

# Report on the Activities of the North Atlantic Salmon Conservation Organization 1998 - 1999

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There is growing concern about the abundance of salmon stocks around the North Atlantic, particularly multi-sea-winter salmon, which appears to have declined due to factors which are poorly understood but which have resulted in reduced survival in the marine environment. Many populations are threatened despite the major sacrifices resulting from the increasingly stringent management measures which have been implemented in the last decade. Very strong conservation measures have been taken but the salmon are still not responding in the way that had been hoped. In such difficult circumstances, new philosophies and approaches will be needed if the Organization is to fulfil its objective of conserving, restoring, enhancing and rationally managing salmon stocks.

In response to this situation, a new approach to the conservation, management and exploitation of Atlantic salmon will guide the work of NASCO and its Parties in the new millennium. The Precautionary Approach, which provides a framework under which the Atlantic salmon and its environments are managed and conserved, requires that more caution be exercised when information is uncertain, unreliable or inadequate, and that the absence of adequate scientific information is not used as a reason for postponing or failing to take conservation and management measures. This new approach, which is likely to be an evolving process over a number of years, will influence the entire range of the salmon conservation and management activities of NASCO and its Parties, although initially, application will be in relation to management of the North Atlantic salmon fisheries, the formulation of management advice and associated research and introductions and transfers (including impacts of aquaculture). A detailed Action Plan has been agreed which will guide NASCO and its Parties with regard to the work required for application of the Precautionary Approach over the coming years.

The life-cycle of the salmon is complex, and it is vulnerable to impacts from many different sources.

Clearly, no single factor is responsible for the problems facing the Atlantic salmon, and NASCO has, therefore, continued to act on a broad front. As this report shows, action is being taken in relation to by-catch, fishing in international waters, catch and release, unreported catches, introductions and transfers, habitat issues, impacts of aquaculture and regulatory measures. In accordance with a Precautionary Approach, the first steps have also been taken in developing a framework for stock rebuilding programmes. Clearly, there are many challenges ahead throughout the North Atlantic area in the conservation of this valuable natural resource, but our aim must be to continue to address the wide-ranging pressures on the resource so that when conditions in the sea improve, the stocks are able to rebuild to their former abundance. The ultimate judges of our conservation actions will be the salmon themselves.

## COUNCIL

President	Mr Einar Lemche (Denmark (in respect of the Faroe Islands and Greenland))
Vice-President	Mr Ole Tougaard (European Union)

## NORTH AMERICAN COMMISSION

Chairman	Dr Ray B Owen, Jr (USA)
Vice-Chairman	Mr Pierre Tremblay (Canada)
Rapporteur	Mr Mike Calcutt (Canada)

## WEST GREENLAND COMMISSION

Chairman	Mr Robert Jones (USA)	<i>to June 1998</i>
	Mr Andrew Thomson (European Union)	<i>from June 1998</i>
Vice-Chairman	Mr Andrew Thomson (European Union)	<i>to June 1998</i>
	Mr Mike Calcutt (Canada)	<i>from June 1998</i>
Rapporteur	Mr David Dunkley (European Union)	1998
	Mr David Kerstetter/	
	Ms Kimberly Blankenkemper (USA)	1999

## NORTH-EAST ATLANTIC COMMISSION

Chairman	Mr Pekka Niskanen (European Union)	<i>to June 1998</i>
	Mr Vladimir Moskalenko (Russian Federation)	<i>from June 1998</i>
Vice-Chairman	Dr Alexander Zelentsov (Russian Federation)	<i>to June 1998</i>
	Mr Arni Isaksson (Iceland)	<i>from June 1998</i>
Rapporteur	Mr Dagfinn Gausen (Norway)	1998
	Dr Niall O'Maoiléidigh (European Union)	1999

## FINANCE AND ADMINISTRATION COMMITTEE

Chairman	Mr Eero Niemela (European Union)	<i>to June 1998</i>
	Dr Jean-Pierre Plé (USA)	<i>from June 1998</i>
Vice-Chairman	Mr Stetson Tinkham (USA)	<i>to June 1998</i>
	Mr Steinar Hermansen (Norway)	<i>from June 1998</i>

## SECRETARIAT

Secretary	Dr Malcolm Windsor
Assistant Secretary	Dr Peter Hutchinson
Personal Assistant	Miss Margaret Nicolson

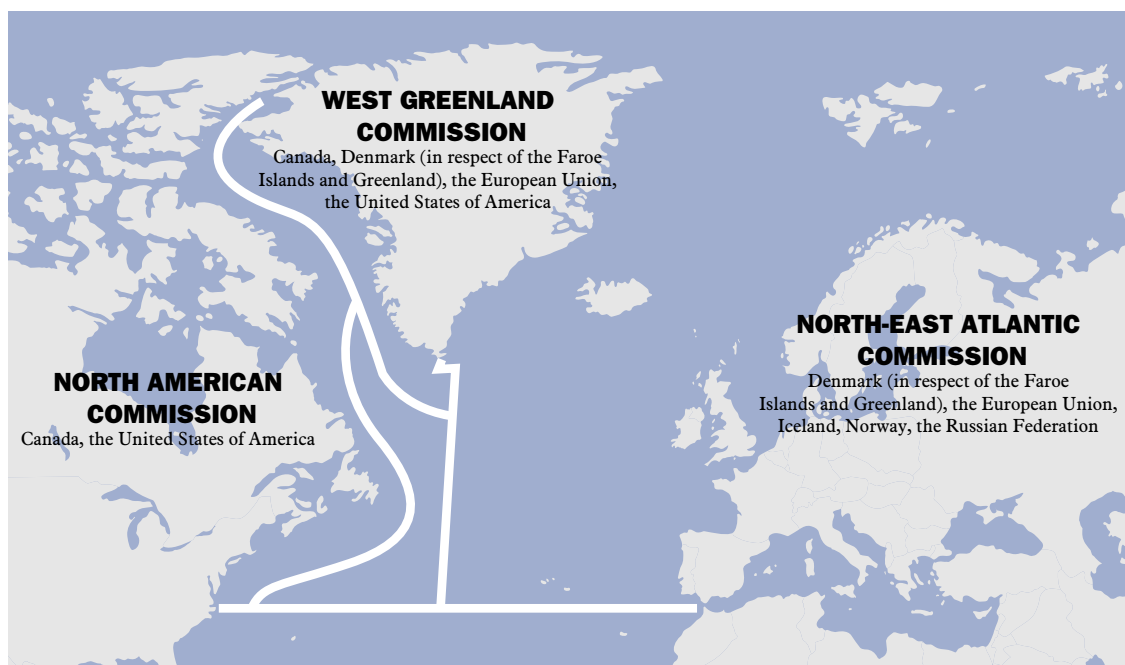
The North Atlantic Salmon Conservation Organization (NASCO) was established in 1984 under the Convention for the Conservation of Salmon in the North Atlantic Ocean. It is an international body with the objective of contributing through consultation and cooperation to the conservation, restoration, enhancement and rational management of salmon stocks taking into account the best scientific evidence available to it.

NASCO consists of a Council, three regional Commissions and a Secretariat. The Council is made up of representatives of all the Parties to the Convention, i.e. Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, Norway, the Russian Federation and the United States of America. The main functions of the Council are to provide a forum

for the study, analysis and exchange of information and for consultation and cooperation on salmon stocks; to coordinate the activities of the Commissions; and to make recommendations on scientific research. Its decisions are taken in the main by three-quarters majority.

The functions of the three regional Commissions - the North American Commission, the North-East Atlantic Commission and the West Greenland Commission - are to provide fora for consultation and cooperation on salmon stocks; to propose regulatory measures for fishing in the fishery zones of members for salmon originating in the rivers of other Parties; and to make recommendations to the Council on scientific research. The Commissions have restricted membership and decisions require unanimous agreement.

## Map of the Convention area showing the membership of the regional Commissions



*Note:*

*In the North American Commission the European Union has the right to submit and vote on proposals for regulatory measures concerning salmon stocks originating in the territories referred to in Article 18 of the Convention.*

*In the North-East Atlantic Commission Canada and the United States of America each has the right to submit and vote on proposals for regulatory measures concerning salmon stocks originating in the rivers of Canada or the United States of America, respectively, and occurring off East Greenland.*

The following organizations have observer status to NASCO:

American Fisheries Society  
Association of Icelandic Angling Clubs  
Association Internationale de Défense du Saumon Atlantique  
Association of Salmon Fishery Boards  
Atlantic Salmon Federation, Canada  
Atlantic Salmon Federation, USA  
Atlantic Salmon Trust  
Coomhola Salmon Trust Limited  
European Anglers Alliance  
Federation of Irish Salmon and Sea-Trout Anglers  
Fédération Québécoise pour le Saumon Atlantique  
Finnish Sport Fishermen's Association  
Icelandic Federation of River Owners  
Institute of Fisheries Management  
International Friends of Wild Salmon  
National Anglers Representative Association  
Norges Bondelag (Norwegian Farmers Union)  
Norges Jeger og Fiskerforbund (Norwegian Association of Hunters and Anglers)  
Norske Lakseelver (Norwegian Salmon Rivers)  
Salmon Net Fishing Association of Scotland  
Salmon and Trout Association  
Sami Parlamenta  
Scottish Anglers National Association  
Ulster Angling Federation Limited  
World Wide Fund for Nature (Norway)

### **Precautionary Approach to Salmon Management**

The prolonged period of low abundance of many salmon stocks suggests the need for a more cautious approach to their conservation, management and exploitation. An approach which has been enshrined in some international agreements is the Precautionary Approach. There is unanimous support from the Parties and Non-Government Organizations for adoption of a Precautionary Approach by NASCO and its Parties. In 1998, the Council adopted an Agreement on Adoption of a Precautionary Approach, under which NASCO and its Parties have agreed to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. Accordingly, NASCO and its Parties should be more cautious when information is uncertain, unreliable or inadequate, and the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

The Precautionary Approach requires:

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

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

- application of a Precautionary Approach should involve all parties concerned with salmon conservation, management and exploitation;
- the Precautionary Approach will be applied by NASCO and by its Parties to the entire range of their salmon conservation and management activities;
- initially application of the Precautionary Approach will be to management of North Atlantic salmon fisheries, the formulation of management advice and associated scientific research, and the area of introductions and transfers (including aquaculture impacts and the possible use of transgenic salmon);
- as the next step, NASCO and its Parties should address application of the Precautionary Approach to freshwater habitat issues and the by-catch of salmon in other fisheries.

### **Management of North Atlantic salmon fisheries**

NASCO and its Parties have agreed to apply the Precautionary Approach to the management both of fisheries regulated by NASCO and those in homewaters. This will require at least the following:

- that stocks be maintained above the conservation limits (currently defined by NASCO as the spawning stock level that produces maximum sustainable yield) by the use of management targets;
- that conservation limits and management targets be set for each river and combined as appropriate for the management of different stock groupings defined by managers;
- the prior identification of undesirable outcomes including the failure to achieve conservation limits, and instability in the catches;
- that account be taken, at each stage, of the

risks of not achieving the fisheries management objectives by considering uncertainty in the current state of the stocks, in biological reference points and fishery management capabilities;

- the formulation of pre-agreed management actions in the form of procedures to be applied over a range of stock conditions;
- assessment of the effectiveness of management actions in all salmon fisheries;
- that stock rebuilding programmes (e.g. habitat improvement, stock enhancement and fishery management actions) be developed for stocks that are below their conservation limits.

The management procedures for all salmon fisheries could include the following elements:

- definition of target spawning stock levels in the relevant rivers;
- definition of pre-fishery abundance of individual salmon stocks or groups of stocks occurring in the relevant fishery;
- utilisation only of the surplus;
- socio-economic factors.

The establishment of river-specific conservation limits for stocks in the North-East Atlantic Commission area has been identified as a priority for immediate action.

#### **Management advice and scientific research**

NASCO has revised its request for scientific advice from ICES to ensure its consistency with the Precautionary Approach.

#### **Introductions and transfers (including impacts of aquaculture and transgenic salmon)**

The Agreement recognises that full implementation of the measures in NASCO's agreements to minimise impacts of introductions and transfers (including aquaculture impacts and

possible use of transgenic salmon) is essential and that NASCO's Parties should consider the need to re-examine the agreements and complement them with additional measures.

#### **Future application of the Precautionary Approach**

The adoption of a Precautionary Approach by NASCO will ensure that, where the scale of an impact is uncertain, priority is given to conservation. Over the coming years NASCO will be developing further the concepts and details of how the Precautionary Approach is applied to its work in order to address the very serious situation facing the wild salmon stocks. A detailed Action Plan designed to guide NASCO and its Parties in applying the Precautionary Approach has been agreed.

#### **Impacts of Aquaculture on Wild Salmon Stocks**

During the last two years, NASCO has given increased attention to impacts of aquaculture on the wild stocks, which may have genetic, disease and ecological implications. Containment measures are currently not adequate to deal with the problem of escapes. A European escapement of only 1% leads to a significant proportion of farmed salmon in the wild and further increases in salmon production would mean that containment levels would have to improve just to ensure the number of salmon escaping remained stable. There is a potential risk of irreversible genetic damage to the wild stocks from continuing escapes of farmed salmon, but there is a lack of scientific consensus on the full extent and nature of the risks. In such circumstances the Precautionary Approach would require that the needs of future generations are taken into account, that changes which are not potentially reversible are avoided, that corrective measures are initiated without delay and that consideration is given to an appropriate placement of the burden of proof. In this regard NASCO has already developed a number of Agreements designed to safeguard the wild stocks from genetic,



ecological and disease and parasite impacts, and these will need to be fully implemented and stronger measures considered, where appropriate, so as to ensure their consistency with the Precautionary Approach.

The Resolution by the Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean to Minimise Impacts from Salmon Aquaculture on the Wild Salmon Stocks (the “Oslo Resolution”) was unanimously adopted by NASCO in 1994, with a view to full implementation by 1998. The measures in this Resolution are designed to minimise genetic and other biological

adopted an Agreement on Implementation of the Oslo Resolution. This Agreement concludes that:

- in order to have confidence that the wild stocks are protected from irreversible genetic change, from ecological impacts and from the impacts of diseases and parasites, the measures in the Oslo Resolution need to be fully implemented and stronger measures considered where appropriate;
- there is a need for improved reporting by the Parties concerning the measures in force to minimise the impacts from aquaculture on the wild stocks;



interactions and the risks of transmission of diseases and parasites to the wild stocks. In 1998, the Council reviewed the implementation of the Oslo Resolution in the light of the information arising from the ICES/NASCO Symposium on “Interactions between salmon culture and wild stocks of Atlantic salmon: the scientific and management issues” held in April 1997, and

- each year in a Special Liaison Meeting with the aquaculture industry, reports should be made by two Contracting Parties on how various aspects of the Oslo Resolution are implemented, and the priority issues;
- although there have been improvements to cage structures to reduce escapes, containment measures are not currently

adequate to deal with the problem;

- there is a need to cooperate with the salmon farming industry in developing guidelines on physical containment and husbandry practices for salmon farms so as to reduce escapes and protect the wild stocks;
- the use of sterile salmon in aquaculture should be the subject of a substantial review by the Council;
- the Parties should give emphasis, where appropriate, to the use and effects of wild salmon protection zones;
- gene banks can be of value as a measure to protect genetic diversity of the wild stocks where these are threatened with loss.

The first Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on Wild Stocks was held in 1999 and involved presentations by Canada and Norway on what steps they have taken to minimise impacts.

In order to retain and strengthen NASCO's relationship with the salmon farming industry, a Wild and Farmed Salmon Liaison Group has been established to "provide the international forum for liaison between the salmon farming industry and managers of the wild Atlantic salmon stocks on issues of mutual interest and to make recommendations for action". The Council has agreed that it wishes to develop closer, more open and broader cooperation with the aquaculture industry so that the industry throughout the North Atlantic can participate. In this regard a new

liaison structure will be initiated early in the year 2000. It is intended to focus initially on the development of Guidelines on Physical Containment and Husbandry Practices.

The Council has reviewed the pros and cons of the use of sterile salmon in aquaculture. While such use would eliminate genetic interactions with the wild fish, there could be disadvantages for the salmon farming industry, including reduced yields and marketing difficulties. The Council agreed that, in line with the Oslo Resolution, there was a need for further research in order to assess the contribution sterile salmon might make to protection of genetic diversity and quantify any difficulties in their use.

**Unreported Catches**

Unreported catches introduce uncertainty into the scientific advice and management process. Guess-estimates of unreported catches indicate that during the period 1985-1996 an average of 28% of the estimated total catch was unreported. A number of factors have been identified which could give rise to unreported catches, including:

- absence of a requirement for catch statistics to be collected;
- suppression of information thought to be unfavourable;
- local sale or consumption;
- innocent inaccuracies in making returns;
- fishing for salmon in international waters;
- illegal fishing.



In order to review the factors leading to unreported catches and the measures being taken to minimise them, the Parties have agreed to provide to the Council, on an annual basis, the following information:

- a description of their management control and reporting systems by country;
- an estimate of unreported catch for each country, broken down to show the different categories of unreported catch and indicating whether or not they result from legal or illegal activities;
- an explanation of how the figure for unreported catch is derived (along the lines of the breakdown of factors leading to unreported catches listed above);
- the extent of catch and release fishing;
- the measures taken to further minimise the level of unreported catches.

Initial returns by the Parties indicate that, while considerable efforts are made to obtain detailed and accurate catch statistics from the salmon fisheries, catches may be unreported for a number of reasons. Illegal fishing appears to be a particular problem for a number of Parties. The Council has expressed continuing concern about the high level of unreported catches and has strongly emphasised the need to take stronger measures to minimise the level of such catches.

#### **By-catch of Atlantic Salmon**

In recent years there has been an enormous growth

in fishing for pelagic species of fish in the North-East Atlantic Commission area, particularly for herring and mackerel in the Norwegian Sea. The fisheries for both mackerel and herring overlap in space and time with the north-ward feeding migration routes of European post-smolts, i.e. salmon in their first year at sea, giving rise to concern about a possible by-catch in these fisheries. Purse-seine vessels are known to target the large concentrations of herring, and it has been suggested that these dense schools tend to deter other species from mixing with the herring; the potential for capture of salmon might, therefore, be low, although there is anecdotal historical evidence from Iceland of a by-catch of both post-smolt and adult salmon in purse-seine fisheries for herring. There is, however, particular concern about the possible by-catch of salmon in the trawl fishery for mackerel in the Faroese zone and in the international area of the Norwegian Sea, which is presently at a high level, and is not anticipated to diminish in the near future. Assessing the scale of the by-catch is, however, difficult. The Council is urgently seeking information from those countries participating in the pelagic fisheries, and from other sources. In this regard collaborative studies between Russian and Faroese scientists are planned during 1999 to investigate by-catch in both the herring and mackerel fisheries.

#### **Fishing for Salmon in International Waters**

During the period 1989-1994, reports were received that salmon long-lining vessels which had registered in non-NASCO States were fishing for



salmon in the area of international waters to the north of the Faroe Islands. Diplomatic actions taken by the Council and NASCO's Parties resulted in actions by the States concerned to address the problem and there have been no sightings of vessels fishing for salmon in international waters since 1994. However, there is a need for constant vigilance, and NASCO is collaborating with the coastguard authorities in the North-East Atlantic Commission area, with the Northwest Atlantic Fisheries Organization (NAFO) and with the North-East Atlantic Fisheries Commission (NEAFC) in order to obtain the best available surveillance information.

#### **Research Fishing for Salmon**

Under Article 2 of the Convention, fishing for salmon is prohibited beyond 12 nautical miles from the baselines except at West Greenland (where it is permitted to fish for salmon up to 40 nautical miles from the baseline) and in the North-East Atlantic Commission area where fishing within the area of fisheries jurisdiction of the Faroe Islands is permitted. Under the Resolution on Scientific Research Fishing adopted by the Council in 1997, scientific research fishing for salmon by Norway, EU (Scotland) and Canada has been approved. In view of the decline in salmon abundance linked to a period of low marine survival, these programmes should provide valuable information on the biology of salmon post-smolts at sea.

#### **Catch and Release**

Catch and release angling is a relatively recent phenomenon that has been promoted as a conservation measure for Atlantic salmon. It is becoming increasingly widely practised and the proportion of the total rod catch that was released in 1998 was 100% in the USA, 81% in Russia, 52% in Canada, 30% in England and Wales, 19% in Scotland and 7% in Iceland. Catch and release angling is considered to be a conservation measure relative to retention angling, due to the generally

low levels of mortality, but caution is needed in its implementation under certain conditions and in handling and releasing the fish if the conservation benefits are to be maximised. NASCO has developed guidelines on catch and release and more than 30,000 copies have been distributed around the North Atlantic area.

#### **Special Session on Habitat Issues**

Conservation of freshwater habitat is a vital requirement if wild stocks are to flourish. The Council held a Special Session on Habitat Issues which included a review of freshwater habitat issues in relation to Atlantic salmon and reports from North America and Europe on measures to conserve, restore and enhance habitat. A separate report of the Special Session will be published.

#### **Other Issues**

NASCO now has 25 Non-Government Organizations with observer status. The Council has welcomed their contribution, which has improved the transparency of NASCO's work. The Council believes that there are significant benefits to this relationship.

There are a number of international fisheries Commissions which exist to conserve other salmon stocks. There is a growing realisation that these organizations should work more closely. The Council has agreed to cooperate with the North Pacific Anadromous Fish Commission (NPAFC) and the International Baltic Sea Fishery Commission (IBSFC) in order to exchange information on problems facing salmon at sea and on the application of the Precautionary Approach. The Council has also agreed to cooperate with all the North Atlantic Fishery Commissions to review aspects such as the Precautionary Approach, control and enforcement schemes and data collection.

NASCO has established a web site which can be accessed at [www.nasco.org.uk](http://www.nasco.org.uk).

## THE WEST GREENLAND COMMISSION

### Regulatory measures

The Commission agreed regulatory measures for fishing of salmon at West Greenland in the years 1998, 1999 and 2000.

In 1998 the scientific advice from ICES stated that:

- the pre-fishery abundance of non-maturing multi-sea-winter salmon from southern European stocks had been declining steadily for about ten years. Present analyses suggest that the pre-fishery abundance reached a historic minimum in 1996 and with the current trend could fall below the preliminary conservation limit in 1998;
- for stocks originating in North America, estimates of pre-fishery abundance of non-maturing one-sea-winter salmon provided a value for 1996 that is the lowest on record.

In the light of this advice, the Commission agreed that, for 1998 only, the catch at West Greenland would be restricted to that amount used for internal consumption in Greenland, which in the past had been estimated at 20 tonnes. The Parties commended Greenland for the improvement in its monitoring and reporting procedures and encouraged further improvements.

The total catch at West Greenland in 1998 was 11 tonnes. In 1999 the Commission became aware that recent articles in angling magazines had alleged that wild salmon from Greenland were on sale in Switzerland and Denmark. Export of wild salmon caught at Greenland would be contrary to the NASCO regulatory measure and Greenland Home Rule Government regulations. Information provided by the United States and Denmark indicated, however, that the “wild” salmon on sale in Denmark was Norwegian farmed salmon, and that on sale in Switzerland was Icelandic ranches salmon. Moreover, statistics from the Government of Switzerland indicated that there have been no imports of salmon from Greenland in the last two

years.

In 1999, the scientific advice from ICES indicated that:

- stocks originating in the southern component of the North-East Atlantic are considered to be outside safe biological limits, and that extreme caution should be exercised in the management of mixed stock fisheries exploiting these stocks;
- stocks originating in North America are outside safe biological limits. Fishing mortality of multi-sea-winter fish should be minimised, except for in-river harvests from those stocks which are above biologically-based escapement requirements.

Taking into account these very serious circumstances the Commission agreed that for 1999 and 2000 the catch at West Greenland in each of these years will be restricted to that amount used for internal consumption in Greenland, which in the past has been estimated at 20 tonnes. There will continue to be no commercial export of salmon. The Parties commended Greenland for the continued improvement in its monitoring and reporting procedures, in order to respect the aforementioned amount.

## THE NORTH-EAST ATLANTIC COMMISSION

### Regulatory measures

In both of the years covered by this report, the Commission agreed regulatory measures for the Faroese fishery. Under these measures, the total nominal catch was set at 330 tonnes and 300 tonnes for the calendar years 1999 and 2000 respectively. Additional measures required that areas with salmon below 60cm in length be closed to salmon fishing at short notice; that the number of boats licensed for salmon be limited to 10 in 1999 and 8 in 2000; that the salmon fishing season be limited to 150 days in 1999 and to 120 days in 2000; and that subject to the total allowable catch, the total



*NASCO held its Sixteenth Annual Meeting in Westport, Co. Mayo, Ireland (7 - 11 June 1999).*

allowable number of fishing vessel days be set at 930 in 1999 and 800 in 2000. If fishing licences are issued the Faroese Home Government indicated that it would allocate less than the total quota. Thus 290 tonnes and 260 tonnes would be allocated in 1999 and 2000 respectively. Additionally, the Faroese Home Government indicated that it would

seek to reduce the fishing effort by 7 days in April 1999 and by 7 days in December 1999.

The quotas for 1999 and 2000 were agreed as interim measures leading towards a quota based on a predictive model as soon as such scientific advice is available.

## Introductions and transfers

In 1997, in response to growing interest in movements of salmonid fish for aquaculture, restoration or enhancement purposes, and the risks these movements of fish pose to the wild stocks, the Commission adopted a Resolution to Protect Wild Salmon Stocks from Introductions and Transfers. It was recognised at this time that there could be possible conflicts with international trade agreements under the World Trade Organization (WTO). However, subsequent consultations with the WTO have indicated that there is scope under their agreements to restrict or prevent trade to protect fish life and health and to prevent or limit other damage, taking into account internationally agreed standards. The consultations also indicated that as NASCO is the relevant international organization dealing with salmon conservation issues, if measures were agreed by NASCO to protect wild salmon stocks, there is nothing in the WTO agreements to prevent the resolution of any disputes within NASCO.

In the interests of transparency, the Commission agreed to introduce an annual reporting system for measures taken by the Parties to protect wild salmon stocks from introductions and transfers in accordance with the Resolution. Under this reporting procedure the information provided by members of the Commission will include details of:

- known movements into the Commission area of live Atlantic salmon and their eggs which have originated from outside the Commission area;
- proposals to release transgenic salmonids to the environment;
- any epidemiological zones, i.e. zones free of specific pathogens, which have been established;
- new management measures which have been undertaken within epidemiological zones, and of any known movements of live salmonids and their eggs from a zone where a disease is present to a zone free of that disease;
- new procedures and changes to existing procedures for the early identification and detection of and rapid response to an outbreak of a new disease or parasitic infection likely to affect salmon;
- any known movements of live salmonids and their eggs from hatcheries to areas containing Atlantic salmon stocks, or to facilities where there is a risk of transmission of infection to such areas, other than those from facilities where regular inspections have not detected significant diseases and parasites;
- management measures concerning introductions and transfers developed for each class of river specified in the Resolution;
- known introductions of non-indigenous fish species into a river containing Atlantic salmon;
- steps taken to limit the risks from unintentional introductions (e.g. in ships' ballast water or through release of live bait, etc.).

## THE NORTH AMERICAN COMMISSION

### Review of salmon management measures

The Commission reviewed the 1998 and 1999 Canadian and US Salmon Management Measures. In the fall of 1997, in response to the crisis in salmon stocks, the Atlantic salmon became one of the conservation priorities adopted by the Canadian Fisheries Minister. The 1998 Canadian Salmon Management Plan included an extension of the moratorium on commercial salmon fishing in Newfoundland, further reductions in retention in the recreational fisheries in Newfoundland and Labrador, closure of some rivers in all provinces, and further restrictions on hook and release fisheries. In Quebec, a voluntary commercial licence retirement offer worth \$1.4 million had been introduced and in Labrador the remaining

commercial fishery was closed. Highlights of the 1999 Canadian Salmon Management Plan include a new approach in Newfoundland based on a river classification system, and the development of conservation thresholds for rivers in Quebec. In the USA the commercial salmon fishery ended in 1948 and there is catch and release fishing only in the recreational fishery. US management actions taken included: acceptance by the US Fish and Wildlife Service and National Marine Fisheries Service of a Conservation Plan for Protection of Atlantic salmon and their habitat in Maine which includes measures to minimise impacts of aquaculture, forestry, agriculture and recreational fishing; and the issue of an order for the decommissioning and removal of Edwards Dam on the Kennebec River for fish habitat reasons. The State of Maine is further restricting water withdrawals, closing the catch and release fishery in certain rivers and promulgating regulations for a code of containment for the aquaculture industry.

#### **Introductions and transfers**

The Commission received reports on the activities of its Scientific Working Group on Salmonid Introductions and Transfers covering 1997 and 1998. Reported introductions and transfers were evaluated against the NAC Protocols for the Introduction and Transfer of Salmonids which had been developed to minimise the risk of the introduction and spread of infectious diseases and agents; to prevent the reduction in genetic diversity and prevent the introduction of non-adaptive genes to wild salmon populations; and to minimise the other impacts of introductions and transfers.

In 1998, proposals for revisions to the NAC Protocols were considered by the Commission. These included a shift from a geographic to a river basis classification system, use of protected zones rather than exclusion zones, new protocols on transgenic salmonids and increased emphasis on risk analysis. It was agreed that recommendations for modifications to the revised protocols would be

provided by the Parties.

#### **St Pierre et Miquelon fisheries**

There are salmon fisheries on the islands of St Pierre et Miquelon (off the south coast of Newfoundland) which exploit salmon of North American origin. These islands are French dependencies and are not members of the Commission. Information from the Government of France on the fisheries at St Pierre et Miquelon was considered by the Commission. This indicated that, while the statistics for St Pierre et Miquelon refer to “commercial” and “recreational” catches, the “commercial” fishery is conducted by fishermen from communities which are heavily dependent on fishing and these fisheries should more appropriately be described as “subsistence” fisheries. Enforcement of the salmon fishery regulations is very thorough and the French authorities had agreed to improve their reporting procedures so as to avoid the discrepancies in the statistics noted by the Commission in the past. In 1998 the catch had increased as a result of an increase in the number of licences issued and an increase in salmon in the coastal waters of St Pierre et Miquelon. The Commission expressed concern about the increase in catch, particularly given the precarious state of North American stocks, and the Council will take the matter up with the French authorities.