

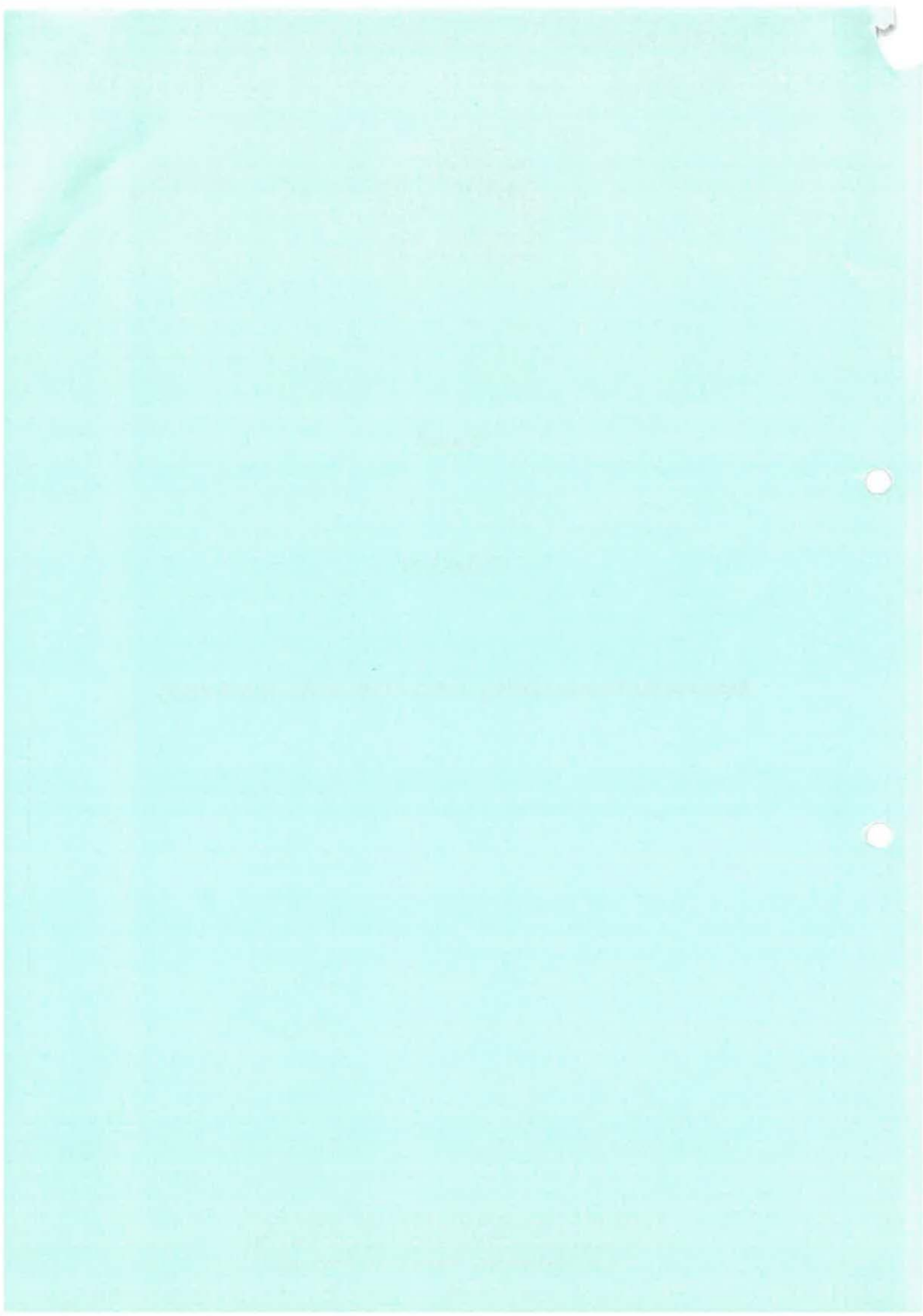


Agenda item 5.7(b)
For decision

Council

CNL(03)23

Report of the Liaison Meeting with the Salmon Farming Industry



Report of the Liaison Meeting with the Salmon Farming Industry

1. Since 2000, the Liaison Group, comprising NASCO and the North Atlantic salmon farming industry, has met annually. The Council had previously welcomed this closer, more open and broader cooperation with the salmon farming industry and the commitment to work together on issues of mutual concern. The fourth meeting of the Liaison Group was held in Williamsburg, Virginia, USA on 13 March 2003 and the report of the meeting is attached.
2. At its third meeting the Liaison Group had agreed a format for reporting, on an annual basis, on progress in developing and implementing action plans on containment. The first returns according to this format were provided to the Liaison Group and are contained in Annex 4 of the report. The Group welcomed the progress made in developing and implementing Action Plans on containment and in transparent reporting of the actions taken, and agreed that it was important to continue to improve the reporting process so that detailed responses to the questions in the agreed format are available to the Group in advance of its meetings.
3. Last year, the Liaison Group's Salmon Cooperation Group initiated a project, with industry funding, to review existing cooperative ventures between wild and farmed salmon interests, to identify further areas for cooperation and to examine options for securing funding for cooperative projects. The report of this SALCOOP project was welcomed by the Liaison Group which agreed that initially it should focus on a small number of the eighteen recommendations. To facilitate this it is proposed that a Workshop be held in conjunction with the next Liaison Group meeting in 2004, focusing on area management initiatives, restoration programmes and the pros and cons of using sterile salmon in farming and the possible opportunities for cooperative trials. The Workshop would also allow for reports on progress in implementing the other SALCOOP recommendations.
4. A report on the SCPA's meeting on application of the Precautionary Approach to aquaculture, introductions and transfers and transgenics was made to the Liaison Group. The draft Resolution developed by the SCPA was made available to industry representatives who indicated that they welcomed the opportunity to review the document at an early stage and agreed to provide comments to NASCO following ISFA's next meeting and before NASCO's Twentieth Annual Meeting.
5. The Liaison Group also considered a request from NASCO's accredited NGOs to participate in future meetings of the Liaison Group in an observer capacity. NASCO had no problem in accepting this proposal in order to increase transparency of the Group's work. However, the industry representatives indicated that they believed that it was important to keep the Group small for its efficient functioning and indicated that they would not wish the problems that had occurred at NASCO's Nineteenth Annual Meeting in relation to communication with the media intruding into the work of the Liaison Group. The proposed Workshop to be held in 2004 would, however, be an open one. With regard to industry representation in the Group, it was noted that

the North Atlantic salmon farming industry was now fully represented but that, if companies not represented by ISFA members or the Russian industry representatives should seek to participate, each application would need to be considered on a case-by-case basis and such participation would require the agreement of both NASCO and industry members of the Group.

6. The Council is asked to:

- note the recommendations of the Salmon Cooperation Group and, in particular, decide if it can accept the proposal to hold a Workshop in conjunction with the next Liaison Group meeting in 2004;
- note the decision of the Liaison Group concerning NGO participation in its meetings and about industry representation in the Group;
- consider any comments from the industry on the recommendations of the SCPA on application of the Precautionary Approach to aquaculture, introductions and transfers and transgenics (the views from the industry and other stakeholders will be considered under agenda item 5.2(c)).

Secretary
Edinburgh
2 May, 2003

SLG(03)9

Report of the Meeting of the North Atlantic Salmon Farming Industry and NASCO Liaison Group

Williamsburg Lodge, Williamsburg, USA

13 March, 2003

1. Introduction

- 1.1 The Chairman of the Liaison Group, Mr James Ryan, opened the meeting and welcomed participants to Williamsburg. He referred to the common interest of ISFA and NASCO members, who are working with the same species. The salmon farming industry is as concerned with safeguarding the wild stocks as it is with ensuring a successful and sustainable salmon farming industry. He referred to the progress made through the Liaison Group and the excellent spirit of cooperation that has characterised its meetings. He noted that there would be important issues to consider during the meeting, including reports on the development and implementation of containment actions plans and a report of the SALCOOP project, which had identified areas for further cooperative ventures between wild and farmed salmon interests.
- 1.2 An opening statement was made by Dr Malcolm Windsor on behalf of NASCO (Annex 1).
- 1.3 A list of participants is contained in Annex 2.

2. Nomination of a Rapporteur

- 2.1 Dr Peter Hutchinson, Assistant Secretary of NASCO, was appointed as Rapporteur.

3. Adoption of the Agenda

- 3.1 The Liaison Group adopted its agenda, SLG(03)5 (Annex 3), having deleted item 4(c), "Norwegian Research Council's Scientific Research Programme for Salmon", from the Draft Agenda since this and other areas of cooperative research are addressed under item 6 of the agenda.

4. Matters Arising since the First Meeting of the Liaison Group

(a) Industry representation in the Liaison Group

- 4.1 At the Group's last meeting the industry representatives had proposed that ISFA, a federation of national salmon farming associations, should in future be the organization which would represent the industry within the Liaison Group. NASCO had asked for an indication of how a North Atlantic group within ISFA might be structured and for a copy of the ISFA Constitution to be provided. The Liaison Group's Constitution states that it comprises representatives of NASCO and the North

Atlantic salmon farming industry. At its Nineteenth Annual Meeting the Council of NASCO had agreed that representatives of ISFA and of the salmon farming industry in Russia be invited to participate in future Liaison Group meetings, and invitations to the meeting had been issued accordingly.

- 4.2 ISFA currently accounts for approximately 90% of production of farmed salmon in the North Atlantic region and, with participation from the Russian salmon farming industry (currently not a member of ISFA), the view was expressed that the North Atlantic salmon farming industry was fully represented in the Liaison Group. However, the Group recognised that in future there could be salmon farming companies not represented by ISFA members that might seek to participate in the Liaison Group. The Group agreed that if this should occur the applications would need to be considered on a case-by-case basis and any decision to invite such participation would require the approval of both NASCO and the industry members of the Group.

(b) *NAC Protocols on Introductions and Transfers*

- 4.3 At the Group's 2001 meeting, representatives of the salmon farming industry in North America had referred to the need to re-examine NASCO's North American Commission's Protocols on Introductions and Transfers in the light of the development by the Liaison Group of Guidelines on Containment of Farm Salmon. At its 2002 meeting, Canada had advised the Group that it had developed a new National Code on introductions and transfers and that consultations were on-going in Canada with stakeholders. The Group had been advised that, once this process was complete, there would be consultations with the US with regard to reviewing the NAC Protocols in the light of this new policy. The Liaison Group had agreed to keep this matter under review.
- 4.4 Canada updated the Group on the ongoing consultation process. The National Code had been agreed by all jurisdictions in Canada and, at the present time, there is unlikely to be support for major revisions to the NAC Protocols. However, it will be important to ensure consistency of the Protocols with the National Code and once the consultations in Canada are completed there will be consultations with the US on revisions to the Protocols, hopefully before the next Annual Meeting of NASCO.

5. Progress in Developing and Implementing Action Plans on Containment

- 5.1 At its 2001 meeting, the Liaison Group had adopted Guidelines on Containment of Farm Salmon. These had been agreed by the Council of NASCO at its Eighteenth Annual Meeting and the Council had stressed the need for the guidelines to be reviewed and updated on a regular basis to take account of new technology and better understanding of the impacts of escaped farm salmon on the wild salmon stocks. The Council had asked the Liaison Group to monitor the development and implementation of the Action Plans envisaged under the guidelines and advise of progress on an annual basis.
- 5.2 At the Liaison Group's 2002 meeting verbal reports had been made by the Parties on progress in developing and implementing Action Plans which indicated that each country with salmon farming had begun the process of implementing Action Plans by

cooperation between industry and governments. The Liaison Group had recognized that each country would inevitably proceed at different speeds in implementing their Action Plans but had agreed that there was a need to develop a systematic process of reporting on implementation of the Action Plans. A format had been agreed for reporting on an annual basis. The first returns according to this format were presented to the Liaison Group, SLG(03)7 (Annex 4). Copies of action plans made available to the Liaison Group are contained in document SLG(03)8 (Annex 5).

- 5.3 The Group welcomed the progress made in developing and implementing Action Plans and towards comprehensive and transparent reporting of the actions taken in accordance with the guidelines. It was recognised that it would be a matter for each country to decide whether, in future, the responsibility for reporting should be with the industry or government representatives to the Group or a joint initiative. However, it was agreed that it was important to continue to improve the reporting process so that detailed responses to the five questions in the agreed format and copies of Action Plans (or details of changes to existing plans) are made available to the Group well in advance of its meetings.

6. Report of the Salmon Cooperation Group

- 6.1 At its 2001 meeting the Liaison Group had established a Salmon Cooperation Group to explore options for enhanced cooperation between wild and farmed salmon interests. Last year the Salmon Cooperation Group reported that ten areas for possible joint initiatives had been identified but initially the Group would work to review all existing cooperative ventures between wild and farmed salmon interests, to identify further areas for cooperation and to examine options for securing funding for cooperative projects. Funding for this initial review, the SALCOOP project, had been secured from industry sources. The report of the SALCOOP project, SLG(03)4, was presented. The Executive Summary of the report is contained in Annex 6. Copies of the full report are available from the NASCO Secretariat.
- 6.2 The Liaison Group welcomed this report, commended the Salmon Cooperation Group and Margaret Poole for their work and agreed that it should be referred, with the support of the Liaison Group, to ISFA and NASCO for their consideration and possible endorsement. The report contains eighteen recommendations and the Group recognised that it was important that these be widely disseminated to interested parties and that a short-list of priority recommendations be identified so that further progress can be made. There was support for a Workshop at which further consideration could be given to the report's recommendations and on progress in implementing them. It was agreed that the SALCOOP project report should be made available on the NASCO and ISFA websites and drawn to the attention of other organizations with sites of relevance to cooperation between wild and farmed salmon interests, e.g. Aquaflow, AquaTT. The Irish Department of the Marine's Communication Section might also be asked to assist with publicizing the report. After the report has been considered by the Council of NASCO, consideration could be given to its publication and circulation.
- 6.3 The Liaison Group agreed that it should initially focus on a small number of the Group's recommendations and that it could best take the project's recommendations

forward by holding a one- or two-day Workshop comprising a number of cooperative themes with the initial focus on:

- area management initiatives;
- restoration programmes;
- the pros and cons of using sterile salmon in farming and possible opportunities for cooperative trials.

6.4 Such a Workshop would also allow reports to be made on progress in implementing the SALCOOP proposals and on communication and education programmes. This Workshop would be open to the public. It was agreed that an Organizing Committee should be established, comprising two representatives from NASCO and two from the North Atlantic salmon farming industry, to develop arrangements for the meeting, including appropriate publicity material, and to examine funding opportunities. It was proposed that the Workshop be held in conjunction with the ISFA meeting in 2004. It was further agreed that an item should be retained on the Liaison Group's agenda to allow for continuing reports on cooperative ventures between wild and farmed salmon interests.

6.5 While there was wide support for the need for enhanced cooperation between wild and farmed salmon interests, the meeting was advised, however, of a case where a cooperative agreement entered into on a voluntary basis had become mandatory, and that this could cause problems.

7. Application of the Precautionary Approach to Salmon Management

7.1 Under the Liaison Group's Guiding Principles for Cooperation, the Parties agreed to work cooperatively when consideration is given to application of the Precautionary Approach to salmon aquaculture. Therefore a brief verbal report was presented of the meeting of NASCO's Standing Committee on the Precautionary Approach (SCPA) to consider application of the Precautionary Approach to aquaculture, introductions and transfers and transgenics. This meeting had been held immediately prior to the Liaison Group meeting and a draft Resolution, which had been developed by the SCPA, was made available to the industry representatives, although it had not, at this stage, been presented to the Council of NASCO. The Resolution is a consolidation of all NASCO's agreements concerning aquaculture, introductions and transfers and transgenics. It is based closely on the wording in the existing agreements but includes new sections on implementation, placement of the burden of proof, risk assessment, mitigation and corrective measures, and standardised definitions. Furthermore, in order to broaden the base and ensure balance in addressing all impacts of aquaculture, guidelines on stocking had been developed. The Liaison Group's Guidelines on Containment had not been changed.

7.2 NASCO representatives indicated that they would appreciate feedback from the salmon farming industry on the SCPA's recommendations which will be considered by the Council at its Twentieth Annual Meeting. The Council had previously recognized that because the SCPA's work covered issues wider than salmon farming, i.e. introductions and transfers, stocking and transgenics, the Parties would need to undertake consultations on these issues with relevant stakeholders. The industry representatives confirmed that they welcomed the opportunity to review the document

at an early stage and agreed to respond with comments following the next meeting of ISFA, and before NASCO's Twentieth Annual Meeting. The view was expressed that the Liaison Group's Guiding Principles for Cooperation should have been included in the draft Resolution. However, NASCO indicated that only the documents concerning measures to minimise impacts from aquaculture, introductions and transfers and transgenics had been included. Thus, the Liaison Group's Guidelines on Containment of Farm Salmon had been included but as the Guiding Principles deal only with the basis for working arrangements between NASCO and the salmon farming industry, they had not been included.

8. Reports on the Status of Wild Salmon Stocks

- 8.1 NASCO advised the Group that the report of the ICES Advisory Committee on Fishery Management on the status of stocks in 2002 will not be available until early May. However, at this time it will be made available to salmon farming industry representatives. A brief summary of the advice for the previous year was presented, which highlighted the continuing low returns, linked to low marine survival, of both European and North American Atlantic salmon stocks. Preliminary information suggests that there had not been any major improvement in stock status in 2002 and, in some areas, there had been further declines. However, reference was made to some signs of improved returns to some rivers on the west coast of Scotland where many populations are in a critical condition.
- 8.2 The Group discussed the significance of by-catch of salmon post-smolts in fisheries for pelagic fish species in the North-East Atlantic. There is particular concern about by-catch of post-smolts in the pelagic trawl fishery for mackerel. Preliminary estimates made by ICES suggested that between 600,000 – 950,000 post-smolts may be taken in this fishery but these estimates will be further refined by ICES in the light of the results of additional research trawling by Norwegian scientists and research trawls and an observer programme carried out by Russia in 2002. Despite the very high estimate of by-catch, preliminary analysis did not appear to indicate that it was a major cause of decline in abundance of Scottish spring salmon stocks. Furthermore, there is not thought to be a large by-catch problem in North America yet stocks there have also declined. All available data will be examined by ICES in developing its advice to NASCO for presentation at the June 2003 meeting. It may be that by lowering the depth of the headrope of the pelagic trawls below 5m the by-catch of salmon could be avoided, but the implications of this measure for the mackerel fishery would need careful consideration. Iceland reported that salmon of 1½ - 2kg weight had been caught as a by-catch by Icelandic trawlers operating close to Svalbard and that the available information would be provided to ICES. There is, therefore, a potential problem of by-catch of both post-smolts and salmon that have spent one or more winters at sea.

9. NGO Participation in the Liaison Group

- 9.1 At its 2001 meeting the Liaison Group agreed that it would be important to demonstrate significant progress in its work before considering changes to its Constitution so as to allow participation by NGOs in its meetings. The Liaison Group had indicated to NASCO's accredited NGOs that it looked forward to being in a position to return to this issue at a future meeting.

- 9.2 Prior to the Liaison Group's 2003 meeting, the Chairman of NASCO's NGOs, Mr Chris Poupard, had written to the Chairman of ISFA, Dr Vigfus Johannsson, requesting that he or his nominee from the accredited NGOs be invited to participate in an observer capacity in future meetings of the Group. NASCO indicated that it would have no problems in accepting this request in order to increase the transparency of the Group's meetings. Furthermore, NASCO pointed out that the NGOs are now better organised and able to provide coordinated responses to issues concerning salmon conservation and management. Some NGOs are cooperating with the salmon farming industry in programmes to safeguard and restore wild stocks. The industry representatives indicated that, in their view, the Group's meetings were already transparent, since its reports are made available to the NGOs. While there is increasing cooperation between the salmon farming industry and NGOs in a number of countries, the industry representatives highlighted the need to keep the Liaison Group small for its efficient functioning. The industry representatives also referred to the problems involving two of NASCO's accredited NGOs that had occurred at NASCO's last Annual Meeting in relation to communication with the media. They would not want to see such actions intruding into the work of the Liaison Group. The industry representatives, therefore, felt that NGOs should not be admitted to the Group for the time being, although the Workshop to be held in 2004 would be an open one.

10. Any Other Business

- 10.1 There was no other business.

11. Date and Place of Next Meeting

- 11.1 The Liaison Group agreed that its next meeting and the Workshop referred to under agenda item 6 should be held in about one year's time so as to maintain the impetus of the Group's work. The Group agreed to leave open the date and place of the next meeting until after ISFA's meeting in May.

12. Report of the Liaison Group Meeting

- 12.1 The Liaison Group agreed a report of its meeting by correspondence.

Opening Statement on Behalf of the North Atlantic Salmon Conservation Organization (NASCO)

First, on behalf of the NASCO delegates to this Liaison Group Meeting, I would like to thank our US colleagues in the National Marine Fisheries Service for the arrangements made for this meeting. It is a great pleasure to be here in beautiful and historic Williamsburg, and we are looking forward to building on the spirit of cooperation that has developed through these meetings and to making progress on issues of mutual concern. I would particularly like to welcome our colleagues from the salmon farming industry in Russia who are participating for the first time in this Liaison Group.

The Council of NASCO has welcomed the development of Guidelines on Containment of Farm Salmon and has asked that the Liaison Group monitor the development and implementation of the action plans developed in accordance with these guidelines and advise on progress on an annual basis. Last year, this group developed a reporting format, and we look forward to receiving the first returns under this new systematic reporting process.

Our second task will be to receive a report back from our Salmon Cooperation Group. You will recall that last year we asked that the Group review all existing cooperative ventures between wild and farmed salmon interests. Funding for the review had been made available from industry sources, and we have the group's recommendations to review. We see this as contributing to a confidence-building process.

Thirdly, NASCO's Standing Committee on the Precautionary Approach met earlier this week to consider application of the Precautionary Approach to aquaculture, introductions and transfers and transgenics. Under this Liaison Group's guiding principles, we agree to work cooperatively when consideration is given to application of the Precautionary Approach to salmon aquaculture and the Council of NASCO is interested to have feedback from the industry and other stakeholders on the Committee's proposals. We will be making a report on the Committee's work which has culminated in the development of a new Resolution; this might become known as the 'Williamsburg Resolution' and it incorporates all of NASCO's agreements on aquaculture, introductions and transfers and transgenics.

Finally, NASCO's NGOs have again raised the question of obtaining observer status for one nominated representative to future meetings of this Liaison Group. You will recall that the Liaison Group felt that it was important to demonstrate significant progress before allowing wider participation in its meeting but looked forward to being able to return to this issue. We will need to fully consider this issue of transparency here in Williamsburg.

We in NASCO look forward to working with the industry on these and other issues on our agenda today, and we are confident that we can make further progress in a continuing spirit of goodwill and cooperation.

***North Atlantic Salmon Farming Industry and NASCO
Liaison Group***

**Williamsburg Lodge, Williamsburg, USA
13 - 14 March 2003**

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SLG(03)7

***Reports on the Development and Implementation of
Containment Action Plans***

1. Is there currently an Action Plan for containment of farm salmon so as to achieve a level of escapes that is as close to zero as practicable? If yes, please attach a copy. If no, what is the anticipated timetable for development of an Action Plan?

Canada*Background*

Regulation of aquaculture in Canada is a shared responsibility between the federal government and the provincial or territorial governments. The Canadian Council of Fisheries and Aquaculture Ministers support, and are helping to facilitate, the development of a National Code for Sustainable Aquaculture (including containment). In Canada, Codes of Conduct, Codes of Practice and Best Management Practices are, by nature, voluntary. They are comprehensive, covering all aspects of aquaculture operations including escape prevention/containment. The development of these codes is being led by the Canadian aquaculture industry. The provinces, having the lead on siting, are collaborating with industry to ensure codes are in agreement with provincial legislation and are considering mandatory codes as a condition of licensing. The federal government is collaborating with industry to ensure codes are in agreement with federal legislation. A National Code System for Sustainable Aquaculture, under which a containment code would reside, will be based on specific standards and will be audited. The draft Code is nearing completion. The following Codes of Practice apply throughout the NASCO area within Canada. Where applicable, they are consistent with the SLG's recommendation on Codes of Containment:

- Best Management Practices for Sustainable Aquaculture in Freshwater (Quebec)
- Environmental Management Guidelines (a Code of Practice is in development) - Aquaculture Association of Nova Scotia
- Code of Containment for Use of Non-Local Salmonids Strains in Sea Cage Aquaculture in Bay d'Espoir and Marine Cage Culture Code of Practice for the Newfoundland Salmonid Aquaculture Industry
- Bay Management Agreement, Fish Health Surveillance Program, Environmental Management Guidelines (New Brunswick)

New Brunswick¹

A Draft Code of Containment for Salmon Farming in New Brunswick was presented by the New Brunswick Salmon Growers Association to the Province of New Brunswick and has

¹ Among Canada's provinces in NASCO, New Brunswick accounts for 90% of the farmed salmon, Nova Scotia 7% and Newfoundland and Labrador the remaining 3% (2001).

been returned with further comment to the industry. The industry is drafting a comprehensive Code of Practice document that is consistent with the requirements of both provincial and federal regulators and meets the requirements of the Canadian Environmental Assessment Act (CEAA). The Code of Practice will compile various programs and agreements that are already being implemented, such as the Environmental Management Guidelines (regulated by the New Brunswick Department of Environment and Local Government), the Fish Health Surveillance Program (regulated by the New Brunswick Department of Agriculture, Fisheries and Aquaculture under the Fish Health Policy, which is in its final draft form) as well as Disinfection Guidelines, Harvesting Codes of Practice, Waste Management Plans and a Code of Containment. A draft Code of Practice will be brought to the membership of the New Brunswick Salmon Growers Association in the spring of 2003 for discussion. Once the Code has been ratified and printed, a copy will be made available to the Liaison Group.

European Union

Ireland

A copy of the Irish Salmon Growers Association (ISGA) containment plan is contained in Annex 5. This document is currently under discussion with the Department of Communications, Marine and Natural Resources, with a view to agreeing a national policy on escapes.

UK - Scotland

The Action Plan being implemented by the Scottish Executive involves both voluntary Codes of Practice and regulation. The plan:

- requires a site-specific containment specification and escapes contingency plan for all (marine) development consent applications within the Environmental Statement which arises from their Environmental Impact Assessment;
- should take account of the various outcomes from consultations with local wild fishery interests including the local Salmon Fishery Board (a process that is facilitated by the Tripartite Working Group Initiative);
- requires monitoring and reporting on industry compliance with its containment Code of Practice (details are published on the Scottish Quality Salmon (SQS) website) that SQS has developed and now implements as an integral component of its requirement for ISO 14001 accredited Environmental Management System (EMS);
- includes statutory escapes notification regulations;
- requires investigation and report of escape incidents;
- requires collection of containment data, and sponsored R&D.

Iceland

A regulatory measure regarding design and strength of equipment and internal inspection at cage farms is now going through a consultation process in Iceland. It should be issued as a regulatory measure before the end of 2003. An English translation will be made available when the measure has been issued.

Norway

A "National Action Plan to prevent escapees" has been developed. A working group under the leadership of the Norwegian Fishfarmers Association (now FHL Aquaculture) delivered a proposal for an Action Plan in March 2000. Apart from NFF, the working group consisted of representatives from the Directorate of Fisheries, the Directorate of Nature, the insurance companies and the environmental official with responsibility on a regional basis. The action plan has been strongly supported by the relevant departments, the insurance business and the association. Since then the "National Action Plan to prevent escapees" has been the basis for work in this field. Through the Action Plan the working group mapped the level and causes of escapes, conducted a thorough evaluation of the situation including technology, knowledge and economy; and proposed list of measures to prevent escapes.

The Action Plan is not available in English, but is available in Norwegian at <http://www.fiskeoppdrett.no/informasjon.php?action=2&ID=14>.

Due to the number of escapees last year, there is an agreement that action to prevent escapes has to be even more focused. Therefore the board of FHL Aquaculture has decided to go further. An addition to the action plan is therefore decided. This means special focus on relevant topics, who is responsible for following up, and if possible, time limits or deadlines for action.

Russia

A plan was approved for use on a regional basis in the Murmansk region in 2001. A translation is contained in Annex 5.

USA

No report received.

2. Is information available on the level and causes of escapes? If yes, please provide details.

Canada

There is currently no formal mechanism for reporting escapes in New Brunswick, but the Code of Containment has been drafted to meet the Liaison Group's International Guidelines on Containment so will include such a mechanism. While there is currently no formal mechanism for reporting, there is substantial anecdotal evidence that indicates a dramatic drop in the incidence of escapes from salmon farms in spite of recent increases in production.

European Union

Ireland

Company	Date	Report	No. of Fish	Comments
SW Regional Fisheries Board (freshwater)	6/8 April 2002	11 April 2002	1,000+ (rainbow trout)	Cormorant damage to nets
Seastream Ltd	6 August, 2002	6 August, 2002	100+ (rainbow trout)	Loss during net change at sea

UK - Scotland

Statutory escapes notification regulations came into effect on 10 May 2002 by way of the Registration of Fish Farming and Shellfish Farming Businesses Amendment (Scotland) Order 2002. The following data are derived from notifications made on or after this date.

No of escape incidents notified:	
1. Total	10
2. Salmon	8
3. Rainbow trout	2
4. Other	0
Estimated stock losses:	(No. of Fish)
1. Total	373,655
2. Salmon	298,655
3. Rainbow trout	75,000
4. Other	0
No of incidents due to:	
1. Storms	4
2. Predation	2
Operator error/accident	3
Other	1
Number of recovery attempts:	5
No. of fish recovered	2

A more detailed report and analysis will be published in due course.

Iceland

No escapes have been reported from Icelandic sea-cages but 6 fish of reared origin, 4 rainbow trout and 2 salmon, were caught in small trout streams, mostly in south-eastern Iceland. Since no escapees have been reported on the east coast in the vicinity of the Icelandic cage farms it seems likely that these fish might be of foreign origin.

Norway

The figures in Attachment 1 show:

- i. Escapees 1992-1998 and production;
- ii. Escapees and causes 1994-1999 in percentage of fish escaped;
- iii. Preliminary figures on numbers and causes for 2002 and geographical distribution;
- iv. Escaped salmon and rainbow trout in parts per thousands (‰) of farmed population;
- v. Number of escapees of salmon and trout 1993-2002.

Russia

To date there have been no escapes.

USA

No report received.

3. Is information available on implementation of and compliance with the Action Plan? If yes, please provide details.

Canada

The Draft Code of Practice will include information on compliance.

European Union

Ireland

Engineers from the Department of Communications, Marine and Natural Resources, regularly inspect structures. Some 100,000 wild salmon are examined annually for the presence of nose tags. All escapes encountered are recorded. The level of fish farm escapes encountered is consistently below 1% of samples.

UK - Scotland

Implementation of the Action Plan is underway, with preparations to monitor industry compliance started, and escape follow-up investigations routinely undertaken on notification, now statutory. The data collected as a result will inform both future R&D and compliance with the Action Plan. SQS will collate information from members in respect of containment measures and management under their EMS.

Iceland

Since the regulatory measure has not been finalised, there can be no question of compliance. The cage farms are nevertheless under inspection for compliance with other regulations and licences.

Norway

A short description of the follow-up in relation to the action plan is shown in Table 1 of Attachment 1.

Russia

All affected sites follow the plan.

USA

No report received.

4. Is information available on the effectiveness of the Action Plan in minimizing escapes? If yes, please provide details.

Canada

The Code as drafted will include a mechanism for evaluating its effectiveness.

European Union

Ireland

See 3 above.

UK - Scotland

Few useful data are yet available, given that the legislative requirement is not yet one year old. However, the data collected will, over time, allow verification of the Action Plan's effectiveness, and enable future refinements to the Plan.

Iceland

Not applicable.

Norway

Minimizing escapes is a continuous process. There seems to be a decline in escapees when compared to the total farmed population. The number of escapees is still far too high, and the numbers for 2002 increased compared to previous years.

Russia

It is difficult to evaluate the effectiveness of the Plan due to the fact that, so far, there have been no escapes.

USA

No report received.

5. Have areas for research and development in support of the Action Plan been identified? If yes, please provide details.

Canada

The New Brunswick industry spent \$24 million on capital investment in 2001 and continues to invest each year in innovation and new technology. Major restructuring has occurred in the past five years as the industry has moved to adopt new technologies and maximize on new scientific knowledge in the areas of hydrographics, cage and equipment design, environmental management and fish health issues. The New Brunswick Salmon Growers Association has identified research into engineering and hydrodynamics as a major priority for the industry.

European Union

Ireland

No state-funded programmes are in place but the industry keeps abreast of new technology in this area. Recently industry has invested heavily in the testing and development of offshore cage technology.

UK - Scotland

Executive-sponsored R&D includes:

- modeling the potential genetic impact of escaped fish on wild populations;
- disease interactions between wild and farmed fish;
- impacts of salmon farming on wild populations;
- assessment of the impacts on native salmonid fishes of introduced rainbow trout;
- genetic inventory and management for west coast salmonid stock restoration.

Iceland

No areas of research and development have been identified. Due to the small size of the Icelandic farming industry it seems likely that Iceland will rely to some extent on information from other countries engaged in fish farming.

Norway

The Norwegian Fisheries and Aquaculture Industries Research Fund support projects in this field. Two major projects are briefly described below:

- “New technology in net pens”
Part objectives for the project are:
 1. Develop new technology for net pens – focusing on maintaining volume and geometry of nets;
 2. Mooring technology to cope with differences in topography;
 3. Management and new technology.Total economic input 2002-2004: NOK 5.5 million (approximately £500,000)
- “Preventive measures to reduce escapees”
Part objectives for the project are:
 1. Based on experience and causes a technical standard for nets will be worked out;
 2. Quality testing and procedures for testing of nets;
 3. Manual for testing, using and treatment of nets.Total economical input 2003-2004: NOK 1.2 million (approximately £100,000)

Together with other projects dealing with preventing escapees, the research fund will contribute NOK 10 million (approximately £900,000) during the years 2002 (NOK 3 million), 2003 (NOK 4 million) and 2004 (NOK 3 million).

An Environmental Management System manual has been drawn up and made available for members. This can be obtained from:
http://www.fiskerifond.no/files/news/attach/guide_170103.pdf.

Russia

There have not been any areas for research identified. The extent of salmon farming is presently very limited in Russia.

USA

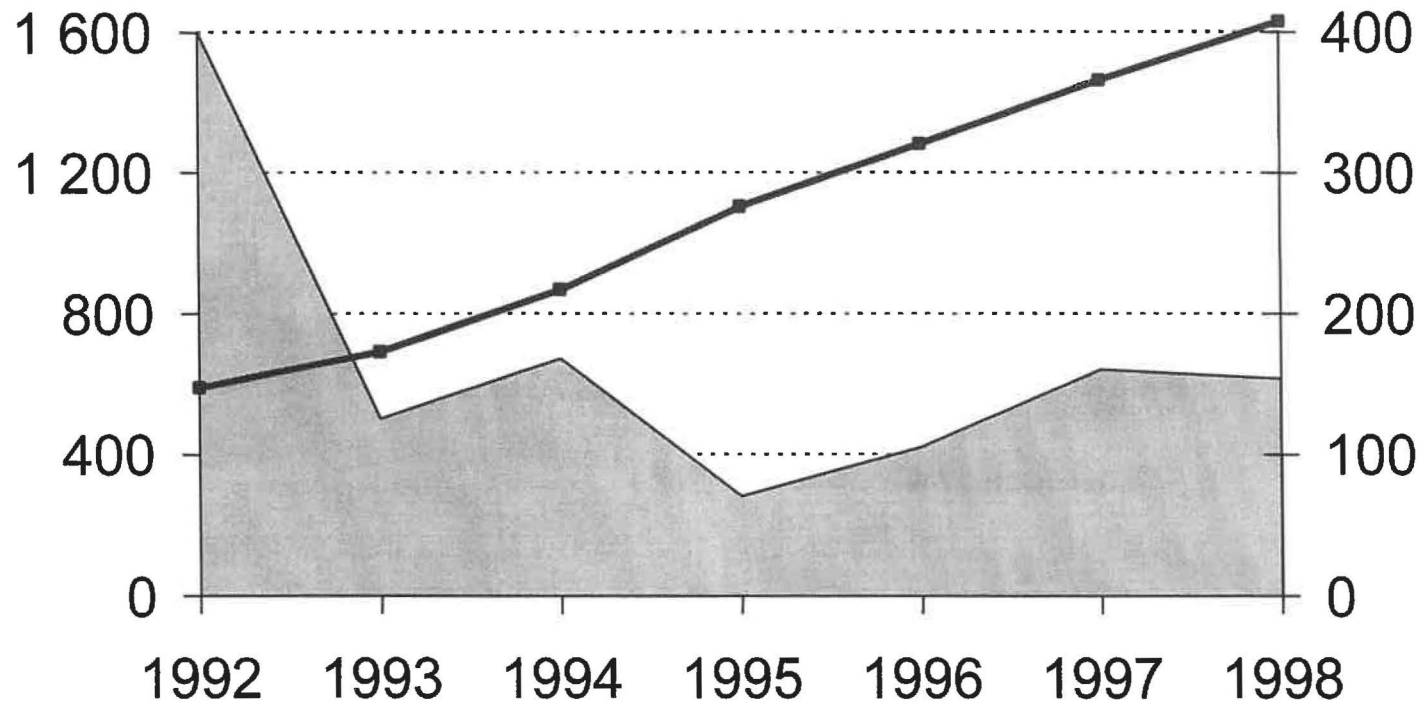
No report received.

***Information on Escapes and Causes of Escapes
provided by Norway***

Escapees 1992 - 1998

Numbers
in 1000

Production
1000 ton



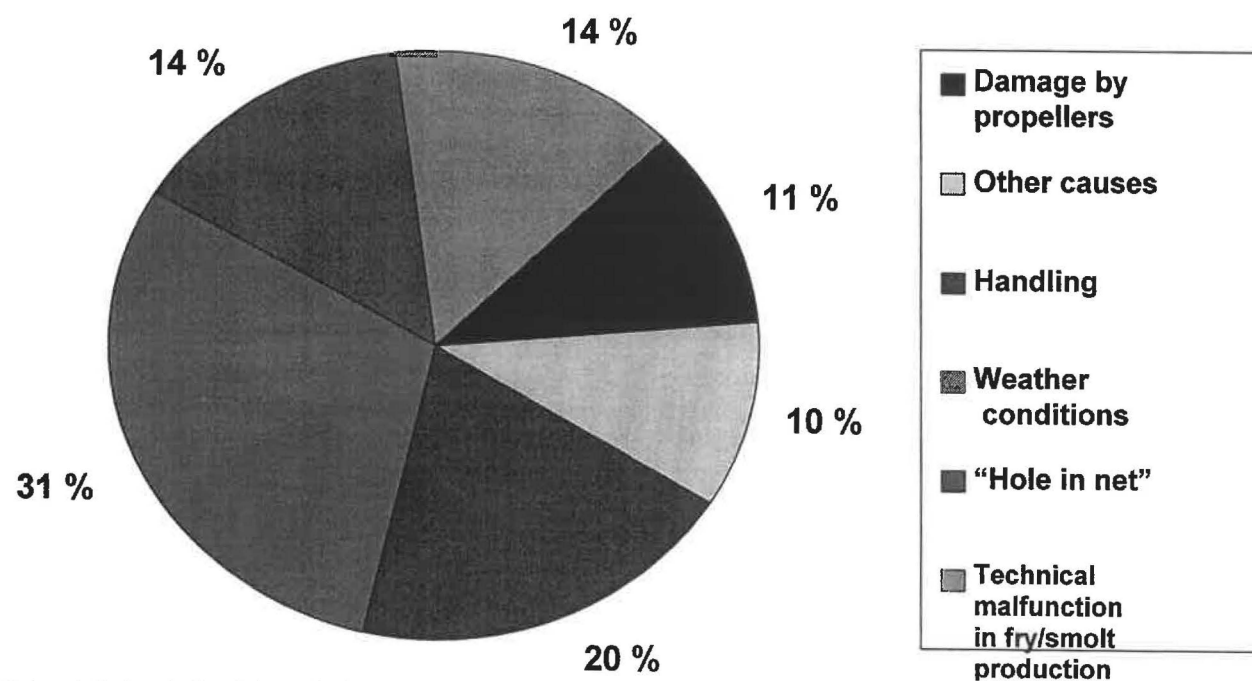
Escaped fish

Production

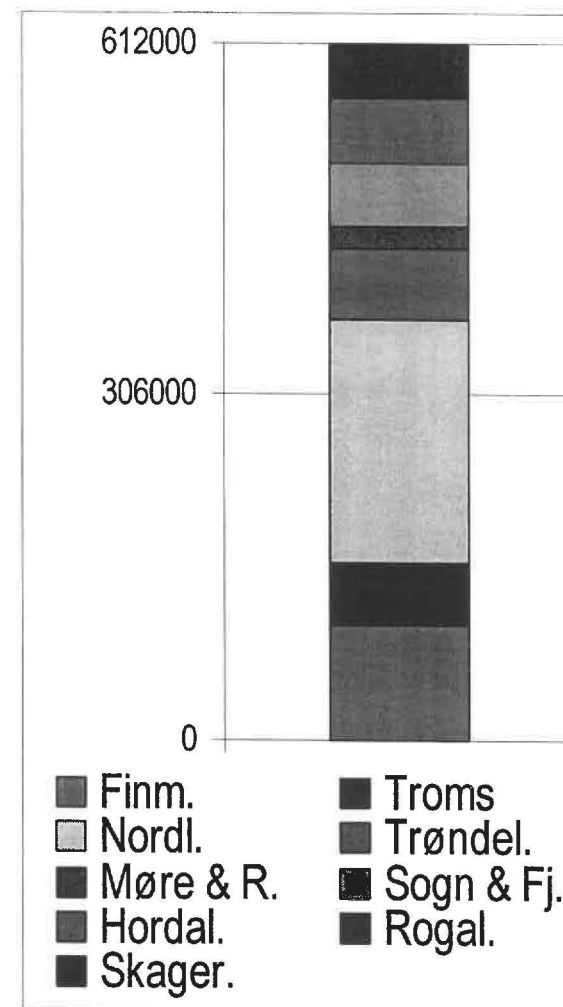
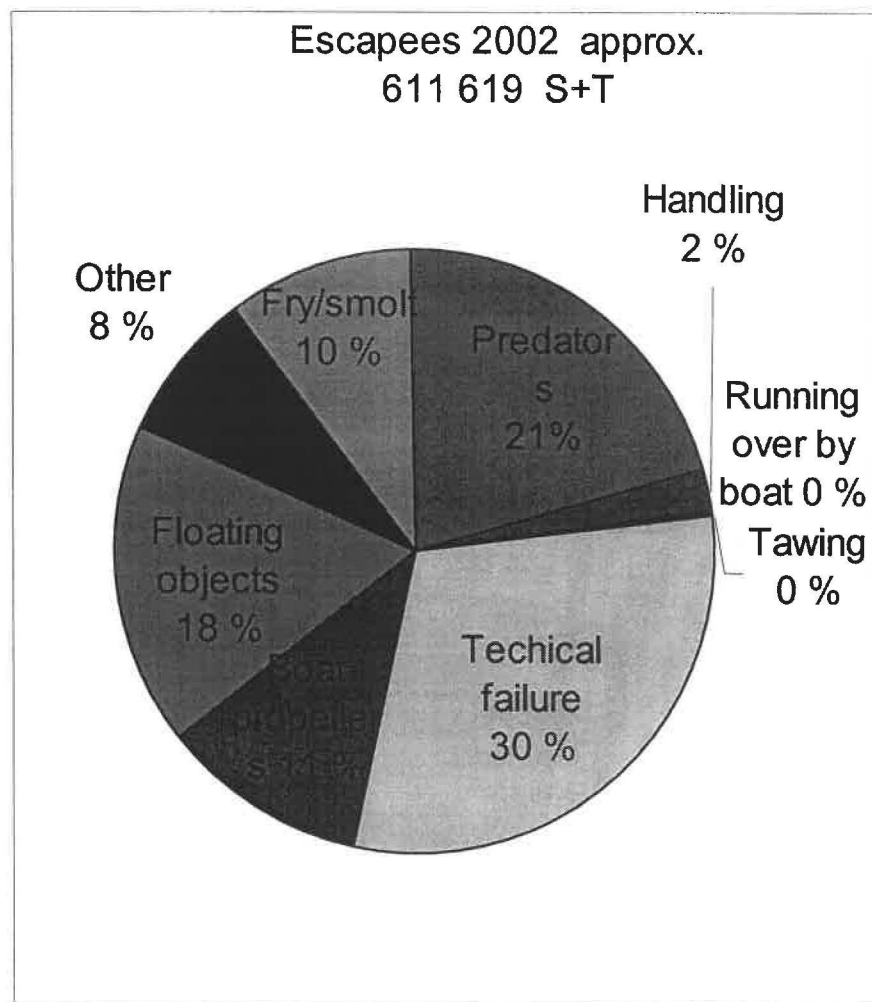
Source: Directory of Fisheries

Escapees and causes 1994 – 99

Based on number of escaped fish



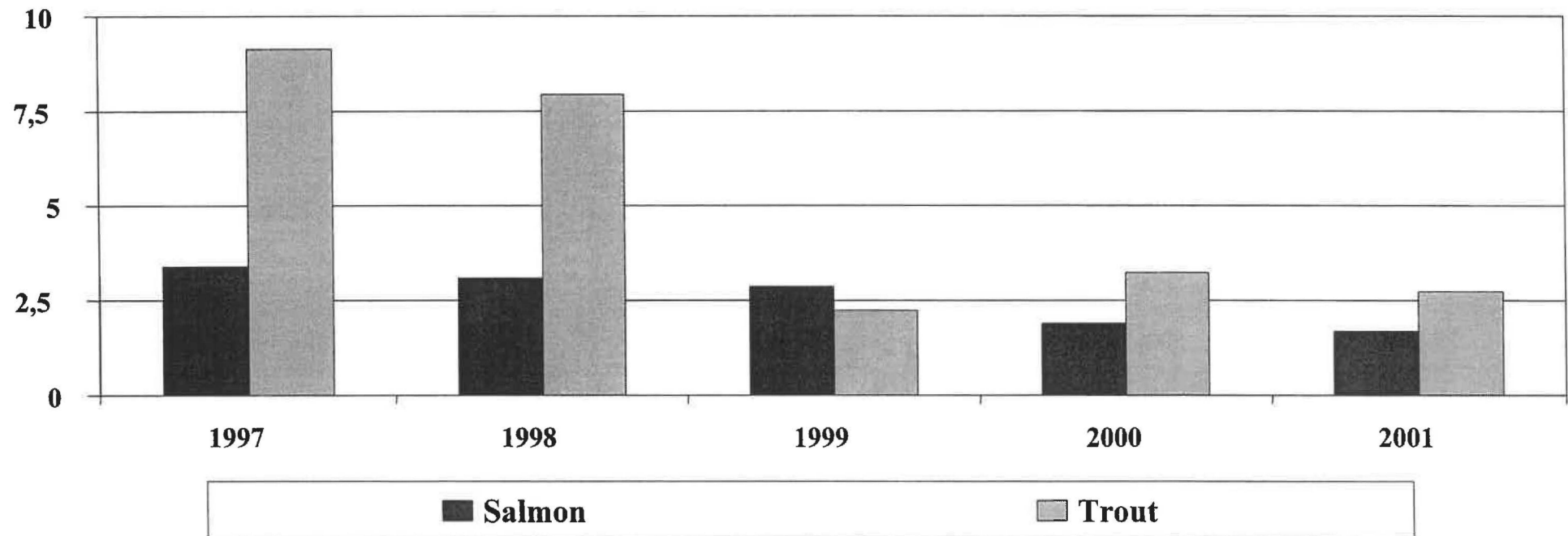
Kilde: Fiskeridirektoratet



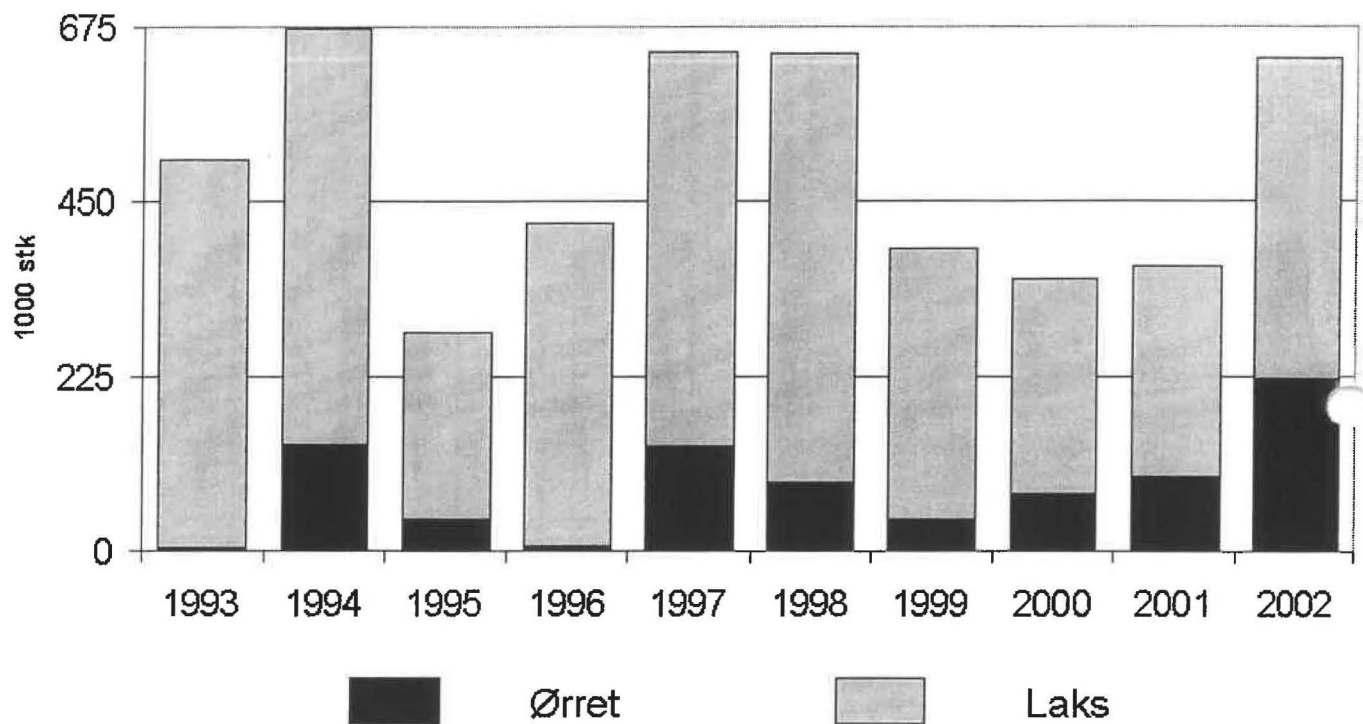
Escapees salmon and trout

Norway 1997-2001

In % of farmed population



Rømming av laks og ørret. 1993 - 2001



Escapees, salmon and trout 1993 – 2002. Laks = Salmon, Ørret = Trout

Comments: In 2002, 36% of the escaped fish were rainbow trout. That means that approximately 390,000 salmon escaped. Of these, 61,000 fishes escaped from hatcheries.

Table 1: Efforts against escaping, comments, responsibility and time limits

Target	Efforts	Comments	Responsibility	Time limits
<i>Fry/smolts plants, on-growing, slaughter plants and traffic by boats at sites:</i>	Focus on training and awareness at all levels through production.	Training as a part of lawful base for doing aquaculture. A number of voluntary courses have been held during 2001/2002. Well boat crews also invited.	The authorities responsible for requirements. FHL Aquaculture contributes to make the courses available. Companies to participate in courses.	ASAP.
	Establishment of a commission for accidents/escapees. Identify causes, efforts to bring experience back to industry.	The industry has asked for this over years. Money is granted (state budget).	Authorities. Industry must push for it.	ASAP.
	Focus on R&D for improvement of efforts and to document effects of efforts made.	A number of R&D projects ongoing. A conference will be held to sum up existing knowledge and further R&D demands.	Industry and authorities to get R&D money. NRC and Industry's R&D fund to select and finance relevant projects.	Continually.
	Improved control routines.	Directory of Fisheries is working on a special regulation for aquaculture.	Authorities for making the regulation, Industry for implementation.	Regulation from January 2004. Continued implementation.
	Continuous improvement through implementation of Environmental management systems, i.e.: ISO 14001/EMAS.	More and more medium and large companies are being certificated due to ISO 14001/EMAS. Introduction manuals for EMS have been worked out.	Industry for implementation of implementation of EMS.	Continues.
	Work for stronger reaction against companies that have escapees due to improper management and/or companies that do not report escapees.	Signals already given to the Department of Fisheries and Directory of Fisheries.	Authorities.	ASAP.

<i>Fry/smolt production units</i>	Better routines to avoid escapees through outlets.	Due to different technical solutions the units will identify weak points and implement efforts to secure the unit.	Industry.	Ongoing, will be finished during December 2003.
	Improve routines for smolt deliveries.	Due to different technical solutions the units will identify weak points and improve routines.	Industry.	Ongoing, will be finished during December 2003.
<i>On-growing</i>	Technical demands for equipment (by law).	Industry has asked for this for the last decade.	Authorities for regulations. Authorities, industry and equipment producers for working out standards.	August 2003.
	Voluntary standards for nets (until we get a law-based standard)	Most of the on-growers use this standard.	Industry and equipment producers.	Continuously.
	Increased R&D to develop new technology for surveillance of nets.	Ongoing R&D in this field.	Industry and authorities to get R&D money. NRC and Industry's R&D fund to select and finance relevant projects.	Continuously.
<i>Slaughter plants</i>	Improve quality and surveillance routines of slaughter nets.	Thickness of nets and testing of strength. Inspection.	Authorities and industry.	August 2003.
<i>Well boats and other boats</i>	Improvements of quality systems. The well boat association has a project on this.	Industry should have routines for handling visits by ships. Important things to implement in routines are available at FHL Aquaculture's internet sites.	Industry.	Ongoing, finished by December 2003.
	Continue work on grids around propellers. Regulation on this.	Industry requested this.	Authorities.	ASAP.

SLG(03)8

Copies of Action Plans for Containment of Farm Salmon

European Union - Ireland

A Code of Practice for the Prevention of Stock Escapes of Irish Farmed Salmon

Introduction

- The Irish Salmon Growers' Association is committed to best environmental and husbandry practice in accordance with the principles of sound, sustainable development.
- ISGA is committed to ensuring that transparent codes relating to these principles are applied evenly throughout the industry; ongoing communication and co-operation between producers and the state is vital to ensure the long-term success of such codes.
- ISGA, along with our colleagues in other North Atlantic salmon-producing nations, have concluded a groundbreaking agreement with NASCO on a Code of Containment for Farmed Salmon. This has directly led to the development of this current document.
- It is the aim of the ISGA, through the promotion of the following procedures, to assist the Irish salmon industry in reducing to the absolute minimum any opportunity for salmon to escape from farms through failure of management, equipment or procedure. It is recognised that there is a potential for unavoidable natural catastrophes or uncontrollable outside forces to damage farms and potentially cause escapes. It is the aim of this document to ensure all events within the control of the farmer are managed to the highest standards in order to ensure full stock containment.
- The Irish salmon industry works in a unique physical and legislative environment within Europe. It is in the best interests of all farmers to ensure the highest farming standards are adhered to from both an economic and environmental viewpoint.
- It is, therefore, agreed that all ISGA members shall follow this Code of Practice for the containment of stock and the reporting of any escape that may occur. These procedures may be included in farm licence applications, including Environmental Impact Statements, in-house procedure manuals at the farm, appropriate Quality Assurance Schemes and also in Co-ordinated Local Aquaculture Management Plans.

1. Site Selection and Location

- 1.1 All fish farm boats, barges, nets and sea pens shall be adequately marked so as not to be a navigational hazard or obstruct the movement of sea traffic. All navigational marking shall comply with regulations as issued by the Department of Marine and Natural Resources.
- 1.2 Site location shall give due consideration to prevailing weather conditions in the area.
- 1.3 On choosing a site, in consultation with the equipment suppliers and the farm's insurance company, the farmer shall determine the most appropriate equipment,

mooring system, pens, nets, etc. to be used and their suitability for the specific location and purpose intended.

- 1.4 In the case of a new site, where a full Environmental Impact Statement is required, it shall, as a matter of course, assess wave climate, hydrography, prevailing weather conditions and any other factors which may cause stress to pens and nets.

2. Pen Structures, Tank Systems

- 2.1 The selected structure shall be designed and constructed so as to be capable of withstanding any reasonable environmental or extreme weather conditions that may be experienced at the site. Moorings in particular must be designed with adequate strength to withstand the worst conditions to be expected.
- 2.2 All pens shall be installed in a professional manner and comply with the manufacturer's instructions and specifications. The farm should, where possible, engage the manufacturer to oversee the completed mooring installation.
- 2.3 All pens shall comply with DoMNR engineering requirements regarding anchorage, stability, strength and buoyancy.
- 2.4 All pens shall be individually identifiable and appropriate records maintained for each unit with regard to stocks as well as maintenance and repair records.
- 2.5 Pen moorings shall be compatible with the pen units installed. Installation shall be carried out to ensure that all loads or stresses imposed on the unit are distributed in accordance with its design and that the unit has adequate movement and flexibility. Moorings shall be installed in consultation with the pen and mooring manufacturer and tested regularly; the underwater fitting and chains should be inspected at least once every two years.
- 2.6 Tank systems should be designed to effectively contain fish and minimize the possibility of escape; where the outflow from tanks passes into a settling pond the outflow from the settling pond should incorporate a screen of suitable size and construction to avoid escape.

3. Pen Nets

- 3.1 The design of the net should account for extreme weather conditions likely to be encountered at the site and due consideration given to the net's ability to withstand such conditions. Net design shall ensure that under pressure stresses are directed into reinforced areas of the net specifically designed to deal with this and not into the main body of the net. The pen collar or waterline area of the net is more exposed to UV light and abrasion than the rest of the net, therefore it should be suitably reinforced.
- 3.2 Pen nets shall be compatible with the pens being used and installed to manufacturer's specifications.

- 3.3 Pen nets shall be manufactured from a material of suitable quality that is fit for the purpose intended. All nets shall be treated with a UV-inhibitor in order to prevent deterioration from exposure to ultraviolet light.
- 3.4 Nets shall be tested on a regular basis during their life-span, including breaking strength, in compliance with manufacturer's and insurance company instructions and always visually inspected from above water and by divers in the immediate aftermath of extreme weather conditions.
- 3.5 In order to reduce the risk of drag and tear minimum recommended clearances (as defined by the net manufacturer) between the base of the pen and the sea floor shall be adhered to at all times. Appropriate clearances are required from neighbouring cages and sub-surface weights used to maintain net shape.
- 3.6 Appropriate and effective predator deterrence devices should be employed. These should be upgraded as more effective and cost efficient methods become available.
- 3.7 Each net should be marked and identifiable; all nets should have clear records showing a detailed history of their use, i.e. age, frequency and results of stress testing, last area of use, etc.
- 3.8 Farms should have enough spare nets in good condition available at all times to replace damaged nets on all pens.

4. Farming Practices and Staff

- 4.1 Daily on-farm procedures shall be executed in a professional and careful manner to ensure that the highest standard of farming practice is achieved.
- 4.2 Due consideration and careful planning shall be given to any procedure that may increase the possibility of escape such as grading or fish transfer. Towing of stocked pens requires supervision on both the boat and the pen being towed. Diving personnel should be on stand-by where tows have to navigate past or over potential hazards.
- 4.3 The use of boats on site shall be conducted so as to minimize any possible damage that may occur to nets or pens. Where possible, boat propellers should be fitted into wells or fitted with guards to minimize the risk of contact with nets or rope.
- 4.4 Farm employees shall be suitably experienced or trained for the work required and be familiar with the farm's Comprehensive Emergency Plan.

5. Preventative Measures

- 5.1 Each licensed site shall have a maintenance and inspection programme designed specifically for conditions at that site, including good housekeeping and the removal of surplus or unused equipment on site. Net cleaning or changing shall be regular to prevent undue stresses on nets consequent to fouling. Apart from the nets, all associated waterborne structures shall be subject to maintenance, inspection and repair procedures on a regular basis to minimize the risk of escape. The farm shall

ensure the regular removal of fouling in situ of the pen collar, floats and related structures within the photic zone.

- 5.2 Each site shall devise a storm procedure detailing actions to be taken to ensure the site is prepared in the event of adverse weather; this shall include follow-up procedures for the inspection and testing of all nets and equipment after the storm. Measures to move pens to alternative sheltered sites in the event of forecasted very extreme weather should be agreed with the Department of Marine and Natural Resources.
- 5.3 All nets, screens and pen structures must be cleaned and inspected before new stock is added.
- 5.4 Precautions should be taken to protect stock and structures against malicious damage, i.e. by installing security systems where necessary.
- 5.5 When not in use nets should be stored in a dry area that is vermin-free and away from direct sunlight.
- 5.6 Nets should only be put in long-term storage after cleaning as decomposition of organic material on the net during storage can lead to deterioration of quality.

6. Record Keeping

- 6.1 Maintenance records should be kept for each pen unit detailing repairs and tests, net changes, grading, transfers, treatments and any predator problems.
- 6.2 In order to assist in quantifying the number of escaped fish should an incident occur, adequate stock records should be maintained detailing numbers, types, origin and year classes of fish per pen unit.

7. Notification of Escapes

- 7.1 In the event of an escape the licensee shall notify the Department of the Marine and Natural Resources, Coastal Zone Administration Division, Leeson Lane, Dublin 2, the appropriate Regional Fishery Boards and the Irish Salmon Growers' Association within twenty-four hours of the escape. The licensee shall make available records of fish escaped, including numbers, types, origin, and year classes.

8. Measures for Recapture of Escaped Fish

- 8.1 The licensee should liaise with the local Fisheries Board on methods best suited to the recapture of escaped fish.

ISGA
April 2002

Russia

Special actions in connection with preventing escape of fish from cages

1. The establishing of fish cages is done by Russian and Norwegian specialists in accordance with the technical specifications and the relief of the area. The specialist should have a high level of competence.
2. To prevent fish from escaping from the cages and to enhance the security of the cages from any external actions, the floating construction (the fish net and the cage) must be strengthened by a net that is attached in between the high end of the structure and the bottom. A net to prevent birds from entering should be stretched over the cages. The net meshes in the fish net should have varying sizes according to the size of the fish. The fish nets are regularly inspected and changed when necessary (the reasons include the need for a different mesh size or sea algae growth).
3. Equipment necessary to maintain 24-hour lighting of the areas under water should be installed.
4. A diver should be available to proceed with inspection of the technical condition of the farming complex. If necessary, the diver should be able to conduct the necessary repairs on the spot. In addition to this, under-water cameras should be used in order to survey the technical situation and the state of the fish in order to prevent problems that might occur.
5. In order to prevent fish from escaping from the cages, the equipment necessary to ensure maximum security on a 24-hour basis should be used.
6. The areas where the cages are located should be illuminated at all times.
7. There should be a 100-metre zone around the cages where fishing and boat traffic should be illegal.
8. In case of fish escaping immediate measures should be implemented within two hours after the escape is discovered. A net with the correct net mesh size should be set in an effort to recapture escaped fish. In case of fish escaping, the following should be informed immediately within two hours of the discovery: Murmanrybvod; the regional inspection for fish surveying; the regional and county veterinary services; PINRO; Kolkhos "Pribresjny" and OOO "Gigante Pechenga". The information that is sent to these organisations should include the following:
 - The time of the escape
 - The estimated number of escaped fish
 - The average weight
 - The age
9. Fish farming technical documentation should be developed.

*Executive Summary of the Report
of the Sub Group on Salmon Co-operation (SalCo-Op)*

Excerpt from document SLG(03)4

*Inventory of Co-operative Projects
between
Salmonid Aquaculture and Wild Fisheries*

January 2003

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SalCo-Op Project Executive Summary

The SalCo-Op research project was carried out on behalf of the NASCO/International Salmon Farmers Association Liaison Group to establish the level of co-operative projects between aquaculture and wild fisheries interests and to identify potential areas for future co-operation.

All members of the Liaison Group and key individuals in the co-operative arena were contacted for their input. An internet search for co-operative projects was also carried out. The project was highlighted in Dave Conley's *Aquaculture Newsclips* and at two international and one national conference held in Ireland.

The regions reviewed in this study were the NASCO Commission areas (North America, West Greenland and the North-East Atlantic) and the Western States of America and Canada, where Atlantic salmon are an introduced species.

Overview of projects identified

In total eight projects were identified, covering area management, containment, enhancement and restoration. The area management projects were located in Scotland and Maine, while the other initiatives were located in Maine, New Brunswick, Scotland and Quebec. Detailed inventories for the projects were generated; these results are outlined in Appendix 3.

These projects, together with the Liaison Group's underpinning co-operative work on containment, are the basis of this report. To gain a greater understanding of the achievements and challenges facing such endeavors, a SWOT analysis was carried out:

The main strengths associated with co-operative initiatives are:

- benefits gained in experience and commitment,
- improved mutual understanding of the challenges and limitations facing partners,
- the establishment of foundations for future initiatives,
- highlighting of co-operative initiatives through publications.

Many opportunities are available to those wishing to continue with or participate in co-operative projects:

- there is potential to broaden the scope of existing partnerships,
- to develop a greater mutual understanding through discussion,
- to implement area management initiatives in new regions,
- to broaden the scope for research and proactive initiatives in partnership,
- to disseminate information on co-operative projects more widely.

Some challenges also exist for co-operative initiatives:

- to avail of best practice in project management,
- to be pro-active as well as reactive in establishing initiatives,
- to improve publicity of initiatives,
- working in an atmosphere of litigation.

Additional threats could arise from:

- lack of defined guidelines on best practice,
- polarisation between groups which can result in a lack of trust and mutual understanding,
- lack of funding (sources of funding are identified in Appendix 4),
- lack of commitment,
- interference from parties not involved in the co-operative initiative,
- health issues.

Recommendations/Areas for Future Co-operation

Recommendation: Based on the analysis of the projects

- The Liaison Group should evaluate the findings of this review, address the issues highlighted and determine how best to build on the recommendations. A future workshop highlighting the experiences encountered by those involved in co-operative projects is recommended.

Recommendation: Definitions

In the course of this review, the apparent lack of clarity concerning the fishery terms 'aquaculture', 'salmon enhancement' and 'salmon restoration' was noted.

Aquaculture

- It is strongly recommended that the Liaison Group should agree on a series of definitions and practical guidelines relating to restoration, enhancement, aquaculture and fish farming. Agreement on such definitions is fundamental to ensuring that optimum co-operation is facilitated between the fish farming/food and wild/recreational sectors of the aquaculture industry.

Salmon Enhancement/Salmon Restoration

- Review the NASCO definition of salmon enhancement and formulate a clear definition for stock restoration.

Potential areas for future co-operation identified were: area management, restoration, enhancement, containment strategies, education, research, fish health, environmental improvement awards and, within the two industries, dissemination of information on new technology and current best practice.

Recommendation: Areas for future co-operation

Area management

- Each region should review the concept of area management and assess the possibility of appropriate initiatives in this area.

Restoration

- Examine guidelines available for restoration in each country. Develop a code of practice for determining when restoration is appropriate.

Containment – annually each jurisdiction reports on its progress to the group.

Education

- Review the feasibility of both parties developing an education programme aimed at achieving a greater understanding of all aspects of both industries, targeted at those not covered by existing programmes.
- Evaluate the possibility of generating and promoting Post-Graduate/Post-Doctorate internships in both industries, to improve understanding and technology transfer.
- Evaluate the feasibility of establishing annual workshops co-hosted by aquaculture and wild fisheries interests to review new technological developments in both areas and to discuss current best practice within each group.
- Each region should review the feasibility of utilising distance learning or e-learning, as a method of conveying educational information.

Research

- Evaluate a taxation mechanism (% tax on fish/fish product/services exports) as a means of raising research funds in the various jurisdictions.
- Evaluate the *Link* aquaculture mechanism (50:50 – government:industry funds) as a means of raising research funds in the various jurisdictions. Establish a mechanism for wild interests to contribute.
- Establish a web site page to detail all current co-operative projects.
- Review the possibility of establishing Centres for Collaborative Studies in each region.
- Review the possibility of the farming industry mass-rearing specific stocks of smolts for research projects (e.g. marine survival projects).

Fish Health

- Review the opportunity for participation in co-operative projects relating to fish health.

Accreditation

- Review the possibility of acknowledging respective achievements by means of awards or joint publicity.

Dissemination of Information

- Review the possibility of establishing a web site to carry information on co-operative projects. Information could also be disseminated through the conference forum.

Conclusion

This review has highlighted the opportunities which currently exist to foster pragmatic co-operative ventures between the fish farming/food and wild/recreational sectors of the aquaculture industry. There is no doubt that over the past twenty years a great deal of animosity has been generated between various sectors of the industry. This is most unfortunate, as an objective overview would clearly identify food generation based on fish rearing and recreational opportunities based on fish rearing as two sides of the same coin. In moving forward it is suggested that the primary focus must relate to education and communication. Inherent in such a mind shift is a willingness to accept that negative interactions can exist but may be overcome through the co-operative efforts of all concerned. A belief that co-operative initiatives should be primarily driven by the need for an improved

public image is anathema to a successful process since the essence of co-operation is the elimination or mitigation of current or potential problems. Continued commitment from all sectors is required and an acknowledgement of each other as equals is critical.

As the level of activity will no doubt vary from time to time it may be of benefit to the cohesion of the Group that a major underpinning project should be initiated; a proactive initiative on issues such as disease or parasite control, the impact of climate change on salmonid populations or salmonid genetic studies of mutual interest to the two industries.

In conclusion each region must choose its own path with regards to co-operation and what steps it wishes to take. Lack of co-operative initiatives should not be seen in a negative light, if a mature relationship exists. A sign of a mature relationship is not the quantum of activity at any point in time but the ability to work side by side in harmony, understanding each other's position on an ongoing basis and co-operating when appropriate.

