

# Report on the Activities of the North Atlantic Salmon Conservation Organization 2000 - 2001

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There has not been much good news concerning the abundance of wild salmon stocks in the North Atlantic for many years. Indeed, for the last decade every year has brought evidence of low abundance and, in response, NASCO and its Contracting Parties have taken many harsh measures to reduce exploitation, including greatly reduced quotas, effort reductions and closure of fisheries. In addition, catch and release is increasingly being employed in recreational fisheries. Many sacrifices have been made but, so far, there has been little indication that the salmon are responding. The reasons for this lack of response are probably complex, but it seems likely that the conditions in the sea are a major factor, because marine survival of monitored stocks continues to be low. There are some initial signs that the situation may be beginning to improve, but not enough to relax the restrictive measures in place. Indeed, in some situations further restrictive measures may be necessary. In our view, NASCO and all of its Contracting Parties should be proud of the measures that have been taken. They were difficult but they were necessary. We now need to know more about why salmon are not thriving during their time in the sea, and the new International Cooperative Salmon Research Programme outlined here is an exciting opportunity to try to coordinate and expand research on this phase of the salmon's life-cycle.

Clearly, the serious situation facing wild salmon stocks requires new approaches, not only to the management of fisheries but so as to address the various threats to the well-being of these stocks. That is why NASCO has introduced the Precautionary Approach to its work internationally, and the Contracting Parties have agreed to use the same approach to their work nationally. In this report the first steps in implementing the Precautionary Approach are outlined. These apply to the management of salmon fisheries and of the freshwater habitats on which the salmon depends. This approach, which better takes into account uncertainty in scientific knowledge, will not be an easy process but it should offer us opportunities to re-think the way that we manage wild species, such

as salmon, and the environments in which they live.

Since the formation of NASCO, a whole new industry, salmon farming, has grown up. It now has far more fish in sea cages than there are wild fish. NASCO is certainly not opposed to salmon farming. We do, however, have the international obligation to protect wild salmon stocks and in this regard the risk of adverse genetic, disease, parasite and environmental impacts cannot be ignored. Here, new steps in developing enhanced cooperation between the salmon farming industry and those concerned with wild stocks are described. The first fruits of this cooperation are internationally agreed guidelines on containment of farmed salmon, which will oblige each Party to produce national action plans to minimise escapes to a level as close to zero as is practicable.

We believe that NASCO is taking the right steps to conserve and restore wild salmon stocks, and we hope that all the sacrifices made will result in improved abundance, of which there are now some very tentative signs.

*Jacque Robichaud - President*

*Malcolm Windsor - Secretary*

## COUNCIL

President	Mr Einar Lemche (Denmark (in respect of the Faroe Islands and Greenland))	<i>to June 2000</i>
	Mr Jacque Robichaud (Canada)	<i>from June 2000</i>
Vice-President	Mr Ole Tougaard (European Union)	<i>to June 2000</i>
	Mr Eidur Gudnason (Iceland)	<i>from June 2000</i>

## NORTH AMERICAN COMMISSION

Chairman	Dr Ray B Owen, Jr (USA)	<i>to June 2000</i>
	Mr Pierre Tremblay (Canada)	<i>from June 2000</i>
Vice-Chairman	Mr Pierre Tremblay (Canada)	<i>to June 2000</i>
	Dr Andrew Rosenberg (USA)	<i>from June 2000</i>
Rapporteur	Mr Mike Calcutt (Canada)	<i>2000</i>
	Ms Kimberly Blankenkaker (USA)	<i>2001</i>

## WEST GREENLAND COMMISSION

Chairman	Mr Andrew Thomson (European Union)	
Vice-Chairman	Mr Mike Calcutt (Canada)	
Rapporteur	Ms Kimberly Blankenkaker (USA)	<i>2000</i>
	Ms Julia Barrow (Canada)	<i>2001</i>

## NORTH-EAST ATLANTIC COMMISSION

Chairman	Mr Vladimir Moskalenko (Russian Federation)	
Vice-Chairman	Mr Arni Isaksson (Iceland)	
Rapporteur	Dr Niall Ó Maoiléidigh (European Union)	

## FINANCE AND ADMINISTRATION COMMITTEE

Chairman	Dr Jean-Pierre Plé (USA)	<i>to June 2001</i>
	Mr Steinar Hermansen (Norway)	<i>from June 2001</i>
Vice-Chairman	Mr Steinar Hermansen (Norway)	<i>to June 2001</i>
	Mr Andrew Thomson (European Union)	<i>from June 2001</i>

## SECRETARIAT

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

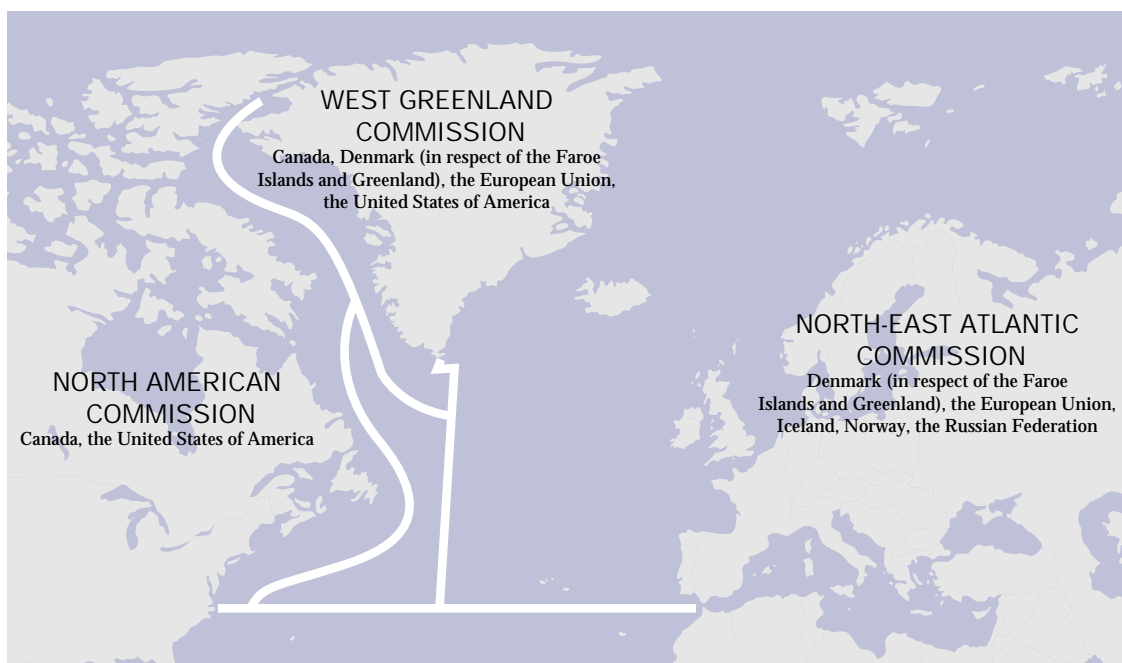
The North Atlantic Salmon Conservation Organization (NASCO) was established in 1984 under the Convention for the Conservation of Salmon in the North Atlantic Ocean. It is an international organization with the objective of contributing through consultation and cooperation to the conservation, restoration, 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 matters concerning 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 North American Commission has a more detailed mandate which requires each member to take

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.*

measures to minimise by-catch of salmon originating in the rivers of the other member. It also requires that fishing patterns in salmon fisheries should not be altered in a manner that results in initiation of fishing or increases in catches of salmon originating in the rivers of another Party without the consent of that Party. The Commissions have restricted membership and decisions require unanimous agreement.

The following non-government 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  
Greenpeace International  
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)

World Wildlife Fund (USA)

The following inter-government organizations have observer status to NASCO:

International Baltic Sea Fishery Commission

International Council for the Exploration of the Sea

North Atlantic Marine Mammal Commission

North Pacific Anadromous Fish Commission

Media representatives may also attend NASCO's meetings.

## Precautionary Approach to Salmon Management

In the light of the severe difficulties experienced with the abundance of many fish species, the Precautionary Approach is being increasingly adopted in international fisheries fora. NASCO and its Contracting Parties took an early initiative 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. Under an Action Plan agreed by the Council, the Precautionary Approach will be applied to the entire range of salmon conservation and management activities but initially this application will be to:

- management of North Atlantic salmon fisheries;
- formulation of management advice and associated scientific research;
- freshwater habitat issues;
- introductions and transfers, aquaculture and transgenics;
- by-catch of salmon in other fisheries;
- implications of social and economic factors.

The first steps have been to adapt the request for scientific advice from the International Council for the Exploration of the Sea (ICES) so as to ensure its consistency with the Precautionary Approach, and to apply the Precautionary Approach to the management of North Atlantic salmon fisheries and to freshwater habitat issues.

### Management of North Atlantic Salmon Fisheries under a Precautionary Approach

The aim of salmon management is to preserve the abundance and diversity of wild salmon stocks. The prolonged period of low abundance of many of these stocks suggests that a more cautious approach to their exploitation is needed. A decision structure has been developed which

requires that conservation limits (i.e. the stock level at which recruitment would begin to decline significantly) or other measures of abundance be established for all stocks and that management targets be used to maintain stocks above these conservation limits so as to achieve management objectives. This decision structure was adopted by the Council on a trial basis, pending a detailed evaluation over the period 2000-2002, and will be applied by each Contracting Party on a selection of rivers with different stock status and management policies. The Parties will report back in 2002 on their experiences in applying the decision structure, so that there can be a thorough evaluation. The decision structure is designed to ensure that fisheries are managed so that only the exploitable surplus is harvested, taking account of the abundance and diversity of the stocks, and that effective mechanisms are in place for fisheries monitoring, surveillance, control and enforcement to ensure compliance with the management measures. In applying the decision structure, management decisions should be taken in accordance with an assessment of risk such that, in the face of uncertainty, the risks to abundance and diversity of the stock(s) are low and the probability of achieving management goals is high.

The final internationally agreed decision structure is likely to form a template for the management of salmon fisheries both by NASCO and by its Contracting Parties. The decision structure will form a uniform and logical process for identifying the abundance and diversity of each stock and then setting up and implementing pre-agreed management measures to permit harvesting only of the surplus. Further, it will require monitoring of the effectiveness of measures and appropriate adjustment to the management regimes, as required.

### Freshwater Habitat Protection and Restoration

It is clear that there have been significant reductions in the productive capacity of the resource through loss of habitat. For example, it

has been estimated that in Canada there has been a net loss of productive capacity of 16% since 1870 and in the USA only approximately 35% of the historic salmon habitat in Maine was accessible in 1984. Similarly, in Europe there has been a very serious decline in both the extent and quality of salmon habitat. A wide range of activities have adversely affected salmon production including:

- pollution from agricultural, domestic and industrial sources;
- obstruction to migration (for example by dams, causeways, weirs, hydro-electric facilities and culverts with inadequate fish passage facilities);
- degradation of in-river habitat (for example by gravel extraction and drainage schemes);
- degradation of riparian habitat (for example by poor forestry practices and over-grazing).

While progress has been made in protecting and restoring salmon habitat through both major

salmonid habitat enhancement programmes and smaller-scale projects focusing on specific problem areas, pressures on salmon habitat from domestic, industrial and agricultural demands are likely to increase as the human population continues to increase. It is clear that NASCO will only be able to achieve its objectives of conserving, restoring, enhancing and rationally managing salmon stocks if habitat is also conserved, restored, enhanced and rationally managed.

In order to ensure that the Precautionary Approach is applied to future activities that could adversely affect salmon habitat, the Council has adopted a Plan of Action which lays down guiding principles and calls for the development of comprehensive salmon habitat protection and restoration plans by NASCO's Contracting Parties and their relevant jurisdictions. The overall objective is to maintain and, where possible, increase the current productive capacity of Atlantic salmon habitat. Among the guiding principles identified for



*Miramichi River, New Brunswick, Canada. NASCO held its Seventeenth Annual Meeting in Miramichi City (5-9 June, 2000).*



NASCO's Contracting Parties and their relevant jurisdictions are to:

- establish inventories of rivers;
- identify and designate priority/key habitats for improvements;
- identify potential risks to productive capacity and develop procedures for implementation, in a timely fashion, of corrective measures;
- place the burden of proof on proponents of an activity which may have an impact on habitat;
- maintain biodiversity;
- protect the current productive capacity of existing habitat;
- restore, in designated areas, the productive capacity of habitat which has been adversely impacted.

The Plan of Action will be reviewed in the light of experience gained and of improved scientific information. At NASCO's 2002 Annual Meeting the Contracting Parties will report on the steps taken to develop and implement habitat protection and restoration plans. Thus habitat protection and restoration plans developed in accordance with internationally agreed principles will be presented to the Council of NASCO by each Party for review.

#### **Next Steps in Applying the Precautionary Approach**

As the next steps in applying the Precautionary Approach, the Council will consider the implications of social and economic issues for application of the Precautionary Approach and how the Precautionary Approach might be applied in relation to introductions and transfers, aquaculture and transgenics.

#### **[An International Cooperative Salmon Research Programme](#)**

Information provided by NASCO's scientific advisers, ICES, indicates that the current period of

low returns of salmon is strongly influenced by factors in the marine environment. For some stocks, marine mortality is currently twice as high as in the 1970s. Many factors may affect marine mortality including environmental changes, diseases and parasites, predation, competition, availability of food, exploitation (including by-catch in fisheries for other species) and freshwater factors which subsequently influence survival in the ocean. These factors, operating alone or in combination, may affect mortality and, if sub-lethal, life-history responses such as age at maturity. Research on salmon during their marine phase is expensive and current expenditure is probably only a fraction of that required for a clearer understanding of the factors responsible for the present period of increased marine mortality. The Council has, therefore, decided to establish an International Cooperative Salmon Research Programme, overseen by a Board which will direct and coordinate the research programme. The Council has agreed that:

- the Secretariat should establish administrative mechanisms to accept contributions and establish an administrative framework to provide funding for projects;
- the Secretariat should compile an inventory of all on-going or scheduled marine salmon research which Contracting Parties plan to carry out during 2002, 2003 and 2004;
- the Board should review this inventory and advise on areas of potential cooperative research and compile priorities for marine research for the next three years;
- the Board should define project terms and conditions for funding eligibility and, at such time as funds become available, solicit, evaluate and approve project proposals.

Clearly the work of the Board over the next few years will be crucial to a clearer understanding of the factors responsible for mortality of salmon at sea and of the opportunities there may be to

counteract this mortality. This initiative provides an opportunity to better coordinate national research programmes on the marine phase of salmon and, in future, to seek more funding for such research.

The Council is also liaising with the North Pacific Anadromous Fish Commission (NPAFC) and the International Baltic Sea Fishery Commission (IBSFC) in order to exchange views on the factors affecting marine survival of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea.

#### By-catch of Atlantic Salmon

The Council remains concerned about the possible by-catch of Atlantic salmon in those fisheries for pelagic fish species in the North-East Atlantic Commission area which overlap spatially and temporally with the migration routes of salmon post-smolts. Information provided by ICES based on the results of special fishing experiments for post-smolts conducted in the Norwegian Sea indicates that catches can be high and are a concern with respect to the impact of the mackerel fishery in this area. The Council has referred the question of whether this fishery poses a threat to salmon stocks to the Board of the International Cooperative Salmon Research Programme.

#### Impacts of Aquaculture

The production of farmed salmon in the North Atlantic Ocean is now more than two hundred and thirty times the harvest of wild salmon stocks. NASCO remains very concerned about the risks of genetic, disease and parasite and other impacts of salmon aquaculture on the wild salmon stocks. In 1994 the Council had adopted the Resolution by the Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean to Minimise Impacts of Salmon Aquaculture on the Wild Salmon Stocks (the 'Oslo Resolution') designed to:

- minimise genetic and other biological interactions;

- minimise the risk of transmission of diseases and parasites to the wild salmon stocks;
- encourage research and development so as to improve the effectiveness of the measures contained in the Resolution.

As recently as 1998, the Council concluded that in order to have confidence that Atlantic salmon 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. Over the last three years the Council has held a series of Special Liaison Meetings in order to allow the Contracting Parties to report, in a transparent manner, on how various aspects of the Oslo Resolution are implemented, and on the priority issues. These reports are available in a separate publication from the Secretariat.

After a period of some difficulties in establishing a useful dialogue with the international salmon farming industry, the Council decided to make a fresh start. A new Liaison Group with the North Atlantic salmon farming industry has been established in order to provide an international forum for liaison on issues of mutual interest. The first tasks of that Group have been to develop Guiding Principles for Cooperation and Guidelines on Containment of Farm Salmon. Under these guidelines, which have been agreed by the Council, each jurisdiction will draw up a national action plan or regional plans at the earliest opportunity. Progress in developing and implementing these plans will be monitored by the Liaison Group.

The action plans should:

- create a systematic basis for minimising escapes so as to achieve a level of escapes that is as close to zero as practicable;
- include a mechanism for reporting information on the level and causes of escapes;

- include a mechanism for reporting and monitoring in order to assess compliance and to verify efficacy.

Measures taken by the Contracting Parties in accordance with the Oslo Resolution will continue to be reviewed by the Liaison Group and by the Council on an annual basis. The Liaison Group will also explore the options for enhanced cooperation between wild and farmed salmon interests. For example, on-going restoration programmes, involving cooperation between the salmon farming industry and those concerned with the wild stocks, will be reviewed.

The Council believes that it is in the interests of the international salmon farming industry to ensure that its operations do not damage the wild salmon stocks, and it has expressed its satisfaction at the improved liaison between salmon farming interests and those concerned with wild stocks, through the Liaison Group. NASCO wishes to see more progress made through this Group on matters of mutual interest.

#### Transgenic Salmon

Transgenic salmon, that is salmon which have been modified by the insertion of genes from another species, have been developed which can grow about four to six times as quickly as existing strains of farmed salmon. In 1997 the Council had expressed concern about the risks posed by transgenic salmon and had adopted guidelines designed to prevent impacts on the wild stocks. Under these guidelines the Contracting Parties agreed to advise the Council of any proposal to permit the rearing of transgenic salmonids, providing details of the proposed method of containment and other measures to safeguard the wild stocks, and to take all possible actions to ensure that the use of transgenic salmon is confined to secure, self-contained, land-based facilities.

The promoters of transgenic salmon are now seeking approval in the USA for their commercial use. The Council has agreed that NASCO's

concerns about transgenic salmon should be made known to the relevant US authorities. All NASCO Contracting Parties are fully committed to the present guidelines on transgenic salmon, although these do not necessarily have legal force.

#### St Pierre and Miquelon Salmon Fisheries

St Pierre and Miquelon are French islands close to Newfoundland, on the migration route of North American Atlantic salmon. In response to concern about salmon harvests, the Council adopted a Resolution under which the President was asked to communicate, through appropriate diplomatic channels, to convey NASCO's concerns about the level of harvests in 1998 and 1999, to urge France in respect of St Pierre and Miquelon to set harvest limits for the 2000 salmon fishery at the lowest possible level consistent with the advice from ICES, and to request that information on the measures taken be made available to NASCO. In the light of the response from the French authorities, the Council supported a proposal from the US to initiate a sampling programme, perhaps with Canadian collaboration, so as to improve understanding of the fishery and determine the origin of the wild salmon in the catch at St Pierre and Miquelon.

#### Predator-related Mortality

The Council has reviewed the measures taken by the Parties in relation to the management of seal populations. A Special Session on predator-related mortality will be considered for a future meeting and information on this issue will be compiled by the Secretariat for presentation to the Council on an annual basis.

#### 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 an 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 this area of 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.

### Unreported Catches

Unreported catches form a significant proportion of the total catch of salmon. Not all of these catches are illegal, but NASCO is eager to reduce the proportion of the catch that goes unreported. The Council had previously agreed that the Contracting Parties should report annually in relation to unreported catches, providing:

- a description of management control and reporting systems by country;
- an estimate of unreported catch;
- an explanation of how the figure for unreported catch is arrived at;
- the extent of catch and release fishing;
- the measures taken to further minimise the level of unreported catches.

It is clear from this information that, despite best efforts by all Contracting Parties to obtain detailed and accurate catch statistics, a significant proportion of the total estimated catch (about 30%) is unreported. However, for the 2000 statistics the proportion of the total estimated catch which was unreported had decreased slightly and the Council welcomed this progress and emphasized the need to take further measures to minimise the level of unreported catches.

### Observers

NASCO aims to be a transparent organization and twenty-seven non-government organizations (NGOs) have been granted observer status. In

addition, representatives from the media and from inter-governmental organizations may also attend all the meetings of the Council and Commissions (a list of observer organizations is given on page 4 of this report). The Council has welcomed participation by observers in its meetings, which has been of mutual benefit and which has enhanced transparency of international cooperation on salmon conservation and management. The conditions governing NGO status have been progressively relaxed in order to allow increased participation by these organizations in NASCO's meetings.

### Management Measures

Each year NASCO's Contracting Parties report to the Council on *inter alia* the actions taken to implement regulatory measures and on laws, regulations and programmes related to the conservation, restoration, enhancement and rational management of salmon stocks. Significant new measures have been introduced by all Parties in response to concern about the abundance of salmon stocks. A major measure was enacted in November 2000, when the USA listed a distinct population segment of Atlantic salmon in Maine under the Endangered Species Act. Under this Act, it is illegal to "take" a listed species and there is a requirement to develop a recovery plan designed to restore the listed species to health.



## Regulatory Measures

Under the NASCO Convention one of the functions of the three regional Commissions is to propose regulatory measures for fishing in the area of fisheries jurisdiction of a member of salmon originating in the rivers of other Parties. During the period covered by this report, such fishing has been regulated by NASCO for the West Greenland and Faroese salmon fisheries.

### The West Greenland Commission

Under a regulatory measure agreed by the Commission for 1999 and 2000, the catch at West Greenland in each of these years was restricted to that amount used for internal consumption in Greenland, which in the past has been estimated at 20 tonnes. Commercial export of salmon was not permitted under this measure. The restriction of the quota to the amount used for internal consumption took into account the advice from

ICES that:

- stocks originating in the southern component of the North-East Atlantic were 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 were 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.

The catch at West Greenland in 2000 under this regulatory measure was 21 tonnes.

Under a Resolution regarding the Fishing of Salmon at West Greenland, the Parties resolved to maintain the spirit embodied in previous



*Tea River, Galicia, Spain. NASCO held its Eighteenth Annual Meeting in Mondariz, on the banks of the Tea River (4-8 June, 2001).*

agreements within the West Greenland Commission and agreed that, unless a significant improvement was demonstrated in the condition of stocks available to the West Greenland fishery, the catch at West Greenland in 2001 would be restricted to the lowest possible level.

For the 2001 fishery at West Greenland the Commission adopted an *ad hoc* management programme. This is an innovative measure which will utilize data collected during the course of the fishing season and which will be implemented as follows:

- three harvest periods will be established which will be separated by two-day closures to allow for estimation of catch per unit effort (CPUE) statistics and communication of management actions;
- the first harvest period will start no sooner than 13 August and will remain open for seven days, or until 28 tonnes of salmon are taken in the commercial fishery, whichever comes first;
- if average CPUE is high ( $> 135\text{kg/licence/day}$ ) in the first period, the second opening will occur. This fishery will close after either 12 days or an additional 64 tonnes are taken, whichever comes first. If average CPUE in the first period is medium ( $100\text{--}135\text{kg/licence/day}$ ) an additional 12-day 32-tonne fishery will open. If the average CPUE in the first period is low ( $< 100\text{kg/licence/day}$ ) no second opening will occur;
- if the combined average CPUE for the first and second openings is high, a third opening will occur, beginning two days after the second period concludes. This fishery will close after either an additional 26 days or an additional 108 tonnes are taken, whichever comes first. If the average in the first and second periods is medium, an additional 26-day 54-tonne fishery will be allowed, but if

the average CPUE is low there will be no additional opening.

The maximum quota for the fishery as a whole will depend on the observed average CPUE, but will be between 28 and 200 tonnes. For the first time, NASCO will have a management measure which responds in real time to the abundance of the salmon.

### **The North-East Atlantic Commission**

Under a regulatory measure established by the Commission in 1999, the total nominal catch for the Faroese fishery in 2000 was set at 300 tonnes. However, the Faroese Home Government indicated that if licences were issued to fish for salmon, no more than 260 tonnes would be allocated. 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 8; that the salmon fishing season be limited to 120 days between 20 January and 30 April and 1 November and 20 December; and that subject to the maximum annual catch the total allowable number of fishing vessel days be set at 800.

There was no fishery for salmon at the Faroes in 1999, but in 2000 a commercial fishery resumed with a total catch of 8 tonnes.

For the fishery at Faroes in 2001 and 2002, the Commission adopted decisions under which no quota was set for the fishery in the light of the Faroese Home Government's intention to manage the fishery in a precautionary manner with a view to sustainability, and to make management decisions with due consideration to the advice from ICES concerning the biological status of the stocks contributing to the fishery.

No fishing for salmon was conducted by Faroese fishermen during the 2000/2001 fishing season (i.e. November 2000 - April 2001).



#### Application of the Precautionary Approach

Each of the Commissions reviewed the initial steps taken by the Contracting Parties to apply the decision structure for application of the Precautionary Approach to the management of North Atlantic salmon fisheries. A detailed evaluation of the decision structure will be undertaken in 2002.

#### Salmonid Introductions and Transfers

The North American Commission and the North-East Atlantic Commission reviewed known introductions and transfers in relation to their agreements on this issue. These compilations are proving very useful in monitoring movements of salmonids and the risks involved to the wild stocks from these movements. The dangers to the wild stocks have been highlighted by the damage caused

by the parasite *Gyrodactylus salaris* in Norway. This parasite has been recorded in 41 watercourses in Norway and in these rivers the wild salmon stocks are threatened with loss. Twenty-five watercourses have been treated and, of these, the parasite has been eradicated from fourteen, but in eight of the treated rivers the parasite has survived.

*Gyrodactylus salaris* has also been reported in rivers in Karelia, Russia, and the west coast of Sweden.

The Council has agreed that it will review application of the Precautionary Approach to introductions and transfers, aquaculture and transgenics prior to its meeting in 2003.

#### Acid Rain

The North American Commission reviewed information arising from a Canadian workshop on the effects of acid rain on Atlantic salmon of the

Southern Upland of Nova Scotia. Natural reproducing salmon are no longer present in many of the region's 65 rivers due to acid toxicity and low marine survival. Significant reductions in toxicity are not anticipated in the near future and further declines in salmon production and losses of stocks are expected. The report recommended a further 75% reduction in sulphur dioxide emissions in eastern Canada and the USA, and identified management options as: liming to neutralize river acidity, stocking of hatchery fish, live gene banking and further restrictions on exploitation. The Commission agreed to investigate the possibility of contacting the Committee on Environmental Cooperation of the North American Free Trade Agreement regarding the potential for acid rain to impact Atlantic salmon.

#### Sampling

Robust sampling at West Greenland and in Labrador is of critical importance for the functioning of the scientific model that predicts pre-fishery abundance for the West Greenland fishery, and to science-based management decisions for this fishery. Canada is committed to increased sampling at Labrador in 2001 and 2002.

A bilateral agreement between Canada and Denmark applied to sampling at West Greenland in 1999 and 2000 and the USA also contributed to this programme. Agreement has been reached which commits all members of the West Greenland Commission to a cooperative sampling programme at West Greenland during the 2001 fishery.