2014

REPORT OF THE THIRTY-FIRST ANNUAL MEETING OF THE COUNCIL

Saint-Malo, France

3 - 6 JUNE 2014

President:	Ms Mary Colligan (USA)
Vice-President:	Mr Steinar Hermansen (Norway)
Secretary:	Dr Peter Hutchinson

CNL(14)58

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Report of the Thirty-First Annual Meeting of the Council

Le Nouveau Monde Hotel, Saint-Malo, France

3 - 6 June 2014

1. Opening Session

1.1 The President of NASCO, Ms Mary Colligan (USA), opened the meeting and introduced Ms Elisabeth Dupont-Kerlan (ONEMA) who welcomed delegates to Saint-Malo (Annex 1). The President then made an Opening Statement (Annex 2).

1.2 Written Opening Statements were tabled by Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Norway, the Russian Federation and the United States (Annex 3).

1.3 A written Opening Statement was tabled by the European Inland Fisheries and Aquaculture Advisory Committee (EIFAAC) (Annex 4).

1.4 A written Opening Statement was tabled on behalf of all the Non-Government Organisations (NGOs) attending the Annual Meeting (Annex 5).

1.5 A written Opening Statement was tabled by Sami Parliament (Norway) (Annex 6).

1.6 The President expressed appreciation for these statements and closed the Opening Session.

1.7 A list of participants is given in Annex 7.

2. Adoption of Agenda

2.1 The Council adopted its agenda, CNL(14)53 (Annex 8).

3. Election of Officers

3.1 The Council unanimously elected Mr Steinar Hermansen (Norway) as its President and Mr Jóannes Hansen (Denmark (in respect of the Faroe Islands and Greenland)) as its Vice-President.

4. Financial and Administrative Issues

4.1 Report of the Finance and Administration Committee

The Chairman of the Finance and Administration Committee, Mr Raoul Bierach (Norway), presented the report of the Committee, CNL(14)5. On the recommendation of the Committee, the Council took the following decisions:

(i) to adopt a Decision concerning the NASCO Deferred Salary Scheme and Staff Fund, CNL(14)19 (Annex 9). *Note: the Staff Fund Rules, CNL(14)62, and Staff Rules, CNL(14)63, as subsequently adopted by the Council, are contained in Annexes 10 and 11 respectively;*

(ii) to accept the 2013 audited accounts, FAC(14)2;

(iii) to adopt a budget for 2015 and to note a forecast budget for 2016, CNL(14)20 (Annex 12);

(iv) to confirm the appointment of Chiene + Tait of Edinburgh as auditors for the 2014 accounts;

(v) to adopt the report of the Finance and Administration Committee, CNL(14)5.

5. Scientific, Technical, Legal and Other Information

5.1 Secretary's Report

The Secretary made a report to the Council, CNL(14)6, on: the status of ratifications of, and accessions to, the Convention and membership of the regional Commissions; the receipt of contributions for 2014; applications for observer status to NASCO; applications to conduct scientific research fishing; fishing for salmon in international waters by non-NASCO Parties; NASCO's public relations work; the FAO FIRMS partnership; the Handbook of Basic Texts and the possibility of organising an International Year of the Salmon that is being discussed within the North Pacific Anadromous Fish Commission (NPAFC).

He reported that there had been no applications for NGO status since the last Annual Meeting and no applications to conduct scientific research fishing in the Convention area during 2014. There had been no changes to the status of ratifications of, and accessions to, the Convention or in the membership of the regional Commissions. All contributions for 2014 had been received, and there were no arrears.

There had been no sightings of vessels fishing for salmon in international waters by non-NASCO Parties during the year since 1 April 2013, and none since the early 1990s, but surveillance is limited to the summer months. The External Performance Review Panel had concluded that NASCO had demonstrated that it had responded quickly to address IUU fishing in areas beyond fisheries jurisdiction by vessels registered to non-Parties. However, it felt that NASCO should consider enhancing its current surveillance efforts by requesting the cooperation of NEAFC and NAFO in reporting on any suspected IUU fishing activities for salmon that may be detected in their MCS operations. The Secretary reported that he had been engaged in discussions with the Secretaries of NEAFC and NAFO regarding possible cooperation on this matter and a report had been made under the Action Plan referred to in paragraph 6.3 below.

In 2013, the Council had accepted an invitation to participate in the Fishery Resources Monitoring System (FIRMS) partnership. The primary aim of FIRMS is to provide access to a wide range of high-quality information on the global monitoring and management of fishery marine resources. It is part of the Fisheries Global Information System (FIGIS). The Secretary reported that the FIRMS Partnership Agreement was signed by the President and NASCO became a partner on 16 December 2013. Information about NASCO has been included on the FIRMS website. NASCO has been asked to provide additional information

using an agreed FIRMS template and a draft document was considered by the Council. The Council agreed this document and asked that the Secretary send it to the FIRMS Secretariat for inclusion on the FIRMS website. The document would be updated in 2015 in the light of the advice from ICES.

The Council asked that the Secretary continue to liaise with the NPAFC and report back on any developments with regard to the possible International Year of the Salmon.

5.2 **Report on the Activities of the Organization in 2013**

In accordance with Article 5, paragraph 6 of the Convention, the Council adopted a Report on the Activities of the Organization in 2013, CNL(14)7.

5.3 **Announcement of the Tag Return Incentive Scheme Grand Prize**

The President announced that the winner of the $2,500 Grand Prize was Mr Valentin Efremenkov. The winning tag was of Russian origin and had been applied to a fresh summer run salmon in the recreational catch and release fishery on the Eastern Litsa River on the Kola Peninsula. It was recaptured by an angler fly-fishing on the same river. The Council offered its congratulations to the winner.

5.4 **Scientific Advice from ICES**

The representative of ICES presented the report of the Advisory Committee (ACOM) to the Council, CNL(14)8 (Annex 13). In response to a request from the representative of the European Union, the representative of ICES agreed that in future ACOM Reports page numbering for the different sections would be included in the table of main tasks in the report and that the nominal catches by country shown in Figure 10.1.5.2 would also be presented both as graphics and tables.

The representative of Denmark (in respect of the Faroe Islands and Greenland) asked if ICES would support a scientific research fishery at the Faroe Islands given that the information on stock composition is many years old. The representative of ICES responded that ICES looked to use the best available data, but noted that it is not appropriate for ICES to offer an opinion on whether there should be a scientific research fishery at the Faroe Islands. The representative of the NGOs referred to the lack of Conservation Limits (CLs) in Scotland and asked ICES to clarify the actual basis for management of the stocks. The representative of ICES responded that Scotland was working towards establishing CLs, but these were unlikely to be developed imminently so other approaches were being used. This issue would be considered at the Theme-based Special Session.

In 2013, ICES had been asked to provide a review of the stock status categories currently used by the jurisdictions of NASCO, including within their Implementation Plans, and advise on common approaches that may be applicable throughout the NASCO area. NASCO has recommended the development of CLs for all stocks but these have not yet been developed by some jurisdictions where alternative stock abundance indicators may be used in management. ICES had advised that the implementation of any standardised classification scheme may also be difficult, given differences in the way national management advice is presented in different jurisdictions. Nevertheless, ICES had considered that it might be possible to develop a classification more closely reflecting the generally applied categories used for describing stock status and providing management advice (i.e. Conservation Limits). ICES had developed a preliminary tentative example of

this but indicated that approaches would need to be developed to enable compliance with the classification criteria to be averaged over time periods and thus avoid the need for updating of the rivers database on an annual basis.

The Council recognised the value of a consistent and uniform approach to presenting information on stock status and decided to establish a Working Group, comprising scientists and managers to work by correspondence over the coming year and with a view to meeting during the 2015 Annual Meeting. The Council agreed Terms of Reference for this Working Group, CNL(14)61 (Annex 14). The Secretary will liaise with the Parties on their participants to serve on the Working Group.

5.5 Report of the International Atlantic Salmon Research Board

The Report of the Meeting of the Board, CNL(14)9 (Annex 15), was presented by its Chairman, Mr Raoul Bierach (Norway).

5.6 Report of the Standing Scientific Committee

The Acting Chairman of the Standing Scientific Committee (SSC), Mr Tim Sheehan (USA), 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(14)10 (Annex 16).

Last year, on the recommendation of the SSC, the Council had decided that in future it would provide feedback to ICES on the responses provided to any new questions included in the request for advice. To facilitate this, the SSC had identified the origin (the Council, a Commission, a Party or the NGOs) of new questions in the 2013 request for advice, CNL(13)10, so that appropriate feedback could be sought following presentation of the advice. Within the Council and Commissions, the originator of the questions is asked to provide feedback on the proposed sections.

6. Conservation, Restoration, Enhancement and Rational Management of Atlantic Salmon under the Precautionary Approach

6.1 Special Session: Evaluation of Annual Progress Reports under the 2013 – 2018 Implementation Plans

The first Annual Progress Reports (APRs) under the 2013 - 2018 Implementation Plans were made in 2014 using the agreed template, CNL(12)43. The primary purpose of the APRs is to provide details of: any changes to the management regime for salmon and consequent changes to the Implementation Plans; actions that have been taken under the Implementation Plans in the previous year; significant changes to the status of stocks, and a report on catches; and actions taken in accordance with the provisions of the Convention.

The APRs had been subject to a critical evaluation by a Review Group. The purpose of the evaluation was to ensure that jurisdictions had provided a clear account of progress in implementing and evaluating the actions detailed in their Implementation Plans, along with the information required under the Convention. Where there were shortcomings, the Review Group had developed questions which were sent to the jurisdictions with a request that they respond to these, both orally and in writing, at the Annual Meeting. A summary of the returns (CNL(14)12) was presented under item 6.5. The returns themselves are contained in

documents CNL(14)21 to CNL(14)40.

Mr Rory Saunders (USA) presented the report of the Implementation Plan/Annual Progress Report Review Group, CNL(14)11 (Annex 17), during a Special Session of the Council.

The Review Group had concluded that the new Implementation Plan reporting template had worked well in terms of focusing the plans on the key elements of NASCO Agreements. The Implementation Plans were more consistent and clearer than those prepared in 2007, and the amount of information was more manageable and amenable to evaluation. In most cases, they specified the actions to be taken, the timescales for these actions, the expected outcomes and the approach to monitoring and enforcement so that progress could be assessed. Overall, the Review Group considered that the new plans are an improvement over those provided in the first cycle. The timeliness of reporting and the lack of IPs for some jurisdictions remains a concern to the Group and it is clear that for some Parties/jurisdictions, providing quantitative data to demonstrate progress towards the international goals for sea lice and containment is challenging.

For the Annual Progress Reports, the Review Group considered that the reporting had worked well; generally the reports were submitted on time and the template ensured that the amount of information provided, particularly when compared to the previous Focus Area Reports, was amenable to review and was better focused on outcomes of actions to address particular threats/challenges identified in the IPs. Some Annual Progress Reports provided very limited information on which to assess progress and some information was not presented in the appropriate sections of the template. The Review Group had suggested changes to the template that should further enhance reporting in the 2015 and subsequent APRs. During the Special Session, the Parties/jurisdictions had the opportunity to respond to the questions raised by the Review Group. The written responses to these questions are included in document CNL(14)54 (Annex 18).

The Council agreed to changes proposed to the APR template (CNL(12)43), as detailed in the Review Group's report and asked that where a Party/jurisdiction changes its IP it should send a revised version to the Secretariat no later than 1 December so that any revised actions can be included in the APR template for that Party/jurisdiction before it is issued for completion. The Review Group had recommended that rather than conducting its evaluations by correspondence, it should meet for two days in April 2015 and that the members of the Review Group should continue to serve on the Group, as the Council had intended, for the 2015 evaluations and the remaining evaluations under the five-year period covered by the Implementation Plans. The Council agreed to both these proposals. The Council agreed that in future the Parties should provide written responses to the Review Group's questions prior to the Annual Meeting.

6.2 **Theme-based Special Session: Management of single and mixed stock fisheries, with particular focus on stocks below their conservation limits**

At its Thirtieth Annual Meeting, the Council had decided to change the structure of its Annual Meetings on a trial basis in 2014, in order to improve the opportunities for exchange of information during the meeting. The Council asked that the President and Secretary develop the agenda and schedule of meetings to allow for greater exchange of information through Theme-based Special Sessions. The management of single and mixed stock fisheries, with particular focus on stocks below their conservation limits was chosen as the topic of the first of these Theme-based Special Sessions, and a full-day was allocated to the session. The Council had agreed that the presentations at this Special Session would

include details on how socio-economic issues are included in management decisions including the interests of indigenous peoples.

A Steering Committee, comprising Guy Mawle (Co-Chair of the Socio-Economics Sub-Group), Jóannes Hansen (Denmark (in respect of the Faroe Islands and Greenland)), Niall Ó Maoiléidigh, Chairman (European Union), and Paul Knight (NGOs) had developed a Programme for the Theme-based Special Session, CNL(14)13 (Annex 19). The Steering Committee will prepare a report of the Theme-based Special Session after the Thirty-First Annual Meeting. The Council noted that an item on mixed-stock fisheries would be included on the agendas for the 2015 Annual Meeting of each of the Commissions.

The Council thanked the Steering Committee for its work in arranging the Theme-based Special Session and the speakers for their excellent contributions. The Council recognised that as there are to be negotiations for new regulatory measures/decisions in both the West Greenland Commission and North-East Atlantic Commission in 2015, it would not be able to allocate a full day to a Theme-based Special Session. However, in view of the very valuable exchanges during the 2014 session, the Council decided to ask the APR Review Group to identify a topic for a half day Theme-based Special Session and develop a Programme. The Council will consider a topic and appoint a Steering Committee for a 2016 Theme-based Special Session at its 2015 Annual Meeting.

6.3 **Progress in implementing the 'Action Plan for Taking Forward the recommendations of the External Performance Review and the Review of the 'Next Steps' for NASCO', CNL(13)38**

In 2013, the Council had adopted an 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO' (CNL(13)38). The Secretary reported on progress in implementing the recommendations in the Action Plan, CNL(14)14 (Annex 20). The recommendations in the plan relate to:

- actions which had been implemented or planned at the time the 'Action Plan' was developed and for which there was a need to monitor progress and evaluate outcomes (section 1);
- new actions developed in response to the recommendations contained within the External Performance Review Report and the review of the 'Next Steps' for NASCO (section 2);
- actions to strengthen NASCO's work on the management of salmon fisheries (section 3).

The Council welcomed the progress that had been made and asked that the Secretariat provide a further update on progress at the 2015 Annual Meeting.

6.4 **Liaison with the Salmon Farming Industry**

In 2013, the Council agreed that an item should be retained on its Agenda entitled 'Liaison with the Salmon Farming Industry', during which a representative of the International Salmon Farmers' Association (ISFA) would be invited to participate in an exchange of information on issues concerning impacts of aquaculture on wild salmon. The regular meetings of the Liaison Group would not be continued, but, if a specific need arose, consideration could be given to convening a joint *Ad hoc* group. The President indicated that she had consulted the representative of ISFA, Professor Phil Thomas, who had indicated that ISFA did not have any issues that it wished to raise with the Council. The item will be retained on the Agenda for the 2015 Annual Meeting.

6.5 **New or Emerging Opportunities for, or Threats to, Salmon Conservation and Management**

In accordance with the 'Strategic Approach for NASCO's Next Steps', this item had been included on the Council's Agenda and ICES had been requested to provide relevant information, which is contained in document CNL(14)8. Information is also presented in the summary of Annual Progress Reports, CNL(14)12.

6.6 **Incorporating Social and Economic Factors in Salmon Management**

Last year, the Socio-Economics Sub-Group had reported to the Council, CNL(13)14, on progress on a number of areas on which it had been working. Prior to the Thirtieth Annual Meeting, the Sub-Group had completed the development of the NASCO web pages concerning the socio-economic aspects of the wild salmon and a new page 'Measuring Value' had been included and other pages had been updated. The Sub-Group had concluded that this aspect of its work was complete except for updating the pages as new information became available.

Dr Guy Mawle (Co-Chair of the Socio-Economics Sub-Group) presented the Report of the Socio-Economic Sub-Group, CNL(14)17. He reported that the Sub-Group had previously prepared tables of socio-economic information relating to rod and line and net and trap fisheries (based on information available in 2008) for possible inclusion on the NASCO website. Following presentation of the Sub-Group's report last year, the Council had asked that Parties update these tables and information had been received from Canada, EU - Germany and EU - UK (England and Wales) and the United States had indicated that since there have been no targeted fisheries for Atlantic salmon in the USA for many years, the information should be removed. Given that most of the information in the tables is five or six years old and is far from complete, the Sub-Group recommended that the tables should not be made available on the NASCO website. The Sub-Group also recommended that the Parties/jurisdictions be requested to advise the Secretariat of any new studies relating to the socio-economic values of the wild Atlantic salmon and reiterated that future Theme-based Special Sessions might be held on integrating socio-economic factors in decisions relating to habitat protection, restoration and enhancement and to aquaculture. The Council agreed with these recommendations.

6.7 **Management and Sampling of the St Pierre and Miquelon Salmon Fishery**

A report on the management of the salmon fishery at St Pierre and Miquelon, CNL(14)15 (Annex 21), was presented by the representative of France (in respect of St Pierre and Miquelon).

The representative of France (in respect of St Pierre and Miquelon) expressed her gratitude to NASCO for the invitation to the Thirty-First Annual Meeting and re-affirmed a commitment to supporting the work and objectives of the Organization. The Council was advised that France (in respect of St Pierre and Miquelon) shares NASCO's concerns not only for the conservation of Atlantic salmon, but also for the socio-economic value of the resource. She congratulated NASCO for the quality of its work over many years, including the presentations, documents and discussions at the present meeting, and re-iterated a commitment to contribute to improving knowledge of Atlantic salmon stocks by continuing and strengthening the sampling programme of salmon harvested around the islands of St Pierre and Miquelon. The Council was advised that there is one permanent scientist based in St Pierre and a second fisheries scientist based on Miquelon involved in communications

and sampling. It is hoped that strengthening the cooperation and information exchange with both the recreational and commercial fishing community of St Pierre and Miquelon will enable improved data collection.

The representative of France (in respect of St Pierre and Miquelon) thanked Canada for its help and expertise and noted that she hoped to further develop scientific cooperation on: possible correlations between annual salmon returns and increased harvests at St Pierre and Miquelon and variables affecting the abundance of the resource, such as climate change or changes in the migration patterns of salmon. She advised the Council that it was hoped that the actions being taken would contribute to improved genetic knowledge of the origin of the salmon harvested at St Pierre and Miquelon and noted that these actions will be continued, as recommended by the scientific community, over the coming years. Other factors affecting the abundance of the resource would also be explored. She understood that the record high catch in 2013 was largely due to increased abundance of the resource. It was also noted that, based on NASCO's best practice guidelines, dialogue with all participants and stakeholders in the St Pierre and Miquelon salmon fishery would be renewed and strengthened. The representative of France (in respect of St Pierre and Miquelon) advised the Council that she hoped to continue the fruitful partnership with NASCO and looked forward to working with the Parties.

The representative of the United States requested that France (in respect of St Pierre and Miquelon) consider establishing management control measures for the fishery and that doing so would be consistent with the EU-France's laudable commitment to conservation and restoration of salmon in France.

6.8 **Reports on the Conservation Work of the Three Regional Commissions**

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

7. Other Business

7.1 There was no other business.

8. Date and Place of Next Meeting

8.1 The Council accepted an invitation from Canada to hold its Thirty-Second Annual Meeting during 2 – 5 June 2015 at a venue to be decided.

8.2 The Council accepted an invitation from the European Union to hold its Thirty-Third Annual Meeting during 7 – 10 June 2016 in Germany.

9. Report of the Meeting

9.1 The Council agreed the report of the meeting.

10. Press Release

10.1 The Council agreed a press release, CNL(14)57 (Annex 22).

Note: The annexes mentioned above begin on page 21, following the French translation of the report of the meeting. A list of Council papers in included in Annex 23.

CNL(14)58

Compte rendu de la trente-et-unième session annuelle du Conseil Hôtel le Nouveau Monde, Saint-Malo, France

3 - 6 juin 2014

1. Ouverture de la session

1.1 La Présidente de l'OCSAN, Mme Mary Colligan (Etats Unis), a ouvert la session et présenté Mme Elisabeth Dupont-Kerlan (ONEMA) qui a accueilli les délégués à Saint-Malo (Annexe 1). La Présidente a ensuite fait une déclaration d'ouverture (Annexe 2).

1.2 Des déclarations d'ouvertures écrites ont été présentées par le Canada, le Danemark (pour les îles Féroé et le Groenland), l'Union européenne, la Norvège, la Fédération de Russie et les Etats-Unis (Annexe 3).

1.3 Une déclaration d'ouverture écrite a été présentée par la Commission européenne consultative pour les pêches et l'aquaculture dans les eaux intérieures (CECPAI) (Annexe 4).

1.4 Une déclaration d'ouverture écrite a été présentée au nom d'Organisations non gouvernementales (ONGs) présentes à la session annuelle (Annexe 5).

1.5 Une déclaration d'ouverture écrite a été présentée par le Parlement sami (Norvège) (Annexe 6).

1.6 La Présidente a exprimé son appréciation pour ces déclarations et a clos l'ouverture de la session.

1.7 Une liste des participants est donnée en Annexe 7.

2. Adoption de l'ordre du jour

2.1 Le Conseil a adopté son ordre du jour, le CNL(14)53 (Annexe 8).

3. Election des Membres du Bureau

3.1 Le Conseil a élu à l'unanimité M. Steinar Hermansen (Norvège) en tant que Président et M. Jóannes Hansen (Danemark (pour les îles Féroé et le Groenland)) en tant que Vice-Président.

4. Questions financières et administratives

4.1 Rapport du Comité financier et administratif

Le Président du Comité financier et administratif, M. Raoul Bierach (Norvège), a présenté le rapport du Comité, CNL(14)5. Sur les conseils du Comité, le Conseil a pris les décisions suivantes :

(i) adopter une Décision concernant le régime de salaires différés et le Fond des employés de l'OCSAN, CNL(14)19 (Annexe 9) ; Note : Le Règlement du Fond des employés, CNL(14)62 et le Règlement des employés, CNL(14)63, tels qu'adoptés par le Conseil, sont contenus en Annexes 10 et 11 respectivement ;

(ii) accepter les comptes vérifiés de 2013, FAC(14)2 ;

(iii) adopter un budget pour 2015 et noter un budget prévisionnel pour 2016, CNL(14)20 (Annexe 12) ;

(iv) confirmer la nomination de Chiene + Tait d'Edimbourg en tant que commissaires aux comptes de 2014 ;

(v) adopter le rapport du Comité financier et administratif, CNL(14)5.

5. Informations scientifiques, techniques, juridiques et autres

5.1 Rapport du Secrétaire

Le Secrétaire a fait un rapport au Conseil, CNL(14)6, sur : les statuts de ratifications de et accessions à la Convention ; le statut de membre des Commissions régionales ; la réception des contributions pour 2014 ; les demandes effectuées pour le statut d'observateur de l'OCSAN ; les demandes effectuées pour mener une pêche à des fins de recherches scientifiques : pêche au saumon en eaux internationales par des Parties extérieures à l'OCSAN ; travail de relations publiques de l'OCSAN ; le partenariat FAO FIRMS ; le Manuel des Textes Fondamentaux et la possibilité d'organiser une année internationale du saumon, possibilité discutée avec la Commission du poisson anadrome du Pacifique Nord (CPAPN).

Il a rapporté qu'il n'y avait eu aucune candidature au statut d'ONG depuis la dernière session annuelle et aucune candidature pour exercer une pêche à des fins de recherches scientifiques dans la zone de la Convention courant 2014. Aucun changement aux statuts de ratification ou aux accessions à la Convention, ou au statut de membre des Commissions régionales. Toutes les contributions pour 2014 ont été reçues, et il n'y avait pas d'arriérés.

Aucuns navires de Parties extérieures à l'OCSAN n'ont été vus pêchant le saumon dans les eaux internationales au cours de l'année ceci depuis le 1er avril 2013, ni depuis le début des années 1990, mais la surveillance est limitée aux mois d'été. Le Comité externe de révision de la performance avait conclu que l'OCSAN avait fait la preuve qu'ils avaient réagi promptement pour traiter la pêche INN au-delà de la zone de juridiction de pêche par des navires enregistrés par des Parties extérieurs à l'OCSAN. Cependant l'OCSAN devrait envisager d'améliorer ses efforts actuels de surveillance en faisant appel à la coopération de la CPANE et la NAFO qui pourraient rapporter toute activité suspecte de pêche au saumon de l'INN détectable lors de leurs opérations SCS. Le Secrétaire a rapporté qu'il avait entamé des discussions avec les Secrétaires de la CPANE et la NAFO concernant la possibilité d'une coopération sur cette question et un rapport avait été effectué conformément au Plan d'action visé au paragraphe 6.3 ci-dessous.

En 2013, le Conseil avait accepté une invitation à participer au partenariat du Système de suivi des ressources halieutiques (FIRMS). L'objectif premier du FIRMS est de permettre d'accéder à un large éventail d'informations de première qualité sur le suivi et la gestion à l'échelle mondiale des ressources halieutiques marines. Il fait partie du Système

d'information global de pêche (FIGIS). Le Secrétaire a rapporté que l'Accord de partenariat du FIRMS a été signé par la Président et que l'OCSAN en est devenue partenaire le 16 décembre 2013. Des informations au sujet de l'OCSAN ont été incluses sur le site web du FIRMS. Des informations supplémentaires ont été demandées à l'OCSAN qui devra utiliser un modèle convenu du FIRMS et un document provisoire a été étudié par le Conseil. Le Conseil a accepté ce document et a demandé que le Secrétaire l'envoie au Secrétariat du FIRMS pour être inclus sur le site web du FIRMS. Le document serait mis à jour en 2015 à la lumière des conseils du CIEM.

Le Conseil a demandé au Secrétaire de continuer à entretenir une liaison avec la CPAPN et de le tenir informé de toute évolution relative à la possibilité d'une année internationale du saumon.

5.2 **Rapport sur les activités de l'Organisation en 2013**

Conformément à l'Article 5, paragraphe 6 de la Convention, le Conseil a adopté un Rapport des activités de l'Organisation en 2013, CNL(14)7.

5.3 **Annonce du gagnant du Grand Prix du Programme incitatif au renvoi des étiquettes**

La Président a annoncé que le gagnant du Grand Prix de $2,500 était M. Valentin Efremenkov. L'étiquette gagnante était d'origine russe et avait été appliquée à un saumon frais de remonte estivale d'une pêcherie de remise à l'eau récréative de l'Est de la rivière Litsa sur la péninsule Kola. Il a été recapturé par un pêcheur à la mouche dans la même rivière. Le Conseil a adressé ses félicitations au gagnant.

5.4 **Conseils scientifiques du CIEM**

Le représentant du CIEM a présenté le rapport du Comité consultatif (ACOM) au Conseil, CNL(14)8 (Annexe 13). En réponse à une demande de la représentante de l'Union européenne, le représentant du CIEM a convenu que dans les futurs rapports de l'ACOM la numérotation des pages pour les différentes sections serait incluse dans le tableau des tâches principales dans le rapport et que les captures nominales par le pays montrées au Schéma 10.1.5.2 seraient aussi présentées sous forme de graphique et de tableaux.

Le représentant du Danemark (pour les îles Féroé et le Groenland) a demandé si le CIEM soutiendrait une pêcherie à but de recherche scientifique aux îles Féroé étant donné que les informations sur la composition du stock sont vieilles de plusieurs années. Le représentant du CIEM a répondu que le CIEM cherchait à utiliser les meilleures ressources disponibles, mais a noté qu'il n'était pas approprié pour le CIEM d'exprimer une opinion et de dire s'il faudrait ou non une pêcherie à but de recherche scientifique aux îles Féroé. Le représentant des ONG a mentionné le manque de Limites de conservation (CL) en Ecosse et a demandé au CIEM de clarifier ce sur quoi la gestion des stocks était fondée. Le représentant du CIEM a répondu que l'Ecosse s'applique à établir des CL, mais que l'imminence de leur développement est improbable si bien que d'autres approches sont employées. Cette question serait étudiée lors de la Séance spéciale thématique.

En 2013, il a été demandé au CIEM de procéder à un examen des catégories de statut des stocks actuellement utilisées par les juridictions de l'OCSAN, y compris leurs Programmes d'application, et de fournir des conseils d'approches communes pouvant être applicables dans l'ensemble de la zone de l'OCSAN. L'OCSAN a recommandé le développement des CL pour tous les stocks, mais certaines juridictions n'en n'ont pas encore développé, des

indicateurs d'abondance de stocks alternatifs peuvent dans ce cas être utilisés pour la gestion. Le CIEM a informé que la mise en œuvre de tout système de classification standardisé peut aussi être difficile, étant donné les différences dans la façon dont le conseil de gestion nationale est présenté dans différentes juridictions. Néanmoins le CIEM a considéré qu'il est peut être possible de développer une classification reflétant plus précisément les catégories appliquées utilisées pour décrire le statut des stocks et fournir des conseils de gestion (i.e. Limites de conservation). Le CIEM en a développé un exemple d'esquisse préliminaire, des moyennes de critères de classification devant être atteintes dans certains délais évitant ainsi que la base de données des rivières ne dusse être mise à jour tous les ans.

Le Conseil a reconnu la valeur d'une approche pertinente et uniforme pour présenter les informations relatives au statut des stocks et a décidé d'établir un Groupe de travail, comprenant des scientifiques et des gestionnaires qui travailleront par correspondance au cours de l'année à venir avant de se réunir lors de la session annuelle de 2015. Le Conseil a convenu des Termes de référence pour ce Groupe de travail, CNL(14)61 (Annexe 14). Le Secrétaire entretiendra un lien entre les Parties concernant leurs participants participant au Groupe de travail.

5.5 Rapport de la Commission internationale de recherche sur le saumon atlantique

Le rapport de la Commission, CNL(14)9 (Annexe 15), a été présenté par son Président, M. Raoul Bierach (Norvège).

5.6 Compte-rendu du Comité scientifique permanent

Le Président en exercice du Comité scientifique permanent (SSC), M. Tim Sheehan (Etats-Unis), a présenté un projet de demande de conseil scientifique au CIEM. Sur recommandations du Comité, le Conseil a adopté une demande de conseils scientifiques auprès du CIEM, CNL(14)10 (Annexe 16).

L'année dernière, sur recommandation du SSC, le Conseil a décidé qu'à l'avenir il fournirait des remarques au CIEM concernant les réponses fournies à toute nouvelle question incluse dans la demande de conseil. Pour faciliter ceci, le SSC a identifié les initiateurs (le Conseil, une Commission, une Partie ou les ONG) de nouvelles questions dans la demande de conseil de 2013, CNL(13)10, afin que les remarques appropriées soient recherchées suite à la présentation des conseils. Au sein du Conseil et de la Commission, il est demandé à l'initiateur des questions de fournir une remarque sur les sections proposées.

6. Conservation, restauration, accroissement et gestion rationnelle du saumon atlantique dans le cadre de l'approche préventive

6.1 Séance spéciale : évaluation des comptes-rendus annuels des progrès réalisés dans le cadre des programmes d'application de 2013 – 2018

Les premiers rapports de progrès annuel (APR) conformément aux Programmes d'application pour 2013 - 2018 ont été effectués en 2014 en utilisant le modèle convenu, CNL(12)43. L'objectif principal des APR est de fournir des informations sur tout changement du régime de gestion du saumon et sur les changements des Programmes d'application en découlant; les mesures qui ont été prises conformément aux Programmes d'application les années précédentes; les changements significatifs au statut des stocks et un

rapport sur les prises; et les mesures prises conformément aux dispositions de la Convention.

Les APR ont fait l'objet d'une évaluation critique par un Comité de révision. L'objectif de l'évaluation était de s'assurer que les juridictions avaient fourni un exposé clair du progrès de l'application et de l'évolution des mesures détaillées dans leur Programmes d'application, ainsi que les informations requises en vertu de la Convention. En cas de manques, le Comité de révision avait développé des questions auxquelles les juridictions destinataires avaient reçu la demande de répondre, aussi bien par oral que par écrit lors de la session annuelle. Un résumé des APR (CNL(14)12) a été présenté conformément au titre du point 6.5. Les APR eux-mêmes sont contenus dans les documents CNL(14)21 à CNL(14)40.

M. Rory Saunders (Etats-Unis) a présenté le compte-rendu du Comité de révision des Programmes d'application/ rapports de progrès annuel, CNL(14)11 (Annexe 17), au cours d'une Séance spéciale du Conseil.

Le Comité de révision a conclu que le nouveau modèle de rapport du Programme d'application avait bien fonctionné et avait concentré les programmes sur les éléments clé des Accords de l'OCSAN. Les Programmes d'application étaient plus pertinents et clairs que ceux qui avaient été préparés en 2007, et la quantité d'informations était plus gérable et se prêtait davantage à une évaluation. Dans la plupart des cas, ils spécifiaient les mesures à prendre, les délais de ces mesures, les résultats attendus et l'approche du suivi et de l'application afin que le progrès puisse être évalué. Dans l'ensemble, le Comité de révision a considéré que les nouveaux programmes constituent une amélioration par rapport aux programmes fournis dans le premier cycle. Ce reporting en temps voulu et l'absence des Programmes d'application pour certaines juridictions reste un souci pour le Comité et il est clair que pour certaines Parties/juridictions, la fourniture de données quantitatives pour démontrer un progrès dans l'atteinte des objectifs internationaux pour les poux de poisson et le confinement est un défi.

Concernant les rapports de progrès annuels, le Comité de révision a considéré que le reporting avait bien fonctionné ; les rapports étaient généralement soumis en temps voulu et le modèle a assuré que la quantité d'informations fournies, en particulier si l'on compare avec les rapports de domaines d'action précédents, se prêtait à la révision et se concentrait mieux sur les résultats des actions pour traiter des menaces/défis particuliers identifiés dans les Programmes d'application. Certains rapports de progrès annuel fournissaient des informations très limitées sur lesquelles fonder une évaluation du progrès et certaines informations n'étaient pas présentées dans les sections appropriées du modèle. Le Comité de révision avait suggéré que le modèle soit modifié pour valoriser le reporting de 2015 et les APR ultérieurs. Au cours de la Séance spéciale, les Parties/juridictions ont eu l'opportunité de répondre aux questions soulevées par le Comité de révision. Les réponses écrites à ces questions ont été incluses au document CNL(14)54 (Annexe 18).

Le Conseil a accepté des modifications au modèle APR proposées (CNL(12)43), comme cela est détaillé dans le rapport du Comité de révision et a demandé que lorsqu'une Partie/juridiction change son Programme d'application d'envoyer une version révisée au Secrétariat au plus tard le 1er décembre afin que toute révision d'action soit incluse dans le modèle APR pour cette Partie/juridiction avant qu'il ne soit délivré. Le Comité de révision a recommandé non pas d'effectuer son évaluation par correspondance, mais de se réunir pendant deux jours en avril 2015 et que les membres du Comité de révision devraient continuer à servir au sein du Comité, comme le Conseil l'avait prévu, pour les évaluations de 2015 et les évaluations restantes en vertu de la période de cinq ans couverte par les Programmes d'application. Le Conseil a accepté ces deux propositions. Le Conseil a

convenu qu'à l'avenir les Parties devraient fournir des réponses écrites aux questions du Comité de révision avant la session annuelle.

6.2 **Séance spéciale thématique : Gestion de pêcheries de stocks individuels et mixtes, une attention particulière est accordée aux stocks en dessous de leurs limites de conservation**

Lors de sa trentième session annuelle, le Conseil avait décidé de changer la structure de ses sessions annuelles avec un essai en 2014, afin d'améliorer les opportunités d'échange d'informations au cours de la session. Le Conseil a demandé que la Président et le Secrétaire développent l'ordre du jour et le calendrier des sessions pour améliorer l'échange d'informations via des sessions spéciales consacrées à des thèmes spécifiques. La première de ces Séances spéciales thématiques portera sur la gestion de pêcheries de stocks individuels ou mixtes, une attention particulière est accordée aux stocks en dessous de leur Limites de conservation, et une journée complète y a été consacrée. Le Conseil avait accepté que les présentations lors de cette session spéciale comprennent des informations détaillées sur la façon dont les questions socio-économiques sont incluses dans les décisions de gestion y compris la question des intérêts des populations autochtones.

Un Comité décisionnel, comprenant Guy Mawle (Co-Président du Groupe de travail socio-économique), Jóannes Hansen (Danemark (pour les îles Féroé et le Groenland)), Niall Ó Maoiléidigh, Président (Union européenne), et Paul Knight (ONGs) avait développé un Programme pour la session spéciale thématique, CNL(14)13 (Annexe 19). Le Comité décisionnel préparera un compte-rendu de la Session spéciale thématique après la trente-et-unième session annuelle. Le Conseil a noté qu'une partie sur les pêcheries sur les stocks mixtes serait incluse à l'ordre du jour pour la session annuelle de 2015 de chacune des Commissions.

Le Conseil a remercié le Comité décisionnel pour le travail consacré à l'organisation de la session spéciale thématique puis les intervenants pour l'excellence de leurs contributions. Le Conseil a reconnu qu'étant donné qu'il y aurait des négociations en vue de nouvelles mesures/décisions réglementaires aussi bien au sein de la Commission du Groenland occidental et que de la Commission de l'Atlantique du Nord-Est en 2015, il ne serait pas capable de consacrer une journée entière à une Session spéciale thématique. Cependant étant donnée la richesse des échanges au cours de la session de 2014, le Conseil a décidé de demander au Comité de révision des APR d'identifier un sujet pour une Séance spéciale thématique d'une demi-journée et de développer un Programme. Le Conseil se penchera sur un sujet et nommera un Comité décisionnel pour une Séance spéciale thématique en 2016 lors de sa session annuelle de 2015.

6.3 **Progrès effectué dans l'application du 'Plan d'action pour mettre en œuvre les conseils de l'étude externe des performances de l'OCSAN et l'étude des 'Prochaines Etapes' de l'OCSAN', CNL(13)38.**

En 2013, le Conseil a adopté un 'Plan d'action pour mettre en œuvre les conseil de l'étude externe des performances et la révision des 'Prochaines étapes' pour l'OCSAN' (CNL(13)38. Le Secrétaire a rendu compte des progrès de la mise en œuvre des conseils dans le Plan d'action, CNL(14)14 (Annexe 20). Les conseils dans le Plan sont liés à :

- Des actions mises en œuvre ou planifiées à l'époque du développement du 'Plan d'action' et pour lesquelles un suivi du progrès et une évaluation des résultats était nécessaire (section 1);

- Nouvelles actions développées en réponse aux recommandations contenues dans le rapport de l'étude externe des performances et le rapport des 'Prochaines étapes' de l'OCSAN (section 2);
- actions pour renforcer le travail de gestion des pêcheries au saumon de l'OCSAN (section 3).

Le Conseil a accueilli le progrès effectué et a demandé au Secrétariat de fournir une nouvelle mise à jour du progrès lors de la session annuelle de 2015.

6.4 **Liaison avec l'industrie salmonicole**

En 2013, le Conseil a convenu qu'un point devrait être maintenu dans son ordre du jour intitulé «Liaison avec l'industrie salmonicole», au cours duquel un représentant de l'Association des Producteurs de saumon internationaux (ISFA) serait invité à participer à un échange d'informations sur des questions relatives à l'impact de l'aquaculture sur le saumon sauvage. Les réunions régulières du Groupe de Liaison ne se poursuivraient pas, mais, si un besoin particulier se posait, on pourrait envisager de convoquer un groupe mixte *ad hoc*. La Président a indiqué qu'elle avait consulté le professeur Phil Thomas, représentant de l'ISFA, qui a indiqué que l'ISFA n'avait pas encore de questions à soulever auprès du Conseil. Ce point sera maintenu à l'ordre du jour de la session annuelle 2015.

6.5 **Nouvelles opportunités ou opportunités naissantes pour, ou menaces contre, la conservation et la gestion du saumon**

Conformément à 'l'Approche stratégique des Prochaines étapes de l'OCSAN', cet élément a été inclus dans l'ordre du jour du Conseil et il a été demandé au CIEM de fournir des informations adéquates, contenues dans le document CNL(14)8. Les informations sont aussi présentées dans le résumé des rapports de progrès annuel, CNL(14)12.

6.6 **Incorporation des facteurs sociaux et économiques dans la gestion du saumon**

L'an dernier, le Sous-groupe socio-économique avait fourni un compte rendu au Conseil, CNL(13)14, sur les progrès accomplis dans un certain nombre de domaines sur lesquels il avait travaillé. Avant la trentième session annuelle, le Sous-groupe a terminé le développement de pages web de l'OCSAN concernant les aspects socio-économiques du saumon sauvage et une nouvelle page «Mesure de la valeur» avait été incluse alors que d'autres pages étaient mises à jour. Le Sous-Groupe a conclu que cet aspect de son travail était terminé, sauf pour mettre à jour les pages lorsque de nouvelles informations sont disponibles.

Le Dr Guy Mawle (Co-Président du Sous-groupe socio-économique) a présenté le rapport du Sous-groupe socio-économique, CNL(14)17. Il a indiqué que le Sous-groupe avait déjà préparé des tableaux d'informations socio-économiques relatifs aux pêcheries à la ligne et aux filets et trappes (sur la base des informations disponibles en 2008) pour une éventuelle inclusion sur le site de l'OCSAN. Après la présentation du rapport du Sous-groupe l'an dernier, le Conseil avait demandé aux Parties de mettre à jour ces tableaux et des informations avaient été reçues de la part du Canada, de l'UE - Allemagne et de l'UE – Royaume-Uni (Angleterre et Pays de Galles) et les États-Unis avaient indiqué qu'étant donné qu'il n'y a pas eu de pêcherie ciblant le saumon Atlantique aux Etats-Unis depuis de nombreuses années, l'information devrait être supprimée. Étant donné que la plupart des informations dans les tableaux ont cinq ou six ans d'âge et qu'elles sont loin d'être

complètes, le Sous-Groupe a recommandé que les tableaux ne soient pas publiés sur le site de l'OCSAN. Le Sous-groupe a également conseillé que les Parties / juridictions seront invités à informer le Secrétariat de toute nouvelle étude concernant les valeurs socio-économiques du saumon Atlantique sauvage et a réaffirmé que des sessions spéciales thématiques à venir pourraient être tenues sur les facteurs d'intégration socio-économique dans les décisions relatives à la protection, la restauration et l'accroissement de l'habitat et l'aquaculture. Le Conseil a approuvé ces recommandations.

6.7 Pêcherie de saumons à St Pierre et Miquelon – Gestion et Échantillonnage

Un rapport sur la gestion de la pêcherie au saumon à St Pierre et Miquelon, CNL(14)15 (Annexe 21), a été présenté par la représentante de la France (pour St Pierre et Miquelon).

La représentante de la France (pour St Pierre et Miquelon) a exprimé sa gratitude à l'OCSAN pour l'invitation à la trente-et-unième session annuelle et a réaffirmé son engagement à soutenir le travail et les objectifs de l'Organisation. Le Conseil a été informé que la France (pour St Pierre et Miquelon) partage les préoccupations de l'OCSAN, non seulement en ce qui concerne la conservation du saumon Atlantique, mais aussi en ce qui concerne la valeur socio-économique de la ressource. Elle a félicité l'OCSAN pour la qualité de son travail au cours de nombreuses années, y compris les présentations, documents et débats de la présente session, et a réitéré son engagement à contribuer à l'amélioration de la connaissance des stocks de saumon Atlantique en poursuivant et en renforçant le programme d'échantillonnage de saumon prélevé aux alentours des îles de St Pierre et Miquelon. Le Conseil a été informé qu'il y a un scientifique basé à St Pierre à titre permanent et un second scientifique de la pêche basé à Miquelon impliqué dans la communication et l'échantillonnage. Il est à espérer que le renforcement de la coopération et de l'échange d'informations à la fois avec la communauté de la pêcherie récréative et commerciale de St Pierre et Miquelon permettra d'améliorer la collecte de données.

La représentante de la France (pour St Pierre et Miquelon) a remercié le Canada pour son aide et son expertise et a noté qu'elle espérait développer davantage de coopération scientifique sur : les corrélations possibles entre les rendements annuels de saumon et l'augmentation des récoltes à St Pierre et Miquelon et les variables qui affectent l'abondance de la ressource, tels que le changement climatique ou les changements des habitudes migratoires des saumons. Elle a informé le Conseil qu'elle espérait que les mesures prises contribuent à l'amélioration de la connaissance génétique de l'origine du saumon prélevé à St Pierre et Miquelon et noté que ces actions seront poursuivies, comme l'a conseillé la communauté scientifique, au cours des années à venir. D'autres facteurs qui influent sur l'abondance de la ressource devraient également être explorés. Elle a compris que le plus grand record de capture en 2013 était dû en grande partie à l'augmentation de l'abondance de la ressource. Il a également été noté que, sur la base de meilleures pratiques de l'OCSAN, le dialogue avec tous les participants et les intervenants dans le domaine de la pêcherie de saumon de St Pierre et Miquelon serait renouvelé et renforcé. La représentante de la France (pour St Pierre et Miquelon) a informé le Conseil qu'elle espérait poursuivre le partenariat fructueux avec l'OCSAN et se réjouit de travailler avec les Parties.

Le représentant des États-Unis a demandé que la France (pour St Pierre et Miquelon) envisage d'établir des mesures de contrôle de gestion pour la pêcherie et que cela serait conforme à l'engagement louable de l'UE-France relatif à la conservation et la restauration du saumon en France.

6.8 Rapports des trois Commissions régionales concernant leurs activités de conservation

Le Président de chacune des trois commissions a présenté un rapport au Conseil concernant les activités de leur Commission respective.

7. Divers

7.1 Aucunes autres questions n'ont été soulevées.

8. Date et lieu de la prochaine session

8.1 Le Conseil a accepté une invitation du Canada de tenir sa trente-deuxième session annuelle les 2 – 5 Juin 2015 reste à déterminer le lieu.

8.2 Le Conseil a accepté une invitation de l'Union européenne de tenir sa trente-troisième session annuelle les 7 – 10 Juin 2016 en Allemagne.

9. Compte rendu de la session

9.1 Le Conseil a accepté le compte rendu de la session.

10. Communiqué de presse

10.1 Le Conseil a convenu d'un communiqué de presse, CNL(14)57 (Annexe 22).

Note: Les annexes mentionnées ci-dessus commencent en page 21. Une liste d'articles du Conseil est incluse en Annexe 23.

Annex 1

Welcoming Address made by Ms Elisabeth Dupont-Kerlan,Chief Executive Officer of the French National Agency for Water and Aquatic Evironments (ONEMA) at the Thirty-First Annual Meeting of NASCO

I am extremely pleased to be here with you this morning at the Opening of the Thirty-First Annual Meeting of NASCO, which I am delighted to say has been organised by ONEMA on behalf of the Ministry for Ecology, Sustainable Development and Energy. The last NASCO Annual Meeting here in France was held in 2005, in Vichy, on the Loire-Allier axis, and the Loire salmon conservation plan is still on-going today, as we will see in the presentation later.

I would like to thank both the President and the Secretary of NASCO for accepting our invitation and for your warm words. We chose to host the meeting in this magnificent part of France as the rivers of Brittany and Normandy are renowned for salmon fishing and have been subject to TACs since 1996, which are currently under review. These rivers are still highly important for salmon, and migratory fish in general.

I would like to thank so many of you for coming here, and to apologise on behalf of Mr Laurent Roy, the Director of Water and Biodiversity at the Ministry for Ecology, Sustainable Development and Energy who could not be here this morning. He will, however, join us this afternoon.

If the aim of this meeting is to bring together all of us with an interest in managing Atlantic salmon, to share our experiences, exchange information on the many measures which have been implemented in order to conserve salmon habitat and restore the stocks, I am sure we can all agree that, due to its requirement for high quality habitat, the Atlantic salmon is a great indicator of the state of our watercourses and the effectiveness of our conservation efforts.

This Annual Meeting comes at a fitting time in France as the Government has decided to carry out two major projects aimed at restoring ecological continuity and I, along with our partners at EDF and the Seine-Normandy Water Agency, am pleased to be able to invite you to the premiere of a film on the subject this evening. The conservation and return of Atlantic salmon to our rivers is a symbol of the achievement of good ecological status as required under the Water Framework Directive, and that is what we are committed to doing.

Finally, I would like to remind you that success comes from the steps taken by all of us. I thank you for your attention and wish you a useful, productive and enjoyable week.

Annex 2

Opening Statement made by the President of NASCO

Distinguished Delegates, Observers, Ladies and Gentlemen:

It is my pleasure to welcome you to the Thirty-First Annual Meeting of NASCO in the beautiful, historic city of Saint-Malo.

As you know, at last year's Annual Meeting the Parties reviewed a report from the External Performance Review of NASCO's work and adopted an 'Action Plan' for taking forward these recommendations and those arising from the review of the 'Next Steps' process. The Parties expressed a desire to have more time during the Annual Meeting for information exchange on priority issues. As a result, we have devoted a full day of this meeting to a Theme-based Special Session on the topic of 'Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their Conservation Limits'. I would like to offer my sincere appreciation to the Steering Committee for putting together what looks to be a very informative session and I encourage you all to participate fully in that session.

Another key outcome of the internal and external performance reviews was the decision to require Parties and jurisdictions to develop five-year Implementation Plans and to then report annually on actions taken. The second cycle of Implementation Plans were developed last year and the first Annual Progress Reports were submitted this year. I would like to thank the Review Group for their evaluation of these reports. They have identified a number of questions on each report and I look forward to our Special Session on Thursday morning during which there is an opportunity for responses by the Parties and jurisdictions and questions from all delegates. Strong commitment to the development and implementation of these Plans is essential to furthering the goals of transparency and accountability identified as priorities by the Parties in response to the previously mentioned reviews.

Through the 'Next Steps' process the Parties also increased opportunities for input and engagement with NGOs in recognition of the strong role they have, and will continue to have, in the conservation and management of Atlantic salmon. I would like to particularly thank the NGOs for your involvement over the past year as part of the Annual Progress Report Review Group as well as your membership on the Steering Committee for our Theme-based Special Session. Your continued engagement, constructive criticism and challenging of the Parties is, I believe, essential to achieving our shared goals.

Due to the continued poor status of Atlantic salmon throughout the North Atlantic, our actions here and at home for the conservation and management of Atlantic salmon have never been more critical. ICES is providing us with some new genetic analysis that will warrant discussion within each of the Commissions. Adherence to scientific advice is essential in order to achieve our international commitment to the conservation, restoration, enhancement and rational management of salmon stocks, taking into account the best scientific evidence available to us.

In addition to the important work of the Council this week, the Commissions also have new information to consider and challenges to address. Of particular note, the West Greenland Commission had a productive inter-sessional meeting in April with excellent exchange of information and sharing of perspectives. I am hopeful that foundation will allow for further progress this week.

I would like to thank the Secretariat for the excellent support for the inter-sessional work over the past year and for the preparations for this meeting. I would also like to thank our French hosts for the wonderful hospitality. Since this is my last meeting as President, and in fact my last NASCO meeting, I would also like to take this opportunity to thank you all for the opportunity to learn from you over the years and especially to serve as President over the past four years. It has been a great honor and privilege and I sincerely appreciate your support and guidance. I wish you all success in the challenging work this week.

Annex 3

Opening Statements submitted by the Parties

Opening Statement submitted on behalf of Canada

Madame President, Heads of Delegations, Commissioners, Observers, distinguished guests, Ladies and Gentlemen.

My name is Richard Nadeau. I am in my 4th year as the Head of the Canadian Delegation to NASCO, and my day job is Regional Director General for Fisheries and Oceans Canada, for Quebec Region.

Members of the Canadian Delegation and I are pleased to be here in Saint-Malo, France to attend the 31st Annual Meeting of the North Atlantic Salmon Conservation Organization. I would be remiss if I did not thank the European Union, and specifically, our French hosts for their warm welcome, and the wonderful venue. As is the case year after year, the Secretariat has once again done a wonderful job in preparation for this meeting, and I wish to thank Peter, Louise, and Mairi for their excellent work in setting up this Annual Meeting.

Joining me at the Council table this year are Canada's Commissioners to NASCO, Mr Bud Bird, and Canada's newest Commissioner, attending not his first NASCO meeting, but his first meeting as Commissioner, Mr Carl McLean. Carl is currently a Deputy Minister of Lands and Natural Resources within the Nunatsiavut Government in Labrador. Canada looks forward to Commissioner McLean's continuing contributions to NASCO.

Moving Forward

Canada is quite pleased that NASCO has modernized through the process of an External Performance Review, and that the Organization can move forward to tackle the wide variety of challenges facing wild Atlantic salmon.

Of recent note is the ongoing collaborative international work to ensure that shared stocks are not threatened when leaving home rivers. Canada recognizes that this issue is very complex and that many of those who harvest salmon do so for subsistence needs. For many who live in Northern areas, access to a reliable supply of food can be a challenge and harvesting from the land and the waters often mean that their families can continue to feed themselves. Harvesting salmon can sometimes mean that families without other options do not go without a necessary source of protein or Omega 3's.

However, Canada recognizes that all wild salmon populations are not currently at levels of abundance to allow for harvests on all rivers. In Canada, resource management decisions are made based upon the best available scientific information, and also from traditional knowledge. In Northern communities, where harvests are protected by Canada's *Constitution Act,* there are strict and enforced laws which dictate how many salmon can be retained, how they can be fished, and which prohibit the sale of the salmon. When rivers show returns above their conservation requirements, harvests can take place. When rivers do not meet their conservation requirements, limitations are placed upon harvests.

Canada's management regime is diverse and reflects the varying conditions of stocks throughout its range. Fisheries and Oceans Canada work with the Provinces and Aboriginal governments and communities to ensure subsistence needs are met, while working to limit harvests on rivers with differing conservation requirements.

Work of the West Greenland Commission

Within the West Greenland Commission we look forward to continuing the work started during last year's Annual Meeting, and continued upon in London at the recent inter-sessional meeting, and continued here in Saint-Malo, to address Greenland's harvests. This work will be important to achieve our mutually agreed upon goals within NASCO, to work together to improve the overall abundance of wild Atlantic salmon stocks.

Continuing Contributions to Implementation Plans

Canada is also pleased to continue to contribute via annual updates on its Implementation Plan. Canada's latest annual update provides information on the way Canada is modernizing its regulatory framework to allow for the enhancement of wild Atlantic salmon populations, and we look forward to continuing to report to NASCO through these annual updates. We also hope that these updates will continue to be effective for our consultations with our many domestic stakeholders and international partners, many of whom are with us here in Saint-Malo. As committed in previous years, Canada will continue to engage you for the benefit of the wild Atlantic salmon, and for those who rely upon this resource.

Conclusion

In conclusion, we are looking forward to a fruitful meeting here in Saint-Malo, and to the progress we hope to achieve for the good of wild Atlantic salmon.

Thank you.

Opening Statement submitted by Denmark in respect of the Faroe Islands and Greenland

Madame President, Distinguished Delegates, Observers, Ladies and Gentlemen

On behalf the Faroe Islands and Greenland, I would like to begin by thanking the European Union and our French hosts for arranging this meeting and making us feel so welcome here in Saint-Malo.

Many years ago, the Faroes and Greenland took the decision to stop all commercial fisheries of wild salmon in our waters. This was done in order to protect and rebuild the stocks. This decision came with a high price to our fishing industry, as they could no longer conduct commercial fisheries for wild salmon. In the interest of preserving the salmon stocks, we have maintained this policy for more than two decades.

We have kept our side of the bargain.

Despite these measures, the state of the stocks has not improved over the past two decades.

Therefore, it is clear that it is also necessary to look at fisheries elsewhere in order to achieve sustainable management of the wild salmon.

We are of the view that the best and fairest solution would be if NASCO could regulate fisheries for wild salmon in the homewaters of all Parties and jurisdictions of NASCO.

Nevertheless, the Faroe Islands and Greenland are pleased that over the last few years there has been more emphasis on fisheries below their Conservation Limits, and particularly mixed-stock fisheries, within NASCO.

We are very much looking forward to this year's Theme-based Special Session, focusing as it does on fisheries on stocks below their Conservation Limits.

It was also an important step in the right direction when, in 2013, the Parties submitted the new Implementation Plans for the period up to 2018.

We are very pleased that it has been agreed that the Parties will also submit an Annual Progress Report, and that these reports are thoroughly reviewed before being discussed at the Annual Meeting.

We come here in good spirit and in the hope that, through a positive dialogue and joint efforts, we can come closer to achieving our vision for the wild salmon.

Finally, Madame President, I would like yet again like to thank our hosts and the Secretariat for the excellent preparations for this this meeting.

Thank you for your attention.

Opening Statement submitted by the European Union

Madame President, Distinguished Delegates, Observers, Ladies and Gentlemen,

This is the second consecutive year that the European Union has the honour and pleasure to host the Annual Meeting of NASCO. I would like to acknowledge the hospitality and generosity of the French authorities, as well as the wonderful work of our French colleagues for the excellent organisation of this meeting in this fabulous venue of Saint-Malo.

We all share our concern for Atlantic salmon, not just for its pretty unique biological cycle, but also for the cultural implications that are associated with its fishery. There are several challenges that this species continues to face despite the invaluable efforts of NASCO and its individual members in the course of the last 30 years. The situation of several stocks is still critical. However, some positive signs of recovery in a number of jurisdictions encourage a moderate level of optimism and call for further robust efforts in order to overcome the existing knowledge gaps and the increasing pressure of the socio-economic environment.

The European Union is strongly committed to support NASCO's objectives. This commitment is not limited to a mere endorsement of principles and shared vision.

In fact, major efforts and sacrifices have been and are being made across several EU jurisdictions to conserve, protect and rebuild salmon stocks, despite the growing pressures to sometimes undo progresses and achievements by favouring more attractive short-term interests. We keep on thinking that those sacrifices will be repaid by much greater rewards. Patience and a commitment for the long-term are therefore essential, as seeing the rewards will take time.

We believe it is important to take advantage of any valuable learning opportunity for crafting effective best practices, reviewing our achievements but also acknowledging our failures. This is why we attach a great importance and hope to the agenda that the meeting features this year, in response to the 'Next Steps' process. I refer in particular to the evaluation of the Annual Progress Reports and to the Theme-based Special Session, in which several EU experts have been actively involved in the conception, planning and implementation phase. We are confident that the new structure will further help all Parties to learn from each other, by sharing best practices and by guiding them towards new and ambitious targets.

However, NASCO is not just sharing best practices. NASCO means also finding and mutually agreeing on ways to move forward. This is only possible through open dialogue, consultation and mutual understanding, as we recently proved at the inter-sessional meeting of the West Greenland Commission. The EU wants to continue such a dialogue with a view to foster cooperation, as we are convinced that only by working together can we ensure that NASCO's objectives are fully met.

Finally, one fundamental area where we should all recognise the critical importance of cooperation is science. We need to pursue our efforts to ensure that the international scientific collaborations continue. The EU will continue supporting the scientific community, to shed light into the black boxes of salmon mortality. The European Commission has recently contributed with 5.6M€ to NASCO's SALSEA initiative. In addition, two large on-going EU-funded projects, namely Aquatrace and Ecoknows, are tackling issues that are key to NASCO. The EU Member States are also funding and carrying out national projects on Atlantic salmon. We hope that at least some of the outputs of all these research initiatives will be applicable and useful for the work and objectives of NASCO.

Before concluding, I would like to thank the Secretariat for their diligence and dedication in organising this meeting and personally I want to thank Peter for the constant, valuable and wise support he has given me in the past months. Finally, I cannot conclude without expressing on behalf of all my colleagues our gratitude and heartfelt thanks to Mary for the excellent work she has done as NASCO's President. We wish her all the best in her personal "Next Steps" process.

I am looking forward to a fruitful cooperation with all of you during this meeting and beyond, to collectively pave the way to the achievement of the long-term objectives of NASCO and ensure that Atlantic salmon remains an integral part of our ecological legacy to the future generations.

Opening Statement submitted by Norway

On behalf of Norway, I would like to thank France for hosting the Thirty-First Annual Meeting of NASCO.

NASCO has gone through an important but also demanding four-year period. Following up the results of the 'Next Steps' process and the findings of the External Performance Review, last year we agreed on an array of changes in how we 'conduct our business' in order to further improve the effectiveness and relevance of the organisation to Atlantic salmon management for coming years. This year, of course, is the first time we implement those changes and I am both excited and looking forward to see how these changes will work in practice.

In recent years, Pre-Fishery Abundance in Norway has continued to be at historically low levels, and in 2013 it was particularly low, only about 50% of what it was in 1983. Despite that fact, spawning targets have been met for an increasing number of stocks in recent years, although there are some indications that this trend was reversed in 2013. Implementing more strict fisheries regulations in recent years has been important to those developments.

There are, of course, some local and regional differences, in fact after liming and re-establishing new salmon stocks in a number of rivers in the southern parts of Norway, salmon is again much more abundant and stocks are still building up. This is also the case for rivers where the parasite *Gyrodactylus salaris* has been successfully eradicated and is promising not only for the affected rivers, but also for the total number of salmon returning to the Norwegian coast. In northern Norway many stocks in the River Teno have especially poor status, with no other known impacts than overharvesting.

As last year, we still have severe concerns about the future of our stocks. The grilse component continues to decline at a disturbing rate and sea survival seems not to have improved in general. Adverse human impacts remain high and increasing in some areas. All this combined with climate change underlines the necessity for our continued common effort, and the need for NASCO to strengthen its role as a forum contributing to common understanding of challenges and management approaches.

Norway would like to thank France and the Secretariat for excellent preparations for this meeting. The Norwegian delegation looks forward to a productive and successful meeting. Finally we like to take the opportunity to thank our President Mary Colligan for her excellent guidance and work and would like to wish her the very best for the future.

Opening Statement submitted by the Russian Federation

Madame President, Distinguished Delegates, Observers, Ladies and Gentlemen!

I am pleased on behalf of the Russian Delegation and the Federal Agency for Fisheries, representing the Russian Government in NASCO, to greet all participants of the 31st Annual Meeting of NASCO. First of all I would like to use this opportunity to express my appreciation of the cordial welcome and excellent arrangements for this meeting provided by our French hosts, and the magnificent beauty of the place. We are honoured to be here!

To enhance implementation of existing NASCO Agreements, Parties have prepared Implementation Plans for the period 2013-2018, key documents in their work in the coming years. We are looking forward to hearing the evaluation by the Review Group of the first Annual Progress Reports (APRs) under the new Implementation Plans.

The extensive salmon migrations between open sea and home rivers pose a major problem for managers regulating salmon fisheries. While the river fisheries mainly exploit river-specific stocks, the coastal fisheries inevitably exploit a mixture of stocks from widely different areas, including fish originating from rivers in neighboring countries. This is a problem. Moreover, the coastal mixed-stock fishery can exploit salmon stocks below their Conservation Limits. We believe that sharing of knowledge in management of salmon fisheries in the Theme-based Special Session is a very good and useful initiative of NASCO, which, we are sure, will contribute to better understanding of management approaches used in different jurisdictions and assist them in further improving management regimes for their salmon fisheries, both mixed-stock and single. We also believe that this Session will be a forum to further exchange views and continue dialogue between the Parties and NGOs.

In 2011-2013 the Kolarctic salmon project was implemented under Agreement between the EU and the Russian Federation – Kolarctic ENPI CBC Programme, with three participating countries: Norway, the Russian Federation and Finland. The Kolarctic salmon project has generated one of the most comprehensive and detailed genetic datasets for any fish species. Results of genetic stock identification provide a first and comprehensive overview of spatial and temporal variation in stock compositions in coastal fisheries of Northern Norway and in the White Sea. We are confident, that data from the project will provide managers with tools for regulating mixed-stock fisheries in the northern NEAC area on a more informed basis.

Concluding this statement, I would like to thank France for hosting this Annual Meeting once again for hospitality and commend the splendid arrangements for this meeting.

Madame President, the delegation of the Russian Federation is looking forward to a very productive meeting and to working closely with you and all the Parties during this week and I wish all of us success in working together.

Thank you for attention!

Opening Statement submitted by the United States of America

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

I am delighted to be here today with colleagues and friends who share a common purpose – to provide for the conservation, restoration, and rational management of Atlantic salmon throughout its range.

On behalf of the United States, I offer my sincere thanks to our French hosts for their hospitality and for the excellent accommodations. I expect this grand and beautiful setting will inspire us to redouble our commitment to NASCO as the best forum in which to collaborate towards fulfilling that profound shared responsibility and purpose. I also wish to express our sincere appreciation for our Secretary and his staff, whose hard work has prepared the stage for our deliberations this week. Well done, and thank you for your tireless efforts in support of this body.

Just six weeks ago, many of us here today were in London for an inter-sessional meeting of the West Greenland Commission. I extend the appreciation of the United States to the Parties of the West Greenland Commission, the Chairman, Ted Potter, the Non-Governmental Organizations who attended the meeting, and, especially (again), to the NASCO Secretariat, who so expertly prepared for and supported the inter-sessional meeting. No doubt, that meeting came at a challenging time, as we all were in the midst of preparations for this Annual Meeting. Still, I would characterize the proceedings as profoundly important and thoroughly informative, setting the stage for further discussions and collaborative work this week. The business of the Commission regards a fishery off the west coast of Greenland that involves mixed stocks, some of which are below their Conservation Limits. So our proceedings in the West Greenland Commission are certain to be advanced not only by our work in London, but also by the Theme-based Special Session the Council will hold on Wednesday to examine and discuss mixed-stock fisheries.

We strongly believe that the work of NASCO should be conducted in a fair, balanced, and transparent way. From our perspective, the implementation of robust conservation measures in homewaters is as important for ensuring the recovery and long-term sustainability of salmon populations as is the implementation of effective management actions for interceptory fisheries. For many salmon populations throughout the North Atlantic region, we are a long way from achieving the Parties' shared goal. Right now, US-origin stocks remain critically endangered. We are fighting to protect and restore them and to expand and enhance their habitat. To demonstrate that commitment, I offer two photographs for your consideration: (a) Veazie Dam on the Penobscot River in May of 2013 and (b) the site of the former dam a year later. We are not here to take sole credit for this momentous project in our biggest river. Indeed, the dam removal could never have executed without a diverse array of committed government and non-governmental partners primarily the Penobscot River Restoration Trust, working closely with its members: Atlantic Salmon Federation, American Rivers, Maine Audubon, Natural Resources Council of Maine, Trout Unlimited, The Nature Conservancy and Penobscot Indian Nation. Rather, our purpose in sharing these photos is to offer evidence of a dogged commitment to working in homewaters with the same energy and singular focus as in this international forum.

Of course, NASCO's consideration of work in homewaters and our accountability relative to NASCO agreements are driven primarily through the Implementation Plan process. We, the Parties, must work to make the Implementation Plan process more robust and effective. The United States continues to support the process. We believe the Implementation Plans and the requirement to submit annual reports, marking accomplishments against those plans, have shed important light on the actions taken by each jurisdiction to improve the conservation of wild salmon in line with

NASCO agreements. We note and congratulate the substantial progress made by several jurisdictions on management and control of domestic fisheries, in particular. We are looking forward to a rigorous discussion of the first Annual Progress Reports during the Special Session slated for Thursday morning. We ask that all of the Parties take full advantage of the Implementation Plan process and this Special Session, as critical tools for enhancing the transparency of our process, our accountability relative to our management commitments and the effectiveness of our NASCO agreements.

We stress again our continued commitment to NASCO and to science-based management that takes appropriate account of uncertainties. We would also like to reiterate our serious concern about critically endangered US populations of Atlantic salmon. The risk of extinction of these populations is real, and our responsibility, individually and collectively, to avoid such an outcome cannot be overstated. We humbly ask for your help to ensure that this iconic species does not die out from its range in the United States.

In closing, I note that Madame President, Mary Colligan, is serving as chair over our proceedings for the final time. The members of the United States' delegation have been extremely proud to see our colleague and friend in that esteemed role. We offer our sincere thanks for her assiduous leadership and for her tireless efforts ensuring NASCO remains an effective and vital forum. Thank you, Madame President. You have fulfilled your duties with exceptional poise, élan, integrity, and intelligence. You have challenged us all to be better in our support of NASCO and, especially, for the sake of the fish.

Thanks once again to our hosts and the Secretariat for the excellent preparations for this meeting. The United States looks forward to working with you all this week to ensure a successful meeting.

Thank you.

Annex 4

Opening Statement submitted by the European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC)

Madame President, Mr Secretary, Delegates, Observers, Ladies and Gentlemen.

I am grateful for the opportunity to provide an Opening Statement on behalf of the European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC) at this the 31st Annual Meeting of NASCO.

By way of background, EIFAAC is a statutory, advisory body of the Food and Agriculture Organization (FAO) of the United Nations. Established in 1957, it is an inter-governmental forum for collaboration and information exchange on inland fisheries and aquaculture across European countries. EIFAAC currently has 34 members including the European Union.

Governments, institutions and agencies, including NASCO, can benefit from international advice derived from EIFAAC's network of policy-makers, managers, scientists and others working on inland fisheries and aquaculture issues.

EIFAAC's mission is to promote the long-term sustainable development, utilisation, conservation, restoration and responsible management of European inland fisheries and aquaculture and to support sustainable economic, social, and recreational activities through:

- providing advice and information;
- encouraging enhanced stakeholder participation and communication; and
- the delivery of effective research.

A new EIFAAC structure has been designed to deliver advice and research through an efficient project management approach supported by a Technical and Scientific Committee. EIFAAC currently has active project groups looking at a number of prioritised research areas. One particular project on recreational angling may be of interest to NASCO Parties as it seeks to bring together all the stakeholders including anglers, managers, scientists, commercial interests, equipment providers and legislators to discuss topics relating to the future of recreational angling. This will culminate in an EIFAAC Symposium which will be hosted by the Norwegian Government from 15 – 17 June in Lillehammer. EIFAAC would certainly welcome NASCO's input into this project.

EIFAAC and NASCO share the common goal of wild Atlantic salmon conservation while respecting the social, economic and cultural value of this unique species. EIFAAC is well positioned to offer expert advice and support to NASCO on issues affecting the Atlantic salmon in the freshwater element of its lifecycle.

I would like to take this opportunity to thank our hosts and facilitators for their wonderful welcome to beautiful Saint-Malo and for the facilities and hospitality provided. Finally, can I wish all of you a productive an enjoyable NASCO session.

Annex 5

Opening Statement submitted by the Non-Government Organisations

The NGOs have appreciated the opportunity this year to participate in reviewing the Annual Progress Reports made by individual governments in fisheries management, habitat restoration and protection of wild Atlantic salmon from the impacts of salmon farming. The absence of the submission by Scotland of its Annual Progress Report is deeply regretted and, in fact, astonishing when you consider the magnitude of that Party's net fisheries and salmon aquaculture industries.

The NGOs are very concerned that the Parties that have major aquaculture production continue to expand with little, if any, progress to stop recurrent outbreaks of disease, spread of parasites and genetic pollution caused by interbreeding of escapees with wild salmon. We do appreciate those Parties that have provided realistic data on sea lice loads and escapes from sea cages in a conscientious attempt to track the success of various methods of mitigation. The lack of progress in reaching NASCO's goals of zero escapes and zero sea lice and the continuous outbreaks of disease reinforce the need for a Special Session on the impacts of aquaculture at the Annual Meeting in 2015. We take heart from the traction being gained by entrepreneurs who are utilising land-based, closed containment operations that are growing salmon completely separate from wild salmon and their environment. The NGOs urge NASCO to include presentations on closed containment in the line-up for this Special Session next year.

We are pleased to have participated in the inter-sessional meeting of the West Greenland Commission. The NGOs appreciate the effort that went into the proposals for action on this fishery that were to be subsequently considered within individual governments and will be further discussed at this Annual Meeting. We look forward to participating in the Theme-based Special Session on management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their Conservation Limits and hope to hear transparent reports by all Parties followed by frank discussion and questions of individual Party representatives.

Once again, we urge the Parties to remember that NASCO is primarily concerned with the management and conservation of wild Atlantic salmon, and we ask that this principle be kept to the forefront of our discussions this week, especially during the Special Session. We must strive for agreements and resolutions that are fair and equitable to all countries which host salmon at any stage of their life cycle.

Meanwhile, we thank the Government of France for hosting us in Saint-Malo, and hope that our beautiful and historic surroundings lead to candid discussion and effective action to save our iconic wild Atlantic salmon.

Annex 6

Opening Statement submited by the Sami Parliament - Norway

The Sámi Parliament in Norway welcomes you to this joint effort to protect the world's wild salmon for coming generations. Wild salmon are among the material natural resources that provide subsistence for the Sámi and many other indigenous communities. For the Sámi, wild salmon represent not only food on the table, but also a welcome addition to our business incomes. Salmon fishing is a cornerstone of Sámi culture.

The Sámi Parliament would like the Parties to NASCO to recognise that indigenous peoples have a precarious need for protection of our traditional way of life, precisely because the correlation between the practice of culture and traditional economic activities is especially strong.

There is a great deal of traditional knowledge associated with our fishing activities. We have long traditions related to how we fish and how we prepare and preserve this food. We know our traditional fishing grounds well and we know how to live as one with nature. Since time immemorial, several rituals have been used to bring good luck in connection with salmon fishing. Salmon have been, and continue to be, of great importance to our communities. We have been fortunate in the north. The salmon have visited our waters often. Regrettably, we see that the salmon stocks are not as viable today as they should be in some areas.

As we try to find out why this is the case, it is important for the Sámi Parliament to point out that management calls for a combination of biological knowledge and traditional knowledge. Only that will give us the best possible knowledge base and, fortunately, much of this knowledge is already firmly rooted in our local communities.

Many factors must be taken into account in connection with salmon management. The Sámi Parliament maintains that the indigenous perspective must be given more emphasis in the assessments made by NASCO and the member countries. The Sámi and other indigenous peoples have established rights in the light of historic fishing activities. The Sámi Parliament is therefore pleased that the theme of this year's Special Session at NASCO is open to considering the interests of indigenous peoples. This is especially important in areas where salmon are at risk and where fishing must therefore be regulated more strictly. The Sámi Parliament emphasises that indigenous fishing rights cannot be superseded by other entitlements.

Like many other indigenous peoples around the world, the Sámi see increasingly more pressure being applied to our natural resources. Not only do we find that fewer salmon are returning to our fishing grounds, but they are encountering increasingly more obstacles along the way. In the past year, the State of Norway adopted a 10 per cent increase in fish-farming intensity. Several of the new licences will be granted in our areas. This has taken place without consulting the Sámi Parliament in Norway or the fishermen among us who are affected. This has taken place without the consent of the Sámi.

The Sámi Parliament underscores strongly the State's responsibility for obtaining indigenous people's free, prior informed consent when taking decisions that impact our interests. The Sámi Parliament believes that NASCO can contribute to good processes by including the indigenous perspective in NASCO's guidelines.

Annex 7

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Dr Phil McGinnity *p.mcginnity@ucc.ie*

Dr Guy Mawle *guy.mawle@gmail.com*
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Dr Peter Hutchinson	Secretary
Ms Mairi Ferguson	PA to the Secretary
Ms Louise Forero	PA

SUPPORT STAFF

Mr Jimmy Histel
Ms Anne Rouet

Annex 8

CNL(14)53

Thirty-First Annual Meeting of the Council

Le Nouveau Monde Hotel, Saint-Malo, France

3 - 6 June, 2014

Agenda

1. Opening of the Meeting

2. Adoption of Agenda

3. Election of Officers

4. Financial and Administrative Issues

4.1 Report of the Finance and Administration Committee

5. Scientific, Technical, Legal and Other Information

5.1 Secretary's Report

5.2 Report on the Activities of the Organization in 2013

5.3 Announcement of the Tag Return Incentive Scheme Grand Prize

5.4 Scientific Advice from ICES

5.5 Report of the International Atlantic Salmon Research Board

5.6 Report of the Standing Scientific Committee

6. Conservation, Restoration, Enhancement and Rational Management of Atlantic Salmon under the Precautionary Approach

6.1 Special Session: Evaluation of Annual Progress Reports under the 2013 – 2018 Implementation Plans

6.2 Theme-based Special Session: Management of single and mixed stock fisheries, with particular focus on stocks below their conservation limits

6.3 Progress in implementing the 'Action Plan for Taking Forward the Recommendations of the External Performance Review and the Review of the 'Next Steps' for NASCO', CNL(13)38

6.4 Liaison with the Salmon Farming Industry

6.5 New or Emerging Opportunities for, or Threats to, Salmon Conservation and Management

6.6 Incorporating Social and Economic Factors in Salmon Management

6.7 Management and Sampling of the St Pierre and Miquelon Salmon Fishery

6.8 Reports on the Conservation Work of the Three Regional Commissions

7. Other Business

8. Date and Place of Next Meeting

9. Report of the Meeting

10. Press Release

Annex 9

CNL(14)19

Decision of the Council concerning the NASCO Deferred Salary Scheme and Staff Fund

Having regard to the recommendations from Chiene + Tait and Davidson Chalmers concerning the NASCO Deferred Salary Scheme and the Staff Fund, established as a Special Fund in 2001 (Council documents CNL(01)49, CNL(02)42, CNL(04)52 and CNL(12)17), the Council has decided as follows:

- it should adopt the revised Staff Rules and Staff Fund Rules proposed by Chiene + Tait and Davidson Chalmers as contained in document FAC(14)5 subject to the following clarification:
    - that the wording in the Staff Fund Rules is reviewed to ensure that references to taxation are clear including, in particular, whether rule 4.3 should refer to 'UK taxation' rather than 'taxation';
    - the wording in Staff Rule 8.1 should refer to Rule 5 and not Rule 8;

  The Secretary agreed to seek confirmation in writing that these changes were appropriate and that other references to taxation in the Staff Fund Rules be similarly clarified wherever appropriate. Once that input is provided then the Staff Fund Rules and Staff Rules will be revised accordingly and will be annexed to the Council Report.

- the financial statements should include a note in the audited accounts, commencing with the 2014 accounts, to disclose the total value of the Staff Fund and the associated obligation to Staff Fund members as of 31 December each year;
- the financial statements should include a note in the audited accounts, commencing with the 2014 accounts, to confirm that tax has been deducted from all remuneration paid to Secretariat members and retained by NASCO in accordance with the Staff Rules;
- the revised format for the payslips proposed by Chiene + Tait and Davidson Chalmers be used from 1 July 2014 for all Secretariat members;
- the Secretary should be asked to develop revised offers of appointment to Secretariat members to reflect the findings of the review by Chiene + Tait and Davidson Chalmers incorporating wording to reflect the changes made to the Staff Fund and Staff Fund Rules and to address the issue identified concerning temporary/part-time contracts.

Annex 10

CNL(14)62

NASCO Staff Fund Rules

1. Application

1.1 These Rules apply to the NASCO Staff Fund and govern the operation of the Deferred Salary Scheme (the "Scheme") established by the decision of the Council, CNL(01)49. NASCO does not operate a system for payment of pensions and annuities for its former employees and membership of the Scheme ends at the termination of full-time employment with NASCO.

2. Membership

2.1 Any Secretariat Member may become a Member of the Scheme and may remain as a Member of the Scheme for as long as such Member is employed by NASCO on a full-time basis in accordance with the provisions of the Staff Rules. A Secretariat Member who ceases, for whatever reason, to be employed as aforesaid, shall ipso facto cease to be a Member of the Scheme, and the provisions of clause 6.2 below shall apply.

3. Contributions

3.1 Contributions to the Scheme by NASCO and by the Members of the Scheme shall be held in the NASCO Staff Fund, established in accordance with NASCO Financial Rule 6.1, and sub-divided into a separate deferred salary account for each Member.

3.2 NASCO will defer 15.8% after tax of the gross salary of each Member of the Scheme to the Fund or such other amount as is determined by the Council from time to time. Each Member of the Scheme shall defer a minimum of 7.9% after tax of gross salary or such other minimum amount as is determined by the Council from time to time. Members of the Scheme may request that additional contributions be deferred from gross salary and paid into the Fund. These contributions to the Fund by NASCO and Members of the Scheme shall be enhanced by 5% after tax by NASCO as a contribution to investment charges. Prior to a Secretariat Member retiring from full-time employment with NASCO, a lump sum payment will be made into that Secretariat Member's deferred salary account of not less than one twelfth after tax of the final year's gross salary and allowances for each year of service with NASCO, fractions of a year to count pro-rata.

4. Nature of Deferred Salary Accounts

4.1 The funds contributed to, and held within, each Member's deferred salary account form part of the NASCO Staff Fund, and subject to clause 6.1 below, belong to and comprise part of the assets of NASCO. A note of the total year-end balance available in the Staff Fund shall be included in NASCO's audited accounts.

4.2 In holding the funds or other investments in the deferred salary accounts of each Member of the Scheme, NASCO does not thereby assume the position either as a trustee or nominee of any Member of the Scheme.

4.3 The funds held within each Member's deferred salary account, and any increase in the values thereof, are deemed to be within the scope of NASCO's official activities and shall therefore accrue exempt from UK taxation, but such exemption from taxation shall only apply for so long as the Member of the Scheme continues to be employed by NASCO in the manner referred to under clause 2.1 above.

5. Management of the Staff Fund

5.1 All amounts contributed to the individual deferred salary accounts of Members of the Scheme shall be held on bank deposit or invested in such manner or held in the form of such other investments as NASCO, in its sole discretion shall determine. Notwithstanding the foregoing, NASCO may consult with Members of the Scheme with regard to the nature of the investments held within a Member's deferred salary account, but nevertheless shall be under no obligation to act in accordance with the direction or instruction of any such Member.

6. Benefits and Scheme Members' Rights

6.1 Each Member of the Scheme shall at all times be fully vested and have entitlement to give notice requesting payment in whole or in part of their individual deferred salary account at any time whilst remaining a Secretariat Member.

6.2 In the event of a Member of the Scheme ceasing to be employed by NASCO in the manner referred to under clause 2.1 above, such Member shall be deemed to have given notice to NASCO requesting payment of the whole amount of the Member's individual deferred salary account whereupon the Secretary shall immediately procure that the full value of that Member's deferred salary account is paid to the Member concerned. In the event of the death in service of a Member of the Scheme, the amount or value of the deceased Member's deferred salary account shall automatically belong to the Estate of the deceased Member, and the Secretary shall procure that the full value of that deceased Member's deferred salary account is paid to the executor of the deceased Member.

Annex 11

CNL(14)63

Staff Rules

RULE 1

GENERAL PROVISION

1.1 The Staff Rules establish the fundamental principles of employment, regulate the working relationships and establish the rights and responsibilities of formally appointed employees who render their services to, and receive remuneration from, the North Atlantic Salmon Conservation Organization (hereinafter referred to as either the "Organization" or "NASCO").

RULE 2

DUTIES, OBLIGATIONS AND PRIVILEGES

2.1 The Secretary and the staff members (together hereinafter referred to as "Secretariat members") are international civil servants. Upon accepting their appointments they pledge themselves to discharge their duties faithfully and to conduct themselves with the interests of the Organization in mind.

2.2 For the purpose of the Rules the term "dependant" shall be deemed to include only children aged under 18 years or as further defined in the rules on allowances for dependent children used as guidance by the Secretary.

2.3 Secretariat members shall at all times conduct themselves in a manner in keeping with the international nature of the Organization. They shall always bear in mind the loyalty, discretion and tact imposed on them by their international responsibilities in the performance of their duties. They shall avoid all actions, statements or public activities which might be detrimental to the Organization and its aims.

2.4 Secretariat members are not expected to renounce either their national feelings or their political or religious convictions.

2.5 In the performance of their duties, Secretariat members may neither seek nor accept instructions from any government or authority other than the Organization.

2.6 Secretariat members shall observe maximum discretion regarding official matters and shall abstain from making private use of information they possess by reason of their position. Authorisation for the release of information for official purposes shall lie with the Council in respect of the Secretary, and with the Secretary in respect of the staff members.

2.7 Secretariat members shall, in general, have no employment other than with the Organization. In special cases, staff members may accept other employment, provided that it does not interfere with their duties in the Organization, and that prior authorisation by the Secretary has been obtained. The Council's prior authorisation shall be obtained in respect of the Secretary.

2.8 No Secretariat member may be associated in the management of, or have a financial interest in, a business, industry or other enterprise if, as a result of the official position held in the Organization, he may benefit from such association or interest.

2.9 Secretariat members shall enjoy privileges and immunities to which they are entitled under the Headquarters Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Organization, pursuant to Article 3, paragraph 5, of the Convention.

RULE 3

HOURS OF WORK

3.1 The normal working day shall be up to eight hours, Monday through Friday, for a total of 38 hours per week.

3.2 The Secretary shall establish the working hours, and may alter them for the benefit of the Organization, as circumstances may require.

RULE 4

CLASSIFICATION OF STAFF

4.1 Secretariat members shall be classified in either of the two following categories:

Professional Category

Positions of high responsibility of a managerial, professional or scientific nature. These posts will be filled by appropriately qualified professionals. Secretariat members in this category will be recruited internationally but only among citizens of members of the Organization.

General Services Category

Auxiliary, administrative and technical positions. Clerical, secretarial and other office personnel. Such Secretariat members shall be recruited in the United Kingdom from among citizens of members of the Organization.

4.2 Persons employed under Rule 11 or employed as domestic service personnel shall not be classified as Secretariat members.

4.3 The Staff Rules apply to staff in both the Professional Category and the General Services Category.

RULE 5

SALARIES AND REMUNERATION

5.1 The basic salary and the allowances of a Secretariat Member in the Professional Category shall be in accordance with the scales of remuneration of the Coordinated Organisations for staff serving in the United Kingdom (London scales) and shall be paid in pounds sterling. The gross salary shall be this sum adjusted for the prevailing level of NASCO taxation.

5.2 Secretariat members in the General Services Category shall, in principle, be paid at rates based on those paid in Edinburgh for staff of equivalent qualifications and experience which shall be subject to the NASCO taxation regime. Secretariat members in the General Services Category shall also be entitled to the insurances as required under Rule 8.1 and contribution arrangements as defined under the Staff Fund Rules. Where appropriate these entitlements are subject to the NASCO taxation regime.

5.3 A Secretariat member in the Professional Category shall be entitled to net or basic salary in accordance with Rule 5.1, and, where appropriate, expatriation allowance, household allowance, children's allowance, handicapped children's allowance, installation allowance and education allowance. A Secretariat member in the Professional Category shall also be entitled to the insurances as required under Rule 8.1 and contribution arrangements as defined under the Staff Fund Rules. Adjustments in the salary scale and allowances are made only after approval of Council through the annual budget. Where appropriate these entitlements are subject to the NASCO taxation regime.

5.4 The promotion of Secretariat members from one category or grade to another requires the prior approval of Council.

5.5 Only in very special cases, on the proposal of the Secretary and with the approval of the Council, may staff members be appointed at a salary higher than the lowest step of the relevant grade. Staff members shall remain at that grade for at least the first year of employment.

5.6 Staff members shall receive annual increments, subject to the approval of the Secretary.

5.7 Secretariat members in the Professional Category are not entitled to overtime pay or compensatory leave.

5.8 Staff members in the General Services Category required to work outside the normal daily working hours will be compensated:

(a) with compensatory leave equivalent to the hours of overtime performed; or

(b) by remuneration per overtime hour, to be estimated at the rate of time and a half, or if the additional time is worked on a Sunday, or on the holidays listed in Rule 7.9, at the rate of double time.

The choice of compensation shall be at the discretion of the Secretary.

5.9 The Organization shall pay duly justified representation expenses incurred by the Secretary in the performance of his duties up to an amount prescribed annually in the budget.

RULE 6

RECRUITMENT AND APPOINTMENT

6.1 The Council shall appoint the Secretary and shall determine the conditions of employment.

6.2 The Secretary shall appoint staff in accordance with staffing requirements approved by the Council. The paramount consideration in the appointment, transfer or promotion of staff shall be the necessity for securing the highest standards of efficiency, competence and integrity.

6.3 Staff members shall be appointed subject to a probationary period of one year. In exceptional circumstances the Secretary may extend the probationary period for an additional period of not more than six months.

6.4 Offers of appointment to Secretariat members are subject to the persons selected undergoing a medical examination at the expense of the Organization and presenting a certificate stating that they have no medical condition which might prevent them from performing their duties or which might endanger the health of others.

6.5 Upon selection, each Secretariat member shall receive an offer of appointment stating:

(a) that the appointment is subject to the Staff Rules applicable to the category and grade of appointment in question, and to changes which may be duly made in such Rules from time to time;

(b) the nature of the appointment;

(c) the date on which the Secretariat member is required to commence duty;

(d) the period of appointment, the notice required to terminate it and the period of probation;

(e) the category, grade, commencing rate of salary and the scale of increments and the maximum salary attainable;

(f) the allowances attached to the appointment; and

(g) any special terms and conditions which may be applicable.

6.6 Together with the offer of appointment, Secretariat members shall be provided with a copy of these Rules. Upon acceptance of the offer Secretariat members shall state in writing that they are familiar with and accept the conditions set out in these Rules.

6.7 Secretariat members in the Professional Category may be required to undergo further medical examination from time to time as determined by the Council in respect of the Secretary and by the Secretary in respect of staff members. The medical examinations shall be at the expense of the Organization.

RULE 7

LEAVE

7.1 (a) Secretariat members shall be entitled to annual leave at the rate of:

(i) two workdays for each full month of service for the first four years of service, and

(ii) two and a half workdays for each full month of service for the years of service thereafter.

(b) Annual leave is cumulative, but for the first four years not more than 24 workdays and for the years thereafter not more than 30 workdays at the end of each calendar year may be carried over to the following year.

7.2 The taking of leave shall not cause undue disruption to normal staff operations. In accordance with this principle, leave dates shall be subject to the needs of the Organization. Leave dates of staff members shall be approved by the Secretary who shall, as far as possible, bear in mind the personal circumstances, needs and preference of staff members.

7.3 Annual leave may be taken in one or more periods.

7.4 Any absence not approved within the terms of these Rules shall be deducted from annual leave or, at the discretion of the Secretary, treated as leave without pay.

7.5 In exceptional cases, the Secretary may take special leave or authorise staff members to take special leave. Such special leave shall not exceed ten days.

7.6 Secretariat members who, upon termination of their appointment, have accumulated annual leave which has not been taken shall receive the cash equivalent estimated on the basis of the last salary received.

7.7 After a Secretariat member in the Professional Category has served for 18 months, the Organization shall, in accordance with Rule 9.3, pay travel expenses to the Secretariat member's home country on annual leave for internationally recruited Secretariat members and their dependants. Following this, home leave of 4 days shall be granted at two-year intervals provided that:

(a) in the case of dependants, they have resided in Edinburgh for at least six months prior to travel;

(b) Secretariat members will return to the Secretariat to continue rendering their services for six months or reimburse the travel expenses.

7.8 The possibility of combining travel to home country on leave with official travel in service may also be considered, provided the interests of the Organization are duly borne in mind.

7.9 Secretariat members shall not be granted sick leave for a period of more than three consecutive days or for more than a total of seven working days in any calendar year without producing a medical certificate.

7.10 Secretariat members shall be granted certified sick leave not exceeding twelve months in any four consecutive years. The first six months shall be on full salary and the second six months on half salary, except that no more than four months on full salary shall normally be granted in any period of twelve consecutive months.

7.11 On the basis of medical advice a Secretariat member shall be entitled to maternity leave of 14 weeks. During this period the Secretariat member shall receive full pay and corresponding allowances.

7.12 Secretariat members shall be entitled to the holidays celebrated traditionally in Edinburgh, i.e.

1 January	Spring Bank Holiday
2 January	Autumn Bank Holiday
1 May	25 December
Victoria Day	26 December
Easter Day	

RULE 8

INSURANCES AND STAFF FUND

8.1 It shall be a condition of employment that Secretariat members shall make appropriate arrangements for themselves and their dependants to cover medical (including dental, life, and permanent health insurances and UK National Insurance (Class 3 contributions)) which shall be duly ascertained by the Council in respect of the Secretary and by the Secretary in respect of Secretariat members prior to granting appointment. The costs incurred by a Secretariat member in respect of paying the amounts of such National Insurance and the premiums for such insurances shall be reimbursed by the Organization to the Secretariat member concerned. These insurances, together with the allowances referred to in Rule 5 (other than any overtime allowance payable) represent a component of the Organization's social security scheme and are not, therefore, subject to NASCO taxation.

8.2 (a) The Council has established a NASCO Staff Fund in relation to its Deferred Salary Scheme for Secretariat members. A Constitution for, and Rules applying to, this Staff Fund have been developed. Any Secretariat member may become a Member of the Scheme for so long as such Secretariat member continues to be employed by the Organization on a full-time basis. The Organization will defer 15.8% after tax of the gross salary of each Member of the Scheme to the Fund or such amount as is determined by the Council from time to time. Each Member of the Scheme shall defer a minimum of 7.9% after tax of the gross salary or such other minimum amount as is determined by the Council from time to time. Members of the Scheme may request that additional contributions be deferred from gross salary and paid into the Fund. Contributions to the Fund by the Organization and Members of the Scheme shall be enhanced by 5% after tax by the Organization as a contribution to investment charges. The tax regime imposed for the benefit of the Organization on the gross salary and other entitlements of Secretariat members and other members of staff under Rules 5.2 and 5.3 including all contributions to the Staff Fund shall comprise a flat rate of 15%. The application of the NASCO taxation regime is illustrated in Appendix 1.

(b) Prior to a Secretariat Member retiring from full-time employment with NASCO, a lump sum payment will be made into that Secretariat member's Staff Fund of not

less than one-twelfth after tax of the final year's gross salary and allowances for each year of service with the Organization, fractions of a year to count pro-rata. A Secretariat member aged 55 years or over may request the Secretary to transfer to the Staff Fund up to 20% per annum of the estimated current value of his or her lump sum entitlement. Thereafter, the balance of the lump sum entitlement will be transferred on an annual basis.

8.3 (a) In the event of the death of a Secretariat member following illness or surgery not resulting from an accident covered by the appropriate insurance, the right to salary, allowances and other corresponding benefits shall cease on the day on which death occurs, unless the deceased leaves dependants, in which case they shall be entitled to a mortality allowance. The mortality allowance shall be calculated in accordance with the following table:

Years of Service	Months of gross remuneration following death
Less than 3 years	3 months
3 years and more, but less than 7 years	4 months
7 years and more, but less than 9 years	5 months
9 years or more	6 months

(b) In the event of death in service of a long-serving Secretariat member (ten or more years' continuous service) the lump-sum payment referred to in Staff Rule 8.2(b) and not the mortality allowance shall be paid to the Secretariat member's dependants through the Staff Fund.

8.4 In the case of Secretariat members who are not United Kingdom residents, the Organization shall pay for shipment of the Secretariat member's body from the place of death to the place designated by the next of kin.

8.5 All accidents to staff members incurred at work must be reported immediately to the Secretary.

RULE 9

TRAVEL

9.1 All official travel shall be authorised by the Secretary in advance within the limits of the budget, and the itinerary and travel conditions shall be those best suited for maximum effectiveness in the fulfilment of duties assigned.

9.2 With regard to official travel, a travel allowance shall be paid in advance for fares, accommodation and daily living expenses. These allowances will be those used by the Coordinated Organisations. Where the cost of overnight accommodation and breakfast exceeds 60% of the 24-hour allowance, accommodation and breakfast costs plus 50% of the 24-hour allowance will be payable.

9.3 First class may not be utilised for travel by air or sea but may be utilised for land travel.

9.4 Following completion of a duty journey, Secretariat members shall repay any travel allowances to which, in the event, they were not entitled. Where Secretariat members have incurred expenses above and beyond those for which travel allowances have been paid, they shall be reimbursed, against receipts and vouchers, if such expenses were necessarily incurred in pursuit of their official duties.

9.5 Secretariat members in the Professional Category on taking up or on termination of employment shall be paid for reasonable removal costs. The Secretary shall draw up more detailed provisions for consideration by the Council.

RULE 10

SEPARATION FROM SERVICE

10.1 A Secretariat member may resign at any time upon giving three months' notice or such lesser period as may be approved by the Council in the case of the Secretary or by the Secretary in the case of staff members.

10.2 In the event of a Secretariat member resigning without giving the required notice, the Council reserves the right to decide whether repatriation expenses or any other allowance shall be paid.

10.3 Appointment of staff members may be terminated upon prior written notice, at least three months in advance, by the Secretary when he deems this to be in the interests of the Organization.

10.4 In the event of the termination by the Organization of a Secretariat member's service, compensation at the rate of one month's salary for each year's service shall be paid unless the cause of termination has been gross dereliction of the duties imposed in Rule 2.

RULE 11

TEMPORARY PERSONNEL UNDER CONTRACT

11.1 The Secretary may contract temporary personnel necessary to discharge special duties in the service of the Organization.

11.2 Persons in this category may include translators, interpreters, typists and other persons contracted for meetings, as well as those whom the Secretary contracts for a specific task.

RULE 12

SPECIAL DUTIES OF THE SECRETARY

12.1 The Secretary shall, after consultation with the President of the Council, waive immunities accorded to staff members under the Headquarters Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Organization when he considers that such immunities are preventing the carrying out of justice and when it is possible to dispense with them without prejudicing the interests of the Organization.

12.2 The Secretary shall, after approval by the Council, conclude an Exchange of Letters with a representative of the Government of the United Kingdom of Great Britain and Northern Ireland, giving effect to any modification or extension of the Headquarters Agreement or understanding related thereto.

RULE 13

APPLICATION OF RULES

13.1 Any questions arising from application of these Rules shall be resolved by the Secretary following consultation with the President of the Council.

13.2 All matters not foreseen in these Rules shall be brought to the attention of the Council by the Secretary.

Appendix 1

NASCO taxation regime on payslip

1	Gross salary	5000
2	Gross employee Staff Fund contributions (9.3% of 1)	465
3	NASCO tax on employee Staff Fund contributions (@ 15%)	70
4	Net employee Staff Fund contributions (after NASCO tax @15%)	395
5	Gross employee AVC Staff Fund contributions	588
6	NASCO tax on employee AVC Staff Fund contributions (@15%)	88
7	Net employee AVC Staff Fund contributions (after NASCO tax @15%)	500
8	Total employee Staff Fund contributions (4 +7)	895
9	Gross Employer Staff Fund contributions (18.6% of 1)	929
10	NASCO tax on employer Staff Fund contributions (@ 15%)	139
11	Net employer Staff Fund contributions(after NASCO tax @ 15%)	790
12	Taxable salary (1-(4+7))	4105
13	NASCO tax on salary (@ 15%) (12*0.15)	616
14	Total tax deducted (3+6+10+13)	913
15	Net salary due	3489
16	Additional Gross payment to Staff fund (5.9%)	99
17	NASCO tax on additional payment (after NASCO tax@15%)	15
18	Net employer Staff Fund additional contribution (after NASCO tax @ 15%)	84

Gross salary	5000
Gross up of employee contributions	158
Gross employer contributions	1029
Gross remuneration	6186
NASCO Tax thereon at 15%	-928
Less after tax contributions to staff fund	-1769
Net salary due	3489

Annex 12

CNL(14)20

North Atlantic Salmon Conservation Organization
2015 Budget and 2016 Forecast Budget (Pounds Sterling)

		Budget 2015	Forecast 2016
	Expenditure		
1.	Staff-related costs	307,750	316,940
2.	Travel and subsistence	20,000	28,000
3.	Research and advice	63,250	65,000
4.	Contribution to Working Capital Fund	0	0
5.	Meetings	36,000	9,000
6.	Office supplies, printing and translation	23,000	25,000
7.	Communications	15,000	17,000
8.	Headquarters Property	37,700	40,000
9.	Office furniture and equipment	6,500	6,500
10.	Audit and other expenses	8,000	9,500
11.	Tag Return Incentive Scheme	4,800	4,800
12.	International Atlantic Salmon Research Fund	0	0
13.	Contribution to Contractual Obligation Fund	66,500	94,000
14.	Contribution to Recruitment Fund	15,000	15,000
	Total Expenditure	**603,500**	**630,740**
	Income		
15.	Contributions - Contracting Parties	549,500	576,740
16.	General Fund – Interest	4,000	4,000
17.	Income from Headquarters Property	50,000	50,000
18.	Surplus or Deficit (-) from 2013	0	0
	Total Income	**603,500**	**630,740**

2015 Budget & 2016 Forecast Budget (Pounds Sterling) - Expenditure by Sub-section

		Budget 2015	Forecast 2016
1.	**Staff-related costs**		
1.1	Secretariat members	223,200	229,900
1.2	Support staff	1,500	1,540
1.3	Staff Fund contributions, allowances, & other staff costs	83,050	85,500
	Total	**307,750**	**316,940**
2.	**Travel and subsistence**		
2.1	Travel to post and Annual Meeting	0	7,000
2.2	Official travel and subsistence	20,000	21,000
	Total	**20,000**	**28,000**
3.	**Research and advice**		
3.1	Annual contribution to ICES	63,250	65,000
3.2	Other research and advice	0	0
	Total	**63,250**	**65,000**
4.	**Contribution to Working Capital Fund**	**0**	**0**
5.	**Meetings**		
5.1	Costs of Annual Meeting	32,000	4,000
5.2	Costs of other meetings	4,000	5,000
	Total	**36,000**	**9,000**
6.	**Office supplies, printing and translation**		
6.1	Office supplies	17,000	18,000
6.2	Printing	4,000	4,500
6.3	Translations	2,000	2,500
	Total	**23,000**	**25,000**
7.	**Communications**		
7.1	Telecommunications	5,000	6,000
7.2	Postage and courier services	3,000	3,000
7.3	Website	7,000	8,000
7.4	Communications, professional support and design	0	0
	Total	**15,000**	**17,000**
8.	**Headquarters Property**		
8.1	Capital and interest payments	0	0
8.2	Maintenance, services and other building-related costs	37,700	40,000
	Total	**37,700**	**40,000**
9.	**Office furniture and equipment**		
9.1	Furniture	0	1,500
9.2	Equipment	6,500	5,000
	Total	**6,500**	**6,500**
10.	**Audit and other expenses**		
10.1	Audit and accountancy fees	4,500	5,000
10.2	Bank charges and insurances	1,000	1,000
10.3	Miscellaneous	2,500	3,500
	Total	**8,000**	**9,500**
11.	**Tag Return Incentive Scheme**	**4,800**	**4,800**
12.	**Contribution to IASRF**	**0**	**0**
13.	**Contribution to Contractual Obligation Fund**	**66,500**	**94,000**
14.	**Contribution to Recruitment Fund**	**15,000**	**15,000**
	Total Expenditure	**603,500**	**630,740**

2014 Budget Contributions (Pounds Sterling) Adjusted for Confirmed rather than Provisional 2012 Catches (tonnes)

Party	2012 catch (provisional)	2012 catch (confirmed)	2014 contribution (provisional)	2014 contribution (confirmed)	Adjustment
Canada	135	126	63,918	61,905	-2,014
Denmark (Faroe Islands and Greenland)	34	33	36,083	35,930	-153
European Union	410	403	139,707	139,271	-436
Norway	696	695	218,527	220,826	2,299
Russian Federation	82	82	49,312	49,616	304
USA	0	0	26,713	26,713	0
Total	**1,357**	**1,339**	**534,260**	**534,260**	**0**

Note: A positive adjustment represents an underpayment in 2014.

NASCO Budget Contributions for 2015 and Forecast Budget Contributions for 2016 (Pounds Sterling)

Party	2013 catch (provisional)	2015 contribution	Adjustment from 2014	2015 adjusted contribution	2016 forecast contribution
Canada	136	73,363	-2,014	71,350	77,000
Denmark (Faroe Islands and Greenland)	47	43,333	-153	43,180	45,481
European Union	404	163,790	-436	163,353	171,909
Norway	475	187,746	2,299	190,045	197,053
Russian Federation	78	53,793	304	54,097	56,460
USA	0	27,475	0	27,475	28,837
Total	**1,140**	**549,500**	**0**	**549,500**	**576,740**

Contributions are based on the catch data available to date.
Column totals in both tables can be in error by a few pounds due to rounding.

Five-year NASCO Budgeted Expenditure and Income Projections 2015 – 2019

		2015	Forecast 2016	Forecast 2017	Forecast 2018	Forecast 2019
	Expenditure					
1	Staff related costs	307,750	316,940	327,000	338,000	352,000
2	Travel & Subsistence	20,000	28,000	28,000	29,000	30,000
3	Research & advice	63,250	65,000	68,000	70,000	74,000
4	Contribution to Working Capital	0	0	0	0	0
5	Meetings	36,000	9,000	30,000	9,000	9,000
6	Office supplies, printing and translations	23,000	25,000	27,000	28,000	29,000
7	Communications	15,000	17,000	17,500	18,500	19,000
8	Headquarters Property	37,700	40,000	43,000	45,000	45,000
9	Office furniture & equipment	6,500	6,500	6,500	6,500	6,500
10	Audit & other expenses	8,000	9,500	11,000	12,000	12,000
11	Tag return incentive scheme	4,800	4,800	4,800	4,800	4,800
12	International Cooperative Research	0	0	0	0	0
13	Contribution to Contractual Obligation Fund	66,500	94,000	103,000	110,000	90,000
14	Contribution to Recruitment Fund	15,000	15,000	15,000	15,000	15,000
	Total	**603,500**	**630,740**	**680,800**	**685,800**	**686,300**
	Income					
15	Contributions of Contracting Parties	549,500	576,740	626,800	631,800	632,300
16	Interest Received on General Fund	4,000	4,000	4,000	4,000	4,000
17	Income from HQ property	50,000	50,000	50,000	50,000	50,000
	Total	**603,500**	**630,740**	**680,800**	**685,800**	**686,300**

Annex 13

Council

CNL(14)8

Report of the ICES Advisory Committee

(Section 10.1 only)

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.

10 NORTH ATLANTIC SALMON STOCKS Advice May 2014

10.1 Introduction

10.1.1 Main tasks

At its 2013 Statutory Meeting, ICES resolved (C. Res. 2013/2/ACOM9) that the **Working Group on North Atlantic Salmon** [WGNAS] (chaired by: Ian Russell, UK) would meet at ICES HQ, 19–28 March 2014 to consider questions posed to ICES by the North Atlantic Salmon Conservation Organization (NASCO).

The sections of the report which provide the responses to the terms of reference are identified below.

a) With respect to Atlantic salmon in the North Atlantic area:	Section 10.1
i) provide an overview of salmon catches and landings, including unreported catches by country, catch and release, and production of farmed and ranched Atlantic salmon in 2013[1];	10.1.5
ii) report on significant new or emerging threats to, or opportunities for, salmon conservation and management[2];	10.1.6
iii) provide a review of examples of successes and failures in wild salmon restoration and rehabilitation and develop a classification of activities which could be recommended under various conditions or threats to the persistence of populations[3];	10.1.7
iv) provide a review of the stock status categories currently used by the jurisdictions of NASCO, including within their Implementation Plans, and advise on common approaches that may be applicable throughout the NASCO area;	10.1.8
v) provide a compilation of tag releases by country in 2013;	10.1.10
vi) identify relevant data deficiencies, monitoring needs, and research requirements.	10.1.13
b) With respect to Atlantic salmon in the Northeast Atlantic Commission area:	Section 10.2
i) describe the key events of the 2013 fisheries[4];	10.2.1
ii) review and report on the development of age-specific stock conservation limits;	10.1.6. & 10.2.1
iii) describe the status of the stocks;	10.2.1
iv) provide recommendations on how a targeted study of pelagic bycatch in relevant areas might be carried out with an assessment of the need for such a study considering the current understanding of pelagic bycatch impacts on Atlantic salmon populations[5];	10.1.11
*In the event that NASCO informs ICES that the Framework of Indicators (FWI) indicates that re-assessment is required: **	
v) provide catch options or alternative management advice for 2014–2017, with an assessment of risks relative to the objective of exceeding stock conservation limits and advise on the implications of these options for stock rebuilding[6];	
vi) update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice.	
c) With respect to Atlantic salmon in the North American Commission area:	Section 10.3
i) describe the key events of the 2013 fisheries (including the fishery at St Pierre and Miquelon)[4];	10.3.1
ii) update age-specific stock conservation limits based on new information as available;	10.1.6 & 10.3.1
iii) describe the status of the stocks;	10.3.1

*In the event that NASCO informs ICES that the Framework of Indicators (FWI) indicates that re-assessment is required: **	
iv) provide catch options or alternative management advice for 2014–2017 with an assessment of risks relative to the objective of exceeding stock conservation limits and advise on the implications of these options for stock rebuilding[6];	
v) update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice.	
d) With respect to Atlantic salmon in the West Greenland Commission area:	Section 10.4
i) describe the key events of the 2013 fisheries[4];	10.4.1
ii) describe the implications for the provision of catch advice of any new management objectives proposed for contributing stock complexes[7];	10.1.12
iii) Describe the status of the stocks[6];	10.4.1
*In the event that NASCO informs ICES that the Framework of Indicators (FWI) indicates that re-assessment is required: **	
iv) provide catch options or alternative management advice for 2014–2016 with an assessment of risk relative to the objective of exceeding stock conservation limits and advise on the implications of these options for stock rebuilding[6];	
v) update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice.	

Notes:

1. With regard to question a) i, for the estimates of unreported catch the information provided should, where possible, indicate the location of the unreported catch in the following categories: in-river; estuarine; and coastal. Numbers of salmon caught and released in recreational fisheries should be provided.
2. With regard to question a) ii, ICES is requested to include reports on any significant advances in understanding of the biology of Atlantic salmon that is pertinent to NASCO, including information on any new research into the migration and distribution of salmon at sea and the potential implications of climate change for salmon management.
3. With regards to question a) iii, NASCO is particularly interested in case studies highlighting successes and failures of various restoration efforts employed across the North Atlantic by all parties/jurisdictions and the metrics used for evaluating success or failure.
4. In the responses to questions b) i, c) i and d) i, 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. Information on any other sources of fishing mortality for salmon is also requested.
5. In response to question b) iv, if ICES concludes that there is a need for a study, provide an overview of the parameters and time frame that should be considered for such a study. Information reported under previous efforts and on migration corridors of post-smolts in the Northeast Atlantic developed under SALSEA–Merge should be taken into account.
6. In response to questions b) v, c) iv and d) iv, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice and report on any developments in relation to incorporating environmental variables in these models.
7. The proposal specifically refers to NAC(13)4, tabled during the North American and West Greenland Commissions during the 2013 NASCO Annual Meeting.
8. In response to question d) ii, 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 b) iii and c) iii.

*** The aim should be for NASCO to inform ICES by 31 January of the outcome of utilizing the FWI.**

The NEAC and West Greenland FWI assessments completed in January 2014 both indicated that no reassessment was necessary. There was therefore no requirement for ICES to address questions: b) v and vi, c) iv and v, or d) iv and v during the 2014 Working Group on North Atlantic Salmon (WGNAS) meeting.

In response to the terms of reference, WGNAS considered 41 Working Documents. A complete list of acronyms and abbreviations used in this report is provided in Annex 1. References cited are given in Annex 2.

10.1.2 Management framework for salmon in the North Atlantic

The advice generated by ICES is in response to terms of reference posed by the North Atlantic Salmon Conservation Organization (NASCO), pursuant to its role in international management of salmon. NASCO was set up in 1984 by international convention (the Convention for the Conservation of Salmon in the North Atlantic Ocean), with a responsibility for the conservation, restoration, enhancement, and rational management of wild salmon in the North Atlantic. Although sovereign states retain their role in the regulation of salmon fisheries for salmon originating in their own rivers, distant-water salmon fisheries, such as those at Greenland and Faroes, which take salmon originating in rivers of another party, are regulated by NASCO under the terms of the Convention. NASCO now has six parties that are signatories to the Convention, including the EU which represents its Member States.

NASCO discharges these responsibilities via the three Commission areas shown below:

10.1.3 Management objectives

NASCO has identified the primary management objective of the organization as:

"To contribute through consultation and cooperation to the conservation, restoration, enhancement and rational management of salmon stocks taking into account the best scientific advice available".

NASCO further stated that "the Agreement on the Adoption of a Precautionary Approach states that an objective for the management of salmon fisheries is to provide the diversity and

abundance of salmon stocks", and NASCO's Standing Committee on the Precautionary Approach interpreted this as being "to maintain both the productive capacity and diversity of salmon stocks" (NASCO, 1998).

NASCO's Action Plan for Application of the Precautionary Approach (NASCO, 1998) provides an interpretation of how this is to be achieved:

- "Management measures should be aimed at maintaining all stocks above their conservation limits by the use of management targets".
- "Socio-economic factors could be taken into account in applying the precautionary approach to fisheries management issues".
- "The precautionary approach is an integrated approach that requires, *inter alia*, that stock rebuilding programmes (including as appropriate, habitat improvements, stock enhancement, and fishery management actions) be developed for stocks that are below conservation limits".

10.1.4 Reference points and application of precaution

Atlantic salmon has characteristics of short-lived fish stocks; mature abundance is sensitive to annual recruitment because there are only few age groups in the adult spawning stock. Incoming recruitment is often the main component of the fishable stock. For such fish stocks, the ICES maximum sustainable yield (MSY) approach is aimed at achieving a target escapement (MSY $B_{escapement}$, the amount of biomass left to spawn). No catch should be allowed unless this escapement can be achieved. The escapement level should be set so there is a low risk of future recruitment being impaired, similar to the basis for estimating B_{pa} in the precautionary approach. In short-lived stocks, where most of the annual surplus production is from recruitment (not growth), MSY $B_{escapement}$ and B_{pa} might be expected to be similar and B_{pa} is a reasonable initial estimate of MSY $B_{escapement}$.

ICES considers that to be consistent with the MSY and the precautionary approach, fisheries should only take place on salmon from rivers where stocks have been shown to be at full reproductive capacity. Furthermore, due to differences in status of individual stocks within stock complexes, mixed-stock fisheries present particular threats.

Conservation limits (CLs) for North Atlantic salmon stock complexes have been defined as the level of stock (number of spawners) that will achieve long-term average maximum sustainable yield. In many regions of North America, the CLs are calculated as the number of spawners required to fully seed the wetted area of the rivers. In some regions of Europe, pseudo stock–recruitment observations are used to calculate a hockey-stick relationship, with the inflection point defining the national CLs. In the remaining regions, the CLs are calculated as the number of spawners that will achieve long-term average MSY, as derived from the adult-to-adult stock and recruitment relationship (Ricker, 1975; ICES, 1993). NASCO has adopted the region-specific CLs (NASCO, 1998). These CLs are limit reference points (S_{lim}); having populations fall below these limits should be avoided with high probability.

Management targets have not yet been defined for all North Atlantic salmon stocks. When these have been defined they will play an important role in ICES advice.

Where there are no specific management objectives for the assessment of the status of stocks and advice on management of national components and geographical groupings of the stock complexes in the NEAC area, the following shall apply:

- ICES considers that if the lower bound of the 90% confidence interval of the current estimate of spawners is above the CL, then the stock is at full reproductive capacity (equivalent to a probability of at least 95% of meeting the CL).
- When the lower bound of the confidence interval is below the CL, but the midpoint is above, then ICES considers the stock to be at risk of suffering reduced reproductive capacity.
- Finally, when the midpoint is below the CL, ICES considers the stock to be suffering reduced reproductive capacity.

Therefore, stocks are regarded by ICES as being at full reproductive capacity only if they are above the MSY $B_{escapement}$ (or CLs).

For catch advice on the mixed-stock fishery at West Greenland (catching non-maturing 1SW fish from North America and non-maturing 1SW fish from Southern NEAC), NASCO has adopted a risk level of 75% (probability) of simultaneous attainment of management objectives in seven geographic regions (ICES, 2003) as part of an agreed management plan. NASCO uses the same approach for catch advice for the mixed-stock fishery affecting six geographic regions for the North American stock complex. ICES notes that the choice of a 75% risk (probability) for simultaneous attainment of six or seven stock units is approximately equivalent to a 95% probability of attainment for each individual unit.

NASCO has not formally agreed a management plan for the fishery at the Faroes. However, ICES has developed a risk-based framework for providing catch advice for fish exploited in this fishery (mainly non-maturing 1SW fish from NEAC countries). Catch advice is provided at both the stock complex and country level and catch options tables provide both individual probabilities and the probability of simultaneous attainment of proposed management objectives for both. ICES has recommended (ICES, 2013a) that management decisions should be based principally on a 95% probability of attainment of CLs in each stock complex / country individually. The simultaneous attainment probability may also be used as a guide, but managers should be aware that this will generally be quite low when large numbers of management units are used.

10.1.5 Catches of North Atlantic salmon

10.1.5.1 Nominal catches of salmon

Figure 10.1.5.1 displays reported total nominal catch of salmon in four North Atlantic regions from 1960 to 2013. Nominal catches of salmon reported for countries in the North Atlantic for 1960–2013 are given in Table 10.1.5.1. Catch statistics in the North Atlantic include fish farm escapees, and in some Northeast Atlantic countries also ranched fish.

Icelandic catches have traditionally been split into two separate categories, wild and ranched, reflecting the fact that Iceland has been the main North Atlantic country where large-scale ranching has been undertaken with the specific intention of harvesting all returns at the release site and with no prospect of wild spawning success. The release of smolts for commercial ranching purposes ceased in Iceland in 1998, but ranching for rod fisheries in

two Icelandic rivers continued into 2013 (Table 10.1.5.1). Catches in Sweden have also now been split between wild and ranched categories over the entire time-series. The latter fish represent adult salmon which have originated from hatchery-reared smolts and which have been released under programmes to mitigate for hydropower development schemes. These fish are also exploited very heavily in homewaters and have no possibility of spawning naturally in the wild. While ranching does occur in some other countries, this is on a much smaller scale. Some of these operations are experimental and at others harvesting does not occur solely at the release site. The ranched component in these countries has therefore been included in the nominal catch.

Reported catches in tonnes for the three NASCO Commission Areas for 2004–2013 are provided below.

AREA	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
NEAC	1978	1998	1867	1409	1533	1163	1415	1419	1250	1107
NAC	164	142	140	114	162	129	156	183	127	141
WGC	15	15	22	25	26	26	40	28	33	47
Total	2157	2156	2029	1548	1721	1318	1610	1629	1411	1296

The provisional total nominal catch for 2013 was 1296 t, 115 t below the updated catch for 2012 (1411 t). The 2013 catch was the lowest in the time-series. Catches were at or below the previous ten-year averages in the majority of countries, except Greenland, Denmark, St Pierre et Miquelon (France), and Iceland.

ICES recognises that mixed-stock fisheries present particular threats to stock status. These fisheries predominantly operate in coastal areas and NASCO specifically requests that the nominal catches in homewater fisheries be partitioned according to whether the catch is taken in coastal, estuarine, or riverine areas. The 2013 nominal catch (in tonnes) was partitioned accordingly and is shown below for the NEAC and NAC Commission Areas. Figure 10.1.5.2 presents these data on a country-by-country basis. There is considerable variability in the distribution of the catch among individual countries. In most countries the majority of the catch is now taken in freshwater; the coastal catch has declined markedly.

	COAST		ESTUARY		RIVER		TOTAL
AREA	Weight	%	Weight	%	Weight	%	Weight
NEAC	342	31	76	7	689	62	1107
NAC	15	11	43	30	83	59	141

Coastal, estuarine, and riverine catch data aggregated by region are presented in Figure 10.1.5.3. In northern Europe, about half the catch has typically been taken in rivers and half in coastal waters (although there are no coastal fisheries in Iceland and Finland), with estuarine catches representing a negligible component of the catch in this area. There has been a steady reduction in the proportion of the catch taken in coastal waters over recent years. In southern Europe, catches in all fishery areas have declined dramatically over the period. While coastal fisheries have historically made up the largest component of the catch, these fisheries have declined the most, reflecting widespread measures to reduce exploitation in a number of countries. Since 2007, the majority of the catch in this area has been taken in freshwater.

In North America, the total catch over the period 2000–2013 has been relatively constant. The majority of the catch in this area has been taken in riverine fisheries; the catch in coastal fisheries has been relatively small in any year (15 t or less).

10.1.5.2 Unreported catches

The total unreported catch in NASCO areas in 2013 was estimated at 306 t; however, there was no estimate for Russia, Spain, or Saint Pierre and Miquelon. The unreported catch in the North East Atlantic Commission Area in 2013 was estimated at 272 t, and that for the West Greenland and North American commission areas at 10 t and 24 t, respectively. The following table shows unreported catch by NASCO commission areas in the last ten years:

AREA	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
NEAC	575	605	604	465	433	317	357	382	363	272
NAC	101	85	56	-	-	16	26	29	31	24
WGC	10	10	10	10	10	10	10	10	10	10

The 2013 unreported catch by country is provided in Table 10.1.5.2. It has not been possible to separate the unreported catch into that taken in coastal, estuarine, and riverine areas. Over recent years efforts have been made to reduce the level of unreported catch in a number of countries (e.g. through improved reporting procedures and the introduction of carcass tagging and logbook schemes).

10.1.5.3 Catch-and-release

The practice of catch-and-release (C&R) in rod fisheries has become increasingly common as a salmon management/conservation measure in light of the widespread decline in salmon abundance in the North Atlantic. In some areas of Canada and USA, C&R has been practised since 1984, and in more recent years it has also been widely used in many European countries, both as a result of statutory regulation and through voluntary practice.

The nominal catches do not include salmon that have been caught and released. Table 10.1.5.3 presents C&R information from 1991 to 2013 for countries that have records; C&R may also be practised in other countries while not being formally recorded. There are large differences in the percentage of the total rod catch that is released: in 2013 this ranged from 15% in Norway (this is a minimum figure, as statistics were collected on a voluntary basis) to 80% in UK (Scotland), reflecting varying management practices and angler attitudes among countries. C&R rates have typically been highest in Russia (average of 84% in the five years 2004 to 2008) and are believed to have remained at this level. However, there were no obligations to report C&R fish in Russia in 2009 and records since 2010 are incomplete. Within countries, the percentage of fish released has tended to increase over time. There is also evidence from some countries that larger MSW fish are released in higher proportions than smaller fish. Overall, more than 174 000 salmon were reported to have been caught-and-released around the North Atlantic in 2013.

10.1.5.4 Farming and sea ranching of Atlantic salmon

The provisional estimate of farmed Atlantic salmon production in the North Atlantic area for 2013 is 1429 kt. The production of farmed salmon in this area has been over one million tonnes since 2009. The 2013 total represents an 8% decrease from 2012, but a 15% increase on the previous five-year mean. Norway and UK (Scotland) continue to produce the majority

of the farmed salmon in the North Atlantic (79% and 11%, respectively). Farmed salmon production in 2013 was above the previous five-year average in all North Atlantic salmon producing countries.

Worldwide production of farmed Atlantic salmon has been in excess of one million tonnes since 2002 and was over two million tonnes in 2012. It has previously been difficult to source reliable production figures for all countries outside the North Atlantic area and, for 2013, data for some countries were sourced from the FAO Fisheries and Aquaculture Department database in deriving a worldwide estimate. The total production in 2013 is provisionally estimated at around 1951 kt (Figure 10.1.5.4), a 6% decrease on 2012. Production outside the North Atlantic is estimated to have accounted for 27% of the total in 2013 (similar to 2012). Production outside the North Atlantic is dominated by Chile.

The worldwide production of farmed Atlantic salmon in 2013 was around 1500 times the reported nominal catch of Atlantic salmon in the North Atlantic.

The total harvest of ranched Atlantic salmon in countries bordering the North Atlantic in 2013 was 36 t, and taken in Iceland, Sweden and Ireland (Figure 10.1.5.5). No estimate of ranched salmon production was made in Norway in 2013 where such catches have been very low in recent years (< 1 t) and UK (N. Ireland) where the proportion of ranched fish was not assessed between 2008 and 2013 due to a lack of microtag returns.

10.1.6 Significant new or emerging threats to, or opportunities for, salmon conservation and management

10.1.6.1 Quantifying uncertainty in datasets using the "NUSAP" approach

WGNAS considered proposals in relation to an approach for communicating uncertainty of numbers in a more transparent way. The "Numeral, Unit, Spread, Assessment and Pedigree" (NUSAP) approach has been advocated to better represent unquantifiable uncertainties (Funtowicz and Ravetz, 1986; Van der Sluijs, 2005). The NUSAP approach provides a methodological framework to manage and communicate uncertainty and the quality of quantitative information. This extends the classic notational system for quantitative scientific information (usually provided as a number, a unit, and a standard deviation) with two additional qualifiers: expert judgment of the reliability (the assessment) and a multi-criteria characterization reflecting the origin and status of the information (the pedigree). It was suggested that the approach may be useful in communicating the outcome of fishery assessments and associated management advice; such an approach has been applied to an analysis of Western Baltic herring (Ulrich *et al*., 2010).

WGNAS noted that one of the proposed applications of the NUSAP approach was to enhance communication of the methods used by ICES to stakeholders and managers. This is laudable, but the approach is based on subjective evaluations and the outputs appeared likely to be quite detailed. It was therefore unclear how it might be implemented and how much it would assist stakeholders. It may, however, provide a better record of the provenance of data and assessment methods used by the Working Group and thereby enhance the information currently being compiled in the Stock Annex. WGNAS therefore concluded that they would be interested to hear of further development and application of the approach.

10.1.6.2.1 Interactions between wild and farmed salmon

Genetic introgression between wild and farmed escape salmon in the Magaguadavic River (Bay of Fundy, Canada) and other genetic studies in Canada

Recent studies supported by a Natural Sciences and Engineering Research Council of Canada grant, document the genetic temporal changes from 1980 to 2005 of the Magaguadavic River salmon population (Bay of Fundy, Canada), impacted by interbreeding with farmed escapees (Bourret *et al*., 2011). Overall, the results of this study indicate that farmed escapees have introgressed with wild Magaguadavic salmon, resulting in significant alteration of the genetic integrity of the native population, including possible loss of adaptation to conditions in the wild.

Another study of interest aimed at understanding the links between the environmental and genetic divergence of Atlantic salmon populations by using a large-scale landscape genomics approach with 5500 genome-wide single nucleotide polymorohisms (SNPs) across 54 North American populations and 49 environmental variables (Bourret *et al.,* 2013b). Multivariate landscape genetic analysis revealed strong associations of both genetic and environmental factors, with climate (temperature–precipitation) and geology being associated with adaptive and neutral genetic divergence, and should be considered as candidate loci involved in adaptation at the regional scale in Atlantic salmon.

Report on a new salmon trapping technique for farmed escapees in Norway

Recent evidence indicates that gene pools of wild salmon populations in a number of Norwegian rivers are gradually changing through introgression of genetic material from escaped farmed salmon. Genetic profiles were compared for salmon populations from 21 Norwegian rivers, developed from archival scale samples and contemporary scale and tissue samples, and changes were documented through analyses of microsatellites (Glover *et al.,* 2012) and SNPs (Glover *et al.,* 2013). In many rivers, considerable effort is invested to remove escaped farmed salmon from the spawning populations through various approaches, including netting, rod catches, and culling by divers. In 2013, the Resistance Board Weir trap, a portable salmon trap developed in North America, was tested in the River Etneelva, Norway. This is the first time the trap has been tested outside North America; the Norwegian trial was a collaboration between the Institute of Marine Research, management authorities, and the salmon farming industry.

The River Etneelva is subject to special protection in Norway, and is one of the largest salmon rivers on the west coast. The weir trap is based on floating panels, which prevent salmon from ascending and guide fish into a trap chamber. Altogether, 1154 wild salmon, 85 farm escapees, and 922 anadromous trout (*Salmo trutta*) were captured. Catch efficiency of the trap was estimated by recapture rates by anglers, and by counts of spawners performed by drift dives (snorkelling). Based on the two estimates, about 85% of ascending salmon were captured in the first year of operation, and 92% of ascending escaped farmed salmon were removed. The catch rate (excluding caught and released fish) by anglers was calculated at 26%. The conclusion from the first year of operation is that the trap works very well, can be considered a useful tool for generating precise data on the spawning run of wild salmonid populations, and an efficient method for removing farmed salmon from wild salmon populations.

10.1.6.3 Tracking and acoustic tagging studies in Canada

WGNAS reviewed the latest results of ongoing projects (led by the Atlantic Salmon Federation in collaboration with the Ocean Tracking Network, Miramichi Salmon Association, DFO, and others) to assess estuarine and marine survival of tagged Atlantic salmon released in rivers of the Gulf of St Lawrence. A total of 248 smolts (24 St Jean, 39 Cascapedia, 105 Miramichi, and 80 Restigouche) and 41 kelts (16 Miramichi and 25 Restigouche) were sonically tagged from rivers in Canada between April and June 2013. Of the 41 kelts, 11 from the Miramichi were also tagged with archival pop-up tags; these were set to release after four months.

The proportion of smolts detected (apparent survival) in 2013 from freshwater release points to the heads of tide, through the estuary and out of the Strait of Belle Isle, was somewhat lower than the previous years for the Cascapedia and Restigouche rivers and much lower for the Miramichi River; as in previous years only few St Jean fish were detected (Figure 10.1.6.3). Smolts and kelts exited the Strait of Belle Isle together during the last week of June and first week of July, similar to previous years. Analysis is proceeding to account for the variability in detection efficiency by receivers to better estimate survival rates and their variability.

The detector array across the Cabot Strait, between Cape Breton, Nova Scotia and Southwest Newfoundland was operational in 2012 and 2013, although few fish used this exit from the Gulf of St. Lawrence (one Cascapedia smolt in mid-June and one Miramichi kelt in late July, that had been tagged in spring 2012).

The satellite archival pop-up tags provided additional information in 2013, with information from seven of the tags that left the Miramichi River being recovered, and two of these transmitting information from the northern Labrador Sea when they "popped-off" at the start of September. Preliminary results show: evidence of predation on salmon kelts within the Gulf of St. Lawrence (likely by species such as a porbeagle shark); concentration of kelts south of Anticosti Island during the summer; and four fish leaving the Gulf of St Lawrence through the Strait of Belle Isle while the remainder stayed within the Gulf. Predation by large predatory fish has been noted previously for the Inner Bay of Fundy (Lacroix, 2014).

For the second year, a Wave Glider® was released into the Gulf of St Lawrence on the west coast of Prince Edward Island in mid-May 2013 to detect acoustically tagged salmon. The movements of the Wave Glider were controlled to pass through areas expected to contain tagged smolts and kelts on their migration through the Strait of Belle Isle. Detection of four of these salmon (kelts) did occur, as well as an acoustically tagged snow crab that was detected near the end of August. The Wave Glider trial ended off Cape Breton, Nova Scotia in early September.

In 2013, the Atlantic Salmon Federation also collaborated with the Miramichi Salmon Association and DFO in a study of striped bass and Atlantic salmon smolt interactions on the Miramichi River. Acoustic tags were used to document the spatial and temporal overlap of the two species, the passage of downstream migrating salmon smolts and the spawning migration into the lower Miramichi of the striped bass population of the Gulf of St. Lawrence. Significant losses of Miramichi smolts were detected in areas where striped bass were known to be spawning. Further work is ongoing, including diet and migrations of acoustically tagged striped bass.

ICES encourages the continuation of this tracking programme as information from it is expected to be useful in the assessment of marine mortality on North American salmon stocks. ICES also noted that these techniques are being proposed for similar research in other areas (Section 10.1.13).

10.1.6.4 Diseases and parasites

Testing for infectious salmon anemia virus (ISAv) and infectious pancreatic necrosis virus (IPNv) in mixed-stock aggregations of Atlantic salmon harvested along the coast of West Greenland, 2003–2011

Infectious salmon anemia virus (ISAv) and infectious pancreatic necrosis virus (IPNv) are fish pathogens that cause vascular disease and digestive disease, respectively, in Atlantic salmon, often with lethal effects. ISAv can cause mortality at any life stage, whereas IPNv usually causes mortality in juvenile stages (i.e. fingerling to post-smolt), but adults can be carriers of the disease and pass it to their offspring. The viruses are transmitted through a number of direct and indirect mechanisms, including contact with infected individuals and infected ambient water. Although naturally occurring, rates of ISAv and IPNv infection and epidemic outbreak are higher in and around aquaculture facilities due to the density at which fish are held. Wild individuals that come in contact with infected farmed fish (either by migrating past farms or through contact with infected escapees) can contract these viruses and pass them on to other wild individuals and populations. The diseases may therefore spread when individuals are in close proximity in the wild, such as when congregating at specific marine feeding areas.

Testing was carried out on 1284 Atlantic salmon sampled at West Greenland for ISAv in 2003–2007 and 2010–2011, and 358 Atlantic salmon in 2010 for IPNv. Samples from 2003–2007 were collected and processing was funded by NOAA Fisheries Service (USA). Samples from 2010–2011 were collected as part of SALSEA Greenland and processing was funded by NOAA Fisheries Service. The rate of ISAv infection was very low, 0.08%. A single North American origin Atlantic salmon was infected with a Scottish strain of HRPO (non-virulent ISA strain) suggesting that the transmission vector may have been another infected individual, possibly at the mixed-stock feeding grounds in the Labrador Sea or West Greenland. No fish tested positive for IPNv. These findings indicate that ISAv and IPNv are carried at very low to non-detectable levels in the wild Atlantic salmon population off the coast of West Greenland.

Update on red vent syndrome

Over recent years, there have been reports from a number of countries in the NEAC and NAC areas of salmon returning to rivers with swollen and/or bleeding vents. The condition, known as red vent syndrome (RVS or Anasakiasis), has been noted since 2005, and has been linked to the presence of a nematode worm, *Anisakis simplex* (Beck *et al*., 2008). This is a common parasite of marine fish and is also found in migratory species. However, while the larval nematode stages in fish are usually found spirally coiled on the mesenteries, internal organs, and less frequently in the somatic muscle of host fish, their presence in the muscle and connective tissue surrounding the vents of Atlantic salmon is unusual. The reason for their occurrence in the vents of migrating wild salmon, and whether this might be linked to possible environmental factors, or changes in the numbers of prey species (intermediate hosts of the parasite) or marine mammals (final hosts) remains unclear.

A number of regions within the NEAC area observed a notable increase in the incidence of salmon with RVS in 2007 (ICES, 2008a). Levels in the NEAC area were typically lower from 2008 (ICES, 2009a; ICES, 2010b; ICES, 2011b). However, trapping records for rivers in UK (England & Wales) and France suggested that levels of RVS increased again in 2013, with the observed levels being the highest in the time-series for some of the monitored stocks.

There is no clear indication that RVS affects either the survival of the fish or their spawning success. Affected fish have been taken for use as broodstock in a number of countries, successfully stripped of their eggs, and these have developed normally in hatcheries. Recent results have also demonstrated that affected vents showed signs of progressive healing in freshwater, suggesting that the time when a fish is examined for RVS, relative to its period of in-river residence, is likely to influence perceptions about the prevalence of the condition. This is consistent with the lower incidence of RVS in fish sampled in tributaries or collected as broodstock compared with fish sampled in fish traps close to the head of tide.

Update on sea lice investigations in Norway

The surveillance programme for salmon lice infection on wild salmon smolts and sea trout at specific localities along the Norwegian coast continued in 2013 (Bjørn *et al.,* 2013), and for most areas sea lice infestation tended to be lower in the salmon smolt migration period than it had been in previous years.

In general, however, sea lice are still regarded as a serious problem for salmonids (Skilbrei *et al.,* 2013; Krkošek *et al.,* 2013) and especially sea trout (Bjørn *et al.,* 2013). Furthermore, a recent study has demonstrated that sea lice infections may alter life-history characteristics of salmon populations. Long-term studies with vaccination of smolts from the Dale and Vosso rivers have shown that fish infested with sea lice may delay their spawning migration and return as MSW fish instead of as grilse (Vollset *et al.,* 2014).

10.1.6.5 Quality norm for Norwegian salmon populations

In 2013 a management system – the Quality Norm for Wild Populations of Atlantic Salmon – was adopted by the Norwegian government (Anon., 2013). This system was based on an earlier proposal by the Norwegian Scientific Advisory Committee for Atlantic Salmon Management (Anon., 2011). Work is currently in progress to categorize the most important Norwegian salmon populations according to this system.

In this quality norm, the status of salmon stocks is evaluated in two dimensions (Figure 10.1.6.5); one dimension is the conservation limit and the harvest potential, and the other dimension is the genetic integrity of the stocks. In the conservation limit and harvest potential dimension both the attainment of the conservation limit (after harvest) and the potential for harvest in relation to a "normal" harvest potential is evaluated. The genetic integrity is evaluated in relation to species hybridization, genetic introgression from escaped farmed salmon, and altered selection as a result of selective harvest and/or human induced changes in the environment. The poorest classification in either of the dimensions determines the final classification of the stock.

10.1.6.6 Developments in setting conservation limits (CLs) in Canada (Québec) and Finland

Update of stock–recruitment models in Québec

Since the year 2000, management of Atlantic salmon in Québec has been based on biological reference points obtained from stock–recruitment models (Fontaine and Caron, 1999; Caron *et al.,* 1999). However, population dynamics have changed in Québec through the 1990s, as elsewhere in North America, following anthropogenic and environmental changes affecting both freshwater and marine survival of salmon (Friedland *et al.,* 2000). Moreover, since then, reliable data on stock abundance and characteristics have been collected in Québec (Cauchon, 2014) and stock–recruitment analyses have evolved with the development of new approaches (Parent and Rivot, 2012).

The Government of Québec has started to update its stock–recruitment model by using recent data and incorporating an up-to-date modelling approach. This initiative is part of a wider process aimed at developing a management plan for Atlantic salmon in Québec, and will allow updating of biological reference points so as to accurately represent the current status of salmon populations. The new Ricker model being developed includes 12 rivers from a broader geographical scale and with a wider range of production units than the previous model. At least 15 extra years were included in the new model, which now covers cohorts between 1972 and 2005. A Bayesian hierarchical approach was used, allowing uncertainty associated with population dynamics to be incorporated (Parent and Rivot, 2012). This approach also allowed habitat production units to be introduced as covariables in an integrated way, to better explain between-river variability and estimate biological reference points for other rivers in Québec that lack stock–recruitment data, but have known production units. It is anticipated that the new model will be implemented in 2015.

Progress with setting river-specific conservation limits in the River Teno/Tana (Finland/Norway)

In the River Teno/Tana (Finland/Norway), information has been collated to set CLs for most of the tributary systems and the main stem of the river following the Norwegian standard method (Hindar *et al*., 2007; Forseth *et al*., 2013). In addition, CLs have been updated for five Norwegian tributaries of the Teno system. A report will be published in 2014 describing the new CLs for this river system.

10.1.6.7 Recovery potential for Canadian populations designated as endangered or threatened

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) subdivided Canadian Atlantic salmon populations into 16 designatable units (DUs) based on genetic data and broad patterns in life history variation, environmental variables, and geographic separation (COSEWIC, 2010). Of the 16 DUs, one (Inner Bay of Fundy; DFO, 2008) had been listed as endangered since 2003 under Canada's federal Species at Risk Act (SARA). In 2010, COSEWIC assessed five other DUs as either "Endangered" (at risk of becoming extinct) or "Threatened" (at risk of becoming endangered), and four DUs as "Special Concern" (at risk of becoming threatened or endangered).

For the five DUs assessed as threatened or endangered, DFO has recently conducted Recovery Potential Assessments (RPAs) to provide scientific information and advice to meet the various requirements of the SARA listing process (DFO 2013a, 2013b, 2013c, 2014a, 2014b). Among the advice, each RPA contains information on population viability and recovery potential for populations with enough information to model population dynamics, as well as information on threats to persistence and recovery. The five DUs assessed were:

- **South Newfoundland (DU 4), Threatened** – The DU has a low probability of extinction. Under contemporary marine survival rates, the probability of meeting or exceeding the recovery target within the next fifteen years was improved by reducing recreational fishery mortality rates.
- **Anticosti (DU 9), Endangered** – The DU has a low probability of extinction. If survival and carrying capacity remain the same, the probability of meeting or exceeding the recovery target within the next fifteen years was improved by reducing recreational fishery mortality rates. The Anticosti rivers are rarely disturbed by human activities.
- **Eastern Cape Breton (DU 13), Endangered** – The probability of extinction for the two populations (considered to be two of the healthier populations) with enough information to model population dynamics is low if conditions in the future are similar to those in the recent past. Given the life history variability seen throughout the DU, the two populations included in the analyses are not considered to be representative of other populations in the DU. Identified threats to persistence included: illegal fishing; salmonid aquaculture; marine ecosystem changes; and diseases and parasites.
- **Southern Upland (DU 14), Endangered** – A region-wide comparison of juvenile density data indicated significant ongoing declines and provided evidence for river-specific extirpations. Modeling indicates that two of the larger populations remaining in the DU have a high probability of extirpation in the absence of human intervention or a change in survival rates for some other reason. Modeling also indicates that relatively small increases in either freshwater productivity or marine survival are expected to decrease extinction probabilities, although larger changes in marine survival are required to restore populations to levels above conservation requirements. Identified threats to persistence included: acidification; altered hydrology; invasive fish species; habitat fragmentation due to dams and culverts; illegal fishing and poaching; salmonid aquaculture; and marine ecosystem changes.
- **Outer Bay of Fundy (DU 16), Endangered** – The two rivers with enough information to model population dynamics are at risk of extinction. Increases in freshwater productivity are expected to result in an increase in population abundance and a decreased extinction probability, although increases in both freshwater productivity and marine survival are required to meet recovery targets with higher probabilities. Identified threats to persistence included: hydroelectric dams; illegal fishing activities; shifts in marine conditions; salmonid aquaculture; depressed population phenomenon; and disease and parasites.

10.1.6.8 Genetic stock identification

North American genetic database

A Natural Sciences and Engineering Research Council of Canada strategic grant enabled the development of a North American genetic database using standardized markers across Canada and USA. The database includes 9042 individuals from 152 sampling locations genotyped at 15 microsatellite loci standardized across three different laboratories. The database can be used for the analysis of mixed-stock fisheries and individual assignment to estimate the populations most impacted by these. The database also includes data from an expressed sequence tag (EST)-based medium-density SNP array which provides data on over 5000 SNPs for 20–25 individuals for each of 46 sampling locations (Bourret *et al.,* 2013a). The SNP dataset is divided into neutral and potentially adaptive markers based on a genome scan analysis. The first use of this database was to define regional groups. This was done by comparing microsatellites, neutral SNPs, and potentially adaptive SNPs in Québec. The seven regional genetic groups were confirmed for the provinces of Québec, New Brunswick, and Labrador, and analyses with SNP identified the same regional groups as previous analyses with microsatellites (Dionne *et al.,* 2008).

Composition of the mixed-stock fisheries at Greenland

A mixed-stock fishery analysis was carried out for the salmon fishery at Greenland using part of the new microsatellite baseline (Gauthier-Ouellet *et al.,* 2009). The entire North American microsatellite baseline was subsequently used in a preliminary analysis of the North American salmon taken in the 2011 West Greenland harvest (Bradbury, DFO Canada, pers. comm.). Average sample composition estimates obtained using Bayesian mixture analysis suggest that the majority of the catch consisted of fish originating from: Labrador (15%), Québec upper north shore (10%), Gaspé Peninsula (33%), and Maritimes (27%) populations. Other regions in North America were also detected, but at lower levels. It is proposed that samples for later years are analysed in the future.

Composition of the mixed-stock fisheries at Labrador

The stock composition and exploitation of Atlantic salmon in Labrador Aboriginal and subsistence fisheries was evaluated for 1772 individuals sampled between 2006 and 2011 at various locations; genetic mixture analysis and individual assignment with the entire microsatellite baseline was used (Bradbury *et al*., in press). For assignment purposes, eleven groups (Figure 10.1.6.8) were identified, for which assignment accuracy was >90%. Bayesian and maximum likelihood mixture analyses indicate that 85–98% of the harvest was of Labrador origin. Estimated exploitation rates were highest for Labrador salmon (4.3–9.4% per year) and generally < 1% for all other regions. Individual assignment of fishery samples indicates that non-local contributions to the fishery (e.g. Maritimes, Gaspé Peninsula) were rare and occurred primarily in southern Labrador. Genetic samples from 2012 and 2013 are currently being processed.

For the salmon sampled in the Labrador subsistence fisheries in 2013 (n = 544) scale analysis indicated that 79% were 1SW salmon, 16% were 2SW, and 5% were previously spawned salmon. The majority of the sampled salmon were river ages 3 to 6 years (99%) (modal age 4). No river age 1 and few river age 2 (1%) salmon were sampled, suggesting (as

in previous years, 2006–2012) that very few salmon from the most southern stocks of North America (USA, Scotia–Fundy) are exploited in these fisheries.

ICES noted that this sampling programme provides biological characteristics of the harvest and the origin of the fish in the fishery, which are important parameters in the run–reconstruction model for North America and in the development of catch advice.

Composition of the mixed-stock fisheries at Saint-Pierre et Miquelon

The stock composition of Atlantic salmon caught in the mixed-stock fisheries at Saint-Pierre et Miquelon in 2013 was examined using the North American baseline described above. Samples were assigned to one of eleven regions in North America (Figure 10.1.6.8). This is the first time that samples from the fishery have been examined.

Samples were obtained from the fishery covering the period 17 May to 17 June 2013. Genetic analysis indicated that the sample (n = 71) contained 37% Gaspé Peninsula salmon (30 fish), 34% Newfoundland salmon (23 fish), 22% Maritimes salmon (13 fish), and 7% Upper North Shore Québec salmon (5 fish). The salmon sampled in 2013 were mostly two-sea-winter maiden salmon, with fewer one-sea-winter maiden salmon and only three repeat spawning salmon. Continued analysis of additional years will be informative of the characteristics of the salmon, age and size structure, origin of the fish, and the variation in the stock-specific characteristics of the catches.

ICES welcomed the analysis for genetic origin of samples of the catches at Saint-Pierre et Miquelon and recommends that sampling and supporting descriptions of the fisheries be continued and expanded (i.e. sample size, geographic coverage, tissue samples, seasonal distribution of the samples) in future years to improve the information on biological characteristics and stock origin of salmon harvested in these mixed-stock fisheries.

Composition of the catch in the mixed-stock fishery at Faroes

ICES received preliminary results from a genetic study of salmon scales collected in the Faroes salmon fishery in the 1980 and 1990s. This study involves scientists from UK (Cefas and Marine Scotland Science), Norway (NINA and IMR), and Faroes (MRI) and is funded by the NASCO IASRB and by UK, Norwegian, and Irish government departments. The aim of the study was to extract DNA from the historical scale samples and use the genetic stock assignment protocol developed during the SALSEA–Merge project (Gilbey *et al.,* pers. comm.) to estimate the historical stock composition of the catch.

Approximately 375 scale samples collected during each of the 1983/84 and 1984/85 commercial fisheries and the 1993/94 and 1994/95 research fisheries were selected for analysis. Initial results showed significant degradation of the DNA in some of the samples and reliable allele scorings could not be achieved for many of the microsatellites used. Improved DNA amplification was achieved for the later period using a modified polymerase chain reaction (PCR) process (Paulo Prodohl, pers. comm.), but this approach was less successful for the earlier period. As a result, the decision was made to limit the analysis to just the 1993/94 and 1994/95 samples.

Initial examination of the alleles at the SsaD486 microsatellite locus indicated that there were a number of samples with alleles normally only seen in North American fish. Further

exclusion and conformation analyses also indicated that 101 of the samples (16%) were probably from salmon of North American origin. Further analysis will be undertaken to confirm the classification of these samples. The remaining fish have been assigned using a mixed-stock analysis performed separately for each month represented in the samples. Fish have been assigned to the hierarchical reporting units at four levels (1–4) as defined by the SALSEA–Merge project (Gilbey *et al.,* pers. comm.) The assignments at levels 1 and 3 were scaled to the average distribution of the catch during the fishing season when the commercial fishery operated in the 1980s. Initial results suggest that around two thirds of the European fish in the catch may have come from northern NEAC countries and one third from southern NEAC countries; this represents a significant change from the approximately 50:50 split currently used in the NEAC assessments. Further work will be undertaken to provide confidence limits for the estimation of catch composition and to determine how these results should be used in the NEAC assessment models.

10.1.6.9 Update on EU project ECOKNOWS – Embedding Atlantic salmon stock assessment at a broad ocean scale within an integrated Bayesian life-cycle modelling framework

Within the EU FP7 ECOKNOWS project, models are being developed that provide improvements to pre-fishery abundance (PFA) stock assessment models. A key development has been a Bayesian integrated life-cycle model that offers potential for future Atlantic salmon stock assessment on a broad ocean scale. The approach also paves the way toward harmonizing the stock assessment models used in the WGBAST (ICES Baltic salmon and trout assessment working group) and in WGNAS (Rivot *et al*., 2013).

The Bayesian integrated life-cycle modeling approach provides methodological improvements to the PFA forecasting models currently used by ICES:

- Existing biological and ecological information on Atlantic salmon demographics and population dynamics are first integrated into an age- and stage-based life-cycle model, which explicitly separates the freshwater (egg-to-smolt) and marine phases (i.e. smolt-to-return, which accounts for natural and fishing mortality of sequential fisheries along the migration routes), and incorporates the variability of life histories (i.e. river and sea ages) (Figure 10.1.6.9.1). This body of information forms the prior about the population dynamics, which is then updated through the model with assimilation of the available data.
- Both ecological processes and various sources of data are modelled in a probabilistic Bayesian rationale. Uncertainties are accounted for in both estimations and forecasting.
- The structure provides a framework for harmonizing the models and parameterization between different stock units, while maintaining the specificities and associated levels of detail in data assimilation.
- The approach also offers flexibility to improve the ecological realism of the model, as different hypotheses regarding the population dynamics can be assessed without changing the data assimilation scheme.

The model has been successfully applied to the stock complex from UK (Scotland East), the largest regional component of the southern NEAC stock complex (Massiot-Granier *et al.,* 2014), and different demographic hypotheses have been tested:

- Density-dependent effects in the freshwater phase can change estimates of trends in marine productivity, which may critically impact forecasts of returns and ecological interpretation of the changes in marine productivity.
- Two alternative hypotheses for the decline of return rates in 2SW fish are supported equally by the data: (1) a constant natural mortality rate after the PFA stage and an increase in the proportion maturing (current hypothesis in PFA models); (2) an increase in the natural mortality rate of 2SW fish relative to 1SW fish, and a constant proportion maturing. Changing from one hypothesis to the other may critically impact management advice, as applying a higher mortality rate for 2SW fish limits the expected impact, and thus the size of catch for the 2SW stock component.

A multi-regional extension of the integrated life-cycle model developed by Massiot-Granier *et al.* (2014) is under development. The model captures the joint dynamics of all the regional stock units considered by ICES for stock assessment in the Southern NEAC stock complex (Figure 10.1.6.9.1).

- Data available at the scale of eight stock units have been implemented as five units, applying the spatial variability of the post-smolt marine survival and the probability of maturing after the first winter at sea. The five units are: i) France; ii) UK (England & Wales); iii) Ireland and UK (N. Ireland); iv) UK (Scotland East and West); and v) Iceland Southwest.
- The hierarchical structure provides a tool for separating out signals in demographic traits at different spatial scales: i) a common trend shared by the 5 stock units and, ii) fluctuations specific to each stock unit.
- Both post smolt survival during the first months at sea (smolts to PFA stages) and the proportion of salmon returning to freshwater after two years at sea exhibit common decreasing trends in the stock units (Figure 10.1.6.9.2). Results support the hypothesis of a response of salmon populations to broad scale ecosystem changes, but changes specific to each of the five stock units still represent a significant part of the total variability (~40%), suggesting a strong influence of drivers acting at a more regional scale.

In association with ICES, the ECOKNOWS project will disseminate findings at the end of its tenure with a concluding symposium: *"Ecological basis of risk analysis for marine ecosystems"*, which is scheduled to be held 2–4 June 2014 in Porvoo, Finland.

10.1.7 Examples of successes and failures in wild salmon restoration and rehabilitation, and developing a classification of activities which could be recommended under various conditions or threats to the persistence of populations

The Working Group on the Effectiveness of Recovery Actions for Atlantic Salmon (WGERAAS) will have its second meeting 12–16 May 2014 at ICES in Copenhagen. A sub-group of WGERAAS met in Swansea, UK (England & Wales) on 18–19 June 2013 to further develop a database and approaches to data reporting. The database consists of all rivers from the HELCOM and NASCO river databases, combined with a system scoring the impact of a list of 10 stressors and 12 recovery actions on a river-by-river basis. A guide has been developed to assist in populating the database.

ICES has granted a request to extend the duration of WGERAAS by two years, taking the total duration to three years. WGERAAS received the following guidance from NASCO with regards to the TORs: "NASCO is particularly interested in case studies highlighting successes and failures of various restoration efforts employed across the North Atlantic by all parties/jurisdictions and the metrics used for evaluating success or failure". WGERAAS acknowledged the NASCO comment and such case studies will be a key focus of the upcoming meeting.

10.1.8 Stock status categories currently used by the jurisdictions of NASCO, including within their Implementation Plans, and advice on common approaches that may be applicable throughout the NASCO area

Introduction

The Atlantic salmon is widely distributed throughout the North Atlantic area. It is estimated that Atlantic salmon occur in around 2500 rivers across its geographical range. NASCO has developed a rivers database into which NASCO parties are obliged to enter details for each of their salmon rivers. The database is an important source of information on Atlantic salmon stocks and rivers. Most countries have provided data for this database, using the classification scheme described below, but NASCO has expressed concerns that this does not reflect the use of conservation limits (CLs) and management targets (MTs) in making management decisions, the approach agreed by NASCO.

The NASCO rivers database provides information on the status of the salmon stocks based on seven categories http://www.nasco.int/RiversDatabase.aspx. The database relates to salmon only and is applied to rivers primarily with reference to stock status.

The categories used in the NASCO rivers database (applied by all NASCO jurisdictions) are defined as:

Lost – Rivers in which there is no natural or maintained stock of salmon but which are known to have contained salmon in the past.
Maintained – Rivers in which there is no natural stock of salmon, which are known to have contained salmon in the past, but in which a salmon stock is now only maintained through human intervention.
Restored – Rivers in which the natural stock of salmon is known to have been lost in the past but in which there is now a self-sustaining stock of salmon as a result of restoration efforts or natural recolonization.
Threatened with loss – Rivers in which there is a threat to the natural stock of salmon which would lead to loss of the stock unless the factor(s) causing the threat is (are) removed.
Not threatened with loss – Rivers in which the natural salmon stocks are not considered to be threatened with loss (as defined in the previous category).
Unknown – Rivers in which there is no information available as to whether or not it contains a salmon stock.
Not present but potential for salmon – Rivers in which it is believed there has never been a salmon stock but which it is believed could support salmon if, for example, natural barriers to migration were removed.

Many jurisdictions also implement other categorization systems, either through obligations under EU (e.g. EU Habitats Directive) or national legislation (e.g. Species at Risk Act, Canada, and Endangered Species Act USA). Categorizations are often provided with scientific advice for management purposes, which are closely linked to national management objectives requiring stocks to attain particular biological reference points (limit reference points and/or management targets). NASCO currently requires parties to report the current status of stocks relative to the reference points and how threatened and endangered stocks are identified within their national Iiplementation plans. These categories may require specific assessments or data or may only be applicable to rivers being assessed for compliance and not all rivers in a jurisdiction. A key difference in the various categories in use is whether they are applied at the stock level or at the species level.

Review of the stock status categories currently used by the jurisdictions of NASCO, including within their implementation plans

A range of stock status categories are used by different jurisdictions. Table 10.1.8.1 provides examples of various different stock categories in use for countries where categories are based on clear criteria. Countries with no specific national classification are excluded, although details of the broad approaches used in all NAC and NEAC countries were reviewed by ICES. The following provides a brief overview:

Canada

The abundance of Atlantic salmon relative to conservation limits (CLs) is used in Canada to assess stock status. Of the 1082 Canadian Atlantic salmon rivers tabulated in the NASCO database, annual assessments of returns and status relative to the CLs are available from between 65 and 75 major rivers.

In addition, reference points are being developed in Canada to reflect the application of the precautionary approach (DFO, 2006). The framework for this is shown in Figure 10.1.8.1.

Ireland

River- and age-specific conservation limits (CLs) have been derived and categorization of status of stocks for the provision of catch advice is based on a stock assessment for all 141 salmon-producing rivers in Ireland separately. This provides estimates of returns (counters, catches raised by exploitation rates) and status of stocks relative to the attainment of CLs. Advice on catch options is presented in relation to a 75% probability that this CL will be met, based on the average returns of the previous five years (Table 10.1.8.1).

Norway

Spawning targets have been calculated for 439 of the approximately 465 Norwegian rivers containing salmon. Attainment of spawning targets is assessed for about 200 river stocks; these account for about 98% of the total river catch of salmon in Norway. For advice on harvest, the management target was defined as being reached when the average probability of reaching the spawning target in the four previous years was more than 75%.

Assessment is now also based on the effects of human impacts which affect fish production and stock abundance and the capacity to produce a harvestable surplus. Norway established a

salmon stock registry in 1993 and a new system was published in 2012. This classification system (Table 10.1.8.1) is based on a combination of both the number of fish in the populations and influences of different threats to the populations. The most influential factor in this new category system – the Quality Norm – is the modeled genetic integrity of the population (further details are provided in Section 10.1.6.5).

Sweden

As river-specific CLs are lacking for Swedish rivers, the stock status for each river is assessed using the abundance of parr. Salmon habitat quality is classed in three categories according to depth, water velocity, dominant substrate, slope, and stream-wetted width. For each category an expected abundance is calculated from electrofishing data from the 1980s, when the number of returning spawners was high. Data from each site each year are then compared to the expected value and expressed as a percentage. All sites in a river are pooled and the average (and 95% confidence limits) is calculated. Out of 23 rivers, data are collected and stock status determined annually for 17 of these, to enable their categorization (Table 10.1.8.1).

UK (England & Wales)

There are 80 river systems in UK (England & Wales) that regularly support salmon, although some of the stocks are very small and support minimal catches or are dominated by sea trout. CLs have been set for 64 principal salmon rivers. Annual compliance with the CL is estimated using egg deposition figures. These are derived from returning stock estimates, where such data are available. However, for rivers without traps or counters, egg deposition is typically based on estimates of the run size derived from rod catch and estimates of exploitation (with an appropriate adjustment for underreporting). In reviewing management options and regulations, the management objective is for a river's stock to meet or exceed its CL in at least four years out of five (i.e. >80% of the time) on average. Compliance against this management objective is assessed annually and stocks categorized into four groups (Table 10.1.8.1).

UK (N. Ireland)

River-specific CLs have been used to assess compliance and stock status for 12 of 15 rivers in UK (N. Ireland). Biological reference points, for individual catchments, have been established in both Department of Culture, Arts and Leisure (DCAL) and Loughs Agency jurisdictions. The status of stocks in the DCAL area is assessed relative to CLs while management targets (MTs) based on CLs are used to manage in real time within the Loughs Agency area. Specific categories have been derived to advise on the status of stocks (Table 10.1.8.1).

USA

The process for designating threatened and endangered stocks is specified in the US Endangered Species Act. In short, the National Marine Fisheries Service or US Fish and Wildlife Service conducts a review of the species status.

ICES stock status categories – used by all NASCO jurisdictions

ICES categorizes Atlantic salmon stock groups as being at: full reproductive capacity, at risk of suffering reduced reproductive capacity, or suffering reduced reproductive capacity (Table 1.10.8.1). This categorization is used for assessment and the provision of catch advice on management of national components and geographical groupings.

Review of other classification schemes used for categorizing species

In addition to the categorization of stocks, species classification requirements commonly also apply. Details of these schemes are provided in Table 10.1.8.2. The following text provides a brief overview:

Canada – COSEWIC

The Committee on the Status of Endangered Species in Canada (COSEWIC) identifies species at risk through processes put in place under the federal *Species at Risk Act* (SARA) and similar provincial laws (http://www.cosewic.gc.ca/eng/sct0/assessment_process_e.cfm#tbl2). A range of categories apply (Table 10.1.8.2).

Texel–Faial – Used for EU classification of species

The Texel–Faial classification is used by OSPAR and applied to regional assemblages rather than individual stocks: http://www.ospar.org/documents/dbase/decrecs/agreements/03-13e_Texel_Faial%20criteria.doc.

Annex V to the OSPAR Convention indicates that a package has been prepared to identify those species and habitats in need of protection, conservation, and where practical, restoration and/or surveillance or monitoring.

OSPAR nominated the Atlantic salmon for inclusion under this scheme on the basis of an evaluation of their status according to the Criteria for the Identification of Species and Habitats in need of Protection and their Method of Application (the Texel–Faial Criteria) (OSPAR, 2003), with particular reference to its global/regional importance, decline and sensitivity, with information also provided on threat.

A review of the status of Atlantic salmon was therefore carried out (OSPAR, 2010). Following this review, Atlantic salmon were classified by OSPAR as qualifying under the criteria: Global Importance, Local Importance, Sensitivity, Keystone species, and Decline. Atlantic salmon, however, did not qualify under the category of Rarity (Table 10.1.8.3).

European Union Habitats Directive – used for EU classification of species

The Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna) is used by the EU for the classification of species or habitats. Further details are available at: http://europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm.

If a species is included under this Directive, it requires measures to be taken by individual EU Member States to maintain or restore them to favourable conservation status in their natural range. While the objective of the EU is for nominated species to achieve "favourable status", the classification system pre-supposes that the species are in need of protection. The categories are described as Annexes (Table 10.1.8.2).

Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention)

Further details on the Bern Convention are available at:
http://www.coe.int/t/e/cultural_co--operation/environment/nature_and_biological_diversity/Nature_protection/.

Atlantic salmon are included under Appendix/Annex III (freshwater only) (Table 10.1.8.2).

The World Conservation Union (IUCN) – (Red Data Books/Lists and Categories)

The IUCN Red Data Book is used to categorize species or geographic assemblages of species. A range of categories apply from 'extinct' to 'not evaluated' (Table 10.1.8.2).

Comparison of NASCO River Database categories with other classification systems

The primary differences in the classification systems illustrated above relate to whether they are applied at the stock level or at the species level. Both types appear to have some relevance to the categories currently in use in the NASCO Rivers Database, given that at very low stock status levels the species criteria listed above may provide a closer match with some of the NASCO categories. For comparison purposes, the NASCO categories are tabulated against both example stock categories (Table 10.1.8.4) and species categories (Table 10.1.8.5). It should be noted that many of the categorization schemes might best be viewed as continuous scales. As such, these 'tables' should not be interpreted as strict matrices implying direct alignment across rows; rather the 'tables' are intended to provide a basis for broad comparisons.

The NASCO categories broadly reflect these classifications but comparisons are more difficult at a detailed scale. The NASCO categories "maintained", "not present but potential", and "restored" are descriptive and do not appear to have a close parallel with the other species or river stock classifications generally in use. They clearly relate to special categories for stocks which have been or might be subject to special intervention, possibly including stocking. The NASCO categories "Threatened with loss" and "Not threatened with loss", while relating more directly to stock status, were also difficult to align directly with categories based on attainment of stock indicators because the terminology is imprecise and interpretation of these categories tends to encompass several categories in other systems.

NASCO has recommended the development of CLs for all stocks. However, these have not yet been developed by some jurisdictions, where alternative stock abundance indicators may be used in management. The implementation of any standardized classification scheme may also be difficult given the differences in the way national management advice is presented in different jurisdictions and it is unlikely that a standardized system for providing catch advice at the national level will be developed in the near future. Nevertheless, ICES considered that it might be possible to develop a classification more closely reflecting the generally applied

categories used for describing stock status and providing management advice (i.e. CLs). A preliminary and tentative example of this is shown in the final two columns of Table 10.1.8.4. However, approaches would need to be developed to enable compliance with the classification criteria to be averaged over time periods and thus avoid the need for assessment and updating of the Rivers Database on an annual basis. In addition, some degree of expert judgement would also be required for stocks that do not currently have CLs.

10.1.9 Reports from expert groups relevant to North Atlantic salmon

WGRECORDS

The Working Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species (WGRECORDS) was established to provide a scientific forum in ICES for the coordination of work on diadromous species. The role of the group includes organizing expert groups, theme sessions, and symposia, and helping to deliver the ICES Science Plan.

WGRECORDS held an informal meeting in June 2013, during the NASCO Annual Meeting in Drogheda, Ireland. Discussions were held on the requirements for expert groups to address new and ongoing issues pertinent to diadromous species, including issues arising from the NASCO Annual Meeting. The annual meeting of WGRECORDS was held in September 2013, during the ICES Annual Science Conference in Reykjavik, Iceland. This meeting received reports from all the ICES expert groups working on diadromous species, and considered their progress and future requirements. Updates were also received from expert groups of particular relevance to North Atlantic salmon. The following are the ongoing, recently held, or proposed expert groups to be considered by ICES in 2014:

> Ongoing – "The Working Group on Effectiveness of Recovery Actions for Atlantic Salmon (WGERAAS) – next meeting May 2014 (see Section 10.1.7).
> Recent – Workshop on Sea Trout (WKTRUTTA). Chaired by Stig Pedersen, Denmark, and Nigel Milner, UK, met November 2013.
> Proposed – The Workshop on Lampreys and Shads (WKLS), co-chaired by Pedro Raposo de Almeida, Portugal, and Eric Rochard, France, will be established and will meet in Lisbon, Portugal, for 3 days in October 2014.
> Proposed – Planning Group on the Monitoring of Eel Quality: "Development of standardized and harmonized protocols for the estimation of eel quality".
> Proposed – Joint Workshop of the Working Group on Eel and the Working Group on Biological Effects of Contaminants "Are contaminants in eels contributing to their decline?"
> Proposed – A Working Group on Data-Poor Diadromous Fish (WGDAM), chaired by Erwin Winter, Netherlands, and Karen Wilson, United States.

Other issues arising from the WGRECORDS meeting which are of particular relevance to Atlantic salmon were:

- Inclusion of new proposals for Atlantic salmon data collection under the EU DC-MAP (see Section 10.1.13).
- Proposal for a theme session at the ICES ASC in 2014: "Analytical approaches to using telemetry data to assess marine survival of diadromous and other migratory fish species".

Report of NASCO's ad hoc West Greenland Committee Scientific Working Group

NASCO convened a group of scientific representatives, which were nominated by members of NASCO's West Greenland Commission (WGC), to develop a working paper in support of the upcoming NASCO WGC intersessional meeting. This meeting was held in London 14–15 April 2014 prior to the availability of formal ICES advice. The *ad hoc* West Greenland Committee Scientific Working Group was to compile available data on catches in the West Greenland salmon fishery from 1990 to 2013, including:

- Reported and unreported catches;
- The spatial and temporal breakdown of the catches;
- The origin of the catches by continent and at finer scales where possible (e.g. country or region of origin);
- Rates of exploitation on contributing stocks or stock complexes; and
- Any additional scientific data related to the fishery.

The *ad hoc* West Greenland Committee Scientific Working Group presented their working paper to ICES for consideration and review. ICES supported the working paper and considered it an accurate representation of historical and current data related to the Greenland fishery.

10.1.10 Tag releases by country in 2013

Data on releases of tagged, fin-clipped, and otherwise marked salmon in 2013 were provided by ICES and are compiled as a separate report (ICES, 2014a). A summary of tag releases is provided in Table 10.1.10.1.

10.1.11 Recommendations on how a targeted study of pelagic bycatch in relevant areas might be carried out with an assessment of the need for such a study considering the current understanding of pelagic bycatch impacts on Atlantic salmon

NASCO further elaborated the question in a note: "In response to question 2.4, if ICES concludes that there is a need for a study, provide an overview of the parameters and time frame that should be considered for such a study. Information reported under previous efforts and on migration corridors of post-smolts in the Northeast Atlantic developed under SALSEA–Merge should be taken into account."

ICES discussed the bycatch issue based on previous work undertaken by the Study Group on Bycatch of Salmon (SGBYSAL), reported by ICES (ICES, 2004a, 2005a), and in light of other information made available to WGNAS in 2014.

The background for the SGBYSAL study group was the observed large number of post-smolts taken together with catches of mackerel in Norwegian research surveys in the Norwegian Sea (June–August). These research surveys were targeted at salmon post-smolts, but overlapped in time and space with commercial pelagic fisheries. These observations gave rise to concerns that the large commercial fisheries in these areas, particularly for mackerel, might heavily intercept the post-smolt cohorts moving northwards during the summer months. However, Russian observers on-board commercial mackerel trawlers, and in separate

research surveys, detected only negligible numbers of post-smolts in screened catches. This resulted in a very large discrepancy in the estimates of post-smolts taken as bycatch if the observed ratios of post-smolts to mackerel catches were scaled up to the total commercial mackerel catch in these areas (from 60 to over 1 million post-smolts taken as bycatch).

SGBYSAL (ICES, 2005a) recommended that catch ratios should not be extrapolated from Norwegian scientific salmon surveys to the entire pelagic fishery due to the absence of comparable efficiency estimates and the considerable differences in design and operation of the research survey and commercial trawls. It was considered, at the time, that the most reliable data for the purposes of extrapolation were those derived from the Russian research surveys that had taken place on the same spatial–temporal scale as the pelagic fishery and from the screening of commercial catches. It was further recommended that results from screening of pelagic survey catches should only be used when both the gear used and the fishery were similar to the commercial fishery. Thus, screening of the catches on-board commercial fishing vessels in relevant pelagic fisheries was considered to be the primary method of producing data for bycatch estimation.

SGBYSAL also considered that catches from other research surveys should continue to be screened for salmon, as this would add to overall knowledge about the temporal and spatial distribution of salmon at sea. In addition, it was recommended that further investigations into salmon marine ecology were required, in particular in relation to the distribution of salmon in time and space, in order to allow a better assessment of the potential overlap between salmon and pelagic fisheries. Any further directed research should also include investigation of the migration routes of salmon post-smolts from the coastline of the Northeast Atlantic countries into the shelf areas and onward into the northern summer feeding areas for post-smolt and adult salmon. In particular, surveys in more southerly areas should be undertaken in weeks 20–23 (mid-May to early June) while the northern areas should be covered in weeks 30–34 (late July to late August). Finally, SGBYSAL recommended that a questionnaire survey directed at the processing plants dealing with mackerel, herring, and horse mackerel should be considered to establish whether salmon have been observed during processing.

WGNAS (ICES, 2005b) endorsed the recommendations from SGBYSAL. Furthermore, they reiterated that direct on-board observation of pelagic catches was the most reliable method of bycatch estimation. Despite the difficulty in obtaining precise estimates of bycatch, ICES noted that the latest available upper estimate of potential salmon post-smolt bycatch in the mackerel fishery (154 482) represented approximately 5% of the estimated combined PFA for the NEAC stock complexes (10-year average PFA approximately 3.4 million) in the most recent assessment at the time.

Although SGBYSAL did not meet after 2005, further information was available in 2005 and 2006 on bycatches in pelagic research surveys and from screening of commercial catches. These data were consistent with earlier findings and WGNAS (ICES, 2006) continued to consider that the previous findings remained valid, i.e. that there were relatively low impacts of salmon bycatches in pelagic fisheries on PFA or returns to homewaters. However, these available new records remained insufficient to allow a detailed assessment of the effect of non-targeted fisheries on salmon abundance (the absence of disaggregated catch data, in both time and space, for pelagic fisheries also remained a key constraint). ICES (2006) recommended that future estimates should be refined, if possible, with annual estimates based on observer-based screening of catches.

Since this time, there have been further developments and new information has become available. More knowledge has been gained about post-smolt and salmon distribution and migration, mainly through the studies conducted during the SALSEA–Merge project. Figure 10.1.11.1 provides capture rates for post-smolts derived from this project and earlier captures from research surveys, indicating the distribution of some post-smolts along the shelf edge to the north west of the British Isles and, following migration further north, their subsequent widespread capture in the Norwegian Sea, with higher concentrations towards the eastern areas. Further information on bycatch has also been provided to WGNAS from screening of catches and landings, primarily by Iceland, and from the recent International Ecosystem Summer Survey of the Nordic Seas (IESSNS).

Bycatch of salmon in the Icelandic herring and mackerel fisheries was studied both by screening of landings and by screening of catches on-board fishing vessels, conducted by inspectors from the Icelandic Fisheries Directorate. The screening of landings only occurred when crew members indicated that some salmon bycatch had occurred, so these do not represent an unbiased sample of the whole landings. The number of landings / catches screened and the numbers of salmon detected during the period from 2010 to 2013 are shown in Table 10.1.11.1 (landings) and Table 10.1.11.2 (catches). The bycatch rates of salmon vary somewhat among years, but are mostly larger in screened landings (average 5.4 salmon per 1000 t catch; range 4.7–6.2 salmon per 1000 t) than in screened catches (average 2.1 salmon per 1000 t catch; range 0–5.5 salmon per 1000 t), likely reflecting the bias noted previously. Similar levels of bycatch were reported for Faroese fisheries in 2011 (ICES, 2012a). In this instance, the screening of 33 315 t of mackerel taken in pelagic pairtrawls occurred at land-based freezing plants and resulted in a bycatch rate of 2.4 salmon per 1000 t catch. In this screening programme, salmon were only reported from catches taken in May and June. Icelandic mackerel catches have constituted about 150 000 t in recent years and, assuming the salmon bycatch rates recorded in the screening are representative of the fishery as a whole, this would give a total salmon bycatch in the range of 300–800 individuals for this fishery. This represents 0.01 to 0.03% of the total estimated PFA of NEAC salmon (average total PFA for both maturing and non-maturing fish for the last five years). The catch composition of the Icelandic samples (Table 10.1.11.3) shows that salmon of length 20–50 cm made up 15% of the catch, salmon of length 50–70 cm made up 69% of the catch, and salmon of length 70–100 cm made up 16% of the salmon caught.

Bycatches of salmon taken in the IESSNS surveys in the period 2010–2013 were also presented to WGNAS (Figure 10.1.11.2). All vessels taking part in this survey have been using a specially designed pelagic trawl, fishing in the upper 30 m and in a standardized way, allowing the catches to be used quantitatively. The catches taken in these surveys are also carefully screened, so the certainty of the salmon bycatch count is very high, and all salmon are weighed, measured, and frozen for further analysis. These pelagic surveys, mainly targeting mackerel, cover large parts of the Norwegian Sea and Icelandic and Faroese waters (e.g. see Figure 10.1.11.3 for the survey area covered in 2012). However, despite this wide coverage, the bycatch of salmon mostly occurred in the eastern parts of the Norwegian Sea, as indicated by Figure 10.1.11.2. The salmon catch in the survey was low, but so were the total survey catches (Table 10.1.11.4), since the IESSNS sampling trawl is smaller than commercial trawls and the haul duration is only 15 minutes. However, when these rates are extrapolated to provide estimates of salmon per 1000 t of catch (comparable to the reported Icelandic values), the IESSNS bycatch rates are, on average, 20 to 50 times higher than those recorded from the commercial Icelandic fisheries (average of 103 salmon per 1000 t of catch; Table 10.1.11.4).

The pelagic fisheries in the Norwegian Sea and in the areas around Iceland and along the Greenlandic east coast have changed in recent years. Catches of Norwegian spring-spawning herring have declined in the last few years (ICES, 2013b). However, catch and survey data indicate that the mackerel stock has expanded north-westwards during spawning and in the summer feeding migration. This distributional change is likely a reflection of increased stock size coupled with changes in the physical environment and in the zooplankton concentration and distribution (ICES, 2013b). A northern expansion has been indicated by the recent summer surveys in the Nordic seas (IESSNS), while a westward expansion in the summer distribution of adult mackerel has also been observed in the Nordic Seas since 2007, as far west as southeast Greenlandic waters. Catches in ICES Subareas I, II, V, and XIV have increased markedly in recent years (Figure 10.1.11.4), with significant catches taken in Icelandic and Faroese waters, areas where almost no catches were reported prior to 2008 (ICES, 2013b). In 2012, mackerel catches in this area constituted approximately half of the total reported catches for the whole Northeast Atlantic. Catches from Greenland were reported for the first time in 2011, and increased in 2012. The distributions of mackerel catches for 2012 in quarters 2 and 3 are provided in Figure 10.1.11.5 and indicate some potential overlap with the distribution of post-smolt salmon – see Figures 10.1.11.1 and 10.1.11.2.

The latest information highlights ongoing uncertainty on the salmon bycatch question, although the issues remain very similar to those previously addressed by SGBYSAL and WGNAS. The latest bycatch estimates from the recent Icelandic and Faroese screening programmes suggest relatively low levels of bycatch in the mackerel catches and this is consistent with the previous views of ICES. Such assessment procedures, based on direct screening of the commercial catches, have previously been considered to provide the most reliable data for extrapolation purposes and this remains the case. ICES noted the markedly higher salmon bycatch rates recorded in the IESSNS surveys, but it is unclear how representative these might be of the bycatch in the commercial fishery given differences in the design and operation of the gears used. In any event, the capture rates remain low relative to the estimates of total NEAC PFA (< 2%). ICES further noted that while there was overlap between the areas known to be frequented by salmon and the areas where the pelagic fisheries were prosecuted, there were also apparent differences in the areas where the highest salmon and mackerel catches occurred, with the former tending to occur in more easterly parts of the Norwegian Sea. Nonetheless, the catches in these pelagic fisheries have increased and substantial uncertainties remain as to the extent to which the migration routes of post-smolt and adult salmon might overlap in time and space with these pelagic fisheries.

Given that estimates of the bycatch of salmon in the total pelagic fisheries are highly uncertain, ICES considers it would be informative to increase efforts to obtain reliable estimates of the bycatch of salmon. ICES, therefore, recommends the following:

- Collate all available information on post-smolt and salmon marine distribution, particularly from the SALSEA–Merge project.
- Collate information of possible interceptive pelagic fisheries operating in the identified migration routes and feeding areas of Atlantic salmon. This would require close cooperation with scientists working on pelagic fish assessments in the relevant areas and provision of disaggregated catch data in time and space which overlap areas known to have high densities of post-smolts or adults.
- Review pelagic fisheries, identifying important factors such as gear type and deployment, effort, and time of fishing in relation to known distribution of post-smolt

and salmon in space and time, and investigate ways to intercalibrate survey trawls with commercial trawls.

- Carry out comprehensive catch screening on commercial vessels fishing in areas with known high densities of salmon post-smolts or adults. This would require significant resources and would need to be a well coordinated and well-funded programme.
- Integrate information and model consequences for productivity for salmon from different regions of Europe and America.

This might be approached as a phased investigation with the first elements possibly carried out by a combined Salmon/Pelagic Workshop or Study Group. The major element (catch screening) would likely require some preparation and agreement between NASCO parties and could be conducted as a joint collaborative exercise with cooperation from the pelagic fishing industry.

10.1.12 Implications for the provision of catch advice of any new management objectives proposed for contributing stock complexes

The reference points for provision of catch advice for West Greenland are the CLs of 2SW salmon from six regions in North America and the MSW CL from the southern European stock complex. NASCO has adopted these region-specific CLs as limit reference points with the understanding that having populations fall below these limits should be avoided with high probability. CLs for the West Greenland fishery for North America are limited to 2SW salmon and southern European stocks are limited to MSW fish because fish at West Greenland are primarily (>90%) 1SW non-maturing salmon destined to mature as either 2SW or 3SW salmon.

Alternative management objectives to the CLs were first proposed for the Scotia–Fundy and USA stock complexes in 2002, roughly at the same time that the risk analysis framework for providing catch advice at Greenland was developed and in response to strongly divergent trends in status of stocks between northern and southern regions of North America (ICES, 2002). Managers were concerned that the potential fishery at Greenland could be constrained by the status of the weakest stocks with no hope of meeting their CLs even if production from the northern areas became very high and in excess of CLs. Considering the differences in stock status among the regions, ICES (2002) proposed that fishery managers attempt to meet the CLs simultaneously in the four productive northern regions of North America (Labrador, Newfoundland, Québec, and Gulf) while defining and managing to meet stock rebuilding objectives for the two southern regions (Scotia–Fundy and USA). A rebuilding objective was agreed for each region consisting of a 25% increase in 2SW returns relative to the average returns for the period 1992 to 1996.

In the years since these management objectives were agreed, the estimated returns of 2SW salmon to Scotia–Fundy have remained relatively stable and low, in the range of 10 000 to less than 5000 fish during 1997 to 2012 (Figure 10.1.12.1). The returns have represented less than 20% of the 2SW CL and less than 50% of the management objective. This contrasts with the returns of 2SW salmon to the USA which were often at or above 50% of the management objective and in 2011 exceeded the objective (Figure 10.1.12.1). The USA 2SW returns have never exceeded more than 21% of the 2SW CL, but have been much closer to the management objective than Scotia–Fundy (Figure 10.1.12.1). ICES has provided catch advice considering these rebuilding objectives since 2002. However, ICES (2012c) also noted that to be consistent with achieving maximum sustainable yield and the precautionary approach,

the overarching goal should be for fisheries to only take place on salmon stocks that have been shown to be at full reproductive capacity, and that CLs are limit reference points and having populations fall below these limits should be avoided with high probability.

Proposed revised management objective for USA

At the Thirtieth Annual Meeting of NASCO, the USA proposed a new management objective for the USA stock complex for the provision of catch advice at Greenland (NASCO, 2013). The previous management objective (ICES, 2004b) was viewed as a rebuilding objective and was established in light of the extremely depleted state of the endangered USA populations. It was indicated that this management objective is inconsistent with NASCO's Agreements, Action Plans, and Guidelines (NASCO, 1998, 1999, 2009) as well as interim recovery criteria for USA stocks protected by the Endangered Species Act (ESA). However, NASCO has also acknowledged that when a stock has fallen well below its CL, or has been below the CL for an extended period, it may be appropriate to consider an intermediate 'recovery' reference point (NASCO, 2004). Given these discrepancies, the USA recommended aligning the management objectives for the USA stock complex with the recovery criteria for the remnant stocks currently under protection of the ESA (NASCO, 2013).

One requirement of the ESA is defining objective, measurable criteria for determining when Atlantic salmon may be considered for de-listing from the Act. The draft recovery criteria for the Gulf of Maine Distinct Population Segment (GOM DPS), the only region where remnant Atlantic salmon populations remain, are a census population abundance of 6000 adult returns of all sea ages, and assuming a 1:1 sex ratio equally distributed among three distinct areas within the GOM DPS. There are additional criteria that must be met before proposing de-listing the GOM DPS, such as demonstrating consistent positive population growth and achieving the census population criteria based on wild spawners only. Further details can be found in Appendix A of the Critical Habitat Designation (http://www.nero.noaa.gov/prot_res/altsalmon).

The fishery at West Greenland primarily exploits (>90%) 1SW non-maturing salmon destined to mature as either 2SW or 3SW salmon. As such, the provision of catch advice for West Greenland is based on the forecasts of 2SW returns compared to the stated management objectives. To convert the draft recovery criteria to 2SW equivalents, the average percentage of 2SW fish in returns to the USA for the base period 2003–2012 was applied (75.8%), resulting in a value of 4549 2SW returns. This value was proposed as a replacement to the previous USA management objective of achieving a 25% increase in returns of 2SW salmon from the average returns in the 1992–1996 base period (2548). The objective would now be stated as: "achieve 2SW adult returns of 4549 or greater for the USA region".

Review of management objective for Scotia–Fundy

A review of the management objective for Scotia–Fundy was also considered by ICES. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) have assessed the salmon stocks of the three Scotia–Fundy Designatable Units (DU) as endangered (at risk of extinction) due to population declines associated with low marine survival and threats in freshwater. Recovery potential assessments (RPAs) of each DU were conducted in 2012 and 2013. The RPA science advisory reports proposed recovery objectives for distribution and abundance which could be considered as an alternative to the presently defined rebuilding management objective for the Scotia–Fundy area. Only the RPA for the Outer Bay of Fundy

DU specifically quantified the short-term 2SW abundance target through the identification of priority rivers. No short-term abundance target or priority rivers were identified for the Eastern Cape Breton (DFO, 2013b) and Nova Scotia Southern Upland (DFO, 2013a) regions during the RPAs to allow for similar 2SW target calculations for these regions within Scotia–Fundy.

It is therefore not possible at this time to propose a revised management objective for the Scotia–Fundy region that takes into account advice on recovery targets identified in the recent RPAs for the three DUs of Atlantic salmon in this region. Specific short-term and long-term recovery objectives for distribution and abundance within each DU would be developed during the completion of recovery plans, but these are currently pending. Once such recovery plans are developed it is anticipated that these would provide specific abundance and distribution targets. However, until any such objectives can be assessed for their appropriateness for the provision of management advice for West Greenland, the current management objective of a 25% increase in returns from the average of 1992–1996 can be retained for the following reasons:

1. The current management objective for Scotia–Fundy is aimed at rebuilding the stocks which are well below the 2SW conservation limit for the Scotia–Fundy region (i.e., 44% of the 2SW CL);
2. Recovery objectives in terms of number of fish have not been proposed in scientific recovery potential assessments for two of the three DUs in the Scotia–Fundy region; and
3. If the current management objective is lower than recovery objectives that will be identified from river-specific recovery objectives that have yet to be developed in recovery plans, then there is a low risk of impacting management advice to West Greenland in the short term given the current stock status in relation to existing management objective.

Impact of the revised management objective for USA on catch advice

The existing management objectives used for the provision of catch advice for the West Greenland fishery (ICES, 2012c) are as follows:

- 75% probability of simultaneous attainment of seven management objectives:
  - Meet the 2SW CLs for the four northern areas of NAC (Labrador, Newfoundland, Québec, Gulf);
  - Achieve a 25% increase in returns of 2SW salmon from the average returns in 1992–1996 for the Scotia–Fundy and USA regions;
  - Meet the MSW southern NEAC CL.

To evaluate the implications of the proposed new management objective, the most recent catch options provided for the West Greenland fishery (ICES, 2012c) were compared to a re-analysis of the catch options, using the same input data, but with the inclusion of the proposed new USA stock complex management objective.

The scientific advice has been for zero harvest of the mixed-stock complex at West Greenland since 2002. The probabilities of meeting each individual management objective and simultaneously meeting all seven objectives for the period of 2012–2014 under the existing and the proposed new USA management objectives are provided in Table 10.1.12.1.

The time-series of 2SW returns against the USA CL, the existing, and the proposed new management objectives is provided in Figure 10.1.12.2.

Due to the record high returns in USA rivers in 2011 (the highest in the time-series since 1990 and the sixth highest since 1971), the probability of meeting the existing management objective for the USA stock complex based on a forecast of USA returns in the years 2012–2014 ranged from 75% to 89%. However, realized returns of 2SW fish were well below the forecast values for 2012 and 2013 and were < 30% of the 2011 returns (Figure 10.1.12.2).

Prior to 2012, the probability of USA returns exceeding the management objective was assessed jointly with the Scotia–Fundy stock complex and therefore cannot be reported independently. However, for the five years during which catch options were provided prior to this time, the probability of USA and Scotia–Fundy returns jointly exceeding their management objectives remained below 5% in each year (ICES, 2004b, 2005b, 2006, 2007, 2009a).

For the years 2012 to 2014, there is a 0.16–0.23 reduction in the probability of the USA stock complex meeting the proposed new management objective (range 0.50 to 0.70) compared to meeting the existing management objective (range 0.75 to 0.89) (Table 10.1.12.1). However, the provision of catch advice for the West Greenland fishery depends on the simultaneous achievement of all seven management objectives with a probability of at least 0.75. It is therefore most appropriate to evaluate changes in the simultaneous probability between the two scenarios. The probability difference for simultaneously achieving all seven management objectives for both options of USA management objectives is only 0.01 (i.e. 1%). As such, the proposed modification of the USA management objective would have had a negligible impact on the catch advice for the 2012–2014 fishing years. The USA stock complex is a single component of the West Greenland fishery and the management of the fishery is dependent on the performance of all contributing stock complexes.

Further considerations

ICES noted that the protocols for updating the management objectives if and when stocks recover have not been developed. The management objectives for the southern regions are interim objectives intended to guide management in assessing progress in increasing abundance of Atlantic salmon, while not unduly restricting Greenland and domestic governments from exploiting stocks that are at high abundance and achieving their conservation objectives. Ultimately, the catch options for the fishery at West Greenland should be assessed against the 2SW conservation limits for each of the contributing regions.

10.1.13 Relevant data deficiencies, monitoring needs, and research requirements

NASCO subgroup on telemetry

ICES received an update on the work of the NASCO Sub Group on Telemetry that had been established by the Scientific Advisory Group (SAG) to the International Atlantic Salmon Research Board (IASRB). Following discussions within the IASRB about the future direction of research that might be supported by the Board, the Sub Group had been asked to develop an outline proposal for a large-scale international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon. Tracking projects undertaken in the US (Gulf of Maine)

and Canada (Gulf of St Lawrence) based on acoustic tagging have demonstrated the potential for such methods to be used to identify the migration routes of emigrating post-smolts and to quantify the mortality occurring during different phases of this migration (see Section 10.1.6.3). Similarly, trials with pop-off satellite transmitters on salmon caught at West Greenland and kelts returning to sea after spawning have demonstrated the potential for elucidating the migration routes and behaviour of salmon at later life stages, including the return migration from the ocean feeding areas towards their home rivers. Satellite tags and archival tags have also been used to obtain additional information on conditions experienced by salmon at sea. The proposed programme will build on these studies to extend the areas for which detailed information on marine mortality is available.

ICES recognised that this would be a very challenging programme, but considered that it could provide important information that would greatly assist in the management and conservation of Atlantic salmon stocks throughout the North Atlantic.

EU Data Collection – Multi-Annual Plan

ICES received an update on the ongoing process for the revision of the EU Data Collection Framework (DCF) as it affects the collection of data used in the assessment of Atlantic salmon stocks and the provision of management advice. Changes to the DCF in 2007 introduced requirements for EU Member States to collect data on eel and salmon, but the specific data requested for these species did not meet the needs of national and international assessments. In 2012, the Workshop on Eel and Salmon Data Collection Framework (ICES, 2012b) provided detailed recommendations on the data requirements for European eel, and Baltic and Atlantic salmon, including data required by ICES to address questions posed by NASCO. In February 2014, these recommendations were presented to an Expert Working Group of the EU Scientific, Technical and Economic Committee for Fisheries (STECF). A number of suggestions were made for changes to Council Regulation 199/2008 (concerning the establishment of a Community framework for the collection, management, and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy) and Commission Decision 2010/93/EU (adopting a multiannual Community programme for the collection, management, and use of data in the fisheries sector for the period 2011–2013), which will be considered by STECF in March 2014. The revised DFC will provide the basis for data collection under the proposed Multi-Annual Plans (DC-MAP) which will apply for the period 2015 to 2021.

Stock annex development

ICES considered proposals from the Review Group regarding the establishment of an Atlantic Salmon Stock Annex. Such stock annexes have been developed for other ICES assessment working group reports and are intended to provide a complete description of the methodology used in conducting stock assessments and the provision of catch advice. ICES developed a Stock Annex incorporating country-specific inputs for the 2014 WGNAS meeting. These documents are intended to be informative for members of WGNAS and reviewers, as well as in facilitating wider communication.

Recommendations

The Working Group on North Atlantic Salmon recommends that it should meet in 2015 to address questions posed by ICES, including those posed by NASCO. WGNAS may be invited to hold its next meeting in Canada, but would otherwise intend to convene at ICES Headquarters in Copenhagen, Denmark. The meeting will be held from 17 to 26 March 2015.

Specific list of recommendations:

1) The Working Group recommends the following actions to improve our understanding of salmon bycatch:

   1.1) Collate all available information on post-smolt and salmon marine distribution, particularly from the SALSEA–Merge project.

   1.2) Collate information of possible interceptive pelagic fisheries operating in the identified migration routes and feeding areas of Atlantic salmon. This would require close cooperation with scientists working on pelagic fish assessments in the relevant areas and provision of disaggregated catch data in time and space which overlap areas known to have high densities of post-smolts or adults.

   1.3) Review pelagic fisheries, identifying important factors such as gear type and deployment, effort and time of fishing in relation to known distribution of post-smolt and salmon in space and time, and investigate ways to intercalibrate survey trawls with commercial trawls.

   1.4) Carry out comprehensive catch screening on commercial vessels fishing in areas with known high densities of salmon post-smolts or adults. This would require significant resources and would need to be a well coordinated and well-funded programme.

   1.5) Integrate information and model consequences for productivity for salmon from different regions of Europe and America.

   The Working Group recommends that this might be approached as a phased investigation with the first elements of such a programme possibly carried out by a combined salmon/pelagic species workshop or study group. The major element (catch screening) would likely require some preparation and agreement between NASCO parties and could be conducted as a joint collaborative exercise with cooperation from the pelagic fishing industry.

2) The Working Group recommends that sampling and supporting descriptions of the Labrador and Saint-Pierre et Miquelon fisheries be continued and expanded (i.e. sample size, geographic coverage, tissue samples, seasonal distribution of the samples) in future years and analysed using the North American genetic baseline to improve the information on biological characteristics and stock origin of salmon harvested in these mixed-stock fisheries.

3) The Working Group recommends that the Greenland catch reporting system continues and that logbooks be provided to all fishers. Efforts should continue to encourage compliance with the logbook voluntary system. Detailed statistics related to catch and effort should be made available to the Working Group for analysis.

4) The Working Group recommends that the Government of Greenland facilitate the coordination of sampling within factories receiving Atlantic salmon, if landings to factories are allowed in 2014. Sampling could be conducted by samplers participating in the international sampling programme or by factory staff working in close coordination with the sampling programme coordinator. The Working Group also recommends that arrangements be made to enable sampling in Nuuk as a significant amount of salmon is reported as being landed in this community on an annual basis.

5) The Working Group recommends that the longer time-series of sampling data from West Greenland should be analysed to assess the extent of the variations in fish condition over the time period corresponding to the large variations in productivity as identified by the NAC and NEAC assessment and forecast models. Progress has been made compiling the West Greenland sampling database and should be available for analysis prior to the 2015 Working Group meeting.

6) The Working Group recommends a continuation and expansion of the broad geographic sampling programme at West Greenland (multiple NAFO divisions) to more accurately estimate continent of origin in the mixed-stock fishery.

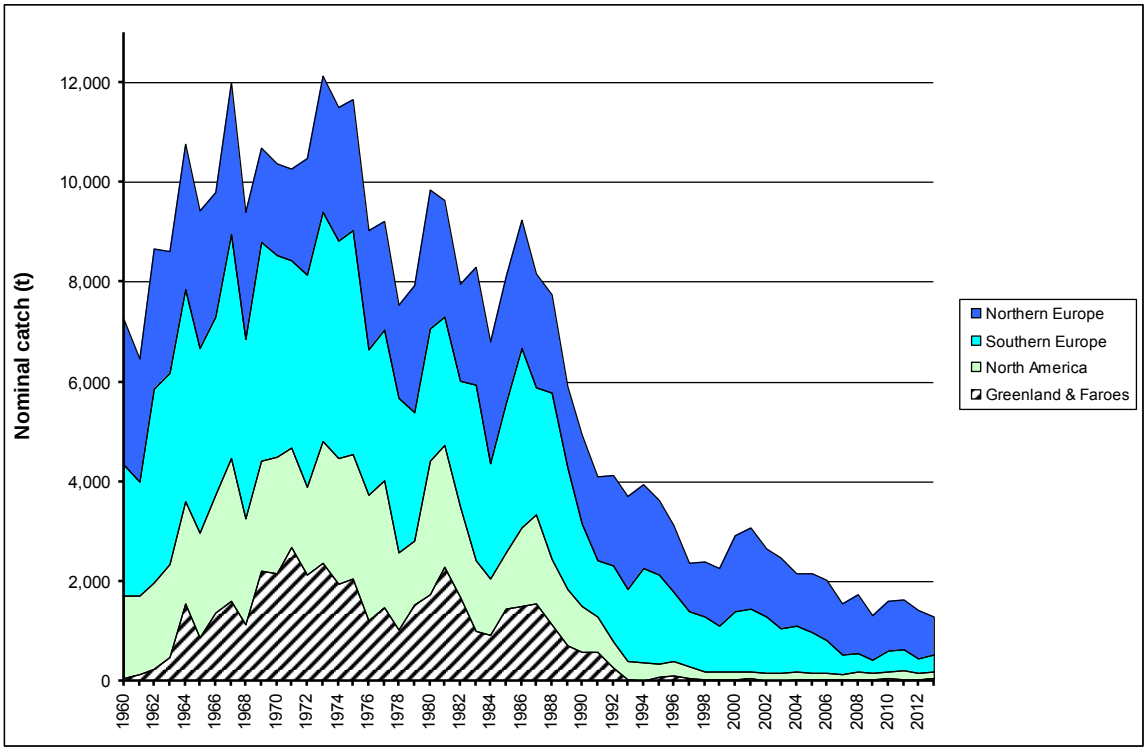

Figure 10.1.5.1 Reported total nominal catch of salmon (tonnes round fresh weight) in four North Atlantic regions, 1960 to 2013.

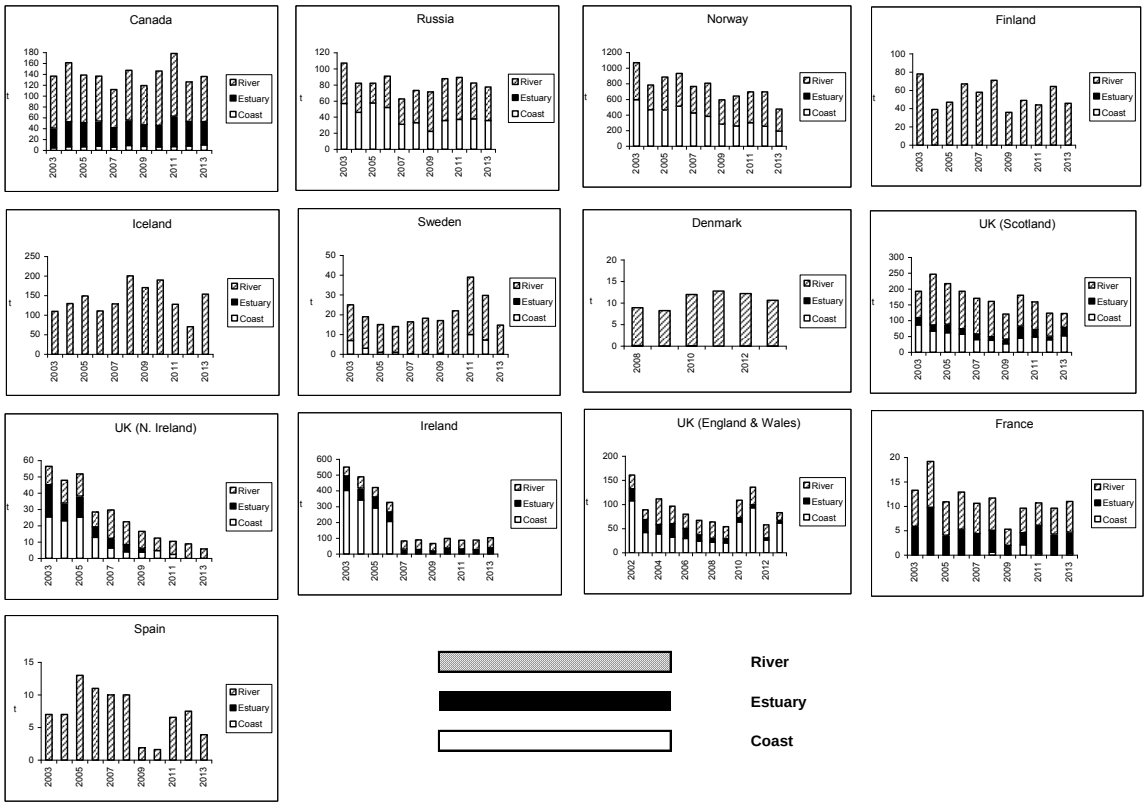

Figure 10.1.5.2 Nominal catch (t) by country taken in coastal, estuarine, and riverine fisheries, 2003–2013 (except Denmark: 2008–2013). Note that the scales of the vertical axes vary.

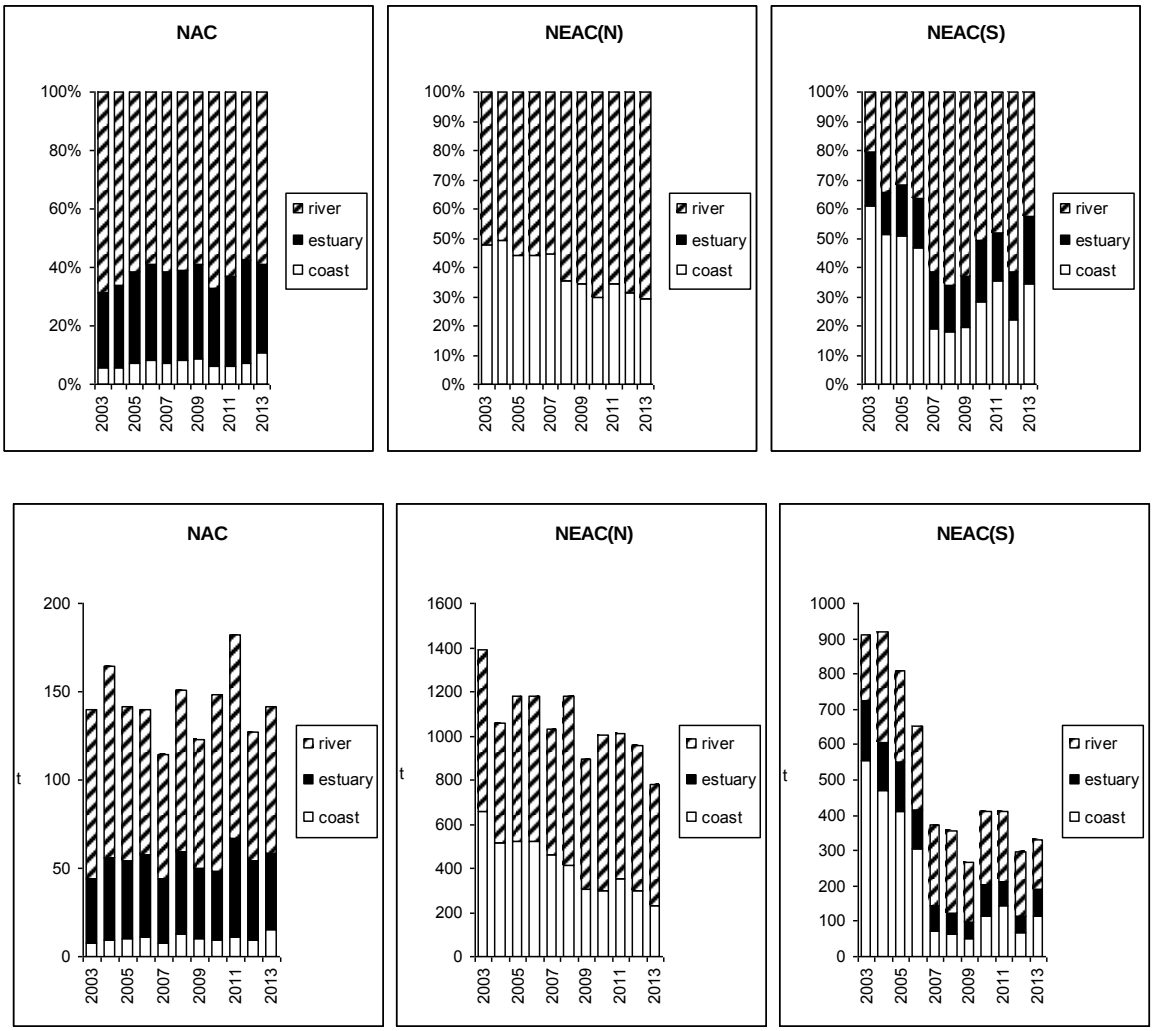

Figure 10.1.5.3 Percentages of nominal catch (top panel) and nominal catch in tonnes (bottom panel) taken in coastal, estuarine, and riverine fisheries for the NAC area, and for the northern and southern NEAC areas, 2003–2013. Note that scales of vertical axes vary in the bottom panels.

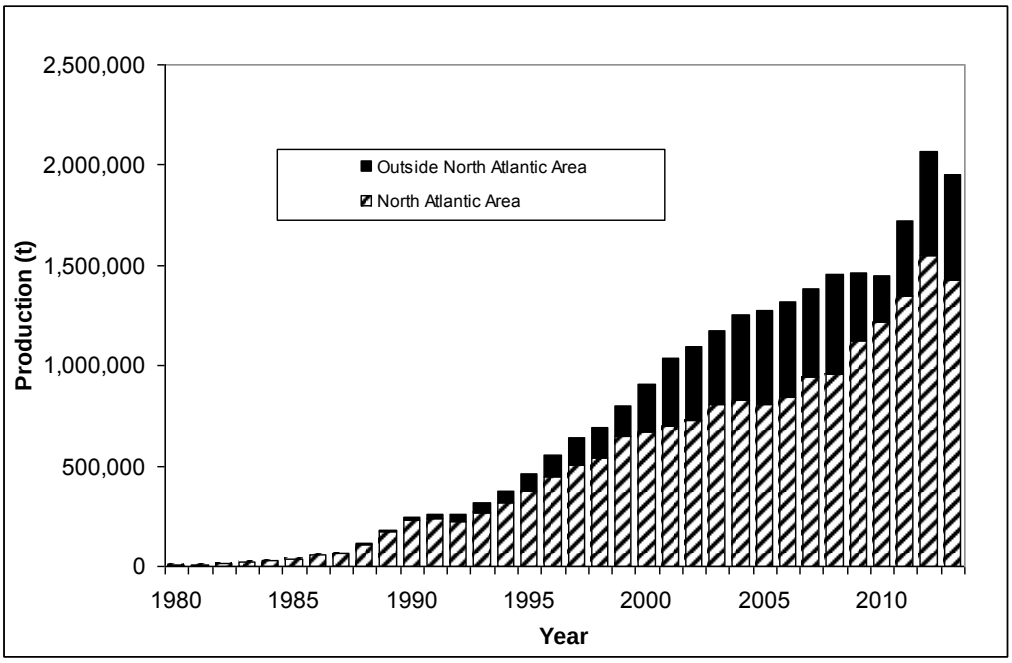

Figure 10.1.5.4 Worldwide production of farmed Atlantic salmon, 1980 to 2013.

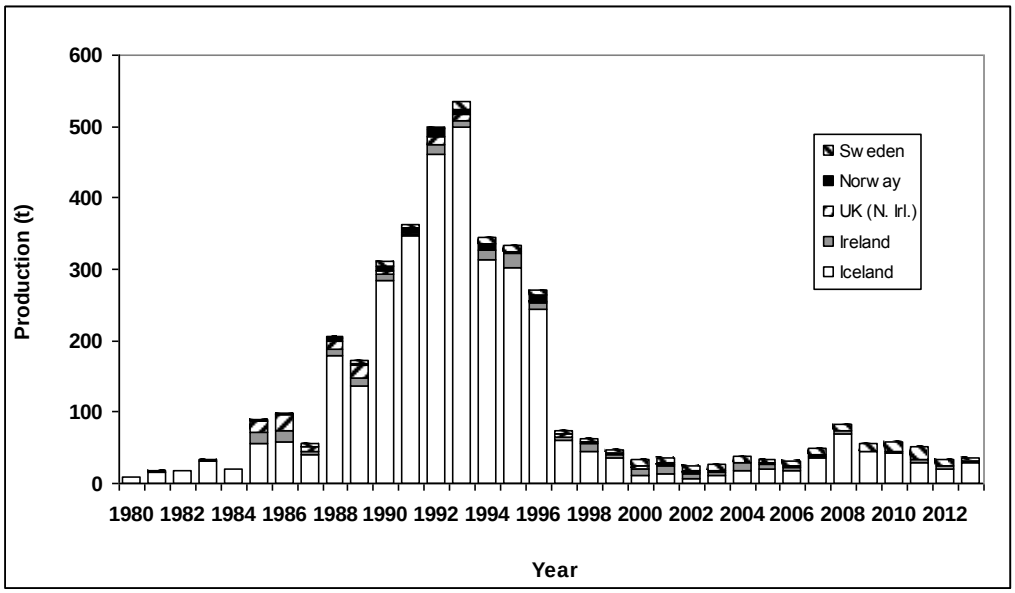

Figure 10.1.5.5 Production of ranched Atlantic salmon (tonnes round fresh weight) in the North Atlantic, 1980 to 2013.

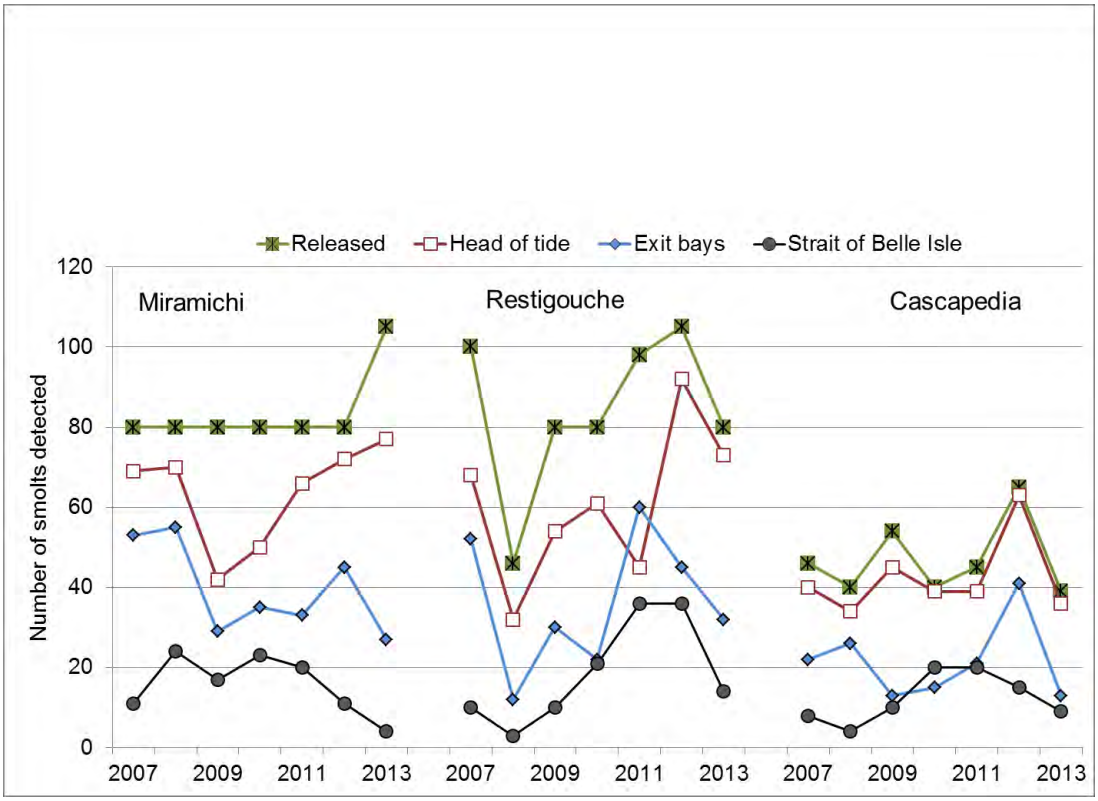

Figure 10.1.6.3 Number of smolts tagged and released from the Miramichi, Restigouche, and Cascapedia rivers, and subsequently detected at the head of tide, exit of bays, and Strait of Belle Isle arrays in 2007 to 2013.

		Conservation limit attainment and harvest potential				
		Very bad	Bad	Moderate	Good	Very good
Genetic integrity	Very bad					
	Bad					
	Moderate					
	Good					
	Very good					

Figure 10.1.6.5 The Norwegian quality norm classification system. Note: the poorest classification in any of the dimensions determines the final classification of the stock.

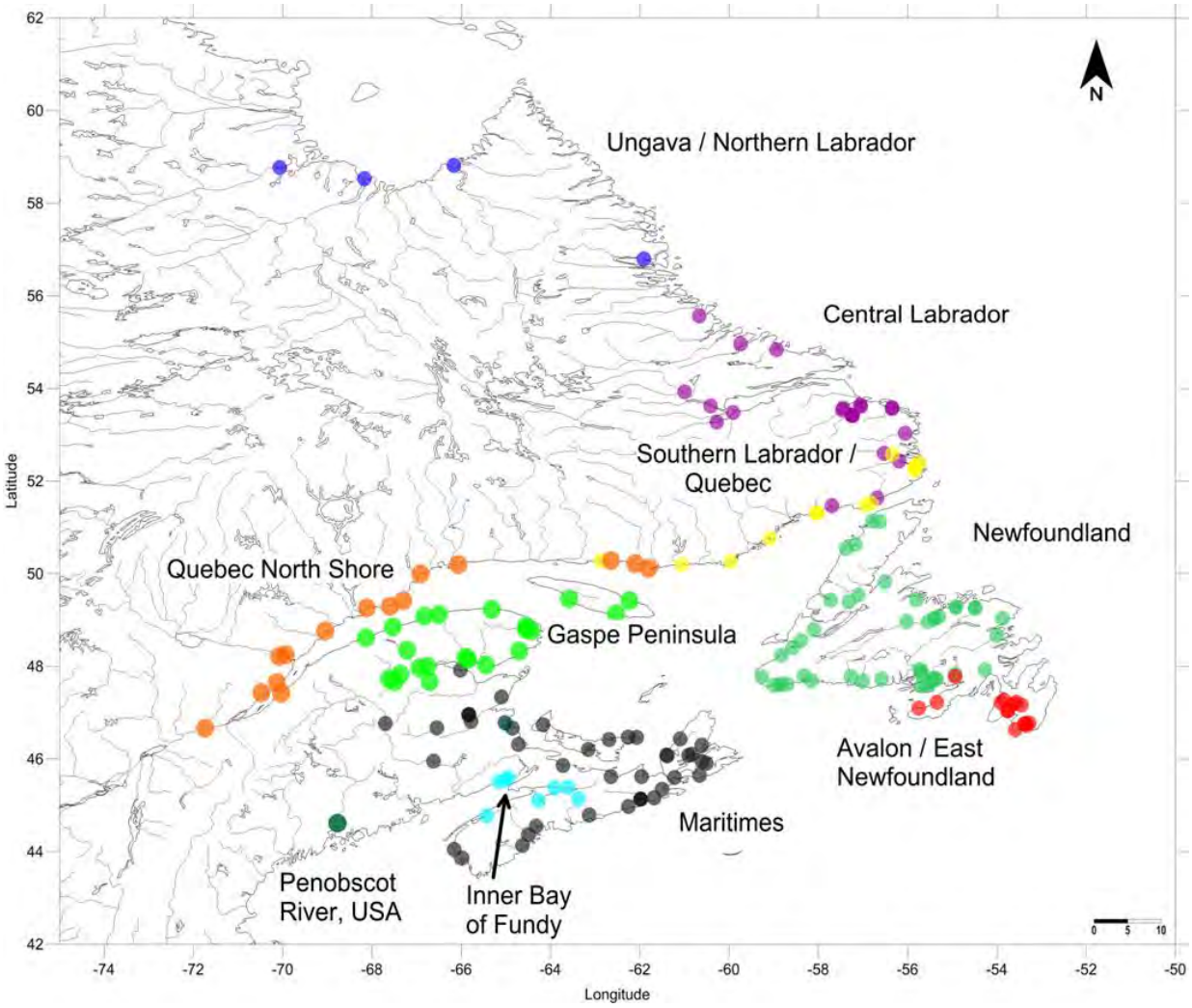

Figure 10.1.6.8 Map of baseline samples and 11 reporting groups used in the mixture and assignment analysis of Bradbury *et al.* (in press) for Labrador Aboriginal and subsistence mixed-stock fisheries.

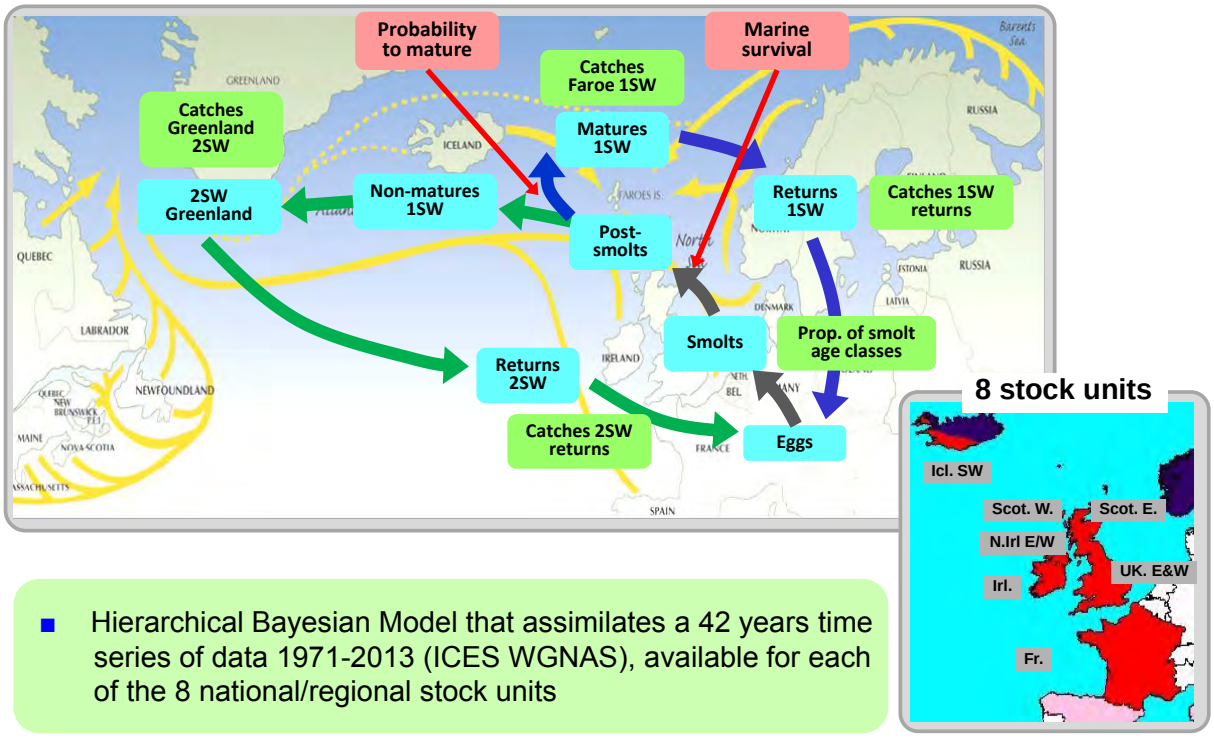

Figure 10.1.6.9.1 The integrated life-cycle model developed for each stock unit of the Southern NEAC stock complex. The eight stock units are: UK (Scotland) – east and west (2 units), UK (England & Wales; 1 unit), UK (N. Ireland) – east and west (2 units), Ireland (1 unit), France (1 unit), and south and west Iceland (1 unit). Variables in light blue are the main stages considered in the age- and stage-structured model. Arrows in blue and green are the fish that mature after the first and second winter at sea. Variables in light green indicate the main sources of data assimilated in the model. The post-smolt marine survival and the probability of maturing are the key parameters estimated in the model. The hierarchical structure provides a tool for separating out signals in demographic traits at different spatial scales: (1) a common trend shared by all stock units and, (2) fluctuations specific to each stock unit.

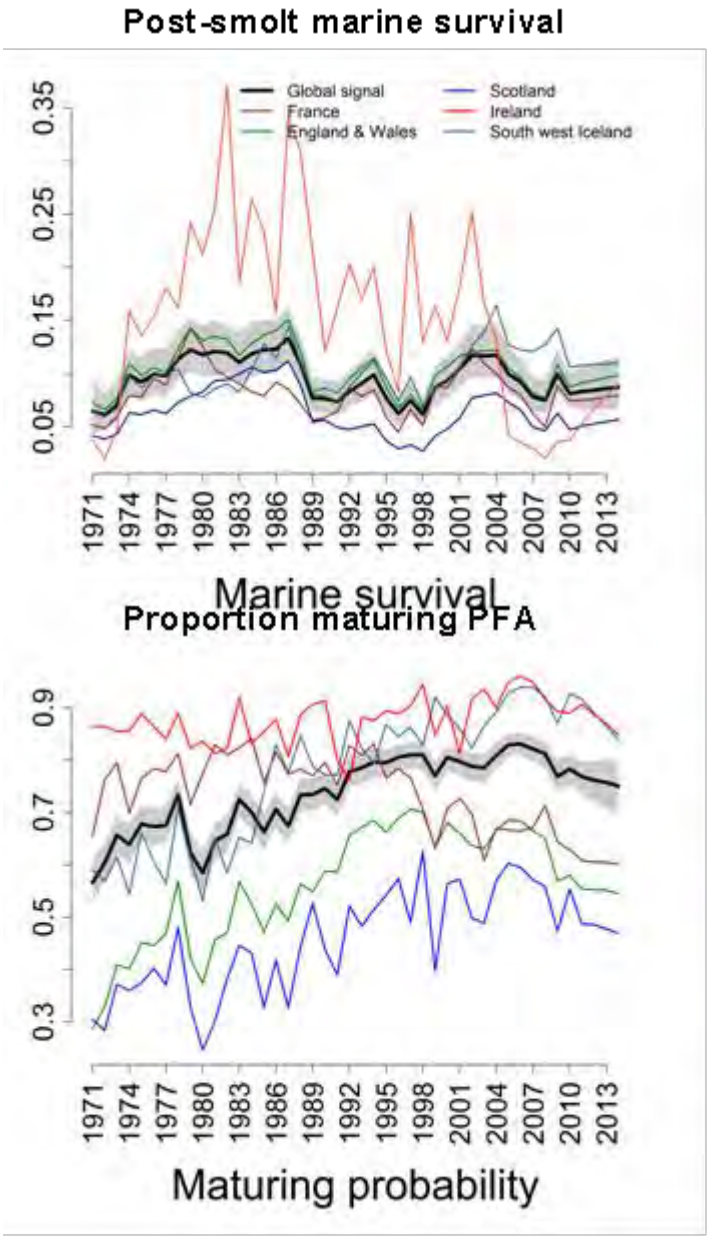

Figure 10.1.6.9.2 Time-series of estimates of post-smolt marine survival and probability to mature after the first winter at sea. The solid black line indicates the trend shared by all stock complexes together with the associated Bayesian uncertainty (95% Bayesian credible interval). Other solid lines are the medians of Bayesian posterior distributions. Even if the data are available at the scale of eight regions (see Figure 10.1.6.9.1), only five stock complexes have been considered regarding the spatial variability of the post-smolt marine survival and the probability of maturing after the first winter at sea: France, UK (England & Wales), Ireland + UK (N. Ireland), UK (Scotland), and Iceland-SW.

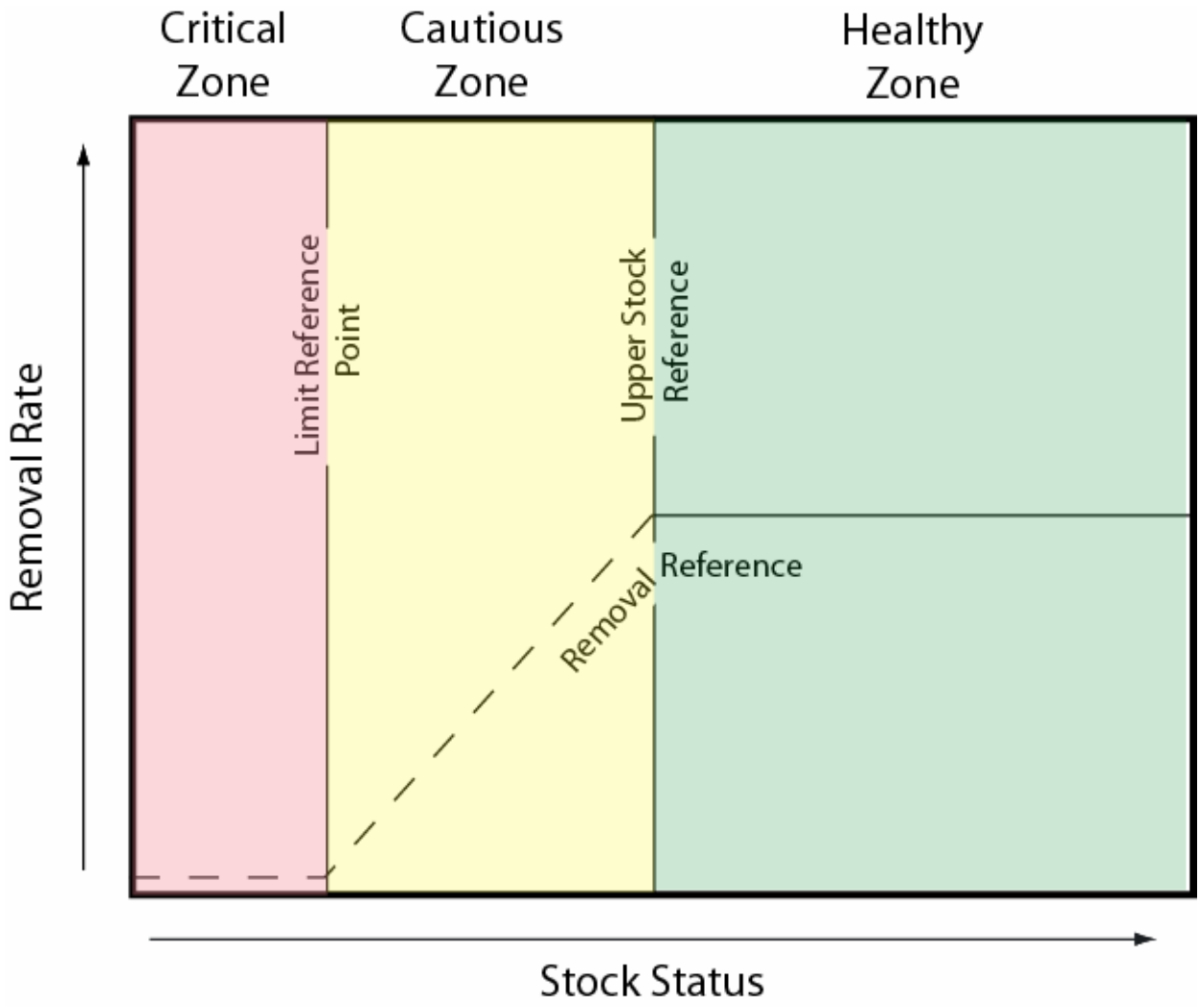

Figure 10.1.8.1 Canadian fisheries management framework consistent with the precautionary approach (Source: DFO, 2006).

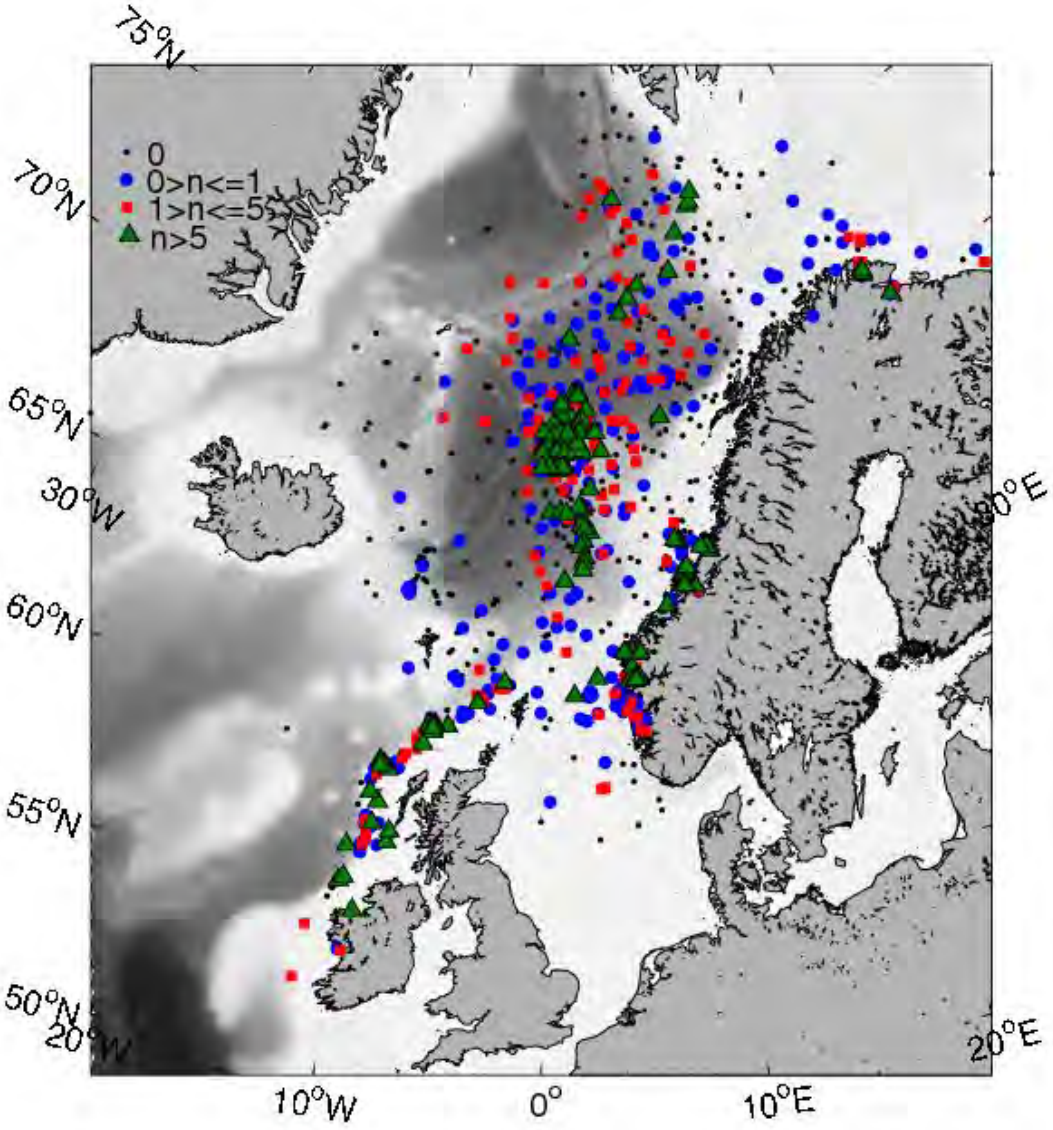

Figure 10.1.11.1 Distribution of Atlantic salmon post-smolts (number per hour of trawling). Data from the SALSEA–Merge project and earlier research cruises. Data are aggregated over a number of years from 1994 on, with the majority of fish being caught in the period May to August.

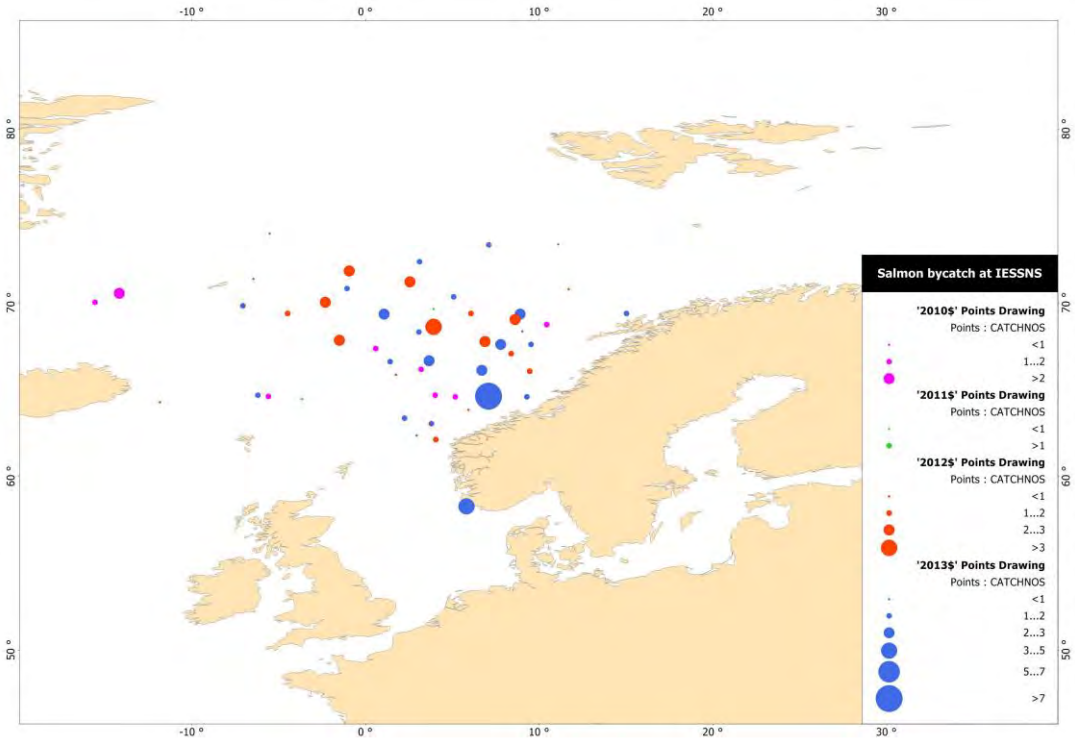

Figure 10.1.11.2 Salmon bycatch in the IESSNS surveys 2010–2013. The size of the bubbles show the number of salmon caught and the colour of the bubbles are coded by year, see legend on map.

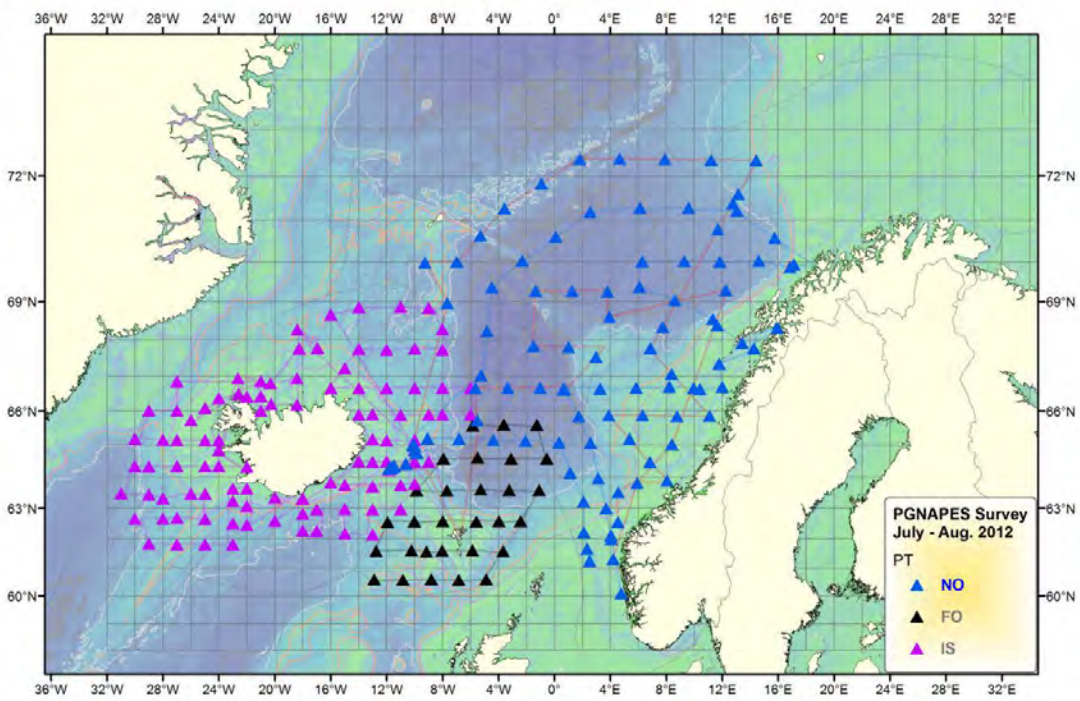

Figure 10.1.11.3 Cruise tracks and pelagic trawl stations shown for RV "G. O. Sars" in green, MV "Brennholm" (Norway) in blue, MV "Christian í Grótinum" (Faroe Islands) in black, and RV "Arni Fridriksson" (Iceland) in red within the covered areas of the Norwegian Sea and surrounding waters from 2 July to 10 August 2012.

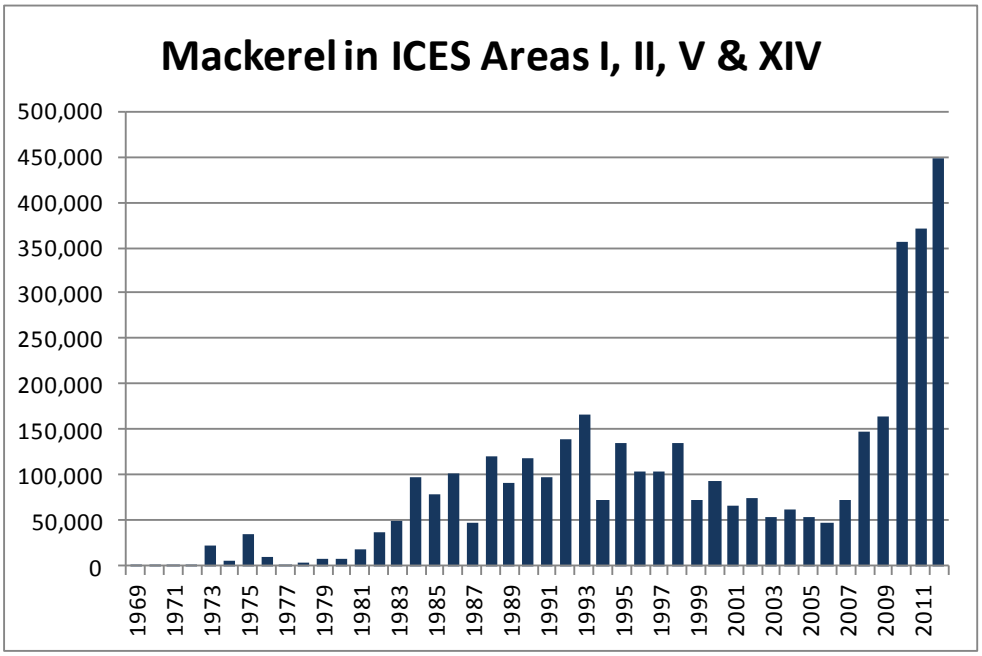

Figure 10.1.11.4 Reported mackerel catches (t) in ICES Subareas I, II, V, and XIV, 1969–2012 (from ICES, 2013b).

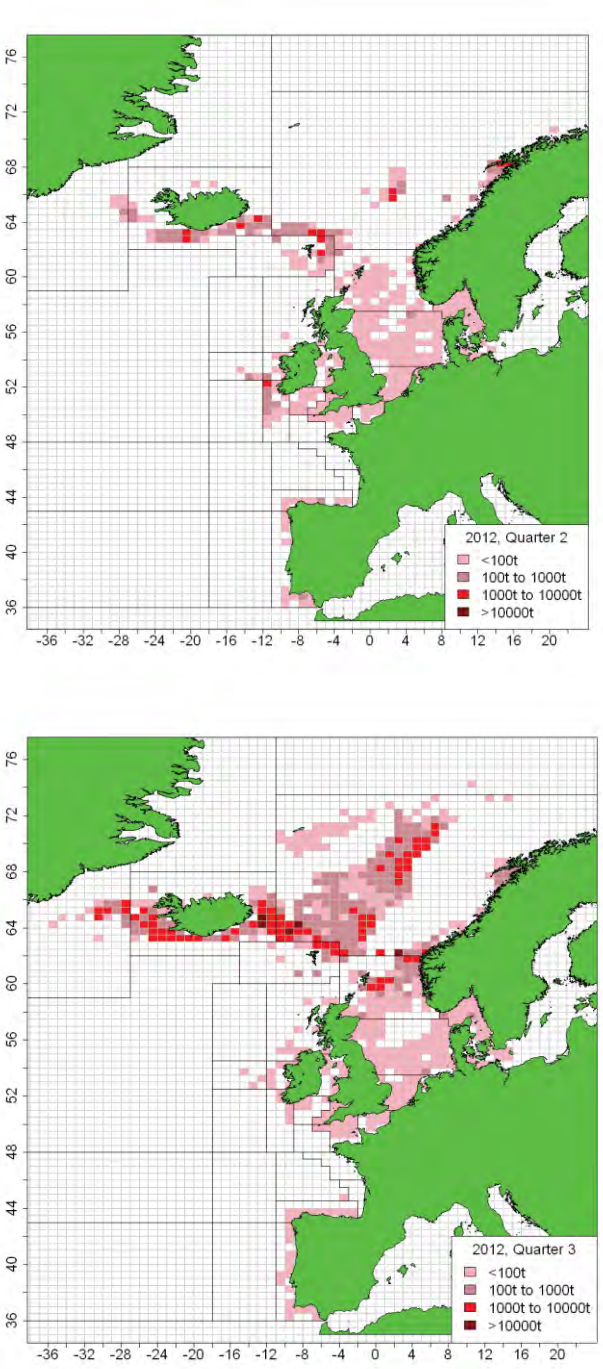

Figure 10.1.11.5 Distribution of mackerel catches in the Northeast Atlantic for 2012 for quarter 2 (upper panel) and quarter 3 (lower panel) (from ICES, 2013b).

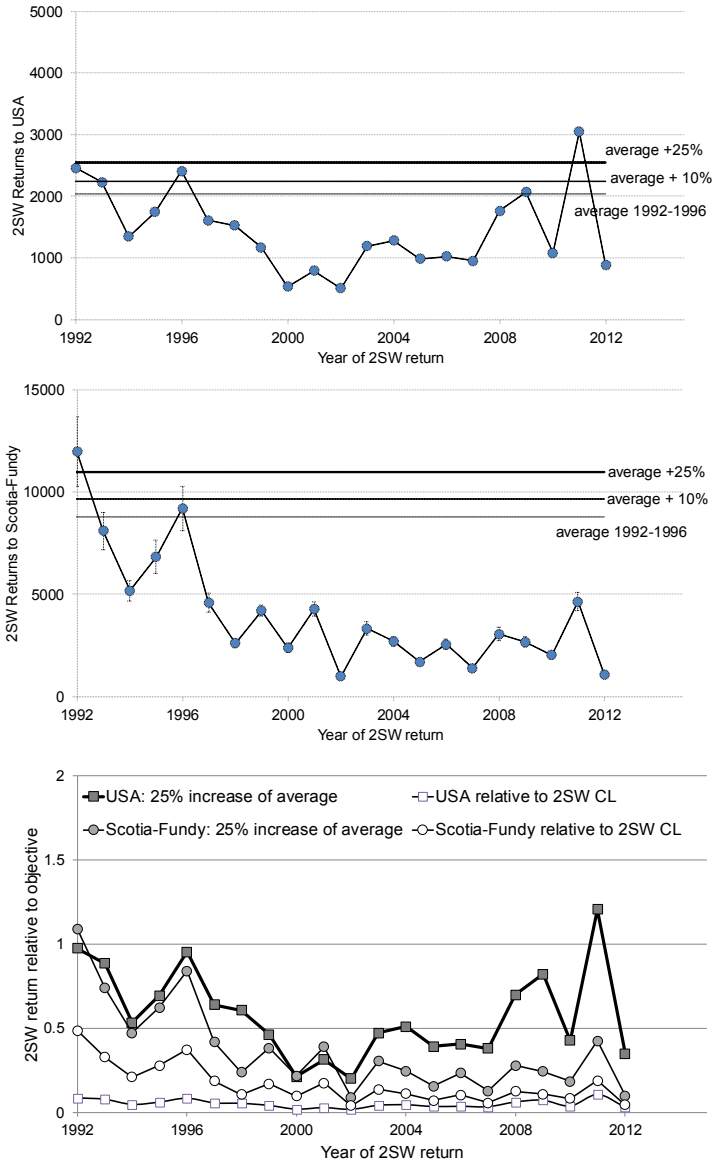

Figure 10.1.12.1 Median returns of 2SW salmon to the USA (upper panel) and Scotia–Fundy regions (middle panel, 5th to 95th percentile error bars) and the ratio of the returns to the management objective (25% increase from the average returns of 1992–1996, 2SW CL) for Scotia–Fundy and USA (lower panel) for 1992 to 2012.

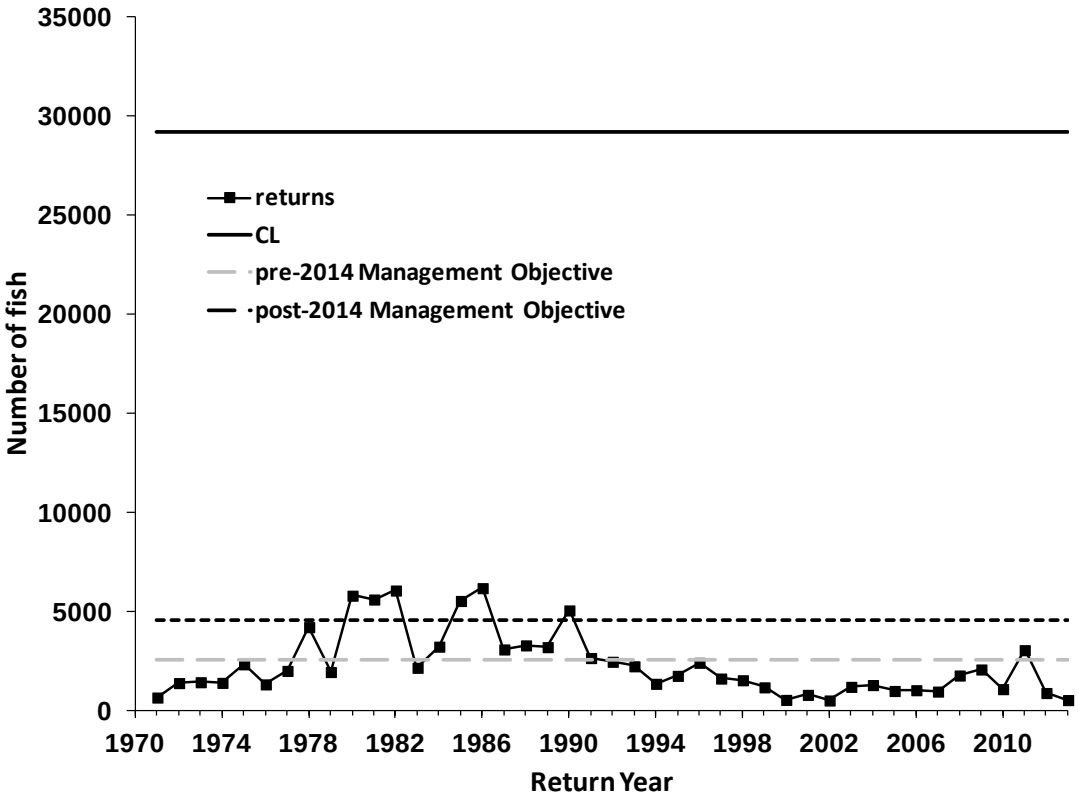

Figure 10.1.12.2 US returns (1971–2012) compared against three different management objectives: US stock complex CL (29 199), the existing Management Objective (2548), and the proposed new Management Objective (4549).

Table 10.1.5.1 Reported total nominal catches of salmon by country (in tonnes round fresh weight), 1960 to 2013 (2013 figures include provisional data).

	NAC Area			NEAC (N. Area)								NEAC (S. Area)						Faroes & Greenland				Total	Unreported catches	
Year	Canada	USA	St. P&M	Norway	Russia	Iceland		Sweden		Denmark	Finland	Ireland	UK (E & W)	UK (N.Irl.)	UK (Scotl.)	France	Spain	Faroes	East Grld.	West Grld.	Other	Reported Nominal	NASCO	International
	(1)			(2)	(3)	Wild	Ranch (4)	Wild	Ranch (15)			(5,6)		(6,7)		(8)	(9)	(10)		(11)	(12)	Catch	Areas (13)	waters (14)
1960	1,636	1	-	1,659	1,100	100	-	40	0	-	-	743	283	139	1,443	-	33	-	-	60	-	7,237	-	-
1961	1,583	1	-	1,533	790	127	-	27	0	-	-	707	232	132	1,185	-	20	-	-	127	-	6,464	-	-
1962	1,719	1	-	1,935	710	125	-	45	0	-	-	1,459	318	356	1,738	-	23	-	-	244	-	8,673	-	-
1963	1,861	1	-	1,786	480	145	-	23	0	-	-	1,458	325	306	1,725	-	28	-	-	466	-	8,604	-	-
1964	2,069	1	-	2,147	590	135	-	36	0	-	-	1,617	307	377	1,907	-	34	-	-	1,539	-	10,759	-	-
1965	2,116	1	-	2,000	590	133	-	40	0	-	-	1,457	320	281	1,593	-	42	-	-	861	-	9,434	-	-
1966	2,369	1	-	1,791	570	104	2	36	0	-	-	1,238	387	287	1,595	-	42	-	-	1,370	-	9,792	-	-
1967	2,863	1	-	1,980	883	144	2	25	0	-	-	1,463	420	449	2,117	-	43	-	-	1,601	-	11,991	-	-
1968	2,111	1	-	1,514	827	161	1	20	0	-	-	1,413	282	312	1,578	-	38	5	-	1,127	403	9,793	-	-
1969	2,202	1	-	1,383	360	131	2	22	0	-	-	1,730	377	267	1,955	-	54	7	-	2,210	893	11,594	-	-
1970	2,323	1	-	1,171	448	182	13	20	0	-	-	1,787	527	297	1,392	-	45	12	-	2,146	922	11,286	-	-
1971	1,992	1	-	1,207	417	196	8	17	1	-	-	1,639	426	234	1,421	-	16	-	-	2,689	471	10,735	-	-
1972	1,759	1	-	1,578	462	245	5	17	1	-	32	1,804	442	210	1,727	34	40	9	-	2,113	486	10,965	-	-
1973	2,434	3	-	1,726	772	148	8	22	1	-	50	1,930	450	182	2,006	12	24	28	-	2,341	533	12,670	-	-
1974	2,539	1	-	1,633	709	215	10	31	1	-	76	2,128	383	184	1,628	13	16	20	-	1,917	373	11,877	-	-
1975	2,485	2	-	1,537	811	145	21	26	0	-	76	2,216	447	164	1,621	25	27	28	-	2,030	475	12,136	-	-
1976	2,506	1	3	1,530	542	216	9	20	0	-	66	1,561	208	113	1,019	9	21	40	<1	1,175	289	9,327	-	-
1977	2,545	2	-	1,488	497	123	7	9	1	-	59	1,372	345	110	1,160	19	19	40	6	1,420	192	9,414	-	-
1978	1,545	4	-	1,050	476	285	6	10	0	-	37	1,230	349	148	1,323	20	32	37	8	984	138	7,682	-	-
1979	1,287	3	-	1,831	455	219	6	11	1	-	26	1,097	261	99	1,076	10	29	119	<0,5	1,395	193	8,118	-	-
1980	2,680	6	-	1,830	664	241	8	16	1	-	34	947	360	122	1,134	30	47	536	<0,5	1,194	277	10,127	-	-
1981	2,437	6	-	1,656	463	147	16	25	1	-	44	685	493	101	1,233	20	25	1,025	<0,5	1,264	313	9,954	-	-
1982	1,798	6	-	1,348	364	130	17	24	1	-	54	993	286	132	1,092	20	10	606	<0,5	1,077	437	8,395	-	-
1983	1,424	1	3	1,550	507	166	32	27	1	-	58	1,656	429	187	1,221	16	23	678	<0,5	310	466	8,755	-	-
1984	1,112	2	3	1,623	593	139	20	39	1	-	46	829	345	78	1,013	25	18	628	<0,5	297	101	6,912	-	-
1985	1,133	2	3	1,561	659	162	55	44	1	-	49	1,595	361	98	913	22	13	566	7	864	-	8,108	-	-
1986	1,559	2	3	1,598	608	232	59	52	2	-	37	1,730	430	109	1,271	28	27	530	19	960	-	9,255	315	-
1987	1,784	1	2	1,385	564	181	40	43	4	-	49	1,239	302	56	922	27	18	576	<0,5	966	-	8,159	2,788	-
1988	1,310	1	2	1,076	420	217	180	36	4	-	36	1,874	395	114	882	32	18	243	4	893	-	7,737	3,248	-
1989	1,139	2	2	905	364	141	136	25	4	-	52	1,079	296	142	895	14	7	364	-	337	-	5,904	2,277	-
1990	911	2	2	930	313	141	285	27	6	13	60	567	338	94	624	15	7	315	-	274	-	4,925	1,890	180-350

Table 10.1.5.1 continued.

Year	NAC Area			NEAC (N. Area)								NEAC (S. Area)						Faroes & Greenland				Total Reported Nominal Catch	Unreported catches	
	Canada (1)	USA	St. P&M	Norway (2)	Russia (3)	Iceland Wild	Iceland Ranch (4)	Sweden Wild	Sweden Ranch (15)	Denmark	Finland	Ireland (5,6)	UK (E & W)	UK (N.Irl.) (6,7)	UK (Scotl.)	France (8)	Spain (9)	Faroes (10)	East Grld.	West Grld. (11)	Other (12)		NASCO Areas (13)	International waters (14)
1991	711	1	1	876	215	129	346	34	4	3	70	404	200	55	462	13	11	95	4	472	-	4,106	1,682	25-100
1992	522	1	2	867	167	174	462	46	3	10	77	630	171	91	600	20	11	23	5	237	-	4,119	1,962	25-100
1993	373	1	3	923	139	157	499	44	12	9	70	541	248	83	547	16	8	23	-	-	-	3,696	1,644	25-100
1994	355	0	3	996	141	136	313	37	7	6	49	804	324	91	649	18	10	6	-	-	-	3,945	1,276	25-100
1995	260	0	1	839	128	146	303	28	9	3	48	790	295	83	588	10	9	5	2	83	-	3,629	1,060	-
1996	292	0	2	787	131	118	243	26	7	2	44	685	183	77	427	13	7	-	0	92	-	3,136	1,123	-
1997	229	0	2	630	111	97	59	15	4	1	45	570	142	93	296	8	4	-	1	58	-	2,364	827	-
1998	157	0	2	740	131	119	46	10	5	1	48	624	123	78	283	8	4	6	0	11	-	2,395	1,210	-
1999	152	0	2	811	103	111	35	11	5	1	62	515	150	53	199	11	6	0	0	19	-	2,247	1,032	-
2000	153	0	2	1,176	124	73	11	24	9	5	95	621	219	78	274	11	7	8	0	21	-	2,912	1,269	-
2001	148	0	2	1,267	114	74	14	25	7	6	126	730	184	53	251	11	13	0	0	43	-	3,069	1,180	-
2002	148	0	2	1,019	118	90	7	20	8	5	93	682	161	81	191	11	9	0	0	9	-	2,654	1,039	-
2003	141	0	3	1,071	107	99	11	15	10	4	78	551	89	56	192	13	9	0	0	9	-	2,457	847	-
2004	161	0	3	784	82	111	18	13	7	4	39	489	111	48	245	19	7	0	0	15	-	2,157	686	-
2005	139	0	3	888	82	129	21	9	6	8	47	422	97	52	215	11	13	0	0	15	-	2,156	700	-
2006	137	0	3	932	91	93	17	8	6	2	67	326	80	29	192	13	11	0	0	22	-	2,029	670	-
2007	112	0	2	767	63	93	36	6	10	3	58	85	67	30	171	11	9	0	0	25	-	1,548	475	-
2008	158	0	4	807	73	132	69	8	10	9	71	89	64	21	161	12	9	0	0	26	-	1,721	443	-
2009	126	0	3	595	71	126	44	7	10	8	36	68	54	17	121	4	2	0	0	26	-	1,318	343	-
2010	153	0	3	642	88	147	42	9	13	13	49	99	109	12	180	10	2	0	0	40	-	1,610	393	-
2011	179	0	4	696	89	98	30	20	19	13	44	87	136	10	159	11	7	0	0	28	-	1,629	421	-
2012	126	0	1	696	82	50	20	21	9	12	64	88	58	9	124	10	8	0	0	33	-	1,411	403	-
2013	136	0	5	475	78	125	29	10	4	11	46	103	83	6	123	11	4	0	0	47	-	1,296	306	-
Average 2008-2012	148	0	3	687	81	111	41	13	12	11	53	86	84	14	149	9	5	0	0	31	-	1,538	401	-
2003-2012	143	0	3	788	83	108	31	12	10	7	55	230	86	28	176	11	8	0	0	24	-	1,804	538	-

Key:

1. Includes estimates of some local sales, and, prior to 1984, by-catch.
2. Before 1966, sea trout and sea charr included (5% of total).
3. Figures from 1991 to 2000 do not include catches taken in the recreational (rod) fishery.
4 From 1990, catch includes fish ranched for both commercial and angling purposes.
5. Improved reporting of rod catches in 1994 and data derived from carcase tagging and log books from 2002.
6. Catch on River Foyle allocated 50% Ireland and 50% N. Ireland.
7. Angling catch (derived from carcase tagging and log books) first included in 2002.
8. Data for France include some unreported catches.
9. Weights estimated from mean weight of fish caught in Asturias (80-90% of Spanish catch).
10. Between 1991 & 1999, there was only a research fishery at Faroes. In 1997 & 1999 no fishery took place; the commercial fishery resumed in 2000, but has not operated since 2001.
11. Includes catches made in the West Greenland area by Norway, Faroes, Sweden and Denmark in 1965-1975.
12. Includes catches in Norwegian Sea by vessels from Denmark, Sweden, Germany, Norway and Finland.
13. No unreported catch estimate available for Canada in 2007 and 2008.
    Data for Canada in 2009 and 2010 are incomplete.
    No unreported catch estimate available for Russia since 2008.
14. Estimates refer to season ending in given year.
15. Catches from hatchery-reared smolts released under programmes to mitigate for hydropower development schemes; returning fish unable to spawn in the wild and exploited heavily.

Table 10.1.5.2 Estimates of unreported catches by various methods, in tonnes by country within national EEZs in the Northeast Atlantic, North American, and West Greenland Commissions of NASCO, 2013.

Commission Area	Country	Unreported Catch t	Unreported as % of Total North Atlantic Catch (Unreported + Reported)	Unreported as % of Total National Catch (Unreported + Reported)
NEAC	Denmark	6	0.4	36
NEAC	Finland	7	0.4	13
NEAC	Iceland	12	0.8	7
NEAC	Ireland	10	0.6	9
NEAC	Norway	204	12.7	30
NEAC	Sweden	2	0.1	9
NEAC	France	2	0.1	12
NEAC	UK (E & W)	14	0.9	14
NEAC	UK (N.Ireland)	0	0.0	5
NEAC	UK (Scotland)	16	1.0	12
NAC	USA	0	0.0	0
NAC	Canada	24	1.5	15
WGC	West Greenland	10	0.6	18
	Total Unreported Catch *	306	19.1	
	Total Reported Catch of North Atlantic salmon	1,296		

* No unreported catch estimate available for Russia in 2013.
Unreported catch estimates not provided for Spain & St. Pierre et Miquelon

Table 10.1.5.3 Numbers of fish caught and released in rod fisheries along with the % of the total rod catch (released + retained) for countries in the North Atlantic where records are available, 1991–2013. Figures for 2013 are provisional.

Year	Canada [4]		USA		Iceland		Russia [1]		UK (E&W)		UK (Scotland)		Ireland		UK (N Ireland) [2]		Denmark		Norway [3]	
	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch	Total	% of total rod catch
1991	22,167	28	239	50			3,211	51												
1992	37,803	29	407	67			10,120	73												
1993	44,803	36	507	77			11,246	82	1,448	10										
1994	52,887	43	249	95			12,056	83	3,227	13	6,595	8								
1995	46,029	46	370	100			11,904	84	3,189	20	12,151	14								
1996	52,166	41	542	100	669	2	10,745	73	3,428	20	10,413	15								
1997	50,009	50	333	100	1,558	5	14,823	87	3,132	24	10,965	18								
1998	56,289	53	273	100	2,826	7	12,776	81	4,378	30	13,464	18								
1999	48,720	50	211	100	3,055	10	11,450	77	4,382	42	14,846	28								
2000	64,482	56	0	-	2,918	11	12,914	74	7,470	42	21,072	32								
2001	59,387	55	0	-	3,611	12	16,945	76	6,143	43	27,724	38								
2002	50,924	52	0	-	5,985	18	25,248	80	7,658	50	24,058	42								
2003	53,645	55	0	-	5,361	16	33,862	81	6,425	56	29,170	55								
2004	62,316	57	0	-	7,362	16	24,679	76	13,211	48	46,279	50					255	19		
2005	63,005	62	0	-	9,224	17	23,592	87	11,983	56	46,165	55	2,553	12			606	27		
2006	60,486	62	1	100	8,735	19	33,380	82	10,959	56	47,669	55	5,409	22	302	18	794	65		
2007	41,192	58	3	100	9,691	18	44,341	90	10,917	55	55,660	61	13,125	40	470	16	959	57		
2008	54,887	53	61	100	17,178	20	41,881	86	13,035	55	53,347	62	13,312	37	648	20	2,033	71	5,512	5
2009	52,151	59	0	-	17,514	24			9,096	58	48,418	67	10,265	37	847	21	1,709	53	6,696	6
2010	55,895	53	0	-	21,476	29	14,585	56	15,012	60	78,304	70	15,136	40	823	25	2,512	60	15,041	12
2011	71,358	57	0	-	18,593	32			14,406	62	64,669	73	12,753	39	1,197	36	2,153	55	14,303	12
2012	43,287	57	0	-	9,752	28	4,743	43	11,952	65	63,331	74	11,891	35	5,014	59	2,153	55	18,611	14
2013	59,207	61	0	-	20,675	30	3,732	39	9,302	69	55,243	80	6,993	30	1,507	64	1,932	57	15,953	15
5-yr mean 2008-2012	55,515	56			16,903	26			12,700	60	61,614	69	12,671	38	1,706	32	2,112	59	12,033	10
% change on 5-year mean	+7	+9			+22	+14			-27	+15	-10	+16	-45	-21	-12	+99	-9	-3	+33	+53

Key:

[1] Since 2009 data are either unavailable or incomplete, however catch-and-release is understood to have remained at similar high levels as before.

[2] Data for 2006-2009 is for the DCAL area only; the figures from 2010 are a total for UK (N.Ireland).

[3] The statistics were collected on a voluntary basis, the numbers reported must be viewed as a minimum.

[4] Released fish in the kelt fishery of New Brunswick are not included in the totals for Canada.

Table 10.1.8.1 Overview of Atlantic salmon stock status categories used by different countries and organizations.

Canadian categories linked to reference points (as used in NASCO IP)	
Category 1	Rivers below 50% of their Conservation Limit (CL).
Category 2	Rivers between 50% and 100% of their CL.
Category 3	Rivers at or over 100% of their CL.
Canadian reference points for application of the precautionary approach (in development)	
Reference points (RP):	
Limit RP	The stock level below which productivity is sufficiently impaired to cause serious harm to the resource but above the level where the risk of extinction becomes a concern.
Upper stock RP	The stock level threshold below which the removal rate is reduced.
Zones:	
Critical zone	Below the Upper stock RP: Management actions must promote stock growth. Removals by all human sources must be kept to the lowest possible level.
Cautious zone	Between the Upper stock RP and the Limit RP: Management actions should promote stock rebuilding towards the Healthy zone. The removal rate should not exceed the Removal reference.
Healthy zone	Above the Upper stock RP: The removal rate should not exceed the Removal reference.
Stock status classification system in Ireland (as used in NASCO IP)	
> 75% probability of meeting / exceeding CL	Surplus above the CL may be used for a harvest fishery (angling and commercial).
65–75% probability of meeting CL	Catch and release fishing may be permitted.
< 65% probability of meeting CL	No fishery is advised.
Stock status classification system in Norway (as used in NASCO IP)	
Critical or lost	Stocks regarded as lost owing to low spawner numbers, or where genetic integrity of the original population is, or has a high probability of becoming lost owing to persistent extremely high levels of escaped farmed salmon (estimated mean proportion of escaped farmed salmon above 35% in the period 1989–2012).
Very bad	Stocks threatened with loss if the negative influence continues or increases. For example rivers infested with *Gyrodactylus salaris* or populations where genetic integrity can be lost owing to persistent very high levels of escaped farmed salmon (estimated mean proportion of escaped farmed salmon 20–35% in the period 1989–2012).
Bad	Stocks are vulnerable or may become threatened with loss if the negative influence continues or increases. Also applies to rivers with persistently high levels of escaped farmed salmon (estimated mean proportion of escaped farmed salmon 8.7–20 % in the period 1989–2012).
Moderately influenced	Stocks with significantly reduced harvestable surplus, reduced production of juveniles (>10%) and/or too small spawning stocks, or rivers with persistently moderate levels of escaped farmed salmon (estimated proportion of escaped farmed salmon 3.3–8.7 % in the period 1989–2012).
Good	Stocks in the lower risk category or with naturally small populations, or rivers with low levels of escaped farmed salmon (1.6–3.3 % in the period 1989–2012).
Very good	Large stocks. Escaped farmed salmon not observed or observed at very low levels (less than 1.5% in the period 1989–2012).
Stock status classification system in Sweden (as used in NASCO IP)	
Good status	Rivers with averages of 80% or more of expected juvenile salmon density (based on habitat variables, etc) are considered to be of good status.
Intermediate status	Rivers with an average of 50–79% of expected juvenile salmon density are labelled intermediate status.
Poor status	Rivers below 50% of expected juvenile salmon density are labelled poor status.
Stock status classification system in UK (England & Wales) (as used in NASCO IP)	
Not at risk	>95% probability of meeting the Management Objective – i.e. of the stock being above the conservation limit in 4 years out of 5, on average.
Probably not at risk	< 95% but >50% probability of meeting the Management Objective.
Probably at risk	< 50% but >5% probability of meeting the Management Objective.
At risk	< 5% probability of meeting the Management Objective. Also includes recovering rivers that do not yet have CLs.

Stock status classification system in UK (N. Ireland) (as used in NASCO IP)

Category 1	All catchment / tributaries attaining CL and management targets.
Category 2	All catchment / tributaries partially attaining management targets.
Category 3	All catchment / tributaries failing to attain management targets.
Category 4	All catchment / tributaries where stock status is unknown.

Stock status classification system in USA (as used in NASCO IP)

Endangered	The Gulf of Maine Distinct Population Segment includes all anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River. This represents roughly 14 major salmon rivers.
Restoration	Historically, salmon occurred in most major watersheds south of the Androscoggin River (Maine) to the Housatonic River in the south (Connecticut). Currently, there are programs to restore self-sustained runs of salmon to three rivers and a legacy programme in one river (the Connecticut).

ICES stock status categories – used by all NASCO jurisdictions

The following precautionary reference points are used by ICES for the provision of catch advice for Atlantic salmon.

Full reproductive capacity	The lower bound of the 90% confidence interval of the current estimate of spawners is above the CL.
At risk of suffering reduced reproductive capacity	The lower bound of the confidence interval is below the CL, but the midpoint is above.
Suffering reduced reproductive capacity	The midpoint of the confidence interval is below the CL.

Table 10.1.8.2 Overview of species categories potentially applicable to Atlantic salmon.

Canadian Species at risk classification (COSEWIC)	
The Committee on the Status of Endangered Species in Canada (COSEWIC) identifies species at risk through processes put in place under the federal *Species at Risk Act* (SARA) and similar provincial laws (http://www.cosewic.gc.ca/eng/sct0/assessment_process_e.cfm#tbl2).	
Extinct (X)	A species that no longer exists.
Extirpated (XT)	A species that no longer exists in the wild in Canada, but exists elsewhere.
Endangered (E)	A species facing imminent extirpation or extinction.
Threatened (T)	A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern (SC)	A species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.
Not At Risk (NAR)	A species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Texel–Faial classification	
The Texel–Faial classification is used by OSPAR and applied to regional assemblages rather than individual stocks: http://www.ospar.org/documents/dbase/decrecs/agreements/03-13e_Texel_Faial%20criteria.doc	
Global Importance	Global importance of the OSPAR area for a species. Importance on a global scale, of the OSPAR Area, for the species is when a high proportion of a species at any time of the life cycle occurs in the OSPAR Area.
Regional importance	Importance within the OSPAR Area, of the regions for the species where a high proportion of the total population of a species within the OSPAR Area for any part of its life cycle is restricted to a small number of locations in the OSPAR Area.
Rarity	A species is rare if the total population size is small. In case of a species that is sessile or of restricted mobility at any time of its life-cycle, a species is rare if it occurs in a limited number of locations in the OSPAR Area, and in relatively low numbers. In case of a highly mobile species, the total population size will determine rarity.
Sensitivity	A species is "very sensitive" when: (a) it has very low resistance (that is, it is very easily adversely affected by human activity); and/or (b) very low resilience (that is, after an adverse effect from human activity, recovery is likely to be achieved only over a very long period, or is likely not to be achieved at all). A species is "sensitive" when: (a) it has low resistance (that is, it is easily adversely affected by human activity); and/or (b) it has low resilience (that is, after an adverse effect from human activity, recovery is likely to be achieved only over a long period).
Keystone species	A species which has a controlling influence on a community.
Decline	Means an observed or indicated significant decline in numbers, extent or quality (quality refers to life history parameters). The decline may be historical, recent, or current. 'Significant' need not be in a statistical sense.

European Union Habitats Directive	
Annex II	Animal and plant species of community interest whose conservation requires the designation of special areas of conservation.
Annex IV	Animal and plant species of community interest in need of strict protection.
Annex V	Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures.

Convention on the Conservation of European Wildlife and Natural Resources (the Bern Convention)	
Appendix/Annex III	Contains species that are in need of protection but may be hunted or otherwise exploited in exceptional instances.

The World Conservation Union (IUCN) – (Red Data Books/Lists and Categories)	
Extinct (EX)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historical range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

Extinct in the wild (EW)	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historical range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Critically endangered (CR)	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.
Near threatened (NT) -	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least concern (LC)	A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data deficient (DD)	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.
Not evaluated (NE)	A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.

Table 10.1.8.3 Summary assessment of *S. salar* against the Texel–Faial criteria – OSPAR review 2010.

Criterion	Comments	Evaluation
Global Importance	The results of a river-by-river assessment of the status of the Atlantic salmon in Europe and North America concludes that nearly 90% of the known healthy populations of wild salmon are found in Norway, Iceland, Scotland and Ireland (WWF, 2001). This makes the OSPAR maritime area of global importance for this species.	Qualifies
Regional Importance	In Europe, the historical range of the Atlantic salmon extends from Iceland in the northwest (66°N), to the Barents and Kara Seas in the north-east (70°N, 83°E), and southward along the Atlantic coast, with only minor gaps, to the Minho river, the species present southern limit and boundary between Spain in Portugal (42°N). However, native wild stocks are no longer found in the Elbe and the Rhine (where a successful restoration program is now in progress), or in many rivers draining into the Baltic Sea, which previously had abundant salmon runs. In recent years many Baltic salmon stocks have recovered in response to a lowered exploitation. The species is also severely depressed or extinct in the rivers of France and Spain. As a result salmon has disappeared from large European basins and the species range has generally contracted and fragmented over the last century and a half due to anthropogenic effects (Stradmeyer, 2007). However, there have been recent improvements linked to improved water management with salmon returning for example to the Seine (Perrier et al., 2010).	Qualifies
Rarity	**According to the Texel–Faial Criteria, the total population size determines the rarity of a highly mobile species such as the Atlantic salmon. Despite the fact that the stock is close to its historical minimum in most of the distribution area, Atlantic salmon are still present in many areas.**	Does not qualify
Sensitivity	The Atlantic salmon is known to be highly sensitive to water quality (estuarine and freshwater zones) particularly in relation to eutrophication, chemical contaminants increased sedimentation and temperature (climate change) (OSPAR, 2006). both at the adult stage when migrating up river and at the juvenile stage when growing in nursery zones.	Qualifies – very sensitive
Keystone species	Atlantic Salmon is a cultural icon throughout its North Atlantic range; it is the focus of probably the World's highest profile recreational fishery and is the basis for one of the World's largest aquaculture industries (Stradmeyer, 2007). It is also an indicator of healthy aquatic environments (NASCO website).	Qualifies
Decline	Records of the numbers of salmon returning to monitored rivers indicate that, despite drastic reductions in directed fisheries, there has been at least a threefold reduction in marine survival rates since the early 1970s. The reduction in the numbers returning has been accompanied by a marked decline in the proportion of multi sea-winter fish. Such a change in an age distribution is a classic symptom of a sustained increase in mortality rate, a conclusion which is supported by the current relative scarcity of repeat spawners in the returning populations (IASRB SAG(09)9). Furthermore, changes in age composition result in a shortening of the life cycle and a more precocious sexual maturation age which could be an adaptive strategy to more drastic environmental conditions (Baglinière, pers.comm.). The status of salmon populations in both North America and Europe show a clear geographical pattern, with most populations in the southern areas in severe condition; in the north the populations are generally stable while at intermediate latitudes, populations are declining. While many of the problems could be attributed to the construction of dams, pollution (including acid rain), and total dewatering of streams, along with overfishing, and recently, changing ocean conditions and intensive aquaculture, many declines cannot be fully explained (ICES, 2007).	Qualifies – severely declined

Table 10.1.8.4 Compilation of stock/river status categories compared with the NASCO Rivers Database categories. As categories are defined in different ways, direct alignment is not possible. However, broad comparisons are presented and a tentative categorization based on attainment of CLs or other stock indicators is provided in the final two columns.

NASCO criteria	Canada PA	Canada Imp. Plan	Ireland	Norway	Sweden	UK (E&W)	UK (N. Ire)	ICES		CL or other stock indicator	Tentative categories linked with CL or other stock indicator
Lost				Critical or lost						0% of CL	Lost
										<25% of CL	Critical condition
				Very Bad						>25% but <50% of CL	Threatened with loss
Threatened with loss	Critical zone	< 50% of CL		Bad	Bad status	At risk		Suffering reduced reproductive capacity.			
			Closure <65% CL								
				Moderately influenced		Probably at risk	Failing to attain MTs	At risk of suffering reduced reproductive capacity		>50% but <75%	Not threatened with loss but actions should be taken to stop or reduce exploitation and rebuild
	Cautious zone	50% to 100% of CL									
			C&R 65% to 100% CL		Intermediate status	Probably not at risk	Partially attaining targets			>75% but<100%	Not threatened with loss, but effort should be managed with caution or C&R only
Not threatened with loss	Healthy zone	> 100% of CL	Harvest >100 % CL	Good	Good status	Not at risk	Attaining CLs and MTs	Full reproductive capacity		approx 100 %	Not threatened with loss; effort or harvest fisheries should be managed with caution
				Very Good						>100%	Not Threatened - harvest can proceed in line with identified surplus
Unknown						Rivers with no CLs	Stock status unknown				
Not present but potential											
Restored											
Maintained											

Table 10.1.8.5 Compilation of species status categories compared with the NASCO Rivers Database categories. As categories are defined in different ways, direct alignment is not always possible. However, relative alignments are suggested.

NASCO criteria	Canada COSEWIC	USA ESA	IUCN	TEXEL FAIAL	EU Habitats Directive	Bern Convention
	Extinct (X)		Extinct (EX)			
Lost	Extirpated (XT)		Extinct in the wild (EW)			
Restored		Restoration				
			Critically endangered (CR)			
	Endangered (E)	Endangered	Endangered (EN)		Annex IV - Species needing strict protection	
Threatened with loss	Threatened (T)		Vulnerable (VU)	Decline	Annex V - Species where exploitation needs to be controlled	Annex III
	Special Concern (SC)		Near threatened (NT)	Very sensitive		
				Rare		
Not threatened with loss	Not At Risk (NAR)		Least Concern (LC)	Regional importance	Annex II - species needing SACs	
				Global importance:		
				Keynote		
			Data Deficient (DD)			
Unknown	Data Deficient (DD)		Not evaluated (NE)			
Not present but potential						
Maintained						

Table 10.1.10.1 Summary of Atlantic salmon tagged and marked in 2013.

		Primary Tag or Mark				
Country	Origin	Microtag	External mark[2]	Adipose clip	Other Internal[1]	Total
Canada	Hatchery Adult	0	1,488	68	268	1,824
	Hatchery Juvenile	0	152	106,310	30	106,492
	Wild Adult	0	2,568	0	64	2,632
	Wild Juvenile	0	10,677	9,286	457	20,420
	Total	**0**	**14,885**	**115,664**	**819**	**131,368**
Denmark	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	188,450		169,600	0	358,050
	Wild Adult	0	0	0	0	0
	Wild Juvenile	0	0	0	0	0
	Total	**188,450**	**0**	**169,600**	**0**	**358,050**
France	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile[3]	0	360	534,500	0	534,860
	Wild Adult[3]	2,568	0	0	413	2,981
	Wild Juvenile	183	0	0	0	183
	Total	**2,751**	**360**	**534,500**	**413**	**538,024**
Iceland	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	43,329	0	0	0	43,329
	Wild Adult		255	0	0	255
	Wild Juvenile	4,928	0	0	0	4,928
	Total	**48,257**	**255**	**0**	**0**	**48,512**
Ireland	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	223,463	0	7,459	0	230,922
	Wild Adult		0	0	0	0
	Wild Juvenile		0	0	0	0
	Total	**223,463**	**0**	**7,459**	**0**	**230,922**
Norway	Hatchery Adult	0	9	0	0	9
	Hatchery Juvenile	55,957	9,879	0	0	65,836
	Wild Adult	0	325	0	0	325
	Wild Juvenile	1,162	1,501	0	0	2,663
	Total	**57,119**	**11,714**	**0**	**0**	**68,833**
Russia	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	0		1,509,868	0	1,509,868
	Wild Adult	0	1,406		0	1,406
	Wild Juvenile	0	0	0	0	0
	Total	**0**	**1,406**	**1,509,868**	**0**	**1,511,274**
Spain	Hatchery Adult	0	0	0	0	**0**
	Hatchery Juvenile	0	65,065	0	0	**65,065**
	Wild Adult	0	0	0	0	**0**
	Wild Juvenile	0	0	0	0	**0**
	Total	**0**	**65,065**	**0**	**0**	**65,065**
Sweden	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile[4]	0	4000	155,544	0	159,544
	Wild Adult	0	0		0	0
	Wild Juvenile	0	500		0	500
	Total	**0**	**4,500**	**155,544**	**0**	**160,044**
UK (England &	Hatchery Adult	0	0	0	0	0
Wales)	Hatchery Juvenile	0	0	119,125	0	119,125
	Wild Adult	0	276	0	103	379
	Wild Juvenile	7,942	0	10,733	0	18,675
	Total	**7,942**	**276**	**129,858**	**103**	**138,179**
UK (N. Ireland)	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	20,237	0	60,384	0	80,621
	Wild Adult	0	0	0	0	0
	Wild Juvenile		0	0	0	0
	Total	**20,237**	**0**	**60,384**	**0**	**80,621**
UK (Scotland)	Hatchery Adult	0	0	0	0	0
	Hatchery Juvenile	0	0	102,863	0	102,863
	Wild Adult	0	462	0	99	561
	Wild Juvenile	1989	0	0	3,489	5,478
	Total	**1,989**	**462**	**102,863**	**3,588**	**108,902**
USA	Hatchery Adult	0	2,668	0	1,150	3,818
	Hatchery Juvenile	0	0	111,886	1,493	113,379
	Wild Adult	0	0	0	0	0
	Wild Juvenile	0	0	0	175	175
	Total	**0**	**2,668**	**111,886**	**2,818**	**117,372**
All Countries	Hatchery Adult	0	4,165	68	1,418	5,651
	Hatchery Juvenile	531,436	79,456	2,877,539	1,523	3,489,954
	Wild Adult	2,568	5,292	0	679	8,539
	Wild Juvenile	16,204	12,678	20,019	4,121	53,022
	Total	**550,208**	**101,591**	**2,897,626**	**7,741**	**3,557,166**

[1] Includes other internal tags (PIT, ultrasonic, radio, DST, etc.)
[2] Includes Carlin, spaghetti, streamers, VIE etc.
[3] Includes external dye mark.
[4] The 4000 external tagged hatchery juveiles also adipose finclipped

Table 10.1.11.1 Tonnes of mackerel and herring, number of salmon caught, and number of salmon per 1000 t mackerel and herring from landings where salmon was reported as bycatch, 2010–2013.

Year	Tonnes mackerel and herring	No salmon/ 1000 t mackerel and herring	No salmon caught	Additional salmon samples	Total number of samples
2010	35403	4.8	169	1	170
2011	40048	6.2	249	8	257
2012	8536	5.6	48	1	49
2013	23907	4.7	112	2	114
Total	107894	5.4	578	12	590

Table 10.1.11.2 Tonnes of mackerel and herring screened on-board fishing vessels by the Icelandic Directorate of Fishery inspectors, proportion mackerel in catches, and number of salmon per 1000 t mackerel and herring, 2010–2013.

Year	Tonnes Screened	Proportions Mackerel	No salmon/ 1000 t mackerel and herring	No salmon
2010				
2011	24562	67	5.5	134
2012	28813	62	0.0	0
2013	17138		0.9	15
Total	70513		2.1	149

Table 10.1.11.3 Number and percentage of salmon caught as bycatch in mackerel and herring fisheries in Iceland 2010–2013, divided by length group into salmon life stages.

Year	Post-smolt 20-49 cm Number	%	1SW 50-69 cm Number	%	MSW 70-100 cm Number	%	Total Number	%	No length data
2010	16	9.4	125	73.5	29	17.1	170	100	0
2011	47	18.6	156	61.7	50	19.8	253	100	4
2012	3	6.3	37	77.1	8	16.7	48	100	1
2013	21	18.4	85	74.6	8	7.0	114	100	10
Total	87	14.9	403	68.9	95	16.2	585		15

Table 10.1.11.4 Total catches screened (mostly mackerel) during the IESSNS surveys, number of salmon caught, and number of salmon per 1000 t of catch. The number of salmon per 1000 t in the row "Total" is the weighted average of the years.

Year	Total catch (t)	No. salmon	No. salmon/1000 t	Average length (cm)
2010	212.6	10	47.0	54.7
2011	45.0	2	44.4	66.2
2012	214.9	26	121.0	45.1
2013	288.4	40	138.7	33.8
Total	760.9	78	102.5	

Table 10.1.12.1 The probability of meeting each management objective individually and of meeting all seven objectives simultaneously for fishing years 2012–2014, assuming zero harvest under the existing and the proposed new US management objectives. The original assessment was reported by ICES (2012c) and the updated assessment was based on a re-analysis of catch options with the 2012 input data and the proposed new USA management objective.

	LAB	NFLD	QC	GULF	SF	US	SNEAC MSW	Simultaneous
Existing Management Objective for US stock complex								
2012	0.45	0.86	0.71	0.50	0.15	0.89	0.92	0.05
2013	0.48	0.78	0.73	0.50	0.25	0.75	0.86	0.07
2014	0.56	0.78	0.75	0.55	0.20	0.86	0.87	0.08
Proposed new Management Objective for US stock complex								
2012	0.45	0.86	0.71	0.50	0.15	0.66	0.92	0.05
2013	0.48	0.78	0.73	0.50	0.25	0.50	0.86	0.06
2014	0.56	0.78	0.75	0.55	0.20	0.70	0.87	0.07

Annex 1 Glossary of acronyms and abbreviations

1SW *(One-Sea-Winter).* Maiden adult salmon that has spent one winter at sea.
2SW *(Two-Sea-Winter).* Maiden adult salmon that has spent two winters at sea.
ACOM *(Advisory Committee)* of ICES. The Committee works on the basis of scientific assessment prepared in the ICES expert groups. The advisory process includes peer review of the assessment before it can be used as the basis for advice. The Advisory Committee has one member from each member country under the direction of an independent chair appointed by the Council.
BCI *(Bayesian Credible Interval).* The Bayesian equivalent of a confidence interval. If the 90% BCI for a parameter A is 10 to 20, there is a 90% probability that A falls between 10 and 20.
BHSRA *(Bayesian Hierarchical Stock and Recruitment Approach)*. Models for the analysis of a group of related stock–recruit datasets. Hierarchical modelling is a statistical technique that allows the modelling of the dependence among parameters that are related or connected through the use of a hierarchical model structure. Hierarchical models can be used to combine data from several independent sources.
C&R *(Catch and Release).* Catch and release is a practice within recreational fishing intended as a technique of conservation. After capture, the fish are unhooked and returned to the water before experiencing serious exhaustion or injury. Using barbless hooks, it is often possible to release the fish without removing it from the water (a slack line is frequently sufficient).
CL, i.e. S_{lim} *(Conservation Limit).* Demarcation of undesirable stock levels or levels of fishing activity; the ultimate objective when managing stocks and regulating fisheries will be to ensure that there is a high probability that undesirable levels are avoided.
COSEWIC *(Committee on the Status of Endangered Wildlife in Canada).* COSEWIC is the organization that assesses the status of wild species, subspecies, varieties, or other important units of biological diversity, considered to be at risk of extinction in Canada. COSEWIC uses scientific, Aboriginal traditional and community knowledge provided by experts from governments, academia and other organizations. Summaries of assessments on Atlantic salmon are currently available to the public on the COSEWIC website (www.cosewic.gc.ca).
Cpue *(Catch Per Unit of Effort).* A derived quantity obtained from the independent values of catch and effort.
CWT *(Coded Wire Tag).* The CWT is a length of magnetized stainless steel wire 0.25 mm in diameter. The tag is marked with rows of numbers denoting specific batch or individual codes. Tags are cut from rolls of wire by an injector that hypodermically implants them into suitable tissue. The standard length of a tag is 1.1 mm.
DFO *(Department of Fisheries and Oceans).* DFO and its Special Operating Agency, the Canadian Coast Guard, deliver programs and services that support sustainable use and development of Canada's waterways and aquatic resources.
DNA *(Deoxyribonucleic Acid).* DNA is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms (with the exception of RNA- Ribonucleic Acid viruses). The main role of DNA molecules is the long-term storage of information. DNA is often compared to a set of blueprints, like a recipe or a code, since it contains the instructions needed to construct other components of cells, such as proteins and RNA molecules.
DST *(Data Storage Tag).* A miniature data logger with sensors including salinity, temperature, and depth that is attached to fish and other marine animals.
ECOKNOWS *(Effective use of Ecosystems and biological Knowledge in fisheries).* The general aim of the ECOKNOWS project is to improve knowledge in fisheries science and management. The lack of appropriate calculus methods and fear of statistical over partitioning in calculations, because of the many biological and environmental influences on

stocks, has limited reality in fisheries models. This reduces the biological credibility perceived by many stakeholders. ECOKNOWS will solve this technical estimation problem by using an up-to-date methodology that supports more effective use of data. The models will include important knowledge of biological processes.

ENPI CBC *(European Neighbourhood and Partnership Instrument Cross-Border Cooperation).* ENPI CBC is one of the financing instruments of the European Union. The ENPI programmes are being implemented on the external borders of the EU. It is designed to target sustainable development and approximation to EU policies and standards; supporting the agreed priorities in the European Neighbourhood Policy Action Plans, as well as the Strategic Partnership with Russia.

FWI *(Framework of Indicators).* The FWI is a tool used to indicate if any significant change in the status of stocks used to inform the previously provided multi-annual management advice has occurred.

GRAASP *(Genetically based Regional Assignment of Atlantic Salmon Protocol).* GRAASP was developed and validated by twelve European genetic research laboratories. Existing and new genetic data were calibrated and integrated in a purpose built electronic database to create the assignment baseline. The unique database created initially encompassed 32 002 individuals from 588 rivers. The baseline data, based on a suite of 14 microsatellite loci, were used to identify the natural evolutionary regional stock groupings for assignment.

ICPR *(The International Commission for the Protection of the River Rhine).* ICPR coordinates the ecological rehabilitation programme involving all countries bordering the river Rhine. This programme was initiated in response to catastrophic river pollution in Switzerland in 1986 which killed hundreds of thousands of fish. The programme aims to bring about significant ecological improvement of the Rhine and its tributaries enabling the re-establishment of migratory fish species such as salmon.

ISAV *(Infectious Salmon Anemia Virus).* ISAV is a highly infectious disease of Atlantic salmon caused by an enveloped virus.

LE *(Lagged Eggs)*. The summation of lagged eggs from 1 and 2 sea winter fish is used for the first calculation of PFA.

LMN *(Labrador Métis Nation).* LMN is one of four subsistence fisheries harvesting salmonids in Labrador. LMN members are fishing in southern Labrador from Fish Cove Point to Cape St Charles.

MSY *(Maximum Sustainable Yield).* The largest average annual catch that may be taken from a stock continuously without affecting the catch of future years; a constant long-term MSY is not a reality in most fisheries, where stock sizes vary with the strength of year classes moving through the fishery.

MSW *(Multi-Sea-Winter).* A MSW salmon is an adult salmon which has spent two or more winters at sea and may be a repeat spawner.

NG *(Nunatsiavut Government).* NG is one of four subsistence fisheries harvesting salmonids in Labrador. NG members are fishing in the northern Labrador communities.

NSERC *(Natural Sciences and Engineering Research Council of Canada)*. NSERC is a Canadian government agency that provides grants for research in the natural sciences and in engineering. Its mandate is to promote and assist research. Council supports a project to develop a standardized genetic database for North America.

OSPAR (*Convention for the Protection of the Marine Environment of the North-East Atlantic*). OSPAR is the mechanism by which fifteen Governments of the west coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the Northeast Atlantic. It started in 1972 with the Oslo Convention against dumping. It was broadened to cover land-based sources and the offshore industry by the Paris Convention of 1974. These two conventions were unified, updated and extended by the 1992 OSPAR Convention. The new annex on biodiversity and ecosystems was adopted in 1998 to cover non-polluting human activities that can adversely affect the sea.

PFA *(Pre-Fishery Abundance).* The numbers of salmon estimated to be alive in the ocean from a particular stock at a specified time. In the previous version of the stock complex Bayesian PFA forecast model two productivity parameters are calculated, for the *maturing* (PFAm) and *non-maturing* (PFAnm) components of the PFA**.** In the updated version only one productivity parameter is calculated, and used to calculate total PFA, which is then split into PFAm and PFAnm based upon the *proportion of PFAm* (p.PFAm).
PGA *(The Probabilistic-based Genetic Assignment model).* An approach to partition the harvest of mixed-stock fisheries into their finer origin parts. PGA uses Monte Carlo sampling to partition the reported and unreported catch estimates to continent, country and within country levels.
PGCCDBS *The Planning Group on Commercial Catches, Discards and Biological Sampling*.
PGNAPES *(Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys)*. PGNAPES coordinates international pelagic surveys in the Norwegian Sea and to the West of the British Isles, directed in particular towards Norwegian Spring-spawning Herring and Blue Whiting. In addition, these surveys collect environmental information. The work in the group has progressed as planned.
PIT *(Passive Integrated Transponder).* PIT tags use radio frequency identification technology. PIT tags lack an internal power source. They are energized on encountering an electromagnetic field emitted from a transceiver. The tag's unique identity code is programmed into the microchip's nonvolatile memory.
PSAT (*Pop-up Satellite Archival Tags*). Used to track movements of large, migratory, marine animals. A PSAT is an archival tag (or data logger) that is equipped with a means to transmit the data via satellite.
PSU *(Practical Salinity Units).* PSU are used to describe salinity: a salinity of 35‰ equals 35 PSU.
Q Areas for which the Ministère des Ressources naturelles et de la Faune manages the salmon fisheries in Québec.
RR model *(Run–reconstruction model).* RR model is used to estimate PFA and national CLs.
RVS *(red vent syndrome).* This condition has been noted since 2005, and has been linked to the presence of a nematode worm, *Anisakis simplex*. This is a common parasite of marine fish and is also found in migratory species. The larval nematode stages in fish are usually found spirally coiled on the mesenteries, internal organs and less frequently in the somatic muscle of host fish.
SALSEA (*Salmon at Sea*). SALSEA is an international programme of cooperative research designed to improve understanding of the migration and distribution of salmon at sea in relation to feeding opportunities and predation. It differentiates between tasks which can be achieved through enhanced coordination of existing ongoing research, and those involving new research for which funding is required.
SARA *(Species At Risk Act).* SARA is a piece of Canadian federal legislation which became law in Canada on December 12, 2002. It is designed to meet one of Canada's key commitments under the International Convention on Biological Diversity. The goal of the Act is to protect endangered or threatened organisms and their habitats. It also manages species which are not yet threatened, but whose existence or habitat is in jeopardy. SARA defines a method to determine the steps that need to be taken in order to help protect existing relatively healthy environments, as well as recover threatened habitats. It identifies ways in which governments, organizations, and individuals can work together to preserve species at risk and establishes penalties for failure to obey the law.
SCICOM *(Science Committee)* of ICES. SCICOM is authorized to communicate to third-parties on behalf of the Council on science strategic matters and is free to institute structures and processes to ensure that inter alia science programmes, regional considerations, science disciplines, and publications are appropriately considered.

SER *(spawning escapement reserve)*. The CL increased to take account of natural mortality between the recruitment date (assumed to be 1st January) and the date of return to homewaters.
SFA *(Salmon Fishing Areas)*. Areas for which the Department of Fisheries and Oceans (DFO) Canada manages the salmon fisheries.
SGBICEPS *(The Study Group on the Identification of Biological Characteristics For Use As Predictors Of Salmon Abundance)*. The ICES study group established to complete a review of the available information on the life-history strategies of salmon and changes in the biological characteristics of the fish in relation to key environmental variables.
SGBYSAL *(Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries)*. The ICES study group that was established in 2005 to study Atlantic salmon distribution at sea and fisheries for other species with a potential to intercept salmon.
SGEFISSA (*Study Group on Establishing a Framework of Indicators of Salmon Stock Abundance*). SGEFISSA is a study group established by ICES and met in November 2006.
SGERAAS (*Study Group on Effectiveness of Recovery Actions for Atlantic Salmon*). SGERAAS is the previous acronym for WGERAAS (*Working Group on Effectiveness of Recovery Actions for Atlantic Salmon*).
SGSSAFE (*Study Group on Salmon Stock Assessment and Forecasting*). The study group established to work on the development of new and alternative models for forecasting Atlantic salmon abundance and for the provision of catch advice.
S_{lim}, i.e. CL *(Conservation Limit)*. Demarcation of undesirable stock levels or levels of fishing activity; the ultimate objective when managing stocks and regulating fisheries will be to ensure that there is a high probability that the undesirable levels are avoided.
SSGEF *(SCICOM Steering Group on Understanding Ecosystem Functioning)*. SSGEF is one of five Steering Groups of SCICOM (Science Committee of ICES). Chair: Graham Pierce (UK); term of office: January 2012–December 2014.
SST (*Sea surface temperature*). SST is the water temperature close to the surface. In practical terms, the exact meaning of surface varies according to the measurement method used. A satellite infrared radiometer indirectly measures the temperature of a very thin layer of about 10 micrometres thick of the ocean which leads to the phrase skin temperature. A microwave instrument measures subskin temperature at about 1 mm. A thermometer attached to a moored or drifting buoy in the ocean would measure the temperature at a specific depth, (e.g. at one meter below the sea surface). The measurements routinely made from ships are often from the engine water in-takes and may be at various depths in the upper 20 m of the ocean. In fact, this temperature is often called sea surface temperature, or foundation temperature.
SVC *(Spring Viraemia of Carp)*. SVC is a contagious and potentially fatal viral disease affecting fish. As its name implies, SVC may be seen in carp in spring. However, SVC may also be seen in other seasons (especially in autumn) and in other fish species including goldfish and the European wells catfish. Until recently, SVC had only been reported in Europe and the Middle East. The first cases of SVC reported in the United States were in spring 2002 in cultivated ornamental common carp (Koi) and wild common carp. The number of North American fish species susceptible to SVC is not yet known.
TAC *(Total Allowable Catch)*. TAC is the quantity of fish that can be taken from each stock each year.
WFD *(Water Framework Directive)*. Directive 2000/60/EC (WFD) aims to protect and enhance the water environment, updates all existing relevant European legislation, and promotes a new approach to water management through river-based planning. The Directive requires the development of River Basin Management Plans (RBMP) and Programmes of Measures (PoM) with the aim of achieving Good Ecological Status or, for artificial or more modified waters, Good Ecological Potential.
WGBAST *(Assessment Working Group on Baltic Salmon and Trout*). The Assessment Working Group on Baltic Salmon and Trout assesses the status and trends of salmon and sea

trout stocks in the Baltic Sea and provides annual catch advice on salmon. WGBAST last took place in Tallinn, Estonia, during April 2013, chaired by Tapani Pakarinen (Finland).

WGERAAS *(Working Group on Effectiveness of Recovery Actions for Atlantic Salmon).* The task of the working group is to provide a review of examples of successes and failures in wild salmon restoration and rehabilitation and develop a classification of activities which could be recommended under various conditions or threats to the persistence of populations. The Working Group held its first meeting in Belfast in February 2013. The next meeting is scheduled for May 2014 at ICES in Copenhagen.

WGF *(West Greenland Fishery).* Regulatory measures for the WGF have been agreed by the West Greenland Commission of NASCO for most years since NASCO's establishment. These have resulted in greatly reduced allowable catches in the WGF, reflecting declining abundance of the salmon stocks in the area.

WGRECORDS *(Working Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species)*. WGRECORS was reconstituted as a Working Group from the Transition Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species (TGRECORDS).

WKADS *(Workshop on Age Determination of Salmon).* WKADS took place in Galway, Ireland, January 18th to 20th 2011, with the objectives of reviewing, assessing, documenting and making recommendations on current methods of ageing Atlantic salmon. The Workshop focused primarily on digital scale reading to measure age and growth with a view to standardization.

WKADS2 (*A second Workshop on Age Determination of Salmon*). Took place from September 4th to 6th, 2012 in Derry ~ Londonderry, Northern Ireland to addressed recommendations made at the previous WKADS meeting (2011) (ICES CM 2011/ACOM:44) to review, assess, document and make recommendations for ageing and growth estimations of Atlantic salmon using digital scale reading, with a view to standardization. Available tools for measurement, quality control and implementation of inter-laboratory QC were considered.

WKDUHSTI (*Workshop on the Development and Use of Historical Salmon Tagging Information from Oceanic Areas*). This workshop, established by ICES, was held in February 2007.

WKSHINI (*Workshop on Salmon historical information-new investigations from old tagging data*). This workshop met from 18–20 September 2008 in Halifax, Canada.

WKLUSTRE *(Workshop on Learning from Salmon Tagging Records).* This ICES Workshop established to complete compilation of available data and analyses of the resulting distributions of salmon at sea.

This glossary has been extracted from various sources. It was initially based on the EU SALMODEL report (Crozier *et al.*, 2003), but has subsequently been updated at successive Working Group meetings.

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Annex 14

CNL(14)61

Terms of Reference for Working Group on Stock Classification

Under the Action Plan for Taking Forward the Recommendations of the External Performance Review and the Review of the 'Next Steps' for NASCO, CNL(13)38, it is stated that the Council will convene a Working Group, to work by correspondence or at the Annual Meeting, to develop recommendations for revisions to the stock categories that are used in the rivers database that better reflect status of stocks relative to attainment of conservation limits. Consistent and updated stock status categories would facilitate the implementation of a State of the Salmon Report and would increase transparency. At its 2013 Annual Meeting, the Council agreed to ask ICES to review stock status categories currently used by the jurisdictions of NASCO, including within their Implementation Plans, and advise on common approaches that may be applicable throughout the NASCO area.

The Report of the ICES Advisory Committee, CNL(14)8, contains such a review. ICES considered that it may be possible to develop a classification system more closely reflecting the generally applied categories used for describing stock status and providing management advice (i.e. CLs).

The Council sees value in a consistent and uniform approach to presenting information on stock status. A Working Group, which is composed of experts in science and management, is charged with the following Terms of Reference:

1. Recommend a classification system to be used by jurisdictions to indicate stock status relative to conservation limits, or where these have not been established other reference points or indicators of abundance;
2. Develop recommendations to address the following:
    a. What time period the stock indicators cover (e.g. annual, averaged over five years);
    b. Frequency of updates;
    c. How the absence of any data will be reported; and
    d. How other relevant information to describe stock status can be taken into account in relation to NASCO's goals for salmon management, e.g. biodiversity and harvestable surplus.
3. Recommend changes to the NASCO Rivers database to implement the recommended classification system.

The Working Group is charged with working by correspondence over the next year and intended to meet during the 2015 Annual Meeting of NASCO.

Annex 15

CNL(14)9

Report of the Thirteenth Meeting of the International Atlantic Salmon Research Board

Le Nouveau Monde Hotel, Saint-Malo, France

Monday 2 June, 2014

1. Opening of the Meeting

1.1 The Chairman, Mr Raoul Bierach, opened the meeting and welcomed members of the Board, their scientific advisers and representatives of the accredited NGOs to Saint-Malo.

1.2 A list of participants is contained in Annex 1.

2. Adoption of the Agenda

2.1 The Board adopted its agenda, ICR(14)8 (Annex 2).

3. Report of the Scientific Advisory Group

3.1 The Chairman of the Board's Scientific Advisory Group (SAG), Mr Tim Sheehan, presented a report on the Group's meeting, SAG(14)10 (Annex 3). During its meeting the SAG had reviewed:

- the updated inventory of marine research;
- project applications for potential funding by the Board;
- progress in establishing a metadatabase of salmon survey data and sample collections of relevance to mortality of salmon at sea;
- progress reports on projects funded by the IASRB including genetic stock of origin identification projects of European salmon captured at West Greenland, SAG(14)5, of salmon caught in the Faroes fishery, SAG(14)6, and a Canadian study of stable isotopes to infer trophic status;
- progress in analysing samples from the SALSEA Programme;
- the report of the SAG Telemetry Sub-Group.

3.2 In the light of the recommendations from the SAG, the Board decided:

- to ask that the Parties provide any changes or updates needed to the inventory to the Secretariat by 1 July, including additional projects identified by the SAG, prior to it being uploaded to the IASRB website;
- that the outgoing SAG Chairman, should liaise with the points of contact for each dataset/sample collection included in the metadatabase in order to ensure consistency in the way the information had been provided. Thereafter, the

metadatabase would be made available on the IASRB website and the Secretary would contact all Parties with a view to including additional information in the metadatabase using the revised data entry form and guidance notes;

- that no further action was required from the Board with regard to analysing the remaining SALSEA samples given the significant cost which would be involved in analysing these and limited extra benefit to management. However, the Board encouraged Parties and jurisdictions to highlight the availability of these remaining samples;
- to ask that the Co-Convenors take into account the proposal from Inland Fisheries Ireland for a Telemetry Workshop for Practitioners, SAG(14)7, in the planning of the Telemetry Workshop (see paragraph 4.3 below).

3.3 The Board congratulated Dr Niall O'Maoileidigh (European Union), the newly elected SAG Chairman, and thanked the outgoing Chairman, Mr Sheehan (US) for his excellent work over the past four years.

4. Report of the SAG Telemetry Sub-Group

4.1 In 2013, the SAG Telemetry Sub-Group had been asked to work by correspondence (or hold a workshop, possibly partially funded by IASRB) to develop and document a roadmap outlining a large-scale international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon. This document would:

- identify how this project will support the conservation and management of Atlantic salmon stocks (i.e. what outputs will be produced and how these will improve Atlantic salmon management);
- provide an overview of the resources required with provisional costings;
- identify key strategic partners for this project;
- identify current and proposed telemetry programmes that could be linked with and enhanced by the proposed project.

4.2 The Chairman of the Sub-Group, Mr Ted Potter (European Union) presented a report on the Group's work, SAG (14)4. The Sub-Group had developed a 'roadmap' for an international acoustic tracking programme, describing: the objectives of the study and its potential benefits; the experimental methods, equipment and approximate costs; the areas where the study might take place and the potential collaborators and partners; the risks; and the next steps for taking the proposal forward. The Sub-Group concluded that this is a novel and exciting project proposal that has the potential to answer key questions relating to the conservation and management of Atlantic salmon. It will have a high profile, being dependent upon extensive international collaboration and partnerships between scientists and industry. There is also great potential to collaborate with researchers and organizations focused on a variety of other marine species that utilize the North Atlantic and Arctic Oceans. The Sub-Group believes that it will, therefore, further raise the profile of NASCO as a leader in marine resource management and is also a very challenging study which, while partly based upon established methods, will also require the development of new methods for detecting tagged fish in the open ocean. There would also be a need for close cooperation with the Ocean Tracking Network (OTN) and initial consultations had indicated that OTN was supportive of the proposed telemetry project.

4.3 The Board welcomed the findings of the SAG Telemetry Sub-Group. The Board endorsed the need for an international acoustic tracking programme and adopted a Resolution, ICR(14)10 (Annex 4), encouraging Parties to continue the development of local collaborative telemetry projects, encouraging the development of large international collaborative projects building on local efforts and encouraging Parties to make efforts to identify funding sources. The Board noted that the telemetry programme should build on the success and identity of the SALSEA Programme. It recognised that following the Workshop there may be a role for the Board in coordinating efforts and supporting fund raising initiatives. In order to take this initiative forward, the Board supported the convening of a Workshop and agreed Terms of Reference, ICR(14)11 (Annex 5). The IASRB agreed to make available a sum of up to £12,000 to cover the cost of the meeting facilities and reimbursement of reasonable travel and subsistence costs for invited participants as determined by the Co-Convenors and NASCO Secretary in consultation with the SAG. The Workshop will be held in November or December 2014 and the report should be made available to the Board as soon as practicable.

5. Progress reports on projects funded by the Board

5.1 Progress reports on projects funded by the Board were made to the SAG and are reported under item 3.1 above.

6. Finance and administrative issues

6.1 The Secretary introduced document ICR(14)2 presenting the Board's accounts for 2013. The decision had been taken not to have the 2013 accounts audited because of the limited funds held and the small number of transactions in the year. At the end of 2013, the balance of the International Atlantic Salmon Research Fund was £9,335. In 2012, the Board had made a loan of £25,000 to the Council which was repaid in full in January 2014. In 2013, the Board had been advised that a sum of approximately £18,300 that had not been required for the enhanced sampling programme at West Greenland, that had been funded by the US. The Board had previously agreed that once the loan to NASCO had been repaid this sum should be either returned to the US or the US should be consulted on appropriate uses for the funds when they were available to the Board. The US indicated that it intended that the funds be used to support further development of the North American genetic baseline and to undertake finer scale assignments of salmon caught at West Greenland. The US will develop a proposal to be made available to the Board and SAG members after the Annual Meeting and will report back on progress with the project. The Board had previously agreed to allocate a sum of £6,000 to support a telemetry workshop but in view of the importance of this initiative decided to increase this sum to up to £12,000 (see item 4 above). Allowing for these items of expenditure, the Board would have resources of about £4,000 and it was agreed that this should be maintained as a reserve.

6.2 In 2013 the Sub-Group on the Future Direction of Marine Research noted that the Board had very limited resources and recognised that if it is to continue to play a role in supporting research on salmon at sea it should consider how it can address this issue. The Board agreed that it would be important to have reserves available to it so that it could continue to support initiatives such as the Greenland and Faroes GSI projects that it had contributed funds to in 2012. It was noted that provision of limited funding by the Board had been of great assistance in securing additional funding from

other sources. These had resulted in new information of value to management with limited financial support from the Board. The Board agreed that the Chairman would liaise with the Secretary and would contact Board Members to seek contributions to support the Board's work.

6.3 The Board decided that it would not have its 2014 accounts audited but requested that the Secretariat again provide income and expenditure statements.

7. Other business

7.1 There was no other business.

8. Report of the meeting

8.1 The Board agreed a report of its meeting.

9. Date and Place of next meeting

9.1 The Board agreed to hold its next meeting in conjunction with the Thirty-Second Annual Meeting of NASCO.

9.2 The Chairman thanked participants for their contributions and closed the meeting.

List of Participants

Canada
Tony Blanchard
Gérald Chaput
Bud Bird

Denmark (in respect of the Faroe Islands and Greenland)
Jóannes Hansen
Anna Hofgaard

European Union
Cathal Gallagher
Niall Ó Maoiléidigh
Ted Potter
Stamatis Varsamos

Norway
Raoul Bierach (Chairman)
Arne Eggereide
Peder Fiske

Russian Federation
Konstantin Drevetnyak
Sergey Prusov

US
Kimberly Damon-Randall
Rory Saunders
Tim Sheehan

NGOs
Dave Meerburg
Ken Whelan

Secretariat
Peter Hutchinson

ICR(14)8

Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Report of the Scientific Advisory Group
4. Report of the SAG Telemetry Sub-Group
5. Progress reports on projects funded by the Board
6. Finance and administrative issues
7. Other business
8. Report of the meeting
9. Date and Place of next meeting

SAG(14)10

Report of the Meeting of the Scientific Advisory Group of the International Atlantic Salmon Research Board Le Nouveau Monde Hotel, Saint-Malo, France Monday 2June 2014

1. Opening of the meeting

1.1 The Chairman of the Scientific Advisory Group (SAG), Mr. Tim Sheehan (US), opened the meeting and welcomed participants to Saint Malo.

1.2 A list of participants is contained in Annex 1.

2. Adoption of the agenda

2.1 The SAG adopted its agenda, SAG(14)11 (Annex 2).

3. Election of Officers

3.1 The SAG elected Dr Niall Ó Maoiléidigh (European Union) as its Chairman to take office at the close of the meeting.

4. Review of the updated inventory of research

4.1 An overview of the updated inventory of research relating to salmon mortality in the sea, ICR(14)2, was presented. For 2014, the total annual expenditure on the 37 ongoing projects (2 are uncosted) is approximately £5.5 million. Approximately 45% of the expenditure is associated with long-term monitoring programmes. There are 75 completed projects in the inventory. Two new projects have been included in the inventory since last year; one concerning sea lice impacts (EU - Ireland) and a study of migration timing of smolts from Penobscot Bay to the Scotian Shelf (US).

4.2 The SAG had previously noted that because there is insufficient time available to thoroughly review the inventory at its meetings or at the meetings of the ICES Working Group on North Atlantic Salmon, to whom the inventory used to be made available, the Board had agreed that review of the inventory should continue to be conducted by a SAG Sub-Group every 3 or 4 years. It was last reviewed in 2012 by the Sub-Group on the Future Direction of Research on Marine Survival of Salmon. If this schedule continues to be followed then the next review of the inventory would be due in 2016 or 2017.

4.3 The EU asked if a new column could be added to Table 4 of SAG(14)2 to provide an indication if the entry had direct relevance to management. It was noted that a complete reporting of each entry is available on the Board's Research Inventory website (http://www.nasco.int/sas/research.htm) and a lot of information is contained within. However, it would be beneficial to be able to briefly review the summary

table and quickly identify what projects have specific relevance to management. It was decided that as part of next year's request to Parties to update the inventory, the Secretariat would also asked each Party to indicate if the inventory entry has management implications. The Secretariat will work with the SAG Chair prior to this request to evaluate the utility of providing other categories that could be assigned to each entry (e.g. assessment related, ecologically related etc.).

4.4 Two European Commission funded projects (AquaTrace and EcoKnows) and a number of genetic stock identification (GSI) projects (GSI of Labrador, Saint Pierre and Miquelon and West Greenland (both North American and European origin focused projects) mixed-stock fisheries) were identified as potential candidates for inclusion into the inventory. The Secretariat will coordinate with the appropriate Parties (see Section 4.5) to request inventory submissions for the above referenced projects and will request that any new relevant projects be considered for inclusions prior to posting the finalize inventory by the end of July by the Secretariat.

4.5 The SAG agreed that Parties/jurisdictions should be given the opportunity to provide any additional feedback on the inventory to the Secretariat by the end of June, with a view to the inventory being made available on the Board's website by the end of July.

5. Review of project applications for potential funding by the Board

5.1 The Secretary advised the SAG that no applications had been received for endorsement from, or funding by, the Board prior to the 31 December deadline. One proposal (SAG(14)7) was received at the end of May, but the SAG did not have time to adequately review it. The proposal was to fund a workshop entitled "Fish Telemetry Workshop for Practitioners". The SAG was not in a position to endorse the proposal and considering the potential overlap of the proposed workshop with the workshop being proposed by the SAG Telemetry Sub-Group, the SAG suggested that if the proposed Telemetry Sub-Group workshop (see Section 7) is pursued consideration could be given to also cover the topics outlined within SAG(14)7. Concerns were raised that the two proposed workshops may not be compatible. If appropriate, the workshop proposed in SAG(14)7 could be considered for support in 2015.

5.2 The Secretary reviewed the Board's financial position. The loan that the Board had made to the Council of NASCO in 2012 (£25,000) had been repaid in full in January 2014. Of the Board's current funds of ~£34,000, it had agreed to make £6,000 available for a possible telemetry workshop. Furthermore, last year the Board had agreed that the unused funds contributed by the US for the purchase of salmon at West Greenland of ~£18,300 should either be returned to the US or the US should be consulted on how it wished to use these funds. The Chairman indicated that the US intended to use the funds to improve the US representation within the North American genetic baseline and for finer-scale origin genetic studies at Greenland. The Chairman indicated that a funding proposal would be developed for this effort and distributed to the SAG by the Secretariat for their information before the request to transfer the funds was made. The Chairman also indicated that progress reports and a final report would be submitted to the SAG as appropriate.

6. Developments in relation to the SALSEA Programme

(a) Report on Progress in establishing a metadatabase of salmon survey data and sample collections of relevance to mortality of salmon at sea.

6.1 Last year, the Board had decided that it could play an important role with regard to marine salmon survey data and sample coordination by establishing a metadatabase of existing datasets and sample collections. A format for this metadatabase had been developed and Parties/jurisdictions were requested to provide relevant information. Limited information had been provided and the SAG had recognised that there may have been some confusion regarding the purpose of the metadatabase which is not meant to be a vehicle to provide raw data to researchers and other interested Parties, but rather a means to advertise the availability of the valuable and unique datasets related to the marine phase of Atlantic salmon. A one page information sheet had been developed in order to clarify the purpose of the metadatabase. The SAG had also noted the difficulty in identifying a single person to provide information related to a dataset that results from multi-Party/jurisdiction collaboration and that this may have contributed to the poor response.

6.2 Last year, in order to take this initiative forward, a list of candidate datasets for inclusion in the metadatabase was developed, specific points of contact were identified and the Secretary was asked to contact the Parties/jurisdictions concerned to request information for inclusion in the metadatabase. The Chairman had agreed to follow up with the Parties/jurisdictions concerned.

6.3 The Secretary introduced document SAG(14)3, providing an update on progress since last year. Information has been provided for the candidate datasets and included in the metadatabase. In populating the metadatabase, a number of suggestions for changes to its structure had been made and new data entry forms and Guidance Notes had been developed. The SAG agreed the changes to the metadatabase format, the new data entry form and the guidance notes. The Chairman committed to reviewing the candidate dataset entries for entry inconsistencies and to provide suggested changes and clarifying text for the guidance document. The Chairman will also work with the points of contact to incorporate webpage links for published reports relevant to each entry as available and as appropriate. The SAG also recommended that the Secretariat send out the updated inventory forms and related documents for a final review with a request that Parties/jurisdictions validate the information provided. The Secretariat will also request the Parties/jurisdictions consider any new datasets that should be considered for inclusion in the metadatabase. A few candidate datasets were identified (West Greenland Sampling Program biological characteristics and SALSEA-Merge PGNAPES, genetic and feeding databases) and the Chairman agreed to work with the appropriate points of contact to complete entry forms for inclusion into the metadatabase as appropriate.

6.4 There was discussion related to increasing the detail of the summary information provided within the metadatabase for each entry and on the need for a secure storage location for the datasets. The SAG recommends that the current metadatabase be finalized and posted on the Board's website prior to initiating any effort to increase the level of details provided for each dataset. The SAG discussed the need for dedicated resources for dataset maintenance and storage within one centralized location, but considered it unlikely that resources could be made available. The SAG recognizes the need for this and will consider the issue in the future.

(b) Progress reports on projects funded by the IASRB

6.4 In 2012, the Board agreed to fund two projects (£6,000 each) as follows:

- A proposal to undertake genetic stock of origin identification of European salmon captured at West Greenland; and
- A proposal for genetic stock identification of salmon caught in the Faroes fishery.

6.5 The funding provided by the Board had allowed these two projects to proceed and had led to other funds being made available for the Faroes Genetic Stock Identification project.

6.6 A report entitled Identification of Genetic stock of origin of European Atlantic salmon captured at West Greenland for the Years 2002 - 2012, SAG(14)5, was presented by the Chair. He informed the SAG that the genetic analysis undertaken in this project suggests that the European element of the West Greenland fishery between 2002 and 2012 consisted predominantly (96%) of fish originating from the NEAC 'Southern European' stock complex. Of these British and Irish fish were the largest group and Scotland is the largest individual country to contribute, providing 66% of the salmon sampled over the period.

6.7 A report entitled Genetic stock identification of salmon caught in the Faroes fishery, SAG(14)6, was presented by Mr Ted Potter (EU). He indicated that DNA had been extracted from 656 scale samples collected during two fishing seasons, 1993/4 and 1994/5 and assigned using 14 microsatellites markers compared to a baseline. At the highest hierarchical level, genetic exclusion analytical techniques and conformation analysis identified 16% of the total samples as being of North American continental origin and 84% as European origin. At the next hierarchical level, 62% of the European fish were identified as coming from northern Europe (Russia, Finland, Norway and Sweden), 37% from southern European (UK and Ireland, France and Spain) and 1% from Iceland. These proportions were scaled to the distribution of commercial catches in the Faroes fishery in an average season between 1983/84 and 1990/91. This analysis indicated that about 56% of the catch in an average year might originate from northern European countries, 26% from southern European countries, 1% from Iceland and 16% from North America.

6.8 Mr. Gérald Chaput also presented a brief update on a project that had received funding from the IASRB that used stable isotopes ratios to infer trophic structure and condition of Atlantic salmon during their life at sea. A manuscript entitled "Characterizing the trophic position shift in Atlantic salmon (*Salmo salar*) from freshwater to marine life-cycle phases using stable isotopes" was published in the ICES Journal of Marine Science as part of the 'Salmon Summit' symposium proceedings and manuscript entitled "Assessing the use of different marine growth zones of adult Atlantic salmon scales for studying marine trophic ecology with stable isotope analysis" was submitted for publication in Fisheries Research, where it is currently under review. A number of presentations have also been given at various professional forums. Work planned for 2014 includes writing up papers on the diet of West Greenland salmon and differences in stable isotope values in different salmon tissues over time.

6.9 The Chair noted that the progress reports for the three studies were greatly appreciated and considered that the obligations for reporting back to the Board had been met.

(c) Progress in analysing samples from the SALSEA Programme

6.10 Last year, the SAG Sub-Group on the Future Direction of Research on Marine Survival of Salmon considered that a priority should be to analyze the remaining samples and data arising from the SALSEA Programme and encouraged the Board to explore opportunities to support these analyses. The Board was advised of on-going initiatives to analyse these and recognised that for the remaining samples, it would be important to first clarify what samples are available, how their analysis could benefit management and how much the analyses would cost. The SAG Chairman indicated that he would be willing to collate the requested information and report back to the Scientific Advisory Group.

6.11 The Chairman presented SAG(14)8 which contained an inventory of the remaining unprocessed samples from the three main marine components of the SALSEA Programme (SALSEA Merge, SALSEA North America and SALSEA West Greenland). The estimated number of samples available by the three main marine SALSEA components, the initial purpose of the sample and the estimated processing cost (USD) per sample for each sample were also detailed.

6.12 The Chairman noted that great progress had been made in analyzing the available biological and tissues samples that had been collected in association with the SALSEA programme marine surveys. A large number and array of different data and samples types were collected from each sampled fish in an effort to maximize the amount of information that could be gained. In many cases the collected data or sample type did not have dedicated funding for its processing or more importantly a dedicated Principle Investigator to oversee its use. However, the SALSEA investigators were successful in facilitating the processing and reporting of most of the data and samples that were collected.

6.13 Of the approximate 40 different types of biological characteristic data or samples that were collected from each sampled fish, there were only approximately 7 different samples types that had not or are not being processed or reported on. Some of these sample types do not have a clear intent or purpose and were collected just in case someone had a need for them. Other samples are archived in various institutions and if funding became available they could be considered for processing. It was noted that the remaining sample types likely did not have direct management implications but if they were processed could instead add to our understanding of the ecology of marine phase salmon. The SAG was encouraged to continue to advertise the existence of these samples in an attempt to find a researcher that may be interested in them. However, the SAG agreed that the SALSEA Programme has been a very successful endeavor and that the majority of the collected data and material had been (or currently is being) analyzed. The SAG decided that there was no need to recommend that the Board identify additional funds to process these remaining SALSEA samples.

(d) Other activities

6.14 Mr. Dave Meerburg reported that the Atlantic Salmon Federation (ASF) has continued to assess estuarine and marine survival of tagged Atlantic salmon released in rivers of the Gulf of St. Lawrence using acoustic tags and pop-up satellite tags. In 2014, the ASF along with numerous collaborators will continue their tracking efforts in Eastern Canada with smolts (three rivers) and kelts (two rivers) with a few of these

kelts also fitted with satellite pop-up tags. In addition to the information on timing and numbers of fish leaving the rivers, estuaries and the exits of the Gulf of St. Lawrence, it is noteworthy that tagged salmon are also being recorded by receivers primarily being used for studies on other species. Detections were also noted by a wave glider deployed in the Gulf of St. Lawrence in the summers of 2012 and 2013 by the Ocean Tracking Network. In one example, a Miramichi kelt was tagged and released into the Miramichi in April 2010. It was detected leaving the river in early May, it presumably passed through the Strait of Belle Isle in early July (undetected), was detected in January 2011 by a project studying cod in Notre Dame Bay, Newfoundland, was detected in April 2012 crossing the Cabot Strait into the Gulf of St. Lawrence and entered the Miramichi River in late spring to spawn as alternate repeat spawner. In another example, a study on grey seals of Sable Island has attached receivers and transmitters on to 97 seals between 2009 and 2013 and six of these grey seals have been recorded using the Gulf of St. Lawrence and have detected ASF tagged Atlantic salmon smolts and kelts there. Detections of sonically tagged cod, Atlantic sturgeon, American eel, Bluefin tuna, porbeagle shark, blue shark and snow crab were also documented. These detections have greatly increased the data collected from ASF tracking efforts and highlight the benefits from increased collaboration and communication with researchers tracking a variety of other marine species.

7. Report of the SAG Telemetry Sub-Group

7.1 Last year, the SAG Sub-Group on the Future Direction of Research on Marine Survival of Salmon had proposed that a particular focus for the Board should be studies to partition mortality of salmon among the phases of the marine migration and it recommended that the Board should consider whether it wished to facilitate a meeting of scientists and external partners to further develop a collaborative international programme of research. A preliminary outline proposal was provided and the aim would be to identify where there may be particular need for international collaboration and coordination and support with fund raising. ICES had recommended that the IASRB support the further development of the project outlined by the SAG Sub-Group.

7.2 The Board had established a SAG Telemetry Sub-Group which was asked to work by correspondence (or hold a workshop, possibly partially funded by IASRB) to develop and document a roadmap outlining a large scale international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon. This document should:

- identify how this project will support the conservation and management of Atlantic salmon stocks (i.e. what outputs will be produced and how these will improve Atlantic salmon management);
- provide an overview of the resources required with provisional costings;
- identify key strategic partners for this project;
- identify current and proposed telemetry programmes that could be linked with and enhanced by the proposed project.

7.3 The Chairman of the SAG Telemetry Sub-Group, Mr Ted Potter (EU), presented the Sub-Group's report, SAG(14)4 (Annex 4). He indicated that the Sub-Group had

developed a 'roadmap' for an international acoustic tracking programme, describing: the objectives of the study and its potential benefits; the experimental methods, equipment and approximate costs; the areas where the study might take place and the potential collaborators and partners; the risks; and the next steps for taking the proposal forward. The Sub-Group concluded that this is a novel and exciting project proposal that has the potential to answer key questions relating to the conservation and management of Atlantic salmon. It will have a high profile, being dependent upon extensive international collaboration and partnerships between scientists and industry. There is also great potential to collaborate with researchers and organizations focused on a variety of other marine species that utilize the North Atlantic and Arctic Oceans. The Sub-Group believes that it will further raise the profile of NASCO as a leader in marine resource management but it is also a very challenging study which, while partly based upon established methods, will also require the development of new methods for detecting tagged fish in the open ocean. The Sub-Group has recommended that the next steps include the IASRB: agreeing to the need for a large scale tracking effort; appointing co-convenors to establish one or more Workshops partially funded by IASRB (£6,000 was made available last year for this purpose) to discuss the further development of the programme; and agreeing on clear Terms of Reference for the Workshop.

7.4 The SAG endorsed the recommendations of the Telemetry Sub-Group.

7.5 It was noted that SALSEA Programme had become a well known and well advertised project of NASCO. Casting the international acoustic tracking programme as the logical next steps of SALSEA may aid in raising the profile of the programme. This association could help garner support for the implementation of the program and may increase the help with fund raising in the future.

8. Other business

8.1 There was no other business.

9. Report of the meeting

9.1 The SAG agreed a report of its meeting.

10. Date and place of the next meeting

10.1 The SAG agreed to hold its next meeting in conjunction with the Thirty-Second Annual Meeting of NASCO.

10.2 In closing the meeting, the Chairman thanked the participants for their contributions to the meeting. The SAG expressed its appreciation to Mr Sheehan for his excellent work in Chairing the Group's work over the last four years.

List of Participants

Canada
Bud Bird
Gérald Chaput

Denmark (in respect of the Faroe Islands and Greenland)
Jóannes Hansen
Anna Hofgaard
Katrine Kaergaard

European Union
Francesca Arena
Cathal Gallagher
Niall Ó Maoiléidigh
Ted Potter
Stamatis Varsamos

Norway
Peder Fiske

Russian Federation
Sergey Prusov

US
Tim Sheehan (Chairman)

NGOs
Dave Meerburg
Ken Whelan

Secretariat
Peter Hutchinson

SAG(14)11

Agenda

1. Opening of the meeting
2. Adoption of the agenda
3. Election of Officers
4. Review of the updated inventory of research
5. Review of project applications for potential funding by the Board
6. Developments in relation to the SALSEA Programme
    a. Report on Progress in establishing a metadatabase of salmon survey data and sample collections of relevance to mortality of salmon at sea.
    b. Progress reports on projects funded by the IASRB
    c. Progress in analysing samples from the SALSEA Programme
    d. Other activities
7. Report of the SAG Telemetry Sub-Group
8. Other business
9. Report of the meeting
10. Date and place of the next meeting

ICR(14)10

Resolution of the International Atlantic Salmon Research Board (IASRB) on Research on Salmon at Sea

NOTING *that there has been a substantial decline in salmon stocks throughout much of their migratory range over the last two to three decades despite substantial reductions in exploitation;*

NOTING *the advice from the International Council for the Exploration of the Sea (ICES) that there has been a substantial reduction in survival of salmon at sea possibly resulting from natural factors and/or anthropogenic pressures;*

WELCOMING *the major advances in understanding of the distribution and migration of salmon at sea that have been made under the SALSEA Programme;*

TAKING INTO ACCOUNT *the role of the IASRB to promote collaboration and co-operation on research into the causes of marine mortality of Atlantic salmon and the opportunities to counteract it;*

DESIRING *to encourage studies to partition marine mortality of migrating Atlantic salmon in order to support the conservation and management of Atlantic salmon stocks across the North Atlantic;*

RECOGNISING *the potential that a large international collaborative telemetry project has to provide valuable new information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon;*

RESOLVES *as follows:*

- *to encourage NASCO Parties to continue the development of local collaborative telemetry projects;*
- *to encourage the development of large international collaborative telemetry projects that together build upon and expand local efforts;*
- *to request Parties to make efforts to identify funding sources to support telemetry projects;*
- *to support the development of the SALSEA Programme by facilitating international collaboration in these areas.*

ICR(14)11

Terms of Reference for an IASRB Telemetry Workshop

In light of the recommendations from the Board's Telemetry Sub-Group, SAG(14)4, the IASRB has resolved to support and facilitate the development of an international telemetry programme. The objective of this programme is:

- to monitor the progress of salmon from NAC and NEAC rivers along their migration routes to and from the marine feeding areas; and
- to estimate stage and area specific mortality rates of these salmon during the marine phase of their lifecycle, including the transition from the freshwater to the marine environment.

In order to proceed with the development of this programme, the IASRB has decided to convene a two and a half day workshop, to be held at a venue in Europe in November or December 2014, with the following Terms of Reference:

- Develop an inventory of ongoing and planned marine telemetry studies on Atlantic salmon;
- Develop an inventory of ongoing and planned telemetry studies on other species in the areas of the North Atlantic frequented by salmon;
- Develop an inventory of the current (temporary and permanent) and planned location of acoustic receiver deployments in the areas of the North Atlantic frequented by salmon;
- Recommend areas where collaborative programmes are most likely to provide the best partitioned estimates of mortality of emigrating post-smolts from multiple rivers with an outline of the scale and cost of such studies;
- Identify strategic partners, including equipment manufacturers, that may assist with implementation of proposed new activities;
- Advise on appropriate linkages with existing or planned ocean tracking programmes, both on the high seas and near shore / in estuaries;
- Explore options for tagging adult salmon in the sea and recommend areas where programmes are most likely to provide estimates of mortality;
- Establish one or more Steering Committees to develop more detailed plans for co-ordinated telemetry studies in selected areas and to seek funding.

The Co-Convenors of the workshop will be Mr Ted Potter (EU) and Mr Tim Sheehan (US) who will work with the NASCO Secretary in making arrangements for the workshop and in inviting participation *inter alia* from leaders of key research groups that would participate in an international programme. The IASRB has agreed to make available a sum of up to £12,000 to cover the cost of the meeting facilities and reimbursement of reasonable travel and subsistence costs for invited participants as determined by the Co-Convenors and NASCO Secretary in consultation with the SAG. A report of the workshop will be made available to the Board as soon as practicable.

Annex 16

CNL(14)10

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 by country, including unreported catches and catch and release, and production of farmed and ranched Atlantic salmon in 2014[1];
1.2 report on significant new or emerging threats to, or opportunities for, salmon conservation and management[2];
1.3 provide a review of examples of successes and failures in wild salmon restoration and rehabilitation and develop a classification of activities which could be recommended under various conditions or threats to the persistence of populations[3];
1.4 provide a compilation of tag releases by country in 2014; and
1.5 identify relevant data deficiencies, monitoring needs and research requirements.

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

2.1 describe the key events of the 2014 fisheries[4];
2.2 review and report on the development of age-specific stock conservation limits;
2.3 describe the status of the stocks;
2.4 provide catch options or alternative management advice for 2015/16-2017/18 fishing seasons, with an assessment of risks relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding[5];
2.5 advise on options for taking into account the recent genetic analysis that suggests there was a significant contribution of North American origin stocks to historic mixed-stock fisheries in Faroese waters for the provision of catch advice[6];
2.6 update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice; and
2.7 advise on what data would enhance the development of the catch options.

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

3.1 describe the key events of the 2014 fisheries (including the fishery at St Pierre and Miquelon)[4];
3.2 update age-specific stock conservation limits based on new information as available;
3.3 describe the status of the stocks;
3.4 provide catch options or alternative management advice for 2015-2018 with an assessment of risks relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding[5];
3.5 update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice;
3.6 considering the available contemporary data on stock origin of salmon in the Labrador fisheries, estimate the catches by stock origin and describe their spatial and temporal distribution; and

3.7 considering the available contemporary data on stock origin of salmon in the Saint-Pierre et Miquelon fishery, estimate the catches by stock origin and describe their spatial and temporal distribution.

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

4.1 describe the key events of the 2014 fisheries[4];
4.2 describe the status of the stocks[7];
4.3 provide catch options or alternative management advice for 2015-2017 with an assessment of risk relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding[5];
4.4 update the Framework of Indicators used to identify any significant change in the previously provided multi-annual management advice; and
4.5 considering the available contemporary data on stock origin of salmon in the West Greenland fishery, estimate the catches by stock origin and describe their spatial and temporal distribution.

Notes:

1. *With regard to question 1.1, for the estimates of unreported catch the information provided should, where possible, indicate the location of the unreported catch in the following categories: in-river; estuarine; and coastal. Numbers of salmon caught and released in recreational fisheries should be provided.*
2. *With regard to question 1.2, ICES is requested to include reports on any significant advances in understanding of the biology of Atlantic salmon that is pertinent to NASCO, including information on any new research into the migration and distribution of salmon at sea and the potential implications of climate change for salmon management.*
3. *With regards to question 1.3, NASCO is particularly interested in case studies highlighting successes and failures of various restoration efforts employed across the North Atlantic by all Parties/jurisdictions and the metrics used for evaluating success or failure.*
4. *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. Information on any other sources of fishing mortality for salmon is also requested.*
5. *In response to questions 2.4, 3.4 and 4.3, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice and report on any developments in relation to incorporating environmental variables in these models.*
6. *In response to question 2.5, this should include consideration of the implications of the new genetic results with regard to the factors previously identified by ICES as requiring management decisions for the finalization of the risk framework for the provision of catch advice for the Faroes fishery (i.e. annual or seasonal catch advice, sharing arrangement, choice of management units to consider and specified management objectives).*
7. *In response to question 4.2, 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 2.3 and 3.3.*

Attendees:
Elena Samoylova (NEAC, manager representative)
Peder Fiske (NEAC, scientist representative)

Tony Blanchard (NAC, manager representative)
Tim Sheehan, Chairman (NAC, scientist representative)

Katrine Kaergaard (WGC, manager representative)
Ted Potter (WGC, scientist representative)

Ian Russell (ICES representative, Observer)

New questions, originator:

- 2.5, NEAC
- 2.7, EU
- 3.6, USA
- 3.7, USA
- 4.5, USA

Annex 17

CNL(14)11

Report of the Implementation Plan/Annual Progress Report Review Group

1. Introduction

1.1 In 2012, the Council appointed a Review Group (Paddy Gargan, Kristina Guldbaek, Niall Greene, Ted Potter, Rory Saunders and Sue Scott) to evaluate the new (2013-2018) Implementation Plans (IPs). The Review Group had met in March 2013 and its report, CNL(13)12, had been presented to the Council at it Thirtieth Annual Meeting last June. In accordance with the Council's Guidelines for the Preparation and Evaluation of NASCO's Implementation Plans and for Reporting on Progress, CNL(12)44, in order to provide continuity the Council had agreed that the Review Group members should normally be appointed to serve for a period of up to three years and also undertake the evaluation of the Annual Progress Reports (APRs) under the Implementation Plans. The first APRs were due to be submitted by 1 April 2014 and were to be evaluated by the Review Group by correspondence. This report describes the Review Group's work in completing its evaluations of the IPs and conducting an assessment of the first APRs.

2. Evaluation of the 2013 - 2018 Implementation Plans

Background

2.1 The purpose of the evaluation of the IPs was to ensure that, as far as possible, they provided a fair and equitable account of the actions that each jurisdiction intends to take to implement NASCO's Resolutions and Guidelines. The Review Group was asked to assess each response to questions in the IP template as:

1. Satisfactory answers/information;
2. Unclear or incomplete answers/information; or
3. Clear omissions or inadequacies in answers/information.

2.2 Where plans were considered by the Review Group to contain answers in categories 2 or 3 they were returned to the jurisdiction with guidance on the way that the Group considered the IP should be improved. Re-submitted plans were then re-evaluated to determine whether the areas highlighted had been addressed and where clear omissions or inadequacies (i.e. still scoring 3) remained, these had been highlighted in the Group's report to the Council, CNL(13)12, and discussed at the 2013 Annual Meeting.

Evaluation prior to the 2013 Annual Meeting

2.3 Prior to the 2013 Annual Meeting the Group had evaluated a total of 14 IPs as listed in its report. Of these, nine plans were considered to be satisfactory as follows:

Denmark (in respect of the Faroe Islands and Greenland) – Greenland	CNL(13)40
EU - Denmark	CNL(13)41
EU - Finland	CNL(13)42
EU - Germany	CNL(13)43
EU - Ireland	CNL(13)44
EU - Sweden	CNL(13)45
EU - UK (England and Wales)	CNL(13)46
EU - UK(Northern Ireland)	CNL(13)47
Norway	CNL(13)48

2.4 Five of the IPs that had been reviewed were considered by the Group to contain clear omissions or inadequacies. Of these, three (Canada, the Russian Federation and the US) had been revised and re-submitted prior to the 2013 Annual Meeting following their initial evaluation, and two (Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands and EU – UK (Scotland)) were resubmitted after the Annual Meeting. All five of these IPs were considered to contain clear omissions or inadequacies in the responses to one or both of the questions relating to progress towards the achievement of the international goals for sea lice (4.2) and containment (4.3), and, for some of these IPs, in the responses to other questions.

2.5 Prior to the 2013 Annual Meeting, no IPs had been received from EU - France, EU - Portugal or EU - Spain.

2.6 The Group had emphasised that a score of '1' simply meant that a satisfactory answer/information had been provided and it did not mean that the Party/jurisdiction concerned was necessarily meeting NASCO guidelines or agreements. In some cases, responses were considered to be satisfactory even when the response was incomplete provided that an action had been identified to address any major shortcoming. The Group had also highlighted to the Council that, in accordance with the Guidelines, plans that still contained responses that had scored '2', i.e. they contained unclear or incomplete answers/information, had not been identified in its report. The Council had noted that this could affect future reporting and had, therefore, asked that all Parties/jurisdictions address any shortcomings in the IPs by 1 September 2013, including providing further clarification in IPs assessed as satisfactory.

Evaluations since the 2013 Annual Meeting

2.7 Of the nine IPs considered to be satisfactory, eight Parties/jurisdictions took the opportunity to further clarify their plans, the exception being EU - Denmark. These plans were not re-evaluated by the Group but it wishes to acknowledge the efforts made by those Parties/jurisdictions to further clarify the information contained in their IPs.

2.8 Of the five plans that were noted as containing clear omissions or inadequacies in the Review Group's report to the Council, four jurisdictions (Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands, EU – UK (Scotland), the Russian Federation, and the US) made further revisions to their plans in the light of the Review Group's findings. Of these, the revised IP for the US, CNL(13)49, was considered to be satisfactory. The four remaining plans (Canada, CNL(13)51),

Denmark (in respect of the Faroe Islands and Greenland) - Faroe Islands, CNL(13)53, EU - UK (Scotland), (CNL(13)50) and the Russian Federation (CNL(13)52)) are still considered by the Review Group to contain clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 concerning demonstration of progress towards the international goals for sea lice and containment. The Review Group notes that in the case of the Faroe Islands there are no self-sustaining wild salmon stocks to protect from aquaculture related impacts, but the IP recognises that wild stocks from other countries migrate into the Faroese zone and that there is a need for measures consistent with NASCO agreements. It also noted that the IP for the Russian Federation refers to the development of new legislation in relation to aquaculture including measures to protect the wild stocks. This legislation has since entered into force but it is not known if this will provide a mechanism for provision of such information in the future.

New Plans submitted since the 2013 Annual Meeting

2.9 Since the 2013 Annual Meeting, IPs have been submitted for EU – Spain (Asturias), CNL(13)62, EU – Spain (Cantabria), CNL(13)60 and EU – Spain (Galicia), CNL(13)61. The Review Group welcomed these contributions. Following their evaluation by correspondence, the revised IPs were reassessed by the Group. The Group noted that since its initial evaluation, information had been provided for inclusion in the NASCO rivers database for Galicia and Cantabria and this information has been uploaded to the website by the Secretariat. The Review Group noted, however, that there were clear omissions or inadequacies in all three of these IPs in that no information had been provided on the measures in place to prevent the introduction of *Gyrodactylus salaris* (question 4.6 in the IP template). Furthermore, no information has been provided to demonstrate progress towards the international goals for sea lice (question 4.2) and containment (question 4.3) at an experimental fish farm in Galicia or for containment (question 4.3) at freshwater hatcheries in Asturias.

Jurisdictions not submitting Implementation Plans

2.10 At the time of preparing this report no IPs have been received from EU – France, EU – Portugal or EU – Spain (Navarra) although a Plan from EU – France is under preparation and EU – Spain (Navarra) is developing a management plan for salmon. The lack of IPs for these jurisdictions is a concern to the Review Group.

Overview of IP evaluations

2.11 The Review Group had concluded that the new IP reporting template had worked well in terms of focusing the IPs on the key elements of NASCO Agreements. The IPs were more consistent and clearer than those prepared in 2007 and the amount of information was more manageable and amenable to evaluation. In most cases, they specified the actions to be taken, the timescales for these actions, the expected outcomes and the approach to monitoring and enforcement so that progress could be assessed. In some cases, the wording of the actions could have been more concise and clearer and this could affect the Group's ability to evaluate progress through the APRs. Overall, however, the Review Group considers that the new IPs are an improvement over those provided in the first cycle. The timeliness of reporting and the lack of IPs for some jurisdictions remains a concern to the Group and it is clear that for some Parties/jurisdictions, providing quantitative data to demonstrate progress towards the international goals for sea lice and containment is challenging. The

Review Group remains of the opinion that the IPs for all Parties and jurisdictions with salmon farming should present quantitative data in a transparent manner to demonstrate progress towards the international goals for sea lice and containment rather than describing only the management measures in place. It is hoped that this aspect will be addressed through the APRs or, if not, prior to the start of the next IP cycle.

3. Evaluation of the 2014 APRs

Background to the evaluation of the APRs

3.1 The primary purpose of Annual Progress Reports (APRs) is to provide details of:

- any changes to the management regime for salmon and consequent changes to the IP;
- actions that have been taken under the IP in the previous year;
- significant changes to the status of stocks, and a report on catches; and
- actions taken in accordance with the provisions of the Convention.

3.2 The Council had asked that the APRs be provided to the Secretariat by 1 April 2014 and that they be critically evaluated by the Review Group, working by correspondence. The aim of this evaluation was to ensure that jurisdictions had provided a clear account of progress in implementing and evaluating the actions detailed in their IPs and had provided the information required under the Convention. As requested by the Council, the Secretariat had included the actions from the IPs into the APR template for each Party/jurisdiction before it was issued for completion. Where the Review Group considered that there were shortcomings in an APR, the Council had requested that it develop a list of questions to be sent to the Party/jurisdiction concerned by 1 May. Each Party/jurisdiction would have the opportunity to respond to these questions at a Special Session to be held during the 2014 Annual Meeting. While the Review Group had been asked to conduct its work by correspondence, the inter-sessional meeting of the West Greenland Commission in London on 14 and 15 April provided an opportunity for the Review Group to meet and it did so on 16 April.

Working methods

3.3 The Review Group comprised Paddy Gargan, Katrine Kaergaard, Paul Knight, Ted Potter, Rory Saunders and Sue Scott. The Secretary served as the Review Group's Coordinator but did not undertake any evaluations.

3.4 The Group undertook its evaluations in a similar manner to the evaluations of the IPs (see CNL(13)12) according to the following ground rules:

(a) Initial reviewers were appointed (in the main the same initial reviewers as for the IP evaluations) and asked to lead the discussion within the Group and to produce an initial evaluation of each APR. This included an assessment of progress against each of the actions in the IP and the reporting on new initiatives or achievements for salmon conservation and management, on stock status and new factors affecting salmon abundance, on catch statistics and on the additional information required under the Convention;

(b) The initial reviewers would remain anonymous in the report and in the event that one or more members of the Review Group did not agree with a particular aspect or aspects of the review then the report would indicate that there were dissenting views but not disclose which members of the Group expressed the dissenting views unless they wished to be identified;

(c) The Group drew on information in the IPs, but commented only on the information presented in the APRs;

(d) Because not all Parties/jurisdictions were represented on the Group, it was agreed that a member of the Review Group from a NASCO Party/jurisdiction whose APR was being reviewed would not be present during the initial review of that report. The members of the Group were aware that they were representing NASCO, and not their Parties or Organisations.

3.5 For each APR, the Review Group assessed whether satisfactory responses had been provided on:

- any changes to the IP, new initiatives and significant changes in stock status;
- the provision of complete catch data;
- progress made on each action; and
- other returns required under the Convention.

3.6 A summary of the information contained in the APRs, other than the reporting on progress with actions, is contained in document CNL(14)12.

3.7 When all evaluations were complete, a consistency check was undertaken of all the assessments. For each Party/jurisdiction, the evaluation provided a general assessment of the APR, a more detailed commentary on progress on each of the actions (relating to management of salmon fisheries, habitat protection and restoration, and aquaculture and related activities) and a list of questions to be responded to at the Annual Meeting.

Parties/jurisdictions submitting APRs

3.8 Compared to the IPs, there was improved timeliness in the submission of the APRs and this was appreciated by the Group and facilitated its work. Seventeen APRs were submitted prior to, or within a few days of, the deadline of 1 April. Additionally, an APR for Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands was received after the Review Group had met and was reviewed by correspondence. An APR was received from EU - Spain (Navarra) which has not yet submitted an IP. As a consequence, this APR did not include any report on progress on actions but it did contain information on catch statistics and on the information required under the Convention. The Review Group has, therefore, evaluated eighteen APRs as follows:

Party/jurisdiction	Document No.
Canada	CNL(14)37
Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands	CNL(14)38
Denmark (in respect of the Faroe Islands and Greenland) - Greenland	CNL(14)34
EU - Denmark	CNL(14)21
EU - Finland	CNL(14)30
EU - Germany	CNL(14)23
EU - Ireland	CNL(14)36
EU - Spain (Asturias)	CNL(14)25
EU - Spain (Cantabria)	CNL(14)26
EU - Spain (Galicia)	CNL(14)24
EU - Spain (Navarra)	CNL(14)35
EU - Sweden	CNL(14)22
EU - UK (England and Wales)	CNL(14)31*
EU - UK (Northern Ireland)	CNL(14)27
EU - UK (Scotland)	CNL(14)32*
Norway	CNL(14)28
Russian Federation	CNL(14)29
United States	CNL(14)33

* Updated APRs have subsequently been submitted by EU - UK (England and Wales) (CNL(14)39) and EU - UK (Scotland) (CNL(14)40)

Parties/jurisdictions not submitting APRs

3.9 No APRs were received from EU – France and EU – Portugal and this lack of complete reporting is a concern to the Group.

Outcome of the evaluation

3.10 The Review Group's evaluations of the APRs are contained in document IP(14)14 (Annex 1). The Group noted that some of the wording in the APR template in relation to reporting of progress on each action may not have been clear and may have caused confusion in completing the APR template. In particular, it was intended that progress on each action would be reported under 'Monitoring/Enforcement Results' but in some cases only the approach to monitoring was described. The Review Group, therefore, recommends that the Secretariat be asked to modify the template to read 'Progress on action to date' rather than 'Monitoring/Enforcement Results'. The Review Group also recommends that the Secretariat continues to include the actions from the IP into the APR template before it is issued. To facilitate this, the Review Group suggests that the Council requests that where a Party/jurisdiction has indicated in section 1.1 of this year's APR that changes have been made its IP, it should resubmit the IP to the Secretariat before the 1 December of that year so that the revised actions can be included in the APR template. In the case of the EU – UK (Scotland) a revised IP, CNL(14)60, had been submitted which included an update on progress in the 'Description of Action', but the APR that was also submitted, CNL(14)32, contained the actions from the original IP with no update on progress. It was not, therefore, possible to review progress and the Review Group's evaluation reflects this. This is, of course, the first year of the reporting through the new APRs, so some teething problems are to be expected and it is anticipated that the 2015

returns will be further improved, particularly if the APR template is modified as suggested.

3.11 The Review Group noted that section 2.1 in the APR template seeks a description of any significant changes in the status of stocks relative to the reference points. Some jurisdictions provided very comprehensive information on current stock status but it was envisaged that this information would be provided only every five-years through the IPs. The intention in the APRs was only to briefly highlight significant changes that might have occurred. This could be clarified in the APR template.

3.12 The Review Group noted that it had not been intended that jurisdictions would modify the 'Description of Actions' or 'Expected Outcomes' in the APR unless changes were made to the IP. These entries to the IP are copied into the APR by the Secretariat and the Review Group suggested that this should be clarified on the APR template for future years. The Review Group recognised that the amount of information presented in terms of progress against actions varied markedly with some reports being very comprehensive and others providing so little information that it was hard to assess whether any progress had been made. In some cases, links to websites were provided but the Review Group does not have the time to review detailed reports online. This was particularly the case for the results of ongoing monitoring programmes e.g. in relation to water quality. While referring to additional material is helpful for those seeking more detailed information, a brief overview with a quantitative measure of progress would facilitate the evaluation. A good example of an APR providing this information is EU - Ireland (e.g. action H1).

3.13 The Review Group noted that for the entry 'Ongoing/Completed' it had only expected a one word answer, potentially with a date (e.g. Ongoing, Completed for 2013; or Completed in 2015). The Review Group suggested that this should be clarified on the APR template for future years. The Review Group also noted that the intention had been that the section 'Achieved objective?' would be completed only after actions were completed. The Review Group suggested that this should be clarified on the APR template for future years.

3.14 A number of APRs referred to the diminishing availability of resources and it would have been useful to have had an indication in the APR of how this might be anticipated to affect the timescale for implementing the actions in the period covered by the IP (2013 – 2018).

3.15 It is clear from the APRs that a number of Parties/jurisdictions have concerns about the increase in applications for 'run of the river' hydro-electric installations in salmon rivers. The Review Group recommends that the Council consider this issue as a topic for a future Theme-based Special Session.

3.16 The Review Group prepared a summary table (below) to provide an overview of the number of actions in each IP/APR and progress with their implementation for each Party/jurisdiction. This table should be interpreted with care taking account of the explanatory footnotes.

Overview of APR evaluations

3.17 Overall, the Review Group considers that the reporting under the APRs worked well. It is the first year of reporting under the new IPs using a new APR template but generally the plans were submitted on time and the template ensured that the amount of information provided, particularly when compared to the previous Focus Area Reports, was amenable to review and was better focused on outcomes of actions to address particular threats/challenges identified in the IPs. Some APRs provided very limited information on which to assess progress and some information was not presented in the appropriate sections of the template. The Review Group's suggested changes to the template should further enhance reporting in the 2015 and subsequent APRs.

3.18 The Review Group believes that it is not reasonable to conduct a review of up to twenty APRs by correspondence in the short period of time available between the deadlines for submission of APRs and for issuing the list of questions to the Parties. The Review Group considers that, if it is to undertake a thorough, balanced assessment that is consistent among Parties/jurisdictions, it should meet for a two day period in mid-April. The Review Group also believes that the Council's decision to appoint the Review Group for a period of up to three years is appropriate since those undertaking the reviews of the APRs are familiar with the IPs and will be familiar with the progress reported in the 2014 APRs when the review of the 2015 APRs is undertaken. A case could be made for the same Review Group serving for the duration of reporting under the 2013 – 2018 IPs.

Summary overview of progress on the actions reported in the 2014 Annual Progress Reports

		Denmark (in respect of the Faroe Islands and Greenland)		European Union												
	Canada	Faroe Islands	Greenland	Denmark	Finland	Germany	Ireland	Sweden	Spain - Asturias	Spain - Cantabria	Spain - Galicia	UK - England & Wales	UK - Northern Ireland	Norway	Russian Federation	USA
Actions Related to the Management of Salmon Fisheries																
F1	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Not started	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
F2	Ongoing		Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Completed	Ongoing	Not started	Not started	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
F3	Ongoing						Ongoing	Ongoing		Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
F4	Ongoing							Not started		Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Completed	
F5	Ongoing							Ongoing		Ongoing		Ongoing				
F6								Ongoing								
F7								Not started								
F8								Ongoing								
F9								Ongoing								
F10								Ongoing								
F11								Ongoing								
Actions Related to Habitat Protection and Restoration																
H1	Ongoing		Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Not started	Not started	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
H2	Ongoing			Ongoing		Ongoing	Ongoing	Not started	Ongoing	Not started	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
H3	Ongoing			Ongoing		Ongoing	Ongoing	Not started	Ongoing	Not started	Ongoing	Ongoing	Ongoing	Ongoing		Ongoing
H4							Ongoing	Ongoing		Not started	Ongoing	Ongoing	Ongoing	Ongoing		Ongoing
H5								Ongoing					Ongoing			Ongoing
H6													Ongoing			
Actions Related to Aquaculture and Associated Activities																
A1	Ongoing	Ongoing			Ongoing	Ongoing	Ongoing	Ongoing		Not started		Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
A2	Ongoing				Ongoing	Ongoing	Ongoing	Not started				Ongoing		Ongoing	Ongoing	Ongoing
A3	Ongoing						Ongoing					Ongoing		Ongoing	Ongoing	Ongoing
A4	Completed													Ongoing		Ongoing

Note: *The table above is intended to show for each Party/jurisdiction which actions in the Implementation Plan have been initiated and are ongoing, which have yet to commence, and which are completed. It should be noted that the Implementation Plans specify the planned timescales for implementing the actions and these will differ, with not all scheduled to commence in 2013 and some continuing beyond 2018. The scope of the work under each action will also differ. In some cases, an action to address a particular threat/challenge might comprise a number of different elements and although the action is shown as ongoing it does not mean that all elements have commenced or conversely that some are not completed. Some actions that are shown as ongoing were reported as completed for 2013 but are scheduled to occur annually during the period of the Implementation Plan. There is also a wide range in the number of actions in each Implementation Plan.*

IP(14)15

Evaluation of Annual Progress Reports

Canada, CNL(14)37

The twelve actions described in the Canadian Implementation Plan mainly describe what has already been done rather than what will be done between 2013 and 2018; it is therefore difficult to evaluate progress against the Implementation Plan. The APR describes work undertaken under most of the proposed actions, although these are presented in various sections of the report (including within the description of the action itself) and so are not as clear as they might otherwise be. Further information has been provided on work planned in the next few years which is helpful.

Actions related to management of salmon fisheries: A study has been conducted to identify new reference points for Atlantic salmon that conform to the Precautionary Approach; retention limits are to be reduced by 50% in New Brunswick and Nova Scotia in 2014; and the use of catch and release is to be expanded in the Northwest Miramichi River (Action F1). A review of the control and eradication of smallmouth bass has been completed and a new programme is underway (Action A2). Liming work, in conjunction with the Atlantic Salmon Federation, is ongoing; positive early results are reported, but no details have been provided (Action A3). Efforts to improve compliance and reduce poaching are being implemented and progress is reported on: extensive monitoring and enforcement; reports of violations identified; and increases in penalties (Action A4). Work is ongoing to reduce by-catch in pelagic fisheries, and indications are reported of reduced catches and improved release of by-catch; guidelines have also been produced to improve monitoring (Action A5).

Actions related to habitat protection and restoration: All of the amendments to the *Fisheries Act* entered into force in November 2013, and Fisheries and Oceans Canada released its Fisheries Protection Policy Statement with the goal of providing for the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries (Action H1); results are not yet available, but elements that are expected to be completed in the next year are listed. Three advisory reports were published which (a) describe the likely response of fisheries productivity to various common types of habitat changes, (b) provide a framework for assessing changes in fisheries productivity resulting from activities, and (c) describe methods that have been used to increase fisheries productivity (Action H2). Provinces have provided input on the updated policy and decision-making frameworks prepared by Fisheries and Oceans Canada to support the new Fisheries Protection Provisions and Program (Action H3) but no further details are provided.

Actions related to aquaculture and associated activities: Studies have been initiated on various aspects of sea lice biology, monitoring control and management, and an advisory report is expected in 2014 (Action A1). Various activities are underway to improve the regulatory framework for containment of farmed salmonids, and revised frameworks are expected in 2014 (Action A2). A new National Code on Introductions and Transfers of Aquatic Organisms was officially endorsed in 2013 and is expected to be implemented in

2014. Scientific advice was provided on the risks associated with the potential importation and use of European-origin Atlantic salmon broodlines in salmon aquaculture in Newfoundland (Action A3). Following a risk assessment, Canada approved the commercial production of growth-enhanced, transgenic Atlantic salmon in contained facilities (Action A4). It would have been helpful to have a summary of the outcome of the risk assessment in addition to the link to a website provided in the APR.

Questions for response at the 2014 Annual Meeting:

1. *Since the status of MSW salmon stocks is currently of particular concern, what measures (Action F1) were introduced in 2013 or are planned to further regulate their exploitation?*
2. *What is the anticipated timescale of activities under Action H3 and how is this expected to assist salmon conservation and management?*
3. *The Implementation Plan for Canada provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*
4. *In summary, what was the outcome of the risk assessment conducted prior to approval being granted for the commercial rearing of growth enhanced transgenic salmon and were the NASCO Guidelines for Action on Transgenic Salmonids, CNL(04)41 followed (Action A4)?*

Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands, CNL(14)38

The Implementation Plan identifies only two proposed actions (there are no self-sustaining salmon populations in the Faroe Islands), and the APR provides a clear report on the progress made to address both of them in 2013.

Actions related to management of salmon fisheries: Consistent with the ICES advice, there was no salmon fishery around the Faroe Islands in 2013 (F1).

Actions related to habitat protection and restoration: There are no self-sustaining salmon populations in the Faroe Islands and no actions in the Implementation Plan relating to habitat protection and restoration.

Actions related to aquaculture and associated activities: Monitoring and enforcement activities were conducted by the Faroese veterinary authorities in 2013. Rearing of transgenic salmon is not permitted under the Veterinary Act (Action A1).

Questions for response at the 2014 Annual Meeting:

1. *How do the veterinary authorities assess whether or not there is an issue in relation to sea lice and containment that would require enforcement action e.g. have thresholds been established for sea lice treatment?*
2. *The Implementation Plan for the Faroe Islands provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*

Denmark (in respect of the Faroe Islands and Greenland) – Greenland, CNL(14)34

The Implementation Plan identifies only three proposed actions (there is only one salmon river in Greenland and no aquaculture), and the APR provides a clear report on the progress made to address them in 2013. Further information has been provided on work planned which is helpful.

Actions related to management of salmon fisheries: A new reporting system was implemented in 2012 that requires that effort data is provided (number of nets, net type, hours fished). Evaluation of reporting in 2013 indicates that the data provided has improved, but the evaluation will continue until 2015 (Action F1). In July 2012, a quota for landings to fish factories was set for the internal consumption fishery. This quota is to be reviewed and revised as necessary in the light of catches and biological data. No change was made to the quota in 2013 (Action F2).

Actions related to habitat protection and restoration: There is only one salmon river in Greenland, the Kapisillit River, and a protection plan is under development for the entire river including the estuary in order to safeguard it from pollution, development of agriculture and gill netting (Action H1). A draft Executive Order is currently being finalized and will be presented at a hearing in 2014. The APR indicates that salmon are also likely to be included in a project to develop a strategy for the protection of biodiversity in Greenland.

Actions related to aquaculture and associated activities: There is no aquaculture in Greenland and consequently no proposed actions in the Implementation Plan.

Questions for response at the 2014 Annual Meeting:

1. *Do the new reporting requirements that include provision of effort data apply to both licensed and unlicensed fishermen (Action F1)?*
2. *What biological data are taken into account in decisions concerning the quota to be set for factory landings and how does this influence the decision on the level of quota to be set (Action F2)?*
3. *Will baseline data on the status of salmon in the Kapisillit River be collected in support of the protection plan? Given the development of the protection plan for the Kapisillit River, what additional protection will be delivered by the possible inclusion of salmon in the broader biodiversity strategy for Greenland (Action H1)?*

European Union – Denmark, CNL(14)21

The Implementation Plan identifies only six proposed actions, but the APR provides very little information on the progress made to address them in 2013. The Review Group encourages more detailed reporting on progress against each action in the 2015 APR.

Actions related to management of salmon fisheries: Denmark has a national cormorant plan to regulate recruitment of cormorants where predation on salmonids is perceived to be a problem, but it is unclear what work was undertaken in 2013 although reference is made to tracking and other studies (Action F1). Evaluation of by-catch of salmon and sea trout in the Ringkøbing Fjord is on-going, but no information has been provided on work undertaken in the past year, although reference is made to pound nets for flounder and whitefish having to lower their headropes to 30 - 50cm below the surface (Action F2). There has been no progress on the development of more reliable reference points for four wild salmon stocks (Action F3).

Actions related to habitat protection and restoration: Actions are planned to evaluate the benefits of removing obstructions in rivers (Action H1), to conduct general habitat restoration work (Action H2), and to identify and quantify spawning and nursery habitats that can be opened (Action H3), but no progress has been reported.

Actions related to aquaculture and associated activities: No actions were proposed in the Implementation Plan.

Questions for response at the 2014 Annual Meeting:

1. *What work was undertaken in relation to the control of cormorants (Action F1) and evaluation of by-catch in 2013 (Action F2)?*
2. *What is the proposed timescale for developing more reliable stock reference points (Action F3)?*
3. *What progress was made in 2013 on each of the three actions related to habitat protection and restoration (Actions H1 – H3)?*

European Union – Finland, CNL(14)30

The Implementation Plan identifies only five proposed actions but the APR provides very little information on the progress made to address them in 2013. The Review Group encourages more detailed reporting on progress against each action in the 2015 APR. For Action F2, progress has been reported in the Description of the Action. The APR indicates that catch and release is 'not applicable' but it is not clear if this means it is not practised (i.e. is zero) or if statistics are not collected. Some information has been provided on planned work which is helpful.

Actions related to management of salmon fisheries: A new regulatory regime for the River Teno is being negotiated with Norway (Action F1). Spawning targets have been established and are annually assessed for five tributaries of the Teno and in 2014 new, revised spawning targets will be set for most of the tributaries and the main stem of the Teno (Action F2).

Actions related to habitat protection and restoration: The Implementation Plan indicates that there are minor habitat issues in the Atlantic salmon rivers in Finland. The APR indicates that guidance has been issued to road constructors and that there was no noteworthy road construction in 2013 (Action H1).

Actions related to aquaculture and associated activities: New legislation was introduced in 2010 to prevent the spread of *G. salaris*. Information highlighting the risks associated with the spread of the parasite was issued to fishermen and disinfection stations continued to be operated in 2013 (Action A1). Monitoring for the occurrence of escaped farm salmon originating in Norway continued in 2013, but no results have been provided (Action A2).

Questions for response at the 2014 Annual Meeting:

1. *What is the process for determining the new regulations for the river Teno with Norway and how is it anticipated that this will change the management regime to facilitate stock rebuilding (Action F1)?*
2. *What is the current status of stocks in the five tributaries of the Teno River for which compliance with spawning targets is currently assessed and what is the timescale and approach for assessing compliance in the other tributaries and main stem for which spawning targets will be set in 2014?*
3. *The APR indicates that catch and release is not applicable in Finland. Does this mean it is not practised even though the need to reduce fishing mortality is highlighted and, if so, are there plans to promote it as part of a stock rebuilding effort?*
4. *The APR refers to monitoring for escaped farmed salmon. What has this monitoring shown and is there an ongoing dialogue with Norway concerning containment measures (Action A2)?*
5. *The APR focuses on the Teno River (Actions F1 and F2). Are there similar initiatives to develop new regulations and spawning targets for the Naatamo River and, if so, what is the timescale?*

European Union – Germany, CNL(14)23

The Implementation Plan identifies seven proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013. Detailed supplementary information is provided in Appendices to the APR. A new action has been included in the Implementation Plan relating to genetic monitoring to assess the stocking programme in the Rhine, and progress is reported on this new action in the APR. Further information has been provided on planned work which is helpful. No estimate of unreported catch has been provided, but in all other respects the APR has been completed satisfactorily.

Actions related to management of salmon fisheries: Delegates from each country through which the Rhine flows have reported on improving compliance by reducing by-catches and illegal harvest of salmon. No data are presented on the extent of the problem but the APR concludes that while there is good legislation in place control is difficult and only possible in areas where fishing is banned (Action F1). Stocking in a sub-system of the Agger River will cease in 2014 with a view to developing a self-sustaining salmon population (Action F2).

Actions related to habitat protection and restoration: Preservation and restoration of the ecological passability at 250 barrages in federal waterways is underway and includes actions in the salmon restoration rivers Rhine, Ems, Weser and Elbe. The first implementation phase encompasses 46 'measures' and for more than 30 of these planning has commenced, two measures are under construction and one fishway is complete (Action H1). Since 2009, a range of measures to improve river continuity in the Rhine have been implemented, and a detailed table summarising these has been provided (Action H2). By the beginning of 2013, 29% of the measures intended to re-establish continuity of the Elbe River and its primary tributaries had been completed, 5% of the measures were under construction and 37% were scheduled for implementation (Action H3).

Actions related to aquaculture and associated activities: The goal is to derive stocking material for the tributaries of the Rhine in North Rhine Westphalia from returning spawners, reconditioned kelts and captive breeding in order to eliminate the use of foreign ova. A Wild Salmon Centre Rhein-Sieg has been commissioned, and it is expected that the goal will be achieved by 2015 (Action A1). Following a workshop in 2013, harmonization of genetic monitoring throughout the Rhine catchment is underway with the aim of assessing the effectiveness of stocking including the different strains and strategies used and the relative importance of different tributaries (Action A2).

Questions for response at the 2014 Annual Meeting:

1. *No estimate of unreported catches has been provided but Action F1 refers to illegal catches. Are these illegal catches reported and included in the reported statistics and, if not, is an estimate available of the extent of such catches?*
2. *Given that the APR indicates that control of illegal harvests and by-catch is only possible in areas where fishing has been banned, are there plans to introduce bans in other areas to safeguard salmon (Action F1)?*
3. *Reference is made to the development of a self-sustaining salmon population in the Agger River without stocking and verification of the successful restoration of the salmon population. What criteria will be used to assess the success of the restoration programme (Action F2)?*

European Union – Ireland, CNL(14)36

The Implementation Plan identifies ten proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013. Useful quantitative data is provided to demonstrate progress on monitoring programmes etc. For Action H2, progress has been reported in the Description of the Action. A minor omission is the lack of total catches in 2012 and 2013 but in all other respects the APR has been completed satisfactorily.

Actions related to management of salmon fisheries: The APR indicates that protection against illegal fishing is a high priority in Ireland, and enforcement activities in 2013 are well described including man hours spent, number of nets seized, number of on-the-spot fines issued and number of prosecutions (Action F1). Action F2 relates to improving catch reporting through the use of national carcass tagging and logbooks. In 2013 reporting was 100% for professional fishermen and 73.5% for recreational fishermen and those not reporting were contacted and a proportion taken to court. An electronic licence system is now in place. A new fish counter strategy is under development. In 2013, a new fish counter website and a database were introduced, and validation is underway and will continue in 2014. Data from 29 counters were used in the 2012/13 assessment, an increase of 8 from the year before (Action F3).

Actions related to habitat protection and restoration: Action H1 relates to agricultural enrichment and initiatives to improve water quality through improved agricultural practices. A new Nitrates Action Programme has been developed and will enter into force in 2014. The most recent monitoring indicated that 71% of river channels are at a high or good status with the virtual elimination of seriously polluted waters, and the focus is now on moderate and poor status sites. A new Forestry Bill, that aims to better protect sensitive sites, has passed stage 1 and 2 of Government and Committee hearings and will be published in 2015. There was general compliance with forestry codes of practice in 2013 (Action H2). The upgrading of inadequate sewage treatment works continued in 2013, and a new company, Irish Water, was created to take over the water investment and maintenance programme. Owners of domestic waste water treatment systems have been required since 2013 to register them, and an inspection plan has been developed (Action H3). Monitoring of lice levels on farms indicated that levels in spring 2013 were generally lower that the two previous years, and compliance with treatment targets was better than in 2011 and 2012 but varied between 53% and 100% on different life stages and in different areas (Action H4).

Actions related to aquaculture and associated activities: The APR indicates that the salmon farming industry complies with codes of practice regarding husbandry and good engineering practices and there were no reported escapes of farmed salmon in 2013 although there were large escapes in 2014 due to storms (Action A1). Monitoring of sea lice levels at farms was continued in 2013 (Action A2) - see H2 above. Early harvesting of farmed fish where gill damage has been detected can be used to prevent further outbreaks and there were no significant outbreaks of disease in 2013 (Action A3).

Questions for response at the 2014 Annual Meeting:

1. *The APR indicates that there were improvements in the compliance with treatment target levels sea lice for all salmon age groups, areas and months in 2013 compared to 2011 and 2012 but compliance in 2013 was not 100 % (Actions H2 and A2). What proportion of farms failed to meet targets levels and what actions are taken when targets are not met?*

2. *The APR states that there were no significant outbreaks of diseases in aquaculture facilities in 2013. What is the definition of a significant outbreak and does this relate to the prevalence or severity of the disease (Action A3)?*

European Union – Spain (Asturias), CNL(14)25

The Implementation Plan identifies only five proposed actions but the APR provides very little information on the progress made to address them in 2013. The Review Group encourages more detailed reporting on progress against each action in the 2015 APR. No estimate of unreported catch has been provided.

Actions related to management of salmon fisheries: Work is reported to be continuing to increase surveillance on rivers in order to decrease poaching (Action F1) but no progress has been described other than coordination between river basins and between autonomous communities for border rivers. In order to regulate river catches to avoid over exploitation, quotas and fishing seasons were reduced and reserves created in 2013 but no details have been provided (Action F2).

Actions related to habitat protection and restoration: Work is said to be continuing to keep fish passes clear (Action H1), increase awareness of the problems faced by salmon at the southern limit of their range in Europe (Action H2), and update an inventory of obstructions to fish movements (Action H3), but virtually no details have been provided other than to report that a population census was conducted (H2) and the distribution area was monitored (H3).

Actions related to aquaculture and associated activities: No actions were proposed in the Implementation Plan.

Questions for response at the 2014 Annual Meeting:

1. *The answer to question 2.2 suggests that there is 100% catch and release in the in-river fisheries; if this is the case why is there a reported catch?*
2. *Action F1 suggests that poaching occurs; an estimate of unreported catch would, therefore, be expected.*
3. *What action is being taken to address the concerns about climate change and what were the findings of the population census (Action H2)?*
4. *What is the anticipated timescale for developing the inventory of obstructions and what action will be taken to address them (Action H3)?*
5. *The Implementation Plan for Asturias provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

European Union – Spain (Cantabria), CNL(14)26

The Implementation Plan identifies ten proposed actions but the APR provides very little information on the progress made to address them in 2013. The APR indicates that work on six actions has not yet commenced. The Review Group encourages more detailed reporting on progress against each action in the 2015 APR.

Actions related to management of salmon fisheries: Monitoring of catches is ongoing as part of a programme to assess the status of stocks with a view to reducing exploitation of MSW salmon (Action F1). Monitoring of catches together with a tagging programme is being used to establish exploitation levels (Action F4). Juvenile surveys have been undertaken as part of an action to develop conservation limits and management targets (Action F3) and in connection with operating an index river site (Action F5). However, no further details of progress have been provided. No action was taken in 2013 to promote catch and release among stakeholders (Action F2).

Actions related to habitat protection and restoration: There has been no progress on any of the proposed actions: to improve fish passage by removing dams, removing culverts, installing fishways and upgrading road-stream crossings (Action H1); to conduct research on the impacts of hydropower and implement new regulations to require fish passage facilities (Action H2); to provide appropriate river flows by implementing sustainable abstraction programmes (Action H3); and to develop integrated catchment management to reduce land-use impacts (Action H4).

Actions related to aquaculture and associated activities: An action to regulate salmonid stocking in Cantabrian rivers by implementing and enforcing the existing and a proposed new stocking programme has not yet commenced (Action A1).

Questions for response at the 2014 Annual Meeting:

1. *What is the proposed timescale for developing conservation limits for Cantabrian salmon stocks and how are fisheries managed in their absence (Action F3)?*
2. *What are the timescales for the commencing the proposed actions to improve fish passage (Action H1), undertake research on the impacts of hydropower (Action H2), provide appropriate river flows (Action H3) and develop integrated catchment management (Action H4)?*
3. *Is the annual report on status of salmon stocks and fisheries made available to the ICES Working Group on North Atlantic Salmon?*
4. *What is the proposed timescale for the regulation of stocking in Cantabrian rivers and will it conform to NASCO guidance on stocking (Action A1)?*
5. *The Implementation Plan for Cantabria provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

European Union – Spain (Galicia), CNL(14)24

The Implementation Plan identifies eight proposed actions but the APR provides very little information on the progress made to address them in 2013. The APR indicates that work on three actions has not yet commenced. Unreported catches and catch and release are recorded as 'unknown' and no estimates are provided. The Review Group encourages more detailed reporting on progress against each action in the 2015 APR.

Actions related to management of salmon fisheries: New reaches of the rivers Mera, Anllóns and Sor have been declared 'salmon areas' as part of an action to develop the management of trout in salmon rivers (Action F3); this should provide greater protection for salmon parr as natural baits are prohibited in these areas. The development of a Conservation/Restoration Plan for salmon rivers in the A Coruña province is nearly complete (Action F4); stocking programmes have been initiated in the rivers Anllóns and Sor but no details have been provided. Proposed actions to develop conservation limits for at least the Rivers Eo and Ulla (Action F1) and work with the central government of Spain to develop fishing rules and undertake research in the River Miño (Action F2) have not yet been started.

Actions related to habitat protection and restoration: Three dams were removed in 2013 increasing access to the upper Eo River, and a plan for the demolition of seven dams in the lower Ulla basin is being developed (Action H4). Guidelines for the implementation of compensation flows are under discussion (Action H3). No progress is reported on development of criteria for management of riparian vegetation (Action H1), or the implementation of the EU Water Framework Directive (Action H2).

Actions related to aquaculture and associated activities: No actions were proposed in the Implementation Plan.

Questions for response at the 2014 Annual Meeting:

1. *What are the timescales for commencing the proposed actions to develop conservation limits (F1), develop fishing rules and undertake research in the River Miño (F2) and develop criteria for management of riparian vegetation (H1)?*
2. *How are fisheries managed in the absence of conservation limits and the fishing rules referred to in question 4 above?*
3. *Are there any plans to develop estimates of unreported catch and the extent of catch and release?*
4. *Do the stocking programmes in the A Coruña province conform to the NASCO guidance on stocking (Action F4)?*
5. *The reference to the development of a 'cover index' in Action H1 is unclear and clarification would be welcome.*
6. *What actions are being taken under the EU-WFD to protect and restore salmon habitat (Action H2)?*
7. *What data on sea lice levels or containment are being collected at the experimental fish farm and how will they be taken into account in the evaluation of the project?*

8. The Implementation Plan for Galicia provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.

European Union – Spain (Navarra), CNL(14)35

No Implementation Plan has been submitted yet for the Autonomous Community of Navarra, but its APR indicates that the Government of Navarra started to prepare an Atlantic Salmon Management Plan in 2013. A preliminary draft is being revised but there is no scheduled date for its approval and no budget allocated for its implementation. The only other information provided in the APR is the nominal catch data, with no information on unreported catch or catch and release. While welcoming the submission of an APR for Navarra, the information provided does not meet all of NASCO's reporting requirements.

European Union – Sweden, CNL(14)22

The Implementation Plan identifies eighteen proposed actions and the APR provides brief information on the progress made to address them in 2013. Further information has been provided on planned work which is helpful. The APR indicates that work on six actions has not yet commenced.

Actions related to management of salmon fisheries: To reduce exploitation of wild fish, a new regulation setting a bag limit of two salmonid fish for anglers is proposed for 2014 (Action F1). A ban on gill net fishing in coastal waters deeper than 3m has been agreed and will be effective from March 2014 (Action F2). Fin clipping of reared salmon and trout has continued in 2013 and allows wild and reared salmon to be distinguished (Action F3). No progress was reported in establishing a genetic baseline for salmon stocks but work will commence in 2014 (Action F4). The index river continued to be operated in 2013 and the efficacy of the smolt trap was evaluated; an evaluation of the adult trap is scheduled for 2014. Together with new habitat data this work will support the establishment of conservation limits and management targets (Actions F5 and F6). Work in establishing in-river exploitation levels has not yet commenced (Action F7). More detailed catch statistics are being sought including information on catch and release which has been obtained for some rivers; effort data is still lacking (Action F8). The number of MSW salmon landed in 2013 declined although it is not clear if this was due to declining abundance or management actions (Action F9). Juvenile surveys were conducted in 17 of the 23 rivers in 2013 (Action F10). No new fish management units (FMUs) were established in 2013 (Action F11).

Actions related to habitat protection and restoration: Liming of acidified salmon rivers was undertaken according to an agreed schedule but no details of the number of rivers treated or the results of monitoring the outcome are provided (Action H1). Habitat surveys will commence in 2014 (Action H2). Habitat restoration in salmon rivers is planned for 2015 (Action H3). Scientific background documents relating to establishing criteria for best available technology (BAT) for hydropower generation were published in 2013 and guidance will be produced in 2014 (Action H4). Work in establishing criteria and a work plan for surveillance of hydropower plants according to Environmental Law and the BAT is planned for 2015 (Action H5).

Actions related to aquaculture and associated activities: Annual monitoring of rivers for the presence of *G. salaris* was undertaken as planned and no new infested rivers were detected in 2013. Cooperation with Norway on *G. salaris* has been established (Action A1). Genetic screening for escaped farmed salmon will be undertaken when the genetic baseline scheduled for 2016 has been established (Action A2).

Questions for response at the 2014 Annual Meeting:

1. *The APR refers to a reduction in landings of MSW salmon in 2013. Is this because of declining abundance or the effect of management measures? Are any additional measures planned to protect MSW salmon in addition to the introduction of a two fish bag limit in 2014 (Action F1)?*
2. *Why does the ban on gill netting for salmon only apply at depths >3m in coastal waters and how will exploitation of mixed stocks in gill net fisheries in waters < 3m be controlled (Action F2)?*

3. *The stated objective is to phase out mixed-stock fisheries on wild salmon in reared rivers, and mixed-stock fisheries on the coast. How will this objective will be achieved given that a gill-net fishery at depths <3 m will still be in place along the coast (Action F2)?*

4. *Are there plans to treat rivers infested with the parasite G. salaris or are other measures planned to prevent its spread (Action A1)?*

European Union – UK (England and Wales), CNL(14)31

The Implementation Plan identifies twelve proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013. Further information has been provided on work planned which is helpful.

Actions related to management of salmon fisheries: An annual assessment of the status of salmon stocks was conducted in 2013 *inter alia* to determine the need for emergency regulatory controls (Action F1). Net Limitation Orders (NLOs) were reviewed for several single stock fisheries and some changes introduced in the number of licenses issued. Consultations are underway for other NLOs (Action F2). A range of actions have been taken to implement the policy on mixed-stock fisheries including review of the need for, and consultations on, new regulatory measures and genetic analyses are ongoing to determine the origin of catches in MSFs (Action F3). Promotion, with stakeholders, of catch and release fishing is ongoing and the 2013 provisional estimate (69%) is the highest in the time series (Action F4). A high level of compliance in use and recording of carcass tagging was observed in 2013 with no evidence of sale of rod (or illegally) caught salmon. Intelligence information is being used to direct enforcement operations and a national intelligence model is scheduled for implementation in 2014 (Action F5).

Actions related to habitat protection and restoration: Fencing and planting targets under the 'Keeping Rivers Cool' project were met in two pilot catchments and partially completed in a third in 2013. Water companies submitted their business plans in 2013 and are required to consider climate change in their Water Resources Management Plans. Climate change is considered in river planning and will be reported in River Basin Management Plans (RBMPs) due for consultation in 2014. Draft thermal standards for transitional and coastal waters are being developed (Action H1). Work was undertaken at 49 barriers improving access to ~1000km of river in England and Wales, protocols for new regulations are being developed to require fish passage and screening in England and research is underway into the effects of new in-river hydropower schemes (Action H2). The risk of environmental damage from unsustainable abstraction has been reduced or prevented since 2008 and a review of consents on all Natura 2000 rivers was concluded in 2013 and new licences, where warranted, are expected in 2014. A new Water Bill has nearly completed its passage through Parliament and includes provisions relating to sustainable management of water (Action H3). Progress on a number of actions relating to integrated catchment management through RBMPs are reported including surveys to determine why rivers are failing to achieve good ecological status, provision of catchment sensitive farming advice, launch of the Catchment Based Approach in 2013 and establishment of partnerships and financial rewards for good environmental stewardship (Action H4).

Actions related to aquaculture and associated activities: Discussions are ongoing to agree stocking levels for brown trout and will be incorporated into stocking permits. A target to stop all stocking of diploid brown trout will come into force by 2015 but compliance with the policy in 2013 was higher than target. A review of stocking policy and hatchery operations was completed in Wales in 2013 (Action A1). A new live fish movement regulation is due for implementation in 2014, EU regulations on use of alien and locally absent species are being fully implemented, monitoring of wild fish populations for new and emerging disease threats has continued, projects are underway to assess the risks of *G. salaris* establishment and spread, the 'check, clean, dry campaign' is promoted, a new AquaInvaders 'app' has been made available to anglers to help report new occurrences and the distribution of non-

native species (including fish) and a five-year eradication programme for the topmouth gudgeon has been developed and implemented (Action A2). The application of national and EU regulations concerning discharge controls and prohibited substances is continuing and research on contaminants from fish farms is ongoing and expected for completion in 2014.

Questions for response at the 2014 Annual Meeting:

1. *Are any interim measures for the North-East coast beach net fishery being considered (prior to the review in 2017) in light of the increased catch in 2013 (Action F3)?*
2. *Of the 1,300 cross-compliance inspections referred to in the APR, how many resulted in prosecutions and were remedial actions required (Action H4)?*
3. *How is the 'check, clean, dry' campaign promoted?*

European Union – UK (Northern Ireland), CNL(14)27

The Implementation Plan identifies eleven proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013. For Actions F1, F2 and F3 progress has been reported in the Description of the Action. Further information has been provided on work planned which is helpful.

Actions related to management of salmon fisheries: The voluntary cessation of commercial mixed-stock fishing in the DCAL area was maintained in 2013 and regular patrols confirmed no activity. Legislation will be in place in 2014 to prevent commercial netting until a series of criteria have been met including consistent achievement of conservation limits. There has been no commercial netting of salmon in the Loughs Agency area since 2010 (Action F1). Voluntary catch and release was requested in the DCAL area in 2012 and 2013 and enforcement patrols in 2013 indicated that a significant number of anglers complied with this request. Legislation will be in place in 2014 to make catch and release mandatory unless agreed criteria are met (Action F2). Mandatory catch and release before 1 June was required in the DCAL area in 2013 to protect MSW salmon, and only one infringement was detected during regular enforcement patrols. In the Loughs Agency area there was a public consultation on the number of MSW salmon that could be taken by anglers as part of a review of salmon conservation measures (Action F3). Patrols were conducted regularly in 2013 in both the DCAL and Loughs Agency areas, and details of nets and illegally caught salmon seized are provided (Action F4).

Actions related to habitat protection and restoration: Applications for hydropower are assessed, recommendations for fish passage requirements are provided and compliance monitored. A scientific monitoring programme will be carried out in 2014 to assess the potential impact of small scale hydropower on salmon (Action H1). Habitat improvement works were carried out in a number of rivers to restore habitat in impacted stretches of rivers following drainage and other works (Action H2). Monitoring programmes are in place in relation to trade and sewage waste discharge which now include indicative EU Water Framework Directive classifications but no data have been provided on enforcement actions taken (Action H3). A programme of works has been initiated to identify structures on major salmon rivers that could be barriers to migration. This has been completed on the Six Mile River, and two barriers are being considered for removal (Action H4). To reduce illegal alterations to salmon habitat, an advisory leaflet has been prepared for the DCAL area, and a river morphology handbook has been prepared detailing the permissions required to undertake work in rivers (Action H5). In order to develop an inventory of current and potential salmon habitat, surveys were conducted in two rivers in 2013 and conservation limits were established. Further surveys are planned for 2014. Habitat improvement works have been conducted in five rivers (Action H6).

Actions related to aquaculture and associated activities: Data was collected in 2013 to assess sea lice levels in a wild salmon stock and the level of genetic introgression of escaped farmed salmon on wild salmon stocks, and analysis will commence in 2014 (Action A1).

Questions for response at the 2014 Annual Meeting:

1. *What is the proportion of salmon that are released following capture by angling in the Loughs Agency area (Action F3)?*
2. *The APR (Action H3) refers to 'NASCO fishing data' and its use in the formulation of programmes of measures under the Water Framework Directive. What data does this refer to?*

European Union – UK (Scotland), CNL(14)32

The APR indicates that the Implementation Plan for the period 2013 – 2018 had been updated to reflect progress and developments, including a significant amount of planned activity. This will include an independent review of wild fisheries management in Scotland to be conducted in 2014 (sections 1.1 and 1.2 of the APR). The updated Implementation Plan was made available to the Review Group as document CNL(14)60.

While recognising this new Implementation Plan and the planned activities it contains, the Review Group was tasked with evaluating the APRs submitted by the Parties/jurisdictions to assess the progress that has been made on each of the actions in the previous year (2013).

- The APR for UK (Scotland) contained no details of monitoring/enforcement results (i.e. progress to date on the actions in the Implementation Plan), no indication of whether or not the actions were ongoing or completed and no assessment of whether or not the actions had achieved their objectives.
- The information presented on actions was only the description of the actions to be taken and their expected outcomes, as contained in the previous 2013 – 2018 Implementation Plan and incorporated in the APR by the Secretariat as requested by the Council. There was, therefore, no information in the APR to evaluate.

The Review Group also noted that at the time of the evaluation (16 April), the APR contained no information on catch statistics, although it indicated that these data would be made available on 29 April. The Review Group was aware, however, that catch statistics had been provided to ICES in late March. The APR template also allows for reporting of the information required under the Convention. This information includes details of any laws, regulations and programmes that have been adopted or repealed since the last notification. The Review Group is aware that in 2013 a significant new act had entered into force (Aquaculture and Fisheries (Scotland) Act 2013).

The Review Group encourages UK (Scotland) to report next year on progress against each action in its revised Implementation Plan using the agreed APR template (covering actions taken in 2014).

Norway, CNL(14)28

The Implementation Plan identifies twelve proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013. The Review Group welcomes the fact that further information on certain actions has been reported through ICES (e.g. experiments with temporary weirs to monitor and separate out farmed fish). Further information has been provided on work planned which is helpful.

Actions related to management of salmon fisheries: An annual assessment of stock status in terms of attainment of management targets was completed in 2012 for the period 2009 – 2011 (Action F1). Mid-season assessments of the fishery and salmon runs have been undertaken in some rivers, and their utility is being evaluated and introduction in other rivers is being considered (Action F2). Revised spawning targets have been developed in 2013, and a new generation of spawning targets will be developed from 2016 dependent on development of a sufficient scientific basis (Action F3). A new regulatory regime for the River Tana is being negotiated with Finland (Action F4).

Actions related to habitat protection and restoration: Planned liming programmes were undertaken in 21 rivers in 2013 (Action H1). Work is underway to revise the rules of operation for the largest and oldest hydropower plants by 2022, and the next step is to set environmental objectives in regulated rivers (Action H2) and to develop and implement River Basin Management Plans to protect and restore habitat for all water bodies according to the EU Water Framework Directive by 2015 (Action H4), but no details are provided of progress made in 2013. Eleven fish passes were restored in 2013 (Action H3).

Actions related to aquaculture and associated activities: A regional carrying capacity model for sea lice is under development, but no details are provided of progress made in 2013 although it is anticipated that the model will be implemented in risk assessment and management from 2015 (Action A1). A new action plan is under development for the control of *G. salaris* which it is anticipated will involve rotenone treatment of 7 rivers over the next three years; surveillance programmes have been established on 14 treated rivers (Action A3). Action is also being taken to remove pink salmon from rivers in Finnmark in accordance with an agreed action plan but no details of the method used have been provided (Action A4). Progress has been reported on a range of actions to improve precautionary measures at fish farms: research on the use of sterile farmed salmon is underway; trials with the use of temporary weirs to monitor and remove escaped farm salmon from rivers showed the method to be effective but expensive; methods to identify the origin of farm escapees using trace elements are being evaluated; and a programme to improve estimates of farm escapees in wild populations is being set up (all under Action A2).

Questions for response at the 2014 Annual Meeting:

1. *What is the process for determining the new regulations for the River Tana with Finland and how is it anticipated that this will change the management regime to facilitate stock rebuilding (Action F4)?*
2. *How are the costs and benefits of hydropower generation assessed against conservation and restoration measures for salmon (Action H2)?*

3. *How are geographical areas with the highest risk of negative impacts from sea lice and biggest potential for further growth of salmon farming (or sea lice impact) being assessed (Action A1)?*

Russian Federation, CNL(14)29

The Implementation Plan identifies nine proposed actions, and the APR provides a clear and comprehensive report on the progress made to address them in 2013. No information has been provided on unreported catch or the extent of catch and release but in all other respects the APR has been completed satisfactorily.

Actions related to management of salmon fisheries: A comprehensive genetic baseline has been established through the Kolarctic Atlantic Salmon project, and a migration model and recommendations for management measures for coastal fisheries are being developed (Action F2). New amendments to the regulations for harvesting anadromous fish came into force in 2013 which will allow the establishment of science-based quotas for salmon fisheries conducted by indigenous people, although no timescale is provided for their introduction (Action F4). There has been progress in identifying where unreported catches may be occurring and in estimating these catches (Action F1). Conservation limits had previously been set for all rivers in the Murmansk region and for all exploited stocks in the Arkanghelsk and Nenets regions but not in Karelia. The APR indicates that new conservation limits based on assessment of carrying capacity of the rivers of Murmansk and Arkangelsk are planned using the findings from Action H1, but additional funding is needed (Action F3).

Actions related to habitat protection and restoration: Reassessment of the carrying capacity of the salmon rivers in order to develop inventories has commenced in most regions, and is completed for the Barents Sea rivers, but no progress is reported to date for Karelia (Action H1). While general recommendations on habitat restoration have been developed, no detailed habitat plans have yet been developed (Action H2).

Actions related to aquaculture and associated activities: A new Federal Law has come into force in relation to aquaculture but the APR indicates that by-laws are now required (Action A1). Monitoring is undertaken for the parasite *G. salaris,* which is present in the Keret River in Karelia; while the APR highlights a risk of further spread of the parasite by anglers, no measures to prevent this have yet been developed (Action A2). There are rules in place relating to movements from outside the North-East Atlantic Commission area of reproductively viable non-indigenous anadromous salmonids or their gametes, and the APR confirms that no such movements occurred in 2013 (Action A3).

Questions for response at the 2014 Annual Meeting:

1. *What is the anticipated timescale and process for the development of management measures for the coastal fishery (Action F2) and the introduction of science-based quotas for the indigenous people's fishery (Action F4)?*
2. *No information has been provided on unreported catch or the extent of catch and release. The Review Group notes that there is an action (F1) intended to develop estimates of unreported catch. What is the timescale for meeting these two reporting requirements to NASCO*?
3. *Inventories of salmon rivers are being developed or have been completed in some areas, but the APR indicates that completion of this task requires additional funding (Action H1). Will a lack of funding prevent this task being completed as scheduled by 2018?*

4. *The Implementation Plan for the Russian Federation provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? Will the new Federal Law on Aquaculture and subsequent bylaws provide for this baseline data collection (Action A1)?*

5. *What measures are planned, other than monitoring, to minimise this risk of the further spread of G. salaris by anglers (e.g. increasing awareness of the risks, mandatory disinfection of gear, and treatment of the River Keret) (Action A2)?*

USA, CNL(14) 33

The Implementation Plan identifies twelve proposed actions and the APR provides a clear and comprehensive report on the progress made to address them in 2013.

Actions related to management of salmon fisheries: In order to minimise possible bycatch of sea run salmon, there is a prohibition on retaining landlocked salmon and brown trout over 25 inches in length in certain waters, and fishing regulations explain that sea run salmon are endangered and cannot be taken. There are also consultations among biologists in order to reduce the effects of competition and predation on salmon, although this has not yet led to a comprehensive conservation plan covering the salmon's range (Action F1). The closure of all directed fisheries for salmon was maintained in 2013, databases were queried for presence of salmon in catches, and surveillance was conducted for potential poaching although no results were provided (Action F2). The US participated actively in NASCO meetings concerning the West Greenland and St Pierre and Miquelon fisheries (Action F3).

Actions related to habitat protection and restoration: The Veazie Dam, the lowermost dam on the Penobscot River and a partial barrier to salmon, was removed in 2013 and, taken together with the removal of Great Works Dam in 2012, it is anticipated that this will significantly improve fish passage for salmon and other fish species. Several other smaller dam removal and fish passage improvement projects have recently been completed or are underway (Action H1). An archive of enforcement and monitoring results in relation to implementation of the Clean Water Act is available online, and, in summary, fines over the last five years amount to ~$210,000 (Action H2). NMFS and FWS completed many consultations in 2013 with other Federal Agencies and provided recommendations to prevent degradation of Essential and Critical Fish Habitat and reduce incidental mortality, although the APR notes that there may have been some loss to productive capacity (Actions H3 and H4). There has been re-focusing of the limited resources towards actions most likely to benefit salmon and, following the 'Salmon Summit', increased focus on river connectivity and ensuring as many healthy smolts as possible leave rivers in the US. However, financial constraints have required reductions in conservation hatchery production throughout the United States (Action H5).

Actions related to aquaculture and associated activities: Monitoring has continued in relation to the protective measures agreed in 2003 and in 2013 there was one reported escape event at a fish farm but no aquaculture origin fish were captured in rivers in Maine. Maine's aquaculture suspect identification and notification protocol was updated. Disease monitoring and control was conducted at both conservation hatcheries (in accordance with protocols and biosecurity plans) and adults taken from the wild to hatcheries were screened for diseases (Action A1). Fish health status in the Northeast Region is reviewed annually and guidelines have been developed that enable prevention of importations or transfer among States of baitfish infected with listed pathogens (Action A2). Broodstock management protocols have been implemented at conservation hatcheries to maintain genetic diversity of the hatchery stock rebuilding program and a parr collection programme was initiated in 2013 to reduce reliance on sea-run fish for broodstock (Action A3). There has been coordination within Maine in relation to planned stocking events, and the APR indicates that some stocking of brown trout continues, although it is not clear if this is a concern for wild Atlantic salmon (Action A4).

Questions for response at the 2014 Annual Meeting:

1. *What were the results of the surveillance conducted routinely in rivers for potential poaching activity (Action F2)?*
2. *What is the expected impact of the reduced financial support on the maintenance of the hatchery programme for stock rebuilding of endangered salmon populations, including for maintaining genetic diversity in the hatchery programme (Action H5)?*
3. *With regard implementing the protective measures identified in the 2003 Biological Opinion concerning aquaculture, what has been the outcome of the continuing collaboration with Canadian provincial and federal agencies to inform new regulations for consistency with US federal permit requirements (Action A1)?*
4. *Have there been any incidents of disease outbreaks of concern to wild salmon linked to bait fish importation or transfer (Action A2)?*
5. *How is the coordination of state programs that stock salmonids to support recreational fisheries being achieved and are there concerns that continuing stocking of brown trout could impact endangered salmon populations (Action A4)?*
6. *As the United States was unable to publish current levels of sea lice in salmon farms in their Implementation Plan, how will progress towards NASCO's international goals for sea lice be assessed and how will the findings be shared with the international community?*

Annex 18

CNL(14)54

Written responses from the Parties/jurisdictions to the questions raised by the Implementation Plan/Annual Progress Report Review Group

Canada

1. *Since the status of MSW salmon stocks is currently of particular concern, what measures (Action F1) were introduced in 2013 or are planned to further regulate their exploitation?*

   Canada's management of wild Atlantic salmon is reviewed annually based on the most up to date science advice taking into account input from stakeholders. As such, management measures for 2015 will address any information related to the conservation of MSW stocks.

2. *What is the anticipated timescale of activities under Action H3 and how is this expected to assist salmon conservation and management?*

   Each of the activities under H3 will undergo differing timelines as each represent differing activities.

   Regarding "entering into agreements with other federal departments…" some of this work is being reviewed through internal and external working groups. Timelines vary as per the specific work identified. Work is ongoing to identify opportunities for entering into agreements with other departments, including the provinces/territories and stakeholders, which will in turn develop timelines for implementation.

   Regarding timelines for reporting to Parliament, reports are tabled annually.

   The Multi-Agency Wild Atlantic Salmon Habitat Reporting Working Group reports in three-year cycles.

3. *The Implementation Plan for Canada provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*

   Canada's Implementation Plan, developed in 2012 for the period 2013-2018, contains a commitment to the implementation and improvement of current sea lice and containment management tools which could possibly include such elements as legislation, regulation, policy, standards, monitoring and reporting.

   Within Canada, constitutional jurisdiction for the management of sea lice and containment within aquaculture operations is a provincial responsibility. These possible tools will support ensuring that participants, including industry and governments, act in a

coordinated manner (i.e. across these multiple jurisdictions) that, using a risk and evidence-based approach, addresses impacts to wild fish populations.
As is evident in the 2014 Progress Report (and as also noted by the Review Group), a number of federal and provincial initiatives are underway that should result in further information being reported on both sea lice and containment management in future Annual Progress Reports.

In addition to these actions, as stated in Canada's Implementation Plan, Canada remains committed to the objectives of SLG(09)5 (Guidelines on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks).

As is the case with all other NASCO Parties, progress in meeting actions stated in Canada's Implementation Plan will continue to be made available to the international community through annual NASCO reporting cycles.

4. *In summary, what was the outcome of the risk assessment conducted prior to approval being granted for the commercial rearing of growth enhanced transgenic salmon and were the NASCO Guidelines for Action on Transgenic Salmonids, CNL(04)41 followed (Action A4)?*

   On April 30, 2013, AquaBounty Canada Inc. submitted a regulatory package to Environment Canada (EC) under the *New Substances Notification Regulations (Organisms)* [NSNR (Organisms)] of the *Canadian Environmental Protection Act, 1999* (CEPA 1999) for the AquAdvantage® Salmon (AAS).

   Fisheries and Oceans Canada (DFO) conducted an environmental and indirect human health risk assessment of AAS to support a regulatory decision by the Minister of the Environment and to underpin recommendations on measures necessary to manage risk. The risk assessment determined the likelihood that a harmful effect would be realized (the risk) based on the exposure and hazard assessments. Uncertainty associated with each element of the risk assessment is reported and was considered when drawing conclusions on the risk assessment and recommending measures to manage risk.

   The assessment concludes with reasonable certainty that the likelihood of AAS exposure to the Canadian environment is negligible.

   AquaBounty provided well-defined parameters for the scope of their proposed activities in PEI and Panama, including the conditions under which AAS eggs will be produced, transported, and grown-out. Proposed containment measures (physical, biological, and geographical containment) at the PEI and Panamanian facilities were assessed, and determined to result in a negligible likelihood of entry into the Canadian environment.

   Based on the containment conditions and use scenario proposed by AquaBounty in its regulatory submission, the assessment concludes that AAS is manufactured at a location where AquaBounty is able to contain AAS in a manner that satisfactorily protects the Canadian environment and human health.

Indirect Human Health Risk

The assessment concludes with reasonable certainty that the risk to human health in Canada as a consequence of environmental exposure is low. This conclusion was based on the finding that the likelihood of exposure of AAS to the Canadian environment was negligible with reasonable certainty and the finding that the hazards to human health associated with AAS as a consequence of environmental exposure were low with reasonable certainty.

Environmental Risk

The assessment concludes with reasonable certainty that the risk to the Canadian environment is low. This conclusion was based on the finding that the likelihood of exposure of AAS to the Canadian environment was negligible with reasonable certainty and the finding that the hazard to the environment was high with reasonable uncertainty.

The emphasis placed on containment to prevent exposure makes it imperative that the use scenario proposed by AquaBounty be maintained. This includes all physical, biological, geographical, and operational containment measures. Therefore, any activities outside of the well-defined parameters that have been described in the regulatory submission may be considered a significant new activity and could require a Significant New Activity (SNAc) notification.

Based on the scope of the use scenario specified by AquaBounty in its regulatory submission and the outcome of DFO's risk assessment, in accordance with the DFO/EC/Health Canada Memorandum of Understanding, DFO offered the following recommendations to EC with respect to a Significant New Activity notice:

A Significant New Activity in relation to AAS could include any activity other than the following:

1. Commercial production at the AquaBounty Canada facility in PEI, as described in AquaBounty's notification, of hemizygous triploid female Atlantic salmon eyed-eggs bearing the opAFP-GHc2 construct at the EO-1α locus using milt from homozygous masculinized AAS females (neomales) and eggs from non-transgenic Atlantic salmon females that are derived from the domesticated St. John River strain.
2. Physical containment of all life-stages of AAS at the PEI facility and at the AquaBounty Panama facility that are under the singular and direct control of AquaBounty Technologies, and while in transport between the two facilities in the effective manner described in AquaBounty's notification.
3. Biological containment as described in AquaBounty's regulatory submission.

The Environmental and Indirect Human Health Risk Assessment of AquAdvantage® Salmon has undergone a National Peer Review Process that culminated with a Science Response Meeting, held in Ottawa from July 17 to 19, 2013, to solicit expert opinion on conclusions presented in DFO's comprehensive draft risk assessment. The conclusions reached in consensus at that meeting were incorporated into the current risk assessment (see http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2013/2013_023-eng.html).

Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands

1. *How do the veterinary authorities assess whether or not there is an issue in relation to sea lice and containment that would require enforcement action e.g. have thresholds been established for sea lice treatment?*

   The veterinary authorities conduct regular inspection of all salmon farms in the Faroes. There have been established thresholds for level of sea lice, and should any salmon farm exceed this level appropriate measures will immediately be taken.

2. *The Implementation Plan for the Faroe Islands provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*

   There are regulatory measures in places in the Faroes to combat potential sea lice in salmon farms, and these measures are executed by the veterinary authorities as described in (1).

Denmark (in respect of the Faroe Islands and Greenland) – Greenland

1. *Do the new reporting requirements that include provision of effort data apply to both licensed and unlicensed fishermen (Action F1)?*

   Yes, the reporting requirements apply for all that fish – licensed and unlicensed.

2. *What biological data are taken into account in decisions concerning the quota to be set for factory landings and how does this influence the decision on the level of quota to be set (Action F2)?*

   The Government of Greenland is always informed of the scientific advice from ICES, however, the main focus is on the livelihood of Greenlandic population. The salmon fishery in Greenland is a subsistence fishery and the quota is mainly set from an estimate of the need of the population.

3. *Will baseline data on the status of salmon in the Kapisillit River be collected in support of the protection plan? Given the development of the protection plan for the Kapisillit River, what additional protection will be delivered by the possible inclusion of salmon in the broader biodiversity strategy for Greenland (Action H1)?*

   The Ministry of Environment and Nature is currently expecting a report pointing out the areas in Greenland that require conservation plans in order to protect the biodiversity of Greenland. The next step is for the Ministry of Environment and Nature to start working on a strategy for the biodiversity, this will be done in collaboration with the Ministry of Fisheries, Hunting and Agriculture and the Greenland Institute of Natural Resources. Whether there will be further scientific collection and which protection measures will be imposed has not yet been decided. The strategy is still in the first phase of development and the Ministry of Environment and Nature has the lead on this – the Ministry of

Fisheries, Hunting and Agriculture has not been involved yet. But will be involved in the next phase both concerning the protection of the Kapisillit salmon and other animal species such as birds and sea mammals.

European Union – Denmark

1. *What work was undertaken in relation to the control of cormorants (Action F1) and evaluation of by-catch in 2013 (Action F2)?*

   Action F1: With reference to guidelines (Great Cormorant Applying derogations under Article 9 of the Birds Directive 2009/147/EC) it is now allowed to shoot cormorant in Danish running waters to protect salmonids (brown trout, salmon and grayling).

   Action F2: The project continues in 2014 and there is no report of the results yet.

2. *What is the proposed timescale for developing more reliable stock reference points (Action F3)?*

   Action F3: The new revised management plan for salmon in Denmark is under progress but not yet finalized and published; the last is expected in 2014/15. It should be possible to have reference points for salmon in river Skjern Å. The last three rivers depend on the results in 2014, see Action H3.

3. *What progress was made in 2013 on each of the three actions related to habitat protection and restoration (Actions H1 – H3)?*

   Actions H1: The monitoring of the spawning run in all four rivers with wild salmon (river Skjern Å, Storå, Varde Å and Ribe Å) continues as usual.

   Action H2: The monitoring programme on parr of wild salmon continues.

   Action H3: The original and present spawning and grow-up areas for wild salmon (present in river Skjern Å) shall be estimated in 2014 in rivers Storå, Ribe Å and Varde Å; and rivers Sneum Å, Konge Å, Brede Å and Varde Å in the later years (in these four rivers the original salmon has disappeared but F1 stockings with parr from river Skjern Å take place.

European Union – Finland

1. *What is the process for determining the new regulations for the river Teno with Norway and how is it anticipated that this will change the management regime to facilitate stock rebuilding (Action F1)?*

   The negotiations for a new regulation are ongoing between Finland and Norway: they started in 2012 and the new regulation is anticipated to be in force in 2016. The aim of the new management regime for the mixed-stock fishery is to reduce fishing mortality, and especially facilitate stock re-building of populations with the least favorable stock status.

2. *What is the current status of stocks in the five tributaries of the Teno River for which compliance with spawning targets is currently assessed and what is the timescale and approach for assessing compliance in the other tributaries and main stem for which spawning targets will be set in 2014?*

   The current status of the five Norwegian tributary stocks indicates no compliance with the spawning targets, although there is some improvement in status over recent years. New spawning targets have been established for most of the sub-populations in 2014, and preliminary assessment of two Finnish tributary populations indicate compliance with targets in the past couple of years. Approaches for assessing compliance in other populations are under development, but resources are limited for establishing new monitoring facilities in the Teno system.

3. *The APR indicates that catch and release is not applicable in Finland. Does this mean it is not practised even though the need to reduce fishing mortality is highlighted and, if so, are there plans to promote it as part of a stock rebuilding effort?*

   Catch and release is practiced today on a small-scale only and on a voluntary basis. C/R or selective fishing (e.g. mandatory release of large female salmon late in the season) is considered as one management measure in future stock rebuilding.

4. *The APR refers to monitoring for escaped farmed salmon. What has this monitoring shown and is there an ongoing dialogue with Norway concerning containment measures (Action A2)?*

   Annual monitoring during the fishing season has indicated that the number of escapees in catches is very low, typically less than 0.5%. There is an ongoing dialogue with Norway concerning the monitoring of the occurrence of escaped farmed salmon in the Teno system.

5. *The APR focuses on the Teno River (Actions F1 and F2). Are there similar initiatives to develop new regulations and spawning targets for the Naatamo River and, if so, what is the timescale?*

   As described in the IP, new regulations will be developed for the Näätämö RIver after the Teno regulations have been completed. At the moment, there is voluntary co-operation between fishing right owners in Finland and Norway, and voluntary reductions to fishing times have been applied within the framework of the current agreement on the Näätämö River salmon fishing.

European Union – Germany

1. *No estimate of unreported catches has been provided but Action F1 refers to illegal catches. Are these illegal catches reported and included in the reported statistics and, if not, is an estimate available of the extent of such catches?*

   There are no reliable figures available about the extent of unreported and illegal salmon catches in the German Rhine catchment. It is expected that salmon sometimes is caught illegally by anglers, but there are very different opinions about the significance of these

illegal catches. The targeted catch of salmon in the Rhine river by angling is actually very unlikely. Professional and recreational net fishing on salmon is supposed to be a significant problem in the Dutch part of the Rhine and the Rhine estuary. For Germany I only have got an estimation from Baden-Wuertemberg for caught salmon by angling in 2012 about 20 salmon. I think this figure is insignificant for NASCO reporting. Overall there are no reliable estimates on unreported and illegal catches for the German Rhine catchment available.

2. *Given that the APR indicates that control of illegal harvests and by-catch is only possible in areas where fishing has been banned, are there plans to introduce bans in other areas to safeguard salmon (Action F1)?*

   Salmon is a protected species throughout the catchment area of the Rhine in Germany. Compliance with the salmon fishing ban is strictly monitored due to river police and volunteer fisheries inspectors. Because predator fishing e.g. for perch, pike perch or catfish is allowed in the Rhine river during the salmon run the monitoring of the salmon fishing ban is difficult. As mentioned above the targeted catch of salmon in the Rhine is very unlikely, but at some locations e.g. around the mouths of some special Rhine tributaries or below obstacles the probability increases to catch salmon during the salmon run. In such areas of the Rhine the introduction of general fishing ban areas is intended as precautionary measure to safeguard salmon. It is possible that further fishing ban areas are implemented in the future.

3. *Reference is made to the development of a self-sustaining salmon population in the Agger River without stocking and verification of the successful restoration of the salmon population. What criteria will be used to assess the success of the restoration programme (Action F2)?*

   According to Action 2 the main criterion to assess the success of the restoration programme is the reproductive success of naturally spawned salmon. A standardized method[1] to estimate salmon fry abundance based on utilization of point-abundance electrofishing is applied to this aim. The method was developed specially for North Rhine-Westphalia salmon project rivers. The measure is accompanied by the Institute of Fisheries Ecology of the Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia. Other criteria can also be relevant, but the main criterion for verification the restoration success in the specific project waters is the practical analyses and assessment of natural reproduction of salmon.

   [1] *Nemitz A., Molls F., Steinmann I. & Freyhof J. (1999), Standardisierung von Elektrobefischungen* zur Überprüfung der Effizienz von Lachsbesatzmaßnahmen in NRW – Unveröffentlichte Studie im Auftrag der LÖBF / LAfAO Nordrhein-Westfalen, 35 S. (unpublished paper / only in German)

European Union – Ireland

1. *The APR indicates that there were improvements in the compliance with treatment target levels sea lice for all salmon age groups, areas and months in 2013 compared to 2011 and 2012 but compliance in 2013 was not 100 % (Actions H2 and A2). What proportion of farms failed to meet targets levels and what actions are taken when targets are not met?*

   Over 91% of Atlantic salmon samples and all of rainbow trout samples were below the Treatment Trigger Levels (TTL) as outlined in the Monitoring Protocol No.3 for Offshore Finfish Farms – Sea Lice Monitoring and Control, Department of Marine and Natural Resources (2000). All of the 109 inspections carried out on salmon smolts were below the TTL, 82% of the 102 inspections carried out on one-sea-winter salmon were below TTL and the one inspection to two-sea-winter salmon was above TTL.

   This information is published in the National Survey Of Sea Lice (*Lepeophtheirus salmonis* Krøyer and *Caligus elongatus* Nordmann) On Fish Farms In Ireland – 2013 (Irish Fisheries Bulletin No. 44, 29 pages. February 2014). This report can be downloaded from the Marine Institute website www.marine.ie.

   When lice levels above the Treatment Trigger Level are recorded at an offshore salmon farm a notice to treat is issued to the operator by the Marine Institute. If the initial treatment is not successful in reducing lice infestations to the required level a second notice to treat is issued, if the subsequent treatment does not result in reduction of lice infestation to the desired level the management cell process is invoked. The details of the process are set out in the Strategy for Improved Pest Control on Irish Salmon Farms, May 2008 (DAFF).

   Five Management Cells were put in place in 2012. Follow-up actions included sustained treatments, early fallowing and accelerated harvest.

   Four Management Cells were convened in 2013. Follow-up actions included sustained treatments, early fallowing and accelerated harvest.

2. *The APR states that there were no significant outbreaks of diseases in aquaculture facilities in 2013. What is the definition of a significant outbreak and does this relate to the prevalence or severity of the disease (Action A3)?*

   The approach taken to defining 'significant' or 'increased' mortality is guided by the definition outlined in Council Directive 2006/88/EC. In that context, 'significant' mortalities are deemed to be losses that are significantly above the level of what is considered to be normal for the farm in question under prevailing conditions. In that context, despite the fact that certain sites would have had mortalities due to Pancreas Disease and a certain degree of Amoebic Gill Disease in 2013, these were within the realm of what could be expected for these sites under prevailing conditions.

European Union – Spain (Asturias)

1. *The answer to question 2.2 suggests that there is 100% catch and release in the in-river fisheries; if this is the case why is there a reported catch?*

   In 2013 the fishing period lasted from 1 May until 31 July, with an obligation for 100% catch and release from 15 to 31 July.

2. *Action F1 suggests that poaching occurs; an estimate of unreported catch would, therefore, be expected.*

   There are no quantitative data allowing an estimate of unreported catches but the information available suggests that poaching does not occur frequently.

3. *What action is being taken to address the concerns about climate change and what were the findings of the population census (Action H2)?*

   There are no special measures in this regard, except the communication to the fishermen about the situation of the stocks.

4. *What is the anticipated timescale for developing the inventory of obstructions and what action will be taken to address them (Action H3)?*

   Despite the fact that there is an updated inventory of obstructions and fish passages, an annual monitoring is done. In addition, the fish passages can become clogged and should be cleaned.

5. *The Implementation Plan for Asturias provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   This does not seem to be an issue for Asturias, where neither fish nor fish eggs have been imported for 20 years.

European Union – Spain (Cantabria)

1. *What is the proposed timescale for developing conservation limits for Cantabrian salmon stocks and how are fisheries managed in their absence (Action F3)?*

   It is expected that CLs will be established in all rivers in the future management plan that have a planned deadline at 2018 (as IP describes).

   Based on marked (DCWT) stocked salmon and electrofishing in autumn combined with annual catches and redd counting the total spawning run is estimated every year, and an estimate of the number of spawners is calculated. Both the number of wild salmon from natural spawning and spawners from stocked fish are calculated. Then TACs (Total Allowable Catch) are set for each particular river. TACs for 2014 are as follows:

   - River Asón: 25 (+5) fish.*
   - River Pas: 20 fish.

- River Nansa: 15 (+5) fish.*
- River Deva: 20 fish.

(*) TAC is increased by 5 fish if 50% of the original quota was angled by 1 June.

Angling is not allowed in River Agüera, River Saja-Besaya and River Miera.

2. *What are the timescales for the commencing the proposed actions to improve fish passage (Action H1), undertake research on the impacts of hydropower (Action H2), provide appropriate river flows (Action H3) and develop integrated catchment management (Action H4)?*

   Actions H1 and H2 will commence this year. Actions H3 and H4 will do in 2016.

3. *Is the annual report on status of salmon stocks and fisheries made available to the ICES Working Group on North Atlantic Salmon?*

   Salmon stocks and fisheries annual reports are available upon request, but have not been transmitted to ICES so far.

4. *What is the proposed timescale for the regulation of stocking in Cantabrian rivers and will it conform to NASCO guidance on stocking (Action A1)?*

   This action has just started and is expected that it will be finished in 2017.

5. *The Implementation Plan for Cantabria provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   Salmon is farmed purely for restocking purposes and hatcheries operate only with fish of local origin for stocking. *Gyrodactylus salaris* has not been detected in Cantabrian waters to date.

European Union – Spain (Galicia)

1. *What are the timescales for commencing the proposed actions to develop conservation limits (F1), develop fishing rules and undertake research in the River Miño (F2) and develop criteria for management of riparian vegetation (H1)?*

   No estimates are unfortunately possible at this stage, pending any decision on future budget.

2. *How are fisheries managed in the absence of conservation limits and the fishing rules referred to in question 4 above?*

   An old progressive scheme is still being used, where TACs are fixed from a total ban, when the habitat occupation/population levels fall under 5% of the optimum to a 25% exploitation level, when the 75% of the optimum is reached. Over this population level no TAC is fixed, as 25% seemed to be the average exploitation level in Spanish rivers in

the 1950-1970's, based on available data. This scheme applies to rivers Ulla, Lérez and Masma, with TACs based on the 10% of their runs, as population levels lie on the 5-15% range. Rivers Eo and Miño have no TACs fixed, as they are border rivers and interregional or international agreements are needed. Salmon fishing is banned in the rest of the rivers with the exception of river Mandeo, where a 5 fish quota is allowed in order to maintain local interest on the species.

3. *Are there any plans to develop estimates of unreported catch and the extent of catch and release?*

   A better knowledge of adult numbers at different stages is needed. Data are unavailable at the moment. Declaration of salmon caught and released is not mandatory at the moment.

4. *Do the stocking programmes in the A Coruña province conform to the NASCO guidance on stocking (Action F4)?*

   Yes. Only fish of local origin have been/will be used. River Sor was stocked with parr of Cantabrian parenthood (river Eo's were the closest available at the moment) and parr of southwest origin were used in river Anllóns (from adults from Ulla and Tambre rivers). Genetic assessment was used for decision making. Neither of these rivers had Atlantic salmon populations from a long time ago.

5. *The reference to the development of a 'cover index' in Action H1 is unclear and clarification would be welcome?*

   Sorry, the correct term should be "canopy index". The development of this index will be helpful in decision-making for a correct management of riparian vegetation.

6. *What actions are being taken under the EU-WFD to protect and restore salmon habitat (Action H2)?*

   The main action consists in the improvement of water quality by the correct management of waste-water and building of new treatment plants or upgrading older ones.

7. *What data on sea lice levels or containment are being collected at the experimental fish farm and how will they be taken into account in the evaluation of the project?*

   There are no reports on abnormal sea lice levels in local sea trout fisheries. No information is available for the only experimental cages present in our coastal waters.

8. *The Implementation Plan for Galicia provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   G. salaris has not been reported in Galician rivers, with a water temperature range that may be unavailable for the species.

European Union – Sweden

1. *The APR refers to a reduction in landings of MSW salmon in 2013. Is this because of declining abundance or the effect of management measures? Are any additional measures planned to protect MSW salmon in addition to the introduction of a two fish bag limit in 2014 (Action F1)?*

- The summer 2013 was warm with little rain and resulted in both high water temperature in the rivers and a low water flow. It resulted in a late salmon run and also a low possibility to catch salmon in the rivers because of high water temperatures.
- In 2013 work started to implement new management measures to reduce catches of salmon both in the rivers and in the sea. This work had an effect on the rules for the fisheries in many rivers and was decided by the fishing rights-owners and sport fishing organisations. This work also seems to have had an effect on the reported commercial catches of salmon in the coastal fisheries.
- Since March 2014 gill netting for salmon at depths > 3 m is forbidden. This regulation will protect both MSW and 1SW salmon.
- In 2015 new fishing rules are planned to be implemented in the river to protect the salmon stocks.

2. *Why does the ban on gill netting for salmon only apply at depths >3m in coastal waters and how will exploitation of mixed stocks in gill net fisheries in waters < 3m be controlled (Action F2)?*

- Mixed stocks mainly occurs in coastal water at depths > 3 m. In coastal water at depths < 3 m the stocks normally are separated.
- Fisheries will be controlled by the country administration and the coast guard.

3. *The stated objective is to phase out mixed-stock fisheries on wild salmon in reared rivers and mixed stock fisheries on the coast. How will these objective be achieved given that a gill-net fishery at depths < 3 m will still be in place along the coast (Action F2)?*

- Mixed stocks mainly occurs in coastal water at depths > 3 m. In coastal water at depths < 3 m the stocks normally are separated.
- In water < 3 m the fishermen only is allowed to use 180 m gill nets and only between May to September. Between kl 10.00 – 16.00 it is not allowed to use gill nets at depths < 3 m.
- In coastal areas near salmon rivers emptying in the sea there are large protected areas. Gill netting is not allowed at all in these areas.

4. *Are there plans to treat rivers infected whith the parasite G. salaris ore are there other measures planned to prevent its spread (Action A1)?*

- There are no plans to treat infected rivers. Swedish rivers have many species of fish and normally many large lakes. The impact on the ecosystem when using rotenone in order to kill all fish species is very large.

- Infestation of *Gyrodactylus salaris* on salmon was for the first time investigated in some of the rivers on the Swedish West coast in 1989. *Gyrodactylus salaris* was documented in a fish farm in river Lagan and in river Säveån, a tributary to River Göta älv.
- A monitoring programme started in the early 1990. An increase in infected rivers was thereafter noticed especially in rivers on the southern part of the Swedish West coast probably partly as a result of the expanding monitoring programme and also partly due to infection in new rivers.
- In order to prevent infestation in new rivers was restricted regulation introduced in fish farming, fish transports and stocking in two steps, 1999 and 2003.
- The last infected river was river Himleån in 2005.
- All rivers emptying north of river Göta älv are free from the parasite.

European Union – UK (England and Wales)

1. *Are any interim measures for the North-East coast beach net fishery being considered (prior to the review in 2017) in light of the increased catch in 2013? (Action F3)*

   Yes: the Environment Agency is investigating the possibility of using quotas and/or effort controls to cap salmon catches in the North East fishery.

2. *Of the 1,300 cross-compliance inspections referred to in the APR, how many resulted in prosecutions and were remedial actions required? (Action H4)*

   Firstly, to note that cross-compliance inspections undertaken in 2013 were among several thousand inspections carried out on farms across England and Wales by various agencies to ensure compliance with legislation, agri-environment scheme conditions, and so on.

   Secondly, it is necessary to explain how cross-compliance works. Where breaches are found, prosecution may not be the first option as these schemes are based around good practice rather than compliance with minimum legislative standards. The penalties consist of reductions in Single Payment Scheme payments, and the level of penalty depends on, for example, the severity of the breach and whether it is deemed to be negligent or intentional.

   In 2013, 414 such penalties were applied by the Rural Payments Agency following cross-compliance inspections in England.

   It has not been possible to separate out the penalties applied by Rural Payments Wales from those applied following inspection by other Welsh agencies. However we can confirm that 298 penalties were applied in total across Wales in 2013.

   In terms of remedial action, where repeat offences are detected, i.e. appropriate remedial action has not been taken, this will be factored in to the level of the penalty applied.

   If a breach relates to a regulatory non-compliance then the relevant enforcement bodies, including the Environment Agency and Natural Resources Wales, who manage salmon stocks in England and Wales respectively, will consider whether enforcement action,

under the appropriate legislation, may be required – so this is the point at which prosecution may occur.

We are unable to provide a figure for prosecutions following cross-compliance inspections as any such prosecutions are not necessarily solely a result of the cross-compliance inspections having taken place.

3. *How is the 'check, clean, dry' campaign promoted?*

The campaign is promoted through the GB Non-native Species Secretariat, specifically through its website which can be found at: http://www.nonnativespecies.org/checkcleandry/index.cfm. The web page contains information about the campaign including videos on, for example, biosecurity for anglers and boat owners, together with downloadable posters and other resources which are used by fishery owners and angling clubs.

Water users are also sign-posted to the campaign in, for example, press releases and at 'at risk' sites (for example at Grafham Water following the discovery of the 'killer shrimp' (*Dikerogammarus villosus*).

The Environment Agency is a partner organisation to the GB Non-native Species Secretariat, and promotes the campaign and a wider programme of better biosecurity amongst its own staff. Every Area has a biosecurity champion, the Agency uses a range of communications tools, such as e-learning, toolbox talks, workshops, to advise people about improving biosecurity.

European Union – UK (Northern Ireland)

1. *What is the proportion of salmon that are released following capture by angling in the Loughs Agency area (Action F3)?*

No data is available for 2013 but the figure in 2012 was 60% catch and release for salmon caught in the Loughs Agency area.

2. *The APR (Action H3) refers to 'NASCO fishing data' and its use in the formulation of programmes of measures under the Water Framework Directive. What data does this refer to?*

This is semi-quantitative and fully quantitative electrofishing survey data collected at monitoring sites on salmon rivers. This information is then used to identify areas for possible further more detailed investigation and which may result in identifying habitat, fish passage or water quality improvements / work to improve stocks levels. These will then become specific measures to help NI meet WFD objectives.

European Union – UK (Scotland)

- Acknowledge and take on board the comments from the Review Group around process. Those comments will allow Scotland to improve the reporting in 2015.

- Can reassure the Group that the approach adopted was designed to maximise the value and importance of the Implementation Plan as an on-going accountable programme of activity.

Norway

1. *What is the process for determining the new regulations for the river Tana with Finland and how is it anticipated that this would change the management regime to facilitate stock rebuilding (Action F4)?*

   Norway and Finland have, for the last two years, been negotiating a new agreement aiming at securing a sustainable fishery on salmon stocks in the River Tana. The present stock status calls for a considerable reduction in fishing mortality. An essential part of the negotiations is to establish a stock recovery plan. This plan will be in line with NASCO's guidelines. The negotiations are demanding, but hopefully the main conclusions will be clarified before the end of June this year.

2. *How are the costs and benefits of hydropower generation assessed against conservation and restoration measures for salmon (Action H2)?*

   There will be no regular quantifications of costs and benefits when the new set of Rules of Operation will be given to the owner. Instead an evaluation of the positive and negative effects will be carried out. If the positive values turns out to exceed the negative values new conditions will be set.

3. *How are geographical areas with the highest risk of negative impacts from sea lice and biggest potential for further growth of salmon farming (or sea lice impact?) being assessed (Action A1)?*

   The geographical areas with highest risk of negative impact on Atlantic salmon from sea lice are identified through the annual surveillance system, as previously described. A report is available at web-site of the Institute of Marine Research who coordinate the program for the Competent Authority on Fish diseases – the Norwegian Food Safety Authority (http://www.imr.no/nyhetsarkiv/2013/mai/overvaking_av_lakselus_2013/nb-no).

Russian Federation

1. *What is the anticipated timescale and process for the development of management measures for the coastal fishery (Action F2) and the introduction of science-based quotas for the indigenous people's fishery (Action F4)?*

   In 2013 new amendments to the procedure rules of the Regional Commissions on Regulation of Harvesting the Anadromous Fish came into force by the order of the Ministry of Agriculture No. 170, 08.04.2013. Since 2014 quotas for indigenous people's fisheries should be based on scientific advice.

2. *No information has been provided on unreported catch or the extent of catch and release. The Review Group notes that there is an action (F1) intended to develop estimates of unreported catch. What is the timescale for meeting these two reporting requirements to NASCO*?

   Unreported catches: no time scale has been established yet for developing estimates of unreported catches.

   C&R: there are no obligations in the legislations of the Russian Federation to report released fish as fisheries quotas are established for removing biological resources from nature habitat. However, a procedure for reporting catches in C&R fisheries on a voluntary basis is now under development and will be implemented through Regional Anadromous Commissions.

3. *Inventories of salmon rivers are being developed or have been completed in some areas, but the APR indicates that completion of this task requires additional funding (Action H1). Will a lack of funding prevent this task being completed as scheduled by 2018?*

   The inventory of the Barents Sea rivers has been established and the work on developing the inventory of salmon rivers of the White Sea basin of Murmansk and Archangelsk regions is under way. The funding is required to establish inventory for Karelian salmon rivers and the work will be completed as scheduled by 2018.

4. *The Implementation Plan for the Russian Federation provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? Will the new Federal Law on Aquaculture and subsequent bylaws provide for this baseline data collection (Action A1)?*

   New Federal Law on Aquaculture came in force in January 2014. No bylaws came in force yet. The Russian Federation will provide more information about how sea lice levels will be managed in next year's report.

5. *What measures are planned, other than monitoring, to minimise this risk of the further spread of G. salaris by anglers (e.g. increasing awareness of the risks, mandatory disinfection of gear, and treatment of the River Keret) (Action A2)?*

   No measures such as mandatory disinfection of fishing gears have been planned by authorities to minimize the risk of the further spread of the *G. salaris* by anglers. However information brochures about the risk of spreading the parasite have been published and disseminated. Some recreational fisheries companies on the Kola Peninsula conduct disinfection of fishing gears on a voluntary basis. Regarding the Keret river where *G. salaris* was found in the 1990s, no treatment program has been developed for this river and there are no plans for such a program.

USA

1. *What were the results of the surveillance conducted routinely in rivers for potential poaching activity (Action F2)?*

   The National Marine Fisheries Service's Office of Law Enforcement, the Maine Department of Marine Resource's Marine Patrol, and the Maine Department of Inland Fisheries and Wildlife's Warden Service have the responsibility, among others, of enforcing federal and state laws pertaining to the protection of Atlantic salmon. These enforcement agencies cooperate with all levels of overt enforcement, this being the best deterrent to thwart illegal activity. These agencies also engage in covert operations that have resulted in several high profile cases. In 2011, for example, a man was sentenced to six months in federal prison for snagging and selling Atlantic salmon in the Piscataquis River (a tributary to the Penobscot). Both Federal and State agencies investigate and prosecute vigorously all violations.

   Link to news story: http://bangordailynews.com/2011/05/11/news/bangor/dover-foxcroft-man-sentenced-to-six-months-for-taking-selling-salmon/

2. *What is the expected impact of the reduced financial support on the maintenance of the hatchery programme for stock rebuilding of endangered salmon populations, including for maintaining genetic diversity in the hatchery programme (Action H5)?*

   Every effort is being made to minimize the potential for loss in genetic diversity as a result of adjustments that have to be made to the conservation hatchery program due to reduced funding levels. In section 1.2 of the Annual Report of Actions taken under the United States' Implementation Plan, we referenced a structured decision analysis that is ongoing. The objective of the project is for partners to align priorities and ensure available resources are used in a manner that maximizes potential returns and reduces genetic risks. There are currently no plans to further constrict budgets of the federal hatcheries described in action H5. As budgets become more certain in the coming months, the seven alternatives identified in the structured decision analysis process will be assessed. The alternative with the highest benefit and lowest risk (that is achievable within budget constraints) will be selected and implemented.

3. *With regard to implementing the protective measures identified in the 2003 Biological Opinion concerning aquaculture, what has been the outcome of the continuing collaboration with Canadian provincial and federal agencies to inform new regulations for consistency with US federal permit requirements (Action A1)?*

   The US and Canada have a long history of collaborating on actions of mutual concern to each country. In reference to action A1, there is a process of information exchange that was agreed to over many years of collaboration. The process of information exchange and collaboration has its roots in Annex 1 of the Williamsburg Resolution and was clarified as recently as 2010 (NAC(10)4). The current NAC reports were specifically designed to reduce the reporting burden and fill gaps in communication and coordination between the United States and Canada. In 2013, the United States expressed concern and disappointment that the NAC report tabled by Canada (NAC(13)4) lacked the specificity previously agreed to and desired. The most recent draft of the NAC report submitted by Canada (NAC(14)4). is a substantial improvement. The United States welcomes the recent discussions with staff members to advance our common interests in salmon conservation. In particular, a staff level discussion on February 28, 2014 was very helpful, including follow-up from Canada identifying points of contact within each province.

4. *Have there been any incidents of disease outbreaks of concern to wild salmon linked to bait fish importation or transfer (Action A2)?*

   No.

5. *How is the coordination of state programs that stock salmonids to support recreational fisheries being achieved and are there concerns that continuing stocking of brown trout could impact endangered salmon populations (Action A4)?*

   Coordination on these programs occurs between the Maine Department of Inland Fisheries and Wildlife which is responsible for the management and promotion of recreational fisheries and the Maine Department of Marine Resources which is responsible for the conservation and development of marine and estuarine resources.

   There are concerns that the stocking of brown trout could negatively impact endangered Atlantic salmon populations. Given these concerns, most stocking locations of non-native trout occur in lakes, ponds, and riverine areas that are not accessible to Atlantic salmon. Thus, the primary strategy to maintaining recreational fisheries for non-native trout is spatial segregation. A limited amount of brown trout stocking continues to occur in the Kennebec River, including its major tributary (the Sandy River). The Maine Department of Marine Resources and Inland Fisheries and Wildlife continue to discuss areas of potential overlap, competition, and predation as they arise.

6. *As the United States was unable to publish current levels of sea lice in salmon farms in their Implementation Plan, how will progress towards NASCO's international goals for sea lice be assessed and how will the findings be shared with the international community?*

   In order to gain a better understanding of the temporal and spatial distribution of sea lice throughout the Gulf of Maine, NOAA National Marine Fisheries Service (NMFS) has

recently funded several studies to investigate the presence and abundance of sea lice on wild fish communities in embayments with salmon farms (Cobscook Bay) and areas without (Penobscot Bay). More recently, researchers at the University of Maine are investigating lice loads on wild fish in Cobscook Bay (Jensen 2012 unpublished) and Cobscook and Penobscot Bays (George 2013 unpublished) using a variety of collection methods (trawling, seining, etc.) to quantify the prevalence of sea lice on wild fish communities. Both studies compared the differences in lice loads among and between areas with and without salmon farms. Overall, both studies examined 29 different species of marine fish (n=3,597), with no wild or hatchery origin Atlantic salmon sampled. Three host species (lumpfish, C*yclopterus. lumpus*; three-spine stickleback, *Gasterosteus aculeatus*; and blackspotted stickleback *G. wheatlandi*) were observed as having at least one louse per fish. In 2013, a sub-sample of fish from Penobscot Bay (n=236) and Cobscook Bay (n=592) was analyzed in the lab to identify different lice species and life stages. All of the lice identified on the samples analyzed were *Caligus elongatus* and most were of the non-motile pre-adult Chalimus stage. The prevalence and intensity of lice loads varied substantially between areas with only three infected fish in Penobscot Bay as compared to 118 fish observed with lice loads in Cobscook Bay. Further, comparing lice loads on three-spine sticklebacks within Cobscook Bay revealed a significant difference in lice presence on fish between production areas (inner, central and outer bays) for the two years examined (2012-2013) with a slight increase in the outer bay compared to inner ($p=0.0022$) and central ($p=0.00082$) areas. Also, within Cobscook Bay there was a significant difference in lice loads among three-spine sticklebacks across years (2012-2013) with a slight increase in the inner ($p=0.013$) and central ($p=0.024$) sections of Cobscook Bay in 2013. Comparing the stocking sites and areas for the same years indicated a difference from 2012 (sites stocked in inner/middle Cobscook Bay) to 2013 (sites stocked outside of Cobscook Bay) due to different management actions (site fallowing and Bay management areas).

Another study funded by the National Marine Fisheries Service was initiated in 2013 and is being conducted by researchers at the University of Maine to investigate "The role of wild and farmed fish in modulating the infectious pressure of the sea louse (*Lepeophtheirus salmonis* Krøyer 1837)". One of the proposed goals of the project is to determine the infectious pressure of sea lice throughout Cobscook Bay. The researchers are deploying 4 small sentinel cages containing approximately 70 farmed salmon each in areas of close proximity to salmon net pens and areas further away within Cobscook Bay. The cages will be in place for one week every month over the course of a year. No preliminary information from this study is available at this time.

We emphasize that the current results are preliminary, but we will report results more formally when they are available. We will also attempt to facilitate additional lines of research as funding allows.

Annex 19

CNL(14)13

Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits

A Theme-based Special Session of the Council of NASCO Wednesday 4 June 2014

Background:

Over the last thirty years, there have been major reductions in fishing effort, increasing use of catch and release and other measures to reduce exploitation and yet the ICES advice for 2013 continues to highlight the continuing low abundance of wild Atlantic salmon.

Under the Strategic Approach for NASCO's 'Next Steps', CNL(05)49, NASCO's goal in relation to the management of salmon fisheries is to promote the diversity and abundance of salmon stocks and maintain all stocks above their conservation limits. The key issues identified by NASCO include:

- further improving the 'fairness' and 'balance' in the management of distant-water fisheries;
- exchanging information and transferring expertise and knowledge between Parties and between NGOs and the authorities; and
- further developing the knowledge basis for fisheries regulations.

Under NASCO's 1998 Agreement on Adoption of a Precautionary Approach it is stated that application of the Precautionary Approach to salmon fishery management requires that Conservation Limits (CLs) and Management Targets (MTs) be set for each river and that Stock Rebuilding Programmes are developed for stocks that are below their CLs. In 2002, NASCO adopted a 'Decision Structure for the Management of Salmon Fisheries' to provide a basis for more consistent approaches to the management of exploitation and 'Guidelines for the Management of Salmon Fisheries' were adopted in 2009 to assist jurisdictions in making further progress in implementing NASCO's agreements. These Guidelines state that CLs should be established for all river stocks of salmon, or where CLs have not been established, alternative measures should be used that are effective and appropriate in defining adequate stock levels. In accordance with the Guidelines, fishing on stocks that are below CLs should not be permitted but if such fishing is allowed, on the basis of overriding socio-economic factors, it should be limited to a level that will still permit stock recovery within a stated timeframe. It is noted that fisheries on mixed-stocks pose particular difficulties for management, since rational management of these fisheries requires knowledge of the stocks that contribute to the fishery and their status, and that management actions should aim to protect the weakest of the contributing stocks.

In 2013, the Council adopted the 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO', CNL(13)38, (referred to hereinafter as the 'Action Plan') This 'Action Plan' identified management of fisheries as a priority area to strengthen the work of NASCO. Under the 'Action Plan', the Parties committed to critically review the 2013 - 2018 Implementation Plans including

information on: the reference points used to assess the status of stocks; the decision-making process for fisheries management; the management approach for fisheries that are allowed on stocks that are below their reference points that still permits stock rebuilding; and the approach to managing mixed-stock salmon fisheries to ensure that all the contributing stocks are meeting their conservation objectives.

Objectives of the Theme-based Special Session:

Under the 'Action Plan' it is stated that the focus of the first Theme-based Special Session should be on mixed-stock fisheries. The Council also wished to allow for an exchange of information on fisheries exploiting stocks that are below their CLs and on the interplay between socio-economic considerations, including the interests of indigenous people, and conservation needs. The objectives of the Theme-based Special Session are to allow for a more detailed exchange of information on the management of salmon fisheries including:

- Progress in establishing conservation limits, or alternative reference points, and the approaches being used to manage fisheries in their absence;
- How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries;
- How socio-economic considerations, including the interests of indigenous people, are weighed against conservation needs and, where fishing is permitted on stocks below their CLs, the approaches being used to ensure that exploitation is limited to a level that permits stock rebuilding within a stated timeframe.

Programme:

A full day (0900 – 1730 on Wednesday 4 June) has been allocated to the Theme-based Special Session. The Steering Committee (Jóannes Hansen, Paul Knight, Guy Mawle, Niall Ó Maoiléidigh) has worked with the Secretary in planning the Special Session and has developed a Draft Programme (attached). Written papers of the presentations will be distributed by the Secretariat prior to the Annual Meeting. These papers will not be subject to evaluation but, following the Annual Meeting, the Steering Committee has been requested to prepare a report of the Special Session, synthesising the management implications.

Presentations:

Each presentation has been allocated 20 minutes to include 5 minutes for discussion. There will be periods for general discussion at the end of the morning and afternoon sessions.

In order to address the objectives of the Theme-based Special Session, the Steering Committee has requested that general background information be kept to a minimum in the presentations and that Parties/jurisdictions ensure that specific information is provided on management of the fisheries to address the following questions:

- Have CLs, or alternative reference points, been established for each river, how have these been used on an ongoing basis to monitor stock status and what is the decision-making process for regulating exploitation?
- How is the composition of stocks contributing to mixed-stock fisheries assessed and how are the fisheries managed in order to protect the weakest of these stocks?

- With reference to a specific example from a single-stock or substantial mixed-stock fishery, where fishing continues to be permitted on stocks below their CLs or other reference points:
    - what were the specific socio-economic factors used to permit such fishing,
    - how were they quantified or otherwise documented,
    - what was the process for consulting those stakeholders who may have been affected by the decision prior to authorising such fishing, and
    - what steps were taken to ensure that exploitation was limited to a level that will permit stock rebuilding within a stated timeframe?

In developing the Programme for the Theme-based Special Session, the Steering Committee has taken into consideration the Council's priority in its Action Plan to focus on mixed-stock fisheries and the Council's wish to consider fisheries on stocks below their CLs, the interplay between socio-economic considerations and stock rebuilding, the consistency with the NASCO Guidelines and the use made of the Decision Structure. While it is not feasible to have presentations from all Parties/jurisdictions in a one day session, the Steering Committee requests that all Parties/jurisdictions are prepared to respond to the questions above during the Theme-based Special Session.

Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits

A Theme-based Special Session of the Council of NASCO
Wednesday 4 June 2014

Programme

	Title	Possible Contributor
0900 - 0910	Introduction	Chairman
Scene-setting overviews		
0910 - 0930	**Keynote Presentation** Practical application of genetics in conserving the biological integrity of populations of Atlantic salmon	Dr Phillip McGinnity
0930 - 0950	Overview of the 2013 – 2018 Implementation Plans in relation to the management of salmon fisheries	Steering Committee
Managing the interplay between conservation and Socio-Economic considerations		
0950 - 1010	The management approach to salmon fisheries in Ireland	Dr Ciaran Byrne
1010 - 1030	The management approach to salmon fisheries in Canada	Mr Richard Nadeau
1030 - 1050	Tea/coffee break	
1050 - 1110	The management approach to salmon fisheries in Norway	Mr Arne Eggereide
1110 - 1130	The management approach to salmon fisheries in Scotland	Mr Willie Cowan
1130 - 1150	The management approach to salmon fisheries in England and Wales	Mr Marc Owen
1150 - 1210	The management approach to salmon fisheries in the Russian Federation	Dr Sergey Prusov
1210 - 1230	General Discussion	
1230 - 1400	Lunch	
1400 - 1420	The management approach to North Atlantic salmon fisheries in Finland	Mr Tapio Hakaste
1420 - 1440	The management approach to the West Greenland salmon fishery – fairness and balance in the management of distant-water fisheries	Mr Emanuel Rosing
New information on stock composition of salmon fisheries to support management		
1440 - 1500	Recent investigations into the stock composition of the Norwegian and Russian coastal salmon fisheries (the Kolarctic salmon project)	Dr Sergey Prusov
1500 - 1520	Recent investigations into the stock composition of the Labrador coastal salmon fishery	Mr Gérald Chaput
1520 - 1540	Recent investigations into the stock composition of coastal salmon fisheries in the UK	Mr Julian MacLean
1540 - 1600	Tea/Coffee Break	
1600 - 1700	General Discussion	
1700 - 1715	Concluding remarks & Close of Special Session	Ms Mary Colligan, President of NASCO

Annex 20

CNL(14)14

Report on Progress in Implementing the Measures contained in the 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO'

In 2013 the Council adopted an 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO (CNL(13)38). The following tables present a progress report on each of the recommended actions which we have updated for 2014.

Section 1 contains recommendations which had been implemented or planned at the time the Action Plan was developed in 2013 but for which there was a need to monitor progress and evaluate outcomes.

Section 2 contains recommendations for which further action was required for their implementation. For ease of reference we have numbered the nine decisions in Action Plan.

Section 3 contains actions to strengthen NASCO's work on the management of salmon fisheries.

Secretary
Edinburgh
29 May 2014

Section 1: Recommendations of the External Performance Review Panel (EPR) and 'Next Steps' Review Group (NS) that have been implemented or are planned and for which there may be a need to monitor progress and evaluate outcomes

	Recommendation	Actions taken
	NASCO's 'Next Steps' Process	
EPR1	The 'Next Steps' process has succeeded in undertaking a comprehensive and critical review of the work of the Organization to date and in enhancing efforts on the current areas of focus of the Organization. This progress should continue, based on the Strategic Approach, which has provided a comprehensive framework for the work to be undertaken and for improvements to be made in the implementation of NASCO Agreements.	*The Council has agreed to proceed with a new cycle of IPs covering the period 2013 -2018 and Annual Progress Reports (APRs). The 'Next Steps' review process proposed only minor changes to the Strategic Approach. The EPR considered that the Strategic Approach had provided a comprehensive framework for the work of NASCO and it will be used in the next cycle of reporting.* **2014 Update:** New IPs for the period 2013 - 2018 and the first APRs have been submitted by the Parties/jurisdictions and evaluated by a Review Group. There was a Special Session at the 2013 Annual Meeting to allow for the presentation of the Group's evaluations of the IPs. Following the 2013 Annual Meeting, Parties/jurisdictions were given a further opportunity to clarify any unclear/incomplete answers or information in their Plans, even where these were assessed as satisfactory by the Review Group. Most Parties took advantage of this opportunity. A further Special Session will be held at the 2014 Annual Meeting to allow for presentation and discussion of the evaluation of new IPs received since the 2013 Annual Meeting and of the first APRs.
EPR 2	In the next reporting cycle, the Parties should continue their efforts to implement the decisions and to address the issues identified in the Strategic Approach. It will be important for the second cycle to address areas identified in the first cycle of the 'Next Steps' process for additional action. Consideration should be given to convening an FAR special session on this topic. Progress on the socio-economic aspects of Atlantic salmon and initiatives for endangered populations is also encouraged.	*The IP template adopted in 2012, CNL(12)42, indicates that jurisdictions should take into account the specific issues on which action was recommended in the first cycle of reporting. These issues were collated by the Secretariat and sent to jurisdictions with the request to develop new IPs. An initial assessment of the IPs will be undertaken to ensure the information requested in this template has been provided and where there are gaps the IPs will be returned to the jurisdiction for further drafting. The IPs will then be evaluated by a Review Group. The findings of the evaluation will be considered at the 2013 Annual Meeting. A Special Session on socio-economics is to be held during the 2014 Annual Meeting. The IP template seeks information on social and economic aspects and on how threatened and endangered stocks are identified and of actions to address threats to them so these issues should be addressed in the new IPs. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** New IPs for the period 2013 - 2018 and the first APRs have been submitted by the Parties/jurisdictions and evaluated by a Review Group. In undertaking the evaluation of the 2013 – 2018 IPs the Review Group drew on information arising from the first reporting cycle, including the FAR assessments. There was a Special Session at the 2013 Annual Meeting to allow for the presentation of the Group's evaluations of the IPs. Following the 2013 Annual Meeting, Parties/jurisdictions were given a further opportunity to clarify any

		unclear/incomplete answers or information in their Plans, even where these were assessed as satisfactory by the Review Group. Most Parties took advantage of this opportunity. A further Special Session will be held at the 2014 Annual Meeting to allow for presentation and discussion of the evaluation of new IPs received since the 2013 Annual Meeting and of the first APRs. On the recommendation of its Socio-Economics Sub-Group, the Council decided that the 2014 Theme-based Special Session will be on the topic of management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits, and that the presentations at this Special Session should include details on how socio-economic issues are included in management decisions including the interests of indigenous peoples. The Socio-Economics Sub-Group also recommended that further Special Sessions be planned in future on integrating socio-economic factors in decisions relating to habitat protection, restoration and enhancement and to aquaculture and related activities.
EPR 3	In terms of reporting, the next cycle should focus on assessing the effectiveness of the measures taken by the Parties. The IPs should contain clearly described identifiable, measurable outcomes and timescales. The Parties are encouraged to prepare IPs and FARs in a timely fashion, including through the possibility of electronic filing.	*The Guidelines for the Preparation and Evaluation of IPs and for Reporting on Progress, CNL(12)44, indicate that IPs should specify the actions to be taken, the timescales for these actions, the expected outcomes and the approach to monitoring and enforcement so that progress can be subject to critical evaluation. The IP template, CNL(12)42, has been structured to ensure that, for each action, information is provided on the expected outcome and timescale and guidance has been provided on what constitutes an action and a measurable outcome. An initial assessment of the IPs will be undertaken to ensure the information requested in this template has been provided and where there are gaps the IPs will be returned to the jurisdiction for further drafting. The IPs will then be evaluated by a Review Group. The findings of the evaluation will be considered at the 2013 Annual Meeting. In the next cycle of reporting, FARs are to be replaced by APRs that will be reviewed. Timetables for submission of IPs and APRs have been developed. The APRs will be requested in early January each year and the Secretariat will send out reminders in early March, one month before the deadline for submission (1 April). Both the IP and APR templates will be available electronically. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** New IPs for the period 2013 - 2018 and the first APRs have been submitted by the Parties/jurisdictions and evaluated by a Review Group. There was a Special Session at the 2013 Annual Meeting to allow for the presentation of the Group's evaluations of the IPs. The Review Group indicated that there were still some issues of timeliness regarding the submission of the IPs; three jurisdictions have not yet submitted an IP. Timeliness of reporting through APRs was generally good but two jurisdictions have not yet submitted their APRs. Following the 2013 Annual Meeting, Parties/jurisdictions were given a further opportunity to clarify any unclear/incomplete answers or information in their Plans, even where these were assessed as satisfactory by the Review Group. Most Parties took advantage of this opportunity. The Review Group had concluded that, overall, compared to the first cycle of reporting, the new IPs were clearer, better focused and more succinct.
EPR 4	In the long-term, the 'Next Steps' process should consider cross-cutting issues, such as climate change. It should also consider conducting a review of the functions and role of the	*The Council has agreed that Theme-based Special Sessions could be helpful to NASCO and procedures for planning and organising these Special Sessions agreed (see CNL(12)12 for details). A number of priority topics have been identified including management of mixed-stock fisheries (MSFs), managing salmon under a changing climate and fish passage at hydro-electric facilities. It has been agreed that there will be a Special Session on socio-economics at the 2014 Annual Meeting and a focus on MSFs in NEAC in 2013. Information on climate change impacts on*

	Council including the possibility of vesting it with binding decision-making authority.	*salmon was presented at the 'Salmon Summit' and should be taken into account in developing future research needs. ICES has been requested to report on any significant advances in understanding of the biology of Atlantic salmon that is pertinent to NASCO, including information on the potential implications of climate change for salmon management.* *The actions relating to modernizing and strengthening the work of NASCO are detailed in sections 2 and 3 below.* **2014 Update:** On the recommendation of its Socio-Economics Sub-Group, the Council decided that the 2014 Theme-based Special Session will be on the topic of management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits, and that the presentations at this Special Session should include details on how socio-economic issues are included in management decisions including the interests of indigenous peoples. The Socio-Economics Sub-Group also recommended that further Special Sessions be planned in future on integrating socio-economic factors in decisions relating to habitat protection, restoration and enhancement and to aquaculture and related activities.
	Convention for the Conservation of Salmon in the North Atlantic Ocean	
EPR24	The institutional structure should be reviewed and amended as appropriate to include subsidiary bodies and a Secretariat, as well as rules for appointment of a Secretary and the duties of the Secretary. Authority and procedures for the establishment of *ad hoc* bodies should be provided.	*Article 12 of the Convention states that the Council shall appoint a Secretary and describes the functions of the Secretary. Rule 28 of the Council's Rules of Procedure states that the Council may establish such other subsidiary bodies as it deems necessary and shall determine their composition and terms of reference.* **2014 Update:** A procedure for the appointment of a Secretary was agreed by the Parties and used in 2013.
EPR27	It is recommended that, as appropriate, consideration be given to adoption of rules relating to the establishment of NASCO subsidiary and *ad hoc* bodies.	*Rule 28 of the Council's Rules of Procedure states that the Council may establish such other subsidiary bodies as it deems necessary and shall determine their composition and terms of reference.*
EPR32	The description of the functions of the Secretary in article 12 should be reviewed, expanded and modernized to reflect actual practice. This can be elaborated in rules of procedure.	*Article 12.2 states that the functions of the Secretary include performing such functions as follow from other provisions of the Convention or as the Council may determine. This provides the flexibility for the Council to determine the functions of the Secretary adaptively in response to the work of the Organization.* **2014 Update:** The functions of the Secretary were detailed in the job description used in advertising the post in 2013.
EPR33	The regulatory and other measures reflecting the scientific advice should continue to be set and, in this regard, efforts to develop a risk framework for the Faroese fishery are encouraged	*Multi-annual regulatory measures or decisions were agreed for both the West Greenland and Faroese fisheries in 2012. The development of a risk framework is underway for the Faroese fishery.* **2014 Update:** The multi-annual measures agreed in 2012 apply to the fisheries at West Greenland in 2012, 2013 and 2014 and at the Faroe Islands in 2013, 2014 and 2015. The Framework of Indicators was run in both the West

		Greenland and North-East Atlantic Commissions in 2013 and 2014 to determine if reassessment of the catch advice was required. In 2013, ICES advised on progress made with developing the Risk Framework for the Faroese salmon fishery, including the implications of selecting different numbers of management units, the limitations for defining management units smaller than the current NEAC stock complexes, the implications of applying probabilities of achieving conservation limits to separate management units versus the use of simultaneous probabilities and the choice of risk levels for achieving management objectives. Denmark (in respect of the Faroe Islands and Greenland) advised the Commission that additional time was needed for domestic consultations before being able to further consider a Risk Framework for the Faroese salmon fishery. This issue is on the 2014 agenda for the North-East Atlantic Commission.
EPR 36	Obligations for Parties to provide information should be reviewed and updated, consistent with the recommendations of the 'Next Steps' Review Group and the Working Group on Future Reporting. The type of information required by the Organization to meet the challenges identified in the 'Next Steps' process should be prioritized and identified, and information requirements concerning outcomes of actions taken to implement NASCO programmes or decisions should be required.	*In 2012, the Council adopted all of the recommendations of the Working Group on Future Reporting, CNL(12)12 and templates for both IPs and APRs were agreed that specify the information sought, including details of monitoring programmes and expected outcomes of actions developed to address threats. The IP template, CNL(12)42, seeks information on the three main 'focus areas' of management of fisheries, habitat protection and restoration, and aquaculture and related activities (including G. salaris and transgenics). Information is sought on how socio-economic factors are included under management decisions and on how threatened and endangered stocks are identified.* **2014 Update:** New IPs have been submitted and reviewed and the first APRs under these Plans were reviewed in 2014 (see CNL(14)12). These APRs provide an update on progress on each action in the IP for each jurisdiction. The Review Group has provided a table summarising for each jurisdiction whether each action has not started, is ongoing or completed. This table will be updated annually. There will be a Special Session at the 2014 Annual Meeting to present and discuss the Review Group's findings.
	Conservation and Management	
EPR 41	NASCO should ensure that the precautionary approach is used to the same extent in managing all impacts of human activity on the full life-cycle of salmon in rivers, estuaries, coastal areas and the open ocean.	*NASCO's agreements developed under the Precautionary Approach relate to management of fisheries, habitat protection and restoration and aquaculture and related activities. Guidelines both on incorporating socio-economic factors in decisions under the Precautionary Approach and on stock rebuilding programmes have also been developed. The IP template, CNL(12)42, requests that jurisdictions take account of the specific actions identified in the first reporting cycle to ensure consistency with these agreements (see EPR 2 and EPR43). There will be a need to monitor progress and evaluate outcomes.* *By-catch of salmon in pelagic fisheries for other species is referred to in the Agreement on the Adoption of a Precautionary Approach (see EPR10 below).* **2014 Update:** In undertaking the evaluation of the IPs the Review Group drew on information arising from the first reporting cycle, including the FAR assessments. The IASRB has established a Telemetry Sub-Group to develop and document a 'roadmap' outlining a large scale

		international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon. The Sub-Group will report its findings to the IASRB during the 2014 Annual Meeting, SAG(14)4. In 2013, ICES was asked to provide recommendations on how a targeted study of pelagic bycatch in relevant areas might be carried out with an assessment of the need for such a study considering the current understanding of pelagic bycatch impacts on Atlantic salmon populations. The advice from ICES is contained in document CNL(14)8. In summary, ICES advises that the latest information highlights ongoing uncertainty on the salmon bycatch question, but new screening programmes, considered by ICES to provide the most reliable data, suggest relatively low levels of bycatch in the mackerel catches ICES noted the markedly higher salmon bycatch rates recorded in the IESSNS surveys, but it is unclear how representative these might be of the bycatch in the commercial fishery given differences in the design and operation of the gears used. In any event, the capture rates remain low relative to the estimates of total NEAC PFA (< 2%). Given that estimates of the bycatch of salmon in the total pelagic fisheries are highly uncertain, ICES considers it would be informative to increase efforts to obtain reliable estimates of the bycatch of salmon and made a number of recommendations as to how this might be achieved.
EPR 42	NASCO should ensure that the WSSD-JPOI commitment to maintain or restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis, where possible not later than 2015, is taken into account, including in the context of the 'Next Steps' process.	*NASCO's Agreement on Adoption of a Precautionary Approach, CNL(98)46, states that stocks should be maintained above conservation limits (CLs) by the use of management targets (MTs) and that stock rebuilding programmes should be undertaken for stocks that are below these CLs. ICES advises that conservation limits should be set at a level that will achieve long-term maximum sustainable yield. Progress towards establishment and attainment of these CLs and MTs will be evaluated in the next cycle of IPs and APRs. The IP template, CNL(12)42, seeks information on stock status relative to reference points (conservation limits, management targets or other measures of abundance) so as to provide a baseline for future comparison. The IP template also seeks information on any fisheries permitted to operate on stocks that are below their reference point and the approach to managing them to promote stock rebuilding. A major factor influencing salmon abundance is mortality at sea and this is constraining the ability to achieve stock rebuilding goals.* *Currently, the stated management objectives for Atlantic salmon stocks in the US and the Scotia-Fundy Region of Canada are a 25% increase in returns of 2SW salmon from the average returns in 1992-1996. This rebuilding objective was established in light of the extremely depleted state of these endangered populations. However, selection of this management objective is inconsistent with NASCO's Agreement on the Adoption of the Precautionary Approach, Action Plan for the Application of the Precautionary Approach, NASCO Guidelines for the Management of Salmon Fisheries, and scientific advice from ICES. The North American Commission has, therefore, agreed to review these management objectives.* **2014 Update:** The IPs, and the APRs on actions under these Plans, contain information on stock status relative to reference points. A Theme-based Special Session, on the topic of single and mixed stock fisheries, with particular focus on stocks below their conservation limits, will be held at the 2014 Annual Meeting. The objectives of this session are to allow for an exchange of information on:

		• Progress in establishing conservation limits, or alternative reference points, and the approaches being used to manage fisheries in their absence; • How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries; • How socio-economic considerations, including the interests of indigenous people, are weighed against conservation needs and, where fishing is permitted on stocks below their CLs, the approaches being used to ensure that exploitation is limited to a level that permits stock rebuilding within a stated timeframe. An overview of the information contained in the IPs has been prepared by the Steering Committee, CNL(14)43. At the 2013 Annual Meeting, the US tabled a paper NAC(13)4, describing new management objectives. ICES was asked to describe the implications of these new objectives for the provision of catch advice for the West Greenland fishery. ICES has advised (see CNL914)8) that the proposed modification of the US management objective would have had a negligible impact on the catch advice for the 2012–2014 fishing years.
EPR 43	Noting that NASCO has, in the SALSEA Programme, addressed the problem of estimating sea mortality, it is important to cover the sea areas stretching from estuaries to the high seas, the phase of the life cycle where the salmon leaves natal waters, to the same extent as other phases of the life cycle.	*The SALSEA Programme was a comprehensive programme involving freshwater, estuarine, in-shore and high seas elements, although the marine surveys were focused on post-smolts and on improving understanding of distribution and migration at sea. A Sub-Group of the SAG has met and provided recommendations to the IASRB for future research for consideration during the 2013 Annual Meeting.* **2014 Update:** At its 2013 Annual Meeting in the light of the recommendations from the Sub-Group on Future Research, the IASRB decided that one priority should be to analyse the remaining samples and data arising from the SALSEA programme and recognised that it would be important to first clarify what remaining samples are available, how their analysis could benefit salmon management and how much the analyses would cost. The SAG Chairman will develop this information and report to the SAG at its 2014 meeting. In light of the recommendations that a particular focus of future research should be studies to partition marine mortality, the IASRB established a Telemetry Sub-Group to develop and document a 'roadmap' outlining a large scale international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon (see SAG(14)4).
EPR 46	Through the 'Next Steps' process, NASCO has addressed some of the ambiguities or inconsistencies in its instruments relating to fisheries management. In future reporting, information should be provided by the Parties on the interplay between stock conservation needs and incorporation of social and economic factors in decision-making, for both single and	*The IP template, CNL(12)42, requests that jurisdictions identify any fisheries permitted to operate on salmon stocks that are below their reference point and describe the approach taken to managing them that still promotes stock rebuilding. Jurisdictions are also requested to describe how socio-economic factors are taken into account in making decisions on fisheries management. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The IPs prepared using the template CNL(12)42 have been submitted and reviewed, as have the first APRs under these Plans. No clear omissions or inadequacies were identified in any of the IPs in relation to management of salmon fisheries although the Review Group noted that: • many of the responses provided information on the organizations that are involved in the decision-making

	mixed-stock fisheries. In particular, clear indications should be given of how decisions were taken to permit exploitation of stocks known to be below their reference points, where information on stock status was lacking, and the consequences of these decisions for stock rebuilding.	process but not on how decisions are taken in response to different stock conditions; • fisheries are permitted to operate on stocks that are below their reference point in several jurisdictions, but the number of fisheries involved and the management measures applying to these fisheries to promote stock rebuilding were not always clearly described. The objectives of the 2014 Theme-based Special Session are to allow for an exchange of information on: • Progress in establishing conservation limits, or alternative reference points, and the approaches being used to manage fisheries in their absence; • How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries; • How socio-economic considerations, including the interests of indigenous people, are weighed against conservation needs and, where fishing is permitted on stocks below their CLs, the approaches being used to ensure that exploitation is limited to a level that permits stock rebuilding within a stated timeframe.
EPR 47	The Parties are encouraged to report on issues relating to the management of salmon fisheries in a prompt and timely fashion.	*The IP Guidelines, CNL(12)44, specify the timetable for submission of IPs and APRs. Reminders will be issued. There will be a need to monitor compliance with these timelines.* **2014 Update:** The Review Group indicated that there were still some issues of timeliness regarding the submission of the IPs; three jurisdictions have not yet submitted an IP. Timeliness of reporting through APRs was generally good but two jurisdictions have not yet submitted their APRs.
EPR 48	As recommended by the 'Next Steps' Review Group, there is a need for further progress to be made in the management of salmon fisheries as part of the next cycle of the 'Next Steps' process.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to fisheries and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** No clear omissions or inadequacies were identified in any of the IPs in relation to management of salmon fisheries (but see EPR46 above). The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
EPR 49	The Parties are encouraged to report on issues relating to the protection and restoration of salmon habitat in a timely fashion.	*The IP Guidelines, CNL(12)44, specify the timetable for submission of IPs and APRs. Reminders will be issued. There will be a need to monitor compliance with these timelines.* **2014 Update:** The Review Group indicated that there were still some issues of timeliness regarding the submission of the IPs; three jurisdictions have not yet submitted an IP. Timeliness of reporting through APRs was generally good but two jurisdictions have not yet submitted their APRs.
EPR 50	As recommended by the 'Next Steps' Review Group, there is a need for further progress to be made in the protection and preservation of salmon	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to habitat protection and restoration, and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The IPs for the period 2013 - 2018 were submitted and reviewed prior to the 2013 Annual Meeting.

	habitat as part of the next cycle of the 'Next Steps' process.	No clear omissions or inadequacies were identified in any of the IPs in relation to habitat protection and restoration. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
EPR 51	If there is to be a balance between measures aimed at ending mixed-stock fisheries in the areas beyond fisheries jurisdiction and measures ending mixed-stock fisheries within fisheries jurisdiction, NASCO should aim at managing mixed-stock fisheries in the North Atlantic to protect the weakest of the contributing stocks.	*The NASCO Convention does not permit salmon fishing beyond areas of fisheries jurisdiction and no activity by vessels from non-NASCO Parties has been detected in international waters since the early 1990s (see EPR6). Under the IP template, CNL(12)42, jurisdictions are requested to describe how MSFs are defined, indicate the mean catch in these fisheries over the last 5 years and describe how they are managed to ensure that all contributing stocks are meeting their conservation objectives. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The IPs prepared using the template CNL(12)42 have been submitted and reviewed and were discussed at the 2013 Annual Meeting. The Review Group noted *inter alia* that: • Most IPs clearly indicated whether or not a Party/jurisdiction had mixed-stock fisheries and how these are defined (most used the NASCO definition but one Party/jurisdiction indicated that it considers mixed-stock fisheries to be in-river fisheries that exploit salmon from more than one tributary within the river system). Where Parties/jurisdictions have such fisheries, the IPs generally provided information on catches but clear descriptions of how the fisheries are managed to ensure that all the contributing stocks are meeting their conservation objectives were often lacking. An item was included on the North-East Atlantic Commission's agenda in 2013 on the management of mixed-stock fisheries. Items on mixed-stock fisheries will be included on the Commission agendas for their 2015 meetings. One of the objectives of the Theme-based Special Session to be held at the 2014 Annual Meeting is to allow for an exchange of information on: • How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries; With regard to fishing for salmon beyond areas of fisheries jurisdiction by non-NASCO Parties, there have been no sightings since the early 1990s but see section 2 below concerning IUU fishing (cooperation on surveillance with NAFO and NEAFC).
EPR 52	Additional progress is needed towards achieving the international goals for sea lice and containment.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to aquaculture and related activities, and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The Review Group has reported that five IPs contained clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 concerning demonstration of progress towards the international goals for sea lice and containment. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. For those IPs with clear omissions or inadequacies in the responses, the Review Group has asked the Parties/jurisdictions concerned to indicate how progress towards the

		international goals will be monitored. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to the Group's questions.
EPR 53	As recommended by the FAR Review Group, there is a need for further progress to address the impacts of aquaculture, introductions and transfers and transgenics as part of the next cycle of the 'Next Steps' process.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to the impacts of aquaculture, introductions and transfers and transgenics, and the actions to address each threat (consistent with the Williamsburg Resolution and the BMP Guidance), including actions on the specific issues identified in the first reporting cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The Review Group has reported that five IPs contained clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 concerning demonstration of progress towards the international goals for sea lice and containment. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. Questions have been asked to those Parties/jurisdictions as to how progress towards the international goals will be monitored. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to these Group's questions. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
EPR 54	The Parties are encouraged to report on issues relating to aquaculture, introductions and transfers and transgenics in a full and timely fashion.	*The IP Guidelines, CNL(12)44, specify the timetable for submission of IPs and APRs. Reminders will be issued. There will be a need to monitor compliance with these timelines.* **2014 Update:** The Review Group indicated that there were still some issues of timeliness regarding the submission of the IPs; three jurisdictions have not yet submitted an IP. Timeliness of reporting through APRs was generally good but two jurisdictions have not yet submitted their APRs.
EPR 57	It is recommended that further efforts be made to address the issue of *Gyrodactylus salaris* in the context of the NASCO 'Next Steps' process.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to G. salaris and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The Review Group has reported that three IPs contained clear omissions or inadequacies in the responses to question 4.6 in that no information had been provided on the measures in place to prevent the introduction of *G. salaris*. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. Questions have been asked to those Parties/jurisdictions on the measures in place to prevent the introduction of *G. salaris*. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to these Group's questions. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
EPR 58	Further exchange of information among the jurisdictions through the development of IPs and FARs, as appropriate, should be welcomed.	*The Council has agreed that the next cycle of IPs and APRs should commence in 2013 and that Theme-based Special Sessions will be held on a range of topics. The first Theme-based Special Session will be on mixed-stock fisheries.* **2014 Update:** The IPs for the period 2013 – 2018 were submitted and reviewed prior to the 2013 Annual Meeting. The APRs submitted in 2014 include updates on each of the actions contained within the IPs, and have also been

		evaluated by the Review Group. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings. FARs have been replaced by APRs but, additionally, a Theme-based Special Session will be held in 2014 to allow for detailed exchange on the topic of the management of salmon fisheries. The Review Group has highlighted that no IPs have been received for three jurisdictions and no APRs have been received for two jurisdictions.
	Compliance and Enforcement	
EPR 59	The 'Next Steps' process has been an effective mechanism to improve compliance and enforcement in NASCO, in large part due to the expanding and evolving role of the Council. The Organization is encouraged to continue these efforts to further improve compliance and enforcement and promote the conservation, restoration, enhancement and rational management of salmon stocks.	*The IP template CNL(12)42, seeks details of the expected outcome, the approach for monitoring effectiveness and enforcement. Progress will be reported through the APRs for each specified action. The new reporting cycle has greater focus on enforcement than the first cycle. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The first APRs on the 2013 – 2018 IPs were submitted in 2014, and evaluated by the Review Group. The Review Group noted that it was intended that progress on each action would be reported under 'Monitoring/Enforcement Results' but in some cases only the approach to monitoring was described. The Review Group, therefore, recommended that the Secretariat be asked to modify the template to read 'Progress on action to date' rather than 'Monitoring/Enforcement Results'.
EPR 61	The Parties are encouraged to continue to report on these matters in the next cycle of the 'Next Steps' process. Implementation plans should include reporting on estimates of unreported catches and measures taken to reduce such catches. Timely reporting is essential so that all relevant information is available during assessments.	*The IP template, CNL(12)42, seeks information on the current level of unreported catch and the measures being taken to reduce this. The APR template, CNL(12)43, seeks details of the estimated unreported catch from in-river, estuarine and coastal fisheries. A schedule for reporting has been agreed and reminders will be issued to the Parties. There will be a need to monitor compliance with these timelines, progress and evaluate outcomes.* **2014 Update:** The Review Group indicated that there were still some issues of timeliness regarding the submission of the IPs; three jurisdictions have not yet submitted an IP. Timeliness of reporting through APRs was generally good but two jurisdictions have not yet submitted their APRs. Estimates of unreported catch are contained in document CNL(14)12. The Review Group has highlighted that not all Parties/jurisdictions have provided an estimate of unreported catch.
	International Cooperation	
EPR 69	The NASCO website should show active NGOs, or explain why an NGO is referred to as 'suspended'.	*The website has been amended in accordance with this recommendation.*
EPR 73	Iceland should be encouraged to re-accede to the Convention.	*In accordance with this recommendation a letter was sent to the Icelandic Ministry of Foreign Affairs on 15 May 2012 inviting Iceland to re-accede to the Convention. The Council has agreed that the President and Secretary should keep Iceland informed of NASCO's work. The Parties are also encouraged to raise the issue bilaterally.*

		2014 Update: Mr Arni Isaksson, former Head of Delegation to NASCO, has now retired. The Secretary has met his replacement and has briefed him on NASCO matters and provided relevant documentation on the work of NASCO.
EPR 74	Dialogue with St. Pierre and Miquelon should be increased in order to agree upon targets and a method for making decisions on their salmon fishery and also to improve data collection.	*A letter was sent to the French Sécretariat Général de la Mer by the President in 2010 encouraging France (in respect of St Pierre and Miquelon) to accede to the Convention. Welcome improvements have been made to the sampling programme of the St Pierre and Miquelon salmon fishery including genetic analyses. In accordance with this recommendation and as agreed by the Council a follow-up letter will be sent by the President. The Parties are encouraged to raise the issue bilaterally.* **2014 Update:** A representative of St Pierre and Miquelon participated in the 2013 Annual Meeting and also at the 2014 intersessional Meeting of the West Greenland Commission. At its 2013 Annual Meeting the representative of France (in respect of St Pierre and Miquelon) advised the Council that the question of acceding to the Convention would be discussed again but it is likely that, given that there is no option to have status as a Cooperating Non-Member State, France (in respect of St. Pierre and Miquelon) would wish to retain observer status. Representatives of France (in respect of St Pierre and Miquelon) will attend the 2014 Annual Meeting.
		NASCO should continue to cooperate with EIFAAC and OSPAR on issues of common interest. **2014 Update:** An MoU between NASCO and OSPAR came into effect on 5 August 2013 and is available on the NASCO website. Both EIFAAC and OSPAR have been invited to attend the 2014 NASCO Annual Meeting.
	'Strategic Approach'	
NS1	While the five key issues relating to management of salmon fisheries remain valid, the Group recognised the need for further progress to address the additional actions highlighted by the FAR Review Group. The 2009 fisheries management guidelines should assist jurisdictions in making further progress in implementing NASCO's agreements and with future reporting.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to fisheries and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. These issues were collated by the Secretariat and sent to jurisdictions with the request to develop new IPs. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The IPs for the period 2013 - 2018 were submitted and reviewed prior to the 2013 Annual Meeting. No clear omissions or inadequacies were identified in any of the IPs in relation to management of salmon fisheries (but see EPR46 above). The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
NS2	NASCO could provide a useful forum for exchange of information on how different jurisdictions are incorporating social and economic factors in managing their salmon resource. Proposals for a Special Session are being developed by a Sub-Group of the	*A Special Session on socio-economics is planned for 2014. The Council has agreed that this should include case studies, consideration of the usefulness of NASCO's socio-economic guidelines and NASCO's future work on this topic. The IP template, CNL(12)42, also seeks information relating to social and economic aspects and how these are incorporated in management decisions.* **2014 Update:** In 2013, the Socio-Economics Sub-Group had recommended that rather than a general focus on socio-economic issues, the Council should focus the 2014 Special Session only on how socio-economic factors are

	Socio-Economics Working Group. It would be valuable to consider not only case studies on how social and economic factors are included in decisions relating to each of the three focus areas but to have discussions on the value of NASCO's social and economic guidelines and what NASCO's future role on this topic might be.	integrated into decisions relating to the management of salmon fisheries, both single and mixed-stock fisheries, and particularly in situations where fisheries are permitted on stocks below their conservation limits. The Socio-Economics Sub-Group had further recommended that further Special Sessions on integrating socio-economic factors in decisions relating to habitat protection, restoration and enhancement and to aquaculture and related activities be planned in future. The Council decided to change the structure of its 2014 Annual Meeting, on a trial basis, in order to improve the opportunities for exchange of information during the meeting.
NS4	NASCO's Habitat Plan of Action is vague and most habitat issues are a matter for the jurisdictions. The 2010 habitat guidelines may assist jurisdictions in making further progress in implementing NASCO's agreements and with future reporting.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to habitat protection and restoration, and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. These issues were collated by the Secretariat and sent to jurisdictions with the request to develop new IPs. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The IPs were reviewed prior to the 2013 Annual Meeting. No clear omissions or inadequacies were identified in any of the IPs in relation to habitat protection and restoration. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to the Group's questions.
NS5	The 2009 BMP Guidance on sea lice and containment may assist jurisdictions in making further progress in implementing NASCO's agreements and with future reporting but there might also be improved guidance on other aspects of reporting e.g. in relation to transgenic salmon. Key issue 7 ('Consider the consequences of aquaculture of Atlantic salmon in countries that are not parties to NASCO') may not be required if the Strategic Approach is revised in future.	*The IP template, CNL(12)42, seeks information on the main threats and management challenges relating to aquaculture and related activities, and the actions to address each threat, including actions on the specific issues identified in the first reporting cycle. These issues were collated by the Secretariat and sent to jurisdictions with the request to develop new IPs. The IP template seeks specific information on the policy/strategy in the case of transgenic salmon. There will be a need to monitor progress and evaluate outcomes. The EPR considered that the Strategic Approach had provided a comprehensive framework for the work of NASCO and it will be used in the next cycle of reporting.* **2014 Update:** The IPs were reviewed prior to the 2013 Annual Meeting. The Review Group has reported that five IPs contained clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 concerning demonstration of progress towards the international goals for sea lice and containment. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. Questions have been asked to those Parties/jurisdictions as to how progress towards the international goals will be monitored. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to the Group's questions.
NS6	Given the risks posed by the spread of *G. salaris*, further exchange of information among the jurisdictions is	*The IP template, CNL(12)42, seeks information on measures in place to prevent the spread of G. salaris. The EPR considered that the Strategic Approach had provided a comprehensive framework for the work of NASCO and it will*

	important and future reporting under Implementation Plans may be the most appropriate way to facilitate this exchange. It was recognised that *G. salaris* is a specific issue that was highlighted in the Strategic Approach, but in the event that the Strategic Approach is revised in the future, the goal and key issue relating to *G. salaris* could be incorporated in Challenge 5 (Aquaculture, introductions and transfers and transgenics).	*be used in the next cycle of reporting.* **2014 Update:** The IPs were reviewed prior to the 2013 Annual Meeting. The Review Group has reported that three IPs contained clear omissions or inadequacies in the responses to question 4.6 in that no information had been provided on the measures in place to prevent the introduction of *G. salaris*. The APRs submitted in 2014 include updates on progress on each of the actions in the IPs, and have been evaluated by the Review Group. Questions have been asked to those Parties/jurisdictions on the measures in place to prevent the introduction of *G. salaris*. There will be a Special Session at the 2014 Annual Meeting to discuss the Group's findings and for the Parties/jurisdictions to respond to the Group's questions.
	Reporting and evaluation	
NS8	The second round of reporting under Implementation Plans should be streamlined so as to reduce the reporting burden, avoid duplication and focus the reports and reviews on information and analysis to further NASCO's objectives of conserving, restoring, enhancing and rationally managing salmon stocks in the North Atlantic. It would assist the streamlining of future reporting if templates were developed to facilitate the development of consistent plans and reports and the possibility of electronic reporting should be considered.	*Templates for both IPs (CNL(12)42) and APRs (CNL(12)43) have been developed. The IP template has been made available electronically for completion.* **2014 Update:** New IPs and the first APRs developed using these templates have been submitted by the Parties/jurisdictions and evaluated. The Review Group had concluded that, overall, compared to the first cycle of reporting, the new IPs were clearer, better focused and more succinct. There will be a Special Session at the 2014 Annual Meeting to present the Group's findings. The Review Group has proposed some revisions to the APR template to clarify the information that is being sought in future reporting.
NS9	The second round of reporting under Implementation Plans should place greater emphasis on monitoring and evaluation of activities and describe clearly identifiable measurable	*The IP template, CNL(12)42, seeks details of the actions to be taken, the timescales for these actions, the expected outcomes and the approach to monitoring and enforcement so that progress can be evaluated. An initial assessment will be undertaken to ensure such information is presented and where there are gaps the IPs will be returned to the jurisdiction for further drafting. They will then be evaluated by a Review Group. There will be a need to monitor progress and evaluate outcomes.*

	outcomes and timescales.	**2014 Update:** Following discussion of the evaluation of the new IPs at the 2013 Annual Meeting, Parties/jurisdictions were given a further opportunity to clarify any unclear/incomplete answers or information in their Plans. Most Parties took advantage of this opportunity. The first APRs under these IPs were submitted in 2014 and have been evaluated by a Review Group. These APRs will be used to monitor progress and evaluate outcomes in an on-going process. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.
NS10	In developing updated Implementation Plans it is envisaged that jurisdictions will use their existing plans as a starting point and involvement of NGOs and other stakeholders is encouraged.	*The IP Guidelines, CNL(12)44, state that IPs should draw on information contained in the first IPs and be prepared in consultation with other NGOs and other relevant stakeholders and industries. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The new IPs were submitted and evaluated in 2013. Two representatives of the NGOs served on the Review Group together with four representatives from the Parties.
NS11	The findings from the first round of reviews should be taken into account in developing updated Implementation Plans.	*The IP template, CNL(12)42, requests that jurisdictions take into account the specific issues on which action was recommended in the first cycle of reporting. These issues were collated by the Secretariat and sent to jurisdictions with the request to develop new IPs. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** In undertaking the evaluation of the 2013 – 2018 IPs the Review Group drew on information arising from the first reporting cycle, including the FAR assessments.
NS12	Updated Implementation Plans should be subjected to a critical review since these plans will set the stage for activities and reporting for a five year period. The Group recommends that any plan that is not sufficiently specific should be returned to the jurisdiction for further drafting	*The IP Guidelines, CNL(12)44, state that there will be an initial assessment of IPs and where IPs do not provide answers to all questions, list threats and provide actions to address threats they will be returned for further drafting. Similarly, after a full evaluation, IPs that are unsatisfactory will be returned for further drafting. There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** Following discussion of the findings of the evaluation of the new IPs at the 2013 Annual Meeting, CNL(13)12, Parties/jurisdictions were given a further opportunity to clarify any unclear/incomplete answers or information in their Plans. Most Parties took advantage of this opportunity even when their IP was considered to be satisfactory. Details of the seven IPs that are still considered to contain clear omissions or inadequacies are given in the Review Group's report, CNL(14)11.
NS13	Each year the jurisdictions should provide a report identifying the status of actions within their plan as well as available data on monitoring the effectiveness of those actions. A review of the Annual Reports should be conducted to assess if the commitments in the plan have been fulfilled and whether progress has been made towards achievement of the	*A template for APRs, CNL(12)43, has been developed that seeks a progress report on each action, the results of monitoring and enforcement and whether the objective has been achieved. These APRs will be reviewed in order to ensure that jurisdictions have provided a clear account of progress in implementing and evaluating the actions in their IPs (see CNL(12)44). There will be a need to monitor progress and evaluate outcomes.* **2014 Update:** The APRs have been reviewed by the Review Group, and where the Group felt that information was lacking, questions have been sent to the Party/jurisdiction concerned. Each Party/jurisdiction will have the opportunity to respond to these questions at a Special Session to be held during the 2014 Annual Meeting. The Review Group has developed a table showing the status of each action (not started, ongoing or completed) for each jurisdiction and this will be updated annually.

	stated objectives.	
NS14	There should be a new cycle of Focus Area Reports but developed around specific themes e.g. during the year when habitat protection and restoration is considered the theme might be an exchange of information on fish passage issues. Reports may be solicited from jurisdictions and could be presented during the Special Session	*The Council has agreed that FARs will be replaced by Theme-based Special Sessions and procedures have been agreed for planning and organising these sessions. Priority themes have been agreed (See CNL(12)12). The first theme-based Special Session will be on mixed-stock fisheries.* **2014 Update:** In addition to the development of APRs detailing the progress made on each action in the IP, the Council has agreed to hold a full day Theme-based Special Session at the 2014 Annual Meeting on the management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits. A Steering Committee, comprising three representatives from the Parties and one representative from NASCO's accredited NGOs, has developed the Programme for the session including an invited speaker and solicited presentations from the Parties/jurisdictions, CNL(14)13. A report of the session will be prepared by the Steering Committee after the Annual Meeting. The session is intended to allow for a thorough exchange of information.
	Additional areas to be addressed in meeting NASCO's challenges	
NS15	Climate change poses real challenges for salmon management that may require management approaches to be more flexible and adaptive to changes that may be difficult to predict. The Council might, in the first instance, consider holding a Special Session on this topic in the future to allow for information exchange	*The Council has agreed that theme-based Special Sessions could be helpful to NASCO and procedures for planning and organising these Special Sessions agreed (see CNL(12)12 for details). A number of priority topics have been identified including management of mixed-stock fisheries (MSFs), managing salmon under a changing climate and fish passage at hydro-electric facilities. It has been agreed that there will be a Special Session on socio-economics at the 2014 Annual Meeting and a focus on MSFs in NEAC in 2013. Information on climate change impacts on salmon was presented at the 'Salmon Summit' and should be taken into account in developing future research needs. ICES has been requested to report on any significant advances in understanding of the biology of Atlantic salmon that is pertinent to NASCO, including information on the potential implications of climate change for salmon management.* **2014 Update:** Presentations at the 2014 Theme-based Special Session should include details on how socio-economic issues are included in management decisions. The Council will need to agree on a topic for the next Theme-based Special Session to be held in 2015 or 2016. The ICES advice developed in response to the request made in 2013 is contained in document CNL(14)8.
NS16	The President and Secretary should engage in discussions with the former Head of Delegation for Iceland to keep him informed of the work of NASCO	*A letter was sent to the Icelandic Ministry of Foreign Affairs on 15 May 2012 inviting Iceland to re-accede to the Convention. Efforts will continue to be made to keep Iceland informed of NASCO's work (see EPR 73).* **2014 Update:** Mr Arni Isaksson, former Head of delegation to NASCO, has now retired. The Secretary has met his replacement and has briefed him on NASCO matters and provided relevant documentation on the work of NASCO.

Section 2: Recommendations of the External Performance Review Panel (EPR) and 'Next Steps' Review Group (NS) that require further action for their implementation

2.1 IUU Fishing by non-NASCO Parties *(This refers to recommendations contained within EPR6 – 8, EPR63, EPR 64 and EP72)*

Decision: *A problem of fishing for salmon by vessels registered to non-NASCO Parties occurred in the North-East Atlantic in the late 1980s and early 1990s. NASCO took diplomatic action to address the problem and there have been no sightings of vessels registered to non-NASCO Parties fishing for salmon in international waters in the North-East Atlantic since the early 1990s. However, it is recognised that airborne surveillance of this area is limited, particularly during winter months. The Secretariat should continue to liaise with the Parties and the coastguard authorities. It should also seek cooperation from NEAFC and NAFO to use their MCS to identify any activity by vessels in their areas of competence that may be fishing for salmon in international waters and to compile information in accordance with the Council's Resolution on Fishing for Salmon on the High Seas, CNL(92)54. The Parties should coordinate with their delegations to NAFO and NEAFC, as appropriate, on this issue. In the event that there is evidence of such activity, it will be drawn to the Council's attention so that appropriate measures can be considered.*

2014 Update: The Secretariat has continued to liaise with the coastguard authorities in Norway and Iceland concerning information from airborne surveillance flights. During July, August and September 2013, the Norwegian coastguard carried out eight surveillance flights over the area of international waters north of the Faroe Islands in the Northern Norwegian Sea. No fishing for salmon was observed in 2013 as has been the case since the early 1990s. No information has been provided by the Icelandic coastguard, but in 2012/13 it did not undertake any flights over this area of international waters. In the 1990s when fishing by non-NASCO Parties was known to have occurred, information was also obtained from ports and from fishery protection vessel patrols but no such information has been received since then.

The Secretariat has contacted NAFO and NEAFC to seek cooperation in using their MCS to identify any activity by vessels that may be fishing for salmon in international waters. The NAFO Secretariat has advised that NAFO is willing to assist NASCO with regard to fishing for salmon in international waters and indicated that most of the surveillance in the NAFO Regulatory Area is conducted by Canada. The NAFO Secretariat will advise whether the Parties or NAFO will respond. There will be an opportunity to discuss this further with the NAFO and NEAFC Secretariats at the 2014 Regional Secretariats Network (RSN) meeting.

2.2 IUU Fishing – NASCO Parties *(This refers to recommendations contained within EPR60 and EPR62)*

Decision: *In response to requests from NASCO, ICES has advised that over recent years efforts have been made to reduce the level of unreported catch in a number of countries through improved reporting procedures, carcass tagging and logbook schemes. Consistent with the 1993 Minimum Standard for Catch Statistics, CNL(93)51, jurisdictions should continue to take measures to reduce the level of unreported catches. The IP template, CNL(12)42, seeks information on the current level of unreported catch and the measures being taken to reduce this. The APR template, CNL(12)43, seeks details of the estimated unreported catch from in-river, estuarine and coastal fisheries. There will be a need to monitor progress and evaluate outcomes. A Special Session was held on this topic in 2007 to review approaches to estimating and minimise such catches. The need for the development of guidelines on approaches to minimising unreported catches and for a Special Session on this topic could be considered in the light of the information provided in the next reporting cycle. ICES has reviewed the methods used to calculate unreported catches and has provided suggestions for how estimates of unreported catch should be included in regional, national and international assessments. Best practice guidelines have not, however, been developed by the Council and in the first instance, the Secretariat should review FAO's IUU IPOA with regard to any guidance the IPOA may include on best practice in minimising unreported catches and report back to the Council.*

2014 Update: All Parties/jurisdictions are requested to report annually to NASCO on the level of unreported catch (and information is also provided to ICES). NASCO's 2012 External Performance Review had concluded that timely reporting on estimates of unreported catches and measures taken to reduce such catches is essential. Last year, in its report to the Council (CNL(13)12), the Implementation Plan Review Group had indicated that most, but not all Parties/jurisdictions had provided an estimate of the level of unreported catch in their Implementation Plan. Most Parties/jurisdictions also described a range of measures being taken to reduce unreported catches and these include:

• carcass tagging;

• logbooks;

• ban on the sale of rod caught salmon;

• measures to increase awareness among fishermen of the need to report catches (including issuing reminders, campaigns in the media and deposits on catch reports);

• targeted enforcement activity to reduce illegal fishing;

• a requirement to report any bycatch in fisheries for other species and use of observers on vessels to document any bycatch of salmon.

For 2013, the estimated unreported catch was 295t down from 398t in 2012 (no estimate was available for the Russian Federation and not all EU Member States provided an estimate) (see CNL914)12). An estimate of unreported catch for 2013 is also included in the ICES ACOM report of 306t down from 404t in 2012. ICES has again noted that over recent years efforts have been made to reduce the level of unreported catch in a number of countries (e.g. through improved reporting procedures and the introduction of carcass tagging and logbook schemes). Nonetheless, the estimate of unreported catch in 2013 equates to approximately 20% of the reported catch and not all Parties/jurisdictions have provided an estimate.

NASCO's Guidelines for the Management of Salmon Fisheries, CNL(09)43), provide some general guidance in relation to unreported catches including that estimates of the level of unreported catches and other mortalities associated with the fishery should be collected for all salmon fisheries; information should be sought on the by-catch of salmon in fisheries for other species and efforts made to identify their river of origin; and managers should be able to enforce the measures that are in place to regulate fishing activity and to minimise the level of unreported catches.

The International Plan of Action (IPOA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing is a voluntary instrument that was approved by the FAO Committee on Fisheries (COFI) in 2001. It was developed because COFI was concerned about an apparent increase in IUU fishing including fishing vessels flying 'flags of convenience'. It contains an Introduction and sections on the Nature and Scope of IUU Fishing and the IPOA; Objectives and Principles; Implementation of Measures to Prevent, Deter and Eliminate IUU Fishing (sub-divided into All State Responsibilities, Flag State Responsibilities, Coastal State Measures, Port State Measures, Internationally Agreed Market-Related Measures, Research, and Regional Fisheries Management Organizations); Special Requirements of Developing Countries; Reporting; and the Role of FAO. The objective of the IPOA is to prevent, deter and eliminate IUU fishing by providing all States with comprehensive and transparent measures by which to act, including through appropriate regional fisheries management organizations. There are certainly elements in the IPOA that could be supportive of NASCO's initiatives with regard to IUU fishing but many of these relate to IUU fishing by non-NASCO Parties (see 2.1 above) and there have been no sightings of such activity since the early 1990s. The IPOA could, however, be helpful if such activity occurs in future. For example, the IUU IPOA indicates that: States should discourage their nationals from flagging fishing vessels under the jurisdiction of a State that does not meet its flag State responsibilities; States should ratify, accept or accede to *inter alia* the 1995 UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement; States should avoid flagging vessels with a history on non-compliance and should deter vessels from reflagging for the purpose of non-compliance with conservation and management measures; States should require vessels seeking permission to enter their ports to provide reasonable advanced notice of their entry, a copy of their authorisation to fish and information including quantities of fish onboard; and where a port State has clear evidence that a vessel that has been granted access to its ports has engaged in IUU fishing, landings or transhipment should not be allowed

and it should report the matter to the flag State of the vessel.

There are also some elements that appear consistent with NASCO's initiatives to reduce IUU fishing for salmon by NASCO Parties such as recommendations that States should undertake comprehensive and effective monitoring, control and surveillance of fishing and that they should ensure compliance with and enforcement of policies and measures related to IUU fishing adopted by relevant regional fisheries management organizations. However, the IPOA does not contain best practice guidance on minimising unreported catches in salmon fisheries and appropriate measures may differ among Parties. It may, therefore, be more appropriate to share experience of measures to minimise unreported catches through the IPs/APRs (including holding a further Special Session on this topic which might result in development of guidance).

2.3 Ecosystem Approach ***(This refers to the recommendation contained within EPR9)***

Decision: *ICES has advised that the current salmon fisheries in both the NEAC and NAC areas probably have no or only minor influence on the marine ecosystem. Furthermore, the Plan of Action for Habitat Protection and Restoration requires that each jurisdiction should prepare a comprehensive salmon habitat protection and restoration plan in order to identify risks to productive capacity. Progress in this regard is being assessed through IPs and APRs. Given that the issue of EAF is broad, the Secretariat should review these Technical Guidelines and report to the Council on any implications for NASCO.*

2014 Update: The External Performance Review Panel had recognised that an Ecosytem Approach to Fisheries (EAF) is being operationalized by NASCO as it has addressed challenges related to management of salmon fisheries, habitat protection and restoration and aquaculture and related activities. The panel had noted that some other RFMOs are developing EAF management plans and it suggested that NASCO might consider whether such plans are needed. The FAO Technical Guidelines on the Ecosystem Approach to Fisheries indicate that the information to be provided in an EAF management plan includes: the area of operation of the fishery; the various stakeholders; the gear and vessel types; the history, management and socio-economic importance of the fishery; monitoring data; the distribution area of the most important commercial species in the catch; relevant information on life-history; and any management procedures already in place with descriptions and a performance evaluation. In addition, the potential direct and indirect effects of the fishery on species and habitats should also be described including the critical habitats that may be affected, the species composition of both retained and non-retained by-catch, the likely amounts of discards, the potential amount of litter produced, the impact of fishing on life-history traits, and the major biological interactions in which the harvested species participate and the potential effects of fisheries on these interactions.

NASCO Parties/jurisdictions have all developed, or are developing, Implementation Plans that describe:

- the current status of stocks relative to the reference points and a description of how threatened and endangered stocks are identified;
- the objectives for the management of the fisheries for wild salmon;
- the decision-making process for fisheries management, including predetermined decisions taken under different stock conditions;
- the number of fisheries that are permitted to operate on salmon stocks that are below their reference point and how these are managed to promote stock rebuilding?
- how socio-economic factors are taken into account in making decisions on fisheries management;
- the current level of unreported catch and the measures being taken to reduce this;
- the main threats to wild salmon and challenges for management in relation to fisheries;
- the actions planned to address each of the above threats and challenges.

Additionally, ICES has again advised (CNL(14)8) that the current salmon fisheries probably have no or only minor influence on the marine ecosystem.

It would appear, therefore, that although not termed EAF management plans, NASCO Parties/jurisdictions have provided much of the information that would be included in such plans. The Secretariat will liaise with FAO and other RFMOs on this issue.

2.4 Rivers database *(This refers to recommendations contained within EPR40 and NS7)*

Decision: *All jurisdictions have contributed to the database and the information is available on the NASCO website. This information has already been used in research projects and is a valuable PR tool. The Council will convene a Working Group, to work by correspondence or at the Annual Meeting, to develop recommendations for revisions to the stock categories that are used in the database that better reflect status of stocks relative to attainment of conservation limits. The Parties would then be requested to update the stock category information held in the database and provide information on threats to those stocks. With the available information, the NASCO Secretariat should be requested to prepare an overview of the status of stocks around the North Atlantic and the threats to them using the information contained in the rivers database. The EPR considered that the Strategic Approach had provided a comprehensive framework for the work of NASCO and it will be used in the next cycle of reporting.*

2014 Update: The 2013 request for scientific advice from ICES (CNL(13)10) included a request to provide a review of the stock status categories currently used by the jurisdictions of NASCO, including within their IPs, and to advise on common approaches that may be applicable throughout the NASCO area. ICES has advised that the database is an important source of information on Atlantic salmon stocks and rivers but notes that the stock categories used in the database do not reflect the use of conservation limits (CLs) and management targets (MTs) in making management decisions, the approach agreed by NASCO.

ICES reports that the NASCO categories 'maintained', 'not present but potential', and 'restored' are descriptive and do not appear to have a close parallel with the other species or river stock classifications generally in use. They clearly relate to special categories for stocks which have been or might be subject to special intervention, possibly including stocking. The NASCO categories 'Threatened with loss' and 'Not threatened with loss', while relating more directly to stock status, were also difficult to align directly with categories based on attainment of stock indicators because the terminology is imprecise and interpretation of these categories tends to encompass several categories in other systems. NASCO has recommended the development of CLs for all stocks. However, these have not yet been developed by some jurisdictions, where alternative stock abundance indicators may be used in management. ICES recognises that the implementation of any standardized classification scheme may also be difficult but considered that it might be possible to develop a classification more closely reflecting the generally applied categories used for describing stock status and providing management advice (i.e. CLs). A preliminary and tentative example was provided. However, it was recognised that approaches would need to be developed to enable compliance with the classification criteria to be averaged over time periods and thus avoid the need for assessment and updating of the Rivers Database on an annual basis. In addition, some degree of expert judgement would also be required for stocks that do not currently have CLs. The Council may wish to decide on the next steps with regard to the classification system used in the rivers database.

2.5 ICES Advice *(This refers to recommendations contained within EPR44 – 45)*

Decision: *EPR 44 relates to an issue concerning the forecasts of stock abundance and the EPR has noted that in 2011 the ICES Review Group recommended that environmental indices should be included in the model used by the ICES WGNAS. This matter should be considered by NASCO's SSC to determine if a request should be made to ICES in relation to this issue. For EPR45, it is assumed that the ICES WGNAS will have acted on the issues and recommendations it raised in 2011.*

2014 Update: The Council might wish to refer this matter to the Committee at its 2014 Annual Meeting.

2.6 Research on Salmon at Sea (including bycatch) *(This refers to recommendations contained within EPR10, EPR55-56 and NS3)*

Decision: *The annual request to ICES seeks information on bycatch in new and existing fisheries. ICES has advised that the current salmon fisheries in both the NEAC and NAC areas probably have no or only minor influence on the marine ecosystem. For the WGC area ICES has indicated that there is no information on by-catch of other species in the salmon fishery that is practiced with nearshore surface gillnets. This fishery has been restricted to an internal-use fishery (~20 tonnes) since 1998 by NASCO agreements. The need for a by-catch strategy in NASCO might be considered if the ICES advice on this issue changed. If that was the case, the Secretariat could be requested to prepare a review of the International Guidelines on Bycatch/Discards. NASCO's Guidelines for the Management of Salmon Fisheries, CNL(09)43, indicate that information should be sought on the by-catch of salmon in fisheries for other species and efforts made to identify their river of origin. Such information should be reported to NASCO. Concern was raised about bycatch of salmon in pelagic fisheries (e.g. for herring and mackerel) in the NEAC area. In the light of the new information*

and tools developed through the SALSEA Programme, the Council recommends that jurisdictions undertake further studies to assess by-catch in pelagic fisheries such as those recently undertaken by Russia, Iceland and the Faroe Islands. Further liaison with the pelagic RAC is also encouraged. The Secretariat might also liaise with NAFO and NEAFC regarding availability of information on by-catch of salmon obtained through their observer programmes. The Board's role is to promote collaboration and cooperation on research into the causes of mortality of salmon at sea and the opportunities to counteract it. It has agreed to review its working methods in 2013; its TORs require that it maintain an inventory of research relating to mortality of salmon at sea. This includes information on long-term monitoring programmes in freshwater. It will be a matter for the Council to decide if it wishes to have a broader inventory of research relating to other aspects of NASCO's work. The Parties considered that Theme-based Special Sessions might allow for a further exchange on research priorities and needs. A Sub-Group of the SAG has met and provided recommendations to the IASRB for future research for consideration during the 2013 Annual Meeting.

2014 Update: In 2013, ICES was asked to provide recommendations on how a targeted study of pelagic bycatch in relevant areas might be carried out with an assessment of the need for such a study considering the current understanding of pelagic bycatch impacts on Atlantic salmon populations in 2014. The advice from ICES is contained in document CNL(14)8. In summary, ICES advises that the latest information highlights ongoing uncertainty on the salmon bycatch question, but new screening programmes, considered by ICES to provide the most reliable data, suggest relatively low levels of bycatch in the mackerel catches. ICES noted the markedly higher salmon bycatch rates recorded in the IESSNS surveys, but cautions that it is unclear how representative these might be of the bycatch in the commercial fishery given differences in the design and operation of the gears used. In any event, the capture rates remain low relative to the estimates of total NEAC PFA (< 2%). Given that estimates of the bycatch of salmon in the pelagic fisheries are highly uncertain, ICES considers it would be informative to increase efforts to obtain reliable estimates of the bycatch of salmon and made a number of recommendations as to how this might be achieved. These include, collating all available information on post-smolt and salmon marine distribution; collating information of possible interceptive pelagic fisheries in areas frequented by Atlantic salmon (in cooperation with scientists working on pelagic fish assessments); reviewing pelagic fisheries and investigating ways to intercalibrate survey trawls with commercial trawls; and carrying out comprehensive catch screening on commercial vessels fishing in areas with known high densities of salmon post-smolts or adults (this would require significant resources, coordination and funding). The Council may wish to consider if further action is needed.

The Secretariat has contacted NAFO and NEAFC about possible availability of information on by-catch of salmon obtained through their observer programmes. NAFO has responded indicating a willingness to assist but highlighting that the NAFO regulated species are mainly groundfish stocks. Some NAFO Parties report catches of salmon through STATLANT but NAFO indicates that it is not clear what fishery these come from and this issue will be raised at the upcoming NAFO Scientific Council meeting.

The IASRB agreed to focus on the partitioning of marine mortality of salmon and, through its Scientific Advisory Group, has established a Telemetry Sub-Group to develop and document a roadmap outlining a large scale international collaborative telemetry project to ultimately provide information on migration paths and quantitative estimates of mortality during phases of the marine life-cycle of salmon. The report of this Sub-Group will presented to the SAG and the Board at the 2014 Annual Meeting (see document SAG(14)4). The Board's response to the Sub-Group's recommendations will be presented to the Council, CNL(14)9.

The Secretariat has been advised by Professor Ken Whelan that the Atlantic Salmon Trust (AST) attended the 2012 and 2013 General Assembly of the Pelagic Regional Advisory Council and gave presentations at each event, including details of the work of the IASRB. The Trust has recently joined the Pelagic RAC in an observer capacity and was advised that an application from the IASRB to join the Pelagic RAC would be welcomed, as the experience and expertise of the various salmon interest groups would be of benefit to the Pelagic RAC's work, possibly through involvement of scientists and managers on its Working Groups. The AST has advised that there was great interest within the Pelagic RAC in the research carried out under SALSEA and the potential development by the IASRB of an international tracking programme. The Pelagic RAC suggested that the IASRB could seek a briefing on pelagic surveys currently underway which could be of direct relevance to its work on salmon at sea. It was noted that the pelagic scientists may benefit from a technical workshop convened between salmon and pelagic scientists to update the pelagic scientists on the stock discrimination techniques developed under SALSEA. ICES has advised that if efforts are to be made to obtain reliable estimates of the bycatch of salmon (see above) there will be a need for close cooperation between WGNAS scientists and those working on pelagic fish assessments.

2.7 Public relations *(This refers to recommendations contained within EPR68 and EPR70 – 71)*

Decision: *The IPs and APRs in the second cycle of reporting will be made available on the NASCO website. NASCO has 34 accredited NGOs which now participate in most of the meetings and improvements have been made to the website. Stakeholder consultation meetings are a tool to be considered when a specific need for seeking broad input is identified. The Council has agreed that its initial priorities in Public Relations are its websites and the Salmon Rivers database. The work to enhance the website is on-going and should continue. The Council believes that NASCO should be the source of information on salmon stock status around the North Atlantic and has agreed to develop a State of the Salmon report using the updated stock categories in the rivers database (see above). The Council should keep its PR approach under review and consider if further actions are needed.*

2014 Update: Since last year, further improvements have been made to the NASCO and IASRB websites. The new IPs and first APRs have been made available on the website together with the outcome of their evaluation. NASCO has supported the production of a film entitled 'Atlantic salmon: Lost at Sea' and served on the Steering Committee and contributed to a Discussion Forum on the Atlantic salmon held by the Royal Society of Edinbugh in November 2013. Further details of NASCO's activities relating to PR are contained in document CNL(14)6.

The 2013 request for scientific advice from ICES (CNL(13)10) included a request to provide a review of the stock status categories currently used by the jurisdictions of NASCO, including within their IPs, and to advise on common approaches that may be applicable throughout the NASCO area (see 2.4 above).

2.8 Future role for NASCO on aquaculture *(This refers to recommendations contained within NS17)*

Decision: *Aquaculture remains a focus area for NASCO in terms of concerns over impacts on wild Atlantic salmon. In general, NASCO has established the goal to minimise adverse impacts to wild stocks from aquaculture activities. However, it is for the Parties and jurisdictions to identify and implement appropriate measures to meet this goal. Progress will be tracked as Implementation Plans and Annual Reports are submitted. Some more specific measures are contained in the NAC Protocols, appended to the Williamsburg Resolution.*

2014 Update: At the 2013 Annual Meeting, the Council agreed that an item should be retained on the Council's agenda entitled 'Liaison with the Salmon Farming Industry', during which a representative of the International Salmon Farmers' Association (ISFA) could be invited to participate in an exchange of information on issues concerning impacts of aquaculture on wild salmon. The regular meetings of the Liaison Group would not be continued, but, if a specific need arose, consideration could be given to convening a joint *ad hoc* group. A representative of ISFA will attend the 2014 Annual Meeting.

The Review Group has reported that five IPs contained clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 concerning demonstration of progress towards the international goals for sea lice and containment. The 2014 APRs include updates on progress on actions relating to aquaculture, introductions and transfers and transgenics and have been evaluated by the APR Review Group. Questions have been asked to those Parties/jurisdictions whose IPs contained clear omissions or inadequacies in the responses to either or both questions 4.2 and 4.3 as to how progress towards the international goals will be monitored. The Group's report will be presented in a Special Session at the Annual Meeting, when jurisdictions will answer any questions raised by the Group in relation to the APRs. The Review Group has developed a table showing the status (not started, ongoing or completed) of each action for each jurisdiction and this will be updated annually.

2.9 Meeting schedule and structure *(This refers to recommendations contained within NS18)*

Decision: *The Parties are invited to submit proposals for changes to the structure, frequency and location of NASCO meetings to the Secretariat who will prepare a paper, based on these submissions, for consideration by the Council at its 2013 Annual Meeting. The intention is to explore options for changes to the structure, frequency and location of NASCO meetings with a view to ensuring the most effective use of the time available and expertise present. The Parties may choose to communicate with each other during the development of these papers and Canada committed to circulate its draft to the other Parties.*

2014 Update: Prior to NASCO's 2013 Annual Meeting, papers were received from Canada, Norway, the Russian Federation and the US and collated by the Secretariat (see document CNL(13)16). No suggestions were made regarding the location of NASCO meetings. The Council decided not to change the frequency (i.e. annual) of its meetings or the policy on the location of its Annual Meeting, but agreed to change its structure on a trial basis for 2014 using the papers from Norway and the US as a basis to improve the opportunities for exchange of information during the meeting. The Agendas for the 2014 Annual Meeting have been adapted in accordance with the proposals from Norway and the US and a full-day Theme-based Special Session will be held on the topic of management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits. A Programme for this session has been developed by the Steering Committee which comprised representatives of NASCO's Parties and its accredited NGOs.

Section 3: Strengthening the work of NASCO

Following a comprehensive discussion among the Parties in relation to the options for strengthening the work of NASCO (see FVN(13)12) it was agreed that in addition to the actions in sections 1 and 2, the priority area for special focus is in the area of fisheries management. The Parties renewed their commitment to the following actions:

Recommendation	Action taken
3.1 During the 2013 Council meeting, critically review the new 5-year Implementation Plans which include the following sections: (a) information on reference points used to assess the status of stocks; (b) the decision-making process for fisheries management, including predetermined decisions taken under different stock conditions (e.g. the stock level at which fisheries are closed); (c) identification of whether fisheries are permitted to operate on salmon stocks that are below their reference point and, if so, how many fisheries there are and what approach is taken to managing them that still promotes stock rebuilding; and (d) identification of any mixed-stock salmon fisheries and an explanation of how they are managed to ensure that all the contributing stocks are meeting their conservation objectives.	***2014 Update:*** *The IPs were evaluated by a Review Group whose findings were presented at a Special Session during the 2013 Annual Meeting. The Council asked the Parties to take the opportunity to revise their IPs, including those considered by the Review Group to be satisfactory, so as to clarify any unclear/incomplete answers. Most Parties took advantage of this opportunity. Since 2013, new IPs have been received from EU – Spain (Asturias, Cantabria and Galicia).* *The Review Group had noted inter alia that:* • *river-specific conservation limits have been established by some Parties/jurisdictions for all or most of their rivers. Progress is being made in most other Parties/jurisdictions towards development of these conservation limits and in the meantime juvenile abundance data and/or catch statistics are being used as temporary reference points by some jurisdictions;* • *many of the responses provided information on the organizations that are involved in the decision-making process but not on how decisions are taken in response to different stock conditions;* • *that fisheries are permitted to operate on stocks that are below their reference point in several jurisdictions, but the number of fisheries involved and the management measures applying to these fisheries to promote stock rebuilding were not always clearly described;* • *most IPs clearly indicated whether or not a Party/jurisdiction had mixed-stock fisheries and how these are defined. Where Parties/jurisdictions have such fisheries, the IPs generally provided information on catches but clear descriptions of how the fisheries are managed to ensure that all the contributing stocks are meeting their conservation objectives were often lacking.*

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	During the 2014 Annual Meeting, there will be a Theme-based Special Session on the topic of management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits. The objectives of this session are to allow for an exchange of information on: • *Progress in establishing conservation limits, or alternative reference points, and the approaches being used to manage fisheries in their absence;* • *How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries;* • *How socio-economic considerations, including the interests of indigenous people, are weighed against conservation needs and, where fishing is permitted on stocks below their CLs, the approaches being used to ensure that exploitation is limited to a level that permits stock rebuilding within a stated timeframe.*
3.2 During each annual Council meeting, critically review the annual progress reports from each Party, paying particular attention to progress against actions relating to the management of salmon fisheries.	***2014 Update:*** *A Special Session is to be held at the 2014 Annual Meeting to allow for presentation and discussion of the evaluations of the APRs under the IPs. During this Special Session, Parties will be given the opportunity to respond to any questions the APR Review Group may raise in connection with their APRs and there will be an opportunity for all delegates to raise questions.*
3.3 Ensure there are agenda items in each of the Commissions to allow for a focus on mixed-stock fisheries	***2014 Update:*** *For the 2013 Annual Meeting, a new item was included on the North-East Atlantic Commission's Agenda specifically focused on management of mixed-stock fisheries. At the 2014 Annual Meeting, there is to be a one-day Theme-based Special Session on the topic of management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limits. The intention is to facilitate a greater exchange of information and the objectives of the session are detailed in 3.1 above. As such, no agenda items on mixed-stock fisheries have been included on the Commission agendas for 2014 because of the Theme-based Special Session but such items will be included on the 2015 agendas for all three Commissions.*
3.4 Focus the first Council new theme-based Special Session on mixed-stock fisheries.	***2014 Update:*** *See point 3.1 above*
In addition, the Parties agreed to explore opportunities to strengthen their commitment to implement the NASCO Guidelines on Management of Salmon Fisheries *inter alia* by the use of a Protocol or Resolution.	***2014 Update:*** *The Secretariat has not been advised of any new Protocols or Resolutions that are being developed by Parties.*

Annex 21

CNL(14)15

Management and Sampling of the St Pierre and Miquelon Salmon Fishery

1. As in previous years, we have received from France (in respect of St Pierre and Miquelon) a report containing information on the management of the fishery, details of catches and of the number of licenses issued. This information is contained in Annex 1. The total catch in 2013 was 5.302 tonnes and there were 73 licensed fishermen (9 professional permits and 64 recreational permits).

2. A report on the age and genetic mixed stock analysis of the catch at Saint-Pierre and Miquelon in 2013 has been provided and is included in Annex 2.

3. France (in respect of St Pierre and Miquelon) has been invited to attend the Thirty-First Annual Meeting and will be represented by Ms Christiane Laurent-Monpetit (Ministère des Outre-mer), Ms Marie-Sophie Dufau-Richet (Secrétariat Général de la Mer) and Mr Jean-Marc Philippeau (Ministère de l'écologie, du développement durable et de l'énergie).

4. In 2013, in the light of the findings of the External Performance Review, the President wrote to encourage France (in respect of St Pierre and Miquelon) to accede to the Convention. The response to this letter is contained in Annex 3 of this document.

Secretary
Edinburgh
29 May 2014

Annual report on the Atlantic Salmon Fishery at Saint Pierre and Miquelon
2013 Season

1. Legislation

Salmon fishing in the St Pierre and Miquelon archipelago is regulated by decree No 87-182 of 19 March 1987, implemented under the Order of 20 March 1987.

This legislation establishes the following:

- The fishery is under license and subject to an Annual Fishery Plan
- The minimum capture size is 48cm
- Nets must be declared and marked
- The minimum mesh size is 125mm
- The fishery season is restricted to 1 May – 31 July
- It is not permissible to place fishing gear within 300m of a river mouth.
- Restricted fishing effort:
  - 3 x 360m nets for professional fishermen
  - 1 x 180m net for recreational fishermen
- All catch must be declared (through annual declarations and a fishing log)
- All catch in the recreational fishery must be tagged

322 boat inspections were carried out in 2013, 299 of which were of recreational vessels and 23 were professional vessels. The inspections were carried out over 18 days, both in the morning and in the evening.

2. Permit allocation

Fishing permits are allocated to professional fishermen (who may sell their catch) and recreational fishermen (who are not authorised to sell their catch).

The allocation procedure is based on fishery precedence and on compliance with catch declaration obligations throughout the previous year.

The Maritime Centre deals with permit applications and allocates each permit holder with a specific site to fish for the entire season. The fishery site plan is published by Order of the Prefect.

In 2013, 9 professional permits were issued (as in 2011 and 2012) and 64 recreational permits were issued (60 were issued in 2012). There has been a slight increase in the number of licenses issued over the last 2 years, although the number of fishers has remained constant since 2005 (an average of 50 fishers per year over the last 10 years).

3. Salmon Catch

The total 2013 catch stands at:

Professional catch: 2,291 kg (278 kg in 2012). 974 salmon caught.
Recreational catch: 3,011 kg (1,168 kg in 2012). 1,151 salmon caught.

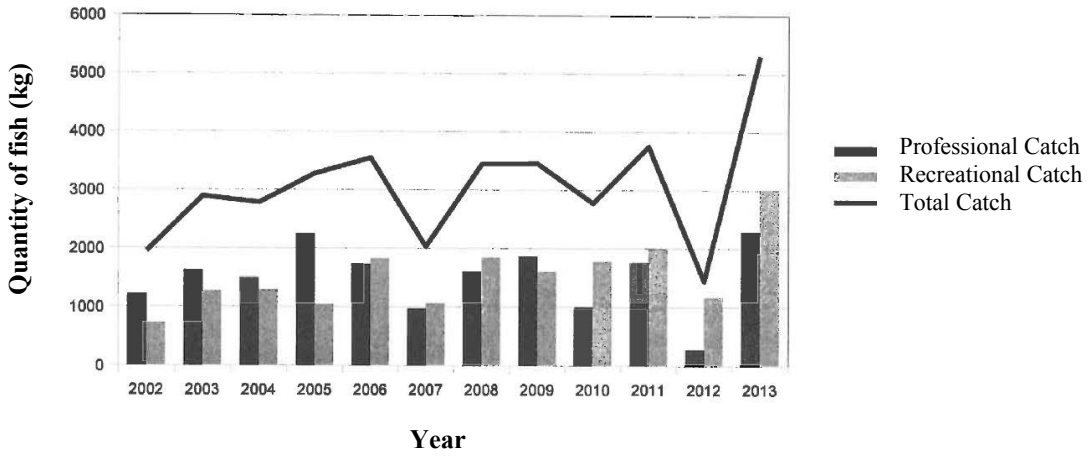
The total weight of the catch was 5,302kg.

The 1,151 salmon caught by 50 recreational boats averages around 23 salmon per recreational fisher. However, the highest catch by a single recreational vessel was 79 salmon. It should also be noted that many boats only fish for a very short period and bring their nets in well before the end of the permitted time-frame, as soon as they consider that their catch is sufficient for their personal use and that of their immediate circle.

The 974 salmon caught by 9 professional vessels averages around 108 salmon per professional fisher. The highest catch by a single professional vessel was 256 salmon, whereas one professional license holder did not fish.

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Professional Fishery												
No. of licenses	12	12	13	14	13	13	9	8	9	9	9	9
Catch volume	**1223**	**1620**	**1499**	**2243**	**1730**	**970**	**1604**	**1864**	**1002**	**1764**	**278**	**3011**
Recreational Fishery												
No. of licenses	42	42	42	52	52	53	55	50	57	58	60	64
Catch Volume	**729**	**1272**	**1285**	**1044**	**1825**	**1062**	**1846**	**1600**	**1780**	**1992**	**1168**	**2291**
Total catch	1952	2892	2784	3287	3855	2032	3450	3464	2782	3756	1446	5302

Salmon catch at St Pierre and Miquelon 2002 – 2013

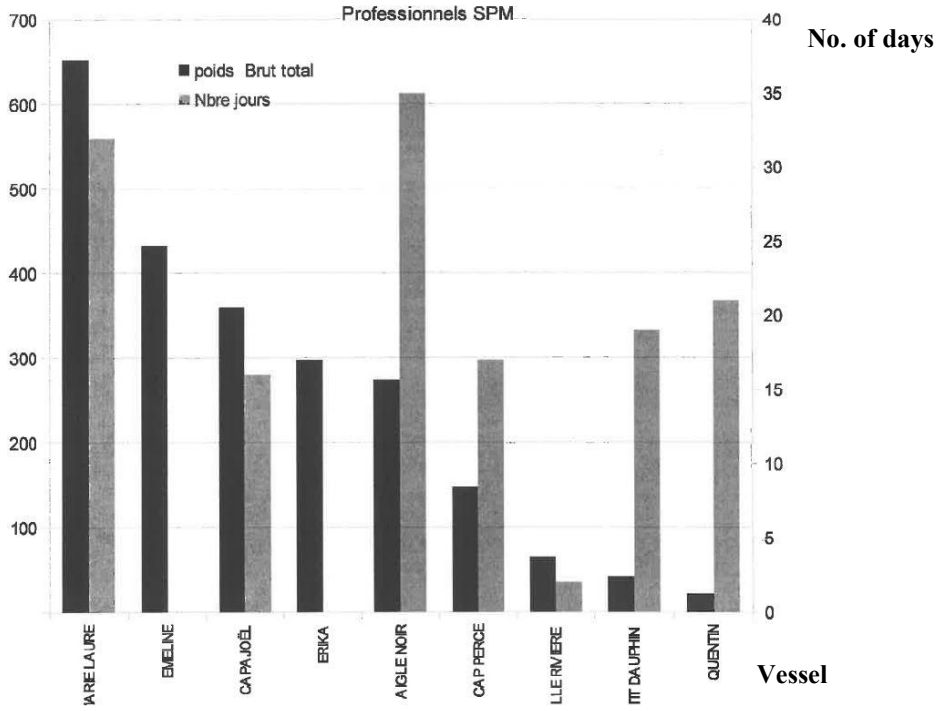


There is no export of salmon and all salmon caught are consumed by the local market. Most salmon caught are retained for personal consumption, while only a few are sold to restaurants or individuals through a local fishmonger, or directly to the individual at market.

It should be noted that there is no fishing for salmon in the archipelago's rivers and that around 16 tonnes of farmed salmon are imported from Canada. The annual consumption of salmon is approximately 3 kg per inhabitant.

2013 Professional Salmon Catch

Kg

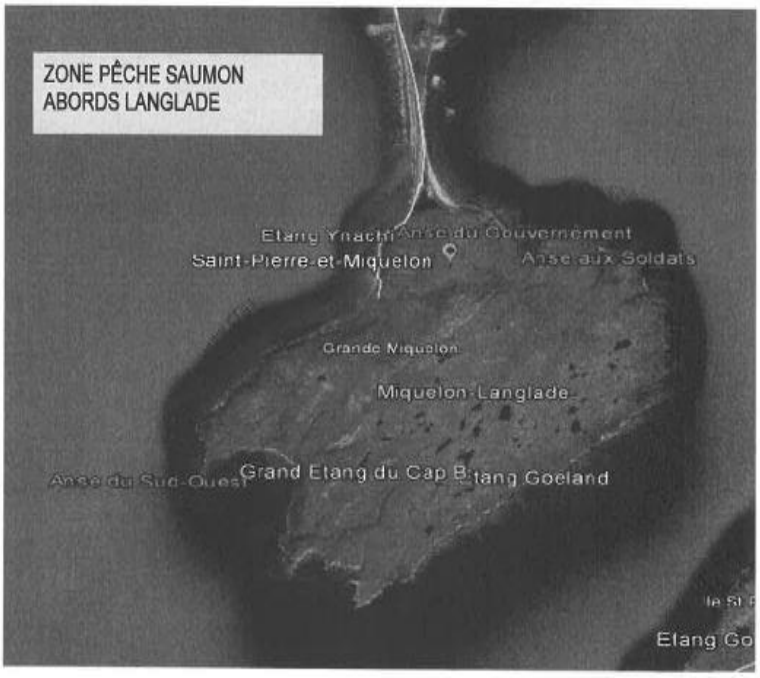


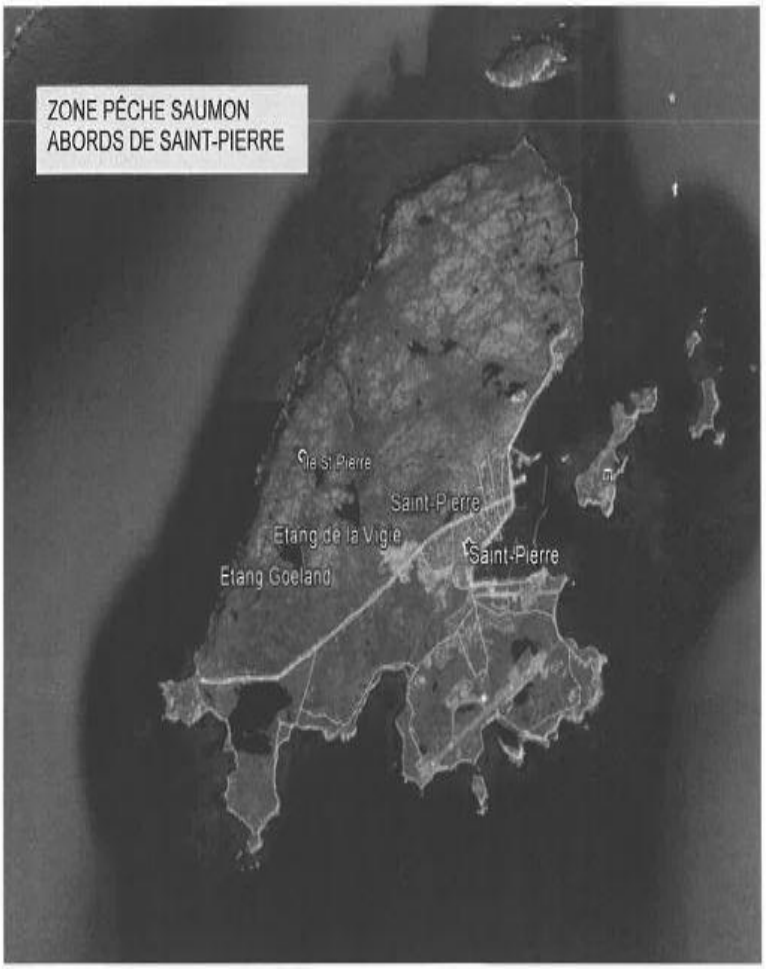
4. Profile of fishers/location of fishing sites

The average fisher on the archipelago is male (there are no female salmon fishers on the archipelago) with an average age of 58 (the oldest being 76 and the youngest 38).

The fishing sites are located around the archipelago as follows:


ZONE DE PÊCHE SAUMON
ABORDS DE MIQUELON
Saint Pierre et Miquelon


ZONE PÊCHE SAUMON
ABORDS LANGLADE
Etang Ynacht
Saint-Pierre-et-Miquelon
Anse du Gouvernement
Anse aux Soldats
Grande Miquelon
Miquelon-Langlade
Grand Etang du Cap
Etang Goeland
Anse du Sud-Ouest
Etang Go



Head of the St Pierre and Miquelon Maritime Office

Amaury de Guillebon

AGE ANALYSIS AND GENETIC MIXED STOCK ANALYSIS OF ATLANTIC SALMON HARVESTED IN THE SAINT-PIERRE ET MIQUELON FISHERY IN 2013

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SUMMARY

Age interpretation and genetic mixed stock analysis was carried out on 74 scale samples and 71 tissue samples from 79 Atlantic salmon collected in the fishery in waters around Saint-Pierre et Miquelon in 2013. Bayesian mixture and assignment was conducted using a baseline for North American salmon containing 15 loci and 11,575 individuals which allowed for assignment to 11 regional groups throughout the Northwest Atlantic. The salmon sampled in 2013 comprised mostly two-sea-winter maiden salmon (49 samples) with fewer one-sea-winter maiden salmon (22 samples) and 3 repeat spawning salmon. Based on the genetic data, analysis indicated that the sample (n = 71) contained 37% Gaspe Peninsula salmon (30 fish), 34% Newfoundland salmon (23 fish), 22% Maritimes salmon (13 fish), and 7% Upper North Shore Quebec salmon (5 fish). Contributions of the other 7 regional groups were all negligible (i.e. <1%; n = 0). Scale analysis of fishery individuals by reporting group indicates river age increases and sea age declines with increasing latitude of regional group consistent with expectations based on known characteristics of these stocks. Continued analysis of additional years will be informative of the characteristics of the salmon, age and size structure and origin of the fish and the variation in the stock specific characteristics of the catches.

PROJECT DESCRIPTION:

Atlantic salmon from throughout the western Atlantic migrate to the Labrador Sea as smolts where they feed (Pippy 1982; Ritter 1989; Reddin and Short 1991; Reddin and Friedland 1999). As well as being exploited at West Greenland primarily during their second summer feeding at sea, they may be exploited on their return migration in coastal fisheries in the waters around Saint Pierre and Miquelon and Labrador, as well as in rivers. Failure to identify the composition of mixed stock harvests may put at risk of over exploitation and extinction small and vulnerable populations, the loss of which may threaten the ability of species to respond to changing environmental conditions and ultimately the stability and persistence of populations and fisheries (Hilborn et al. 2003; Schindler et al 2010). Multiple approaches have been used to examine the composition of mixtures of salmon populations, though genetic approaches are considered the most practical and cost effective (Koljonen et al. 2007). The power of genetic approaches to resolve populations contributing to mixed harvests depends on the degree of isolation among the contributing populations and the markers used. Previous studies have utilized a variety of genetic markers including allozymes (e.g., Reddin et al. 1990, Koljonen and Pella 1997), mtDNA, microsatellites (e.g., Gauthier-Ouellet et al. 2009), and single nucleotide polymorphisms (e.g., Beacham et al. 2010). Presently, microsatellites remain the preferred marker due to the high allelic variability frequently observed (Koljonen et al. 2007), though combined panels are also receiving support (Beacham et al. 2010). In previous work using microsatellites, Gauthier-Ouellet et al. (2009) estimated with greater than 90% accuracy simulated mixtures of Atlantic salmon caught off west Greenland to regions of North America (e.g., Labrador, New Brunswick, Maine). This baseline has recently been extended to encompass all North American salmon stocks and allows assignment of fish harvested in the Northwest Atlantic to region of origin (see Bradbury et al. in review).

OBJECTIVES

The main objective of this study was to estimate the region of origin of Atlantic salmon harvested in the Saint-Pierre et Miquelon salmon fishery using samples collected in 2013. Previous work (NASCO 2011, 2012) had indicated that all salmon sampled from this fishery were of North American origin, no European origin salmon had been identified from these samples.

METHODOLOGY

Baseline samples

Baseline samples encompassed 189 individual river samples ranging from Ungava Bay in the north to the Penobscot River in Maine to the south (Figure 1) (see Bradbury et al. 2014, Dionne et al. 2008 for regional analyses and further details). Reporting groups largely represent regional clusters identified in previous landscape analyses of population structure (e.g., Bradbury et al. 2014, Dionne et al. 2008) and were evaluated for use in mixture analysis for this study. In total, 11 regional groups were used for individual assignment and mixture analysis (Figure 1), based on both new data and previously published data from Quebec, Labrador, and New Brunswick from Dionne et al. (2008) and Newfoundland and Labrador from Bradbury et al. (2014). Regional groups comprise:

(1) Southern Labrador / Lower North Shore Quebec,

(2) Higher North Shore Quebec / Quebec City,

(3) the Gaspe Peninsula / Anticosti Island,

(4) Ungava Bay and Northern Labrador,

(5) Central Labrador,

(6) Avalon Peninsula,

(7) Northeast Brook Trepassey,

(8) remainder of insular Newfoundland,

(9) Maritimes samples (i.e. southern Gulf of St. Lawrence, Nova Scotia and New Brunswick),

(10) the Inner Bay of Fundy, and

(11) USA populations.

The USA Atlantic salmon regional group was characterized from 100 individual sampled fish (50 individuals from each of two years) collected from the Penobscot River.

Fishery Samples

Fishery samples were collected in 2013 from the fishery around the Island of Saint-Pierre as well as from the fishery conducted around the Island of Miquelon. Samples were provided by Ifremer (St Pierre et Miquelon). In total 77 salmon were sampled in 2013 from which scale samples for scale ageing were available

for 74 sampled fish and fin clips for genetic analysis were collected from 69 sampled salmon in 2013 (plus 2 samples provided from the 2012 fishery). Samples for which both scales and tissues for genetic analyses totaled 66 fish in 2013.

DNA extraction and genotyping

DNA was extracted using the Qiagen DNeasy 96 Blood and Tissue extraction kit (Qiagen) following the guidelines of the manufacturer. DNA was quantified using QuantiT PicoGreen (Life Technologies), and diluted to a final concentration of 10ng/μL in 10mM Tris (Buffer EB, Qiagen). Microsatellite polymorphisms were quantified at 15 loci as follows: Ssa85, Ssa202, Ssa197 (O'Reilly et al. 1996), SSOSL417 (Slettan et al. 1995), SsaD85 (T. King, unpublished), SsaD58, SsaD71, SsaD144, SsaD486 (King et al. 2005), MST-3 (hereafter referred to as U3) (Presa and Guyomard 1996), SSsp2201, SSsp2210, SSsp2215, SSsp2216 and SSspG7 (Paterson et al. 2004). Genotyping of baseline samples are described elsewhere (Bradbury et al. 2014, Dionne et al. 2008). Genotyping of fishery samples follows the methods outlined in Bradbury et al. (2014).

Genetic Stock Identification

Stock composition was estimated using the microsatellite data described above and an implementation of a Bayeisan mixture model from Pella and Masuda (2001) as implemented in cBAYES (Neaves et al. 2005). In this analysis eight 20,000 iteration Monte Carlo Markov chains were used each with starting values of 0.90. Convergence was assessed using a shrink factor (< 1.2 indicating convergence) and the last 1,000 iterations were used to calculate stock composition and individual assignments.

RESULTS AND DISCUSSION

Biological characteristics

Of the fish sampled in 2013 with recorded fork lengths, 23 were small salmon (< 63 cm fork length) and 46 were large salmon (>= 63 cm fork length). The river age of the fish sampled was almost equally distributed between two years (34 samples) and three years (38 samples) in freshwater. There were proportionally more river age 3 fish in the 1SW salmon group compared to the 2SW salmon group which had proportionally more river age 2 years fish.

As expected, the 1SW salmon were exclusively in the small salmon category (< 63 cm fork length) whereas the large salmon category was comprised of 2SW and repeat spawning salmon (Figure 2). The three repeat spawning salmon in the samples were all alternate spawning salmon with a maiden age of 1SW.

Table 1. Number of samples by age group.

Freshwater age (years)	Total sea age				All samples
	1SW	2SW	Repeat	Not determined	
2	7	27			34
3	15	20	3		38
Not determined		2		3	5
All samples	22	49	3	3	77

Region of origin

Bayesian mixture analysis of the genetic data from the 71 individuals indicated that the sample contained 37% Gaspe Peninsula salmon (30 samples), 34% Newfoundland salmon (23 samples), 22% Maritimes salmon (13 samples), and 7% Upper North Shore Quebec salmon (5 samples). Contributions of the other 7 regional groups were all negligible (i.e. <1%; no samples assigned to those regions) (Figure 3). The two samples from 2012 were assigned one to each of the Newfoundland and Gaspe groups.

Scale analysis indicated clear trends in biological characteristics of individuals analyzed consistent with the region to which they were assigned (Figure 4). Average river age of assigned individuals declined from Newfoundland to the Maritimes, and conversely average sea age increased from north to south (Figure 4).

Most (two-thirds) of the samples assigned to the Newfoundland region were 1SW salmon whereas most of the fish assigned to the other regions were 2SW salmon (Figure 5).

Assigned region	Se age				All age groups
	1SW	2SW	Repeat	Not determined	
Gaspe	3	23	2	2	30
Maritimes	4	9	0	0	13
Newfoundland	14	6	1	2	23
Quebec North	1	3	0	1	5
All samples	22	41	3	5	71

Also, scale analysis suggested one individual sampled in the fishery may have been an aquaculture escapee. This individual was screened using an existing database for aquaculture salmon currently in use in Newfoundland and Labrador and was identified as being from the Quebec Upper North Shore region. However, the baseline for aquaculture salmon only contains data on salmon currently in production in Newfoundland and Labrador and as such it's possible a miss-identification may occur if an escapee from elsewhere was sampled.

In terms of the timing of the samples, most of the small salmon were sampled after June 1 while most of the large salmon were sampled prior to June 1 in 2013 (Figure 6). Since most of the salmon assigned to the Newfoundland region of origin were small salmon, the fish from this region were mostly from the samples collected in June whereas fish from the other regions were mostly sampled in May.

This work is the first analysis of assignment to region of origin for eastern North America using the extended baseline of samples from salmon populations of eastern North America.

The samples obtained from the fishery in 2013 differed in characteristics from the samples from the 2003 and 2004 fisheries (Lenormand et Briand 2004). In 2003 and 2004, approximately two-thirds of the fish sampled were small salmon (<63 cm fork length) but the sample size in those years was also much larger, 340 and 355 samples in each year respectively.

Where possible, it would be informative to analyse the samples from previous years using the extended baseline database from eastern North America to assess the region of origin of salmon in this fishery. Continued sampling of this fishery is recommended with a consideration of obtaining samples which are representative of the catches in the fishery in both the Saint-Pierre and the Miquelon areas. If tissue samples are too difficult to collect, scale samples could also be considered; scale samples could be collected by fishermen directly from their catches which could enhance the number of samples available for analysis.

Additional years of analysis would be needed to quantify the origin the catches in this fishery.

ACKNOWLEDGEMENTS

The ages of the scale samples were interpreted by Art Walsh (DFO Newfoundland Region) and Noella McDonald (DFO Gulf Region). Images of the scales were collected by Noella McDonald.

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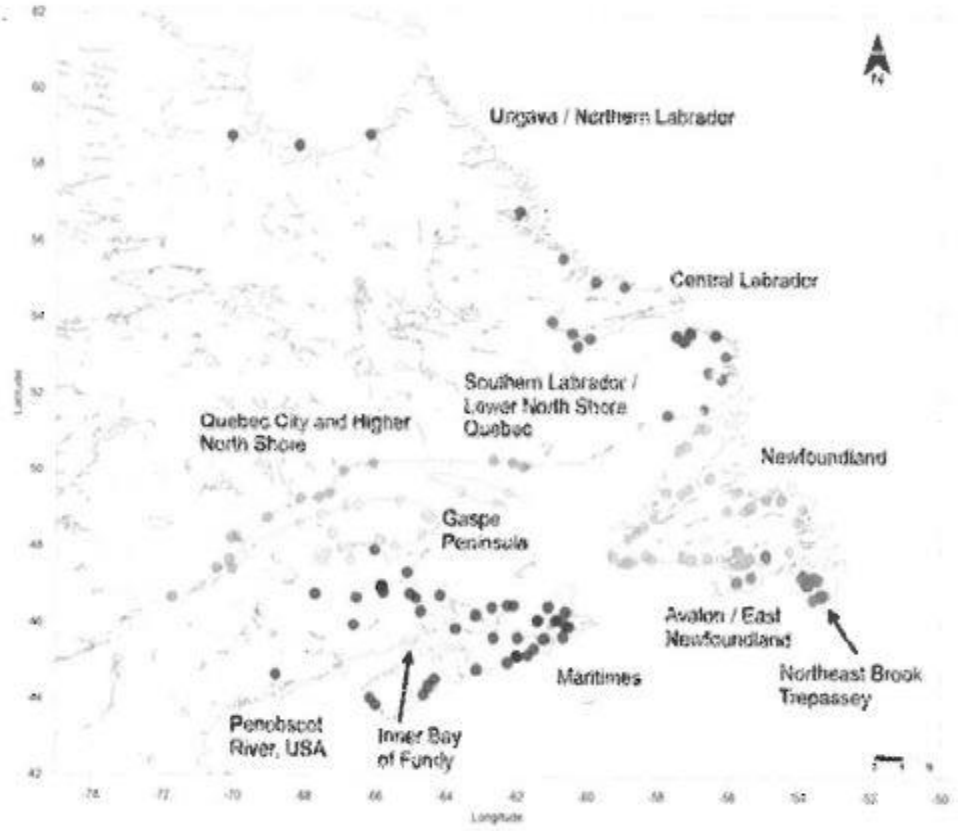

Figure 1: Map of baseline samples and reporting groups used in mixture and assignment analysis. Eleven reporting groups are included (See Methods for details regarding reporting groups). Figure from Bradbury et al. (in review).

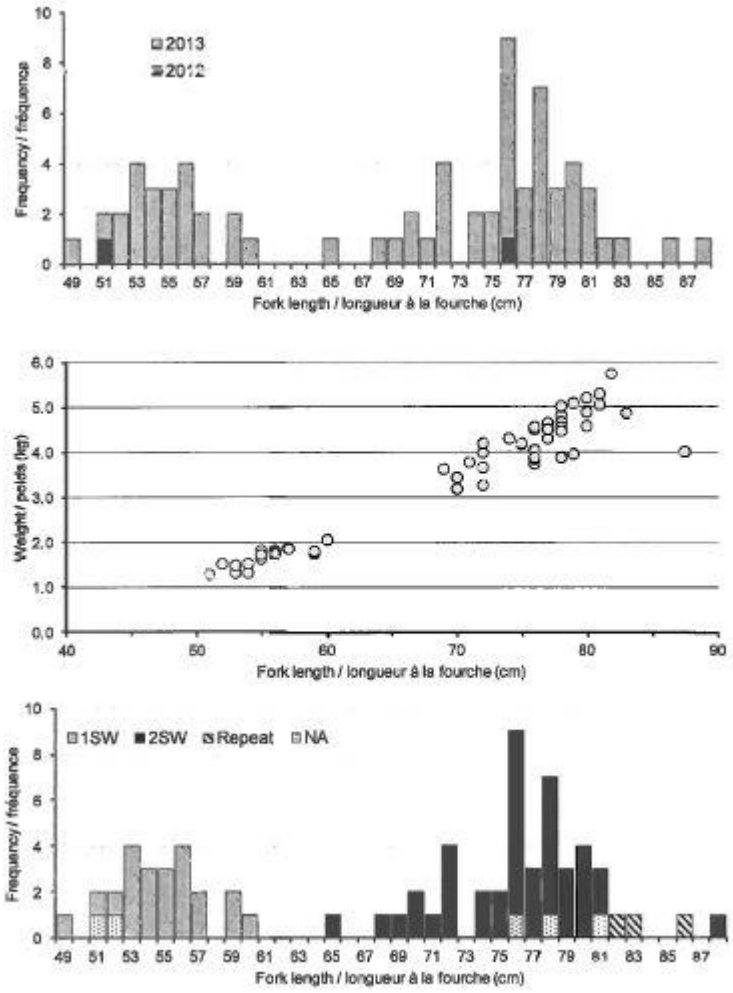

Figure 2: Biological characteristics of the Atlantic salmon sampled from the fishery at Saint-Pierre et Miquelon in 2013.

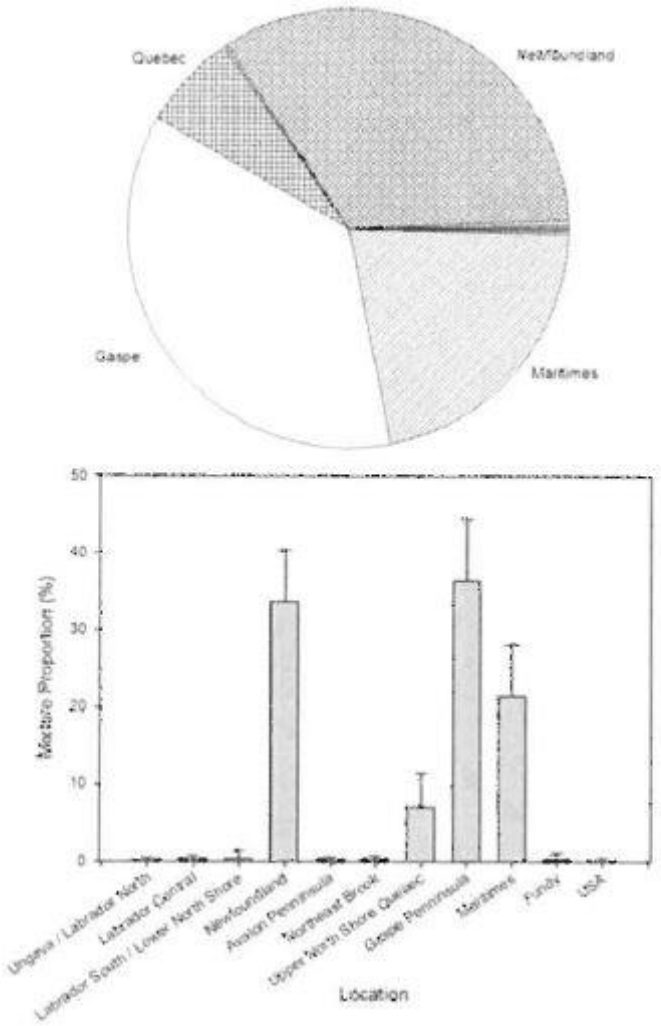

Figure 3: Mixture composition of fishery samples collected in Saint-Pierre et Miquelon in 2013. Eleven reporting groups are included (see Methods for details regarding reporting groups). Error bars represent standard deviation around estimate.

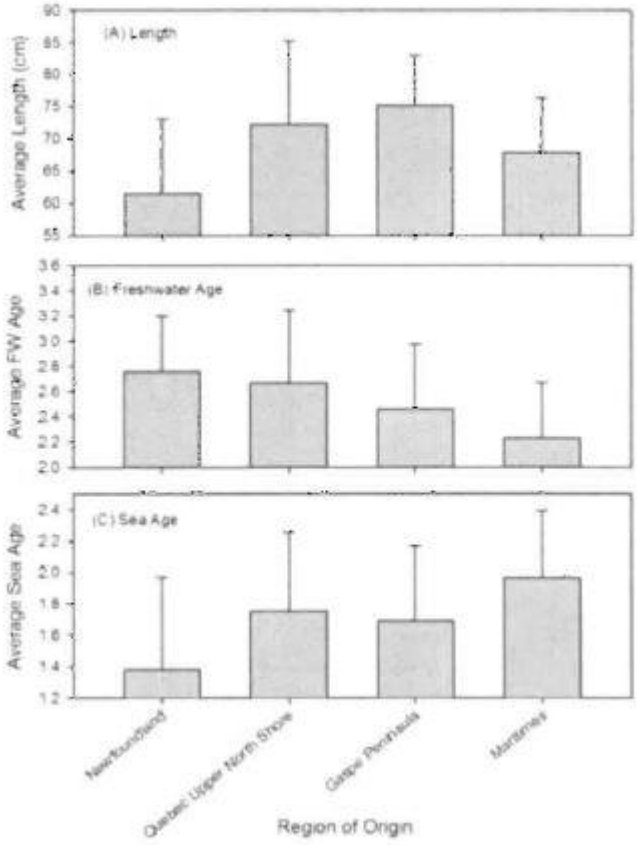

Figure 4: Average biological characteristics (A) length, (B) average freshwater age, and (C) average sea age of salmon sampled from the Saint-Pierre et Miquelon fishery in 2013, by region of origin as determined by genetic mixed stock analysis. Error bars represesnt standard deviation.

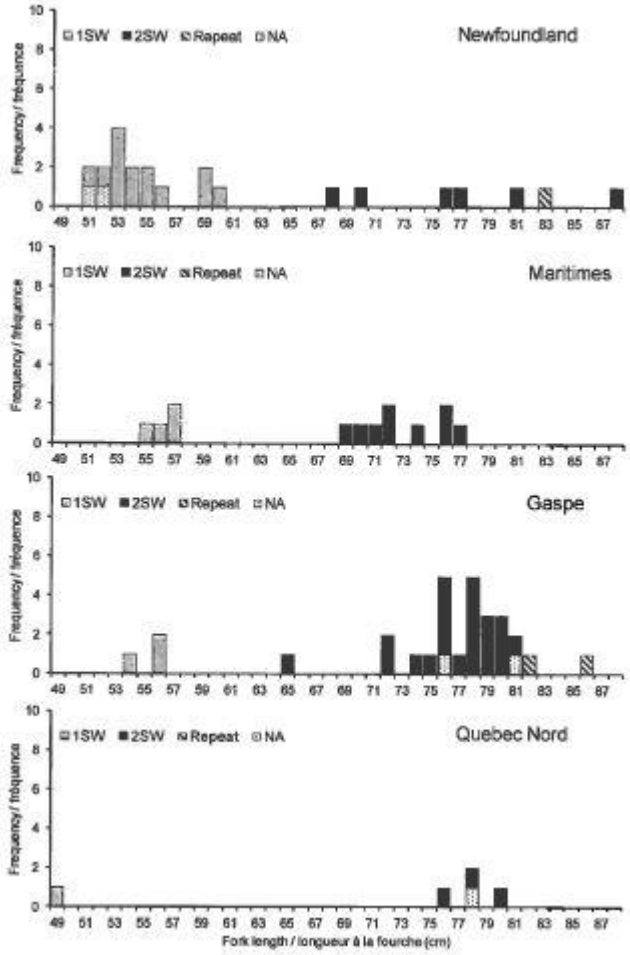

Figure 5: Fork length and sea age characteristics by assigned regional grouping of origin of Atlantic salmon sampled from the Saint-Pierre et Miquelon fishery in 2013. Two samples from 2012 are in the unaged (NA) category assigned to each of the Gaspe (76cm) and Newfoundland (51cm).

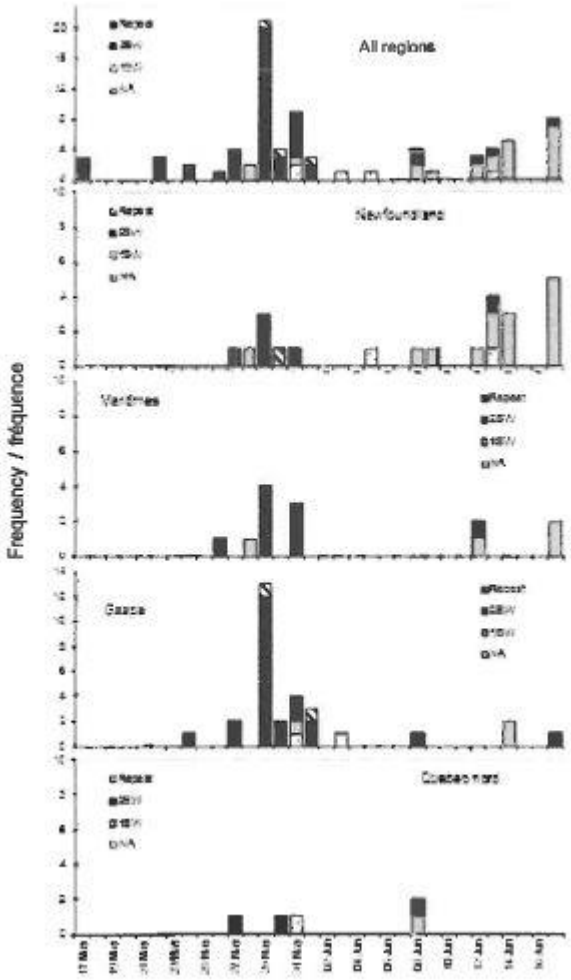

Figure 6: Timing of the samples from the Saint-Pierre et Miquelon fishery in 2013 by sea age group and assigned region of origin. Two samples from 2012 are in the unaged (NA) category assigned to each of Gaspe (3 June) and Newfoundland (5 June).

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RÉPUBLIQUE FRANÇAISE

PREMIER MINISTRE

Secrétariat général de la mer

Le Secrétaire général

Paris, 28 mai 2014

N° 777/SGMER

Madam,

France has the pleasure to welcome the upcoming annual meeting of the North Atlantic Salmon Conservation Organization (NASCO) in Brittany in Saint –Malo.

The status of France in respect of St-Pierre-et-Miquelon (SPM) holds our attention, but at this stage observer status seems satisfactory to meet our objectives. We would like, however, to emphasize that France in respect of SPM remains committed to close cooperation with NASCO and will pursue scientific cooperation with NASCO Contracting Parties.

We are truly pleased to participate, with increasing interest, in NASCO meetings, and to contribute to research on the Atlantic salmon with an ongoing sampling programme for age and genetic origin determination. Another step next year will be the collection of size and parasitism data for a significant number of salmons harvested around the islands. This has been made possible mainly by the decision to keep a permanent IFREMER scientist position in St Pierre, with additional human resources in both islands from the local State services (Pôle maritime) and, on the island of Miquelon, from the scientific staff, financed through the Office for the development of agriculture and aquaculture in overseas territories plus increasing involvement of the fishermen themselves.

Furthermore, I am pleased to send the report for the fishery in 2013:

- administrative information provided by the "Pôle maritime",
- scientific information by the IFREMER representative in St Pierre, in cooperation with DFO-Newfoundland and New Brunswick.

We would like to take this opportunity to sincerely congratulate you for your two mandates as president of NASCO.

Michel AYMERIC

Mrs Mary COLLIGAN
President of NASCO
11, Rutland Square
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EH1 27S
United Kingdom of Great Britain

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Annex 22

CNL(14)57

Press Release

North Atlantic Salmon Conservation Organization (NASCO)
Thirty-First Annual Meeting, Saint-Malo, France
3 – 6 June 2014

Major developments in international Atlantic salmon research programme to be pursued: NASCO continues to support ground-breaking science

Managers, scientists and stakeholders attending the Annual Meeting of the inter-governmental North Atlantic Salmon Conservation Organization (NASCO) in Saint-Malo (France) this week resolved to develop an international programme of research to better understand the reasons for low survival of salmon at sea.

Scientific information presented at the meeting indicated that salmon abundance remains low and in some areas critically low despite large reductions in fisheries. Mortality at sea is a major factor and, building on the recent marine surveys under the Salmon at Sea (SALSEA) Programme, NASCO's International Atlantic Salmon Research Board will now develop plans for an ambitious and innovative programme of research to track salmon from their rivers of birth out into the ocean to improve knowledge of where the mortality occurs and what is causing it.

A primary focus at the meeting was on the management of fisheries and, in particular, those that harvest stocks which are below their Conservation Limits. A highly successful themed session, organised with the accredited NGOs, was held during which open and detailed discussions took place and information shared to help inform future management.

NASCO President, Mary Colligan said 'mixed-stock fisheries pose particular management challenges, especially in ensuring that the weakest of the contributing stocks is protected. Newly available genetic methods should support rational management of these fisheries in the future and our goal must be to ensure that harvesting activities do not exacerbate the serious conservation situation already facing the wild salmon at sea.'

The meeting provided the opportunity for NASCO Parties to report on the progress made in implementing actions related to the management of fisheries, habitat protection and restoration and aquaculture and related activities.

NASCO establishes regulatory measures for the fisheries in West Greenland and around the Faroe Islands and multi-annual measures had been agreed in 2012 that will be due for re-negotiation in 2015. Important preparatory discussions were held in relation to these measures and for the West Greenland Commission a cooperative process to develop approaches for enhanced fishery management and control was also agreed. In addition, an inter-sessional meeting will be held in Greenland to set the stage for a new agreement in 2015.

The Council of NASCO elected Mr Steinar Hermansen (Norway) as its new President and Mr Jóannes Hansen (Faroe Islands) as its Vice-President. Mr Hermansen said 'These are challenging times for the wild Atlantic salmon and the need for international cooperation has never been greater. It is an honour to be appointed President, and I look forward to working with all the Parties in our important work to conserve this iconic species'.

The 32nd Annual Meeting of NASCO will be held during June 2 -5, 2015.

Notes for Editors:

NASCO is an intergovernmental organization formed by a treaty in 1984 and is based in Edinburgh, Scotland. Its objectives are the conservation, restoration and rational management of wild Atlantic salmon stocks, which do not recognise national boundaries. It is the only intergovernmental organisation with this mandate which it implements through international consultation, negotiation and co-operation.

The Parties to the Convention are: Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Norway, Russia and USA. There are 34 non-government observers accredited to the Organization.

The 2014 meeting included almost 100 delegates, including scientists, policy makers and representatives of Inter-Governmental Organisations and Non-Governmental Organisations who met to discuss the present status of wild Atlantic salmon and to consider management issues.

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www.nasco.int

Annex 23

List of Papers

CNL(14)1	Provisional Agenda (English and French)
CNL(14)2	Explanatory Memorandum on the Agenda (*revised 8 April 2014*)
CNL(14)3	Draft Agenda (English and French)
CNL(14)4	Draft Schedule of Meetings
CNL(14)5	Report of the Thirty-First Annual Meeting of the Finance and Administration Committee
CNL(14)6	Secretary's Report
CNL(14)7	Report on the Activities of the North Atlantic Salmon Conservation Organization in 2013
CNL(14)8	Report of the ICES Advisory Committee (ACOM)
CNL(14)9	Report of the Thirteenth Meeting of the International Atlantic Salmon Research Board
CNL(14)10	Request for Scientific Advice from ICES
CNL(14)11	Report of the Implementation Plan/Annual Progress Report Review Group
CNL(14)12	Summary of Annual Progress Reports under the 2013-2018 Implementation Plans
CNL(14)13	Programme for the Theme-Based Special Session: 'Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limit'
CNL(14)14	Report on Progress in Implementing the 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO'
CNL(14)15	Management and Sampling of the St Pierre and Miquelon Salmon Fishery
CNL(14)16	Summary of Council Decisions
CNL(14)17	Report of the Socio-Economics Sub-Group
CNL(14)18	Draft Decision of the Council concerning the NASCO Deferred Salary Scheme and Staff Fund
CNL(14)19	Decision of the Council concerning the NASCO Deferred Salary Scheme and Staff Fund
CNL(14)20	North Atlantic Salmon Conservation Organization 2015 Budget and 2016 Forecast Budget (Pounds Sterling)
CNL(14)21	Annual Progress Report: EU - Denmark
CNL(14)22	Annual Progress Report: EU - Sweden
CNL(14)23	Annual Progress Report: EU - Germany
CNL(14)24	Annual Progress Report: EU - Spain (Galicia)
CNL(14)25	Annual Progress Report: EU - Spain (Asturias)
CNL(14)26	Annual Progress Report: EU - Spain (Cantabria)
CNL(14)27	Annual Progress Report: EU - UK (Northern Ireland)
CNL(14)28	Annual Progress Report: Norway
CNL(14)29	Annual Progress Report: Russian Federation
CNL(14)30	Annual Progress Report: EU - Finland
CNL(14)31	Annual Progress Report: EU - UK (England and Wales)
CNL(14)32	Annual Progress Report: EU - UK (Scotland)
CNL(14)33	Annual Progress Report: United States
CNL(14)34	Annual Progress Report: Denmark (in respect of the Faroe Islands and Greenland) Greenland

CNL(14)35	Annual Progress Report: EU - Spain (Navarra)
CNL(14)36	Annual Progress Report: EU - Ireland
CNL(14)37	Annual Progress Report: Canada
CNL(14)38	Annual Progress Report: Denmark (in respect of the Faroe Islands and Greenland) Faroe Islands
CNL(14)39	Annual Progress Report: EU - UK (England and Wales) (*Updated 6 May*)
CNL(14)40	Annual Progress Report: EU - UK (Scotland) (*Updated 12 May*)
CNL(14)41	Recent investigations into the stock composition of the Norwegian and Russian coastal salmon fisheries (the Kolarctic salmon project) (Tabled by the Russian Federation)
CNL(14)42	The management approach to salmon fisheries in the Russian Federation (Tabled by the Russian Federation)
CNL(14)43	Overview of the 2013 – 2018 Implementation Plans in relation to the management of salmon fisheries
CNL(14)44	The management approach to the West Greenland salmon fishery - fairness and balance in the management of distant-water fisheries (Tabled by Denmark (in respect of the Faroe Islands and Greenland) Greenland)
CNL(14)45	The management approach to salmon fisheries in Norway (Tabled by Norway)
CNL(14)46	Canada's Management Measures for Wild Atlantic Salmon stocks (Tabled by Canada)
CNL(14)47	The Management approach to North Atlantic salmon fisheries in Finland (Tabled by EU - Finland)
CNL(14)48	Recent investigations into the stock composition of the Labrador Atlantic Salmon subsistence fisheries (Tabled by Canada)
CNL(14)49	Recent investigations into the stock composition of coastal fisheries in Scotland (Tabled by EU - UK (Scotland))
CNL(14)50	Management approach to salmon fisheries in Scotland (Tabled by EU - UK (Scotland))
CNL(14)51	Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limit (Tabled by EU - UK (England and Wales))
CNL(14)52	Draft Press Release
CNL(14)53	Agenda
CNL(14)54	Written responses from the Parties/jurisdictions to the questions raised by the Implementation Plan/Annual Progress Report Review Group
CNL(14)55	Draft Report of the Thirty-First Annual Meeting of the Council
CNL(14)56	Terms of Reference for Working Group on Stock Classification (Draft)
CNL(14)57	Press Release
CNL(14)58	Report of the Thirty-First Annual Meeting of the Council
CNL(14)59	Presentation of the ICES advice to the Council
CNL(14)60	NASCO Implementation Plan for the period 2013-18 – EU - UK (Scotland) *Updated March 2014*
CNL(14)61	Terms of Reference for Working Group on Stock Classification
CNL(14)62	NASCO Staff Fund Rules
CNL(14)63	Staff Rules
CNL(14)64	NASCO Implementation Plan for the period 2013-18 – EU - Spain (Navarra)
CNL(14)65	Annual Progress Report: EU - Spain (Navarra) *Updated July 2014*
CNL(14)66	Practical application of genetics in conserving the biological integrity (diversity) of populations of Atlantic salmon (Invited keynote paper)

CNL(14)67 Management of single and mixed stock fisheries with particular focus on fisheries on stocks below their conservation limit (Tabled by EU-Ireland)

CNL(14)68 Report of the Theme-based Special Session: Management of single and mixed stock fisheries, with particular focus on fisheries on stocks below their conservation limit