



TWENTY-YEAR
MILESTONES
AND
NEXT STEPS-
A VISION FOR
THE FUTURE





TWENTY-YEAR MILESTONES AND NEXT STEPS- A VISION FOR THE FUTURE

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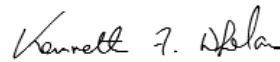
PREFACE

To mark its twentieth anniversary NASCO has undertaken a comprehensive review of its activities and its capabilities to address the major challenges for the management and conservation of wild Atlantic salmon. This review involved consultations in Europe and North America with NGOs and other stakeholders and is, we believe, the first such review undertaken by an inter-governmental fisheries Commission. It became clear at stakeholder meetings held in the UK and the US that there is considerable support for the work of NASCO and that the stakeholders wish to become increasingly involved in its work. Three important themes emerged. First, while we have developed good agreements to address a wide range of pressures facing the resource, there needs to be more urgency in implementation and improved reporting, in an open and challenging environment, on the measures taken by the Parties. Secondly, there is a need to better promote and publicise NASCO's work and to raise public and political awareness of the plight of the salmon and the measures needed to conserve it. Thirdly, a high priority for our stakeholders is the work of NASCO's International Atlantic Salmon Research Board which was set up to improve understanding of the factors affecting mortality of salmon at sea and the opportunities to counteract them.

The plight of the Atlantic salmon is everyone's business

Recognising the need for urgent action to address the wide range of challenges facing the resource and building on NASCO's progress to date, a new and challenging strategic approach to salmon conservation has been developed with the intention of restoring the abundance of Atlantic salmon stocks throughout their range so as to provide the greatest benefits to society and individuals. This strategic approach, which reflects contemporary developments in science and management practices, will guide the future work of the Organization. It aims to make NASCO one of the most open, transparent and effective inter-governmental fisheries organizations.

In this review we provide some background to the establishment of NASCO, summarise the milestones in the Organization's first twenty years and then look at the challenges for the future and how these might be met. The plight of the Atlantic salmon is everyone's business and NASCO is keen to work cooperatively in a more inclusive way with the many interested and committed stakeholders who share our vision.



Dr Ken Whelan *President*



Dr Malcolm Windsor *Secretary*

BACKGROUND

Prior to the 1960s, exploitation of salmon in the North Atlantic was mainly in the homewaters of States of Origin, and management was at a national level. However, the development of fisheries at West Greenland and in the Northern Norwegian Sea and, later, in the Faroese zone, resulted in a change in the pattern of exploitation and meant that rational management could only be achieved through international cooperation.

During the 1970s the need for international cooperation on Atlantic salmon increased because the draft United Nations Convention on the Law of the Sea recognised the establishment of the 200 nautical mile exclusive economic zone. The international organizations which had been involved in the management of salmon fisheries in the North Atlantic no longer provided appropriate management fora since they did not have responsibilities within coastal states' fishing zones. This development, together with concern about catches of salmon in homewaters, resulted in a number of appeals for improved international cooperation. In 1978 an international Atlantic Salmon Symposium sponsored by the Atlantic Salmon Trust and the Atlantic Salmon Federation, and held in Edinburgh, called for an international treaty agreement which would ban fishing for Atlantic salmon beyond 12 nautical miles, provide for cooperation among all

countries in conservation, regulation and enforcement measures, and provide a forum for international cooperation on research and exchange of data on Atlantic salmon.

By January 1979 the first draft of a Treaty had been prepared by the US State Department for comment by the North Atlantic nations and in 1980 and 1981 formal Working Group meetings were held in Washington, Brussels, Ottawa and Oslo to further develop the text. These meetings culminated in January 1982 with a diplomatic conference in Reykjavik to adopt the final version of the Convention for the Conservation of Salmon in the North Atlantic Ocean. This Convention was open for signature in Reykjavik from 2 March 1983 and it entered into force on 1 October 1983. Under the Convention the new inter-governmental organization, the North Atlantic Salmon Conservation Organization (NASCO), was established with the objective of contributing to the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean. The Organization opened on 14 February 1984. This report reviews the progress made by the Organization in the twenty-year period since NASCO's establishment.

TWENTY-YEAR MILESTONES FOR NASCO

Introduction

More than 2,000 salmon rivers flow into the North Atlantic Ocean and the salmon from these rivers migrate widely to the rich feeding grounds of the sub-Arctic. Rational management of these stocks requires international cooperation. Since 1984 we have provided that forum for cooperation

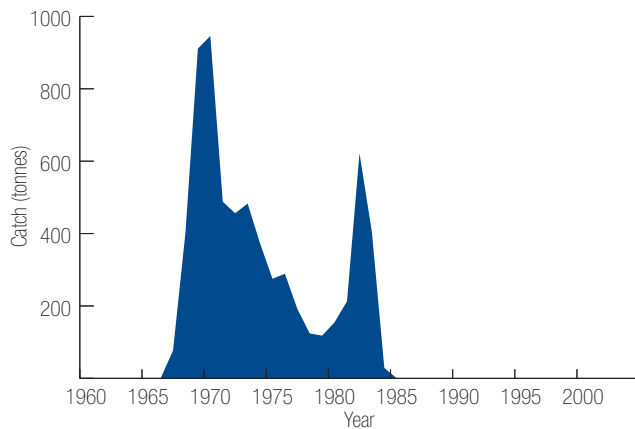
on the conservation, restoration, enhancement and rational management of this highly prized resource. This 20-year period has, however, proved a difficult one since the decline in abundance that started in the late 1970s, and which served as a catalyst for the establishment of NASCO, has continued. Environmental changes, particularly in the ocean, may be driving this decline, which has required the adoption of stringent management measures on a wide range of pressures confronting the resource, in order to maximise the number of fish returning to rivers to spawn. Milestones in NASCO's work to conserve and restore Atlantic salmon through international cooperation are outlined in the following sections.



More comprehensive information is available on the Organization's website, www.nasco.int.

Creation of a salmon protection zone

NASCO's Convention prohibits fishing for salmon beyond areas of fisheries jurisdiction and in most parts of the North Atlantic beyond 12 nautical miles. A large protected zone, free of targeted fisheries for Atlantic salmon, was therefore created when the NASCO



Northern Norwegian Sea salmon fishery catches 1960 - 2004

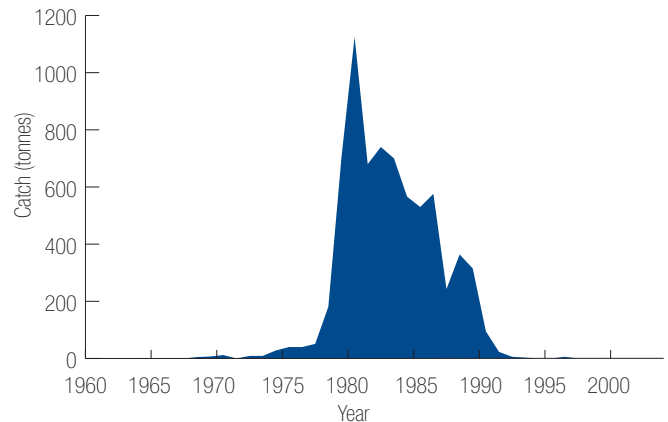
Convention came into force in 1984. One immediate effect was the cessation of the salmon fishery in the Northern Norwegian Sea which at its peak in 1970 harvested almost 1,000 tonnes of salmon.

During the winter of 1989/90 reports to NASCO by its Parties suggested that vessels registered to countries that were not signatories to the NASCO Convention were fishing for salmon in international waters in the protection zone. This fishing threatened to undermine the conservation efforts of NASCO and its Parties and

required an urgent response. Diplomatic intervention by NASCO and its Parties successfully addressed this problem and surveillance actions and information exchange have been improved through international cooperation. There is, however, a need to remain vigilant, since market demand for wild salmon could increase.

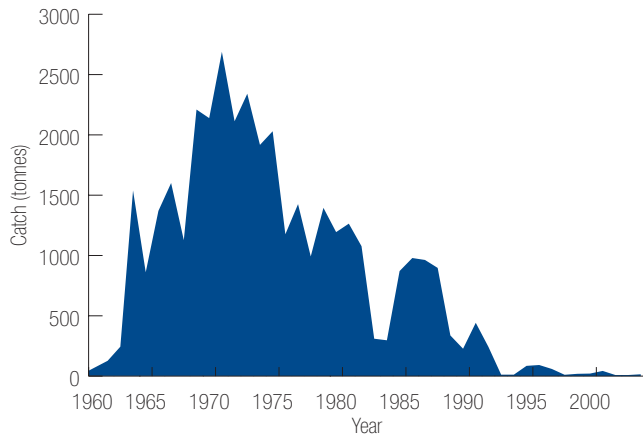
Regulatory measures for salmon fisheries

Regulatory measures agreed by NASCO have greatly reduced the interception by a Party of salmon originating in the rivers of other Parties. These fisheries, principally those at West Greenland, around the Faroe Islands and in the Northern Norwegian Sea, accounted for around 30% of the total harvest at their peak prior to 1984 but for less than 1% of the harvest in 2004.



Faroese salmon fishery catches 1960 - 2004

In establishing regulatory measures, the NASCO Convention requires that a number of factors be taken into account, including the efforts of States of Origin to

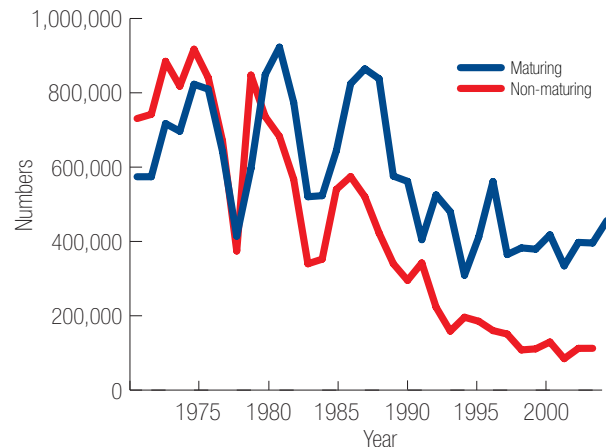


West Greenland salmon fishery catches 1960 - 2004

implement and enforce conservation and management measures. There is, therefore, a requirement for States of Origin to ‘put their own house in order’ before expecting other States to make, or continue to make, sacrifices. This process has stimulated strict management measures by States of Origin, partly in recognition of their international obligations under the NASCO Convention, and partly for domestic management reasons. It has also meant that most interceptions by one country of salmon originating in another country have ceased. The initial focus of NASCO’s work was management of salmon fisheries but the decline in abundance has continued in spite of the harsh management measures introduced which greatly reduced fishing effort. The conservation and rational management of Atlantic salmon require action on many fronts, so NASCO has considerably broadened its base to address the very wide range of threats facing the resource.

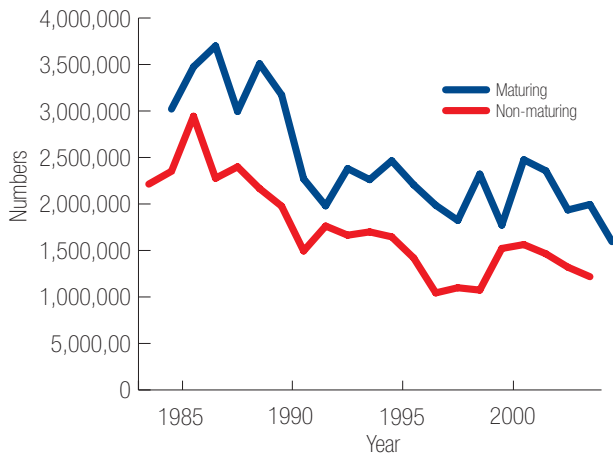
Scientific advice and research

NASCO seeks to base its management actions on the best available scientific information. Advice on the status of stocks, on the effectiveness of management measures, on monitoring needs and research requirements, and on catch options (or alternative management advice) is requested annually from the International Council for the Exploration of the Sea (ICES). Other scientific information has been developed by Working Groups and Committees, through joint workshops and symposia or through specific requests to ICES. NASCO requires scientific advice that is free from political influence, that is clearly presented to managers, and that provides an assessment of risks of the various options. There is no doubt that much progress has been made by the scientific community in developing predictive models of salmon abundance which have provided a scientific basis for establishing regulatory measures.



Estimated pre-fishery abundance of North American salmon 1971-2004
 Source of data: 2005 Report of the ICES Working Group on North Atlantic Salmon. ICES CM2005/ACFM:17.

There has been a very marked reduction in the abundance, prior to any fisheries, of both North American and European origin salmon, particularly for multi-sea-winter fish in the southern regions of the species' range. This decline in abundance is linked to increasing mortality of salmon at sea. Reductions in the fisheries have meant that the decline in the number



Estimated pre-fishery abundance of European salmon 1983-2004
 Source of data: 2005 Report of the ICES Working Group on North Atlantic Salmon. ICES CM2005/ACFM:17.

of fish returning to spawn has been less marked, although still a concern, particularly at the southern limit of the range. In the US and for the Inner Bay of Fundy rivers in Southern Canada, salmon populations have been listed as 'endangered' under federal legislation.

Precautionary Approach to salmon management

While NASCO strives to be a science-based management organization, there are many situations

where scientific information is uncertain, unreliable or inadequate. We have introduced the concepts of the Precautionary Approach to protect the resource and preserve the environments in which it lives. Under the Precautionary Approach, NASCO and its Parties agree to be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures. The Precautionary Approach requires, *inter alia*:

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

We have developed agreements in relation to application of the Precautionary Approach to:

- management of North Atlantic salmon fisheries;
- habitat protection and restoration;
- salmon aquaculture, introductions and transfers

and transgenics;

- stock rebuilding programmes.

We have also identified all the social and economic values of wild Atlantic salmon. In addition to the considerable values associated with the fisheries (commercial, recreational and subsistence) there are values associated with ecotourism and with the salmon itself. Surveys show that people, the general public, care about wild salmon and marvel at its tenacity and migrations. This has a significant value. We have developed guidelines outlining how to incorporate social and economic factors in management decisions under the Precautionary Approach without undermining its effectiveness. These guidelines provide a framework, based on cost/benefit analysis, to support and inform decision-making, which should be supportive of salmon conservation because of the enormous existence value of the Atlantic salmon to society.

Management of North Atlantic salmon fisheries

We have developed a Decision Structure for use in the management of both single- and mixed-stock salmon fisheries by NASCO and its Parties. It proposes the use of reference points such as conservation limits and management targets, or other indicators of stock status and diversity, to trigger management actions to address any failure in abundance or diversity. The Decision

Structure is being used both as a guide to, and a record of, management decisions.

Catch and release recreational fishing for salmon is becoming increasingly practised, although not in all countries. In 2004 more than 140,000 salmon were reported released following capture. We have developed guidelines on catch and release fishing, intended to ensure that, where it is practised, the salmon released have the maximum chance of survival.

We have analysed the sources of unreported catches on an annual basis and have encouraged measures to

minimise such catches which, in 2004, are estimated to have amounted to about 30% of the reported catch. The trends in the estimates of unreported catches indicate that the measures taken are reducing the level of unreported catches. We have also introduced a Minimum Standard for Catch Statistics.

Habitat protection and restoration

Over the last 150 years much salmon habitat has been lost and this must have been a major contributory factor in the decline in wild salmon stocks. Causes of habitat loss include very visible factors, such as hydro-electric dams, and the invisible, but highly damaging, impacts of acid rain. One of the central themes of the Precautionary Approach is that priority should be given to maintaining the productive capacity of the resource. We have developed a Plan of Action for Habitat

The conservation and rational management of Atlantic salmon require action on many fronts

Protection and Restoration with the objective of maintaining and, where possible, increasing the current productive capacity of salmon habitat. The Action Plan requires NASCO's Parties to develop comprehensive plans to protect the current habitat and to restore habitat which has been adversely impacted. To measure and improve progress in meeting the objectives of the plan, the Parties have agreed to establish and regularly update inventories of salmon habitat, which will be made available through the Organization's website. Encouragingly, there have been some notable gains in habitat in recent years.

Aquaculture, introductions and transfers and transgenics

We have adopted a Resolution (the 'Williamsburg Resolution') designed to:

- minimise escape of farmed salmon to as close as practicable to zero;
- minimise impacts of ranched salmon;
- minimise adverse genetic and other biological interactions from salmon enhancement activities, including introductions and transfers;
- minimise the risk of transmission of diseases and parasites to the wild stocks from aquaculture activities and introductions and transfers;
- protect against potential impacts from transgenic salmonids on wild salmon stocks.

This Resolution includes Guidelines for Stocking Atlantic Salmon, since while stocking is widely

practised, and can be successful, it can also have negative impacts on the wild stocks.

We have established a Liaison Group with the salmon farming industry with a view to developing agreements on how to minimise impacts from this industry on the wild stocks, and explore ways in which it may be able to contribute to their restoration. This Liaison Group has developed Guidelines on Containment of Farm Salmon.

The parasite *Gyrodactylus salaris*

The parasite *Gyrodactylus salaris* is a very serious problem in parts of the North-East Atlantic Commission area. It strikes at the very heart of salmon conservation by killing young salmon in fresh water. In Norway the parasite has infected 45 watercourses, where the juvenile populations have declined by 86% on average. The parasite has also been identified in 13 rivers on the west coast of Sweden, in two rivers in Karelia in Russia, and in watercourses in Northern Finland. Iceland, the UK and Ireland are free of the parasite. It is absolutely vital that the further spread of the parasite is prevented and that it is eliminated from infected rivers. We have agreed measures to enhance cooperation on monitoring, research and exchange of information in relation to this parasite, and developed recommendations to revise international guidelines and to strengthen national and regional legislation and measures to prevent its spread.

Mortality of salmon at sea

A major factor influencing salmon abundance is increased mortality at sea. For some monitored stocks

this mortality is now double the level in the 1970s. We do not understand the causes of this increased mortality. It is clear that no matter what steps we take to conserve wild stocks in fresh water, if the fish die at sea this work is undermined. In response to this situation NASCO established an International Atlantic Salmon Research Board. This Board has established an inventory of on-going research in relation to mortality of salmon at sea, which indicates that NASCO Parties and their partners currently spend around £6 million annually on research on salmon at sea. The inventory has enabled gaps in the research programme and priorities for research to be identified. A new comprehensive, innovative programme of research, the SALSEA programme, has been developed and a fund-raising programme is now being developed to support the additional research required. The Board seeks contributions from companies, individuals and foundations. Further details of the work of the Board are available at www.salmonatsea.com.

Information exchange

We have stimulated a very large exchange of statistics and information among our Parties and have established a number of databases related to the salmon and its conservation. This information is available to the public. Conservation and restoration of the wild Atlantic salmon requires involvement and commitment from all stakeholders.

Stakeholder involvement

We have admitted 30 non-government organizations, a

much larger number than most fishery organizations, and welcomed the contributions they have made to our work. A challenge for the future will be to increase the role of stakeholders in the work of NASCO and the International Atlantic Salmon Research Board.

THE NEXT STEPS FOR NASCO - A VISION FOR THE FUTURE

Introduction

In spite of all this progress, the abundance of wild salmon stocks has not significantly improved. However, the stocks would undoubtedly be in a poorer state without these conservation actions. So NASCO's work over the last twenty years provides a strong foundation on which to base future salmon conservation and management measures. However, the situation facing the wild Atlantic salmon is very serious and there are factors at work that are beyond the control of those charged with conserving and restoring the resource. Increasing pressures from climate change and human population growth, with its demand for power, food and infrastructure development, mean that all stakeholders will have to work harder just to maintain stocks at present levels, let alone rebuild them. Over the last twenty years we have successfully broadened NASCO's base to focus on the wide range of pressures facing the resource. Consultations with stakeholders to mark the Organization's twentieth anniversary indicated that there was strong support for NASCO and a willingness

NASCO will pursue the restoration of abundance of Atlantic salmon stocks throughout the species' range

on behalf of the stakeholders to become increasingly involved in the Organization's work. Our intention now is to further increase NASCO's effectiveness and efficiency so as to ensure the conservation and restoration of the Atlantic salmon.

A New Vision and Strategic Approach

NASCO will pursue the restoration of abundance Atlantic salmon stocks throughout the species' range with the aim of providing the greatest possible benefits to society and individuals.

The primary challenges identified under the Precautionary Approach are:

- managing salmon fisheries;
- evaluating the social and economic aspects of Atlantic salmon;
- research on salmon at sea (including by-catch);
- habitat protection and restoration;
- minimising the impacts of aquaculture, introductions and transfers and transgenics;
- minimising the threat from *Gyrodactylus salaris*;
- strengthening initiatives for endangered populations.

The goals for NASCO and the key issues in relation to each of these challenges are summarised in Annex 1.

In order to meet the challenges ahead, we have agreed a range of recommendations for the Next Steps for NASCO, drawing on the feedback from stakeholders, designed to enhance NASCO's ability to achieve its mandate and improve communication with NGOs, stakeholders and the public. These recommendations are aimed at:

- increasing commitment to NASCO's measures and agreements and to actively review progress with implementation plans;
- increasing NASCO's effectiveness and efficiency by ensuring that it uses the best knowledge to inform its actions and by seeking to identify and respond to new opportunities and threats;
- ensuring transparency in its operations and enhancing the use of NGO and stakeholder knowledge and experience;
- increasing its visibility and raising its profile in international, national and local communities by developing its communications and public relations activities.

Conclusions

If NASCO can continue to make progress on the seven challenges identified, increase commitment to its internationally approved agreements, share experience on best practice, update agreements in the light of

experience and understanding of impacts, further enhance the effectiveness and efficiency of international cooperation on this most migratory of species, draw on all the experience and expertise of all the stakeholders and support and energise their work, and raise its public and political profile, then the vision of rebuilding salmon stocks can be realised. However, there are no shortcuts and achieving this vision, particularly for stocks at the southern end of the range in both Europe and North America, could take many years. NASCO is well positioned to play its role but it will require the support of all stakeholders if its conservation goals are to be achieved.

NASCO is well placed to play its role but it will require the support of all stakeholders if its conservation goals are to be achieved



Annex 1

Goals and Issues in Relation to the Main Challenges for NASCO

Management of salmon fisheries

The goal is to promote the diversity and abundance of salmon stocks and maintain all stocks above their conservation limits.

The key issues in relation to the management of salmon fisheries are to:

- maintain an effective prohibition on fishing for salmon beyond areas of fisheries jurisdiction;
- further improve the ‘fairness’ and balance in management of distant-water fisheries;
- explore possibilities for longer-term regulatory measures;
- exchange information and transfer expertise and knowledge between Parties and between NGOs and the authorities;
- further develop the knowledge basis for fisheries regulations.

Social and economic aspects of the Atlantic salmon

The goal for NASCO and its Parties on the social and economic aspects of the Atlantic salmon is to ensure that the salmon stocks provide the greatest possible benefits to society and individuals.

The key issues in relation to the social and economic

aspects of the Atlantic salmon are to:

- ensure that appropriate emphasis is given to the social and economic aspects of the Atlantic salmon;
- strengthen the socio-economic data as a basis for managing Atlantic salmon;
- integrate social and economic aspects and considerations in an open and transparent way into the decision-making processes within NASCO;
- disseminate information on the social and economic aspects of the wild Atlantic salmon in order to ensure that they are given due weight compared to other important commercial and public interests.

Research on salmon at sea (including studies of by-catch of salmon)

The goal for NASCO and its Parties is to promote collaboration and cooperation on research into the causes of marine mortality of Atlantic salmon and the opportunities to counteract this mortality.

The key issues in relation to research on salmon at sea are to:

- develop an effective fund-raising strategy to support research on salmon at sea and identify and target potential sponsors;
- strengthen NGO involvement in, and support for, the Board and for its fund-raising activities.

Protection and restoration of Atlantic salmon habitat

The goal for NASCO and its Parties is to maintain and, where possible, increase the current productive capacity of Atlantic salmon habitat.

The key issues in relation to habitat protection and restoration are to:

- ensure effective implementation of NASCO's Plan of Action for Habitat Protection and Restoration;
- enhance sharing and exchange of information on habitat issues and best management practices between NASCO Parties and other relevant international bodies;
- maintain the NASCO salmon rivers database.

Aquaculture, introductions and transfers and transgenics

The goal for NASCO and its Parties is to minimise the possible adverse impacts of aquaculture, introductions and transfers and transgenics on the wild stocks of Atlantic salmon, including working with industry stakeholders where appropriate.

The key issues in relation to aquaculture, introduction and transfers and transgenics are to:

- determine the need for internationally agreed regulations or standards for aquaculture, introductions and transfers and transgenics;

- enhance public awareness of developments concerning aquaculture, introductions and transfers and transgenics;
- minimise the escape of farmed salmon to a level that is as close as practicable to zero;
- minimise any negative impacts of ranched salmon by utilizing, as far as possible, local stocks and developing and applying appropriate release and harvest strategies;

If NASCO can continue to make progress on all the challenges identified, with the support of its stakeholders, the vision of rebuilding salmon stocks can be realised

- minimise the adverse genetic and other biological interactions from salmon enhancement activities including introductions and transfers;

- minimise the risk of transmission to wild salmon stocks of diseases and parasites from all aquaculture activities and from introductions and transfers;
- consider the consequences of aquaculture of Atlantic salmon in countries that are not Parties to NASCO.

Gyrodactylus salaris

The goal for NASCO and its Parties is to prevent the further spread of this parasite and to eradicate it from infected areas, working with stakeholders, where

appropriate.

The key issues in relation to *G. salaris* are to:

- minimise the threat posed by *G. salaris* to Atlantic salmon;
- enhance cooperation on monitoring, research and dissemination of information regarding *G. salaris*, with special regard to the lack of knowledge on distribution and ecology of the parasite;
- strengthen international, national and regional legislation and guidelines to prevent the further spread of *G. salaris*.

Initiatives for endangered salmon populations

The goal for NASCO and its Parties is to cooperate internationally to protect and rebuild threatened and endangered salmon populations in order to preserve natural diversity.

The key issues in relation to endangered salmon populations are to:

- develop a common terminology to describe the level of threat (i.e. endangered, threatened, near-threatened, vulnerable);
- choose the appropriate strategy, management actions and conservation approaches;
- facilitate a regular exchange of know-how in this field;
- identify efficient stock monitoring techniques to measure success.



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