

	<p><b>Council</b></p> <p><i>Minimising Impacts of Salmon Farming on Wild Atlantic Salmon: Supporting Meaningful and More Rapid Progress Towards Achievement of the International Goals for Sea Lice and Containment</i></p>	<p><b>CNL(21)57</b></p> <p>Agenda Item 5 a) (i)</p>
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***Minimising Impacts of Salmon Farming on Wild Atlantic Salmon: Supporting Meaningful and More Rapid Progress Towards Achievement of the International Goals for Sea Lice and Containment***

A Theme-based Special Session of the Council of NASCO

Thursday (pm) 27 May 2021

**Background**

The objective of NASCO's Theme-based Special Sessions (TBSS) is to allow for greater exchange of information on a topic related to NASCO's Resolutions, Agreements and Guidelines.

In 2021, the TBSS will be on supporting meaningful and more rapid progress towards achievement of the international goals on the impacts of sea lice and escaped farmed salmon on wild salmon stocks. Annual production of farmed salmon in the north Atlantic is currently around 1.75 million tonnes, over two thousand times the reported catch of wild Atlantic salmon ([ICES, 2020](#)). Scientific evidence increasingly confirms a range of impacts from the farmed salmon industry on wild salmon stocks. In response to growing understanding of, and increasing concerns about, the adverse impacts of salmon farming on wild stocks, NASCO has devoted considerable effort in developing recommendations designed to address these concerns, including unanimously agreeing international goals for sea lice and containment, [SLG\(09\)5](#).

NASCO first reviewed these impacts in 1988 ([CNL\(88\)21](#), Annex 23) and, in 1994, ongoing concerns led to the adoption of the 'Oslo Resolution' ([CNL\(94\)53](#), Annex 21). In 2003, the 'Resolution by the Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean to Minimise Impacts from Aquaculture, Introductions and Transfers, and Transgenics on the Wild Salmon Stocks' (Annex 20 in document [CNL\(03\)51](#)) – referred to as the 'Williamsburg Resolution' – was adopted. In 2006, the 'Williamsburg Resolution' was amended ([CNL\(06\)48](#)). In 2009, in response to improved scientific understanding, NASCO and the International Salmon Farmers' Association (ISFA) adopted joint guidance, 'Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks', [SLG\(09\)5](#), which established the following international goals:

- 100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms; and
- 100% farmed fish to be retained in all production facilities.

In 2013, the Council clarified its role in relation to aquaculture. The 'Action Plan for taking forward the recommendations of the External Performance Review and the review of the 'Next Steps' for NASCO', [CNL\(13\)38](#), states as follows:

*'Aquaculture remains a focus area for NASCO in terms of concerns over impacts on wild Atlantic salmon. In general, NASCO has established the goal to minimise adverse impacts to wild stocks from aquaculture activities. However, it is for the Parties and*

*jurisdictions to identify and implement appropriate measures to meet this goal. Progress will be tracked as implementation plans and annual reports are submitted’.*

Thus, monitoring progress towards the international goals through Implementation Plans is central to NASCO’s work in addressing impacts from salmon farming. In 2013, the Council also decided that, while it would not continue with its regular meetings of the Liaison Group with ISFA, it would retain a Council Agenda item to allow for an exchange of information with ISFA on issues concerning impacts of aquaculture on wild salmon. It remains unclear what steps ISFA has taken to promote the Best Management Practices Guidance and progress towards the international goals.

In 2016, a TBSS entitled ‘Addressing impacts of salmon farming on wild Atlantic salmon: Challenges to, and developments supporting, achievement of NASCO / ISFA international goals’ was held ([CNL\(16\)60](#)). The latest scientific evidence on the impact of aquaculture on wild salmon was considered, as were methods used to support innovation to develop alternative production techniques to promote sustainable salmon farming.

Concerns have been expressed within the NASCO community, including during the recent Implementation Plan review, CNL(21)07, relating to the lack of progress towards the international goals. Some examples follow.

First, the Steering Committee of the 2016 TBSS on aquaculture concluded:

*‘In the Steering Committee’s view, there is now an urgent need for all Parties/jurisdictions to adopt stronger measures if their international responsibilities are to be met which it believes is not currently the case.’ (p 187).*

Second, in 2019 a two-day Symposium entitled ‘Managing the Atlantic Salmon in a Rapidly Changing Environment’ was held. The Symposium focused on the challenges facing wild Atlantic salmon and possible responses that could help conserve the resource in a rapidly changing environment. The Symposium Steering Committee’s report to Council, [CNL\(19\)16](#), contained a recommendation to address future management challenges.

*‘Given the continued impacts of domestic salmon farming on wild salmon, NASCO should strengthen compliance to the agreed International Goals of ‘100% farmed fish to be retained in all production facilities and, 100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms’. This is as stated in the 2009 ‘Guidance on Best Management Practices to Address Impacts of Sea Lice and Escaped Farmed Salmon’.*

Third, NGOs have expressed concern about Parties’ and jurisdictions’ lack of commitment to the agreed international goals, in light of the review of the revised Implementation Plans submitted under the third reporting cycle. This was also highlighted by the Implementation Plan / Annual Progress Report Review Group in [2019](#) and [2020](#). In the development of the third reporting cycle (2019 – 2024), Council expressed a wish to strengthen the Implementation Plan / Annual Progress Reporting (IP / APR) process. The guidelines for the third reporting cycle, [CNL\(18\)49](#), therefore include a greater emphasis on actions by Parties / jurisdictions working toward the achievement of the international goals for sea lice and containment by the end of the reporting period. To this end, mandatory actions were introduced, which stipulate that where Parties or jurisdictions have salmon farms, the Implementation Plans must contain at least one action related to the international goal for sea lice and at least one action related to the international goal for containment. All Implementations Plans and Annual Progress Reports are available on the [NASCO website](#).

Additionally, in 2020 Parties / jurisdictions noted that each year the knowledge base on the interaction between wild and farmed salmon grows and that an update on this knowledge was required, along with an assessment of how NASCO can utilise it, in order to improve progress towards achievement of the international goals ([CNL\(20\)51](#)).

## **Objectives of the Theme-based Special Session**

The Steering Committee has agreed that the overarching objective for the TBSS is to stimulate urgent action to implement further measures to protect wild salmon from the impacts of salmon farming, and to ensure demonstrable progress by Parties / jurisdictions towards achievement of the international goals for sea lice and escaped farmed salmon, taking into account the recommendations from the Steering Committees of the [2016 TBSS](#) and the 2019 IYS Symposium, [CNL\(19\)16](#).

The TBSS will involve:

1. Reviewing critically the extent to which NASCO Parties / jurisdictions are meeting the international goals for sea lice and escaped farmed salmon;
2. Updating the current state of scientific knowledge of the adverse impacts of escaped farmed salmon and sea lice on wild Atlantic salmon;
3. Highlighting advances in best management practices and new technologies (infrastructure / biological etc.), their efficacy in mitigating adverse impacts on wild Atlantic salmon and challenges to their urgent implementation, and how to incentivise industry to move towards implementing these new technologies; and
4. Exploring in depth how Parties / jurisdictions can move more rapidly towards the achievement of the international goals.

## **Programme**

A half day has been allocated to the TBSS on 27 May 2021. The Steering Committee (John Campbell, Julie Crocker, Paddy Gargan (Chair), Heidi Hansen, Paul Knight and Steve Sutton) has worked with the Secretariat in planning the Special Session and has developed a Draft Programme (below). Written papers of the presentations will be distributed by the Secretariat prior to the Annual Meeting; these will not be subject to review. The Steering Committee will prepare a report of the Special Session, including the papers presented and any recommendations from the Steering Committee.

## **Presentations**

This TBSS has been developed around invited speakers each presenting in their area of expertise, to enable an update of the current state of scientific knowledge of the adverse impacts of escaped farmed salmon and sea lice on wild Atlantic salmon. This TBSS will also address issues involving best management practice and new technologies in salmon aquaculture.

Each presentation has been allotted a time slot that will not include questions. There will be a period for discussion of each set of presentations immediately afterwards. There will be a full discussion around the objectives of the TBSS after the three presentation sessions by invited speakers.



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the International Goals for Sea Lice and Containment***

***27 May 2021***

***Programme***

<b>Mins</b>	<b>Title</b>	<b>Contributors</b>
<b><i>1. Overview</i></b> <b><i>Session chair: Paddy Gargan</i></b>		
13:00	Opening of the Theme-based Special Session	Paddy Gargan, Chair of the TBSS Steering Committee
13:05-13:25	Setting the scene: To what extent has there been demonstrable progress towards achievement of the international goals for sea lice and containment? A critical review of actions in the third cycle of reporting (2019 – 2024)	Cathal Gallagher, Chair of the IP / APR Review Group
<b><i>2. Examining the Current State of Scientific Knowledge</i></b>		
13:25-13:45	Impact of sea lice on wild Atlantic salmon	Ørjan Karlsen, Institute of Marine Research, Norway
13:45-14:05	Faster pace of life in wild salmon following introgression from farmed escapees	Geir Bolstad, Norwegian Institute of Nature Research (NINA)
14:05-14:15	<b>Panel discussion</b>	Led by the Chair of session
14:15 – 14:30	<b>Break 15 mins</b>	
<b><i>3. Best Management Practices and New Technologies</i></b> <b><i>4. Industry Implementation of New Technologies</i></b> <b><i>Session chair: Julie Crocker</i></b>		
14:30-14:45	State of Salmon Aquaculture Technologies	John Campbell, Fisheries and Oceans Canada
14:45-15:00	Establishing barriers between farmed fish and sea lice – the only sustainable solution?	Arve Nilsen, Norwegian Veterinary Institute

15:00-15:15	Recirculating land-based systems – reducing conflicts between farmed and wild salmon	Erik Sterud, Krüger Kaldnes AS, Norway
15:15-15:30	Genetic and other innovative strategies to reduce sea lice	Michael Pietrak, U.S. Department of Agriculture, National Cold Water Marine Aquaculture Research Center
15:30-15:40	<b>Break 10 mins</b>	
15:40-15:55	How to protect wild salmon against sea lice with the use of new technologies and post-smolts	Åse Maria Espmark, Nofima, Norway
15:55-16:10	Progress by ISFA to promote the international goals for sea lice and containment among its members and what more can be done to protect wild salmonids from the adverse impacts of salmon farming	Mark Lane – International Salmon Farmers Association
16:10-16:30	<b>Panel discussion</b>	Led by the Chair of session
16:30-16:45	<b>Break 15 mins</b>	
<b>5. Getting to Where We Want To Be</b> <b>Session chair: Paddy Gargan</b>		
16:45-17:15	Discussion around Objectives of the TBSS. Approaches needed to ensure Parties / jurisdictions move rapidly towards achievement of the international goals to better protect wild salmonids from the adverse impacts of salmon farming, including how NASCO can help to facilitate such progress	Paddy Gargan, Chair of the TBSS Steering Committee
17:15-17:25	Recommendations from the Steering Committee	
17:25-17:30	Thanks and Close	Paddy Gargan, Chair of the TBSS Steering Committee