REPORT OF THE TWENTY-SEVENTH ANNUAL MEETINGS OF THE COMMISSIONS

Québec City, Québec, Canada

1 – 4 JUNE 2010

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REPORT OF THE

TWENTY-SEVENTH ANNUAL

MEETING OF THE

NORTH AMERICAN COMMISSION

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Québec City, Québec, Canada

Chairman:	Mr Guy Beaupré (Canada)
Vice-Chairman:	Mr Stephen Gephard (USA)
Rapporteur:	Ms Kimberly Blankenbeker (USA)
Secretary:	Dr Malcolm Windsor

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NAC(10)5

Report of the Twenty-Seventh Annual Meeting of the North American Commission of the North Atlantic Salmon Conservation Organization

Le Château Frontenac, Québec City, Canada 1 – 4 June 2010

1. Opening of the Meeting

1.1 The Chairman, Mr. Guy Beaupré (Canada), opened the meeting and welcomed participants to the Twenty-Seventh Annual Meeting of the Commission.

1.2 An opening statement was made on behalf of the NGOs (Annex 1).

1.3 A list of participants at the Twenty-Seventh Annual Meeting of the Council and Commissions is included on page 149 of this document.

2. Adoption of the Agenda

2.1 The Commission adopted its Agenda NAC(10)7 (Annex 2).

3. Nomination of a Rapporteur

3.1 Ms. Kimberly Blankenbeker (USA) was appointed as Rapporteur.

4. Election of Officers

4.1 Mr. Stephen Gephard (USA) was elected Chairman. Mr. Guy Beaupré was elected Vice-Chairman.

5. Review of the 2009 Fishery and ACOM Report from ICES on Salmon Stocks in the Commission Area

5.1 The representative of ICES, Mr Gérald Chaput, presented the report from ICES on the scientific advice on salmon stocks in the North American Commission (NAC) area, CNL(10)8. His presentation is available as NASCO document NAC(10)8. The ICES Advisory Committee (ACOM) report, which contains the scientific advice relevant to all Commissions, is included on page 91 of this document.

5.2 A delegate of Canada asked if the pre-fishery abundance estimates were available for North America for 2010. The ICES representative noted the values were available in the ICES Working Group report and that there had been a slight improvement in this level but that it was still substantially below historical levels.

5.3 The representative of Canada noted that there was a timing problem with respect to providing estimates of Canada's unreported catch to ICES but that these estimates

were being made and would be reported when available.

6. The St Pierre and Miquelon Salmon Fishery

6.1 The Chairman drew the attention of the Commission to the reports presenting information on the St Pierre and Miquelon fishery (CNL(10)18 and CNL(10)34).

6.2 The representative of France (in respect of St Pierre and Miquelon) provided additional information to the Commission on its plans in 2010. She noted that a sampling program would be restarted in 2010, which would include biometric, genetic, and life history aspects. Regarding the genetics work, the representative indicated that 70 individuals would be sampled. She recognized that total harvests in the fishery had increased between 2008 and 2009 but noted the increase was small.

6.3 The representative of the United States welcomed the re-initiation of the sampling program but expressed disappointment that France (in respect of St Pierre and Miquelon) had decided not to join NASCO given their continued interest in the species. She also noted with concern that the catch at St Pierre and Miquelon had increased once again. She stressed that the fishery might be unsustainable given the status of the stocks contributing to it and that a fishery failure would be difficult on local communities in St Pierre and Miquelon.

7. Salmonid Introductions and Transfers

7.1 The Commission considered and adopted the recommendations in document NAC(10)6 (Annex 3), Review of the NAC Database on Introductions and Transfers and the Scientific Working Group. In particular, the Parties agreed: (1) that a detailed international database was no longer necessary; (2) to provide focused annual reports to the Commission on issues of mutual concern; (3) to identify experts who could work over the coming months to identify priority mechanisms and requirements for information exchange on fish health issues; and (4) to make minor revisions to the NAC Protocols on Introductions and Transfers of Salmonids to reflect the new information exchange mechanism.

8. Sampling in the Labrador Fishery

8.1 The representative of Canada provided an update on the sampling activity in the Labrador fishery in 2009. In line with a recommendation from four years ago, she reported that the Department of Fisheries and Oceans (DFO) Canada would sample the food fisheries in Labrador as is done in other Atlantic salmon fisheries.

8.2 The program, begun in 2006, is partnered with Nunatsiavut and the NunatuKavut (formerly Labrador Metis Nation). Sampling is done by Aboriginal conservation officers and others and the DFO Science Branch provides the sampling protocol and sample analysis. A quality assurance check ensures that sampling is done well.

8.3 A total of 503 samples were collected in 2009 (252 in the North and 251 in the South), a large increase over the 95 samples collected in 2006. Analysis of the overall sea distribution in 2009 shows:

- Large salmon – 19% were 1SW fish; 63% were 2SW fish; and 17% were previous spawners;
- Small salmon – 96% were 1SW fish; 2% were 2SW fish; and 2% were previous spawners.

This averaged a total of 76% 1SW fish; 18% 2SW fish; and 6% previous spawners.

8.4 With respect to the origin of the fish caught, DFO found that the location of the fishing has changed substantially since the days of the commercial fishery. Fishing for food, social and ceremonial purposes is done close to Aboriginal communities and fishing no longer occurs at the headlands. With respect to the current food fishery, scale analysis indicates that patterns on the scales are consistent with fish originating in the northern areas.

8.5 The representative of Canada reported that the recommendations from the sampling program are to improve on the distribution in time and space and to increase the number and quality of samples.

8.6 The representative of Canada reported that there will be no retention of large salmon in the Labrador recreational fishery in 2011.

9. Announcement of the Tag Return Incentive Scheme Prize

9.1 The Chairman announced that the draw for the North American Commission prize in the NASCO Tag Return Incentive Scheme was made by the Auditor on 4 May 2010. The winning tag was of Canadian origin. The tag was applied to a 57cm long wild salmon in the Northwest Miramichi River, New Brunswick. The fish was tagged as part of an assessment and research program to monitor the Atlantic salmon run in the Miramichi River. It was angled as a kelt in the Northwest Miramichi on 2 May 2009. The winner of the $1,500 prize is Mr. Burton Ward, Red Bank, New Brunswick.

10. Recommendations to the Council on the Request to ICES for Scientific Advice

10.1 The Commission agreed to the request for scientific advice from ICES prepared by the Standing Scientific Committee in relation to the North American Commission area. The request to ICES, as agreed by the Council, is contained in document CNL(10)10 (Annex 4).

11. Other Business

11.1 There was no other business.

12. Date and Place of the Next Meeting

12.1 The Commission agreed to hold its next meeting at the same time and place as the Twenty-Eighth Annual Meeting of the Council in 2011.

13. Report of the Meeting

13.1 The Commission agreed a report of the meeting.

Note: The annexes mentioned above begin on page 13, following the French translation of the report of the meeting. A list of North American Commission papers is included in Annex 5.

NAC(10)5

Compte rendu de la Vingt-septième réunion annuelle de la Commission Nord-Américaine de l'Organisation pour la Conservation du Saumon de l'Atlantique Nord

Le Château Frontenac, Cité de Québec, Canada 1 - 4 juin 2010

1. Ouverture de la séance

1.1 Le Président, M. Guy Beaupré (Canada) a ouvert la réunion et a souhaité la bienvenue aux représentants à la Vingt-septième réunion annuelle de la Commission.

1.2 Une allocution d'ouverture a été prononcée au nom des ONG (annexe 1).

1.3 Une liste des participants à la Vingt-septième réunion annuelle du Conseil et des Commissions de l'OCSAN figure à la page 149 de ce document.

2. Adoption de l'ordre du jour

2.1 La Commission a adopté l'ordre du jour NAC(10)7 (annexe 2).

3. Nomination d'un rapporteur

3.1 Ms. Kimberly Blankenbeker (États-Unis) a été nommée Rapporteur.

4. Election des membres du Comité directeur

4.1 M. Stephen Gephard (États-Unis) et M. Guy Beaupré ont été respectivement élus Président et Vice-président.

5. Examen de la pêcherie de 2009 et du compte rendu du Comité Consultatif du CIEM sur les stocks de saumons dans la zone de la Commission

5.1 Le représentant du CIEM, M. Gérald Chaput, a présenté le rapport du CIEM sur les recommandations scientifiques particulières aux stocks de saumons de la zone de la Commission Nord-Américaine, CNL(10)8. Le document NAC(10)8 de l'OCSAN reproduit sa présentation. Le compte rendu du Comité Consultatif, contenant les recommandations scientifiques pour l'ensemble des Commissions, figure à la page 91 de ce document.

5.2 Un délégué du Canada a demandé si les estimations d'abondance pré-pêche concernant l'Amérique du Nord étaient disponibles pour 2010. Le représentant du CIEM a signalé que le rapport du Groupe de travail du CIEM en indiquait les valeurs. Le niveau affichait une légère amélioration mais il demeurait toutefois beaucoup plus inférieur aux niveaux historiques.

5.3 La représentante du Canada a fait remarquer que le moment choisi pour fournir les estimations de captures non déclarées du Canada au CIEM posait problème. Toutefois ces estimations étaient en cours et leurs valeurs seraient envoyées dès que disponibles.

6. Pêcherie de saumons à Saint Pierre et Miquelon

6.1 Le Président a attiré l'attention de la Commission sur les rapports CNL(10)18 et CNL(10)34 portant sur la pêcherie à Saint Pierre et Miquelon.

6.2 La représentante de la France (pour St Pierre et Miquelon) a fourni à la Commission des renseignements supplémentaires concernant les projets de son pays pour 2010. Elle a fait remarquer qu'un programme d'échantillonnage serait repris en 2010. Ce programme comprendrait des études biométriques, génétiques et portant sur le cycle de vie du saumon. En ce qui concernait le travail génétique, la représentante a indiqué que l'échantillonnage porterait sur 70 poissons. Elle a reconnu qu'entre 2008 et 2009, les récoltes prélevées dans cette pêcherie avaient augmentées, mais elle a fait remarquer que cette augmentation était faible.

6.3 La représentante des États-Unis a accueilli favorablement la reprise du programme d'échantillonnage. Elle a cependant exprimé sa déception quant à la décision de la France (pour St Pierre et Miquelon) de ne pas se joindre à l'OCSAN, étant donné l'intérêt que ce pays continuait à porter envers cette espèce de poisson. Elle a également noté avec inquiétude que les captures à St Pierre et Miquelon avaient de nouveau augmenté. Elle a souligné, qu'étant donné l'état des stocks qui contribuaient à cette pêcherie, il se pourrait que celle-ci ne soit plus renouvelable. L'effondrement de cette pêcherie serait grave pour les communautés indigènes de St Pierre et Miquelon.

7. Introductions et transferts de salmonidés

7.1 La Commission a étudié et adopté les recommandations du document NAC(10)6 (annexe 3), intitulé Révision de la base de données de la CNA sur les Introductions et Transferts et du groupe de travail chargé des questions scientifiques. Les Parties ont en particulier convenu: (1) qu'une base de données détaillée internationale n'était plus nécessaire; (2) de fournir à la Commission des rapports spécifiques portant sur des sujets de préoccupation mutuelle; (3) de trouver des experts qui pourraient, au cours des mois prochains, travailler sur l'identification des mécanismes et besoins prioritaires en ce qui concernait les échanges d'information sur la santé du poisson; (4) d'apporter des modifications mineures aux Protocoles de la CNA sur les Introductions et Transferts de salmonidés qui reflèteraient le nouveau mécanisme d'échange des informations.

8. Échantillonnage de pêche au Labrador

8.1 La représentante du Canada a présenté une mise à jour de l'activité d'échantillonnage qui avait eu lieu en 2009 dans la pêcherie du Labrador. Conformément à une recommandation émise quatre ans plus tôt, elle a indiqué que le Ministère des Pêches et des Océans du Canada (DFO/MPO) entreprendrait l'échantillonnage des pêcheries alimentaires au Labrador comme ceci était pratiqué dans les autres pêcheries de saumon atlantique.

8.2 Le programme, débuté en 2006, s'effectuait en partenariat avec les Nunatsiavut et les NunatuKavut (autrefois Nation Métisse du Labrador). L'échantillonnage est réalisé, entre autres, par des agents de protection de la nature aborigènes. Des représentants du MPO – Science fournissent le protocole d'échantillonnage et l'analyse de l'échantillon. Un contrôle de qualité garantie que l'échantillonnage est effectué correctement.

8.3 En 2009, on avait effectué 503 échantillons (252 dans le nord et 251 dans le sud), ce qui représentait une augmentation importante par rapport aux 95 échantillons rassemblés en 2006. L'analyse de la distribution générale en mer pour 2009 démontre les faits suivants :

- Grands saumons – 19% étaient composés de poissons 1HM; 63% de poissons 2HM ; et 17% étaient des anciens reproducteurs ;
- Petits saumons – 96% étaient composés de poissons 1HM; 2% de poissons 2HM; et 2% étaient des anciens reproducteurs.

Ceci donnait en moyenne un total de 76% de poissons 1HM; 18% de poissons 2HM; et 6% d'anciens reproducteurs.

8.4 En ce qui concernait l'origine des poissons attrapés, le MPO a découvert que les lieux de pêche avaient changé radicalement depuis l'époque de la pêcherie commerciale. La pêche effectuée à des fins de consommation, pour des raisons sociales ou cérémoniales se pratiquait près des communautés autochtones. Aussi la pêche ne s'effectuait-elle plus aux pointes. En ce qui concernait la pêcherie alimentaire actuelle, l'analyse des écailles indiquait que les motifs sur les écailles correspondaient à ceux trouvés sur les poissons originaires des zones nord.

8.5 La représentante du Canada a signalé que les recommandations issues du programme d'échantillonnage, étaient d'améliorer la distribution spatio-temporelle du saumon et d'accroître le nombre et la qualité des échantillons.

8.6 La représentante du Canada a indiqué qu'il n'y aurait pas de rétention de grands saumons dans la pêcherie récréative de 2011 au Labrador.

9. Annonce du gagnant du prix du Programme d'encouragement au renvoi des marques

9.1 Le Président a annoncé que le tirage au sort du prix de la Commission Nord-Américaine du Programme d'encouragement au renvoi des marques de l'OCSAN a été effectué par le Commissaire aux comptes le 4 mai 2010. La marque gagnante était d'origine canadienne. Elle avait été posée sur un saumon sauvage de 57 cm de long dans la rivière Miramichi Nord-Ouest au Nouveau-Brunswick pour en marquer la participation à un programme d'évaluation et de recherche sur les remontées de saumons dans la Rivière Miramichi. Ce poisson avait été recapturé dans la même rivière, le 2 mai 2009, en tant que ravalé. M. Burton Ward, de Red Bank, au Nouveau-Brunswick, a remporté le prix de 1 500 dollars de la Commission.

10. Recommandations au Conseil dans le cadre de l'avis scientifique émanant du CIEM

10.1 La Commission a accepté la demande au CIEM de recommandations scientifiques, telle qu'elle avait été préparée par le Comité Scientifique Permanent pour la zone de la Commission d'Amérique du Nord. La demande de recommandations scientifiques adressée au CIEM et approuvée par le Conseil figure dans le document CNL(10)10 (annexe 4).

11. Divers

11.1 Aucune autre question n'a été traitée.

12. Date et lieu de la prochaine réunion

12.1 La Commission a convenu de tenir sa prochaine réunion en même temps et au même endroit que la Vingt-huitième réunion annuelle du Conseil, en 2011.

13. Compte rendu de la réunion

13.1 La Commission a accepté le compte rendu de la réunion.

Note: Une liste des documents de la Commission Nord-Américaine figure à l'annexe 5.

Annex 1

Joint NGO Opening Statement to the North American Commission

The NGOs thank both Canada and the US for their participation in the process of preparing and reviewing Focus Area Plans. We urge both governments to heed the advice of the review groups on fisheries management, habitat and the impacts of salmon aquaculture and to implement policy that is consistent with the agreements they have made at NASCO.

The populations of North American wild Atlantic salmon dropped from 1.8 million in 1973 to a low of 418,000 in 2001. Returns in 2009 show a slight improvement, but are offset by a severe drop in the return of grilse (43.6% lower in 2009 than 2008). No area met its minimum conservation threshold for large salmon. ICES is predicting that large salmon abundance in 2010 will be low as a result of poor sea survival of 2008 smolt. Altogether in 2009, Canada allowed the kill of 119 tonnes (about 50,000 fish), 23% of which were large spawners. In addition, Canada has illegal fisheries that it is not accounting for through an estimate on unreported catch. In 2006, Canada reported 65 tonnes. We can only assume that there is still significant unreported kill. Despite these alarming facts and their implications for vulnerable salmon populations, Canada has initiated no significant management measures to decrease the harvest in any fishery in 2010.

Canada continues to allow the kill of salmon (29 tonnes in 2009) in mixed-stock fisheries off Labrador. Canada has little information on the river-specific origins and health of salmon populations that are targeted in these fisheries. The ICES Working Group of scientists indicates that the estimated 2SW returns and spawners for Labrador in 2009 were well below their conservation limit. Fisheries and Oceans Canada scientists recommend reducing the exploitation of large salmon in Labrador. ICES scientists recommend that additional monitoring facilities be considered in Labrador to better assess salmon returns in that region.

The NGOs encourage Canada to act on scientific advice and practice precautionary management in the absence of reliable assessment data, by decreasing the kill of large salmon in Labrador in 2010. We also urge the necessary research to characterize the stocks that are targeted in Labrador's mixed-stock fishery.

It is true, as stated by Canada in its opening address, that salmon are in decline in most areas. However, the decline is accelerated in populations near salmon aquaculture. A peer reviewed study, published by Dalhousie University in 2008, found that the presence of salmon farms reduced wild salmon survival by more than 50% per generation.

The Review Group's assessment of Canadian and US FARs on Aquaculture, Introductions and Transfers and Transgenics indicates that both countries are failing to provide adequate information to assess progress towards the international goals for sea lice and containment. Consequently, they underestimate the severe impacts to wild salmon that can and will occur when goals are not met. The inability to provide full information on the actual and anticipated impacts of current and planned salmon aquaculture on wild salmon populations, with special concern for endangered populations, indicates to the NGOs that neither country is taking seriously its mandate to protect wild salmon from the impacts of aquaculture.

We acknowledge the efforts by jurisdictions and industry in the US to establish aquaculture standards and methods that are protective of wild salmon, though we are not confident that endangered wild salmon are not still vulnerable. We encourage both countries to adopt

strong federal salmon aquaculture regulations that are fully protective of wild salmon and endangered wild salmon in federal waters and waters of local jurisdictions, and that provide for effectively monitoring their success in protecting the health and survival of wild salmon.

Looking at Norway's example – the continued increase in salmon aquaculture, the spread of sea lice to wild salmon and the impacts of inevitable escapes - it is clear that other countries should be wary and place enforceable caps on salmon aquaculture development. In addition, salmon farming and wild stocks are best kept well separated if wild stocks are to flourish. It is urgent that available methods to accomplish this be employed, including for example, closed loop and land-based techniques. We call upon the North American countries to take the lead. Without such measures, wild salmon will continue to be jeopardized and in the US and areas of Canada may disappear altogether.

The first agreement by Parties was passed as the Oslo Resolution in 1994. Parties were meant to report on progress on the various criteria. The Williamsburg Resolution criteria were agreed in 2003. Again, Parties were meant to document progress. Why is there such inability in 2010 for Parties to supply the required information for the agreed-upon criteria? Monitoring of wild populations seems severely deficient and motivation is lacking. We can only surmise that adequate progress has not been made.

It is troubling that Parties have not been more rigorous in ensuring that their aquaculture industries understand and are accountable to the criteria of long-standing agreements. We look to both countries to ensure that your obligations as Parties to NASCO can be met, and the health and survival of wild salmon take precedence over the development of industries that threaten them.

Ladies and Gentlemen, this is a forum for wild Atlantic salmon. The NGOs hope that Party representatives will proudly wear their wild salmon hats this week as they deliberate on behalf of this iconic species.

Annex 2

NAC(10)7

Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Nomination of a Rapporteur
4. Election of Officers
5. Review of the 2009 Fishery and ACOM Report from ICES on Salmon Stocks in the Commission Area
6. The St Pierre and Miquelon Salmon Fishery
7. Salmonid Introductions and Transfers
8. Sampling in the Labrador Fishery
9. Announcement of the Tag Return Incentive Scheme Prize
10. Recommendations to the Council on the Request to ICES for Scientific Advice
11. Other Business
12. Date and Place of the Next Meeting
13. Report of the Meeting

Annex 3

NAC(10)6

Review of the NAC Database on Introductions and Transfers and the Scientific Working Group

Background

The North American Commission (NAC) of the North Atlantic Salmon Conservation Organization (NASCO) recognized that the introduction and transfer of non-indigenous species, stocks and strains of salmonids have the potential for serious adverse fish health, genetic, and ecological effects on Atlantic salmon stocks. Thus, in 1987, the NAC established a Scientific Working Group to advise on the potential for adverse effects from salmonid introductions and transfers and, in 1992, adopted protocols for the introduction and transfer of salmonids for use in the NAC Area (NAC(92)24). Amendments were approved by the NAC in 1994 (NAC(94)14). Because of the manner in which the documents were published by NASCO, both the NAC (92)24 and NAC (94)14 documents must be read together in order to understand the protocols fully.

Further amendments were drafted in 1998, incorporating new information, addressing new issues, and recognizing progress made since 1992 by government agencies and private industry in protecting wild stocks from potential impacts of introductions and transfers of salmonids. Consideration was given to expert advice provided by the Fish Health and Genetic Sub-Groups of the NAC Scientific Working Group. Consideration was also given to the scientific information presented at the ICES/NASCO Symposium on Interactions between Salmon Culture and Wild Stocks of Atlantic Salmon, held in Bath, England, in 1997. The Protocols were intended to present a minimal level of protection.

The Objectives of the Protocols

The fundamental objectives of the protocols, including the 1998 revisions, are to minimize the risks associated with:

l) introduction and spread of infectious disease agents (disease);
2) reduction in genetic diversity and prevention of the introduction of non-adaptive genes to wild Atlantic salmon populations (genetics); and
3) intra- and inter-specific ecological interactions of introductions and transfers of Atlantic salmon stocks (ecology).

The Scientific Working Group and Inventory Database

The Scientific Working Group (SWG) for the NAC is charged with maintaining an inventory of all introductions and transfers and to review these introductions and transfers for consistency with the NAC Protocols. The SWG created multiple databases which included an annual inventory of salmonid introductions and transfers and occurrences of diseases of concern. The Group reviewed this inventory and reported on inconsistencies to the NAC annually until approximately 2004. Information was submitted from each country to be entered into the databases in subsequent years, but submissions have not been as comprehensive as in previous years and more recently the SWG has not met to review the inventory.

Information on the inventory of introductions and transfers into the Commission area began in 1986. Currently, there are three databases developed to track the following:

1) intentional introductions of live salmonids and gametes;
2) fish disease occurrences within the NAC area; and
3) known occurrences of Atlantic salmon aquaculture escapees in salmon rivers within the NAC area.

These three databases reside at the Department of Fisheries and Oceans office in Dartmouth, Nova Scotia.

The Need to Re-Evaluate

As stated above, the NAC databases have not been fully populated for the years 2004 to the present time and the SWG has not met to review inventories and transfers for consistency with the NAC Protocols. During the past few years, the US and Canada have been undergoing significant domestic changes in the management of introduction and transfers. In light of these changes, in 2008 it was determined that it would be timely and appropriate to revisit the status of the NAC protocols, the SWG, and the inventory databases.

Management of Introductions and Transfers within Canada

Canada adopted a National Code on Introductions and Transfers of Aquatic Organisms (Code) in January 2002. The Code applies to all aquatic organisms in freshwater and marine habitats. The purpose of the Code is to establish an objective decision-making framework regarding intentional introductions and transfers that is designed to protect aquatic ecosystems while encouraging responsible use of the aquatic resources for the benefit of Canadians. The Code was developed to minimize the negative impacts of introductions and transfers and, at the same time, permit environmentally sound fisheries resource enhancement and development of aquaculture. The Code ensures that a consistent single standard set of risk assessment and approval procedures is applied across the country. The risk analysis process results in an evaluation of the level of risk of adverse ecological, genetic and fish health effects from a proposed introduction and transfer. The Precautionary Approach has been adopted in the Code. The Code states that consultations should take place between neighboring jurisdictions if a proposed introduction, transfer or range extension might impact stocks within a watershed but outside the receiving province.

In 2005, the Canadian Food Inspection Agency (CFIA) was identified as the lead federal agency for implementing the National Aquatic Animal Health Program (NAAHP), and is currently working on amendments to regulations under the Health of Animals Act and ministerial regulations to manage aquatic animal health in Canada. When CFIA begins implementing these amended regulations, they will be responsible for assessing proposed introductions and transfers of aquatic animals for impacts of diseases of concern. The proposed amendments will align Canada's national aquatic animal health management more closely with international standards for animal health.

Management of Introductions and Transfers within the United States

In 1989, the US Fish and Wildlife Service (USFWS) established regulations to minimize the introductions of fish disease associated with salmonid fish transfers. Accordingly, transfers of live salmonids, gametes and fish products into and out of the United States are controlled by USFWS Title 50 authority. Movements within the United States are controlled by permits issued at the state level. While other New England states have active restoration programs, Maine is the only state with active commercial aquaculture of Atlantic salmon. Transfers of fish from freshwater hatcheries to marine cages in Maine are regulated through transfer permits issued by the Maine Department of Marine Resources (MDMR). Each permit

identifies the genetic strain, fish health status, numbers and age. MDMR maintains an inventory of salmonid transfers.

MOU between Canada and the US (NAC (05)7)

In 2005, an MOU between Canada and the US on Introductions and Transfers was signed (NAC (05)7). In this MOU, the Parties agree to report to the NAC annually on any decision that has an impact on the other jurisdiction, in particular any decisions made that are not consistent with the NAC Protocols are to be identified. The Parties also agree to consult with each other if a proposal is received for an introduction or transfer that may have an impact on the other, including any proposal that would be inconsistent with the NAC Protocols. The Parties agree to convene the NAC Scientific Working Group, from time to time, to review the provisions of the Williamsburg Resolution with respect to developments that may have an affect on introductions and transfers in the NAC area and provide recommendations to the Parties for their consideration and action, if required.

ICES Working Group on Introductions and Transfers of Marine Organisms

Canada and the US are both members of the ICES Working Group on Introductions and Transfers of Marine Organisms. This Group meets annually and focuses on tracking aquatic invasive species and submits an annual report to ICES which describes:

1. Any new laws, policies or regulations in that country which relate to introductions and transfers
2. Deliberate releases or planned introductions
3. Live Imports
4. Unintentional releases
5. Meetings, conferences, symposia or workshops on Introductions and Transfers
6. Bibliography

Of particular relevance is section 3 which will capture all cross-border movements of salmonids between Canada and the US.

2008-2009 Review

In light of the significant advancements that have been made both within Canada and within the United States on the management of introductions and transfers, in 2008 the NAC determined it would be appropriate to re-examine the Databases on Introductions and Transfers and the Scientific Working Group.

Prior to the informal meeting of the NAC in Boston in April 2009, representatives from Canada and the US addressed the issue of the Database on Introductions and Transfers. The participants at this meeting agreed, consistent with the NAC protocols, that it is important to share information**;** however, the level of detail included in the current NAC databases is unnecessary.

When the NAC database was developed, neither the US nor Canada had internal databases to track introductions and transfers. The shared NAC database was the only database available to track movements of fish. The level of detail contained in the NAC Database on Introductions and Transfers is, therefore, very high and, contrary to recent years, the database was more fully populated in the early years given that it served as the only way to track movements and was used for domestic and international purposes.

In the subsequent years, as detailed above, both the US and Canada developed and implemented systems to permit and monitor movements of salmonids. These systems

provide domestic means for both countries to review proposals for introductions and transfers for consistency with the NAC Protocols.

Given that both countries now have internal procedures and requirements to review proposals for introductions and transfers and to maintain records of these proposals and determinations, there is no longer a need for a detailed international database. As previously noted, the MOU between the US and Canada requires that each country notify the other if an introduction or transfer is inconsistent with the NAC Protocols.

The US - Canada Working Group that met in Boston in April 2009 confirmed these internal tracking systems and reaffirmed the commitment to notify the other if any introduction or transfer is inconsistent with the NAC Protocols. While recognizing that there is no longer a need to populate and maintain an international database on introductions and transfers, the Working Group identified a need to exchange information annually and more immediately on fish health and breaches of containment. Regarding introductions and transfers, it was determined that information should be provided on any transfers made into the Commission area (including from the west to the east coast and from Europe to North America) on an annual basis. These needs are in addition to the commitment already contained in the MOU between the US and Canada.

Recommendations
It was decided that issues with immediate implications, such as breaches of containment and disease outbreaks should be reported immediately and an annual summary report should be provided to the NAC which contained a more appropriate level of detail. Based on its review of the current situation within the US and Canada on introductions and transfers, the Working Group developed the following recommendations for international collaboration.

Recommendation 1. Fish Health: The US and Canada should identify appropriate fish health experts and charge them with: (1) developing a list of salmonid diseases of concern, reporting thresholds, and information to be reported; (2) identifying what fish health information should trigger immediate notification to other country upon discovery; and (3) preparing reporting formats for immediate notification and annual reports. Canada is in the process of developing a list of health experts. The US and Canada's list of experts will be completed and work initiated on items 1 & 2 no later than December 31 2010. Work on these items should progress with the goal of reporting at the 2011 Annual Meeting.

Recommendation 2. Introductions and Transfers: The US and Canada should provide to the NAC an annual report identifying any introductions of salmonids from outside the Commission area (including the west coast). The report should contain the following information:

- Species (strain, if applicable)
- Number of fish
- Life Stage
- Origin
- Destination (Province, state)
- Purpose (aquaculture, research, enhancement, etc)

Recommendation 3. Breaches of Containment: Immediate notification should be provided to the other country upon confirmation of a breach of containment and the US and Canada should provide to the NAC an annual summary report containing the following information:

- Species (strain, if applicable)
- Number
- Size/age
- Location (bay level)
- Result (recapture efforts as per code, number of fish recaptured, etc)
- Cause, if known

Recommendation 4. Transgenics: The US and Canada should annually exchange information on transgenics activities.

A recommended format for the annual report for Recommendations 2, 3, and 4 is attached as well as a format for the immediate notification in Recommendation 3. Recommendation #1 will require further consultation with fish health experts in both countries before a reporting template can be created. As there are already provincial/state level exchanges occurring on fish health, it is envisioned that the reporting protocol will take this into account.

NAC Protocols

The Working Group noted the dynamic nature of the NAC Protocols and, as noted, reviewed the Protocols to ensure they were relevant and appropriate in light of current scientific knowledge and policies and procedures within the US and Canada. The Working Group concluded that substantive changes to the Protocols were not necessary. The Working Group recommended, however, two technical wording changes to the Protocols to ensure they reflect as accurately as possible what the NAC Database on Introductions and Transfers is intended to cover, the role of the Scientific Working Group, and the additional data to be shared within the NAC consistent with the above recommendations. It is, therefore, recommended that the NAC Protocols be revised as follows:

Recommendation 5: Reword Section 4.2.5

Current wording: *Section 4.2(5): "Annually, submit to the NAC Scientific Working Group the results of the permit submission/review process, and a list of introductions and/or international transfers proposed for their jurisdiction;"*

Proposed rewording: "Annually, submit to the NAC a summary report detailing disease incidences, information on transgenics, breaches of containment, and introductions from outside the Commission area;"

Rationale: The purpose of the NAC Protocols was to establish consistent minimum standards to ensure any introductions and transfers in Canada and the US would not pose risks to wild stocks in the NAC area. Both countries now have internal domestic procedures to review proposals for introductions and transfers and an obligation, supported by the US/Canada MOU, to identify and report on any that would be inconsistent with the NAC Protocols. Essential information to be shared internationally relates to introductions from outside the NAC area as well as additional information on transgenic activity, summaries of disease incidences, and breaches of containment. For these reasons, there is no longer a need for an international database of ***all*** introductions and transfers. The agreed approach accomplishes the intent of the annual inventory more efficiently and effectively as it is integrated into ongoing permitting processes, and the recommended technical adjustment to text of Section 4.2.5 of the NAC Protocols more clearly reflects the agreed approach.

Recommendation 6: Replace Section 4.3 with text from the MOU.

Current wording: "*(1) Maintain an inventory of all introductions of salmonids, transfers of salmonids from lHN-infected areas, and importation of salmonids across national boundaries into the Commission Area.*
(2) Review and evaluate all introductions and transfers referred in section 4.3(1) above in relation to the NAC protocols and report the results to the North American Commission."

Proposed rewording: Insert section D from the MOU: "*The parties agree to convene the NAC scientific working group, from time to time, to review the provisions of the Williamsburg Resolution with respect to developments that may have an application on introductions and transfers in the NAC area and provide recommendations to the Parties for their consideration and action, if required.*"

Rationale: The summary report identified in the recommended new language for Section 4.2.5 requires submission of an annual fish health and containment report as well as more immediate notification for disease outbreaks and containment breaches. In addition, it requires annual notification of any introductions into the Commission area. Broadening of fish health concerns beyond IHN to a list developed by fish health experts in the US and Canada will offer increased protection to wild salmonids in the NAC area. For instance, concerns over ISA have increased since the Protocols were developed and notification of any ISA outbreaks is important for wild fish protection. Secondly, there is no need for a Scientific Working Group to annually review all introductions and transfers in the US and Canada. If both countries have a means to identify such movements of fish and has committed to notify each other of any proposals inconsistent with the NAC Protocols, then the intent of this section has been met. It is more efficient and effective to integrate the review for consistency with NAC Protocols into the existing process for reviewing proposals for introductions and transfers than to create a separate and redundant system through the creation of a NAC Database and requirement for the SWG to review that inventory annually.

NAC Annual Report

Country, Year
Submitted by:
Date:

1. Summary of Salmonid disease incidences

Information TBD

2. Summary of breaches of containment of salmonids from net cages

Species (Strain, if applicable)	Number[1]	Average size of fish[2]	Location[3]	Result[4]	Cause of the breach

Notes:

1. This should be the best estimate possible, though it is recognized that exact numbers may be difficult to obtain.
2. Based on the codes of containment, it was agreed that average size is a more accurate measurement than lifestage.
3. The more specific the information the better, however Bay level is considered sufficient.
4. This refers to using recapture methods as detailed in the relevant code of containment and summarizing the results of the recapture attempt.

3. Summary of Salmonid introductions from outside the Commission Area

Species (strain, if applicable)	Number	Life Stage	Origin[1]	Destination[2]	Purpose[3]

Notes:

1. This would be the province or state for introductions from the west coast; or country for international introductions. It was decided that introductions between Canada and the US that are within the Commission Area (between Maine and NB, for example) would not be included here as those introductions would be captured in other avenues (ICES WGITMO, for example) and because these are not as relevant.
2. The more specific the information the better, however Bay level is considered sufficient.
3. This refers to the intention for the introduction – aquaculture, research, stock enhancement, etc.

4. Summary of Transgenic activities within the Country

Annex 4

CNL(10)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, including unreported catches by country and catch and release, and production of farmed and ranched Atlantic salmon in 2010[1];

1.2 report on significant new or emerging threats to, or opportunities for, salmon conservation and management[2];

1.3 report on significant advances in our understanding of associations between changes in biological characteristics of all life stages of Atlantic salmon and ecosystem changes with a view to better understanding the dynamics of salmon populations[3];

1.4 further develop approaches to forecast pre-fishery abundance for North American and European stocks with measures of uncertainty;

1.5 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;[4]

1.6 provide a compilation of tag releases by country in 2010 and advise on the utility of maintaining this compilation;

1.7 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 2010 fisheries[5];

2.2 review and report on the development of age-specific stock conservation limits;

2.3 describe the status of the stocks and provide annual catch options or alternative management advice for 2012-2014, 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];

2.4 further investigate opportunities to develop a framework of indicators or alternative methods that could be used to identify any significant change in previously provided multi-annual management advice.

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

3.1 describe the key events of the 2010 fisheries (including the fishery at St Pierre and Miquelon) [5];

3.2 update age-specific stock conservation limits based on new information as available;

3.3 describe the status of the stocks;

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

3.4 provide annual catch options or alternative management advice for 2011-2014 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].

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

4.1 describe the key events of the 2010 fisheries [5];
4.2 describe the status of the stocks [7];

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

4.3 provide annual catch options or alternative management advice for 2010-2012 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].

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.*
2. *With regard to question 1.2, ICES is requested to include information on any new research into the migration and distribution of salmon at sea and on the potential impacts of the development of alternative/renewable energy on Atlantic salmon.*
3. *With regard to question 1.3, there is particular interest in determining if declines in salmon abundance coincide with changes in the biological characteristics of juveniles in fresh water or are modifying characteristics of adult fish (size at age, age at maturity, condition, sex ratio, growth rates, etc.) and with environmental changes including climate change.*
4. *With regard to question 1.5, ICES is requested to include information on best solutions for fish passage and associated mitigation efforts with examples of practices in member countries.*
5. *In the responses to questions 2.1, 3.1 and 4.1, ICES is asked to provide details of catch, gear, effort, composition and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Any new information on non-catch fishing mortality, of the salmon gear used, and on the by-catch of other species in salmon gear, and on the by-catch of salmon in any existing and new fisheries for other species is also requested.*
6. *In response to questions 2.3, 3.4 and 4.3, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice.*
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.*

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

Annex 5

List of North American Commission Papers

NAC(10)1	Provisional Agenda
NAC(10)2	Draft Agenda
NAC(10)3	Review of the NAC Database on Introductions and Transfers and the Scientific Working Group
NAC(10)4	Draft Report
NAC(10)5	Report of the Twenty-Seventh Annual Meeting of the North American Commission
NAC(10)6	Review of the NAC Database on Introductions and Transfers and the Scientific Working Group (Revised)
NAC(10)7	Agenda
NAC(10)8	ICES Presentation to the North American Commission

REPORT OF THE

TWENTY-SEVENTH ANNUAL

MEETING OF THE

NORTH-EAST ATLANTIC COMMISSION

1 – 4 JUNE 2010
Québec City, Québec, Canada

Chairman:	Dr Ciaran Byrne (European Union)
Vice-Chairman:	Mr Andras Kristiansen (Denmark (in respect of the Faroe Islands and Greenland))
Rapporteur:	Ms Heidi Hansen (Norway)
Secretary:	Dr Malcolm Windsor

NEA(10)10

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Report of the Twenty-Seventh Annual Meeting of the North-East Atlantic Commission of the North Atlantic Salmon Conservation Organization

Le Château Frontenac, Québec City, Canada

1 - 4 June, 2010

1. Opening of the Meeting

1.1 The Secretary opened the meeting and referred to the fact that neither the Chairman, Mr Richard Cowan (European Union), nor Vice-Chairman, Mr Andras Kristiansen (Denmark (in respect of the Faroe Islands and Greenland)), were attending the Twenty-Seventh Annual Meeting. There would, therefore, need to be an election of a Chairman to serve until the close of the Twenty-Seventh Annual Meeting. The Commission elected Dr Ciaran Byrne (European Union) as its Chairman. Dr Byrne welcomed delegates to Québec and thanked the Canadian Government for hosting the meeting and for the excellent arrangements made.

1.2 An opening statement was made on behalf of the Non-Government Organizations (NGOs) attending the Annual Meeting (Annex 1).

1.3 A list of participants at the Twenty-Seventh Annual Meeting of the Council and Commissions is included on page 149 of this document.

2. Adoption of the Agenda

2.1 The Commission adopted its agenda, NEA(10)11 (Annex 2).

3. Nomination of a Rapporteur

3.1 Ms Heidi Hansen (Norway) was appointed as Rapporteur for the meeting.

4. Election of Officers

4.1 The Commission elected Mr Raoul Bierach (Norway) as its Chairman and Dr Ciaran Byrne (European Union) as its Vice-Chairman.

5. Review of the 2009 Fishery and ACOM Report from ICES on Salmon Stocks in the Commission Area

5.1 The representative of ICES, Mr Gérald Chaput, presented the scientific advice on salmon stocks relevant to the North-East Atlantic Commission, CNL(10)8. His presentation is available as document NEA(10)12. The Advisory Committee (ACOM) report from ICES, which contains the scientific advice relevant to all Commissions, is included on page 91 of this document.

5.2 At the Commission's Twenty-Sixth Annual Meeting the Chairman had noted that ICES had been unable to make progress in developing quantitative catch advice because the Commission had not agreed explicit management objectives for provision of catch advice for the Faroese fishery and there is no pre-agreed sharing agreement among NASCO Parties. He had suggested that there is a need to address this issue before there is a harvestable surplus. The Commission had agreed and decided that there should be further discussions on this issue among Heads of Delegations following the Annual Meeting, with a view to making arrangements to commence work on developing management objectives in advance of the Twenty-Seventh Annual Meeting. While subsequently, there was no support for an inter-sessional meeting it had been agreed that ICES should be requested to provide an assessment of the issues that would need to be resolved before such advice could be provided in future (see NEA(10)3 for details). The Commission agreed to this proposal and accordingly the Secretary had written to ICES.

5.3 The ACOM report indicated that ICES had discussed a number of issues that would need to be addressed by NASCO if a risk framework is to be established for the Faroese fishery, based on the principles currently used for the West Greenland fishery. ICES had indicated that these are as follows: agreement on the management units to be employed; agreement on the management objectives for each unit; and determination of a sharing agreement.

5.4 The representative of the European Union asked ICES to confirm if the advice given was that the management units might be based on those currently used by ICES for assessment purposes (18 units), that the management objectives could be that there is at least a 75% probability of simultaneously achieving the conservation limits for these units (as is the case for the Southern European stock complex in managing the West Greenland fishery) and that a sharing allocation could be based on historical catches during the period 1986 – 1990 (as also used for the West Greenland regulatory measures). The representative of ICES confirmed that the ICES assessments are conducted on the basis of 18 units (4 in Russia, 3 in Norway, 2 in UK-Scotland, 2 in UK-Northern Ireland, 2 in Iceland and single units for other NEAC countries). He also confirmed that it would be consistent with the approach used in the risk framework for West Greenland if the management objective was that there was a 75% probability of achieving the conservation limits for these units simultaneously and to base a sharing agreement on the historical share of catches in the period 1986 -1990. In response to a further question from the representative of the European Union, he indicated that since the Southern NEAC stock complex is exploited at both West Greenland and at Faroes it would seem appropriate to adopt the same management objectives and baseline period for a sharing agreement.

5.5 The representative of Denmark (in respect of the Faroe Islands and Greenland) recognised that the procedure presented by ICES could be a step forward in developing a risk framework but she believed that the stock complexes currently used by ICES are too large and that there is a need for further scientific information on the status of stocks and further work in defining conservation limits. In this regard she hoped that the SALSEA programme would further the scientific basis for management and that the relevant Parties would continue to strengthen their work and define conservation limits for a larger number of rivers.

5.6 The representative of the European Union reiterated that he believed the approach outlined by ICES was an appropriate way forward. He noted that the Northern stock complex was exceeding its conservation limit but it would be inappropriate to consider opening a fishery until a risk framework was agreed that would allow ICES to provide quantitative catch advice. There was a need to develop a management policy for the Faroese fishery that could be further refined in the future.

5.7 The representative of Norway stated that conservation limits have been established for all salmon rivers in Norway so he would appreciate clarification from the representative of Denmark (in respect of the Faroe Islands and Greenland) on the statement she had made. The representative of Denmark (in respect of the Faroe Islands and Greenland) stated that the view of the Faroe Islands was that the stock complexes are too large and the models used are not substantiated by adequate data. However, she was willing to discuss the matter further as there should be quantitative advice available before there is a harvestable surplus although she believed that it was unlikely that there could be a fishery in the near future taking into account the status of the stocks.

5.8 The representative of the European Union indicated that a fishery should only recommence at Faroes when the advice indicated there was a harvestable surplus and that was the justification for ensuring a management framework was in place. The approach outlined by ICES is working well for the West Greenland fishery and application of the Precautionary Approach would require that a risk framework is developed particularly if, as has been suggested, there is inadequate scientific information available.

5.9 The representative of the Russian Federation indicated that conservation limits have been established for most major rivers. While she respected the concerns expressed by the representative of Denmark (in respect of the Faroe Islands and Greenland) and she appreciated the restraint exercised by the Faroes in not fishing for salmon in recent years, the Russian Federation would like to see a risk framework developed.

5.10 The Commission discussed whether there might be an inter-sessional meeting to take this matter forward. The representative of Denmark (in respect of the Faroe Islands and Greenland) indicated that if there was to be an inter-sessional meeting it should be held in conjunction with the Twenty-Eighth Annual Meeting. The representative of the European Union indicated that there had been a clear indication from ICES of the way forward and that this should be used as a basis for developing a risk framework that could be further refined in the future. The representatives of Norway and the Russian Federation agreed that there was a need for a process to take this issue forward, either through an inter-sessional meeting or by correspondence. The representative of Denmark (in respect of the Faroe Islands and Greenland) indicated that while she did not have a mandate to agree a risk framework she would be willing to work inter-sessionally by correspondence and if necessary return to the matter at the next Annual Meeting.

5.11 The representative of the European Union proposed a mechanism for making progress on the development of a risk-based management framework for the NEAC area. He indicated that there was general support among Members of the Commission on the principles of the framework proposed by ICES. However, there also appeared to be an indication that some additional scientific information might be needed to make an

informed decision. It was agreed that there be a continued dialogue between members inter-sessionally with the intention of providing additional clarification to ICES on the scientific information required to assist the Commission in making progress. It would be desirable to have completed the scientific elements of this process before 30 November 2010 to facilitate provision of information to ICES. The representative of Denmark (in respect of the Faroe Islands and Greenland) indicated that she could not commit to any such deadline.

6. Regulatory Measures

6.1 The Chairman noted that last year a Decision was adopted regarding the salmon fishery in Faroese waters in 2010, NEA(09)6. Under this Decision the Commission decided not to set a quota but noted that the Faroe Islands would manage any fishery on the basis of the ICES advice and in a precautionary manner.

6.2 The Chairman circulated a Draft Decision regarding the salmon fishery in Faroese waters in 2011, (NEA(10)4). The Commission adopted this Decision, NEA(10)8 (Annex 3).

6.3 Prior to the Twenty-Sixth Annual Meeting, an informal consultation meeting of the Parties had been held concerning Norwegian coastal fisheries (see NEA(09)3). At the 2009 Annual Meeting of the Commission, the representative of Norway had stated that fruitful and constructive talks on this issue had been conducted during the Annual Meeting and a further process of cooperation between Norway, the Russian Federation and the EU had been agreed.

6.4 The representative of Norway tabled document NEA(10)7 (Annex 4) detailing the regulatory measures to apply to the salmon fishery in 2010. Under the new regulations the fishing season for nets on the coast of Finnmark has been reduced from nine to six weeks for bag nets and from six weeks to four weeks for bend nets. In the Varanger fjord, the fishing season for bag nets has been reduced from nine weeks to seven weeks and for bend nets from six weeks to four weeks. The representative of the European Union thanked Norway for adhering to the agreement developed last year and welcomed the measures taken. The representative of the Russian Federation also thanked Norway for following the process agreed last year but expressed disappointment that the measures were less restrictive than those proposed by the Russian Federation for Finnmark and the Varanger fjord.

6.5 The representative of the European Union indicated that at the last Annual Meeting there had been consultations between the European Union and Norway concerning the salmon fisheries in the Tana River and this process would continue. The representative of the NGOs thanked the European Union for its efforts in maintaining a dialogue with Norway on this topic. He asked for clarification from Norway on the anticipated effect of the reduction in the length of the fishing season on harvests in the fisheries. The representative of Norway indicated that this was difficult to assess and further assessment would be needed. The effectiveness of the measures in terms of achievement of spawning targets would probably be greater if any reduction was at the beginning rather than at the end of the fishing season.

6.6 The representative of the Russian Federation introduced document NEA(10)6 (Annex 5) which provided a review of its Atlantic salmon management measures for 2009.

7. Risk of Transmission of *Gyrodactylus salaris* in the Commission Area

7.1 The Chairman indicated that at its 2008 Annual Meeting, the Commission had considered a report from its Working Group on *G.salaris* in the North-East Atlantic Commission area, NEA(08)3. The Commission had agreed to retain an agenda item on this issue so as to monitor developments.

7.2 The representative of the European Union referred to the adoption of decision 2010/221 EU of 15 April the effect of which was that the previous measures in Article 4.3 of Directive 2006/88 relating to *G. salaris* would continue to apply. This would mean that certain jurisdictions (Ireland, UK, and specified river catchments in Finland) would be able to continue to take protective measures against the parasite. He indicated that these were the guarantees sought by NASCO and he had provided a copy of the decision to the Secretariat.

7.3 The representative of Norway tabled document NEA(10)5 (Annex 6) concerning landlocked char being a potential host for *G. salaris*. The document indicated that if the parasites on char are pathogenic to salmon, Arctic char may need to be considered on an equal basis to rainbow trout in terms of the risk of spreading the parasite. A review of existing regulations may be required.

8. Announcement of the Tag Return Incentive Scheme Prize

8.1 The Chairman announced that the draw for the North-East Atlantic Commission prize in the NASCO Tag Return Incentive Scheme was made by the Auditor on 4 May 2010. The winning tag was of Norwegian origin and had been applied to a smolt in the River Eira. The tag was one of a batch of tags returned from the river assumed to have been from smolts predated by gulls. The winner of the Commission's prize was Ms Marianne Nauste, Eresfjord, Norway. The Commission offered its congratulations to the winner.

9. Recommendations to the Council on the Request to ICES for Scientific Advice

9.1 The Commission agreed the request for scientific advice from ICES prepared by the Standing Scientific Committee in relation to the North-East Atlantic Commission area. The request to ICES, as agreed by the Council, is contained in document CNL(10)10 (Annex 7).

10. Other Business

10.1 There was no other business.

11. Date and Place of the Next Meeting

11.1 The Commission agreed to hold its next meeting during the Twenty-Eighth Annual Meeting of the Council.

12. Report of the Meeting

12.1 The Commission agreed a report of its meeting.

Note: The annexes mentioned above begin on page 45, following the French translation of the report of the meeting. A list of North-East Atlantic Commission papers is included in Annex 8.

NEA(10)10

Compte rendu de la Vingt-septième réunion annuelle de la Commission de l'Atlantique du Nord-Est de l'Organisation pour la Conservation du Saumon de l'Atlantique Nord

Le Château Frontenac, Cité de Québec, Canada 1- 4 juin, 2010

1. Ouverture de la séance

1.1 Le Secrétaire a ouvert la réunion et a indiqué que ni le Président, M. Richard Cowan (UE), ni le Vice-président, M. Andras Kristiansen (Danemark (pour les Iles Féroé et le Groenland)), n'assistaient à la Vingt-septième réunion annuelle. Il était par conséquent nécessaire d'élire un Président pour la durée de cette réunion annuelle. La Commission a élu Président, le Dr Ciaran Byrne (Union européenne). Celui-ci a souhaité la bienvenue aux délégués à la ville de Québec. Le Président a également remercié les autorités canadiennes pour leur accueil et leur excellente organisation.

1.2 Une déclaration d'ouverture a été prononcée au nom des Organisations non gouvernementales présentes à la Réunion annuelle (annexe 1).

1.3 Une liste des participants à la Vingt-septième réunion annuelle du Conseil et des Commissions de l'OCSAN figure à la page 149 de ce document.

2. Adoption de l'ordre du jour

2.1 La Commission a adopté l'ordre du jour, NEA(10)11 (annexe 2).

3. Nomination d'un Rapporteur

3.1 La Commission a nommé Ms Heidi Hansen (Norvège), Rapporteur de la réunion.

4. Election des membres du comité directeur

4.1 La Commission a élu Président M. Raoul Bierach (Norvège) et Vice-président, le Dr Ciaran Byrne (Union européenne).

5. Examen de la pêcherie de 2009 et du compte rendu du Comité Consultatif du CIEM sur les stocks de saumons dans la zone de la Commission

5.1 Le représentant du CIEM, M. Gerald Chaput, a présenté les recommandations scientifiques à propos des stocks de saumons qui intéressent la Commission de l'Atlantique du Nord-Est, CNL(10)8. Sa présentation est reproduite dans le document NEA(10)12. Le compte rendu du Comité Consultatif du CIEM, qui renferme les recommandations scientifiques pour l'ensemble des Commissions, figure à la page 91 de ce présent document.

5.2 Lors de la Vingt-sixième réunion annuelle de la Commission, le Président avait noté que le CIEM n'avait pas pu avancer dans l'élaboration de recommandations quantitatives de captures car la Commission n'avait pas convenu d'objectifs de gestion explicites permettant une formulation de conseils de captures pour la pêche féringienne. De plus, il n'existait aucun accord de partage préalable entre les différentes Parties de l'OCSAN. Le Président avait suggéré qu'il importait de résoudre cette question avant qu'un surplus récoltable ne soit disponible. La Commission avait accepté cet avis et avait décidé que ce sujet devrait faire l'objet de débats supplémentaires entre les Chefs de Délégations à la suite de la Réunion annuelle. Ces débats avaient pour objectif la mise en place des dispositifs qui permettraient de commencer à élaborer des objectifs de gestion avant la Vingt-septième réunion annuelle. Mais, comme toutefois l'organisation d'une réunion intermédiaire n'avait pas été avalisée, il a été convenu de demander au CIEM de fournir une évaluation des questions qui nécessiteraient d'être résolues avant que les recommandations puissent alors être fournies (voir NEA(10)3 pour renseignements supplémentaires). La Commission a accepté cette proposition et le Secrétaire a, en conséquence, écrit au CIEM.

5.3 Le compte rendu du Comité Consultatif indiquait que le CIEM avait débattu plusieurs des questions que l'OCSAN devrait aborder avant d'établir un cadre des risques pour la pêcherie féringienne, basé sur les principes utilisés en ce moment pour la pêcherie du Groenland Occidental. Le CIEM avait indiqué que ces principes étaient les suivants: accord sur les unités de gestion à utiliser; accord sur les objectifs de gestion pour chaque unité; et détermination d'un accord de partage.

5.4 Le représentant de l'Union européenne a demandé au CIEM de confirmer si les recommandations offertes consistaient à baser les unités de gestion sur celles employées actuellement par le CIEM à des fins d'évaluation (soit 18 unités). Il a également cherché à savoir si les objectifs de gestion pourraient consister à fixer à un minimum de 75% la probabilité d'atteindre simultanément les limites de conservation parmi ces unités (comme tel était le cas pour l'ensemble des stocks du sud de l'Europe dans le cadre de la gestion de la pêcherie du Groenland Occidental) et si, enfin, l'allocation de partage pourrait être basée sur l'historique des captures couvrant le période de 1986 à 1990 (tel qu'il est également employé pour les mesures de réglementation au Groenland Occidental). Le représentant du CIEM a confirmé que les évaluations du CIEM portaient bien sur 18 unités (4 en Russie, 3 en Norvège, 2 au Royaume-Uni – Ecosse, 2 au Royaume-Uni – Irlande du Nord, 2 en Islande et 1 unité pour chacun des autres pays de la NEAC). Il a également corroboré qu'il serait cohérent avec l'approche employée dans le cadre des risques, au Groenland Occidental, de fixer à 75% de probabilité l'objectif de gestion d'atteindre simultanément les limites de conservation parmi ces unités. Il a enfin confirmé qu'il serait également cohérent de fonder l'accord de partage sur l'historique du partage des captures couvrant la période de 1986 à 1990. En réponse à une question supplémentaire posée par le représentant de l'Union européenne, et étant donné que l'ensemble des stocks Sud de la CANE étaient exploités à la fois au Groenland Occidental et aux Iles Féroé, il reconnaissait qu'il semblerait approprié d'adopter des objectifs de gestion identiques et la même période de base pour l'accord de partage.

5.5 La représentante du Danemark (pour les Iles Féroé et le Groenland) a reconnu que la procédure présentée par le CIEM pourrait représenter un pas en avant quant à l'élaboration d'un cadre des risques. Elle pensait toutefois que les ensembles de

stocks actuellement utilisés par le CIEM étaient trop importants et que des informations scientifiques supplémentaires sur l'état des stocks étaient nécessaires. De plus, elle était d'avis que les limites de conservation nécessitaient d'être définies plus précisément. À ce propos, elle espérait que le programme SALSEA apporterait des arguments supplémentaires au fondement scientifique de la gestion et que les Parties concernées continueraient à renforcer leur travail et à définir des limites de conservation pour un plus grand nombre de rivières.

5.6 Le représentant de l'Union européenne a réitéré qu'il pensait que l'approche présentée rapidement par le CIEM représentait la bonne marche à suivre. Il a noté que l'ensemble des stocks du Nord dépassait leur limite de conservation. Il demeurait toutefois inapproprié d'envisager d'ouvrir une pêcherie jusqu'à ce qu'un cadre des risques soit conclu et permette ainsi le CIEM de fournir des recommandations quantitatives de captures. Il importait de définir une politique de gestion pour la pêcherie féringienne que l'on pourrait parfaire à l'avenir.

5.7 Le représentant de la Norvège a déclaré que des limites de conservation avaient été établies pour l'ensemble des cours d'eau de Norvège. Il serait par conséquent reconnaissant si la représentante du Danemark (pour les Iles Féroé et le Groenland) pouvait clarifier la déclaration qu'elle avait faite. La représentante du Danemark (pour les Iles Féroé et le Groenland) a répondu que la perspective des Iles Féroé était que les complexes de stocks étaient trop importants et que les modèles utilisés n'étaient pas appuyés par des données adéquates. Cependant, elle était prête à débattre la question d'une manière plus approfondie étant donné que les recommandations quantitatives seraient disponibles avant qu'il n'y ait un surplus récoltable. Elle était d'avis toutefois qu'une pêcherie serait peu probable dans un avenir proche, vu l'état des stocks.

5.8 Le représentant de l'Union européenne a indiqué que la pêcherie ne devrait reprendre aux Iles Féroé que lorsque les recommandations indiquent qu'un surplus récoltable existe, ce surplus constituant la justification qui garantirait la mise en place d'un cadre de gestion. L'approche ébauchée par le CIEM était efficace pour la pêcherie du Groenland Occidental et l'application de l'Approche préventive exigerait qu'un cadre des risques soit défini, surtout si, comme il l'a été suggéré, les données scientifiques étaient insuffisantes.

5.9 La représentante de la Fédération de la Russie a indiqué que les limites de conservation avaient été établies pour la majorité des plus grands cours d'eau. Même si elle respectait les inquiétudes exprimées par la représentante du Danemark (pour les Iles Féroé et le Groenland) et qu'elle appréciait la modération dont les Iles Féroé avaient fait preuve en n'effectuant, ces dernières années, aucune pêche de saumons, la représentante de la Fédération de la Russie désirait voir l'établissement d'un cadre des risques.

5.10 La Commission s'est penchée sur la possibilité de tenir une réunion intermédiaire afin de faire avancer cette question. La représentante du Danemark (pour les Iles Féroé et le Groenland) a suggéré – si réunion il y avait – de la faire coïncider avec la Vingt-huitième réunion. Le représentant de l'Union européenne a déclaré que le CIEM avait indiqué clairement comment aller de l'avant et que cette indication devrait être utilisée comme point de départ à l'élaboration d'un cadre des risques que l'on pourrait affiner plus tard. Les représentants de la Norvège et de la Fédération de la Russie ont convenu qu'il était nécessaire d'établir un processus qui permette de faire progresser

cette question, soit par le biais d'une réunion intermédiaire, soit par correspondance. La représentante du Danemark (pour les Iles Féroé et le Groenland) a signalé qu'elle n'était pas investie du mandat de convenir d'un cadre des risques, néanmoins elle serait prête à traiter de la question par correspondance et, si nécessaire à se pencher à nouveau sur la question au cours de la prochaine Réunion annuelle.

5.11 Le représentant de l'Union européenne a proposé un mécanisme qui permettrait de faire avancer l'élaboration d'un cadre de gestion basé sur les risques, pour la zone de la CANE. Il a fait remarquer qu'il existait, parmi les Membres de la Commission, un soutien général des principes du cadre proposés par le CIEM. Toutefois, il semblait également que des informations scientifiques supplémentaires étaient nécessaires à la prise d'une décision informée. On avait convenu, dans l'intermédiaire, de continuer le dialogue entre les Membres en vue de clarifier auprès du CIEM ce dont la Commission avait besoin, en tant qu'informations scientifiques, pour aller de l'avant. Il serait ainsi désirable d'examiner cet aspect scientifique du processus avant le 30 Novembre 2010 afin de pouvoir envoyer un feedback au CIEM. La représentante du Danemark (pour les Iles Féroé et le Groenland) a fait savoir qu'elle ne pouvait pas s'engager à respecter cette date butoir.

6. Mesures de réglementation

6.1 Le Président a rappelé que l'année dernière une décision avait été prise concernant la pêcherie de saumons dans les eaux féringiennes en 2010, NEA(09)6. Conformément à cette Décision, la Commission avait décidé de ne pas fixer de quota mais avait pris note que les Îles Féroé gèreraient toute pêcherie selon les conseils du CIEM et d'une manière préventive.

6.2 Le Président a fait circuler un avant projet de prise de décision concernant la pêcherie de saumons dans les eaux féringiennes en 2011, (NEA(10)4). La Commission a adopté cette décision, NEA(10)8 (annexe 3).

6.3 Une réunion consultative informelle des Parties avait précédé la Vingt-sixième réunion annuelle. Cette réunion concernait la question des pêcheries côtières norvégiennes (voir NEA(09)3). Lors de la Réunion annuelle de 2009 de la Commission, le représentant de la Norvège avait annoncé que la question avait fait l'objet de débats fructueux et constructifs au cours de cette réunion et qu'un nouveau mécanisme de coopération entre la Norvège, la Fédération de la Russie et l'Union européenne avait été conclu.

6.4 Le représentant de la Norvège a présenté le document NEA(10)7 (annexe 4) qui décrivait les mesures de réglementation à appliquer à la pêcherie de saumon en 2010. Selon ces nouvelles réglementations, la saison de pêche au filet sur la côte du Finnmark a été réduite de neuf à six semaines pour les filets trappes et de six à quatre semaines pour les filets du type « bend nets ». Dans le fjord Varanger, elle a été réduite de neuf à sept semaines pour les filets trappes et de six à quatre semaines pour les filets du type « bend nets ». Le représentant de l'Union européenne a remercié la Norvège pour son respect de l'accord conclu l'année précédente et a accueilli favorablement les mesures prises. La représentante de la Fédération de la Russie a également remercié la Norvège pour avoir suivi le processus initié l'année dernière. Elle a toutefois exprimé sa déception à propos des mesures, car celles-ci étaient moins

restrictives que celles proposées par la Fédération de la Russie pour le Finnmark et le Fjord Varanger.

6.5 Le représentant de l'Union européenne a indiqué que des consultations avaient eu lieu entre l'Union européenne et la Norvège au cours de la dernière Réunion annuelle concernant les pêcheries de saumons dans la Rivière Tana et que ce processus continuerait. Le représentant des ONG a remercié l'Union européenne pour sa résolution à maintenir le dialogue avec la Norvège concernant ce sujet. Il a demandé à la Norvège d'expliquer l'effet escompté de la réduction de durée de la saison de pêche sur les récoltes dans les pêcheries. Le représentant de la Norvège a répondu que ceci était difficile à estimer et qu'une analyse supplémentaire serait nécessaire. L'efficacité des mesures, à savoir l'atteinte des cibles de reproduction, serait sans doute plus importante si les réductions s'effectuaient en début plutôt qu'en fin de saison de pêche.

6.6 La représentante de la Fédération de la Russie a présenté le document NEA(10)6 (annexe 5) qui fournissait une étude des mesures de gestion du saumon atlantique pour 2009, entreprises par son pays.

7. Risque de Transmission du *Gyrodactylus salaris* dans la zone de la Commission

7.1 Le Président a indiqué que lors de la Réunion annuelle de 2008, la Commission avait étudié un rapport rédigé par son Groupe de Travail chargé de la question du *G.salaris* dans la zone de la Commission de l'Atlantique du Nord-Est, NEA(08)3. La Commission avait convenu de garder cette question à l'ordre du jour de façon à en surveiller l'évolution.

7.2 Le représentant de l'Union européenne s'est reporté à l'adoption de la Décision 2010/221 EU du 15 avril, selon laquelle les mesures précédentes, contenues dans l'Article 4.3 de la Directive 2006/88 concernant le *G. salaris*, continueraient à être d'application. Ceci signifiait que certaines juridictions (Irlande, Royaume-Uni, et certains bassins de rivières en Finlande) pourraient continuer à prendre des mesures de protection contre le parasite. Il a signalé que ceci constituait les garanties recherchées par l'OCSAN. En conséquence, il fournirait une copie de cette Décision au Secrétariat.

7.3 Le représentant de la Norvège a présenté le document NEA(10)5 (annexe 6). Ce document examinait la possibilité de l'omble, qui évoluait dans des étendues d'eau sans débouché sur la mer, comme hôte du *G. salaris*. Si les parasites de l'omble étaient pathogènes pour le saumon, il serait dans ce cas sans doute nécessaire de considérer l'omble chevalier au même niveau que la truite arc-en-ciel en ce qui concernait le risque de propagation du parasite. Ceci pourrait entraîner une révision des réglementations en place.

8. Annonce du gagnant du prix du Programme d'encouragement au renvoi des marques

8.1 Le Président a annoncé que le tirage au sort du prix de la Commission de l'Atlantique du Nord-Est du Programme d'encouragement au renvoi des marques de l'OCSAN a été effectué par le Commissaire aux comptes le 4 mai 2010. La marque gagnante était d'origine norvégienne. Elle avait été appliquée sur un smolt dans la rivière Eira. La

marque comptait parmi celles qui avaient été renvoyées de cette rivière et que l'on soupçonnait être des marques provenant de smolts soumis à la prédation des mouettes. Ms Marianne Nauste, de Eresfjord, en Norvège a remporté le prix de la Commission. La Commission a félicité la gagnante.

9. Recommandations au Conseil dans le cadre de l'avis scientifique émanant du CIEM

9.1 La Commission a accepté la demande au CIEM de recommandations scientifiques, telle qu'elle avait été préparée par le Comité Scientifique Permanent pour la zone de la Commission de l'Atlantique du Nord-Est. La demande de recommandations scientifiques au CIEM, approuvée par le Conseil, figure dans le document CNL(10)10 (annexe 7).

10. Divers

10.1 Aucune autre question n'a été traitée

11. Date et lieu de la prochaine réunion

11.1 La Commission a convenu de tenir sa prochaine réunion pendant la Vingt-huitième réunion du Conseil.

12. Compte rendu de la réunion

12.1 La Commission a accepté le compte rendu de la réunion.

Note: Une liste des documents de la Commission de l'Atlantique du Nord-Est figure à l'annexe 8.

Annex 1

Joint NGO Opening Statement to the North-East Atlantic Commission

Mr Chairman, I am pleased to present this joint opening statement on behalf of the NGO group.

In our opening statement to Council, we expressed our growing frustration with the lack of progress by Parties in implementing NASCO agreements and guidelines, and we promised to return to specific examples relevant to Commission Areas.

Of the mixed-stock fisheries currently still operating in home waters, the Norwegian coastal fishery in Finnmark causes us most concern. This fishery, which intercepts stocks from Norway, Finland and Russia, is huge by NASCO standards, taking more than 27,000 fish. Efforts by the Norwegian Ministry of the Environment to reduce this fishery have recently failed. Nevertheless the impact of continued exploitation of mixed stocks in N. Europe must be of concern to all the Parties involved, and we call on them to put further pressure on the Norwegian authorities to reduce this fishery significantly.

We are also concerned to hear about continuing delays in the efforts to reduce exploitation in the cross-border Tana River, which has the largest stock of salmon in any single river in Europe, with many tributaries well below their conservation limit. Although dialogue between Norway and EU Finland is continuing, we call on both Parties to exercise the Precautionary Approach and introduce regulatory measures as soon as possible.

Mixed-stock fisheries are also causing concern in other jurisdictions. Those in Canada and St Pierre & Miquelon are covered by the NAC. In the UK, Scotland has recently completed a review of mixed-stock fisheries. It failed to reach agreement, and only managed to conclude that it was up to the Government to make a decision. The Chairman's introduction to the report contains a statement that illustrates a complete lack of understanding of the Precautionary Approach. This report yet again postpones a difficult political and socio-economic decision.

In England and Wales the rump of the North-East coast fishery and the fixed T&J nets continue to catch mixed stocks of salmon and sea trout. The Solway haaf net fishery, which we believe to be a mixed-stock fishery, is intercepting salmon bound for several rivers in that estuary.

There are a small number of drift nets left in Northern Ireland which refused buy-out compensation. The Government there has commissioned a report – creating further delay – and the cross border Loughs Agency Board still permit 28 nets catching mixed stocks on the Foyle river system.

In all these jurisdictions we accept that significant reductions in mixed-stock fisheries have taken place in the past, but there seems to be little political will to deal with the remaining damaging fisheries which together are catching some 100 tonnes of wild salmon. NGOs are now contemplating further legal action under the EU Habitats Directive. In the context of the ICES advice, and the principle of equity and fairness in relation to the distant-water fisheries of Greenland and the Faroes, we call on the Parties to redouble their efforts to close these fisheries.

In Ireland, the Government has allowed a resumption of draft netting in a mixed-stock fishery in Castlemaine Harbour, to determine the genetic make-up of the stocks prior to a possible resumption of the fishery; this is a worrying development. Furthermore, it has failed to consult NGO's on both this proposal and two successive extensions to the netting season and has failed to include this in the update to their Implementation Plan.

On the impacts of aquaculture, even though the number of reported escaped salmon has reduced during the last 2-3 years in Norway, the average percentage of escapees in the river breeding stock are over 15 % , many times higher than genetically acceptable. One of the major reasons is the unreported escapes of smolts, estimated by scientists to be as high as 3.5 million – almost 10 times higher than the number of returning salmon to Norwegian rivers in 2009.

The fact that a similar order of magnitude of fish now escape from the Norwegian and Scottish industries as there are wild adults returning to their natal rivers is an indication of the scale of the situation. The clear message here is that, despite the endless pledges and commitments made by the industry in both countries, escapes and sea lice management (now compounded by sea lice resistance) show no signs of being controlled to a satisfactory level for the protection of wild fish. In Scotland, a loss of confidence in the regulatory system has forced wild fisheries interests to resort to legal action. We also await with great interest the outcome of an Irish NGO's complaint to the European Commission that the current Irish salmon farming regime does not meet the requirements of Article 6 of the EU Habitats Directive.

While we welcome the Task Force Best Management Practice (BMP) targets for zero escapes and sea lice control the examples above illustrate the growing frustration amongst wild fish interests, as escapes continue to rise and sea lice become more difficult to control. We have already expressed our concern that dialogue is being used as a device for postponing the firm regulatory action that is required from governments to protect wild Atlantic salmon from the impacts of salmonid aquaculture**.**

Self –regulation by the industry has clearly failed; we believe there is a need for governments across the North Atlantic to set new standards, both technological and environmental, following the example of the regulation of other established farming industries, to protect wild salmon from the impacts of the fish farming industry.

Can I again remind the Parties present, that NASCO is an organisation dedicated to the conservation and restoration of wild Atlantic salmon, not the conservation and promotion of the aquaculture industry or for the protection of mixed-stock fisheries in home waters. It is absolutely crucial, if NASCO is not to be regarded as an annual sideshow, that recommendations from the FAR process are incorporated into national Implementation Plans and translated into firm action at a local level which can be shown to demonstrate positive benefits for wild salmon.

Annex 2

NEA(10)11

Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Nomination of a Rapporteur
4. Election of Officers
5. Review of the 2009 Fishery and ACOM Report from ICES on Salmon Stocks in the Commission Area
6. Regulatory Measures
7. Risk of Transmission of *Gyrodactylus salaris* in the Commission Area
8. Announcement of the Tag Return Incentive Scheme Prize
9. Recommendations to the Council on the Request to ICES for Scientific Advice
10. Other Business
11. Date and Place of the Next Meeting
12. Report of the Meeting

Annex 3

NEA(10)8

Decision regarding the salmon fishery in Faroese waters 2011

The North East Atlantic Commission:

RECOGNIZING the right of the Faroe Islands to fish for salmon in their area of fisheries jurisdiction;

ACKNOWLEDGING the restraint demonstrated by the Faroe Islands by not having commercial salmon fisheries for a number of years;

RECALLING that the Parties to the North-East Atlantic Commission have previously agreed decisions for the Faroese fishery based on the scientific advice from ICES;

ACKNOWLEDGING that in the past the Faroe Islands have managed the salmon fishery in the area of its fisheries jurisdiction in consideration of the advice from ICES concerning the biological situation and the status of the stocks contributing to the fishery;

AGREEING to continue to work together to establish an agreed mechanism to allocate any exploitable surplus between the Faroe Islands and homewater fisheries on a fair and equitable basis;

NOTING that the Faroe Islands will manage any salmon fishery on the basis of the advice from ICES regarding the stocks contributing to the Faroese salmon fishery in a precautionary manner and with a view to sustainability, taking into account relevant factors, such as socio-economic needs;

ACKNOWLEDGING that Faroese management decisions will be made with due consideration to the advice of ICES concerning the biological situation and the status of the stocks contributing to the fishery;

RECOGNIZING that ICES considers it highly unlikely that the catch options provided for the North-East Atlantic Commission will change during the next three years;

NOTING that Denmark (in respect of the Faroe Islands and Greenland) will, in case of any decision to open the fishery, inform the NASCO Secretariat and all members of the Commission of that decision and the attached conditions. In that event, other members of the Commission could call for a Commission meeting in accordance with Article 10 (7) of the Convention. In such a case, it is agreed to derogate from the provisions of Rule 16 of Procedure;

RECOGNISING that a Framework of Indicators has not been provided by ICES;

HEREBY DECIDES:

Not to set a quota for the salmon fishery in the Faroese Fisheries Zone for 2011.

Annex 4

NEA(10)7

Regulatory measures – Norway 2010

At the last Annual Meeting, Norway, Russia and EU agreed on a process of cooperation concerning the regulation of coastal fisheries for salmon. The main elements of this process were to be as follows:

- In early September, the Russian Federation and EU should be given the opportunity to comment on a proposal for general guidelines for the upcoming regulations;

- A proposal for new regulations were subject to a public hearing, and the proposal should also be sent to the authorities in the Russian Federation and EU for information;

- The final proposal from the Directorate for Nature Management to the Ministry of the Environment should be sent to the Russian Federation and EU as part of the process leading up to the decision on this year's regulations, and the feedback from the Russian Federation and EU should be carefully considered in the decision process.

Leading up to this year's regulations in the coastal fisheries for salmon, the agreed process has been followed. After receiving the proposal for new regulations from the Directorate for Nature Management, the Russian Federation held the position that the coastal fisheries for salmon in Finnmark, where salmon of Russian origin are intercepted, must be regulated by more restrictive measures, including such as ban on bend netting and closure of all coastal salmon fishing in the Varanger fjord.

In addition, the Russian Federation reiterated the importance of better scientific knowledge of salmon stocks contributing to mixed stock fisheries in Norwegian waters, and continued scientific cooperation between Russia and Norway.

After careful consideration of all the received views on the suggested regulations in the coastal fishery, the regulations for 2010 have been decided.

In short, the new regulations reduce the fishing season on the Southern coast of Norway from five to four weeks. On the coast of Finnmark, the fishing season for bag nets has been reduced from nine to six weeks for bag nets, and from six to four weeks for bend nets. In the Varanger fiord, the fishing season for bag nets is reduced from nine to seven weeks. For bend nets the fishing season is reduced from six to four weeks.

Annex 5

NEA(10)6

Review of Atlantic Salmon Management Measures for 2009
Russian Federation

Introduction

The Atlantic salmon occurs in the rivers of five regions of the north-western part of the Russian Federation. The number of rivers in the area indicates a large genetic biodiversity within the Atlantic salmon stock in Russia, resulting in a huge production potential. These salmon, unlike the European river systems, are genetically entirely unpolluted by escapes from salmon farms for which the waters surrounding the Northwest of Russia are largely unsuitable. The status of individual river salmon stocks varies considerably and overall they have not shown the same negative trend in salmon abundance as observed in all other parts of the distribution range on the both sides of Atlantic. However a number of salmon stocks are suffering reduced production capacity due to the impact of various anthropogenic factors such as over-fishing in mixed-stock fisheries in coastal areas, poaching on the rivers, etc.

In the Russian Federation quotas for fisheries are allocated to the following user groups: First Nations, enhancement activities, scientific fishery, recreational fishery and commercial in-river and coastal fisheries. In July 2009, the Atlantic salmon was removed from the list of species subject to regulation by a total allowable catch. This amendment makes it possible for the recently established Anadromous Fish Commissions to work in a more flexible and effective way and make in-season adjustments to catch limits and other measures based on scientific advice. The new system became operative from the 2010 fishing season.

Fishery by the First Nations

No quotas for Atlantic salmon were allocated to the First Nations in 2009.

Scientific fishery

New amendments to the Federal Law "On fisheries and conservation of aquatic biological resources" came into force in December 2008: "Any fish caught for scientific purposes must be either released or destroyed after research completed". Due to this amendment the quota established for a scientific fishery on the Pechora river in 2009 was reallocated to the commercial in-river fishery where scientific data were collected.

Fishery for enhancement purposes

In 2009 small scale fishery for enhancement purposes was conducted only on three rivers of Murmansk region and in a number of rivers of the Republic of Karelia and the region of Archangelsk.

Recreational fishery

In Russia, recreational fishery with widely used catch-and-release is prioritized as an exploitation method promoting the sustainable use of the resource. The recreational fishery is particularly developed in the region of Murmansk where most of the salmon are being released. Catch and release catches have typically been high (average of 36,500 salmon in the 5 years 2004 to 2008) and are believed to have remained at this level in 2009. However, there was no obligation to report caught-and-released fish in Russia in 2009. Therefore, no data were provided to fisheries authorities. In 2010 the requirement for reporting catch-and–release is re-introduced.

Commercial fishery

The biggest commercial Atlantic salmon catch in Russia was recorded in 1960 and was over 1,100 tonnes. Subsequently, despite further improvement in fishing gear the total catch was declining. The average catch declined from 625 tonnes in the 1960s to 486 tonnes in the 1980s. Over the last twenty years the effort in commercial fisheries has been further reduced with the aim of conserving the Atlantic salmon stocks and promoting the recreational fisheries.

Commercial fisheries in 2009 were conducted both in the rivers and in the coastal areas of the White Sea. There has been no coastal fishery in the Barents Sea since the late 1950s. In 2009, the commercial catch was 37% and 58% below the means for the previous 5 and 10 years, respectively. Only 15.5 tonnes were declared in Murmansk region for the coastal fishery and 4.5 tonnes were declared for the commercial in-river fishery. In the Archangelsk region, both commercial in-river and commercial coastal catches decreased by 26% and 16% compared to 2008. Mixed-stock coastal fisheries were operated in Murmansk and Archangelsk regions in the White Sea only. The catch taken in the coastal fisheries in the White Sea in 2009 was 22.4t.

Interception of salmon of Russian origin by other nations

Tagging studies conducted in the late 1960s and early 1970s demonstrated that mixed-stock coastal fisheries in northern Norway exploited populations from a wide geographic range, including from Russia as far east as the Pechora River. As indicated by earlier tagging studies the proportion of salmon of Russian origin in Norwegian catches may vary from 10% to 25%. In 2009, Norway and Russia started a collaborative pilot project aimed at investigating the present distribution of different salmon populations contributing to the coastal fisheries using genetic techniques. The main objective is to better inform the management decisions.

Preliminary data indicate that the genetic differentiation between rivers in this region is on a scale that may allow for assignment of individuals to rivers, and not only regions. The data from the analysis, both from Russian and Norwegian samples, are also used for the trans-European database being developed for SALSEA-Merge.

During NASCO's 26th Annual Meeting in June 2009, Norway and the Russian Federation made an agreement concerning bilateral consultations on the management regulations for coastal fisheries in Finnmark. According to the timetable, the Norwegian Directorate of Nature Management sent its proposals on management measures to the Russian Federation in September 2009, in December 2009 and in March 2010. The Russian Federation welcomed the proposals by the Norwegian Directorate of Nature Management for further restrictions of

salmon fisheries in Norway in 2010 – 2014 and re-stated its earlier position that the coastal fisheries for Atlantic salmon in Finnmark, where salmon of Russian origin were intercepted, must be regulated by even more restrictive measures, including measures such as a ban on bend netting and closure of all coastal salmon fishing in the Varanger fjord. Bilateral consultations are ongoing.

Annex 6

NEA(10)5

Landlocked Arctic char, a potential host for Gyrodactylus salaris

In autumn 2009, *Gyrodactylus salaris* was found on landlocked Arctic char (*Salvelinus alpinus*) in a lake above the anadromous part of the river Vefsna in Northern Norway. According to Norwegian plans, the chemical treatment of this river to eradicate *G. salaris* should be started this year. A closed fish ladder has prevented anadromous salmonids from entering this lake for nearly 20 years, and this finding, therefore, was quite unexpected. Genetic studies at the Norwegian Veterinary Institute identified two different species of *Gyrodactylus*, one of which is *G. salaris*.

From earlier investigations in Southern Norway it is known that *G. salaris* may appear in a form not pathogenic to Atlantic salmon. This year, the Veterinary Institute will conduct infection tests to determine whether the parasites found in the lake are harmful to Atlantic salmon.

Should it be verified that those parasites are deadly to Atlantic salmon, Arctic char might have to be considered on an equal basis as rainbow trout in terms of risk of spreading the parasite.

A review of existing regulations may also be required.

Annex 7

CNL(10)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, including unreported catches by country and catch and release, and production of farmed and ranched Atlantic salmon in 2010[1];

1.2 report on significant new or emerging threats to, or opportunities for, salmon conservation and management[2];

1.3 report on significant advances in our understanding of associations between changes in biological characteristics of all life stages of Atlantic salmon and ecosystem changes with a view to better understanding the dynamics of salmon populations[3];

1.4 further develop approaches to forecast pre-fishery abundance for North American and European stocks with measures of uncertainty;

1.5 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;[4]

1.6 provide a compilation of tag releases by country in 2010 and advise on the utility of maintaining this compilation;

1.7 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 2010 fisheries[5];

2.2 review and report on the development of age-specific stock conservation limits;

2.3 describe the status of the stocks and provide annual catch options or alternative management advice for 2012-2014, 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];

2.4 further investigate opportunities to develop a framework of indicators or alternative methods that could be used to identify any significant change in previously provided multi-annual management advice.

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

3.1 describe the key events of the 2010 fisheries (including the fishery at St Pierre and Miquelon) [5];

3.2 update age-specific stock conservation limits based on new information as available;

3.3 describe the status of the stocks;

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

3.4 provide annual catch options or alternative management advice for 2011-2014 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].

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

4.1 describe the key events of the 2010 fisheries [5];
4.2 describe the status of the stocks [7];

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

4.3 provide annual catch options or alternative management advice for 2010-2012 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].

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.*
2. *With regard to question 1.2, ICES is requested to include information on any new research into the migration and distribution of salmon at sea and on the potential impacts of the development of alternative/renewable energy on Atlantic salmon.*
3. *With regard to question 1.3, there is particular interest in determining if declines in salmon abundance coincide with changes in the biological characteristics of juveniles in fresh water or are modifying characteristics of adult fish (size at age, age at maturity, condition, sex ratio, growth rates, etc.) and with environmental changes including climate change.*
4. *With regard to question 1.5, ICES is requested to include information on best solutions for fish passage and associated mitigation efforts with examples of practices in member countries.*
5. *In the responses to questions 2.1, 3.1 and 4.1, ICES is asked to provide details of catch, gear, effort, composition and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Any new information on non-catch fishing mortality, of the salmon gear used, and on the by-catch of other species in salmon gear, and on the by-catch of salmon in any existing and new fisheries for other species is also requested.*
6. *In response to questions 2.3, 3.4 and 4.3, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice.*
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.*

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

Annex 8

NEA(10)00

List of North-East Atlantic Commission Papers

NEA(10)1	Provisional Agenda
NEA(10)2	Draft Agenda
NEA(10)3	Development of a risk framework for providing catch advice for the Faroese fishery
NEA(10)4	Draft Decision regarding the salmon fishery in Faroese waters 2011
NEA(10)5	Landlocked Arctic char, a potential host for *Gyrodactylus salaris*
NEA(10)6	Review of Atlantic Salmon Management Measures for 2009 - Russian Federation
NEA(10)7	Regulatory measures – Norway 2010
NEA(10)8	Decision regarding the salmon fishery in Faroese waters 2011
NEA(10)9	Draft Report
NEA(10)10	Report of the Twenty-Seventh Annual Meeting of the North-East Atlantic Commission
NEA(10)11	Agenda
NEA(10)12	ICES Presentation to the North East Atlantic Commission

REPORT OF THE

TWENTY-SEVENTH ANNUAL

MEETING OF THE

WEST GREENLAND COMMISSION

1 – 4 JUNE 2010
Québec City, Québec, Canada

Chairman:	Mr Guy Beaupré (Canada)
Vice-Chairman:	Mr Alan Gray (European Union)
Rapporteur:	Ms. Nicole Ricci (US)
Secretary:	Dr Malcolm Windsor

WGC(10)6

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Report of the Twenty-Seventh Annual Meeting of the West Greenland Commission of the North Atlantic Salmon Conservation Organization

Le Château Frontenac, Québec City, Canada

1 - 4 June, 2010

1. Opening of the Meeting

1.1 The Chairman, Mr Guy Beaupré (Canada) opened the meeting and welcomed participants to the Twenty-Seventh Annual Meeting of the Commission.

1.2 An opening statement was made on behalf of the NGOs (Annex 1).

1.3 A list of participants at the Twenty-Seventh Annual Meeting of the Council and Commissions is included on page 149 of this document.

2. Adoption of the Agenda

2.1 The Commission adopted its Agenda, WGC(10)7 (Annex 2).

3. Nomination of a Rapporteur

3.1 Ms. Nicole Ricci (United States) was appointed as rapporteur.

4. Election of Officers

4.1 The Commission unanimously elected Mr Alan Gray (European Union) as its Chairman and Mr George Lapointe (US) as its Vice-Chairman.

5. Review of the 2009 Fishery and ICES Advisory Committee Report from ICES on Salmon Stocks in the Commission Area

5.1 The representative of ICES, Mr. Gérald Chaput, provided a report from ICES on the scientific advice on salmon stocks in the West Greenland Commission area, CNL(10)8. His presentation is available as NASCO document WGC(10)8. The ICES Advisory Committee (ACOM) report, which contains the scientific advice relevant to all Commissions is included on page 91 of this document.

5.2 The representative of Denmark (in respect of the Faroe Islands and Greenland) advised the Commission that a new act for self government had been introduced last June and a new government is now in place which has resulted in some changes. A report on the 2009 fishery, WGC(10)9, is contained in Annex 3. As in previous years no quota was set for the commercial fishery. The subsistence fishery, estimated to be 20t, had a reported catch in 2009 of 26t. Of this total, 15t were sold on the open market and 11t were used for private consumption. This represented a minor decrease

over the catch in 2008. She indicated that reporting had improved due mainly to the government's outreach program in the form of television advertising broadcast prior to the start of the fishing season explaining the need to report catches. Furthermore, the tag return incentive scheme has also been well publicized and is popular in Greenland. There is a press release following the award ceremonies. No new regulations have been introduced since 2002 but Greenland is constantly working to improve management and control of the fishery.

5.3 The representative of the European Union noted with satisfaction the support in principle for the introduction of log books to assist with improving reporting. The NGO representative sought clarification on the number of licenses issued in 2009. The representative of Denmark (in respect of the Faroe Islands and Greenland) indicated that 262 licenses had been issued but only 64 had been utilized. This was due to the fact that fishermen would like to preserve their right to fish in case a commercial fishery reopened. The NGO representative asked if it was possible to differentiate between Canadian and US fish in the North American component of the harvest. The representative of ICES explained that with advances in genetic techniques this should be possible in the future. The representative of the NGOs asked for clarification of how the 412 salmon for the enhanced sampling were obtained. It was explained that these salmon formed part of the catch from the internal-use fishery.

6. Regulatory Measures

6.1 At its Twenty-Sixth Annual Meeting, the Commission had adopted a multi-annual regulatory measure for the West Greenland salmon fishery, WGC(09)7, for the calendar years 2009 – 2011. The Commission had agreed that the same procedure used in 2008 for applying the Framework of Indicators (FWI) would apply to the new regulatory measure. Under this arrangement a small group comprising one representative from each member of the Commission would work by correspondence to coordinate the data collection and application of the FWI. The Secretariat would contact the Parties to seek their nominations for the Group. The Secretariat would liaise with the Chairman of the group and would present its findings to the Parties and to ICES in January in the years when the FWI would be used (2010 and 2011).

6.2 Document WGC(10)3 (Annex 4) describes the work of the FWI Working Group. The members of this group were Gerald Chaput (Canada), Julius Peedah (Denmark (in respect of the Faroe Islands and Greenland)), Ted Potter (European Union) and Rory Saunders (USA). Rory Saunders served as the Coordinator. The Coordinator advised the Commission that the Group's conclusions were that the FWI indicated that no reassessment of the management advice previously provided by ICES in 2009 was required for the 2010 fishery at West Greenland. This meant that the multi-annual regulatory measure agreed in 2009 would continue to apply to the 2010 fishery and there is not, therefore, a need for negotiations on a new measure at the Twenty-Seventh Annual Meeting. In accordance with the request for scientific advice adopted by the Council last year, ICES was not required to provide advice on stock status or management options for either the NAC or WGC areas in 2010.

6.3 The representative of Denmark (in respect of the Faroe Islands and Greenland) indicated that the authorities were constantly reviewing the regulation of the fishery which is small and limited in time. Over the years improvements have been made to

the reporting and information is now being received for East Greenland as well. The representative of Canada thanked Greenland for its work in improving reporting of catches.

7. Sampling in the West Greenland Fishery

7.1 The West Greenland salmon fishery sampling programme provides valuable biological data to the stock assessments conducted by ICES that inform science-based management decisions for this fishery. The Parties to the West Greenland Commission have worked cooperatively over the past three decades to collect these biological data. ICES, the International Atlantic Salmon Research Board and its Scientific Advisory Group, and NASCO all endorse taking additional samples from fish captured in the internal-use only fishery in Greenland. This Enhanced Sampling Program, SALSEA West Greenland, which had a two year commitment, requires whole fresh fish and is recognized as complementary to SALSEA Merge and SALSEA North America, which collectively hold promise in providing insights into the critical marine portion of the salmon's life cycle. In 2008, it had not been possible to conduct the enhanced sampling as planned but in 2009, NASCO had facilitated the purchase of these whole fish, using funds provided by the US, and the enhanced sampling programme had been successfully implemented in addition to the long-term baseline sampling.

7.2 The Commission adopted a West Greenland Fishery Sampling Agreement for 2010, WGC(10)4 (Annex 5)

8 Announcement of the Tag Return Incentive Scheme Prize

8.1 The Chairman announced that the draw for the West Greenland Commission prize in the NASCO Tag Return Incentive Scheme was made by the Auditor on 4 May 2010. The winning tag was of Canadian origin and was applied to a salmon smolt on 18 May 2008 in the Restigouche River as part of a program to assess the freshwater production and to contribute to SALSEA North America. The smolt monitoring program in the lower portion of the Restigouche River is a collaborative initiative between the Department of Fisheries and Oceans and the Listijug First Nation. The fish was recaptured at West Greenland on 7 September 2009. The winner of the $1,500 prize is Mr. Per Nukaaraq Hansen, Ivittuut, Greenland.

9. Recommendations to the Council on the Request to ICES for Scientific Advice

9.1 The Commission agreed to the request for scientific advice from ICES prepared by the Standing Scientific Committee in relation to the West Greenland Commission area. The request to ICES, as agreed by the Council, is contained in document CNL(10)10 (Annex 6).

10. Other Business

10.1 There was no other business.

11. Date and Place of Next Meeting

11.1 The Commission agreed to hold its next meeting at the same time and place as the Twenty-Eighth Annual Meeting of the Council in 2011.

12. Report of the Meeting

12.1 The Commission agreed a report of the meeting.

Note: The annexes mentioned above begin on page 75, following the French translation of the report of the meeting. A list of West Greenland Commission papers is included in Annex 7.

WGC(10)6

Compte rendu de la Vingt-septième réunion annuelle de la Commission du Groenland Occidental de l'Organisation pour la Conservation du Saumon de l'Atlantique Nord

Le Château Frontenac, Cité de Québec, Canada 1 - 4 juin, 2010

1. Ouverture de la séance

1.1 Le Président, M. Guy Beaupré (Canada), a ouvert la réunion et a souhaité la bienvenue aux participants à la Vingt-septième réunion annuelle de la Commission.

1.2 Une déclaration d'ouverture a été prononcée au nom des Organisations non gouvernementales (ONG) (annexe 1).

1.3 Une liste des participants à la Vingt-septième réunion annuelle du Conseil et des Commissions figure à la page 149 de ce document.

2. Adoption de l'ordre du jour

2.1 La Commission a adopté l'ordre du jour WGC(10)7 (annexe 2).

3. Nomination d'un Rapporteur

3.1 La Commission a nommé Ms. Nicole Ricci (États-Unis) Rapporteur de la réunion.

4. Election des membres du comité directeur

4.1 La Commission a élu Président, M. Alan Gray (Union européenne) et Vice-président, M. George Lapointe (États-Unis), à l'unanimité.

5. Examen de la pêcherie de 2009 et du compte rendu du Comité Consultatif du CIEM sur les stocks de saumons dans la zone de la Commission

5.1 Le représentant du CIEM, Mr. Gerald Chaput, a présenté le rapport du CIEM sur les recommandations scientifiques concernant les stocks de saumons de la zone la Commission du Groenland Occidental, CNL(10)8. Le document WGC(10)8 de l'OCSAN reproduit sa présentation. Le compte rendu du Comité Consultatif du CIEM contenant les recommandations scientifiques pour l'ensemble des Commissions figure à la page 91 de ce document.

5.2 La représentante du Danemark (pour les Iles Féroé et le Groenland) a communiqué à la Commission qu'une nouvelle loi avait été passée au mois de juin dernier concernant l'autogouvernance et qu'un nouveau gouvernement avait ainsi été établi. Ceci avait entraîné des changements. Le rapport portant sur la pêcherie de 2009, WGC(10)9, figure à l'annexe 3. Comme pour les années précédentes, aucun quota n'a été fixé pour la pêcherie commerciale. La pêcherie de subsistance, estimée à 20t,

comptait en 2009 26t de captures déclarées. Sur ce total, 15t avaient été vendues sur le marché libre et 11t utilisées pour une consommation personnelle, ce qui représentait une légère réduction par rapport aux captures de 2008. La représentante du Danemark (pour les Iles Féroé et le Groenland) a indiqué que l'on avait noté une amélioration au niveau des déclarations de captures. Ceci était lié en partie au programme gouvernemental de sensibilisation du grand public, diffusé par le biais d'émissions télévisées. Ces émissions, qui expliquaient la nécessité des déclarations de captures, étaient transmises au début de la saison de la pêche. Par ailleurs, le programme d'encouragement au retour des marques était également apprécié et bien connu au Groenland. Un communiqué de presse était diffusé à la suite des cérémonies de remise de prix. Bien qu'aucun règlement n'ait été introduit depuis 2002, le Groenland continuait de s'efforcer à améliorer la gestion et le contrôle de la pêcherie.

5.3 Le représentant de l'Union européenne a noté avec satisfaction le soutien, en principe, de l'introduction de journaux de bord visant à faciliter l'amélioration des déclarations de captures. Le représentant des ONG a essayé d'obtenir une clarification quant au nombre de permis octroyés en 2009. La représentante du Danemark (pour les Iles Féroé et le Groenland) a indiqué que, sur les 262 permis alloués, seuls 64 avaient été utilisés. Ceci s'expliquait par le fait que les pêcheurs voulaient préserver leur droit de pêche dans l'espoir d'une future réouverture de la pêcherie commerciale. Le représentant des ONG a demandé s'il était possible de différencier les poissons canadiens des poissons américains dans la composante d'Amérique de Nord de la récolte. Le représentant du CIEM a expliqué qu'étant donné les progrès réalisés au niveau des techniques génétiques, ceci devrait être possible à l'avenir. Le représentant des ONG a cherché à savoir plus clairement comment les 412 saumons avaient été obtenus pour l'échantillonnage étendu. L'explication donnée a été que ces saumons faisaient partie des captures effectuées dans le cadre de la pêcherie pour la consommation interne.

6. Mesures de réglementation

6.1 Lors de sa Vingt-sixième réunion annuelle, la Commission avait adopté une mesure pluriannuelle pour la pêcherie du Groenland Occidental, WGC(09)7, valide de 2009 à 2011 (années civiles). La Commission avait convenu qu'une procédure identique à celle employée en 2008 pour appliquer le Cadre des Indicateurs (FWI) serait utilisée pour cette nouvelle mesure de réglementation. Conformément à cet arrangement, un petit groupe, qui comprendrait un représentant de chaque membre de la Commission, œuvrerait par correspondance à la coordination de la collecte des données et à l'application du Cadre des Indicateurs. Il incomberait au Secrétariat de contacter les Parties afin d'obtenir leurs nominations pour ce groupe. Le Secrétariat serait en rapport avec le Président du groupe et présenterait les conclusions aux Parties et au CIEM au mois de janvier, les années où le Cadre des Indicateurs aurait été utilisé (à savoir en 2010 et 2011).

6.2 Le document WGC(10)3 (annexe 4) décrit le travail effectué par le Groupe de travail FWI. Parmi les membres de ce groupe figuraient Gerald Chaput (Canada), Julius Peedah (Danemark (pour les Iles Féroé et le Groenland)), Ted Potter (Union européenne) et Rory Saunders (États-Unis), ce dernier remplissant le rôle de Coordinateur. Rory Saunders a informé la Commission que, d'après les conclusions du groupe, le Cadre des Indicateurs (FWI) démontrait qu'il était inutile de réévaluer les recommandations du CIEM fournies en 2009 pour la pêcherie de 2010 au

Groenland Occidental. Ceci signifiait que la mesure de réglementation pluriannuelle adoptée en 2009 serait toujours d'application en ce qui concernait la pêcherie de 2010. Il n'était par conséquent pas nécessaire de négocier une nouvelle mesure lors de la Vingt-septième réunion annuelle. Conformément à la demande au CIEM de recommandations scientifiques, approuvée par le Conseil l'année dernière, le CIEM n'avait, à fournir en 2010, aucune recommandation ni sur l'état des stocks, ni sur les options de gestion pour les zones de la CAN et du Groenland Occidental.

6.3 La représentante du Danemark (pour les Iles Féroé et le Groenland) a indiqué que les autorités révisaient constamment la réglementation appliquée à la pêcherie, qui s'avérait peu importante et limitée dans le temps. La déclaration des captures s'était améliorée au cours des années et des informations parvenaient maintenant également du Groenland Oriental. Le représentant du Canada a remercié le Groenland pour le travail accompli dans l'amélioration des déclarations de captures.

7. Échantillonnage de la pêcherie du Groenland Occidental

7.1 Le programme d'échantillonnage de la pêcherie au saumon du Groenland Occidental fournit des renseignements biologiques précieux à l'évaluation du stock. Cette évaluation menée par le CIEM informe à son tour les décisions de gestion de cette pêcherie ainsi prises sur une base scientifique. Au cours des trois dernières décennies, les Parties de la Commission du Groenland Occidental ont oeuvré ensembles pour rassembler ces données biologiques. Le CIEM, la Commission Internationale de Recherche sur le Saumon Atlantique, son Comité consultatif et l'OCSAN approuvent tous une collecte d'échantillons supplémentaires à condition que celle-ci soit effectuée uniquement sur des poissons capturés au cours de la pêcherie pour la consommation interne du Groenland. Ce programme d'échantillonnage étendu, intitulé SALSEA Groenland Occidental nécessite en effet des poisons frais entiers. Considéré comme étant un programme complémentaire de SALSEA Merge et SALSEA Amérique du Nord, SALSEA Groenland avait une durée garantie de deux ans. Conjointement, ces programmes promettent d'aider à mieux comprendre la partie déterminante du cycle de vie du saumon, à savoir son évolution en mer. Il n'a pas été possible, en 2008, d'effectuer comme prévu un échantillonnage étendu, mais, en 2009, l'OCSAN avait facilité l'achat de ces poissons entiers en utilisant les fonds fournis par les États-Unis. En plus de l'échantillonnage de base effectué à long terme, le programme étendu d'échantillonnage s'était ainsi bien déroulé.

7.2 La Commission a adopté un accord d'échantillonnage de la pêcherie au Groenland Occidental pour 2010, WGC(10)4 (annexe 5).

8 Annonce du gagnant du Prix du Programme d'encouragement au renvoi des marques

8.1 Le Président a annoncé que le tirage au sort du prix de la Commission du Groenland Occidental du Programme d'encouragement au renvoi des marques de l'OCSAN avait été effectué par le Commissaire aux comptes le 4 mai 2010. La marque gagnante était d'origine canadienne. Elle avait été posée sur un smolt de saumon dans la rivière Restigouche au Canada le 18 Mai 2008, lors d'une étude visant à estimer la production dans l'eau douce et à contribuer par ailleurs au programme SALSEA Amérique du Nord. Le projet de surveillance des smolts en aval de la Rivière Restigouche était une initiative entreprise conjointement entre le Ministère des Pêches

et des Océans et la Première Nation de Listijug. Le poisson avait été capturé à nouveau au Groenland Occidental le 7 septembre 2009. M. Per Nukaaraq Hansen de Ivittuut au Groenland a remporté le prix de 1 500 dollars (US).

9. Recommandations au Conseil dans le cadre de l'avis scientifique émanant du CIEM

9.1 La Commission a accepté la demande au CIEM de recommandations scientifiques, telle qu'elle avait été préparée par le Comité Scientifique Permanent pour la zone de la Commission du Groenland Occidental. La demande au CIEM de recommandations scientifiques, approuvée par le Conseil, figure dans le document CNL(10)10 (annexe 6).

10. Divers

10.1 Aucune autre question n'a été traitée.

11. Date et lieu de la prochaine réunion

11.1 La Commission a convenu de tenir sa prochaine réunion en même temps et au même endroit que la Vingt-huitième réunion annuelle du Conseil, en 2011.

12. Compte rendu de la réunion

12.1 La Commission a accepté le compte rendu de la réunion.

Note: Une liste des documents de la Commission du Groenland Occidental figure à l'annexe 7.

Annex 1

Joint NGO Opening Statement to the West Greenland Commission

I am pleased to present the joint opening statement on behalf of the NGO Group.

The NGOs commend NASCO and Greenland for the continuing agreement to suspend Greenland's commercial fishery for wild Atlantic salmon. The internal-use fishery, on the other hand, is a growing concern. It is more like an internal commercial fishery with sales to open air markets and shops, rather than a subsistence fishery intended for the personal consumption of the fishermen and their families. It is not restricted by NASCO quota and has steadily increased from 9 tonnes in 2003 to 26.3 tonnes in 2009. Genetic studies indicate that 91% (7,000) of the salmon caught in 2009 were of North American origin.

There are threatened and endangered populations in the United States, Canada and southern Europe that migrate to Greenland, where they are killed by indiscriminate mixed-population fisheries. The loss of just one salmon from an endangered run has drastic repercussions for salmon populations that countries are attempting to recover at considerable time and expense. As the internal-consumption fishery grows so grows the threat of wiping out entire river runs.

We urge NASCO to implement measures to better quantify, monitor and control the internal-consumption fishery at Greenland to keep it at the lowest level possible.

Annex 2

WGC(10)7

Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Nomination of a Rapporteur
4. Election of Officers
5. Review of the 2009 Fishery and ACOM Report from ICES on Salmon Stocks in the Commission Area
6. Regulatory Measures
7. Sampling in the West Greenland Fishery
8. Announcement of the Tag Return Incentive Scheme Prize
9. Recommendations to the Council on the Request to ICES for Scientific Advice
10. Other Business
11. Date and Place of Next Meeting
12. Report of the Meeting

Annex 3

WGC(10)9

The 2009 Fishery at West Greenland
(tabled by Denmark (in respect of the Faroe Islands and Greenland))

At the Annual Meeting of NASCO in June 2009, the West Greenland Commission agreed to restrict the catch of Atlantic salmon at West Greenland to that amount used for internal subsistence consumption in Greenland. Furthermore, no commercial export of salmon was allowed.

In accordance with the Regulatory Measure adopted by the West Greenland Commission, the Government of Greenland decided to set the national quota for commercial landings of Atlantic salmon to fishing plants to zero tonnes, and prohibited any export of salmon from Greenland in 2009. Only a subsistence fishery was allowed, i.e. fishery for private consumption, and fishery with the aim of supplying local open air markets, hotels and institutions. And this is only allowed for professional fishermen with licences.

In 2009, the fishery was opened at the beginning of August and closed at the end of October. During this period a total catch of 26.3 tonnes of salmon was reported to the Greenland Fishery Licence Control (GFLK). Of this, 14.7 tonnes were reported by licensed fishermen as sold at open air markets etc, and 11.6 tonnes were reported as used for private consumption.

The fishery is regulated in the Greenland Home Rule Executive Order No 21 of August 10 2002 on the Salmon Fishery. The Executive Order distinguishes between 1) commercial fishery for Atlantic salmon to be landed at fish plants, 2) subsistence fishery by residents of Greenland, and 3) rod fishery by tourists/non-residents.

All fishermen who wish to sell Atlantic salmon must hold a licence issued by GFLK. In 2009, 262 licences were issued, but only 64 of these were utilized for selling according to the reports to GFLK.

All catches of Atlantic salmon must be reported to GFLK. The catches were either sold at local open air markets or to local institutions, hotels etc, or kept for private consumption.

The wildlife and fisheries officers of GFLK make random checks at local markets in towns and settlements along the west coast of Greenland, and in hotels, restaurants, shops etc. in order to compare purchase of salmon with reported catches. In 2009, the wildlife and fisheries officers once again have put a lot of effort into handing out reporting forms to all fishermen whom they have observed fishing for salmon, and informing them that all catches must be reported to GFLK.

The Government of Greenland is considering ways of improving the catch reports and also changing the report to make it more useful according to collecting biological data. The Department of Fisheries, Hunting and Agriculture will continue the work reminding fishermen to report salmon catches. This will be done transmitting TV spots during the salmon season to remind the fishermen about the gear allowed and to report catches.

Annex 4

WGC(10)3

Report on the Use of the Framework of Indicators in 2010

1. At its 2009 Annual Meeting, in Molde, Norway the West Greenland Commission adopted a regulatory measure (WGC(09)7) for the fishing of salmon at West Greenland in 2009, with possible application in 2010 and 2011. Under this measure the catch at West Greenland in 2009 was restricted to the amount used for internal consumption in Greenland, which in the past has been estimated to be 20 tonnes annually. There would be no commercial export of salmon. The regulatory measure would also apply in 2010 and 2011 if the framework of indicators (FWI) developed by ICES indicates that there has not been a significant change in the indicators and, therefore, that reassessment of the catch advice is required.

2. The Commission had agreed that the same procedure used in 2008 for applying the FWI should apply to the new regulatory measure, WGC(09)7. Under this arrangement a small group comprising one representative from each member of the Commission would work by correspondence to coordinate the data collection and application of the FWI. The Secretariat would liaise with the Group's Coordinator and would report the Group's findings to the Parties and to ICES in January 2010.

3. In accordance with this decision each WGC Party was asked to nominate a representative to serve on the FWI Working Group. The representatives appointed were Gerald Chaput (Canada), Julius Peedah (Denmark (in respect of the Faroe Islands and Greenland)), Ted Potter (European Union) and Rory Saunders (USA). Rory Saunders served as the coordinator. The Group's conclusions were that the FWI indicated that no reassessment of the management advice previously provided by ICES in 2009 is required for the 2010 fishery at West Greenland. This means that the multi-annual regulatory measure agreed in 2009 will continue to apply to the 2010 fishery and there will not, therefore, be a need for negotiations on a new measure at the Twenty-Seventh Annual Meeting. It also means that, in accordance with the request for scientific advice adopted by the Council last year, ICES is not be required to provide advice on stock status or management options for either the NAC or WGC areas.

4. The arrangement appeared to work well and within the timescale proposed by the Commission. We are grateful to the Group for its work. A full report will be presented to the Commission in June.

Annex 5

WGC(10)4

West Greenland Fishery Sampling Agreement, 2010

The West Greenland Commission recognizes the important contribution of sound biological data to science-based management decisions for fisheries prosecuted in the West Greenland Commission area. The Parties in the West Greenland Commission have worked cooperatively over the past three decades to collect biological data on Atlantic salmon harvested at West Greenland. These data provide valuable inputs to the stock assessment completed by the International Council for the Exploration of the Sea's (ICES) North Atlantic Salmon Working Group annually.

ICES, the International Atlantic Salmon Research Board and its Scientific Advisory Group, and NASCO all endorse taking additional samples from fish captured in the internal-use only fishery in Greenland. This Enhanced Sampling Program, SALSEA West Greenland, requires whole fresh fish and is recognized as complementary to SALSEA Merge and SALSEA North America, which collectively hold promise in providing insights into the critical marine portion of the salmon's life cycle. The whole fresh fish required for scientific analysis (e.g. stomach content, isotope analysis) would be fish that are part of the existing internal-use fishery. Strong coordination and cooperation with the Government of Greenland and Kalaallit Nunaanni Aalisartut Piniartullu Kattuffiat (KNAPK) in carrying out this scientific research program is required to fully integrate the sampling program into the internal-use fishery.

The objectives of the sampling programme in 2010 are to:

- Continue the time series of data (1969-2009) on continent of origin and biological characteristics of the salmon in the West Greenland Fishery

- Provide data on mean weight, length, age and continent of origin for input into the North American and European run-reconstruction models

- Collect information on the recovery of internal and external tags

- Collect additional biological samples from fresh whole fish in support of SALSEA West Greenland or other special samples as requested

To this end, the sampling programme in 2010 will collect:

- Biological characteristics data including lengths and weights of landed fish
- Information on tags, fin clips, and other marks
- Scale samples to be used for age and growth analyses
- Tissue samples to be used for genetic analyses
- Various other biological samples (e.g. stomach content, isotope analysis) in support of SALSEA West Greenland
- Other biological data requested by the ICES scientists and NASCO cooperators

External Staffing Inputs:

Parties external to Greenland with interests in the mixed-stock fishery at West Greenland, including Canada, the European Union, and the United States, have historically provided personnel and analytical inputs into the cooperative sampling programmes. The NASCO Parties agree to provide the following inputs to the cooperative sampling programme at West Greenland during the 2010 fishing season:

- The European Union[1] agrees to provide a minimum of 6 person weeks[2] to sample Atlantic salmon at West Greenland during the 2010 fishing season
- Canada agrees to provide a minimum of 2 person weeks[2] to sample Atlantic salmon at West Greenland during the 2010 fishing season
- The United States agrees to provide a minimum of 4 person weeks[2] to sample Atlantic salmon at West Greenland during the 2010 fishing season
- The United States agrees to co-ordinate the sampling programme for 2010
- The United States agrees to provide funding for Greenland Institute of Natural Resources staff to provide in-country support of the sampling program
- The Government of Greenland, in cooperation with the Greenland Institute of Natural Resources, agrees to provide support for the sampling program by facilitating the sampling of Atlantic salmon by the samplers identified above.

In addition, NASCO Parties agree to provide the following technical support for sample analysis and data collected at West Greenland:

- The United States agrees to provide microsatellite DNA analysis of tissue samples collected from Atlantic salmon harvested at West Greenland

- The United States agrees to provide oversight for the processing of all collected biological samples

- The United States agrees to report the sampling program results to the ICES North Atlantic Salmon Working Group in support of the stock assessment completed by the ICES North Atlantic Salmon Working Group

- The United States agrees to report the sampling program results to all SALSEA partners

- Canada agrees to provide ageing of scale samples collected from Atlantic salmon harvested at West Greenland

- Canada agrees to maintain the historical West Greenland sampling database

- The European Union (UK (England & Wales)) agrees to act as a clearing house for coded wire tags recovered from the fishery

[1] The Republic of Ireland and the United Kingdom.
[2] For the purposes of this agreement, a person week of sampling is defined as a trained individual who works on site in West Greenland to collect samples of Atlantic salmon for a period of 7 days.

Government of Greenland Coordination Efforts:

The Government of Greenland agrees to identify a mechanism to provide sampling access to landed Atlantic salmon before grading/culling and before fish are subject to health regulations that would restrict or prohibit activities associated with sampling.

The Government of Greenland agrees to inform persons designated by cooperating NASCO Parties of important developments in the management of the West Greenland fishery including planned openings and closures of the Atlantic salmon fishery at West Greenland.

The Government of Greenland agrees to provide necessary waivers to the regulation that Atlantic salmon must be landed in a gutted condition to allow for the collection of biological samples in support of SALSEA West Greenland. To facilitate land-based collection of these biological samples, the Government of Greenland agrees to provide the necessary permits to allow for landing whole fresh salmon.

The allocation of available scientific sampling personnel will be determined annually by ICES scientists to provide spatial and temporal coverage to characterize both the fishery and the Atlantic salmon populations along the West Greenland coast. Parties participating in the cooperative sampling programme will share access to resulting data and work cooperatively in the publication of information.

Annex 6

CNL(10)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, including unreported catches by country and catch and release, and production of farmed and ranched Atlantic salmon in 2010[1];

1.2 report on significant new or emerging threats to, or opportunities for, salmon conservation and management[2];

1.3 report on significant advances in our understanding of associations between changes in biological characteristics of all life stages of Atlantic salmon and ecosystem changes with a view to better understanding the dynamics of salmon populations[3];

1.4 further develop approaches to forecast pre-fishery abundance for North American and European stocks with measures of uncertainty;

1.5 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;[4]

1.6 provide a compilation of tag releases by country in 2010 and advise on the utility of maintaining this compilation;

1.7 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 2010 fisheries[5];

2.2 review and report on the development of age-specific stock conservation limits;

2.3 describe the status of the stocks and provide annual catch options or alternative management advice for 2012-2014, 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];

2.4 further investigate opportunities to develop a framework of indicators or alternative methods that could be used to identify any significant change in previously provided multi-annual management advice.

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

3.1 describe the key events of the 2010 fisheries (including the fishery at St Pierre and Miquelon) [5];

3.2 update age-specific stock conservation limits based on new information as available;

3.3 describe the status of the stocks;

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

3.4 provide annual catch options or alternative management advice for 2011-2014 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].

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

4.1 describe the key events of the 2010 fisheries [5];
4.2 describe the status of the stocks [7];

In the event that NASCO informs ICES that the framework of indicators (FWI) indicates that reassessment is required:*

4.3 provide annual catch options or alternative management advice for 2010-2012 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].

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.*
2. *With regard to question 1.2, ICES is requested to include information on any new research into the migration and distribution of salmon at sea and on the potential impacts of the development of alternative/renewable energy on Atlantic salmon.*
3. *With regard to question 1.3, there is particular interest in determining if declines in salmon abundance coincide with changes in the biological characteristics of juveniles in fresh water or are modifying characteristics of adult fish (size at age, age at maturity, condition, sex ratio, growth rates, etc.) and with environmental changes including climate change.*
4. *With regard to question 1.5, ICES is requested to include information on best solutions for fish passage and associated mitigation efforts with examples of practices in member countries.*
5. *In the responses to questions 2.1, 3.1 and 4.1, ICES is asked to provide details of catch, gear, effort, composition and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Any new information on non-catch fishing mortality, of the salmon gear used, and on the by-catch of other species in salmon gear, and on the by-catch of salmon in any existing and new fisheries for other species is also requested.*
6. *In response to questions 2.3, 3.4 and 4.3, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice.*
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.*

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

Annex 7

List of West Greenland Commission Papers

WGC(10)01	Provisional Agenda
WGC(10)02	Draft Agenda
WGC(10)03	Report on the Use of the Framework of Indicators in 2010
	WGC(10)04 West Greenland Fishery Sampling Agreement, 2010
WGC(10)05	Draft Report
WGC(10)06	Report of the Twenty-Seventh Annual Meeting of the West Greenland Commission
	WGC(10)7 Agenda
WGC(10)8	ICES Presentation to the West Greenland Commission
WGC(10)9	Report on the 2009 Fishery

Report of the ICES Advisory Committee (Sections 3 to 6 only)

3. North East Atlantic Commission

Conservation limits (CLs) have been defined by ICES as the level of stock that will achieve long-term average maximum sustainable yield (MSY). NASCO has adopted this definition of CLs (NASCO, 1998). The CL is a limit reference point; having populations fall below these limits should be avoided with high probability. However, management targets have not yet been defined for all Atlantic salmon stocks.

Therefore:

- ICES considers homewater stocks in the NEAC Commission to be at full reproductive capacity only if the lower boundary of the confidence interval of the most recent spawner estimate is above the CL. In a similar manner, the status of stocks prior to the commencement of distant water fisheries has been interpreted to be at full reproductive capacity only if the lower boundary of the confidence interval of the most recent PFA estimate is above the Spawner Escapement Reserve (SER).
- ICES considers a stock to be at risk of suffering reduced reproductive capacity when the lower boundary of the confidence limit is below the CL/ SER, but the midpoint is above.
- ICES considers a stock to be suffering reduced reproductive capacity when the midpoint is below the CL/SER.

For catch advice on fish exploited at West Greenland (non-maturing 1SW fish from North America and non-maturing 1SW fish from Southern NEAC), ICES has used the risk level of 75% that is part of the agreed management plan (ICES, 2003).

For stock assessment purposes, ICES groups NEAC stocks into two stock groupings: Northern and Southern NEAC stocks. The composition of these groups is shown below:

SOUTHERN NEAC	NORTHERN NEAC
Ireland	Finland
France	Norway
UK (England and Wales)	Russia
UK (Northern Ireland)	Sweden
UK (Scotland)	Iceland (north/east regions) [3]
Iceland (south/west regions)[1]	

3.1 Status of stocks/exploitation

The status of stocks is shown in Figure 3.1.1.

ICES classifies the status of stock complexes prior to the commencement of distant water fisheries with respect to the SER requirements as follows:

[3] The Iceland stock complex was split into two separate complexes for stock assessment purposes in 2005. Prior to 2005, all regions of Iceland were considered to contribute to the Northern European stock complex.

- Northern European 1SW stock complex is considered to be at full reproductive capacity.
- Northern European MSW stock complex is considered to be at full reproductive capacity.
- Southern European 1SW stock complex is considered to be suffering reduced reproductive capacity.
- Southern European MSW stock complex is considered to be at risk of suffering reduced reproductive capacity.

Estimated exploitation rates have generally been decreasing over the time period for both 1SW and MSW stocks in Northern and Southern NEAC areas (Figure 3.1.2 and Figure 3.1.3). Exploitation on Northern 1SW stocks is higher than on Southern 1SW and considerably higher for MSW stocks. The current estimates for both stock complexes are amongst the lowest in the time series.

Despite management measures aimed at reducing exploitation in recent years there has been little improvement in the status of stocks over time. This is mainly as a consequence of continuing poor survival in the marine environment attributed to climate effects (Friedland et al. 2009). Efforts continue to improve our understanding of causal relationships contributing to marine mortality.

3.2 Management objectives

This Commission area is subject to the general NASCO management objectives as outlined in Section 1.3.

3.3 Reference points

Section 1.4 describes the derivation of reference points for these stocks and stock complexes.

3.3.1 National conservation limits

The national model has been run for all countries that do not have river-specific CLs (i.e. all countries except France, Ireland, and UK (England & Wales)).

Iceland, Russia, Norway, UK (N. Ireland), and UK (Scotland) have provided regional input data for the PFA analysis (1971–2009). For these countries the lagged spawner analysis has been conducted by region. The regional results were combined to estimate CLs based on a pseudo stock–recruitment relationship for the country. Outputs from the national model are only designed to provide a provisional guide to the status of stocks in the NEAC area.

To provide catch options to NASCO, CLs are required for stock complexes. These have been derived either by summing of individual river CLs to national level, or by taking overall national CLs, as provided by the national model and then summing to the level of the four NEAC stock complexes. For the NEAC area, the CLs have been calculated by ICES as:

Northern NEAC 1SW spawners – 218 842
Northern NEAC MSW spawners – 131 152
Southern NEAC 1SW spawners – 625 652
Southern NEAC MSW spawners – 268 920

3.3.2 Progress with setting river-specific conservation limits

In Norway, CLs have been set for 439 rivers since 2007. The CLs are based on stock recruitment relationships in nine rivers. Productivity is mostly based on catch statistics, and scale samples are used to assess the river age and sea age structure in a sub set of the populations. To derive the CLs, wetted areas have been computed from digital maps and analysis of river length accessible to adult fish. CLs for salmon populations are grouped into four categories of egg densities, approximately 1, 2, 4 and 6 eggs/ m^2 wetted area. Most of the rivers fall into the 2 and 4 eggs/ m^2 wetted area categories.

Based on data from 1993 to 2008 the attainment of CLs was evaluated in 180 Norwegian rivers, and advices on exploitation were given for 153 of them. Of the 153 populations, 56 populations were given advice 1 (harvest rates appear sustainable), 34 were given advice 2 (harvest rates should be moderately reduced), 34 were given advice 3 (harvest rates should be considerably reduced) and 29 were given advice 4 (harvest rates should be substantially reduced). For 97 of 153 populations, corresponding to 63 %, the advice given was for reduced harvest rates.

3.4 Management advice

ICES has been asked to provide catch advice, if possible based on a forecast of PFA, with an assessment of risks relative to the objective of exceeding stock CLs in the NEAC area.

ICES emphasized that the national stock CLs discussed above are not appropriate for the management of homewater fisheries, particularly where these exploit separate river stocks. This is because of the relative imprecision of the national CLs and because they will not take account of differences in the status of different river stocks or sub-river populations. Nevertheless, ICES agreed that the combined CLs for the main stock groups (national stocks) exploited by the distant water fisheries could be used to provide general management advice to the distant water fisheries.

Given the current (from the NEAC run reconstruction model) and forecasted (from the Bayesian forecast models) abundances, ICES provides the following advice on management:

- **Northern European 1SW stocks:** ICES considers that in the absence of specific management objectives for this stock complex the precautionary approach is to fish only on maturing 1SW salmon from rivers where stocks have been shown to be at full reproductive capacity. Furthermore, due to the different status of individual stocks within the stock complex, mixed stock fisheries present particular threats to stock status. The newly developed Bayesian forecast model shows that the lower bounds of the forecasted PFA for 2010 to 2013 are below SER indicating that the stock

may be at risk of suffering reduced reproductive capacity prior to the commencement of distant water fisheries.

- **Northern European MSW stocks:** ICES considers that in the absence of specific management objectives for this stock complex the precautionary approach is to fish only on non-maturing 1SW salmon from rivers where stocks have been shown to be at full reproductive capacity. Furthermore, due to the different status of individual stocks within the stock complex, mixed stock fisheries present particular threats to stock status. The newly developed Bayesian forecast model shows that the lower bounds of the forecasted PFA for 2009 to 2013 are below SER indicating that the stock may be at risk of suffering reduced reproductive capacity prior to the commencement of distant water fisheries.
- **Southern European 1SW stocks:** ICES considers that in the absence of specific management objectives for this stock complex the precautionary approach is to fish only on maturing 1SW salmon from rivers where stocks have been shown to be at full reproductive capacity. Furthermore, due to the different status of individual stocks within the stock complex, mixed stock fisheries present particular threats to stock status. The newly developed Bayesian forecast model shows that the lower bounds of the forecasted PFA for 2010 to 2013 are below SER indicating that the stock may be at risk of suffering reduced reproductive capacity prior to the commencement of distant water fisheries.
- **Southern European MSW stocks:** ICES considers that in the absence of specific management objectives for this stock complex, with the exception of the West Greenland fishery, the precautionary approach is to fish only on non-maturing 1SW salmon from rivers where stocks have been shown to be at full reproductive capacity. Furthermore, due to the different status of individual stocks within the stock complex, mixed stock fisheries present particular threats to stock status. There are no catch options at West Greenland that would allow the management objectives to be met for this stock complex. The newly developed Bayesian forecast model shows that the lower bounds of the forecasted PFA for 2009 to 2013 are below SER indicating that the stock may be at risk of suffering reduced reproductive capacity prior to the commencement of distant water fisheries.

3.5 Relevant factors to be considered in management

Fisheries on mixed stocks pose particular difficulties for management, when they cannot target only stocks that are at full reproductive capacity. The management of a fishery should ideally be based upon the status of all stocks exploited in the fishery. Conservation would be best achieved if fisheries target stocks that have been shown to be at full reproductive capacity. Fisheries in estuaries and especially rivers are more likely to meet this requirement.

ICES also emphasised that the national stock CLs discussed above are not appropriate for the management of homewater fisheries. This is because of the relative imprecision of the national CLs which do not take account of differences in the status of different river stocks or sub-river populations, and because of the capacity of homewater fisheries to target specific stocks. Nevertheless, ICES agreed that the combined CLs for

national stocks exploited by the distant water fisheries could be used to provide general management advice at the level of the stock complexes.

It should also be noted that the inclusion of farmed fish in the Norwegian data could result in the stock status being overestimated.

3.6 Pre-fishery abundance forecasts

ICES previously used a regression model to forecast PFA of non-maturing (potential MSW) salmon from the Southern European stock group (ICES, 2002, 2003, 2009a). In 2009 this was superseded by a new forecast model developed in a Bayesian framework which produced forecasts for all four NEAC stock complexes.

3.6.1 Pre-fisheries abundance forecasts

In 2010, ICES ran the new Bayesian forecast models for the Southern NEAC and Northern NEAC complexes. The two models have the same structure and are run independently (ICES, 2009a).

For both Southern and Northern NEAC complexes, forecasts for maturing stocks were derived for 4 years of lagged spawners starting from 2010 to 2013 and for non-maturing stocks for 5 years, from 2009 to 2013. Risks were defined each year as the posterior probability that the PFA would be below the age and stock specific SER levels. For illustrative purposes, risk analyses were derived based on the probability that the PFA abundance would be greater than or equal to the SER under the scenario of no exploitation

3.6.2 Results of the NEAC Bayesian forecast models

The trends in the posterior estimates of PFA for both the Southern NEAC and Northern NEAC complexes closely match the PFA estimates derived from the run reconstruction model.

For the Southern NEAC stock complex, the productivity parameters for the maturing and non-maturing components peaked in 1985 and 1986, and reached the lowest values in 1997 (Figure 3.6.2.1). There was a sharp drop in the productivity parameter during 1989 to 1991 and the median values post-1991 are all lower than during the previous time period.

Over the entire time series, the maturing proportions averaged about 0.6 with the lowest proportion in 1980 and the highest proportion in 1998 (Figure 3.6.2.2). There is an increasing trend in the proportion maturing (8 of 13 values below the average during 1978 to 1990 compared with 4 of 17 values between 1991 and 2007). The total PFA (maturing and non-maturing 1SW salmon at January 1st of the first winter at sea) for the Southern NEAC complex ranged from 3 to 4 million fish between 1978 and 1989, declined rapidly to just over 2 million fish in 1990, and fell to its lowest level of just over one million fish in 2008 **(**Figure 3.6.2.3).

For the Northern NEAC complex, peak PFA abundance was estimated at about 2 million fish in year 2000 with the lowest value of the series in 2008 at over 1 million fish (Figure 3.6.2.4). The proportion maturing has varied around 0.55 over the time

series but in 2007 there was an abrupt drop in the proportion maturing to below 0.35. This showed some recovery in 2008 to around 0.44, though still below the 1991 to 2006 level (Figure 3.6.2.2).

The productivity parameter is higher for maturing 1SW salmon than for the non-maturing component in both stock complexes, with the separation being larger in the Southern NEAC complex (Figure 3.6.2.1).

Forecasts from these models into 2009 to 2013 for the non-maturing age group and for 2010 to 2013 for the maturing age group were developed within the Bayesian model framework. Variations in the median abundance over the forecasts are related to variations in lagged eggs (Figure 3.6.2.5) as the productivity parameters are set at the level of the last year with available data (Figures 3.6.2.1). The variability in the productivity parameters increased sequentially over the forecasts.

For the Southern NEAC stock complex, the 25th percentiles of the posterior distributions of the forecasts are below the SER for both the maturing and non-maturing age components (Figures 3.6.2.3). The abundances of the Northern NEAC age components have declined over the 1983 to 2009 time period. The lower bound of the 95% Bayesian credible interval has fallen below the age-specific SERs for 2010 to 2013 but the expectation is for the 2009 abundance of maturing and non-maturing salmon to remain above the SER (Figures 3.6.2.4).

3.6.3 Probability of attaining PFA above SER

The structure of the previously used regression forecast model generally led to a forecast of declining PFA with time, a pattern not apparent in the Bayesian model output (ICES, 2009a).

Probabilities that the PFAs will be above or equal to SERs in 2009 to 2013 from the Bayesian model are given in the table below. Probabilities are lower for the Southern complex, ranging from 0.62 to 0.78. In the Northern complex probabilities range from 0.821 to 0.975.

PROBABILITY THAT PFAS WILL BE GREATER THAN OR EQUAL TO THE COMPLEX AND AGE SPECIFIC SERS

SOUTHERN COMPLEX		MATURING	NON-MATURING
	SER	795 360	454 753
Year		*P*	*p*
2009		0.735	0.780
2010		0.641	0.689
2011		0.699	0.741
2012		0.668	0.710
2013		0.602	0.648
NORTHERN COMPLEX		**MATURING**	**NON-MATURING**
	SER	276 140	221 590
Year		*p*	*p*
2009		0.964	0.975
2010		0.856	0.900
2011		0.842	0.886
2012		0.821	0.868
2013		0.840	0.881

3.6.4 Use of the NEAC Bayesian forecast models in catch advice

In the absence of specific management objectives for the Faroes fishery, ICES requires that the lower bound of the 95% confidence interval of the PFA estimate be above the SER for the stock to be considered at full reproductive capacity. ICES noted that for both the northern and Southern NEAC stock complexes the Bayesian models predicts the 97.5 percentile (equivalent to the lower 95% confidence interval) as being below the respective SER in all forecast years, except for non-maturing 2009 Northern NEAC complex which is barely above the SER (at 221 590) by 410. It is also noteworthy that for the Southern NEAC the 25th percentiles, in all but the non-maturing 2009 instance, fall below the respective SER. For the West Greenland Commission area, the probability of achieving management objectives has been set to 75%.

3.7 Comparison with previous assessment

3.7.1 National PFA model and national conservation limit model

Provisional catch data for 2008 were updated where appropriate and provisional data for 2009 were incorporated into the assessment. A correction was made to the way that the catch of Scottish salmon in the English NE coast fishery is added into the Scottish assessment; this has resulted in a decrease in the estimates of returns and PFA for Scotland of 3–19%; this has also affected the conservation limit estimate. Exploitation rates for UK(England & Wales) for the period 1998 to 2009 were recalculated on the basis of utilised fishing effort (days or tides fished) rather than the licence numbers used previously; this has resulted in a small decrease in the exploitation rate values used for more recent years, thereby increasing the estimates of returns and PFA.

3.8 NASCO has requested ICES to describe the key events of the 2009 fisheries and the status of the stocks

3.8.1 Fishing at Faroes in 2008/2009

No fishery for salmon has been prosecuted since 2000.

3.8.2 Significant events in NEAC homewater fisheries in 2009

In several countries, measures aimed at reducing exploitation were implemented or extended in 2009. These include a reduction of net fisheries in UK (England & Wales) and the introduction of a carcass tagging scheme for net caught fish, a reduction in the extent of mixed-stock fisheries in Norway and the introduction of regulations in Russia aimed at controlling exploitation.

3.8.3 Gear and effort

No significant changes in the types of gear used for salmon fishing were reported in the NEAC area in 2009. The number of licensed gear units has, in most cases, continued to fall although there are no such consistent trends for the rod fishing effort in NEAC countries over this period.

3.8.4 Catches

The NEAC area has seen a general reduction in catches since the 1980s (Section 2.1.1). This reflects the decline in fishing effort as a consequence of management measures as well as a reduction in the size of stocks. The provisional reported catch in the NEAC area in 2009 was 1151 tonnes, 25% lower than the 2008 value (1533 t) and 34% lower than the previous 5-year mean (1757t). The catch in the Southern area has declined over the period from about 4500 t in 1972–75 to below 1000 t since 2003 and is now well below 300 t. The catch showed marked declines in 1976, 1989–91. The catch in the Northern area also indicated an overall decline over the time series, although this decrease was less distinct than the reductions noted in the Southern area. The catch in the Northern area varied between 2000 and 2800 t from 1971 to 1988, fell to a low of 962 t in 1997 and then increased to over 1600 t in 2001 although it has exhibited a downward trend since this time. Thus, the catch in the Southern area, which comprised around two-thirds of the total NEAC catch in the early 1970s, has been lower than that in the Northern area since 1999.

3.8.5 Catch per unit effort (CPUE)

CPUE can be influenced by various factors, and it is assumed that the CPUE of net fisheries is a more stable indicator of the general status of salmon stocks than rod CPUE since the latter may be more affected by varying local factors.

An overview of the cpue data for the NEAC area was undertaken. In the Southern NEAC area, CPUE show a general decrease in UK (Scotland) and UK (England & Wales) net fisheries. CPUE for the net fishery showed mostly lower values compared to 2008 and the previous 5-year averages. In the Northern NEAC area, there has been an increasing trend in CPUE figures for the Russian rod fisheries in both the Barents and White Sea rivers. A decreasing trend was noted for rod fisheries in Finland (River Teno) and for the Norwegian net fisheries.

3.8.6 Age composition of catches

1SW salmon comprised 58% of the total catch in the Northern area in 2009 which was the same as the previous 5-year mean (58%) and below the previous 10-year mean (60%). In general, there has been greater variability in the proportion of 1SW fish between countries in recent years (since 1994) than prior to this time. For the Southern European countries, the overall percentage of 1SW fish in the catch (54%) is below the 5- and 10-year means (both 59%).

3.8.7 Farmed and ranched salmon in catches

The contribution of farmed and ranched salmon to national catches in the NEAC area in 2009 was again generally low in most countries, with the exceptions of Norway, Iceland and Sweden, and is similar to the values that have been reported in previous years (e.g. ICES, 2009a). Thus, the occurrence of such fish is usually ignored in assessments of the status of national stocks. However, in Norway farmed salmon continue to form a large proportion of the catch in those fisheries which have been sampled (29% in coastal fisheries, 36% in fjordic fisheries and 8% in rod fisheries). The number of coastal and fjordic fisheries sampled in 2009 was lower than in previous years and incidence of framed fish in these fisheries is thought to be an overestimate of

the overall picture. An assessment of the likely effect of these fish on the output data from the PFA model has been reported previously (ICES, 2001).

The release of smolts for commercial ranching purposes ceased in Iceland in 1998, but ranching for rod fisheries in two Icelandic rivers continued into 2009. In 2009 42 t were reported as ranched salmon in contrast to 121 t harvested as wild.

Ranching occurs on a much smaller scale in other countries and the ranched component of the catch in these countries has therefore been included in the nominal catch.

3.8.8 National origin of catches

Evidence of Russian origin salmon being caught in coastal mixed-stock fisheries in northernmost Norway have been reported in previous years (e.g. ICES, 2009a). Norway has recently decreased fishing effort in coastal areas and available information shows a decline in the number of fishing days and in the number of fishermen operating in marine waters of Finnmark County. However, there are still extensive salmon fisheries operating in this coastal area which are very likely to exploit Russian salmon. In 2009, a joint Russian and Norwegian project began, the aims of which included establishing a baseline genetic characterization of salmon populations which could be used for estimating the composition of mixed stock fisheries in the area. (see section 2.4.5). This work will continue under the Joint Russian-Norwegian Scientific Research Program on Living Marine Resources in 2010 (Appendix 10 of the 38th Joint Russian-Norwegian Fishery Commission).

Data on catches of salmon originating from other countries in Ireland have been reported in previous years (e.g. ICES, 2007c). In 2007, following the closure of the mixed stock fishery only a single tag from UK(N. Ireland) was recovered and one tag of Irish origin was taken in Scottish waters. In 2008, no tags of foreign origin were recovered in the Irish tag scanning programme most likely due to the closer proximity of the existing fisheries to estuaries or rivers. In 2009, one tag was recovered from a River Bush (UK(N. Ireland)) origin fish.

3.8.9 Trends in the PFA for NEAC stocks

In the evaluation of the status of stocks in Figure 3.1.1, estimated recruitment (PFA) values should be assessed against the SER values, while the estimated spawning escapement values should be compared with the CL.

Northern European 1SW and MSW stocks: Recruitment patterns of maturing 1SW salmon and of non-maturing 1SW recruits for Northern Europe (Figure 3.1.1) show broadly similar patterns. The general decline over the time period is interrupted by a short period of increased recruitment from 1998 to 2003. Both stock complexes have been at full reproductive capacity prior to the commencement of distant water fisheries throughout the time series. Trends in spawner number for the Northern stock complexes for both 1SW and MSW are similar. Throughout most of the time series, both 1SW and MSW spawners have been either at full reproductive capacity or at risk of reduced reproductive capacity. However, over the recent period 2007 to 2009, the 1SW spawner estimate indicated that the stock complex was suffering reduced reproductive capacity. These patterns are broadly consistent with the general pattern of decline in marine survival of 1SW and 2SW returns in most monitored stocks in the area (Section 3.8.10).

Southern European 1SW and MSW stocks: Recruitment patterns of maturing 1SW salmon and of non-maturing 1SW recruits for Southern Europe (Figure 3.1.1) show broadly similar declining trends over the time period. The maturing 1SW stock complex has been at full reproductive capacity over most of the time period with the exception of 2008, when it was at risk of suffering reduced reproductive capacity, and in 2009, when it was suffering reduced reproductive capacity, prior to the commencement of distant water fisheries. The non-maturing 1SW stock has been at full reproductive capacity over most of the time period but has been at risk of suffering reduced reproductive capacity before any fisheries took place in ten of the thirteen years between 1996 and 2009. Declining trends in spawner number are evident in the Southern stock complexes for both 1SW and MSW. The 1SW stock has been at risk of reduced reproductive capacity or suffering reduced reproductive capacity for most of the time series. In contrast, the MSW stock has been at full reproductive capacity for most of the time series until 1996 from when the stock was either at risk of reduced reproductive capacity or suffering reduced reproductive capacity. This is broadly consistent with the general pattern of decline in marine survival of 1SW and 2SW returns in most monitored stocks in the area (Section 3.8.10).

3.8.10 Survival indices for NEAC stocks

An overview of the trends of marine survival for wild and hatchery-reared smolts returning to homewaters (i.e. before homewater exploitation) is presented in Figure 3.8.10.1. The survival indices presented are the percent change in return rate between five year averages for the periods 1999 to 2003 and 2004 to 2008 for 1SW salmon, and 1998 to 2002 and 2003 to 2007 for 2SW salmon.

The overall trend in for Northern and Southern NEAC areas, in both wild and hatchery smolts, is indicative of a decline in marine survival. The percentage change between the means of the five year periods varied from a 97% decline to a 212% increase in one river (Fig. 3.8.10.1). However, the scale of change in some rivers is influenced by low total return numbers, where a few fish more or less returning may have a significant impact on the percent change. Most of the survival indices for wild and reared smolts were below the previous 5- and 10-year averages although some increases in survival were detected.

Results from these analyses are consistent with the information on estimated returns and spawners as derived from the PFA model, and suggest that returns are strongly influenced by factors in the marine environment.

3.9 NASCO has requested ICES to further investigate opportunities to develop a framework of indicators that could be used to identify any significant change in previously provided multi-annual management advice

In 2006, ICES provided multi-annual management advice for all three NASCO Commission Areas and presented a preliminary framework (Framework of Indicators - FWI) which would indicate if any significant change in the status of stocks used to inform the previously provided multi-annual management advice had occurred. This FWI was subsequently developed further at the Study Group on Establishing a Framework of Indicators of Salmon Stock Abundance [SGEFISSA] in November 2006 (ICES, 2007b).

ICES (2007c) adopted a FWI for the Greenland fishery based on the seven contributing regions/stock complex with direct links to the three management objectives established by NASCO for that fishery. However, SGEFISSA was unable to develop a FWI for the Faroese fishery for a number of different reasons. Among these were the lack of quantitative catch advice, the absence of specific management objectives and a sharing agreement for this fishery and the fact that none of the available indicator data sets met the criteria for inclusion in the FWI. ICES (2007c) endorsed the SGEFISSA report of applying the FWI in respect of the West Greenland and North American Commissions. However, in the absence of a FWI for the Faroese fishery, it was recommended that annual assessments be conducted to verify the multi-year catch advice.

In 2009, ICES (2009a) updated the NEAC data sets previously examined in the FWI. However, these still did not satisfy the criteria for inclusion in the FWI as being informative of a significant change, since over the time series the PFA estimates have predominately remained above the SER. ICES decided that these data sets would need to be re-evaluated for use in the future, should PFA estimates decline to levels consistently below the limit reference points for each stock complex. Alternatively different approaches to that applied in respect of the Greenland fishery should be explored.

ICES concluded that, as NEAC stocks remained close to their respective SERs, none of the available indicator data sets would meet the criteria for inclusion in the FWI and, additionally, as no alternative approaches had been proposed, the only indication of a change in the status of stocks would be provided by a full assessment of the NEAC stock complexes.

3.10 Development of a risk based framework for the provision of catch advice at the Faroes

3.10.1 The basis for developing a risk assessment framework

ICES has previously developed a risk framework for the provision of catch advice for the West Greenland fishery (WGF) which involves estimating the uncertainty in meeting defined management objectives at different levels of catch (catch options) (ICES, 2009a). The procedure has been accepted by NASCO and employed by ICES in providing catch advice for a number of years (e.g. ICES, 2009a); it could therefore provide the basis for establishing a parallel risk framework for the Faroes fishery.

The analysis of risk involves four steps (ICES, 2009a):

a. identifying the sources of uncertainty;
b. describing the precision of the assessment;
c. defining management objectives; and
d. evaluating the probability of an event (either desirable or undesirable) resulting from the fishery action.

The uncertainties have been identified and quantified in the assessment of PFA for salmon stocks in both the NAC and NEAC areas. NASCO's strategy for the management of salmon fisheries is based upon the principle of ensuring that stocks are above CLs (defined in terms of spawner escapement or egg deposition) with a high

probability. The undesirable event to be avoided is that the spawning escapement after the fisheries will be below the CL.

For the WGF, the risk assessment is based upon management units within two stock complexes (NAC 2SW salmon and NEAC non-maturing 1SW salmon) which are evaluated in parallel and then combined at the end of the process into a single catch options table. The primary inputs to the risk analysis for the WGF are the catch options, PFA forecasts for the years of the fishery and conservation limits for agreed management units. The estimation procedures for PFA in the NAC and NEAC areas have been described in ICES (2009a) and take account of the uncertainty in most (but not all) of the input variables, thereby providing a measure of the uncertainty for the final estimates. The number of fish of NAC and NEAC origin in a given catch is derived from biological sampling data.

3.10.2 Current risk assessment procedure for the West Greenland fishery

The following procedure is used to estimate the probability of meeting the management objectives for each catch option (weight of catch) considered for the WGF:

(i) PFA is estimated for NAC 1SW non-maturing salmon and Southern NEAC non-maturing 1SW salmon using the continental run-reconstruction models and forecasts for three years in advance.

(ii) The weight of the (potential) catch for a particular catch option is converted to numbers of NAC and NEAC fish.

(iii) These numbers are subtracted from the forecast values of the NAC and NEAC stock complexes respectively.

(iv) The North American 'share' which matches the West Greenland catch option is then deducted from the fish that are forecast to escape the Greenland fishery. NASCO has agreed a sharing allocation of 40% to West Greenland to 60% to North America (NASCO 1994), which means that the number of fish deducted at this stage equals the catch option multiplied by 60/40. NASCO has not agreed a sharing allocation for the Southern NEAC stocks exploited at West Greenland, and so ICES has assumed the same sharing allocation as for NAC (See section 3.10.4).

(v) The number of fish forecast to return to home waters after the fishery is then reduced to take account of natural mortality from the time of the WGF to the time they return to rivers in the NAC and NEAC areas.

(vi) The fish forecast to survive to North American homewaters are then distributed among the six regions based on the regional proportions of 2SW returns of the previous five years.

(vii) For each forecast year, the number of fish forecast to escape to each NAC region and to the Southern NEAC area is assessed against the management objective for that region/area.

A risk framework for the development of catch options for the Faroes fishery could be based on similar principles to the WGF framework, but there will be a need for both

management and scientific decisions on the principles to be adopted. The following sections discuss a number of factors that will need to be addressed if a risk framework is established following the general principles developed for the WGF.

3.10.3 Management objectives for the Faroes risk framework

The primary objective of the risk framework will be to meet predetermined management objectives, which will need to be agreed between Parties in NASCO; the following discussion is designed to inform that decision making process.

West Greenland fishery

For management advice for the WGF, NASCO has adopted a pre-cautionary management plan requiring at least a 75% probability of achieving three management objectives:

a. Meeting the CLs simultaneously in the four northern regions of the NAC stock complex: Labrador, Newfoundland, Quebec, and Gulf.

b. Achieving more than a 25% increase in returns relative to a baseline period (1992-1996) for the two southern regions in the NAC stock complex: Scotia-Fundy and USA.

c. Meeting the SER for the Southern NEAC MSW complex.

Faroes fishery

Establishing parallel management objectives for the Faroes fishery will require agreement on:

a. The management units to be employed; and

b. The management objectives for each of those units.

ICES currently provides advice on the status of four NEAC stock complexes, based on two age groups (maturing and non-maturing 1SW salmon) within two geographic regions (Northern NEAC and Southern NEAC). The total conservations limits for these stock complexes are:

Northern NEAC 1SW conservation limit – 218 842
Northern NEAC MSW conservation limit – 131 152
Southern NEAC 1SW conservation limit – 625 652
Southern NEAC MSW conservation limit – 268 920

These CLs for the NEAC stock complexes are considerably larger than the total CL for North American 2SW salmon (152 458). The large size of the NEAC complexes is likely to increase the risks to regional and river stocks in these stock complexes, particularly where these are already in a more depleted state than the average. It is also notable that the overall status of the stocks in each stock complex tends to be dominated by the stocks in one region or country. Thus for example, the PFA of non-maturing 1SW salmon in the Southern NEAC area is dominated by stocks in UK(Scotland), with

the mean PFA for several Southern NEAC countries being significantly less than the average year to year variation observed for Scotland.

Reducing the average size of the management units to the same as that for NAC (i.e. units with CLs of ~25,000) would result in about 50 units. However, ICES is unlikely to be able to provide reliable assessments at this scale (in the short term at least).

ICES currently undertakes the assessment of NEAC stocks at the country/region level, and these might reasonably be defined as the management units for the development of the Faroes risk framework.

A similar management decision to that of WGF could be applied to the Faroes fishery; achieve the CLs simultaneously at a probability level of greater than 75%. This would mirror the approach for the WGF and would be in line with the general principles agreed by NASCO.

3.10.4 Assigning Faroes catches (or catch options) to NEAC management units

The assessment requires the catch in the fishery (i.e. the catch option) to be converted to numbers of fish from the contributing management units.

West Greenland Fishery

Allocation of the WGF catch to continent of origin is based upon data collected in the West Greenland sampling programme which has been running (in various forms) almost every year for over three decades (ICES, 2009a). The allocation requires estimates of the following parameters for future years (the years of the fishery):

- proportion of the catch originating from NAC and NEAC (propNA and propE)
- Mean weight of NAC and NEAC 1SW salmon caught (Wt1SWNA, Wt1SWE)
- A correction factor by weight for the other age groups in the fishery (AFC)

In Step (i) of the WGF risk assessment, it is assumed that these parameters could vary uniformly within the values observed in the past five years.

In Step (v) of the WGF risk assessment the fish forecast to survive to North American homewaters are also distributed among the regions based on the regional proportions of 2SW returns of the previous five years.

Faroes Fishery

Biological data on the catches in the Faroes fishery (age composition and mean weights by sea age) were collected while the commercial fishery operated in the 1980s and for the small research fishery in subsequent years, but no data have been collected since that time. The NEAC PFA assessment currently uses an estimate of the national composition of the stock at Faroes based on historic tagging data; the most recent data employed are at least 15 years old and no account has been taken of any changes in stock abundance among regions.

Initially it will be necessary to base any risk assessment on the best available data derived from historical surveys, sampling and tagging studies. If the Faroes fishery was

re-opened, it might be possible to initiate new sampling programmes and thereby derive more up-to-date parameter values for the assessment.

3.10.5 Stock forecasts for NEAC stock units in the Faroes risk framework

Forecasts must clearly be developed for the stock complexes/units on which the management objectives are based, or for components of these if this allows greater accuracy and/or precision in the forecasts.

The NEAC forecast is currently based on the two stock complexes (northern and Southern NEAC), but because of the wide geographic spread of the rivers in these areas, it may be more appropriate to forecast the stocks for smaller regions (e.g. countries or national regions). Furthermore, if there is a desire to include environmental parameters into the forecast models they may be more appropriately applied at a more regional level, particularly if the post-smolt stage is considered to be a critical phase in the life-cycle. The same modelling approach (e.g. Bayesian model) can be provided to the national or regional data sets.

3.10.6 Sharing arrangement for the Faroes risk framework

Determination of the sharing arrangement is a management decision which will require input from NASCO. The following discussion is designed to inform that decision making process.

NASCO has determined that the allocation of a harvestable surplus of salmon at West Greenland should be based on the average for the period 1986 to 1990 of the harvest share of the potential 2SW salmon of North American origin caught at west Greenland (40%), although the agreement also allows for an alternative proportion to be agreed between the Parties (NASCO, 1994). To date the value of 40% has been used. The baseline period was based on a recent 5 year period, although not the 5 years immediately prior to the agreement; the basis for this choice is not known.

A sharing allocation could be determined in a similar manner for the Faroes fishery on the basis of historic catches (weights) and a similar baseline period. Figure 3.10.6.1 shows the proportions of historic catches (5yr averages for the same cohort) of NAC (2SW), Southern NEAC (all ages) and Northern NEAC (all ages) in the West Greenland, Faroes and homewater fisheries. These data might be considered by managers when determining the sharing allocations for the NEAC stock complexes.

Southern-NEAC non-maturing 1SW stocks are potentially exploited at both Faroes and West Greenland as well as in homewaters and so a three-way sharing allocation should ideally be agreed for this stock complex (Figure 3.10.6.1c). Any decision about a sharing allocation for the Southern NEAC stock complex should also be applied when assessing the West Greenland catch options.

3.10.7 Possible assessment procedure for Faroes

Based on the foregoing discussions, and assuming the various scientific and management decisions have been made, the procedure for the assessment of catch options based on a risk framework could take the following form (Figure 3.10.7.1):

(i) PFA is estimated for each of the agreed management units;

(ii) the weight of the potential catch (i.e. a particular catch option) is converted to numbers of fish from each of the stock complexes/units;

(iii) these numbers are subtracted from the forecast values of the corresponding stock complexes/units;

(iv) the fish that are forecast to escape the Faroes fishery are discounted by the fixed sharing fractions for each of the stock complexes (to be agreed by managers) (NB: the sharing fraction does not need to be the same for all of the stock complexes/units);

(v) fish forecast to return to home waters after the fishery are discounted for natural mortality from the midpoint of the Faroes fishery to the mid-point of returns to rivers;

(vi) for each forecast year, the number of fish forecast to escape to each region is assessed against the management objective for that region.

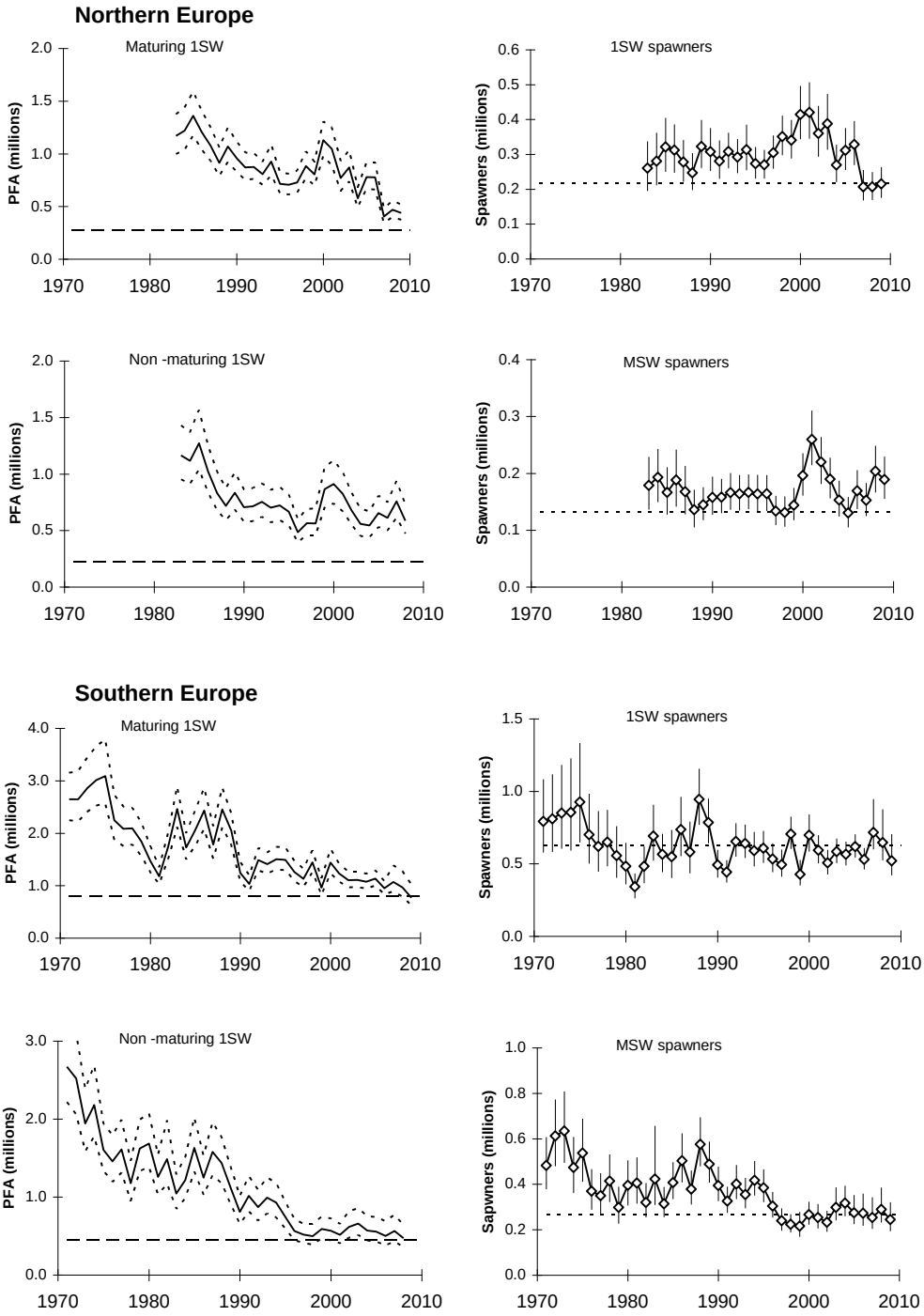


Figure 3.1.1. Estimated PFA (recruits) (left panels) and spawning escapement (right panels), with 95% confidence limits, for maturing 1SW and non-maturing 1SW salmon in Northern and Southern Europe (NEAC). The horizontal line is the Spawner Escapement Reserve (SER, left panels) or the Conservation Limit (right panels) for the age and stock complex.

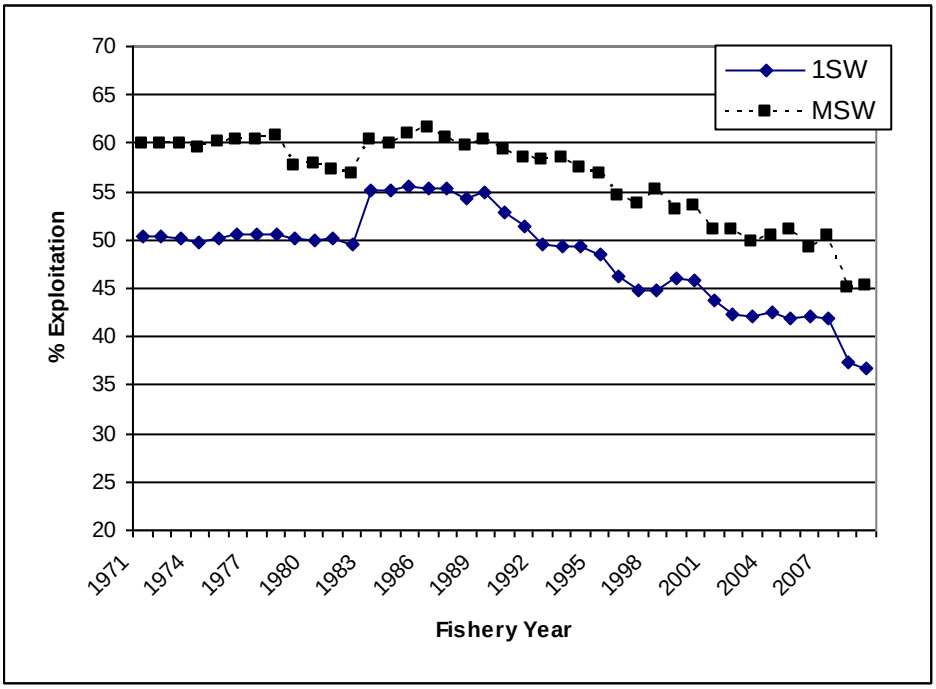


Figure 3.1.2. Exploitation rates of wild 1SW and MSW salmon by commercial and recreational fisheries in the Northern NEAC area from 1971 to 2009.

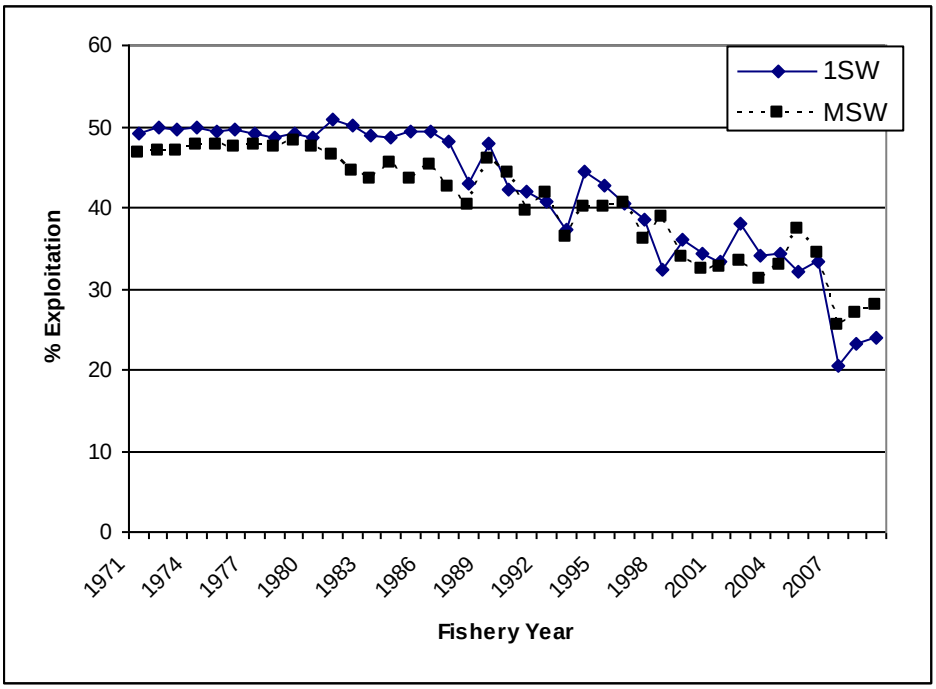


Figure 3.1.3. Exploitation rates of wild 1SW and MSW salmon by commercial and recreational fisheries in the Southern NEAC area from 1971 to 2009.

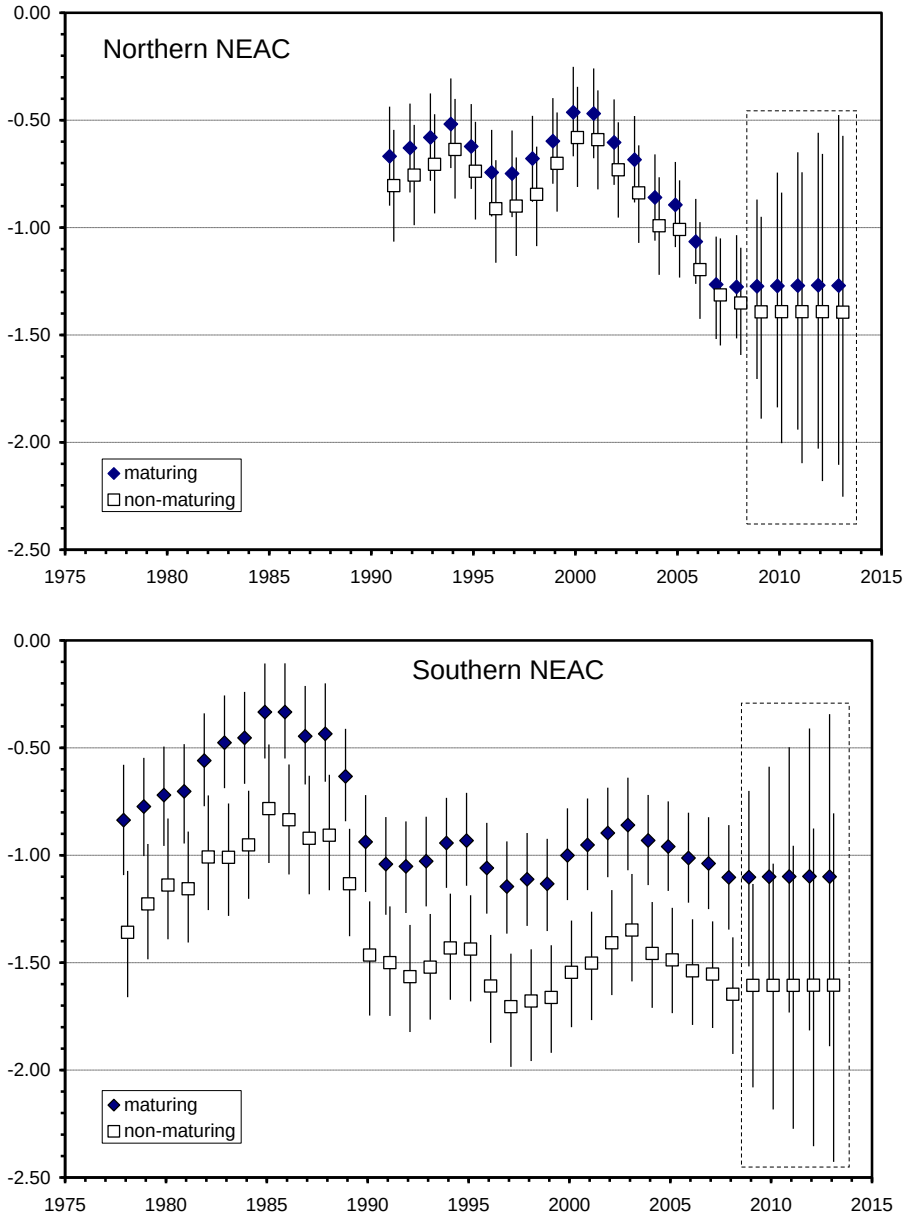


Figure 3.6.2.1. Productivity parameters (log-scale, median) by year for the maturing and non-maturing Northern and Southern NEAC forecast models. Error bars are 2.5 and 97.5 BCI. Model forecasts are enclosed within the boxed areas.

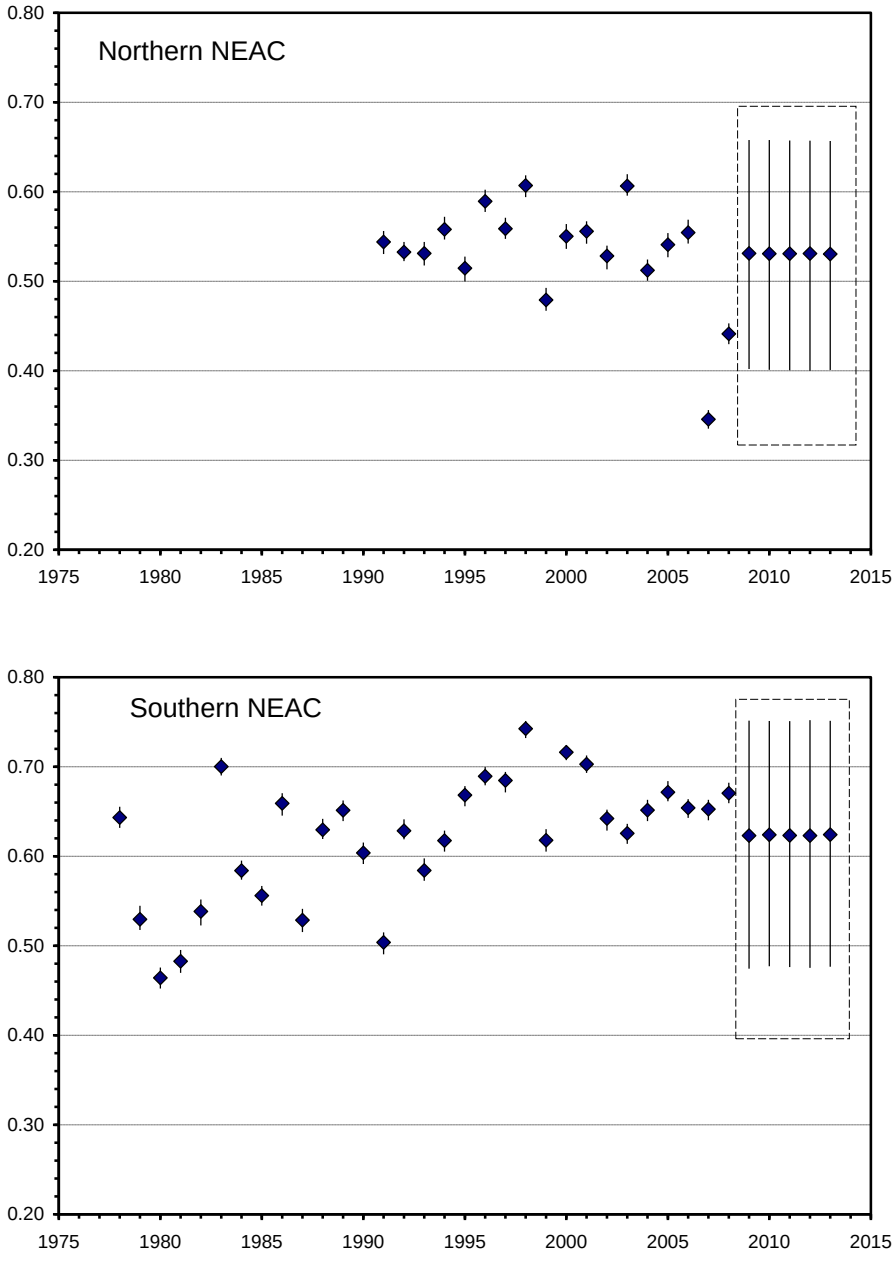


Figure 3.6.2.2. Proportion of maturing 1SW parameter (median) by year from the Northern and Southern NEAC forecast models. Error bars are 2.5 and 97.5 BCI. Model forecasts are enclosed within the boxed areas.

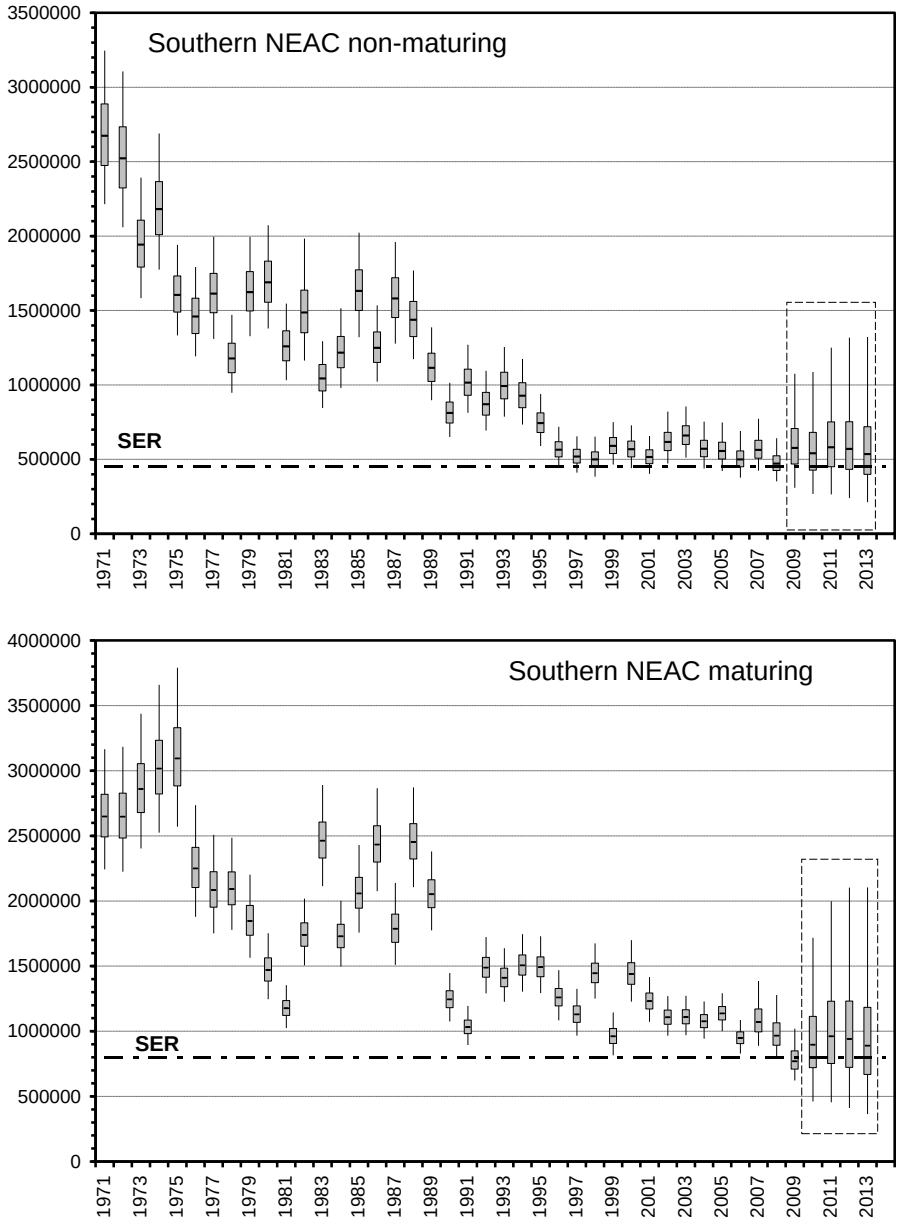


Figure 3.6.2.3. Southern NEAC PFA estimates (number of fish) by year (of PFA). The model forecast years are enclosed within the boxed areas. The horizontal dash is the median, upper and lower bounds represent 2.5th to 97.5th BCI and boxes 25th to 75th BCI.

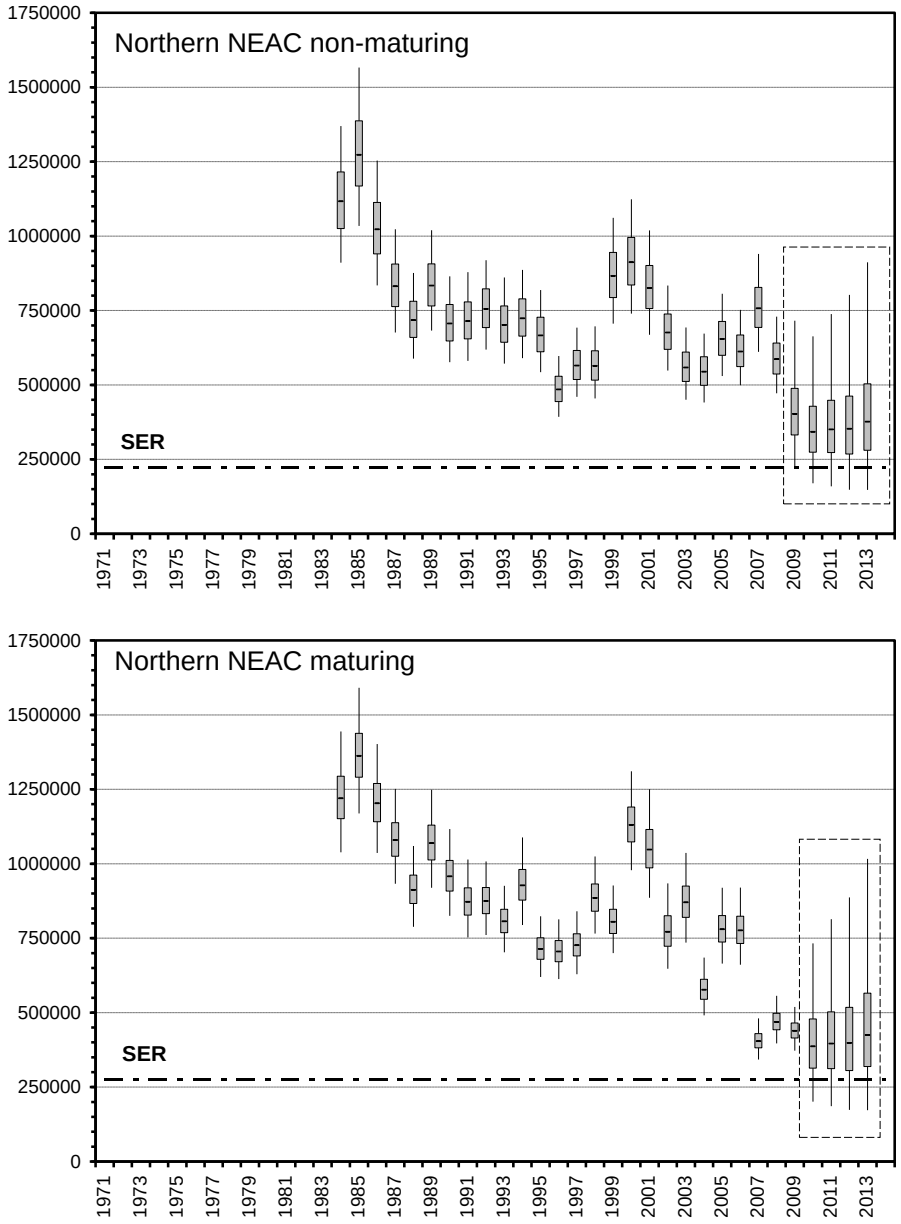
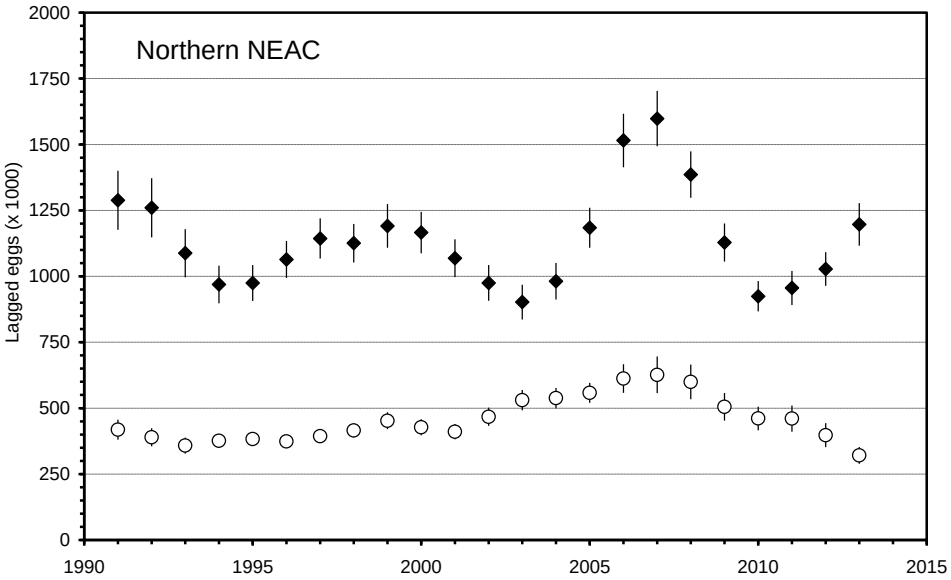


Figure 3.6.2.4. Northern NEAC PFA estimates (number of fish) by year (of PFA). The model forecast years are enclosed within the boxed areas. The horizontal dash is the median, upper and lower bounds represent 2.5th to 97.5th BCI and boxes 25th to 75th BCI.

a)



b)

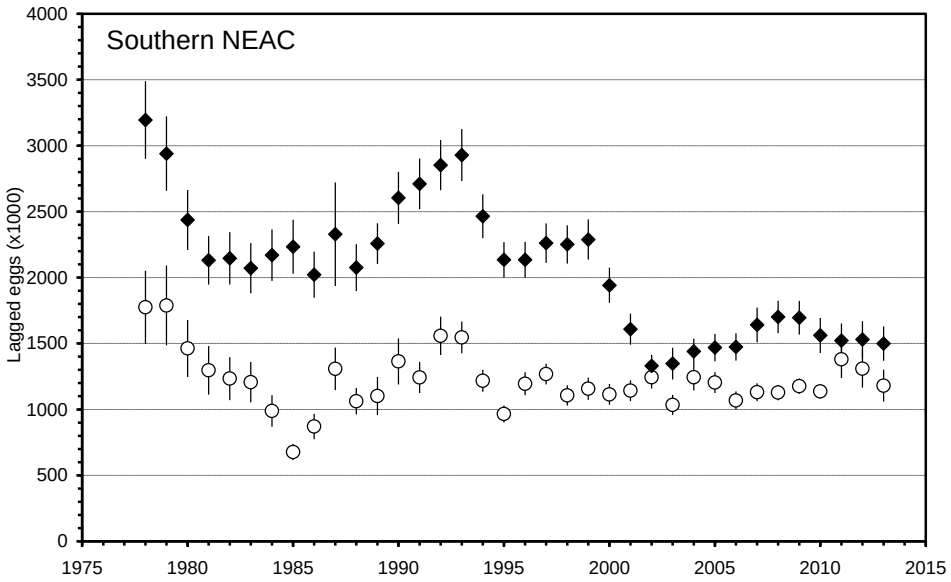


Figure 3.6.2.5. Estimates of the lagged egg depositions used in the PFA forecast model for the Northern and Southern NEAC areas. (a) Northern NEAC area for 1991 to 2013 forecast years. (b) Southern NEAC area for 1978 to 2013 forecast years. Symbols are: solid diamonds = MSW salmon, open circles = 1SW salmon.

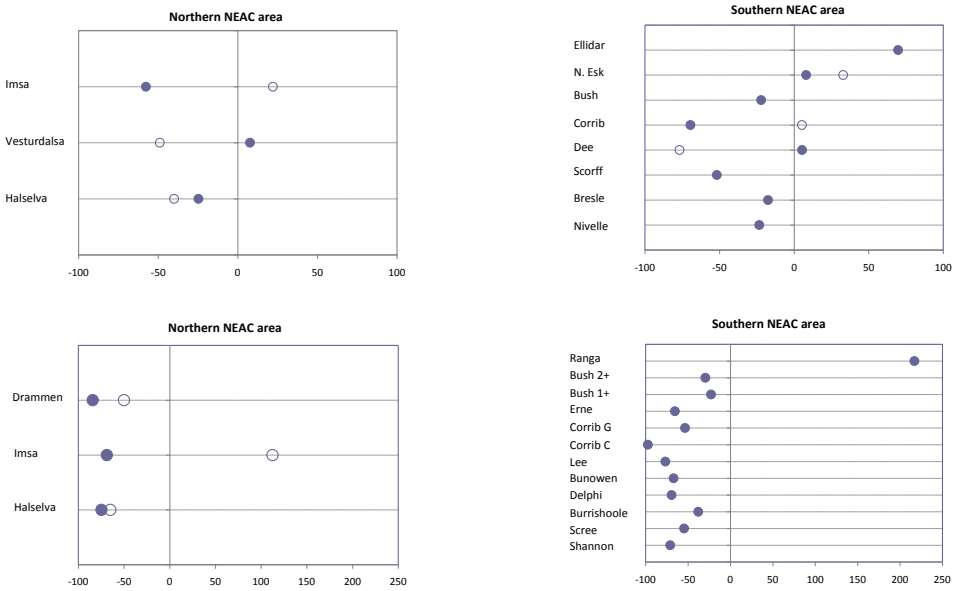


Figure 3.8.10.1. Comparison of the percent change in the five-year mean return rates for 1SW and 2SW salmon by wild (top) and hatchery (lower) salmon smolts to rivers of Northern and Southern NEAC areas for the 1999–2003 and 2004–2008 smolt years (1998–2002 and 2003–2007 for 2SW salmon). Filled circles are for 1SW and open circles are for 2SW data series. Populations with at least 3 data points in each of the two time periods are included in the analysis. The scale of change in some rivers is influenced by low return numbers, where a few fish more or less returning may have a significant impact on the percent change.

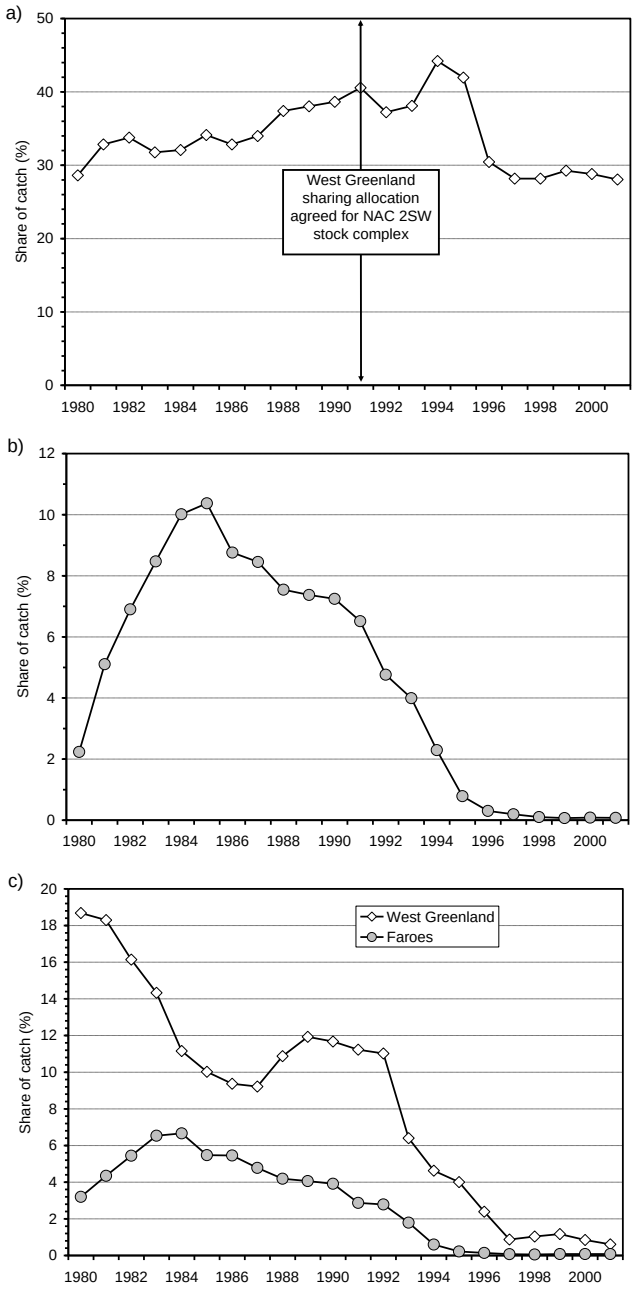


Figure 3.10.6.1. Allocation of catches between West Greenland, Faroes and homewater fisheries, (a) proportion of total catch (weight) of NAC 2SW salmon taken at West Greenland, (b) proportion of total catch (weight) of Northern NEAC salmon (all ages) taken at Faroes and (c) proportion of total catch (weight) of Southern NEAC salmon (all ages) taken at West Greenland and Faroes. In each case the proportions are based on running means of the previous 5 years for the corresponding PFA cohorts.

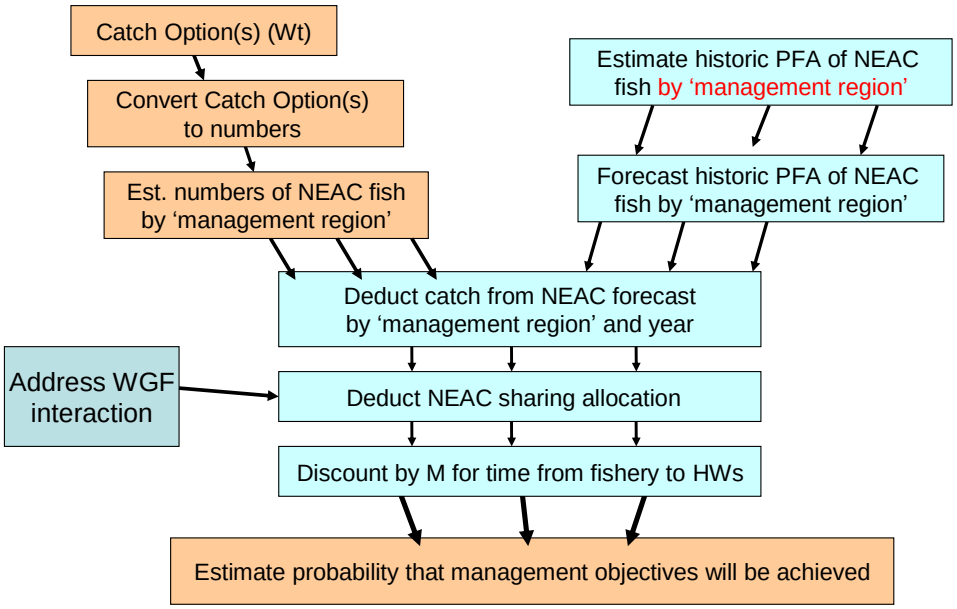


Figure 3.10.7.1 Diagrammatic representation of possible assessment procedure for provision of catch advice for the Faroes fishery within a risk framework. Multiple arrows refer to flow of information from multiple management regions.

4 North American Commission

4.1 Management objectives

Management objectives are included in Section 1.3.

4.2 Reference points

There are no changes recommended in the 2SW salmon CLs from those identified previously. CLs for 2SW salmon for Canada total 123 349 and for the USA, 29 199, for a combined total of 152 548 2SW salmon.

COUNTRY AND COMISSION AREA	STOCK AREA	2SW SPAWNER REQUIREMENT
	Labrador	34 746
	Newfoundland	4022
	Gulf of St. Lawrence	30 430
	Québec	29 446
	Scotia-Fundy	24 705
Canada Total		123 349
USA		29 199
North American Total		152 548

4.3 NASCO has requested ICES to describe the key events of the 2009 fisheries

4.3.1 Key events of the 2009 fisheries

The majority of harvest fisheries were directed to small salmon.

2009 harvest was 38 656 small salmon and 11 316 large salmon, 34% less small salmon and 3.6% less large salmon compared to 2008.

Catches remain very low relative to pre 1990 values.

4.3.2 Harvest of North American salmon, expressed as 2SW salmon equivalents

Harvest histories (1972 to 2009) of salmon, expressed as 2SW salmon equivalents are provided in Table 4.3.2.1. The Newfoundland-Labrador commercial fishery historically was a mixed stock fishery and harvested both maturing and non-maturing 1SW salmon as well as 2SW maturing salmon. The fishery at St. Pierre & Miquelon is also a mixed stock fishery. The harvest in these fisheries of repeat spawners and older sea-ages is not considered in this analysis.

Harvests of 1SW non-maturing salmon in Newfoundland-Labrador commercial fisheries have been adjusted by natural mortalities of 3% per month for 13 months, and 2SW harvests in these same fisheries have been adjusted by one month to express all harvests as 2SW equivalents in the year and time they would reach rivers of origin. The Labrador commercial fishery has been closed since 1998. Harvests from the Aboriginal Peoples' fisheries in Labrador (since 1998) and the residents' food fishery in Labrador

(since 2000) are both included. Mortalities in mixed stock and terminal fisheries areas in Canada were summed with those of USA to estimate total 2SW equivalent mortalities in North America. The terminal fisheries included coastal, estuarine and river catches of all areas, except Newfoundland and Labrador where only river catches were included. Harvest equivalents (2SW) within North America peaked at about 363 000 fish in 1976 and are now about 11 400 2SW salmon equivalents (Table 4.3.2.1).

In the most recent year, the harvest of cohorts destined to be 2SW salmon in terminal fisheries was 69% of the total catch of North America. Harvest values ranged from 19 to 32% during 1972 to 1990 and 61 to 89% during 1993 to 2009 (Table 4.3.2.1). Percentages increased significantly after 1992 with the reduction and closures of the Newfoundland and Labrador commercial mixed stock fisheries.

4.3.3 Gear and effort

Canada

The 23 areas for which the Department of Fisheries and Oceans (DFO) manages the salmon fisheries are called Salmon Fishing Areas (SFAs); for Québec, the management is delegated to the Ministère des Ressources naturelles et de la Faune and the fishing areas are designated by Q1 through Q11 (Figure 4.3.3.1). Harvest (fish which are retained) and catches (including harvests and fish caught–and–released in recreational fisheries) are categorized in two size groups: small and large. Small salmon, generally 1SW, in the recreational fisheries refer to salmon less than 63 cm fork length, whereas in commercial fisheries, it refers to salmon less than 2.7 kg whole weight. Large salmon, generally MSW, in recreational fisheries are greater than or equal to 63 cm fork length and in commercial fisheries refer to salmon greater than or equal to 2.7 kg whole weight.

Three groups exploited salmon in Canada in 2009; Aboriginal peoples, residents fishing for food in Labrador, and recreational fishers. There were no commercial fisheries in Canada in 2009.

In 2009, four subsistence fisheries harvested salmonids in Labrador: 1) Nunatsiavut Government (NG) members fishing in the northern Labrador communities of Rigolet, Makkovik, Hopedale, Postville, and Nain and in Lake Melville; 2) Innu Nation members fishing in Natuashish and in Lake Melville from the community of Sheshatshiu; 3) LMN (Labrador Métis Nation) members fishing in southern Labrador from Fish Cove Point to Cape St. Charles and, 4) Labrador residents fishing in Lake Melville and coastal communities in southern Labrador from Cartwright to Cape St. Charles. The NG, Innu, and LMN fisheries were regulated by Aboriginal Fishery Guardians jointly administered by the aboriginal groups and the Department of Fisheries and Oceans (DFO) as well as by DFO Fishery Officers and Guardian staff. The Nunatsiavut Government is directly responsible through the Torngat Fisheries Board for regulating its fishery through its Conservation Officers. The fishing gear is multifilament gillnets of 15 fathoms in length of a stretched mesh size ranging from 3 to 4 inches. Although nets are mainly set in estuarine waters some nets are also set in coastal areas usually within bays. Catch statistics are based on log book reports.

Most catches (95%, Figure 2.1.1.2) in North America now take place in rivers or in estuaries. Fisheries are principally managed on a river-by-river basis and, in areas where retention of large salmon is allowed, it is closely controlled. The commercial fisheries are now closed and the remaining coastal food fisheries in Labrador are mainly located close to river mouths and likely harvest few salmon from other than local rivers.

The following management measures were in effect in 2009.

Aboriginal peoples' food fisheries
In Québec, Aboriginal peoples' food fisheries took place subject to agreements or through permits issued to the bands. There are 10 bands with subsistence fisheries in addition to the fishing activities of the Inuit in Ungava (Q11), who fished in estuaries or within rivers. The permits generally stipulate gear, season, and catch limits. Catches in food fisheries have to be reported collectively by each Aboriginal user group. However, if reports are not available, the catches are estimated. In the Maritimes (SFAs 15 to 23), food fishery harvest agreements were signed with several Aboriginal peoples groups (mostly First Nations) in 2009. The signed agreements often included allocations of small and large salmon and the area of fishing was usually in-river or estuaries. Harvests that occurred both within and outside agreements were obtained directly from the Aboriginal peoples. In Labrador (SFAs 1 and 2), food fishery arrangements with the Nunatsiavut Government, the Innu First Nation, and the LMN, resulted in fisheries in estuaries and coastal areas. By agreement with First Nations, there were no food fisheries for salmon on the island of Newfoundland in 2009. Harvest by Aboriginal peoples with recreational licenses is reported under the recreational harvest categories.

Resident food fisheries in Labrador
In 2009, a licensed food fishery for local residents took place, using gillnets, in Lake Melville (SFA 1) and in estuary and coastal areas of southern Labrador (SFA 2). Residents who requested a license were permitted to retain a maximum of four salmon of any size while fishing for trout and charr; four salmon tags accompanied each license. All licensees were requested to complete logbooks. DFO is responsible for regulating the Resident Fishery.

Recreational fisheries
Licenses are required for all persons fishing recreationally for Atlantic salmon. Gear is restricted to fly fishing and there are daily/seasonal bag limits. Recreational fisheries management in 2009 varied by area and large portions of the southern areas remained closed to all directed salmon fisheries. Except in Québec and Labrador (SFA 1 and some rivers of SFA 2), only small salmon could be retained in the recreational fisheries.

USA

There were no recreational or commercial fisheries for Atlantic salmon in the USA in 2009.

France (Islands of Saint Pierre and Miquelon)

Eight professional and 50 recreational gill net licences were issued in 2009. This level of effort is similar to previous years. The time-series of available data is in Table 4.3.3.1.

4.3.4 Catches in 2009

Canada

The provisional harvest of salmon in 2009 by all users was 119 t, about 25% lower than the 2008 harvest of 158 t (Table 2.1.1.1; Figure 4.3.4.1). The 2009 harvest was 38 656 small salmon and 11 316 large salmon, 34% less small salmon and 3.6% less large salmon compared to 2008. The dramatic decline in harvested tonnage since 1988 is in large part the result of the reductions in commercial fisheries effort, the closure of the insular Newfoundland commercial fishery in 1992, the closure of the Labrador commercial fishery in 1998, and the closure of the Québec commercial fishery in 2000.

Aboriginal peoples' food fisheries
The total harvest by Aboriginal people in 2009 was 51.1 t (Table 4.3.4.1). Harvests (by weight) decreased by 18% from 2008.

Residents fishing for food in Labrador
The estimated catch for the fishery in 2009 was 2.9 t. This represents approximately 1100 fish, 28% of which were large.

Recreational fisheries
Harvest in recreational fisheries in 2009 totalled 32 120 small and large salmon (approximately 65 t), was 26% below the 2008 harvest level, and remains among the lowest of the time-series (Figure 4.3.4.2). The small salmon harvest of 28 656 fish was 29% below the 2008 harvest. The large salmon harvest of 3 464 fish was 22% above the 2008 harvest. The small salmon size group has contributed 88% on average of the total recreational harvests since the imposition of catch-and-release recreational fisheries in the Maritimes and insular Newfoundland (SFA 3 to 14B, 15 to 23) in 1984. In 2009, about 47 892 salmon (about 24 682 small and 23 209 large) were caught and released (Table 4.3.4.2), representing about 60% of the total number caught (including retained fish). There is some mortality on these released fish, which is accounted for in the spawner estimates.

Commercial fisheries
All commercial fisheries for Atlantic salmon remained closed in Canada in 2009 and the catch therefore was zero.

Unreported catches
There was no total unreported catch estimate available for Canada in 2009.

USA

There are no commercial or recreational fisheries for Atlantic salmon in USA and the catch therefore was zero. Unreported catches in the USA were estimated to be 0 t.

France (Islands of Saint-Pierre and Miquelon) harvests

A total harvest of 3.4 t was reported in the professional and recreational fisheries in 2009. This is similar to the 2008 harvest which was one of the highest in the available time series (Table 4.3.3.1).

There are no unreported catch estimates.

4.3.5 Origin and composition of catches

In the past, salmon from both Canada and the USA were taken in the commercial fisheries of eastern Canada. The Aboriginal Peoples' and resident food fisheries that exist in Labrador may intercept some salmon from other areas of North America; however, in 2009, there were no salmon tagged in other areas and reported from the food fisheries. Also none of the salmon sampled during the Food Fishery Sampling Program were tagged or marked. There were no tagged salmon of USA origin reported in Canadian fisheries in 2009.

Results of sampling program for Labrador subsistence fisheries
As in previous years a sampling program was in place for the 2009 subsistence fisheries in Labrador. Landed fish were sampled opportunistically. Fish were measured (fork length), weighed (gutted weight or whole weight if available) and if possible the sex was determined. Scales were taken for subsequent age analysis. Fish were also examined for the presence of external tags, brands or elastomer marks, and adipose fin clips. In southern Labrador, two people were hired by the Labrador Metis Nation to conduct sampling and aboriginal Guardians were asked to sample salmon when possible. In northern Labrador, Conservation Officers of the Nunatsiavut Government conducted the sampling.

In total, 583 samples were collected from the subsistence fisheries. Scale reading indicated that the sample consisted of 76% 1SW, 18% 2SW and 6% previously spawned salmon. Small and large salmon based on a 2.7 kg cut off, similar to that used in the Aboriginal fishery, indicated small salmon were 96% 1SW, 2% 2SW and 2% previously spawned salmon and large salmon were 19% 1SW, 63% SW and 17% previously spawned salmon. This is similar to the distribution observed in 2008. The river ages (Figure 4.3.5.1) of samples collected from the subsistence fisheries (for food social and ceremonial purposes (FSC)) were compared to ages from scales (1946 samples from north Labrador and 975 in south Labrador) obtained from assessment facilities in 2000-2005.

There was a difference in river age distribution of adults from subsistence fisheries compared to returns to rivers in northern Labrador (Chi square=21.5, P=<0.0015), but not in southern Labrador (Chi square=9.1, P=0.1). The significant difference in river age in the samples from northern Labrador is likely owing to a larger than expected number of river age 3 fish in the upper Lake Melville sample (Figure 4.3.5.2). The absence of age 1 and rarity of age 2 smolts in the catches in 2009 suggests that these fisheries did not exploit southern North America stocks to any great extent. The presence of river age 5 to 7 years in the samples provides evidence that the fisheries are exploiting northern area (predominantly Labrador) stocks.

ICES noted that the sampling program conducted in 2009 provided biological characteristics of the harvest and that the information may be useful for updating parameters used in the Run Reconstruction Model for North America. As well it provides material to assess the origin of salmon in this fishery. ICES recommends that sampling be continued and expanded in 2010 and future years.

4.3.6 Exploitation rates

Canada

In the Newfoundland recreational fishery, exploitation rates for retained small salmon ranged from a high of 13% on Torrent River to a low of 5% on Terra Nova River. Overall, exploitation of small salmon in these rivers declined from 30% in 1986 to approximately 10% in 2009 which is one of the lowest rates of the past 25 years. In Labrador, at Sand Hill River, exploitation on small salmon was 4.6% and 0.41% on large salmon.

In Quebec, the 2009 total fishing exploitation rate was around 18%; about the average of the five previous years. Native peoples' fishing exploitation rate was 7% of the total return. Recreational fishing exploitation rate was 11% on the total run, 15% for the small and 8% for the large salmon, representing a decrease from the previous five year average of 18% for small salmon and 9% for large salmon.

USA

There was no exploitation of USA salmon in home waters.

Exploitation trends for North American salmon fisheries

Annual exploitation rates of small salmon (mostly 1SW) and large salmon (mostly MSW) in North America for the 1971 to 2009 time period were calculated by dividing annual harvests in all North American fisheries by annual estimates of the returns to North America prior to any fisheries in North America. The fisheries included coastal, estuarine and river fisheries in all areas, as well as the commercial fisheries of Newfoundland and Labrador which harvested salmon from all regions in North America.

Exploitation rates of both small and large salmon fluctuated annually but remained relatively steady until 1984 when exploitation of large salmon declined sharply with the introduction of the non-retention of large salmon in angling fisheries and reductions in commercial fisheries (Figure 4.3.6.1). Exploitation of small salmon declined steeply in North America after 1991 with the closure of the Newfoundland commercial fishery in 1992. Declines continued in the 1990s with continuing management controls in all fisheries to reduce exploitation. In the last few years, exploitation rates on small salmon and large salmon have remained at the lowest in the time-series, average of 15% for both small salmon and large salmon over the past ten years. However, exploitation rates across regions within North America are highly variable.

Table 4.3.2.1. Harvests (number of fish) expressed as 2SW salmon equivalents in North American salmon fisheries, 1972–2009. Only mid-points of the estimated values have been used.

	Mixed stock fisheries				Homewater fisheries (Returns - Spawners)						Harvests	Spawners			Proportion harvests
Region	W. Greenland	Newfoundland and Labrador		SP&M	Labrador	Newfoundland	Quebec	Gulf	Scotia-Fundy	USA	North America	North America	Exploitation rate		of North America
Age group	1SW non-mat	1SW non-mat	2SW	2SW	2SW	2SW	2SW	2SW	2SW	2SW	2SW	2SW	NW Atlantic	North America	in homewater fisheries
Year (i)	year (i-1)	year (i-1)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)	year (i)
1971			154,592		490	604	28,430	24,410	6,452	163		50,090			
1972	197,632	20,217	153,719	0	420	590	27,360	20,190	5,600	346	228,441	85,110	0.576	0.421	0.239
1973	148,098	17,515	219,127	0	1,010	770	32,750	15,470	6,213	327	293,182	90,210	0.535	0.433	0.193
1974	186,201	23,839	235,915	0	800	499	47,580	18,220	13,060	247	340,160	120,000	0.534	0.425	0.236
1975	154,640	23,555	237,565	0	330	501	41,080	14,070	12,510	389	330,000	97,840	0.531	0.435	0.209
1976	194,541	35,139	256,586	333	830	377	42,200	16,140	11,130	191	362,926	91,060	0.551	0.444	0.195
1977	112,943	26,852	241,156	0	1,290	779	42,270	29,220	13,460	1,355	356,382	129,900	0.491	0.423	0.248
1978	142,778	27,103	157,309	0	770	532	37,440	20,330	9,369	894	253,747	81,520	0.542	0.431	0.273
1979	103,813	13,582	92,047	0	609	125	25,250	6,253	3,828	433	142,127	38,470	0.577	0.440	0.257
1980	141,844	20,650	217,186	0	890	640	53,570	26,990	17,400	1,533	338,858	121,900	0.511	0.424	0.298
1981	120,923	33,833	201,270	0	520	432	44,360	14,824	12,850	1,267	309,356	79,280	0.525	0.443	0.240
1982	161,183	33,690	134,407	0	620	395	35,240	21,050	8,935	1,413	235,750	80,900	0.556	0.427	0.287
1983	145,870	25,308	111,504	333	428	419	34,490	17,640	12,300	386	202,808	53,090	0.577	0.442	0.324
1984	26,837	19,100	82,798	333	510	181	24,830	3,580	3,970	675	135,977	82,010	0.428	0.384	0.248
1985	32,438	14,381	78,752	333	294	22	27,800	940	4,930	645	128,096	97,740	0.415	0.362	0.270
1986	99,140	19,628	104,905	277	467	34	34,190	1,820	2,830	606	164,757	120,200	0.481	0.366	0.242
1987	123,439	24,841	132,175	222	630	18	34,220	1,930	1,360	300	195,696	87,340	0.530	0.409	0.197
1988	123,799	31,646	81,120	222	710	25	34,600	1,360	1,380	248	151,310	95,090	0.528	0.380	0.253
1989	84,977	21,943	81,343	222	461	7	29,350	1,240	260	397	135,223	81,330	0.504	0.384	0.235
1990	43,617	19,323	57,353	211	357	19	28,460	1,110	600	696	108,129	86,570	0.438	0.357	0.289
1991	52,215	11,869	40,429	133	93	11	29,660	840	1,330	231	84,595	76,290	0.460	0.345	0.380
1992	79,585	9,865	25,105	255	782	53	30,490	1,070	1,110	167	68,897	87,930	0.486	0.305	0.489
1993	29,814	3,125	13,266	322	387	55	23,540	570	1,107	166	42,538	83,230	0.365	0.253	0.607
1994	1,892	2,085	11,936	377	490	152	24,580	660	758	1	41,040	69,440	0.280	0.271	0.649
1995	1,891	1,192	8,675	89	460	143	23,710	530	325	0	35,124	101,300	0.213	0.205	0.717
1996	19,181	1,039	5,645	177	390	173	22,690	800	768	0	31,683	84,730	0.304	0.214	0.783
1997	19,339	947	5,390	166	210	139	18,590	820	580	0	26,842	67,920	0.328	0.221	0.758
1998	13,048	1,133	1,761	255	205	104	11,290	500	321	0	15,570	49,320	0.306	0.194	0.798
1999	4,323	175	841	258	270	81	9,180	790	449	0	12,044	55,200	0.196	0.152	0.894
2000	6,442	150	1,049	251	260	157	8,890	560	193	0	11,511	58,200	0.205	0.142	0.874
2001	5,930	284	1,298	239	310	71	9,650	890	253	0	12,996	67,210	0.191	0.139	0.860
2002	8,606	260	1,115	217	200	50	6,180	520	179	0	8,721	41,790	0.255	0.147	0.817
2003	3,222	310	1,689	321	232	70	8,490	770	190	0	12,071	64,100	0.167	0.137	0.808
2004	3,474	351	2,869	309	270	72	8,380	820	106	0	13,177	60,530	0.184	0.152	0.732
2005	4,339	464	2,186	365	280	77	7,450	940	89	0	11,851	63,150	0.178	0.136	0.746
2006	4,179	559	2,399	394	220	84	7,120	780	138	0	11,694	59,990	0.181	0.140	0.713
2007	4,933	559	2,058	216	230	69	6,710	850	95	0	10,787	57,330	0.188	0.137	0.737
2008	6,616	495	3,034	393	230	99	6,450	820	82	0	11,602	66,130	0.190	0.130	0.662
2009	7,542	539	2,595	377	230	63	6,570	900	118	0	11,392	79,760	0.172	0.111	0.692

W. Greenland: harvest of 1SW non-maturing salmon as 2SW equivalents by adjusting for natural mortality (M) = 0.03 per month for 11 months
Newfoundland and Labrador sea fisheries: harvest of 1SW non-maturing as 2SW equivalents by adjusting for natural mortality (M) = 0.03 per month for 13 months
Newfoundland and Labrador sea fisheries: harvest of 2SW as 2SW equivalents by adjusting for natural mortality (M) = 0.03 per month for 1 month

Table 4.3.3.1. The number of professional and recreational gillnet licenses issued at St. Pierre and Miquelon and landings, 1995 to 2009.

	Number of licences		Reported Landings (tonnes)		
Year	Professional	Recreational	Professional	Recreational	Total
1990			1.146	0.734	1.880
1991			0.632	0.530	1.162
1992			1.295	1.024	2.319
1993			1.902	1.041	2.943
1994			2.633	0.790	3.423
1995	12	42	0.392	0.445	0.837
1996	12	42	0.951	0.617	1.568
1997	6	36	0.762	0.729	1.491
1998	9	42	1.039	1.268	2.307
1999	7	40	1.182	1.140	2.322
2000	8	35	1.134	1.133	2.267
2001	10	42	1.544	0.611	2.155
2002	12	42	1.223	0.729	1.952
2003	12	42	1.620	1.272	2.892
2004	13	42	1.499	1.285	2.784
2005	14	52	2.243	1.044	3.287
2006	14	48	1.730	1.825	3.555
2007	13	53	0.970	0.977	1.947
2008	na	na	na	na	3.540
2009	8	50	1.8	1.6	3.4

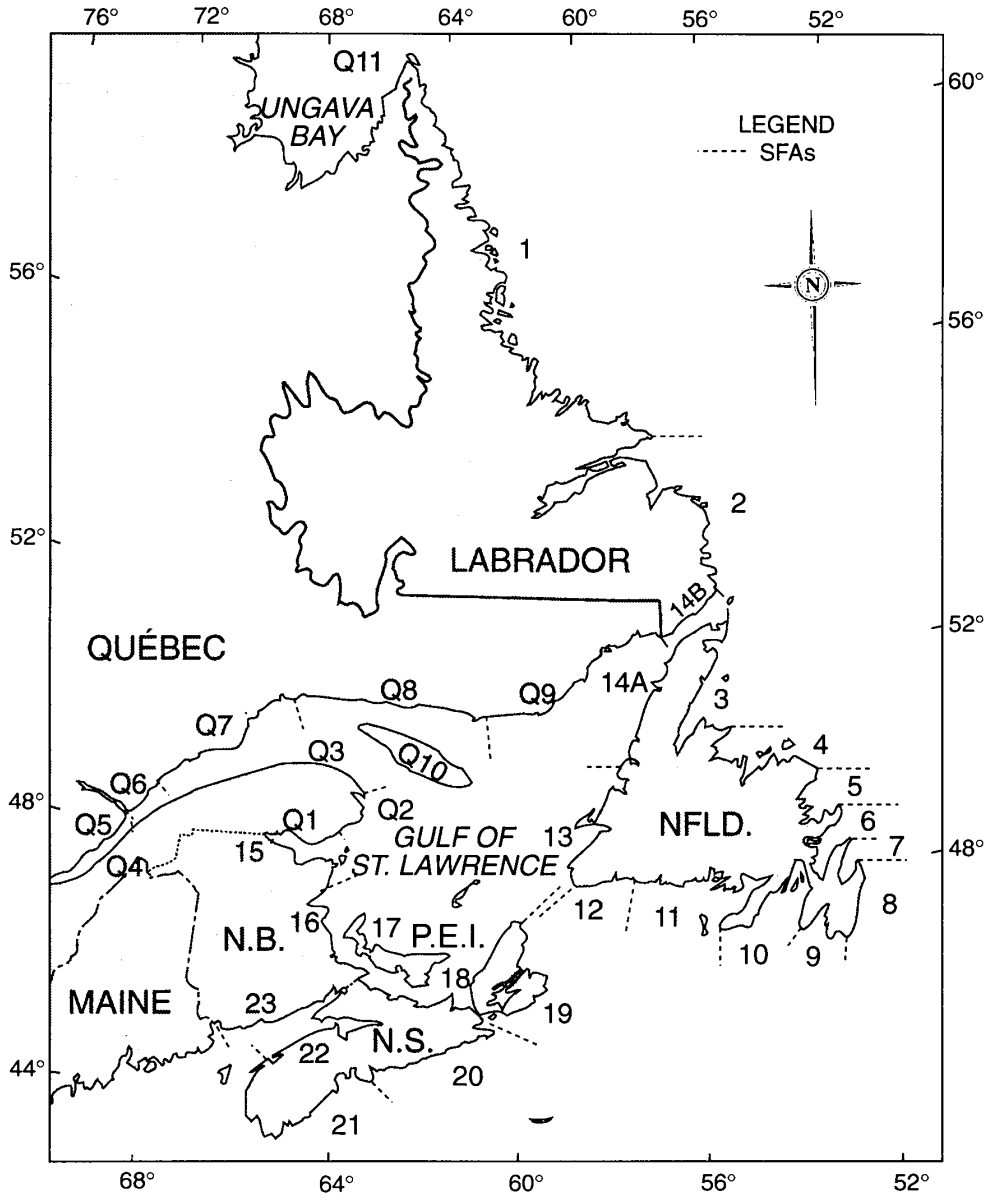
Table 4.3.4.1. Harvests in 2009 (by weight) and the percent large by weight and number in the Aboriginal Peoples' Food Fisheries in Canada.

ABORIGINAL PEOPLES' FOOD FISHERIES			
Year	Harvest (t)	% large	
		by weight	by number
1990	31.9	78	
1991	29.1	87	
1992	34.2	83	
1993	42.6	83	
1994	41.7	83	58
1995	32.8	82	56
1996	47.9	87	65
1997	39.4	91	74
1998	47.9	83	63
1999	45.9	73	49
2000	45.7	68	41
2001	42.1	72	47
2002	46.3	68	43
2003	44.3	72	49
2004	60.8	66	44
2005	56.7	57	34
2006	61.4	60	39
2007	48.0	62	40
2008	62.4	66	44
2009	51.1	65	45

Table 4.3.4.2. Numbers of salmon catch and released in Eastern Canadian salmon angling fisheries. Data for years prior to 1997 are incomplete.

	Newfoundland			Nova Scotia			New Brunswick					Prince Edward Island			Quebec			CANADA		
Year	Small	Large	Total	Small	Large	Total	Small Kelt	Small Bright	Large Kelt	Large Bright	Total	Small	Large	Total	Small	Large	Total	SMALL	LARGE	TOTAL
1984				939	1,655	2,594	661	851	1,020	14,479	17,011							**2,451**	**17,154**	**19,605**
1985		315	315	1,323	6,346	7,669	1,098	3,963	3,809	17,815	26,685			67				**6,384**	**28,285**	**34,669**
1986		798	798	1,463	10,750	12,213	5,217	9,333	6,941	25,316	46,807							**16,013**	**43,805**	**59,818**
1987		410	410	1,311	6,339	7,650	7,269	10,597	5,723	20,295	43,884							**19,177**	**32,767**	**51,944**
1988		600	600	1,146	6,795	7,941	6,703	10,503	7,182	19,442	43,830	767	256	1,023				**19,119**	**34,275**	**53,394**
1989		183	183	1,562	6,960	8,522	9,566	8,518	7,756	22,127	47,967							**19,646**	**37,026**	**56,672**
1990		503	503	1,782	5,504	7,286	4,435	7,346	6,067	16,231	34,079			1,066				**13,563**	**28,305**	**41,868**
1991		336	336	908	5,482	6,390	3,161	3,501	3,169	10,650	20,481	1,103	187	1,290				**8,673**	**19,824**	**28,497**
1992	5,893	1,423	7,316	737	5,093	5,830	2,966	8,349	5,681	16,308	33,304			1,250				**17,945**	**28,505**	**46,450**
1993	18,196	1,731	19,927	1,076	3,998	5,074	4,422	7,276	4,624	12,526	28,848							**30,970**	**22,879**	**53,849**
1994	24,442	5,032	29,474	796	2,894	3,690	4,153	7,443	4,790	11,556	27,942	577	147	724				**37,411**	**24,419**	**61,830**
1995	26,273	5,166	31,439	979	2,861	3,840	770	4,260	880	5,220	11,130	209	139	348		922	922	**32,491**	**15,188**	**47,679**
1996	34,342	6,209	40,551	3,526	5,661	9,187						472	238	710		1,718	1,718	**38,340**	**13,826**	**52,166**
1997	25,316	4,720	30,036	713	3,363	4,076	3,457	4,870	3,786	8,874	20,987	210	118	328	182	1,643	1,825	**34,748**	**22,504**	**57,252**
1998	31,368	4,375	35,743	688	2,476	3,164	3,154	5,760	3,452	8,298	20,664	233	114	347	297	2,680	2,977	**41,500**	**21,395**	**62,895**
1999	24,567	4,153	28,720	562	2,186	2,748	3,155	5,631	3,456	8,281	20,523	192	157	349	298	2,693	2,991	**34,405**	**20,926**	**55,331**
2000	29,705	6,479	36,184	407	1,303	1,710	3,154	6,689	3,455	8,690	21,988	101	46	147	445	4,008	4,453	**40,501**	**23,981**	**64,482**
2001	22,348	5,184	27,532	527	1,199	1,726	3,094	6,166	3,829	11,252	24,341	202	103	305	809	4,674	5,483	**33,146**	**26,241**	**59,387**
2002	23,071	3,992	27,063	829	1,100	1,929	1,034	7,351	2,190	5,349	15,924	207	31	238	852	4,918	5,770	**33,344**	**17,580**	**50,924**
2003	21,379	4,965	26,344	626	2,106	2,732	1,555	5,375	1,042	7,981	15,953	240	123	363	1,238	7,015	8,253	**30,413**	**23,232**	**53,645**
2004	23,430	5,168	28,598	828	2,339	3,167	1,050	7,517	4,935	8,100	21,602	135	68	203	1,291	7,455	8,746	**34,251**	**28,065**	**62,316**
2005	33,129	6,598	39,727	933	2,617	3,550	1,520	2,695	2,202	5,584	12,001	83	83	166	1,116	6,445	7,561	**39,476**	**23,529**	**63,005**
2006	30,491	5,694	36,185	1,014	2,408	3,422	1,071	4,186	2,638	5,538	13,433	128	42	170	1,091	6,185	7,276	**37,981**	**22,505**	**60,486**
2007	17,719	4,607	22,326	896	1,520	2,416	1,164	2,963	2,067	7,040	13,234	63	41	104	951	5,392	6,343	**23,756**	**20,667**	**44,423**
2008	25,226	5,007	30,233	1,016	2,061	3,077	1,146	6,361	1,971	6,130	15,608	3	9	12	1,361	7,713	9,074	**35,113**	**22,891**	**58,004**
2009	19,192	4,484	23,676	670	2,665	3,335	1,338	2,387	1,689	8,174	13,588	6	25	31	1,089	6,173	7,262	**24,682**	**23,209**	**47,892**

Figure 4.3.3.1. Map of Salmon Fishing Areas (SFAs) and Québec Management Zones (Qs) in Canada.



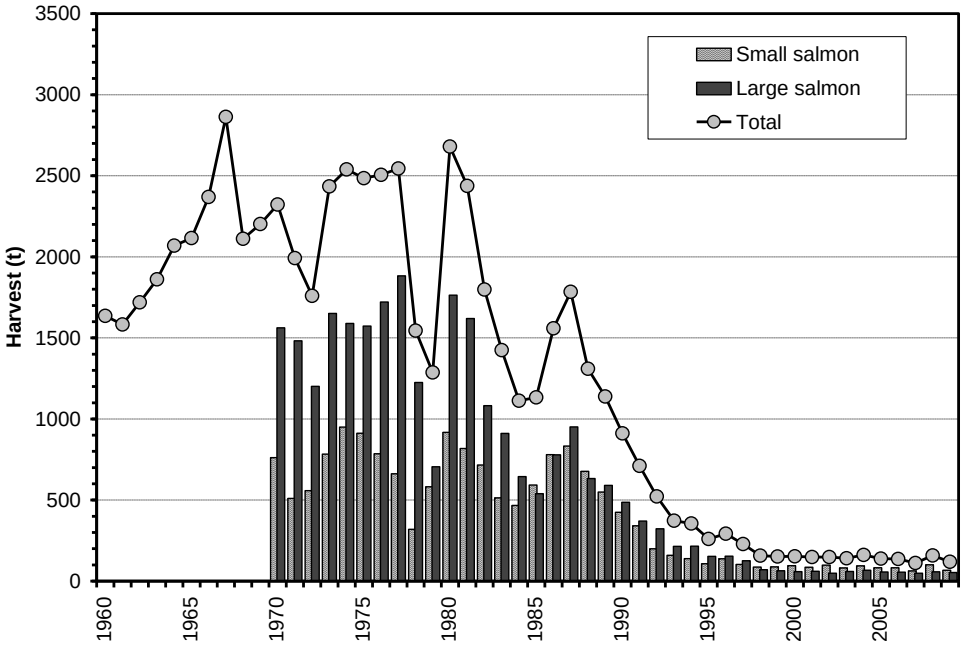


Figure 4.3.4.1. Harvest (t) of small salmon, large salmon and combined for Canada, 1960–2009 by all users.

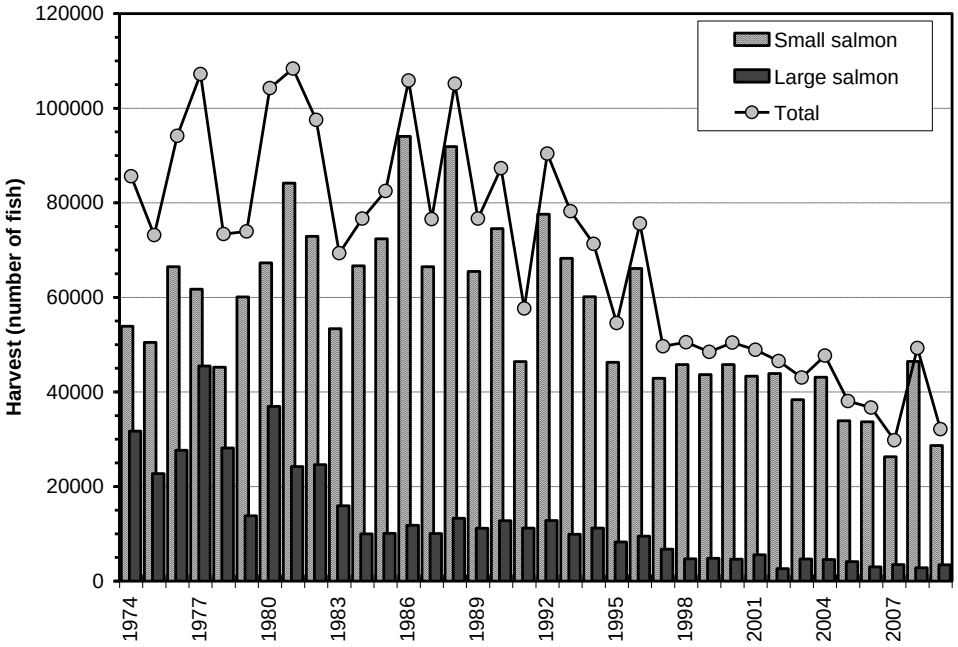


Figure 4.3.4.2. Harvest (number) of small salmon, large salmon and both sizes combined in the recreational fisheries of Canada, 1974 to 2009.

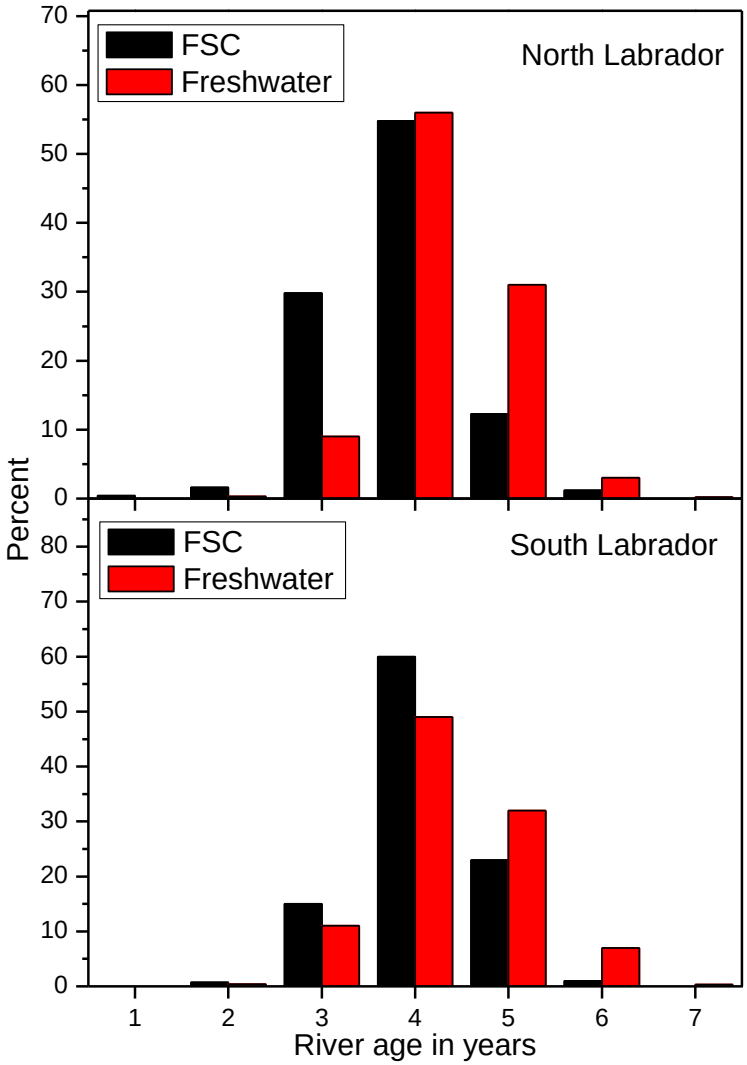


Figure 4.3.5.1. River age distribution of salmon from FSC (food social and ceremonial purposes) fisheries in North and South Labrador in 2009 compared to those at corresponding assessment facilities (freshwater) for 2000 to 2005.

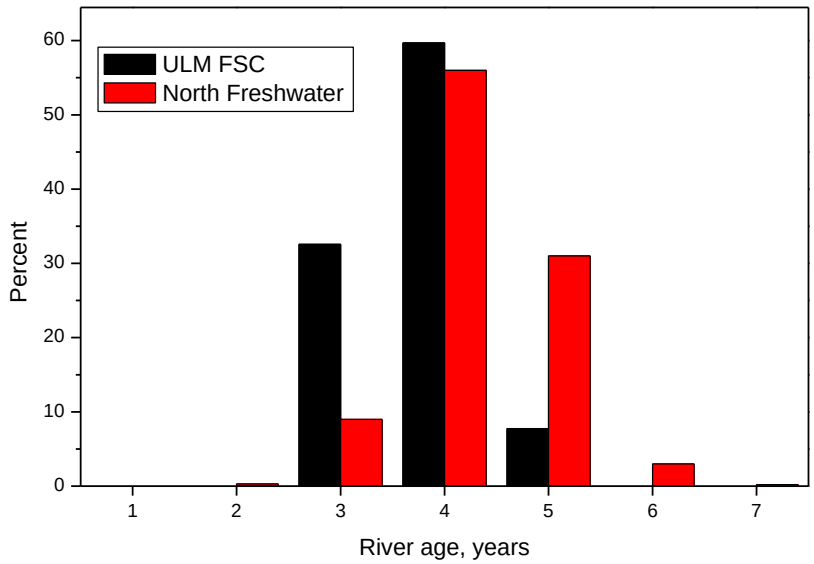


Figure 4.3.5.2. River age distribution of salmon from FSC (food social and ceremonial purposes) fishery in upper Lake Melville (ULM FSC) in 2009 compared to river age distribution from freshwater monitoring facilities in North Labrador for 2000 to 2005.

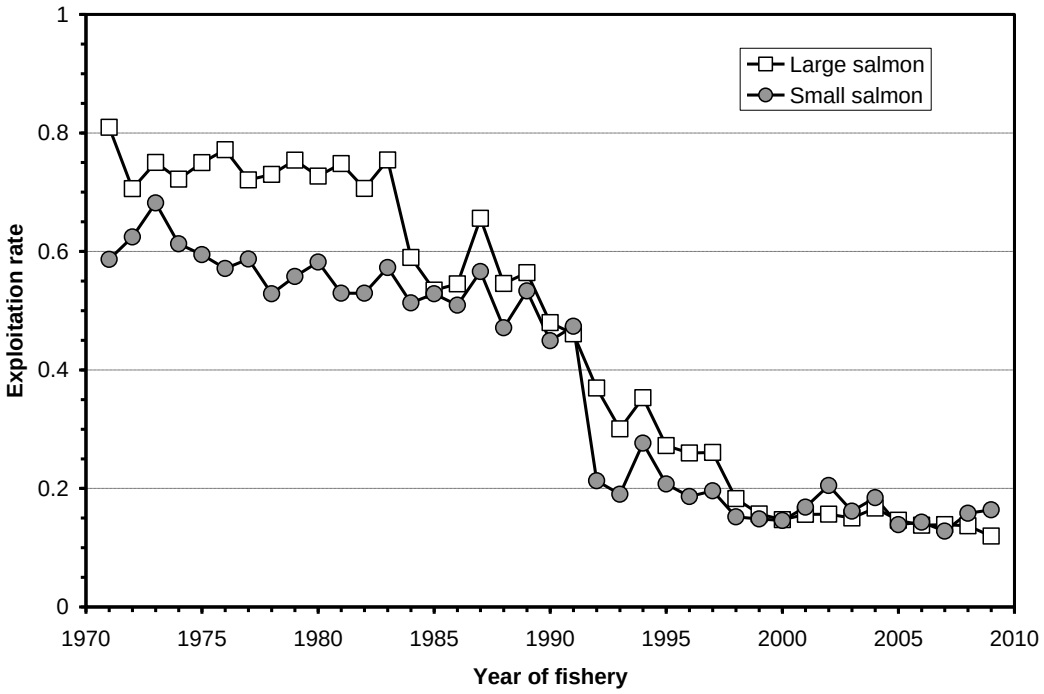


Figure 4.3.6.1. Exploitation rates in North America on the North American stock complex (after West Greenland fisheries) of small salmon and large salmon, 1971 to 2009.

5 Atlantic salmon in the West Greenland Commission

5.1 NASCO has requested ICES to describe the key events of the 2009 fishery

5.1.1 Catch and effort in 2009

A total catch of 25.5 t of salmon was reported during the 2009 fishery (Table 5.1.1.1). Catches were distributed among the six NAFO divisions on the western coast of Greenland. In 2009, a catch of 0.8 t was also reported from East Greenland, accounting for approximately 3% of the combined reported catch (26 t). Catches coming from divisions 1B-1E (Table 5.1.1.2) represented approximately 78% of the total catch. In NAFO Division 1A, the fishery experienced much lower catches in 2009 than in 2008. Only 195 kg were reported by 19 different people and of these nine reported zero catch. This contrasts with the 4.9 t reported in this area by 44 people in 2008.

There is presently no quantitative approach for estimating the unreported catch but the 2009 value is likely to have been at the same level proposed in recent years (10 t).

The Greenland Authorities received 238 reports of salmon catches in 2009 compared to 259 in 2008. In total, 145 people provided reports to the Greenland Home Rule License Office in 2009 which was similar to the previous year (143). Twenty three of these people reported zero catch compare to four people in 2008.

The number of fishers reporting catches has steadily increased up to 2008 from a low of 41 in 2002 to its current level. These levels remain well below the 400 to 600 people reporting landings in the commercial fishery from 1987 to 1991. Since October 2006, the Greenland Home Rule License Office has broadcast TV requests that catch reports be submitted for the season. Thus, it is possible that the increase in the number of people reporting catches, and hence the increased reported landings, reflect changes in reporting practices rather than increased harvest.

5.1.2 Biological characteristics of the catches

International Sampling Program

The international sampling program for landings at West Greenland, initiated by NASCO in 2001, was continued in 2009. The sampling was undertaken by teams from Canada, Ireland, UK (Scotland), UK (England & Wales), and USA. Additionally, staff from the Greenland Institute of Natural Resources assisted with the overall coordination of the program and sampling in Nuuk. Sampling began in August and continued through October.

Samplers were stationed in three different communities representing three different NAFO Divisions. No sampling occurred in the fishery in East Greenland in 2009. One sample collected in Nuuk was identified as having originated from the waters of Division 1C. Nuuk is close to the border between divisions 1C and 1D and a single fisher harvested fish from division 1C, but sold his catch at the market in Nuuk (1D). As has been done in the past, that specific catch has been allocated to Division 1C and therefore, division-specific statistics are presented from four divisions.

In the Baseline Sampling Programme, tissue and biological samples were collected from three landing sites: Sisimiut (NAFO Div. 1B), Nuuk (NAFO Div. 1D), and Qaqortoq (NAFO Div. 1F, Figure 5.1.2.1). In total 1738 salmon were inspected for the presence of tags, representing 29 % by weight of the reported landings. Of these, 1662 were measured for fork length, 1324 for gutted weight and 668 for whole weight (Table 5.1.2.1). Scales samples were taken from 1683 salmon for age and origin determination and tissue was removed from 1671 for DNA analysis and subsequently used for assignment of continent of origin. In addition the sex of 426 fish was identified from gonadal examination. Of the 23 adipose finclipped fish recovered four of these had either external or internal tags. In addition, nine tags were submitted to the Nature Institute by local fishers from unsampled fish. The overall breakdown therefore was four coded wire tags and nine streamer/Carlin tags; three from Norway (two of these from East Greenland), one from the US and the five remaining tags were from Canada.

Non-reporting of harvest becomes evident when reported landings are compared with the sample data. Since 2002 the sampling team has seen more fish than were reported as being landed onwards, in at least one of the divisions where international samplers were present. When there is this type of weight discrepancy, the reported landings are adjusted according to the weight of sampled fish and these adjusted landings are used for all subsequent assessments. In 2009 this occurred only at Nuuk. The total discrepancy equaled 2479 kg and the adjusted catch used in the assessment for West Greenland was 28.0 t (Table 5.1.2.2).

The average weight and length of fish from the 2009 catch was 3.5 kg across all ages and 66 cm fork length, with North American 1SW fish averaging 64.9 cm and 3.28 kg whole weight and European 1SW salmon averaging 65.5 cm and 3.40 kg (Table 5.1.2.3). The mean lengths and mean weights for the 2009 samples are larger than the 2007 and 2008 values, but remain close to the previous 10 year mean. It should be noted that the size data is not adjusted for standard week and may not represent a true increase.

North American salmon up to river age six were caught at West Greenland in 2009, with over 93% of the fish being of river-ages 2 to 4, river-age 3 fish were 47.3% of the total (Table 5.1.2.3). The river ages of European salmon ranged from 1 to 4 years. About 60% of the European fish in the catch were river-age 2 and 23.8% were river-age 3 (Table 5.1.2.3). The percentage of the European origin river age 1 salmon (14.3%) was higher than in 2008 (7.0%).

In 2009, the North American samples were 93.4% 1SW salmon, 2.8% 2SW (the highest value in 12 years) and 3.8% previous spawners (Table 5.1.2.3). The European samples were 89.4% 1SW salmon, 7.6% 2SW (the highest in the time series) and 3.0% previous spawners (Table 5.1.2.3).

As part of the sampling, a total of 417 individuals were sexed by gonadal examination. The sex ratio was 14.1% males (n=59) to 85.9% females (n=358) and 9 individuals were classified as unknown sex.

Enhanced Sampling Programme (SALSEA Greenland)

In addition to the Baseline Sampling Program described above, an Enhanced Sampling Programme (SALSEA Greenland) was developed to conduct broader and more detailed

sampling on a fixed number of fish harvested from the waters off West Greenland. The Enhanced Sampling was designed to be integrated within the International Sampling Program's infrastructure. Fresh whole fish were purchased directly from individual fishers and these were used in both the International Sampling Program as well as a more detailed and enhanced sampling program.

A total of 412 fresh whole fish were purchased directly from individual fishers. These fish underwent the Enhanced Sampling process and all carcasses were returned to the local community where sampling took place. These fish were part of the nominal catch and not an additional catch from the fishery.

Origin of the catches

Of the 1671 samples collected for genetic characterisation, 1621 were genotyped at between seven and ten microsatellites and assigned to a continent of origin. Apart from 17 samples which could not be genotyped, there were 33 samples collected late in the season which were not available at the time for genotyping but will be included in an update of the database in 2010. In total, 91.5% of the salmon sampled from the 2009 fishery were of North American origin and 8.5% fish were of European origin.

The division-specific and overall continent of origin assignments for the samples collected in 2009 are listed below. Applying the continental percentages for the NAFO division catches (excluding the reported harvest from East Greenland) resulted in estimates of 23 t of North American origin and 2.6 t of European origin fish (7000 and 800 rounded to the nearest 100 fish, respectively) landed in West Greenland in 2009.

CONTINENTAL PERCENTAGES BY NAFO DIVISION OF CATCHES AT WEST GREENLAND
NA = NORTH AMERICA, E = EUROPE

2009		Numbers			Percentages	
NAFO Div	Sample dates	NA	E	Totals	NA	E
1B	Aug 27 - Oct 10	601	44	645	93.2	6.8
1C	Sept 21 - Sept 23	35	6	41	85.4	14.6
1D	Aug 17 - Oct 15	619	33	652	94.9	5.1
1F	Aug 13 - Sept 10	228	55	283	80.6	19.4
Total		1483	138	1621	91.5	8.5

ICES recommends a continuation and expansion of the broad geographic sampling program (multiple NAFO divisions) to more accurately estimate continent of origin in the mixed stock fishery.

5.2 NASCO has requested ICES to provide clarification of the levels of reported and unreported catch in the subsistence fishery since 2002

The salmon fishery is currently regulated according to The Government of Greenland Executive Order no. 21 of August 10, 2002. Landings to fish plants, sale of salmon to shops, and any export of salmon from Greenland were forbidden. However, licensed

fishers were allowed to sell salmon at the open markets, to hotels, restaurants and institutions and unlicenced fishers could fish for their own consumption. Only hook, gillnet, and drift net are allowed and minimum mesh size is 140 mm stretched. People participating in the salmon fishery are required to report all catches of salmon to the Greenland Fisheries Licence Office (GFLK) immediately after the fishery has taken place.

5.2.1 Reported catches

There are two types of catch reports. One report is for fish caught for personal use and it must contain information on the identity of the fisherman, number of salmon caught, gutted weight (including the head) and community of the individual. The other report covers situations where the catch is sold, and requests information on identity of the fisherman, number of salmon caught, gutted weight (including the head), community, landing site, vessel number and vessel size. Both reports also request a date and signature although the date may not necessarily be the date when the fishery took place. None of the reports requires reporting the effort (number of nets and hours fishing), where the fishery took place, or where the catch was sold.

The data provided by GFLK are screened for data errors and missing values have been filled in whenever possible based on available information. Catches have been assigned to NAFO/ICES area by community, and also the number of licenses per community has been estimated from addresses from the license list. Some reports only contain either a number or a weight of the salmon caught, and these missing data have been adjusted by a standard gutted weight of 2.75 kg.

The statistics obtained are limited due to the current reporting system. Also, a large proportion of the fishers may not be inclined to report every time they have had their nets in the water and instead they only report once at the end of the season. The problem is partially caused by the fact that only reporting date is requested on the report form, and not the catch date.

ICES supports the proposal from the Greenlandic authorities for the establishment of a logbook programme which is a condition of the licencing system for the salmon fishery at west Greenland. Such a logbook or equivalent reporting form, should also request effort information such as, catch site (field code, GPS or fjord), catch date, number of nets, net length, mesh size and number of hours the gillnet has been fishing, so that a more accurate CPUE index can be developed.

5.2.2 Unreported catches

An unreported catch will always occur and this may be due to the scattered nature of this fishery. Information campaigns have been launched to encourage people to apply for a license and report their catches. The present increase in reported catches, issued licenses and number of people reporting their catches, may therefore reflect an increased awareness in the population and the success of these campaigns. It is therefore impossible to say whether the observed increase in salmon catches is a true increase or the result of a decrease in unreported catch.

The unreported catch has previously been estimated as 10 t. A large proportion of the catches reported as being for private consumption are however reported by licensed

fishers. Of the 26 t reported in 2009, 22 t (83.5%) were reported by licensed fishers as either sold or private. Furthermore, a large proportion of the remaining 4.3 t salmon reported as being for private consumption by unlicensed fishers may still be caught by professional hunters and fishers who forgot to apply for a license or were unaware that a license is required. This suggests that the vast majority of reported harvest caught in Greenland is taken by professional hunters and fishers.

5.2.3 Summary of sources of uncertainty in the reported catches for the Greenland fishery since 2002.

There are distinct groups allowed to partake in a fishery at Greenland.

Commercial fishers
This group of fishers require a licence if they wish to sell their catch and they are required to report this catch.

- While the number of commercial fishers who obtain a licence is known, their reported catches may only be partial. Although they are obliged to report all of the catch which they sell, it is unclear to what level this sector is reporting.
- Commercial fishers are obliged to report any catch they take for personal consumption. It is unclear as to the level of unreported catch from this source.
- The commercial fishers are supposed to obtain a licence to fish but not all commercial fishers do so. Again, the level of unreporting in this situation is unclear.

Private fishers
Anybody in Greenland can fish for salmon if it is for private consumption and they are required to report this catch.

- The number of individuals who fish privately for salmon is not known.
- The accuracy of the reporting by the private fishers is uncertain.
- The catch by private fishers sector is largely unknown.

Adding to the uncertainty in estimating the catch is the situation whereby reports received by the authorities are not always correctly filled in and this may lead to a loss of catch information.

ICES notes that there are several sources of unreported landings that remain unquantified but which might be estimated provided that basic catch returns are provided to authorities by all fishers both commercial and private. It is also essential that the total number of commercial and private fishers is known. Similarly, in order to verify the returns, a follow up mechanism where some or all of the data can be verified would be required to ensure that the data being received are accurate.

Table 5.1.1.1 Nominal catches of salmon, West Greenland 1971 to 2009 (metric tons round fresh weight).

YEAR	TOTAL	QUOTA	COMMENTS
1971	2689	-	
1972	2113	1100	
1973	2341	1100	
1974	1917	1191	
1975	2030	1191	
1976	1175	1191	
1977	1420	1191	
1978	984	1191	
1979	1395	1191	
1980	1194	1191	
1981	1264	1265	Quota set to a specific opening date for the fishery
1982	1077	1253	Quota set to a specific opening date for the fishery
1983	310	1191	
1984	297	870	
1985	864	852	
1986	960	909	
1987	966	935	
1988	893	840	Quota for 1988–1990 was 2520 t with an opening date of August 1. Annual catches were not to exceed an annual average (840 t) by more than 10%. Quota adjusted to 900 t in 1989 and 924 t in 1990 for later opening dates.
1989	337	900	
1990	274	924	
1991	472	840	
1992	237	258	Quota set by Greenland authorities
1993		895	The fishery was suspended
1994		137	The fishery was suspended and the quotas were bought out
1995	83	77	
1996	92	174	Quota set by Greenland authorities
1997	58	57	
1998	11	206	
1999	19	206	
2000	21	206	
2001	43	114	Final quota calculated according to the ad hoc management system
2002	9	55	Quota bought out, quota represented the maximum allowable catch (no factory landing allowed), and higher catch figures based on sampling programme information are used for the assessments
2003	9		Quota set to nil (no factory landing allowed), fishery restricted to catches used for internal consumption in Greenland, and higher catch figures based on sampling programme information are used for the assessments
2004	15		same as previous year

Table 5.1.1.1 cont'd Nominal catches of salmon, West Greenland 1971 to 2009 (metric tons round fresh weight).

YEAR	TOTAL	QUOTA	COMMENTS
2005	15		same as previous year
2006	22		Quota set to nil (no factory landing allowed) and fishery restricted to catches used for internal consumption in Greenland
2007	25		Quota set to nil (no factory landing allowed), fishery restricted to catches used for internal consumption in Greenland, and higher catch figures based on sampling programme information are used for the assessments
2008	26		same as 2007
2009	26		same as 2007

Table 5.1.1.2 Distribution of nominal catches (rounded to nearest metric tonne) by Greenland vessels (1977 to 2009).

	NAFO Division							West	East	Total
Year	1A	1B	1C	1D	1E	1F	NK	Greenland	Greenland	Greenland
1977	201	393	336	207	237	46	-	1420	6	1426
1978	81	349	245	186	113	10	-	984	8	992
1979	120	343	524	213	164	31	-	1395	+	1395
1980	52	275	404	231	158	74	-	1194	+	1194
1981	105	403	348	203	153	32	20	1264	+	1264
1982	111	330	239	136	167	76	18	1077	+	1077
1983	14	77	93	41	55	30	-	310	+	310
1984	33	116	64	4	43	32	5	297	+	297
1985	85	124	198	207	147	103	-	864	7	871
1986	46	73	128	203	233	277	-	960	19	979
1987	48	114	229	205	261	109	-	966	+	966
1988	24	100	213	191	198	167	-	893	4	897
1989	9	28	81	73	75	71	-	337	-	337
1990	4	20	132	54	16	48	-	274	-	274
1991	12	36	120	38	108	158	-	472	4	476
1992	-	4	23	5	75	130	-	237	5	242
1993 [1]	-	-	-	-	-	-	-	-	-	-
1994 [1]	-	-	-	-	-	-	-	-	-	-
1995	+	10	28	17	22	5	-	83	2	85
1996	+	+	50	8	23	10	-	92	+	92
1997	1	5	15	4	16	17	-	58	1	59
1998	1	2	2	4	1	2	-	11	-	11
1999	+	2	3	9	2	2	-	19	+	19
2000	+	+	1	7	+	13	-	21	-	21
2001	+	1	4	5	3	28	-	43	-	43
2002	+	+	2	4	1	2	-	9	-	9
2003	1	+	2	1	1	5	-	9	-	9
2004	3	1	4	2	3	2	-	15	-	15
2005	1	3	2	1	3	5	-	15	-	15
2006	6	2	3	4	2	4	-	22	-	22
2007	2	5	6	4	5	2	-	25	-	25
2008	5	2	10	2	2	5	-	26	-	26
2009	0	6	7	3	4	5	-	25.5	0.8	26

[1] The fishery was suspended

+ Small catches <0.5 t

- No catch

Table 5.1.2.1. Size of biological samples and percentage (by number) of North American and European salmon in research vessel catches at West Greenland (1969 to 1982) from commercial samples (1978 to 1992, 1995 to 1997 and 2001) and from local consumption samples (1998 to 2000 and 2002 to 2009).

		Sample Size			Continent of origin (%)			
Source		Length	Scales	Genetics	NA	(95%CI)[1]	E	(95%CI)[1]
Research	1969	212	212		51	(57,44)	49	(56,43)
	1970	127	127		35	(43,26)	65	(75,57)
	1971	247	247		34	(40,28)	66	(72,50)
	1972	3488	3488		36	(37,34)	64	(66,63)
	1973	102	102		49	(59,39)	51	(61,41)
	1974	834	834		43	(46,39)	57	(61,54)
	1975	528	528		44	(48,40)	56	(60,52)
	1976	420	420		43	(48,38)	57	(62,52)
	1978[2]	606	606		38	(41,34)	62	(66,59)
	1978[3]	49	49		55	(69,41)	45	(59,31)
	1979	328	328		47	(52,41)	53	(59,48)
	1980	617	617		58	(62,54)	42	(46,38)
	1982	443	443		47	(52,43)	53	(58,48)
Commercial	1978	392	392		52	(57,47)	48	(53,43)
	1979	1653	1653		50	(52,48)	50	(52,48)
	1980	978	978		48	(51,45)	52	(55,49)
	1981	4570	1930		59	(61,58)	41	(42,39)
	1982	1949	414		62	(64,60)	38	(40,36)
	1983	4896	1815		40	(41,38)	60	(62,59)
	1984	7282	2720		50	(53,47)	50	(53,47)
	1985	13272	2917		50	(53,46)	50	(54,47)
	1986	20394	3509		57	(66,48)	43	(52,34)
	1987	13425	2960		59	(63,54)	41	(46,37)
	1988	11047	2562		43	(49,38)	57	(62,51)
	1989	9366	2227		56	(60,52)	44	(48,40)
	1990	4897	1208		75	(79,70)	25	(30,21)
	1991	5005	1347		65	(69,61)	35	(39,31)
	1992	6348	1648		54	(57,50)	46	(50,43)
	1995	2045	2045		68	(72,65)	32	(35,28)
	1996	3341	1297		73	(76,71)	27	(29,24)
	1997	794	282		80	(84,75)	20	(25,16)
Local consumption	1998	540	406		79	(84,73)	21	(27,16)
	1999	532	532		90	(97,84)	10	(16,3)
	2000	491	491		70		30	
Commercial	2001	4721	2655		69	(71,67)	31	(33,29)
Local consumption	2002	501	501	501	68		32	
	2003	1743	1743	1779	68		32	
	2004	1639	1639	1688	73		27	
	2005	767	767	767	76		24	
	2006	1209	1209	1193	72		28	
	2007	1116	1110	1123	82		18	
	2008	1854	1866	1853	86		14	
	2009	1,662	1,683	1,671	91		9	

[1] CI - confidence interval calculated by method of Pella and Robertson (1979) for 1984 -86 and binomial distribution for the others.

[2] During 1978 Fishery

[3] Research samples after 1978 fishery closed

Table 5.1.2.2. Reported landings by NAFO Division of Atlantic salmon provided by the Home Rule Government for the fisheries at West Greenland, 2002 to 2009. Adjusted landings are calculated for divisions where the sampling teams observed more fish landed than were reported.

		NAFO Division						
Year		1A	1B	1C	1D	1E	1F	Total
2002	Reported	14	78	2100	3752	1417	1661	9022
	Adjusted						2408	9769
2003	Reported	619	17	1621	648	1274	4516	8694
	Adjusted			1782	2709		5912	12 312
2004	Reported	3476	611	3516	2433	2609	2068	14 712
	Adjusted				4929			17 209
2005	Reported	1294	3120	2240	756	2937	4956	15303
	Adjusted				2730			17276
2006	Reported	5427	2611	3424	4731	2636	4192	23021
	Adjusted							
2007	Reported	2019	5089	6148	4470	4828	2093	24647
	Adjusted						2252	24806
2008	Reported	4882	2210	10024	1595	2457	4979	26147
	Adjusted				3577		5478	28627
2009	Reported	195	6151	7090	2988	4296	4777	25497
	Adjusted				5466			27975

Table 5.1.2.3 Biological characteristics of Atlantic salmon sampled during the 2009 West Greenland Atlantic salmon fishery. NA = North America, E = Europe.

River age distribution (%) by continent of origin								
	1	2	3	4	5	6	7	8
NA	2.6	30.7	47.3	15.4	3.7	0.4	0	0
E	14.3	59.5	23.8	2.4	0.0	0	0	0

Length and weight by origin and sea age.								
	1SW		2SW		Previous spawners		All sea ages	
	Fork length (cm)	Whole weight (kg)	Fork length (cm)	Whole weight (kg)	Fork length (cm)	Whole weight (kg)	Fork length (cm)	Whole weight (kg)
NA	64.9	3.28	84.6	7.59	75.9	5.25	64.7	3.67
E	65.5	3.40	81.7	6.54	73.5	4.28	64.1	3.50

Sea age composition (%) by continent of origin			
	1SW	2SW	Previous Spawners
NA	93.4	2.8	3.8
E	89.4	7.6	3

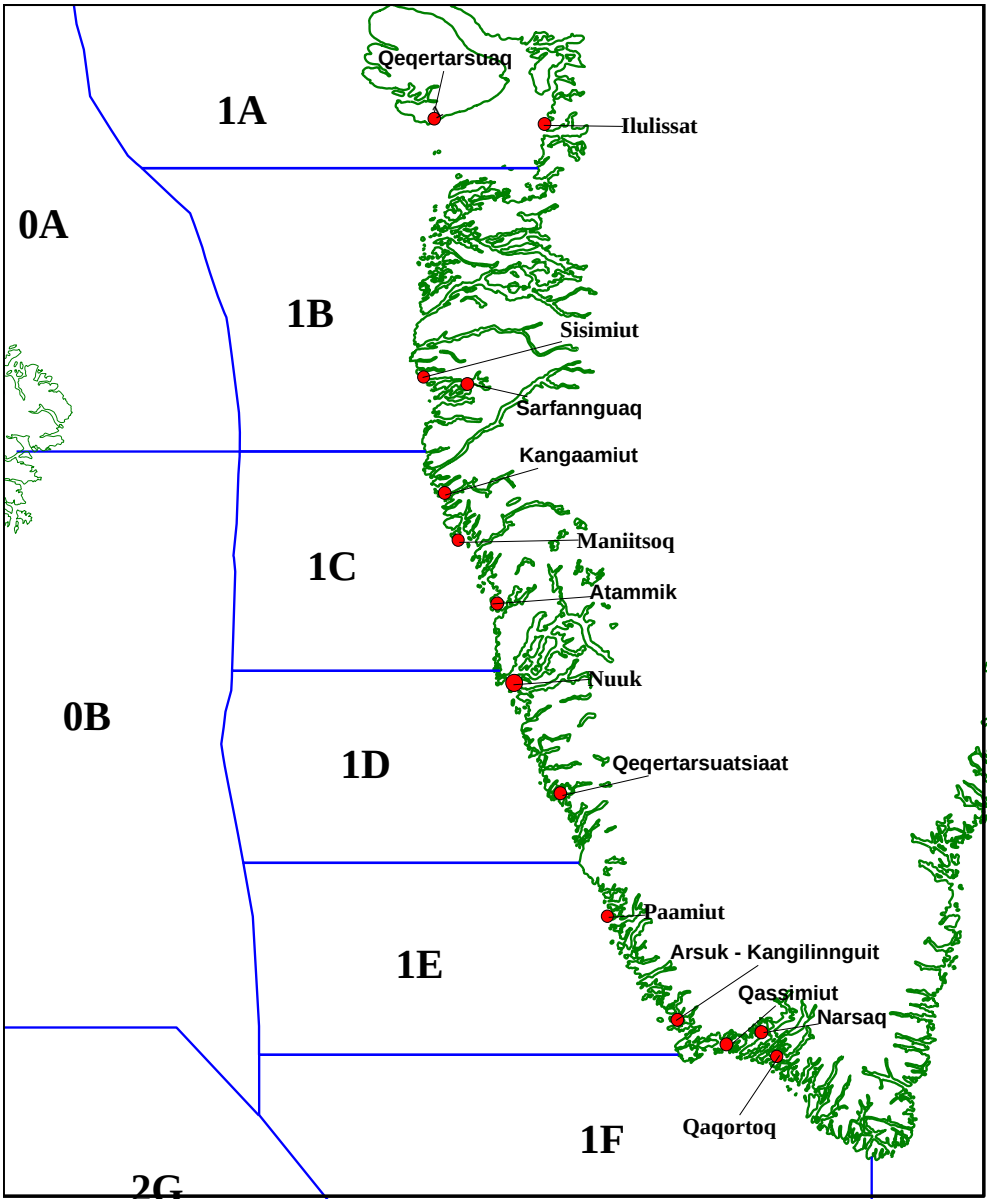


Figure 5.1.2.1. Location of NAFO divisions along the coast of West Greenland.

6 NASCO has requested ICES to identify relevant data deficiencies, monitoring needs and research requirements

ICES recommends that The Working Group meet in 2011 to address questions posed by ICES, including those posed by NASCO. The Working Group intends to convene in the headquarters of the ICES in Copenhagen, Denmark from 29 March to 7 April 2011.

List of recommendations

1) ICES recommends that the Study Group on Salmon Stock Assessment and Forecasting (SGSSAFE) meet to continue the efforts to develop the models formulated for the NAC and NEAC areas, particularly with regard to combining sea age classes, to incorporating environmental variables, and in the spatial disaggregation below the stock complex level. The Study Group should report back to ICES in April 2011.

2) ICES recognised the value of the work completed by SGBICEPS and that the Study Group had been constrained by the lack of wider representation and the difficulties of involving oceanographers. ICES noted the ongoing efforts of the Study Group with regard to developing peer-reviewed outputs and recommended that the data sets collated by the Study Group should be fully utilised and made available to the Working Group in support of further analyses as appropriate.

3) ICES endorsed the recommendations made by WKLUSTRE, which include: long-term storage of the tag databases so that the data are not lost; the reports of the three Workshops on salmon tagging data (WKDHUSTI, WKSHINI, WKLUSTRE) should be combined into a single ICES Co-operative Research Report; and the peer-reviewed publication of these results.

4) ICES recommends that efforts be initiated to transfer and archive in the ICES Data Centre the numerous data sets on Atlantic salmon biological characteristics which have been assembled over the over 30 years of sampling the fisheries at West Greenland, tagging data set from international waters and any other international databases which would be of interest to the Working Group and others in the scientific community.

5) ICES supports the proposal from the Greenlandic authorities for the establishment of a logbook program for commercial and private fishers in the salmon fishery at West Greenland. Additional data to help characterize the nature and extent of the fishery should include catch location, catch date, numbers of nets, net dimensions, and numbers of hours the nets were fished.

6) ICES recommends the continuation of the broad geographic sampling program (multiple NAFO divisions) to more accurately estimate continent of origin in the mixed stock fishery at West Greenland. The Enhanced Sampling Programme undertaken in 2009 should be repeated in 2010.

7) ICES recommends that the sampling program conducted in the Labrador subsistence fishery during recent years and which provided biological characteristics of the harvest material to assess the origin of salmon be continued and expanded in 2010 and future years.

8) ICES recognises that river specific, regional and international management requires extensive monitoring and recommends expanded monitoring programmes across all stock complexes.

9) ICES notes that factors other than fishing are currently constraining and, in some areas, threatening with extirpation populations of Atlantic salmon throughout the North Atlantic. Factors acting in both the freshwater and marine environment are of concern. A review of successes and failures in wild salmon restoration could lead to a classification of activities which could be recommended under various conditions or threats to the persistence of populations. Such a classification would be of benefit to management tasked with rebuilding and restoration actions. Such a review could be undertaken by a Study Group.

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