Agenda item 6.4(d)
For decision

Council

CNL(05)21

Report of the Meeting of the Liaison Group with the North Atlantic salmon farming industry

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1. Since 2000, the Liaison Group comprising NASCO and the North Atlantic salmon farming industry has met annually with the exception of 2004. Last year a Liaison Group meeting was not held, but NASCO and the International Salmon Farmers' Association (ISFA) met to see if the Liaison Group could be put back on a firmer footing with a higher level of commitment. In order to avoid the risk of failures in communication and understanding which had arisen following the 2003 Liaison Group meeting, a Statement of Commitment was agreed last year. This served as a basis for developing the agenda for the 2005 meeting of the Liaison Group which was held in Leuven, Belgium, on 26 April. The report of the meeting is attached. Ms Mary Colligan (USA) was appointed as Chairman of the Liaison Group.

2. The Liaison Group first considered comments from the industry on the Williamsburg Resolution. It is clear that the industry has particular concerns about the elements in this Resolution concerning aquaculture-free zones, marking or tagging of farmed salmon and application of the Precautionary Approach. The industry would prefer to see a risk assessment approach applied rather than the Precautionary Approach, but NASCO representatives pointed out that risk assessment is central to the Precautionary Approach and was one of a small number of new elements that had been added in developing the Williamsburg Resolution. There was also some concern from the industry about how the Resolution would be implemented and that NASCO is focussing undue attention on salmon farming. To address these concerns, the NASCO Secretariat was asked to develop an Explanatory Memorandum on the Williamsburg Resolution and this is included in Annex 5 of the attached report. The industry agreed that once it had this clarification it would be willing to provide specific comments on the various articles of the Resolution, with proposals for changes where the industry feels these are necessary and a rationale for such changes, together with references to relevant scientific papers and codes of practice. The industry has agreed to provide these comments and information by 15 May and they will be distributed to the Council for its consideration.

3. Reports on progress in developing and implementing action plans on containment of farmed salmon were presented. While some reports still lacked some of the detail requested in the reporting format previously agreed by the Liaison Group, the reports for 2004 were seen as a considerable step forward compared to previous years. They are continued in Annex 6 of the report.

4. A progress report was also made on arrangements for a Liaison Group Workshop entitled 'Wild and Farmed Salmon – Working Together' to be held in Trondheim on 9 August 2005 in conjunction with the European Aquaculture Society's (EAS) Aquaculture Europe 2005 conference (5-8 August) and the AquaNor international fish farming industry exhibition (9-12 August). The Workshop is being organised in cooperation with the EAS. The arrangements made and programme developed have been welcomed by the Liaison Group. An announcement of the Workshop has been available to all delegates and additional copies will be available at the Twenty-Second Annual Meeting.

5. The industry also provided comments to the Liaison Group on the report of the Workshop on Marking of Farmed Salmon, CNL(05)19. ISFA has indicated that it is fundamentally opposed to any form of physical or mechanical marking or tagging of farmed salmon and that the industry's audited containment management systems already in place can achieve conservation goals without the need for marking, which they believe will involve significant logistical costs, would provide no benefit to the farmers and raises welfare, food safety and product quality concerns. The Council will consider these views from the industry when it considers the report of the Workshop under agenda item 6.4(a).

6. Finally, the industry again indicated that it remains opposed to NGO participation in the Liaison Group. NASCO representatives expressed their disappointment at the position taken by the industry and referred to the work of the 'Next Steps for NASCO' Working Group which had developed recommendations to increase involvement of stakeholders in NASCO's work so as to increase transparency and inclusivity.

7. The Council is asked to:

- consider the specific comments provided by the industry in relation to proposed changes to the Williamsburg Resolution and decide if any action is required;

- consider the information on the level and causes of escapes and decide if any action is required;

- note the proposed arrangements for the Trondheim Workshop on 9 August 2005;

- consider the comments from the industry in relation to marking of farmed salmon when it reviews the report of the Workshop (CNL(05)19) under agenda item 6.4(a);

- consider what actions, if any, it wishes to take in relation to NGO involvement in the Liaison Group.

Secretary
Edinburgh
11 May, 2005

SLG(05)18

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

Leuven Institute for Ireland in Europe, Jansenlusstraat 1, 3000 Leuven, Belgium Tuesday 26 April, 2005

1. Opening of the Meeting

1.1 The Chairman of the Liaison Group, Mr James Ryan (President of the International Salmon Farmers' Association (ISFA)) opened the meeting and welcomed participants to Leuven. He made an opening statement on behalf of ISFA (Annex 1).

1.2 Dr Malcolm Windsor (Secretary of NASCO) made an opening statement on behalf of NASCO (Annex 2).

1.3 A list of participants is contained in Annex 3.

2. Appointment of a Chairman and a Rapporteur

2.1 Under its Constitution the Chairman of the Liaison Group is appointed for a period of two years and the office of Chairman and of Rapporteur are held alternately by representatives of NASCO and the North Atlantic salmon farming industry.

2.2 The Liaison Group appointed Ms Mary Colligan (USA) as Chairman. She referred to the solid foundation for cooperation through the Liaison Group that had been developed last year in Boston, and to the Statement of Commitment which had been agreed so as to guide the Liaison Group's work. She hoped that the Group would now be able to move forward in a positive manner.

2.3 Mr James Ryan (ISFA) was appointed as Rapporteur.

3. Adoption of the Agenda

3.1 The Liaison Group adopted its agenda, SLG(05)15, (Annex 4).

4. Comments from Industry on the Williamsburg Resolution

4.1 The Resolution to Minimise Impacts from Aquaculture, Introductions and Transfers and Transgenics on the Wild Salmon Stocks, the "Williamsburg Resolution" was adopted by NASCO at its 2003 Annual Meeting. In adopting this Resolution the Council had recognised that it would evolve in future in the light of experience with its implementation, consultations, improved scientific understanding of the impacts of aquaculture, introductions and transfers and transgenics and developments in measures to minimise them. The Resolution was amended in 2004 by the inclusion of a new definition of "transgenic", and revision of the Guidelines for Action on Transgenic Salmonids and the Guidelines for Stocking Atlantic Salmon.

4.2 Prior to adoption of the Williamsburg Resolution by the Council of NASCO, the Resolution had been made available to the industry through the Liaison Group. The industry had subsequently expressed concern about the way in which the development of the Williamsburg Resolution had been handled since, in their view, due process had not been followed. These views had been discussed thoroughly at a NASCO/ISFA meeting in March 2004 and a Statement of Commitment had been developed in order to avoid failures in communication and understanding in future. Under this Statement of Commitment the industry agreed to provide comments on the Williamsburg Resolution so that these could be discussed by the Liaison Group. Comments were provided by ISFA and by Scottish Quality Salmon, and these are contained in documents SLG(05)3 and SLG(05)4 respectively.

4.3 In summary, ISFA has particular concerns about the elements in the Williamsburg Resolution concerning aquaculture-free zones, marking or tagging of farmed salmon and application of the Precautionary Approach. With regard to the latter, ISFA would prefer to see a risk assessment approach applied rather than the Precautionary Approach. However, NASCO representatives indicated that risk assessment is central to application of the Precautionary Approach. One of the few new elements that had been introduced when NASCO's existing agreements were consolidated into the Williamsburg Resolution was an article on risk assessment and the need for the Parties to develop and apply appropriate risk assessment methodologies in considering the measures to be taken in accordance with the Williamsburg Resolution. Reference was made to a recent meeting in Seattle, USA, at which approaches to risk assessments in relation to aquaculture had been considered. The conclusions from this meeting might be of relevance to the Parties in considering risk assessment methodologies in relation to the Williamsburg Resolution. The industry also felt that the Williamsburg Resolution was too prescriptive but NASCO representatives indicated that the nature of the measures implemented is for each NASCO Party to decide in consultation, as appropriate, with its stakeholders. Furthermore, most of the Williamsburg Resolution existed in previous NASCO agreements which had been consolidated into the Williamsburg Resolution. NASCO representatives also pointed out that the industry had been involved in development of the Oslo Resolution, the predecessor to the Williamsburg Resolution.

4.4 Scottish Quality Salmon believed that it might be valuable to identify those articles of the Resolution on which the Liaison Group has been consulted and agreement reached, e.g. the Guidelines on Containment of Farm Salmon.

4.5 The industry also indicated that it feels that NASCO is focussing undue attention on salmon farming. However, NASCO representatives reported that agreements have been developed for application of the Precautionary Approach to management of salmon fisheries, habitat protection and restoration, and stock rebuilding programmes. It has also considered by-catch of salmon and developed guidelines for incorporating social and economic factors into decisions under the Precautionary Approach. During the Next Steps for NASCO consultation meetings, NASCO's stakeholders had indicated that while the agreements it had developed were good, there needed to be greater progress with their implementation and on reporting on measures taken.

4.6 The Liaison Group agreed that it would be helpful to the Council of NASCO if the industry representatives could provide specific comments on the various articles of the Williamsburg Resolution with proposals for changes where they felt these were necessary, a rationale for such changes and references to relevant scientific papers and

codes of practice. The industry agreed to provide these comments and information to the NASCO Secretariat no later than 15 May so that they can be made available to the Parties in advance of NASCO's Twenty-Second Annual Meeting. The NASCO Secretariat was asked to develop an Explanatory Memorandum detailing the background to the development and adoption by NASCO of the Williamsburg Resolution and the manner in which it is to be implemented by NASCO's Parties and their relevant jurisdictions. This Explanatory Memorandum is contained in Annex 5.

5. Report on 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 and these had subsequently been incorporated, unchanged, into the Williamsburg Resolution. To assist the Liaison Group to monitor the development and implementation of the Action Plans envisaged under the guidelines, a format had been agreed for reporting on an annual basis. Information was provided, according to the format, by the European Union (Finland, SLG(05)10; Ireland, SLG(05)9; UK (England and Wales), SLG(05)5; UK (Scotland), SLG(05)13); Iceland, SLG(05)6; Norway, SLG(05)7; Russia, SLG(05)12; and the USA, SLG(05)11. Canada indicated that it felt somewhat constrained by the reporting format and had therefore prepared a report that did not specifically answer the questions raised but which detailed actions taken consistent with the containment guidelines. This report is contained in document SLG(05)16. After the meeting a report according to the agreed format was provided by the European Union (Sweden), SLG(05)14. A summary of these returns is contained in document SLG(05)17 (Annex 6).

5.2 The view was expressed that the Norwegian return might be considered as a model, providing as it did details of the containment action plan, an eight-year time series of the number of escapees, information on the causes of escapes, information on the implementation and effectiveness of the action plan and details of research being undertaken in support of the action plan. Some reports still lacked some of these details, although the reporting for 2004 was seen as a considerable step forward compared to previous years. Reporting on escapees from freshwater facilities is also not available.

5.3 The Workshop discussed the relative survival of farmed salmon which have escaped as smolts or later in the production cycle. There is information to suggest that fish that escape at the smolt stage survive considerably better than larger fish and may return to the area of escape. It is therefore important that careful attention is paid to net mesh size at the time of transfer of smolts to the sea. The question arose as to the impact of escapees on wild salmon stocks. The advice from population geneticists is that where genetic impacts on the wild stocks have been detected, they have always been negative. Reference was made to recent scientific studies conducted in Ireland concerning direct and indirect genetic effects arising from interactions between wild and reared salmon. The first of these studies compared the lifetime success and performance characteristics of communally reared offspring of wild, ranched native and non-native salmon. There were no differences between native and ranched salmon in smolt output or adult returns, but both of these measures were significantly lower for non-native salmon. A second study reported on fitness reduction and potential extinction of wild populations of Atlantic salmon as a result of interactions with escaped farm salmon. A third study examined the impact of aquaculture on the immune response genes of natural salmonid populations. The Liaison Group noted

that the findings and implications of these studies will be discussed at the Bergen Symposium referred to in paragraph 6.3.

6. Other Areas for Cooperation between Wild and Farmed Salmon Interests

6.1 At its 2003 meeting the Liaison Group reviewed the extent of existing cooperative ventures between wild and farmed salmon interests and identified future areas for cooperative work. This process was known as the SALCOOP project. In order to take forward the recommendations from this project the Liaison Group decided to hold a one-day workshop focusing on opportunities for cooperation between wild and farmed salmon interests with the following themes:

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

A Steering Group comprising Dr Ken Whelan, Dr Peter Hutchinson, Mr James Ryan and Mr Kjell Maroni had been appointed by the Liaison Group to develop the programme and make appropriate arrangements for the Workshop.

6.2 Dr Peter Hutchinson (Assistant Secretary of NASCO) reported that the Workshop entitled "Wild and Farmed Salmon – Working Together" will be held at the University of Science and Technology, Trondheim, Norway on Tuesday 9 August. The Workshop is being held in conjunction with the EAS Aquaculture Europe 2005 conference (5-8 August) and to coincide with the AquaNor international fish farming industry exhibition (9-12 August). He indicated that it will be open to all and the intention is that by holding the meeting in conjunction with these major events, there will be good representation from the salmon farming industry. NASCO's NGOs will also be encouraged to participate. The programme, which includes presentations by managers and scientists involved with aquaculture and the wild stocks from around the North Atlantic, has been agreed and funding secured. Registration and accommodation arrangements are being handled by the European Aquaculture Society which is also promoting the event. He concluded that the event will be unique in bringing together at an international level those involved in the management of reared and wild stocks with a view to seeing how best to pool existing resources for the betterment of both of these important sectors. A brochure for the Workshop was distributed to the Liaison Group.

6.3 Dr Malcolm Windsor (Secretary of NASCO) presented an update on arrangements for the ICES/NASCO Symposium entitled "Interactions between aquaculture and wild stocks of Atlantic salmon and other diadromous fish species: Science and Management, Challenges and Solutions". This major international Symposium will be held in Bergen, Norway, during 18-21 October 2005 and compared to the previous Symposium organised by NASCO and ICES on this subject in 1997, there will be greater emphasis on the management aspects.

7. Report on the Workshop on Marking of Farmed Atlantic Salmon

7.1 The report of the Workshop on Marking of Farmed Atlantic Salmon, WMFS(04)6, which had been held in Edinburgh during 6-8 December 2004 was introduced by the Workshop Chairman, Mr Gordon Brown (Scottish Executive Environment and Rural

Affairs Department). Under the Williamsburg Resolution it is stated that tagging or marking could be used in order to facilitate the identification of farmed salmon in the wild and the separation from wild fish, to determine the source of escapes and to assess the interactions of escaped farmed salmon with the wild stocks. The need to evaluate the effectiveness of marking methods, their feasibility for large-scale marking and their costs, was recognized. The task for the Workshop had been to evaluate different methods of marking, but not to decide whether or not farmed fish should be tagged. This would be a matter for each NASCO Party in the light of the Workshop evaluations. The Workshop was not able to fully assess the costs associated with marking farmed salmon.

7.2 He indicated that the Workshop had developed a number of criteria and evaluated a number of marking methods (external tags, combination method, genetic and chemical methods, fin clipping, otolith marking, passive integrated transponders (PIT tags) and coded wire tags (CWTs)) against these criteria. The Workshop had come to the conclusion that while many possible methods are available for marking fish, some methods are not suitable for mass marking, some require further development and others can provide very limited discriminating power. Of the methods evaluated, CWTs and otolith marking appear to be the most suitable for mass marking. Genetic identification methods have potential for marking farmed salmon but further development is needed. All methods involve significant costs and the greater the discrimination power that is required the higher the cost. He noted that welfare and food safety concerns had also been raised in relation to a considerable number of the possible methods for marking farmed salmon, and the Workshop had felt that it would be valuable if each NASCO Party with salmon farming interests obtained advice, at an early opportunity, from the appropriate authorities in relation to the food safety and welfare aspects associated with marking farmed salmon. The Workshop had also recommended that further investigations should be carried out to improve the accuracy of estimates of the number of fish in cages and the extent of 'trickle losses' during routine operations, and that the NASCO Parties should cooperate so as to plan and undertake such assessments.

7.3 He indicated that the report will be considered by the Council of NASCO at its Twenty-Second Annual Meeting in June and that feedback from the industry would be welcomed. He referred to the fact that documents SLG(05)3 and SLG(05)4 contain comments from the industry on tagging and marking of farmed salmon which he assumed fully reflected the industry's views. In document SLG(05)3 ISFA had indicated that it is fundamentally opposed to any form of physical or mechanical marking or tagging of farmed salmon and that the industry's traceability programme is based on the fact that individual fish already have a unique individual 'fingerprint'. ISFA believes that DNA or genetic marking is the only practical method available. ISFA considers that audited containment management systems already in place can successfully achieve conservation goals without marking farmed salmon, and that marking would involve significant logistical costs, would provide no benefit to the farmers, and raises welfare, food safety and product quality concerns. In document SLG(05)4 Scottish Quality Salmon stressed that marking raised fish welfare, fish health and food safety issues which would require evaluation before any commitment could be made to consider marking farmed salmon. A recent Council of Europe Committee had proposed that there be a presumption against mutilation of, including implantation of foreign bodies into, farmed animals. Reference was made to the significant costs of introducing a North Atlantic-wide programme of tagging farmed

salmon (£20 million in Scotland alone), and to the fact that these costs would not apply to the Chilean industry, giving that country's industry a competitive advantage.

7.4 Mr Sebastian Belle (Maine Aquaculture Association) raised two points in connection with the report of the Workshop. Firstly, the Maine Aquaculture Association had provided a report on its Generic Containment Management System which it had requested be annexed to the report. This had not been done. Secondly, he indicated that he had been advised that the Northwest Marine Technology system for microtagging fish was not capable of vaccinating fish, as claimed in paragraph 5.2 of the report. Dr Peter Hutchinson indicated that the report on the containment management system had only been provided about 2 months after the report of the meeting had been agreed and distributed to participants and to the Liaison Group members. It had not, therefore, been possible to annex the document to the report and he stressed that there are good reasons not to change a report after it has been agreed, and certainly not after it has been distributed. He had, however, agreed to distribute the report to all participants at the Workshop and to annex it to the report of the Liaison Group meeting, since it is clearly relevant to the Group's discussions on the containment guidelines. Mr Belle agreed to this approach. The report on the Maine Aquaculture Association's containment management system is contained in Annex 7. Mr Belle also agreed to send further details of the capabilities of the NMT AutoFish system to the NASCO Secretariat so that this could be referred back to the appropriate representative of the tagging company.

7.5 Mr Øyvind Walsø (Directorate for Nature Management, Norway) referred to the 'combination method' approach described in the Workshop report. This method does not involve marking farmed salmon but rather relies on a variety of information from the escapees, including site of recapture, smolt characteristics, stomach content analysis, and genetic profiles to identify the site of escape. Following meetings in Norway with the salmon farming industry and the fish health authorities, a pilot study to assess the feasibility of the 'combination method' has been initiated in the Hardangerfjord, the most intensively farmed part of the Norwegian coast. Sampling of farms has commenced to build up a 'bio-bank' and funding for the study is being sought from the Norwegian Research Council.

7.6 Mr Arni Isaksson (Directorate of Freshwater Fisheries, Iceland) noted that in Iceland it is a condition of the licence that farmers tag 10% of smolts destined for sea cages with CWTs in order to trace escapees to their farm of origin. He suggested that genetic marking would not allow the farm of origin to be identified since Icelandic farmed salmon all originate from the same stock.

7.7 The Liaison Group noted that, for the second year running, there had been no progress in undertaking the North-East Atlantic Commission of NASCO's coordinated trial releases of farmed salmon in order to study the migration and distribution of escapes. It was recognised that there may be some resistance to the deliberate release of farmed salmon to the wild, but the Liaison Group felt that this is an important study in order to better understand the fate of escaped farm salmon. There was also support for the further assessments in relation to 'trickle losses' from salmon farming identified in the Workshop report.

7.8 Reference was made to the EU-funded Atlantic Salmon ARC Project which aims to collect samples of salmon from all regions in Europe so as to facilitate genetic stock identification in fisheries. This project should also benefit the International Atlantic

Salmon Research Board's SALSEA programme by facilitating identification of the origin of salmon caught in research surveys at sea. The support of the salmon farming industry in obtaining baseline data on farmed salmon stocks would be valuable to the SALSEA programme, particularly in allowing identification of fish which have escaped at early life-stages. Reference was also made to the utility of data storage tags in studying salmon migrations.

8. Report on the Status of Wild Salmon Stocks

8.1 A brief summary of the 2004 stock status report from ICES was presented. The information highlights the continuing low returns, linked to low marine survival of both European and North American salmon stocks.

8.2 A brief report was made on the 'Next Steps for NASCO' process. Following consultation meetings with stakeholders and two Working Group meetings, a Strategic Approach had been developed which will be considered at NASCO's Twenty-Second Annual Meeting. This approach includes elements to:

- improve commitment to NASCO's measures and agreements and review of progress in implementation;

- increase NASCO's effectiveness and efficiency by ensuring it uses the best available knowledge to inform its actions and by actively seeking to identify and respond to new opportunities and threats;

- ensure transparency in its operations and enhance the use of NGO and stakeholder knowledge and experience;

- increase its visibility and raise its profile by developing its communications and public relations activities.

9. NGO Participation in the Liaison Group

9.1 At its 2003 meeting NASCO indicated that it strongly supported a request from the Chairman of NASCO's accredited NGOs, Mr Chris Poupard, that he or his nominee be invited to participate in future meetings of the Group in an observer capacity. The industry representatives had indicated that they felt there was a need to keep the Group as small as possible to ensure its effective functioning and referred to the problems in relation to communication with the media involving two NGOs at NASCO's 2001 Annual Meeting. The industry had indicated, therefore, that it did not wish to see NGO participation in the Liaison Group although they had agreed that the Trondheim Workshop referred to in paragraphs 6.1 – 6.2 above should be open.

9.2 NASCO representatives reiterated their support for NGO involvement in the Liaison Group through attendance at all or part of its meetings by the Chairman of NASCO's accredited NGOs. They referred to the work of the 'Next Steps for NASCO' Working Group which had developed recommendations to increase involvement of stakeholders in NASCO's work so as to improve transparency and inclusivity. They felt that NASCO's NGOs had become much better organised in recent years and were now making a valuable contribution to the Organization's work, and could equally contribute to the work of the Liaison Group. They believed that NASCO's accredited NGOs were not anti-salmon farming and that the Liaison Group could develop rules

governing attendance by NGOs at its meetings so as to reassure the industry. NASCO therefore asked the industry to very carefully consider its position with regard to future NGO involvement in the Liaison Group.

9.3 The industry representatives agreed that it is important to operate in a transparent manner, but again stressed the need to further enhance the Liaison Group's working methods and further build confidence before opening the meeting to NGOs. They indicated that they are involved in discussions with NGOs domestically and that the Liaison Group is transparent in that the reports of its meetings are made available to the NGOs. They questioned whether the NGOs could make a valuable contribution to the Liaison Group's meetings. They also referred to the activities of some NGOs which had been extremely damaging to the salmon farming industry and that it was naïve to think that their behaviour towards the industry would change through involvement in the Liaison Group. Rather the view was expressed that the NGOs would have to prove they could behave responsibly with regard to the industry before they could be admitted to the Liaison Group.

9.4 The NASCO representatives expressed their disappointment at the position taken by the industry with regard to NGO involvement. The Liaison Group agreed to review this issue again at its next meeting.

10. Date and Place of Next Meeting

10.1 The Liaison Group decided to agree the date and place of its next meeting by correspondence. It was agreed that a meeting should be held in 2006 at a date and venue that was convenient both to NASCO and the industry, and that the meeting might be held in North America.

11. Any Other Business

11.1 There was no other business.

12. Report of the Meeting

12.1 The Liaison Group agreed the report of its meeting.

13. Close of the Meeting

13.1 The Chairman closed the meeting and thanked participants for their contributions.

Annex 1

Opening statement by Mr James Ryan, President of the International Salmon Farmers' Association (ISFA)

Good morning, ladies and gentlemen. It is my pleasure to welcome you here to the Irish College in Leuven for this Liaison Group meeting. Since we met last in 2003 a lot of water has passed under the bridge. The salmon farming industry is facing difficulties in the market-place and the status of wild stocks is giving rise to increasing concern.

Over the last twelve months I have been working closely with the NASCO Secretariat and President so as to build further the foundation of cooperation between wild and farmed salmon interests. Together we have put in place plans for a Workshop in Trondheim in August entitled "Wild and Farmed Salmon – Working Together". An excellent programme of invited speakers has been agreed, funding has been secured, and arrangements have been made with the European Aquaculture Society, who will handle registrations, provide facilities in Trondheim, and publicise the event. The Workshop will be open to all interested parties, there will be plenty of time for discussions and the meeting promises to be an excellent initiative and a model of the cooperation that can be achieved through this Liaison Group.

Turning to other items on our agenda today, the industry is concerned about the application of the Precautionary Approach through the implementation of the Williamsburg Resolution since this approach could cause the industry enormous difficulties if applied over-zealously. The procedure by which NASCO developed and adopted this Resolution was a concern for the industry which believes due process was not followed. ISFA is also concerned that it was not invited to participate in the Workshop on marking of farmed salmon held in Edinburgh in December last year. However, planning for the Trondheim Workshop has shown that NASCO and ISFA can cooperate as equal partners and if we can resolve the differences that exist between us with regard to the Williamsburg Resolution then I believe we can move forward and build further the cooperation that has been developing through this Liaison Group. ISFA very much looks forward to a full and frank debate on the agenda items before us.

Annex 2

Opening Statement made by Dr Malcolm Windsor on behalf of NASCO

Good morning, ladies and gentlemen. On behalf of the NASCO representatives I would like to thank the International Salmon Farmers' Association for the arrangements made for this Liaison Group meeting here in the beautiful town of Leuven. It is a pleasure for us to participate in this meeting and we look forward to making progress on issues of mutual concern.

Last year we did not hold a full Liaison Group meeting but rather met to discuss how the liaison process could be put back on a firmer footing. The outcome of that meeting was a Statement of Commitment intended to strengthen and improve the future of the Liaison Group. The Council of NASCO has agreed to the actions outlined in this Statement of Commitment and in addition has acknowledged that the Williamsburg Resolution serves as a basis for NASCO's future involvement in the Liaison Group and for identification of other areas of cooperation. Our agenda today reflects the commitments we agreed to last year. Firstly, it is clear that the industry has concerns about the process used in developing the Williamsburg Resolution and its content, and we are grateful for elaboration of these. We will do our best to deal with the points you have raised and will convey them all to our Council.

Second, we welcome the progress reports on developing and implementing action plans on containment.

Third, we agreed two years ago in Williamsburg to arrange a one-day workshop on cooperative ventures between wild and farmed salmon interests. Ken Whelan, James Ryan and Peter Hutchinson (together with Kjell Maroni, who is not here today) have made real progress with the arrangements for this. We look forward to hearing from them on the proposals for this important workshop. We are also willing to explore other areas of cooperation.

Fourth, under the Statement of Commitment NASCO agrees to bring issues concerning salmon farming that it is considering to the Liaison Group for full discussion in a timely manner, where practicable before decision-making by NASCO. Last December we held a Workshop on marking of farmed salmon and in accordance with the Statement of Commitment we have made the report available to the Liaison Group prior to its consideration by the Council of NASCO in June. We would very much welcome feedback from the industry on this report.

Fifth, and also in accordance with the Statement of Commitment, NASCO will report on the status of wild salmon stocks and their management, although we do not yet have the final advice from ICES covering 2004.

Finally, NASCO would again like to raise with the industry the question of NGO participation in the Liaison Group. We believe that participation by a representative of the NGOs is unlikely to create problems, and would build trust and confidence. We will need to consider this issue carefully here in Leuven.

We in NASCO look forward to working with the industry on these issues, and to building on the spirit of cooperation that is being developed through the liaison process.

Annex 3

North Atlantic Salmon Farming Industry and NASCO Liaison Group

Leuven Institute for Ireland in Europe,
Jansenlusstraat 1, 3000 Leuven, Belgium
Tuesday 26 April, 2005

List of Participants

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Annex 4

SLG(05)15

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

Leuven Institute for Ireland in Europe, Jansenlusstraat 1, 3000 Leuven, Belgium

Tuesday 26 April, 2005

Agenda

1. Opening of the Meeting
2. Appointment of a Chairman and a Rapporteur
3. Adoption of the Agenda
4. Comments from Industry on the Williamsburg Resolution
5. Report on Progress in Developing and Implementing Action Plans on Containment
6. Other Areas for Cooperation between Wild and Farmed Salmon Interests
7. Report on the Workshop on Marking of Farmed Atlantic Salmon
8. Report on the Status of Wild Salmon Stocks
9. NGO Participation in the Liaison Group
10. Date and Place of Next Meeting
11. Any Other Business
12. Report of the Meeting
13. Close of the Meeting

Annex 5

CNL32.699

Explanatory Memorandum on the 'Williamsburg Resolution'

The following chronology provides background to the development and adoption by NASCO of the 'Williamsburg Resolution' and the method of its implementation by NASCO Parties and their relevant jurisdictions.

1. The North Atlantic Salmon Conservation Organization (NASCO) was established in 1984 with the objective of contributing through consultation and cooperation to the conservation, restoration, enhancement and rational management of salmon stocks taking into account the best scientific evidence available to it. Under Article 4 of the NASCO Convention, the Council has the authority to make recommendations to the Parties on matters concerning salmon stocks.

2. In 1991, the Council adopted Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture for use, as appropriate, by the Parties on a voluntary basis.

3. In 1994, the Council adopted the Resolution by the Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean to Minimise Impacts from Aquaculture on the Wild Salmon Stocks (the 'Oslo Resolution'). This Resolution had been developed through consultations with the salmon farming industry. In adopting the Oslo Resolution the Council agreed that it wished to strengthen the good relationship which had been established with the salmon farming industry. This led to initial meetings in 1998 and to the establishment of the NASCO/North Atlantic salmon farming industry Liaison Group in February 2000. This advisory group provides an international forum for liaison on issues of mutual interest and makes recommendations for action.

4. In 1990 and 1997 NASCO was involved in organising major international symposia to ensure that it had the best available scientific information on impacts of aquaculture so as to guide its decisions. A further symposium is planned for 2005.

5. In 1998, NASCO and its Contracting Parties agreed to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. Accordingly, NASCO and its Contracting Parties should be more cautious when information is uncertain, unreliable or inadequate and the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures. A Standing Committee on the Precautionary Approach (SCPA) was established in 1999 and has considered the application of the Precautionary Approach to management of salmon fisheries; stock rebuilding programmes; habitat protection and restoration; and impacts of aquaculture, introductions and transfers and transgenics. Technical workshops have been organised by the SCPA to consider how social and economic factors can be incorporated into management decisions under the Precautionary Approach. The SCPA has also considered the issue of by-catch of Atlantic salmon.

6. In March 2003, the SCPA met to review NASCO's agreements in relation to aquaculture, introductions and transfers and transgenics so as to advise the Council on their consistency with the Precautionary Approach and to make recommendations for additional measures, taking account of appropriate risk assessments. The Terms of Reference for this meeting had previously been made available to the salmon farming industry through the Liaison Group.

7. In general the SCPA concluded that the agreements were consistent with the Precautionary Approach but proposed that these be consolidated into one new agreement (the 'Williamsburg Resolution') and that new elements be added to ensure consistency with the Precautionary Approach. These included elements on: mitigation and corrective measures; implementation; burden of proof; risk assessment; Guidelines for Stocking Atlantic Salmon; and river classification and zoning. The Liaison Group's Guidelines on Containment of Farm Salmon were incorporated, unchanged, into the Williamsburg Resolution. The Guidelines for Stocking Atlantic Salmon were developed to address a concern from industry that the Oslo Resolution focused too heavily on salmon farming and largely ignored other practices involving cultured salmon.

8. Immediately following the SCPA meeting, and approximately 3 months before the Williamsburg Resolution was tabled at NASCO's Twentieth Annual Meeting, the draft Resolution was made available to the salmon farming industry through the Liaison Group so that the industry's views could be conveyed to the Council prior to adoption of the Resolution. Comments were provided by the International Salmon Farmer's Association (ISFA), indicating their dissatisfaction that the Liaison Group had not been fully engaged in the development of the Williamsburg Resolution according to the Guiding Principles of the Liaison Group (SLG(01)11) which state that "*The Parties agree to work cooperatively when consideration is given to the application of the Precautionary Approach to salmon aquaculture".* These comments were tabled at the Council meeting.

9. In June 2003, the Council adopted the Williamsburg Resolution but, in doing so, recognised that it would evolve in future in the light of experience with its implementation, consultations, improved scientific understanding of the impacts of aquaculture, introductions and transfers and transgenics on the wild stocks and developments in measures to minimise them. A detailed response to the comments from ISFA was sent by the Secretary on behalf of the Council but no modifications were made to the Williamsburg Resolution at this stage.

10. In accordance with an Action Plan for Application of the Precautionary Approach, NASCO has also developed agreements in relation to: management of North Atlantic salmon fisheries; habitat protection and restoration and stock rebuilding programmes. NASCO has also developed measures in relation to by-catch of Atlantic salmon and guidelines for incorporating social and economic factors in management decisions under the Precautionary Approach. Verbal reports on NASCO's work in applying the Precautionary Approach have been made to the Liaison Group at its meetings. Details of all these agreements are available on the Organization's website, www.nasco.int.

11. Under NASCO's Convention, the Organization can agree binding regulatory measures for certain salmon fisheries. All other agreements, including the

Williamsburg Resolution, are non-binding but provide guidelines or guiding principles to the Parties and their relevant jurisdictions. They facilitate consistency of approach (a "level playing-field") in developing measures for the conservation and management of wild salmon stocks. There is an obligation on the Parties and their relevant jurisdictions to report on the commitments made to implement the agreements in a manner appropriate to their situation. This reporting process also facilitates exchange of information on best practice. The precise nature of the measures to be taken and whether they are mandatory or voluntary is a matter for each Party and their relevant jurisdictions in consultation, as appropriate, with stakeholders.

12. In 2004, the Williamsburg Resolution was amended following a change to the definition of 'transgenic', and modification of the Guidelines for Action on Transgenic Salmonids and of the Guidelines for Stocking Atlantic Salmon. There were no other changes.

13. Under the Statement of Commitment agreed at a meeting of NASCO and ISFA in 2004, the North Atlantic salmon farming industry agreed to provide comments on the Williamsburg Resolution at the 2005 meeting of the Liaison Group. These comments were tabled and discussed at the 2005 meeting of the Liaison Group in Leuven, Belgium. At that meeting it was agreed that ISFA would respond to NASCO by May 15, 2005 with recommendations for minor revisions to the Williamsburg Resolution, along with additional relevant science and code of practice references, so that they could be brought to the June 2005 NASCO meeting for consideration by the Council.

Annex 6

North Atlantic Salmon Farming Industry and NASCO Liaison Group

SLG(05)17

Reports on the Development and Implementation of Containment Action Plans

At its meeting in 2001 the Liaison Group agreed Guidelines on Containment of Farm Salmon. A format was subsequently agreed by the Liaison Group for reporting on progress in developing and implementing action plans for containment as required under the guidelines. Under the agreed reporting format information will be exchanged annually on:

- progress on developing Action Plans on Containment;
- the level and causes of escapes;
- progress on implementation of, and compliance with, the Action Plan;
- the effectiveness of the Action Plan in minimising escapes;
- identification of areas for research and development in support of the Action Plan.

The returns provided are compiled in this report. Canada did not provide a return using the agreed format but rather a report on its containment measures is contained in Annex 4. No return was received for the Faroe Islands.

SLG(05)17

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?

European Union

Finland

In Finland there is no Atlantic salmon farming and within the catchments of the Atlantic salmon rivers discharging into the Arctic Ocean we have no fish farming at all. No Action Plans have been drawn up, because there is no need for such Plans.

Ireland

Voluntary – industry-based (see Annex 1).

Sweden

At present, there is no cage farming of salmon in Sweden and on the west coast there is practically no fish farming at all. There are, however, several land-based farms producing salmon smolts for compensatory releases in regulated rivers. These are normally situated in the same rivers in which the releases are undertaken. Two such farms are situated in rivers emptying to the west coast. Given this, there is currently no need for Action Plans for the containment of farmed salmon.

UK – England and Wales

There are presently no marine cage sites rearing salmon within England and Wales. However, there are a number of stream-, and river-fed juvenile production facilities within England and Wales, that rear salmon parr and smolts for restoration or enhancement stocking (predominantly Environment Agency hatcheries) or to supply commercial marine-based on-growing sites in Scotland (mainly located in northern England). Intakes and outfalls from such facilities are routinely screened to prevent ingress and escape of fish. There is no formal Action Plan for the containment of farmed salmon and none is planned.

UK - Scotland

The Scottish Executive requires site specific containment and contingency plans in support of all applications for fish farm sites to prevent escapes and minimise their impact in line with the Scottish Quality Salmon (SQS) and Shetland Salmon Farmers Association (SSFA) codes of practice.

In May 2002 the Scottish Executive introduced legislation *(The Registration of Fish Farming and Shellfish Farming Businesses Amendment (Scotland) Order 2002*) which requires the

mandatory notification of all escapes of farmed fish. Any suspected escape, or circumstance which gives rise to a significant risk of escape, should also be reported to the Executive.

This legislation provides for recovery action and the deployment of measures, such as the use of gill nets which would otherwise be illegal.

The Government/Industry/Wild Fish Interest Containment Working Group constituted in response to a recommendation in The Strategic Framework for Scottish Aquaculture has drafted a revised Containment Code of Practice that will be included in the Industry Code of Practice.

Iceland

Regulation # 1011/2003 on sea-cage integrity and internal inspection on fish farms was set in December 2003. An abstract of the regulation is contained in Annex 2. The original in Icelandic can be obtained on the Directorate's web page: www.veidimalastjori.is

Norway

Referring to the report from Norway, March 2003. The "National Action Plan to prevent escapees" is continuously being followed up. The board of FHL Aquaculture have decided to focus more on measures for preventing escapees. The following items are focused:

For all installations (smolt/fry producers, on-growing, slaughter plants and well boats):

- Information and education: Compulsory education/courses in "preventing escapees" by regulation.
    - In new regulations, in force from January 2005, every aquaculture plant must have staff that have competence and are trained in preventing, discovering and reducing possible escapees.
- Internal control systems in place and better routines of following up on the systems.
    - New regulation on internal control systems for fulfilling regulations related to aquaculture. An electronic guide as help for implementation the regulation has been developed.
- Implementation of "Environmental Management Systems".
    - An introduction to Environmental Management Systems in aquaculture has been fulfilled (see report from Norway, March 2003).
- Stronger official reactions for escapees because of negligence.
    - This has been taken care of through the new regulation on management, in force from January 2005.

Smolt/fry producers:

- Routines and systems for ensuring no escapees through outlets.
    - Through courses and meetings with the smolt producers, this has been highlighted. Also a part of the regulation on internal control and demand for routines and systems.
- Routines and systems for ensuring no escapees in transportation of fish.
    - Part of the internal control systems as above.
- Checking and upgrading fundaments if necessary.
    - Part of the internal control system as above.

On-growing plants:

- Pushing for certification of equipment, mooring and systems regulated by law.
    - New regulation on technical standard and certification for floating installations and parts thereof. This includes classification of locality (focus on current and waves), floating collars (focus on stability and floating ability), net (focus on strength, duration, mask width, antifouling and shrinking characteristics), barges and fleets (focus on strength and stability), moorings (focus on strength, stability, anchoring, corrosion, fouling and characteristics of materials), totality (how parts function together).
- Routines and systems with focus on preventing escapees.
    - Part of the internal control system and part of competence and part of obligatory plan of preparedness.
- Implementing R&D for new technology in surveillance of the nets and the fish for preventing escapees.
- Upgrading of electronic and basic maps used at sea.
    - Continuous ongoing process, including efforts to install radar reflectors on all floating installations.

Slaughterhouses:

- Routines and systems for keeping a high quality on the pens they have if used.
    - Part of the internal quality control system.
- Routines and systems for preventing escapees in operations when taking the fish "on shore".
    - Part of the internal quality system for slaughterhouses and for well boats.

Well boats:

- Implementation of quality assurance systems
    - Part of the internal quality system for well boats. Also a quality assurance system (including a hand book in procedures) has been worked out in cooperation with the well boat association. Implementation in progress (also including courses "up and down" the coast).
- Focus on routines and procedures in connection with well boats and on-growing plants.
    - Part of the internal control system, both on on-growing farms, smolt farms and well boats.

Russian Federation

There is presently only one commercial marine cage rearing facility for Atlantic salmon in Russia – "Gigante-Pechenga" salmon farm (Kola Peninsula). The Plan of Action for this farm was developed in 2001 (Annex 3). It is being followed and continuously developed further. In 2004 and 2005 new legislation was adopted to regulate aquaculture and protect wild Atlantic salmon stocks as follows:

- ***The Federal Act on Fisheries and Conservation of Aquatic Biological Resources***

Adopted on 20 December 2004. This Act is based on the principles giving priority to conservation of particularly valuable aquatic biological resources (Atlantic salmon is included into this category) and regulates relations in the sphere of fisheries and conservation of aquatic biological resources in the Russian Federation. The Act defines measures for conservation of aquatic biological resources and their habitat. For example, for protection of habitat of aquatic biological resources fish protection zones could be established, where

restrictions for economic or any other activities are introduced. Waters of particular importance for conservation of valuable species of aquatic biological resources can be awarded a status of fish preserve zones, where a special regime for economic or any other activities is established with the aim of conserving aquatic biological resources and providing conditions for development of aquaculture and fisheries at the same time. In addition the Act establishes a framework for regulation of commercial aquaculture. It is a mandatory condition that aquaculture meets all the requirements of conservation of aquatic biological resources and their habitat.

- ***Code of Practice for Commercial Aquaculture in the Murmansk Region***

Adopted on 1 April, 2005. This Code of Practice was adopted by the Government of the Murmansk Region. It defines the relations between executive bodies of the state power and subjects engaged in aquaculture. The Code defines responsibilities of users of water areas for fulfilling the requirements of nature conservation, veterinary and sanitary legislation of the Russian Federation.

USA

In 2003, an MEPDES general permit for Atlantic salmon aquaculture was finalised and includes special conditions for protection of endangered Atlantic salmon. Some of these conditions focused on operations and loss prevention through audited containment practices. Each facility shall employ a fully functional marine Containment Management System (CMS) designed, constructed, and operated so as to prevent the accidental or consequential escape of fish to open water. The CMS will be audited at least once per year and within 30 days of a reportable escape, i.e. more than 50 fish 2 Kg or larger. Containment audits for all active facilities were completed for 2004.

Further details of the CMS are contained in Annex 7 of the Liaison Group report.

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

Denmark (in respect of the Faroe Islands and Greenland)

European Union

Finland

No - see response to question 1.

Ireland

Requirement to inform Department of the Marine in some detail regarding escapes. No reports of escapes in 2004.

Sweden

No – see response to question 1.

UK – England and Wales

No - see response to question 1.

UK - Scotland

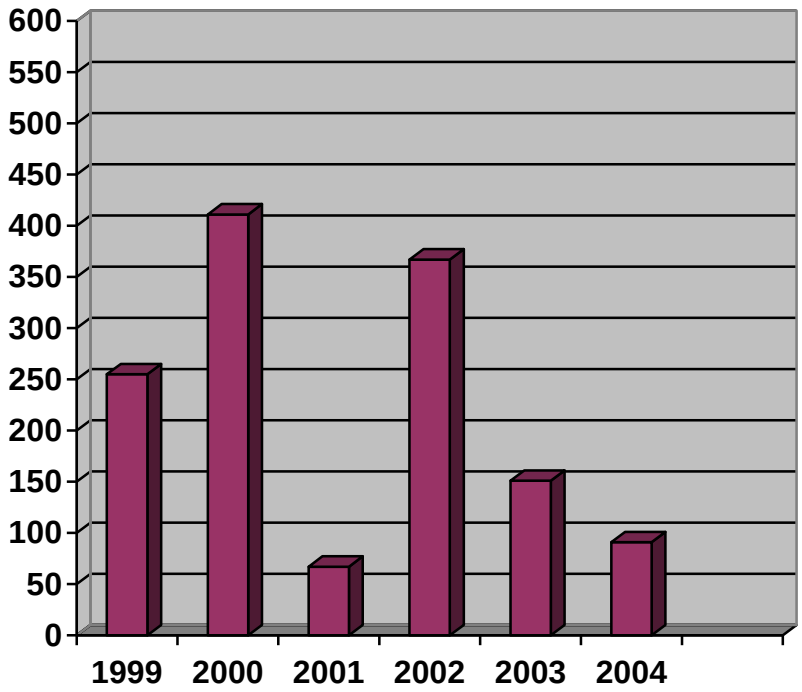
Information on the level of escapes is available in the Scottish Executive annual fish farm production survey published of the Fisheries Research Services web site:
http://www.marlab.ac.uk

In addition, a detailed database of reported escapes including causes of escapes is maintained by the Executive.

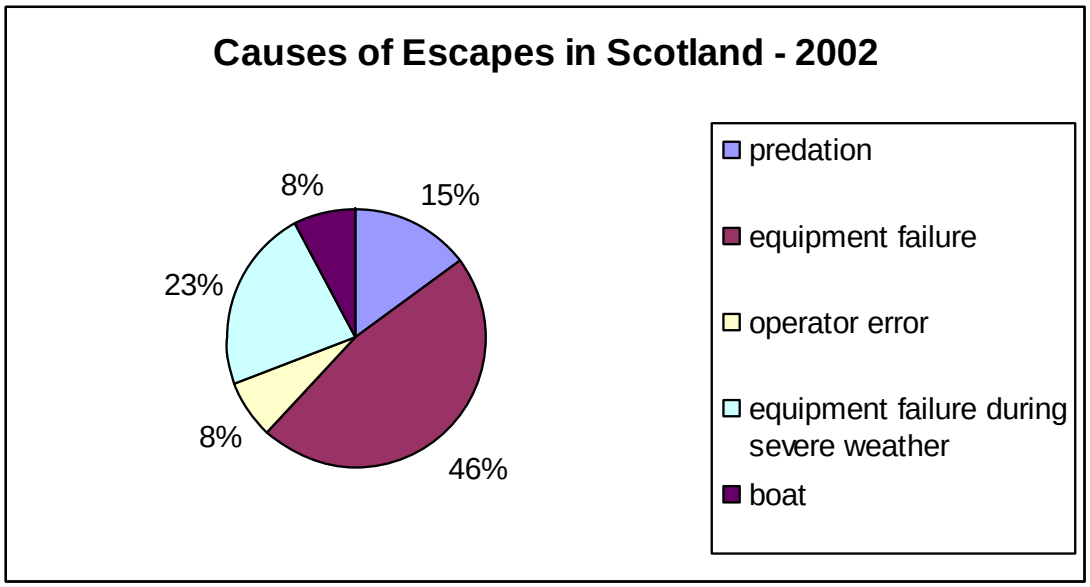
The legislation detailed in Section 1 is also relevant to this section.

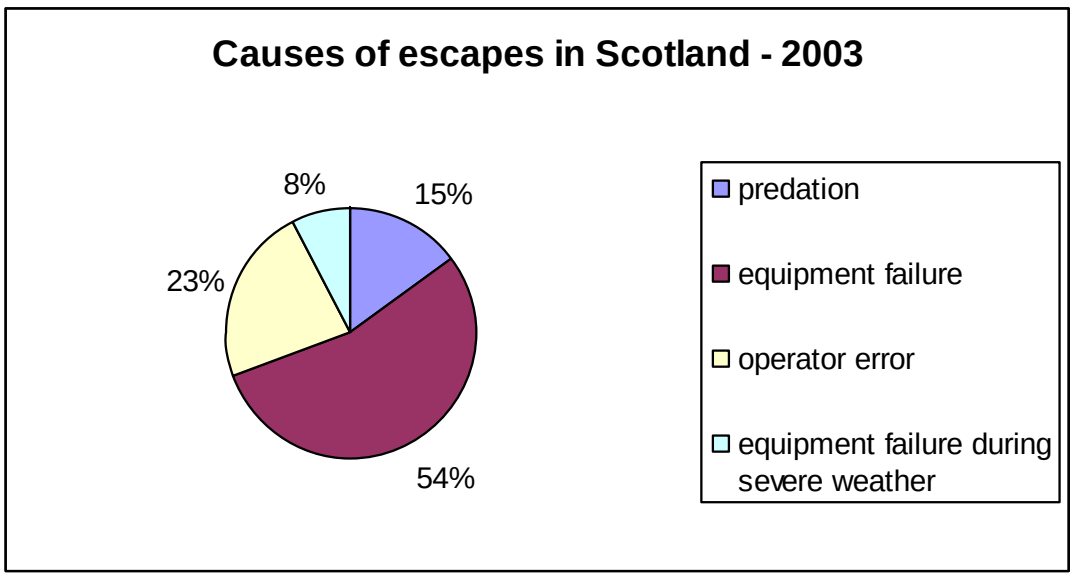
ATLANTIC SALMON ESCAPES FROM SCOTTISH SEAWATER SITES

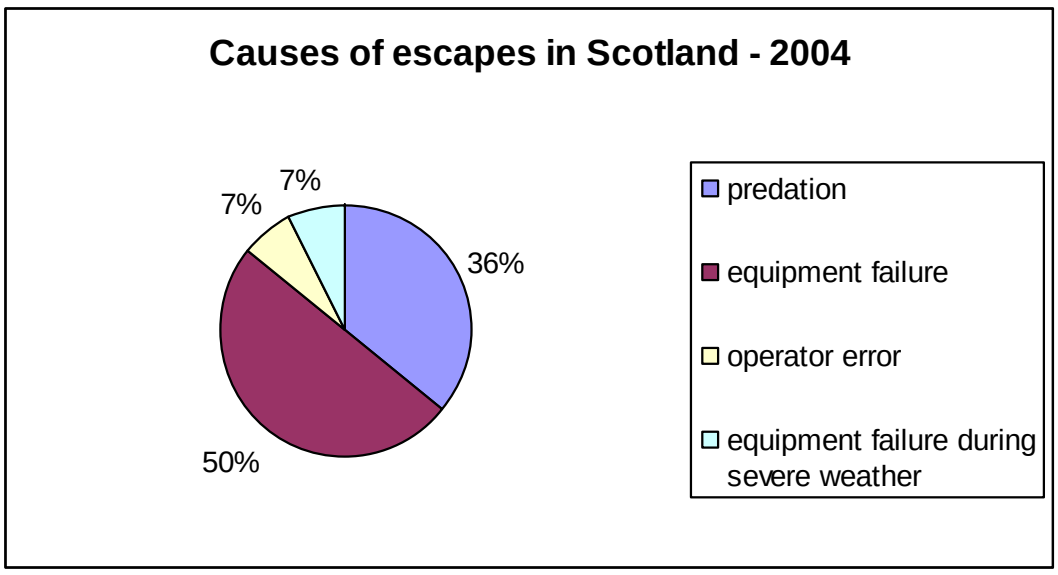
X 1,000



2005 In January of this year the Scottish west coast was hit by exceptional storms which caused the loss of 629,000 fish


Causes of Escapes in Scotland - 2002
8%
15%
23%
8%
46%
predation
equipment failure
operator error
equipment failure during severe weather
boat


Causes of escapes in Scotland - 2003
8%
15%
23%
54%
predation
equipment failure
operator error
equipment failure during severe weather


Causes of escapes in Scotland - 2004
7%
7%
36%
50%
predation
equipment failure
operator error
equipment failure during severe weather

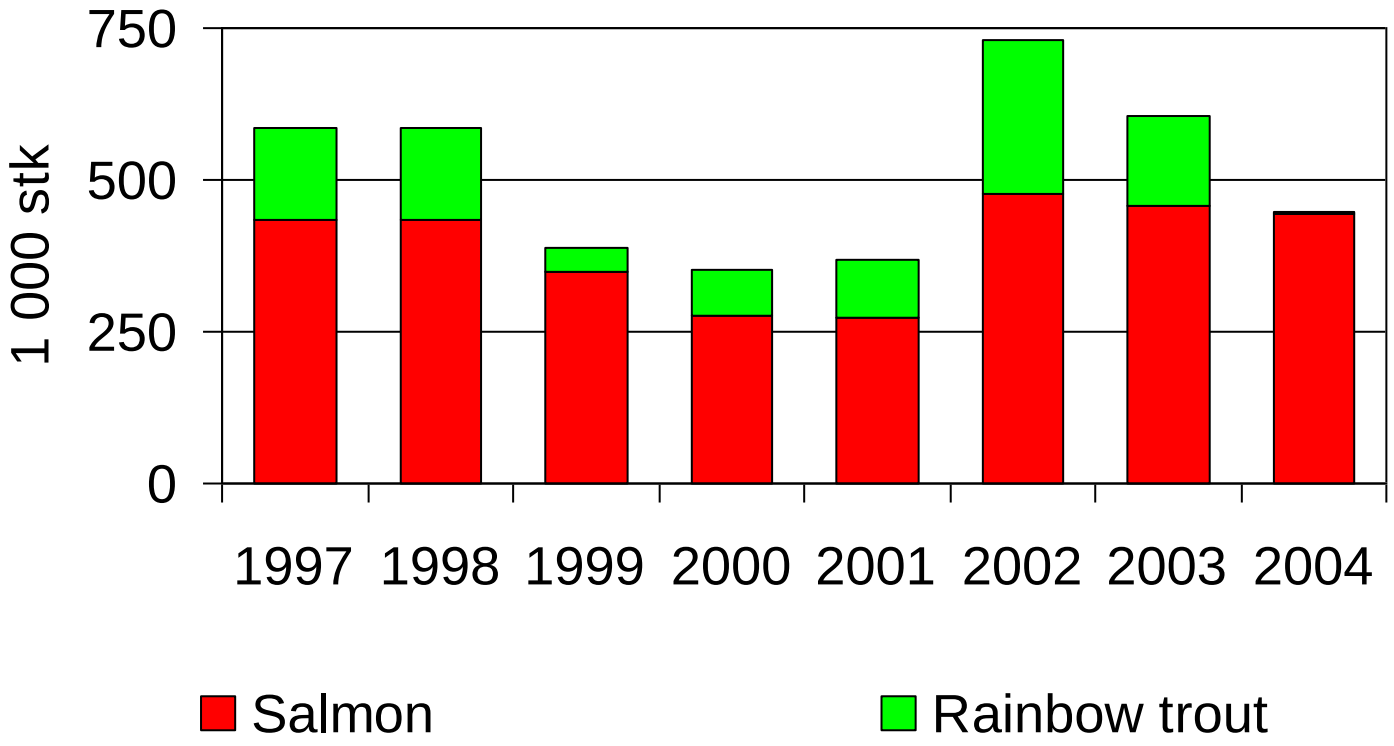
Iceland

There are only 2 marine cage farms operating in Iceland, both on the east coast. Escapes as judged by occurrence of escapees in rivers seem to have been minimal.

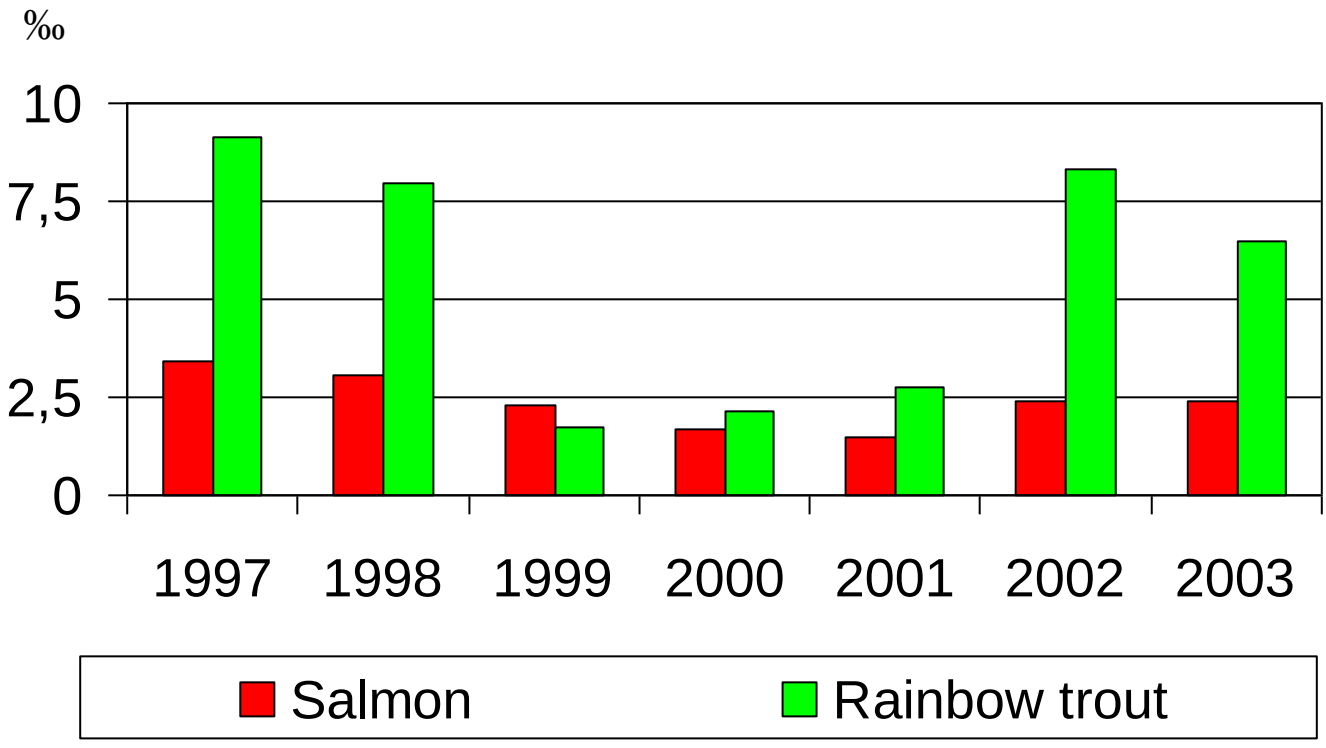
Norway

The following information is available:

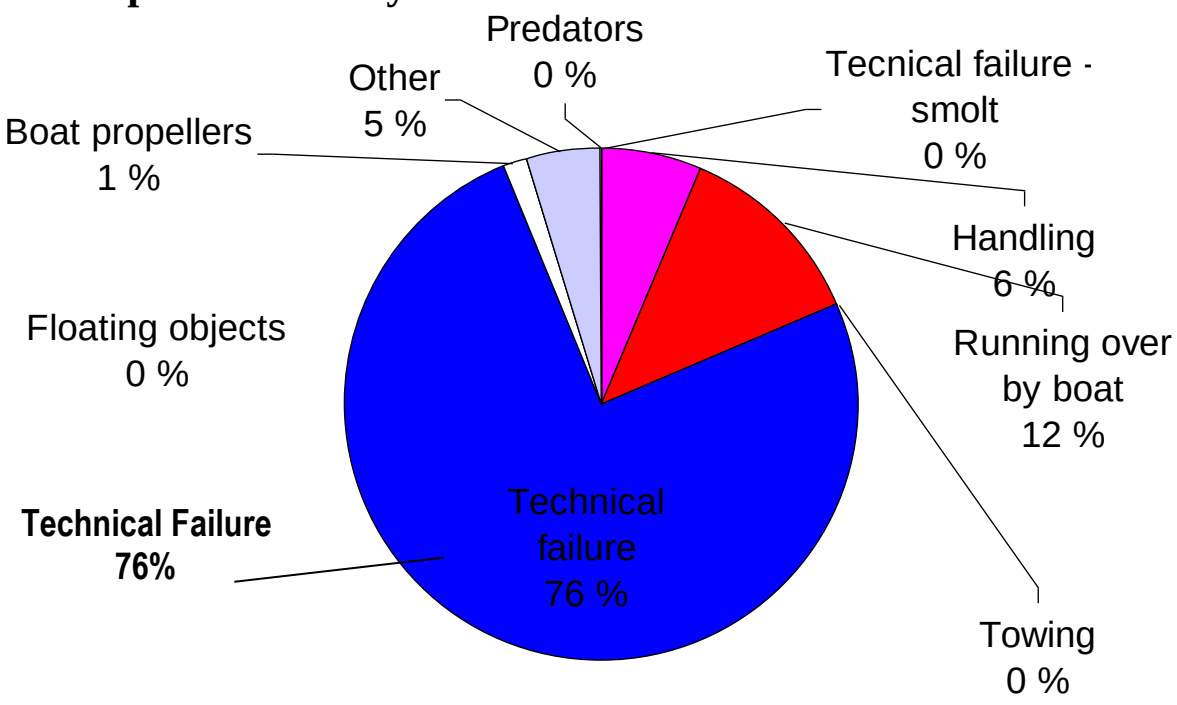
Escaped salmon and rainbow trout in Norway, 1997-2003



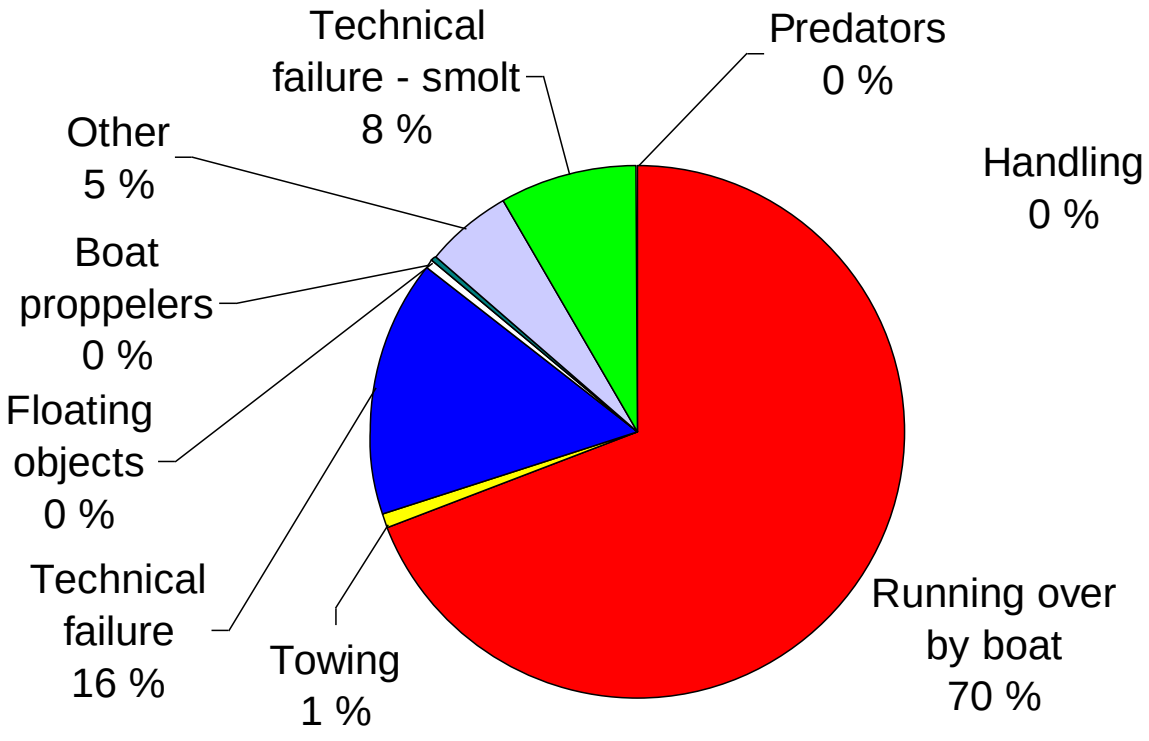
Escaped salmon and rainbow trout in Norway in parts of thousands (‰) of farmed population



Causes of escapees in Norway in 2003:



Causes of escapees in Norway in 2004:



Russian Federation

For the whole period of operations at the rearing facility "Gigante Pechenga" there was only one small-scale leakage of salmon juveniles from cages at on-growing site at Trifonojarvi lake in April 2004. As a follow-up of this case a requisition was issued by relevant authorities and measures were taken by the farm to prevent escapes.

USA

In 2004, mandatory escape reporting protocols were in place for all MEPDES permitted facilities. The facility shall report any known or suspected escapes of more than 50 fish with an average weight of 2 Kg each or more within 24 hrs to the Maine Department Marine Resources (MEDMR). In 2004, one escape event was voluntarily reported; damage to a cage during a storm caused a small hole in the primary containment net, which held fish approximately 800 grams in size. Information on the number of fish escaped is not available. There were 4 aquaculture origin fish documented captured within the St. Croix River in 2004 (USASAC draft report 2004).

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

Denmark (in respect of the Faroe Islands and Greenland)

European Union

Finland

No – see response to question 1.

Ireland

Regular visits by Department of Communications, Marine and Natural Resources engineers to inspect facilities.

Sweden

No – see response to question 1.

UK – England and Wales

No – see response to question 1.

UK - Scotland

The Scottish fish farming Industry Associations have their own quality assurance schemes under which compliance with requirements is audited on an annual basis. Continuing membership of these schemes is dependent on compliance.

Besides this, elements of the containment plans are formally monitored by FRS Fish Health Inspectors as part of the arrangements to monitor compliance with the industry "ISA Code of

Practice", "A Code of Practice To Avoid and Minimise the Impact of Infectious Salmon Anaemia (ISA)". This covers the requirement for net inspections and their frequency.

Iceland

The fish farms are responsible for the preparation of a contingency plan related to escapes and other emergency events. The inspectors of the Directorate of Freshwater Fisheries have enforced the preparation of plans.

Norway

See information under question 1. In 2004 the number of escaped salmon would have been approximately 140,000 if two separate causes had been avoided. Two localities were run over by boats not having anything to do with the aquaculture business. This led to approximately 311,000 escaped salmon.

Russian Federation

The implementation of and compliance with the Action Plan by "Gigante- Pechenga" are monitored by relevant government organisations (Murmanrybvod - Directorate for Fisheries Control and Enforcement and Fish Protection and State Veterinary Services). There is good cooperation between them and the company which ensures that the best practices are used and the Plan of Action is further refined in the light of new legislation adopted.

USA

In 2004, all active marine sites acquiring MEPDES permits were required to develop, implement and adhere to appropriate CMS plans. These facilities were audited for compliance through a collaborative of State and federal agencies.

4. Is information available on the effectiveness of the Action Plan in minimising escapes? If 'yes', please provide details of new actions since the last notification.

Denmark (in respect of the Faroe Islands and Greenland)

European Union

Finland

No – see response to question 1.

Ireland

Large subsample of the wild salmon drift net catch is examined each year and the % of farmed escapes is collected. Records also available from private and State rod fisheries and experimental fish traps.

Sweden

No – See response to question 1.

UK – England and Wales

No – See response to question 1.

UK - Scotland

We have figures for escapes before and after the introduction of the Scottish escapes legislation. No new measures since last notification.

Iceland

Another regulation # 460/2004 has been set, which bans salmon and salmonid farming from areas close to salmon rivers. An English translation is provided in Annex 2. This further ensures that reared salmon do not enter salmon rivers.

Norway

If 2004 (apart from the two above-mentioned incidents) is the beginning of a trend, then we regard that as a result of all efforts done. More focus, improved management and the action plan and implementation as a "back cloth".

Russian Federation

The effectiveness of the Action Plan can be assessed as rather good as there were no escapes of fish from sea cages over the years of operation of the farm. The cooperation with government organisations improved and new legislation was adopted, which will further enhance the effectiveness.

USA

All salmon aquaculture facilities are required to develop and maintain an inventory tracking system that allows clear, accurate inventory tracking of all size classes (i.e. average weight and age) of Atlantic salmon, including documentation of mortality events and any escapes. All inventories are reported monthly to MEDMR in accordance with MEPDES permit requirements.

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

Denmark (in respect of the Faroe Islands and Greenland)

European Union

Finland

No – see response to question 1.

Ireland

No.

Sweden

No – see response to question 1.

UK – England and Wales

No – see response to question 1.

UK - Scotland

The Containment Working Group is exploring improved farm cage construction and maintenance as recommended by the Strategic Framework for Scottish Aquaculture and will report in due course. We await its recommendations which we expect to include calls for research and development.

Iceland

Iceland will follow international developments on standards for sea-cages, e.g. in Norway.

Norway

Ongoing projects:

- "Escape-proof floating installations": Improvement of escapees because of net failure and installation damage/failure. Finished medico/ultimo 2005.
- Video production: "Escaping": Production of a video (27 minutes) with focus on causes of escaping and what is being done to get more knowledge and how to prevent escapees. The video is produced and distributed to all members. Also available for others.

Russian Federation

A study was conducted by the Moscow University in 2003 on the subject: "Genetic monitoring of wild populations of Atlantic salmon in areas of salmon farming". Differences were identified in all characteristics, biological and genetic, between wild salmon juveniles from the Pechenga river and reared in the Pechenga fjord (Gigante-Pechenga farm, Kola Peninsula). The findings showed that in the event of escapes, foreign and different genetic material could potentially be introduced into the population of wild Atlantic salmon of the Pechenga river.

USA

No new measures. Previously reported measures still apply.

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 lead 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 manufacturers 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 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.

3.7 Appropriate and effective predator deterrence devices should be employed. These should be upgraded as more effective and cost efficient methods become available.

3.8 Each net should be marked and identifiable, all nets should have clear records showing a detailed history of its use, i.e. age, frequency and results of stress testing, last area of use etc.

3.9 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 program 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 & 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 liase with the local Fisheries Board on methods best suited to the recapture of escaped fish.

ISGA
April 2002

Regulatory measure regarding equipment and internal inspection on Icelandic Fish Farms

Abstract

Prepared by

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Provisions

- The regulatory measure is composed of 9 chapters and 8 annexes.
- Chapter 1 (articles 1-2) defines the scope of the measure and technical words.
- Chapter 2(article 3) contains provisions regarding a production log and its accessability by inspectors.
- Chapter 3 (article 4) contains provisions regarding accidental releases from fish farms and how these should be dealt with through emergency measures.
- Chapter 4 (articles 5-9) defines the integrity of equipment used on fish farms as well as maintenance.
- Chapter 5 (articles 10-12) defines the inner inspection and risk analysis, which shall be performed on fish farms and approved by the Directorate of Freshwater Fisheries.
- Chapter 6 (article 13) contains provisions for the runoff from landbased farms, which shall be fish proof.
- Chapter 7 (article 14-15) specifies methods used for the transport of life salmonids between fish farms, especially if well boats are used. Towing of cages outside jurisdiction of the fish farms is prohibited as well as the containment of salmonids in cages, which are not part of a licensed unit.
- Chapter 8 (article 16) contains provisions regarding official inspection of the fish farms by the Directorate of Freshwater Fisheries.
- Chapter 9 (article 17-18) specifies penalties and validation of the regulatory measure.

Annexes

- Annex 1 specifies the contents and the processing of the log book kept on the fish farm, which shall be available for inspection at any time.
- Annex 2 specifies procedures regarding accidental releases both with respect to reporting and emergency procedures.
- Annex 3 specifies how a fish farm shall be designed and constructed. It defines environmental variables that shall be withstood by different classes of sea-cages. Necessary anchors for each class are also specified.
- Annex 4 contains provisions regarding the inspection of netting used on sea-cages both above and below the sea-surface.
- Annex 5 specifies monitoring of the vicinity of the fish farm through netting series.
- Annex 6 outlines procedures to be devised by the fish farm management in order to minimize accidental releases from sea-cages.
- Annex 7 specifies necessary training of personnel working in fish farms.
- Annex 8 contains provisions on official verification of the effectiveness of the internal inspection performed by the fish farm management at least once a year.

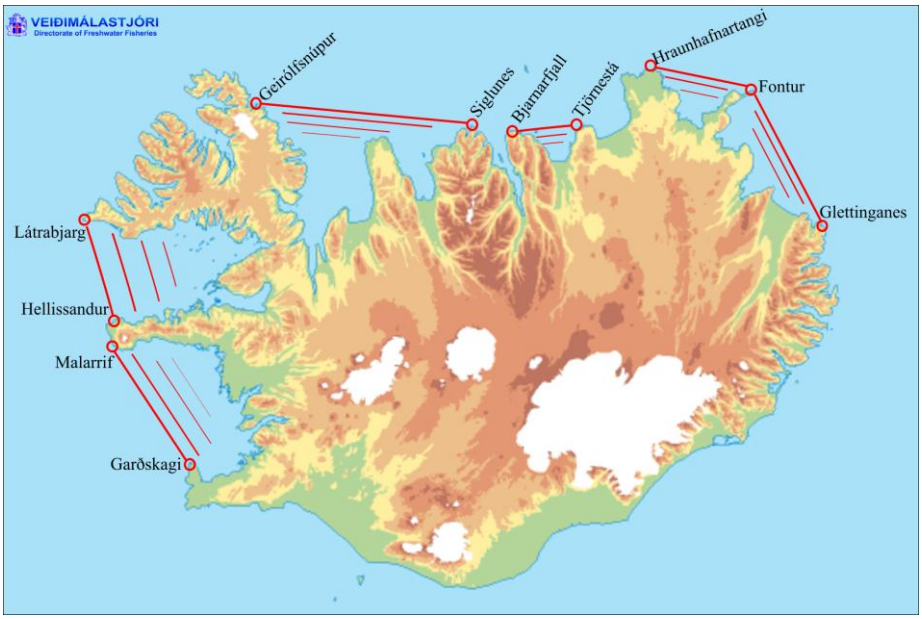
A new regulation
for the protection of wild Atlantic salmon

In May of 2004 the Ministry of Agriculture in Reykjavík issued a regulatory measure (nr. 460/2004) prohibiting the rearing of salmonids of reared origin in sea-cages in fjords and bays close to major salmon rivers. This ban, which is set in the light of the Precautionary Approach, replaces a regulation set in 2001 (nr. 226/2001), which prohibited rearing of fertile salmon in these same areas.

The map below designates the protection areas and an English translation of the regulations is attached in Annex 1.

With this regulation in force no farming of salmonids (fam. Salmonidae),i.e. salmon, brown trout, char or rainbow trout or related species can be carried out in sea-cages in the designated areas.

The setting of this regulation limits farming of salmonids in sea-cages in Iceland to limited north coast areas in addition to the Western and Eastern fjords.



Coastal protection areas where farming of salmonids (fam. Salmonidae) in sea-cages is prohibited.

Annex 1

Nr. 460 27th of May 2004

Notification
on protection areas, where rearing of salmonids (fam. salmonidae) in sea-cages is prohibited

Article 1

In order to protect wild salmon stocks it is prohibited to rear salmonid species of reared origin in sea-cages in the following areas along the Icelandic coast:

1. In Faxaflói inside a line drawn from Garðskagi to Malarrif on Snæfellsnes.
2. In Breiðafjörður inside a line drawn from Hellissandur to Látrabjarg.
3. In Húnaflói and Skagafjörður inside a line drawn from Geirólfsgnúpur to Siglunes.
4. In Skjálfandaflói inside a line drawn from Bjarnarfjall to Tjörnestá.
5. In north-eastern Iceland inside a line drawn from Hraunhafnartangi to Fontur on Langanes and from Fontur to Glettinganes.

Article 2

This notification, which enters immediately into force, is set according to an authorization in article 77 in the Salmonid Fisheries Act nr. 76/1970 with subsequent amendments. It replaces notification nr. 226/2001 on protection areas where the rearing of fertile salmon (Salmo salar) in sea-cages is prohibited.

Ministry of Agriculture 27th of May 2004

Guðni Ágústsson
(Minister of Agriculture)

Guðmundur B. Helgason

Action Plan for Containment of Farm Salmon

Gigante-Pechenga salmon rearing facility, Russian Federation

A. Actions in connection with preventing escape of fish from cages

1. Installation and strengthening of cages should be done by employees in accordance with technical documentation and relief of the area.
2. Only nets with a mesh size according to the fish size should be used. Nets should be regularly inspected and replaced when necessary by nets with adequate mesh size. To prevent sea algae growth nets should be cleaned regularly using special equipment.
3. A diver should be available to proceed with inspection of the technical condition of the farming complex, twice a month in the summer season and as required in winter. Results from inspections are to be recorded in a logbook.
4. A net to prevent birds from entering should be stretched over the cages.
5. There should be a 100-metre zone around the cages where fishing and boat traffic should be illegal.
6. All information relating to operation of the farm should be recorded and sent to relevant government authorities responsible for aquaculture management when requested.
7. Plan of Action should be available at the farming facility.

B. Actions in case of escape of fish from cages

1. In case of fish escaping immediate measures should be implemented within two hours after the escape is discovered. A gill net with the correct net mesh size should be set in an effort to recapture escaped fish. Representatives from the District Inspection office should be invited and be at place. Gill nets should be kept at the farming facility of Gigante-Pechenga.
2. In case of fish escapes details of all operations and actions taken from escape discovery till when the contingency situation is over should be recorded in a logbook.
3. All actions taken by fish farmers should be in accordance with the Instructions for fish farmers. The Plan of Action and the Instructions should be available at the fish farm.
4. Production manager is responsible for the implementation of the Plan of Action.
5. In case of fish escaping, the following should be informed immediately within two hours of the discovery:
    - Murmanrybvod (Directorate for Fisheries Control and Enforcement and Fish Protection)
    - the district inspection office of Murmanrybvod;
    - the regional and district veterinary services;
    - "Gigante Pechenga" office.

The information that is sent to these organizations should included the following:

- The time of the escape
- The estimated number of escaped fish
- The average weight
- The age

SLG(05)16

Report by Canada on Implementation of Action plan with respect to NASCO Guidelines on Containment for Salmon Farms

Canadian context

- Aquaculture in Canada is a shared responsibility between the federal government and the provincial or territorial governments.

- Canada has established a Council of Fisheries and Aquaculture Ministers to deal at a political level with fisheries and aquaculture issues. Ministers support a full integrated aquaculture action plan that includes national Codes of Practice for Aquaculture that is not limited to containment.

- Canada's National Code on Introductions and Transfers of Aquatic Organisms sets in place a mechanism to evaluate proposals to move aquatic organisms from one water body to another. It provides a consistent risk based process for assessing the potential impacts of intentional introductions and transfers of aquatic organisms thereby minimizing the potential impacts from escapes.

- All aquaculture operations are subject to rigorous environmental review under a number of federal and provincial acts and regulations, ensuring that all aquaculture operations meet high standards of environmental sustainability with minimal impact from their activities.

- Codes of Conduct, Codes of Practice and Best Management Practices are, for all intensive purposes, a condition of licence for Atlantic Canadian salmon farms. They are also comprehensive covering all aspects of aquaculture operations including escape prevention / containment.

- By the fall of 20005 access to the United States market will be contingent on salmon farms complying with an independent third party audit driven certification program spearheaded by the US based Food Marketing Institute (FMI). The certification program is called Safe Quality Salmon (SQF).

- The Canadian aquaculture industry is adapting the Canadian Aquaculture Industry Alliance's (CAIA) National Code System for Responsible Aquaculture. CAIA's Code System has similar elements to FMI's SQF program and because of this, the transition of Canadian salmon farmers to the new certification program will be prompt and uncomplicated.

- Containment is a component of the Canadian Code system.

Action Plan – current status

- The Canadian industry has a number of Codes of Practice reflecting the species or geographic distribution of aquaculture. Codes of Practice, including on containment measures, are in operation or are pending and apply throughout the NASCO area.

- Indications from various sources, including specific river system monitoring stations, continue to indicate a significant reduction of escaped salmon.

- Ongoing consolidation of the salmon farming industry in New Brunswick has meant that the major producers in the sector are standardizing their operations to be consistent with and in compliance with provincial and state regulatory authorities in New Brunswick and Maine.

- Insurance policies require that the salmon farming industry have in place significant standards for containment.

- Although formalized reporting mechanisms do not exist regarding containment issues industry shares information regularly with the provinces on issues while respecting proprietary information.

- As industry moves to adopt the SQF program, containment will become an audited standard.

- Industry is continually assessing containment technology with a desire to achieve a level of escapes that is close to zero as possible. Industry is also taking steps to facilitate managing escapes including the establishment of company genetic profiles of their cultured salmon.

Annex 7

Maine's Containment Management System (CMS)

Maine's Containment Management System (CMS) is a third party verified management and verification system based on Hazard Analysis and Critical Control Point (HACCP) risk management. The CMS was developed and tested by the Maine Aquaculture Association through a cooperative program with industry, regulatory and Environmental NGO participation. Following development, participation in the program was mandated as a condition on required State permits. The system has been in place on 100% of Maine salmon facilities, with fish in the water, since March of 2002.

The CMS has 3 major components. The first component is the development of a site-specific containment plan (site plan). The site plan should follow the appropriate (fresh or salt water) generic model developed in the plan. Each site plan consists of a written risk analysis of where or when potential escape events might occur, a current site diagram, identification of critical control points, HACCP plans for each critical control point, methods section, and blank copies of the appropriate records. Any critical control points identified by the risk analysis must have an accompanying HACCP plan. The HACCP plan outlines when, who, how, where and what should be monitored. It specifies what the critical limit is when monitoring and what actions should be taken should the critical limit be exceeded. Finally it also sets forth who, how and when verification of monitoring will occur. The methods section outlines how a site will conduct certain standard operations or respond to common situations that could affect containment. Items covered in this section include inventory methods, predation prevention plans, severe weather plans, training, response to escape events and unusual occurrences. In addition to a sites risk analysis, HACCP plans and methods, they must also abide by all of the best practices contained within the Maine Aquaculture Association's Code of Containment (COC). The Code of Containment does provide for quantifiable standards for nets, mooring systems and mooring components.

The second component of the CMS is the implementation and verification of the CMS. In addition to the regular monitoring and verifications outlined within the HACCP plans operators are required to review all site-specific plans on an annual basis and to keep them updated with current farm practices used on that particular site. During the annual review of the plans the operator must also review any Corrective Action Reports (CARs) from the previous year in order to look for reoccurring issues that should be addressed.

The final aspect of the CMS is the third party verification. Companies may employ any auditor that is approved by the State for CMS audits they desire. All sites are required to undergo a minimum of one audit per year. There should be 24 hr notice to site operators of a visit solely for the purpose of facilitating access to the site. Auditors are expected to visit marine sites during stocking and harvesting at least once out of every 5 annual audits. It is the operator's responsibility to satisfy to the auditor's satisfaction that they are in compliance with the system. If violations are discovered a predetermined timetable exists for submission of a correction plan that includes: time frame for corrections to be made and verification procedure. These plans must be submitted and approved by the regulating authorities. One important aspect of the approval process is the option for the authorities to require more frequent monitoring if they feel it is merited by the violations. In addition increase audit frequency may be automatically triggered based on the type and number of infractions.