



***Programme for the 2024 Theme-based  
Special Session on Pink Salmon***

***Management of Pink Salmon in the North Atlantic and  
Their Potential Threats to Wild Atlantic Salmon***

A Theme-based Special Session of the Council of NASCO

Wednesday 5 June 2024

**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 2023 the Council of NASCO agreed that a half-day TBSS would be held in 2024 on pink salmon.

**Pink salmon: a non-native species in the North Atlantic**

The pink salmon (*Oncorhynchus gorbuscha*) is a migratory fish native to the Pacific Ocean. It was stocked in the Kola Peninsula in Russia, from 1956-1979 and again from 1985-1999, to serve as a fisheries resource but has recently spread throughout the North Atlantic Ocean in unprecedented numbers.

The majority of pink salmon occurring in the North Atlantic has an odd-year spawning cycle and, from 2017-2023, has shown increased reports across most countries where Atlantic salmon occur. Norway has had an enormous increase in pink salmon catches over this time, particularly in the north. Around 250,000 pink salmon were removed from rivers, mainly by use of traps in lower parts of rivers and nets in Troms and Finnmark County during 2023. An additional catch was taken (99,000) in licenced coastal Atlantic salmon fisheries (bag nets). About 13,000 pink salmon were also caught by sports fishing in rivers. There are additional unreported marine catches. This by far outnumbers the abundance of native Atlantic salmon in this region.

Invasive species may have large negative effects, but the potential biodiversity and societal threats of the pink salmon invasion are still largely unknown. The native Atlantic salmon, sea trout and Arctic char are among the most culturally valuable fish species in the North Atlantic. These fish species have supported commercial, sustenance and recreational fisheries, and are still highly prized fish among anglers, creating the basis for tourism and recreation. Atlantic salmon, sea trout and Arctic charr are exposed to a multitude of threats and have declined during the last few decades, which has reduced or eliminated harvestable surpluses for fisheries and severely reduced population abundance. There are worries that pink salmon will compete with, and further reduce the productivity of, these species, and negatively impact other species in estuaries, along the coasts and in the ocean. From the Pacific region, it is known that pink salmon is a species that can become very numerous, highly impact other species and alter entire ecosystems in fresh and marine waters.

Since odd-year pink salmon numbers in some of the North Atlantic and Arctic regions have increased dramatically, ecological interactions between native and introduced species may have consequences for recruitment of both Atlantic salmon and pink salmon. Potential interactions could include competition (for space in rivers and for food in oceans), predation (juvenile Atlantic salmon may be feeding on larval and juvenile pink salmon) and indirect effects of added nutrients and disease transmission. Pink salmon have been found to reproduce successfully in Norway, northwest Russia, Iceland and Scotland and have become established in the Barents Sea and across large parts of the North Atlantic Ocean. The increase in pink salmon in remote areas of Russia may have potential socio-economic benefits for regional economies through commercial, artisanal and recreational fishing.

During the NASCO Annual Meetings in 2022 and 2023, significant concerns were raised about the ongoing and future threat of non-native pink salmon to native wild Atlantic salmon stocks in the Convention area. To date, very little research has been carried out on the impacts of pink salmon across the North Atlantic region, which means more information on distribution, and hypothesised potential impacts, needs to be discussed and taken into consideration to enable the informed management of aquatic ecosystems.

### **NASCO's Actions on Pink Salmon**

#### **2021**

In 2021, NASCO's request for scientific advice from ICES included a request to:

*'provide an update on the distribution and abundance of pink salmon across the North Atlantic and advise on potential threats to wild Atlantic salmon' (paragraph 1.3)*

The advice was provided by ICES in 2022 and the summary states, [CNL\(22\)64](#):

*'ICES notes that both the abundance and geographic range of pink salmon (Oncorhynchus gorbusha) have substantially increased in the North Atlantic since 2017. In 2021, the total number of observed and reported pink salmon was over 500 000, with the distribution ranging from northern Russian Federation to as far south as Scotland, Ireland, the Netherlands, and France.*

*ICES advises that pink salmon pose several potential threats to wild Atlantic salmon (Salmo salar) both in freshwater and marine ecosystems. In freshwater the main potential threats are competition for spawning sites and interspecific aggression during the spawning season, space and food for juveniles, potential transfer of pathogens and decreased water quality caused by the decomposition of dead post-spawning pink salmon. In the marine ecosystem the main potential threat is from competition for food.'*

#### **2022**

Prior to the 2022 Annual Meeting of the North-East Atlantic Commission, Norway requested that a supplementary item on pink salmon be added to the Draft Agenda, [NEA\(22\)03](#). Under this Agenda item, Eirik Frøiland (Norway) made a presentation on the issue of pink salmon in the Commission Area, [NEA\(22\)16](#). He noted that:

- pink salmon is effectively reproducing in most rivers in northern Norway;
- pink salmon has become the dominant species in many rivers in odd years;
- gradually, a high number of spawners is being seen further west and south; and
- it is possible that pink salmon can colonise all of Norway – and thus other countries around the North Atlantic Ocean.

He also highlighted the negative impacts of pink salmon, as follows:

- displacement of native anadromous fish species in the river;
- poor water quality when high number of pink salmon die and decompose after spawning;
- impacts on biodiversity from changes in nutrient load;
- risk of disease spreading between fish farms – pink salmon as vector; and
- negative for sportfishing and related economy.

Eirik Frøiland recommended that pink salmon should be recognised as a threat to Atlantic salmon; that they should be monitored and counteracted; and that Parties should organise to share information and work together in the coming years.

The discussion on pink salmon continued at the Annual Meeting of the Council in 2022, with the President noting that the magnitude of pink salmon entering many Atlantic salmon rivers is very concerning, [CNL\(22\)53rev](#). The Council adopted a ‘Statement of the Council Regarding Pink Salmon, *Oncorhynchus gorbuscha*, in the NASCO Convention Area’, [CNL\(22\)47](#). This included agreement to establish a standing NASCO working group on pink salmon.

### **2023**

In 2023, pink salmon featured on the agenda of the Council meeting where Eirik Frøiland (Norway) again made a presentation on pink salmon in Norway, [CNL\(23\)79](#).

The Council adopted the ‘Terms of Reference for the NASCO Working Group on Pink Salmon’, [CNL\(23\)69](#), requiring it to submit its report to the Council by April 2024, for consideration at the Annual Meeting in June 2024. The Working Group will meet in spring 2024.

Norway and the UK provided papers to the Council with updates on pink salmon ([CNL\(23\)62](#) and [CNL\(23\)61](#) respectively).

The Council also agreed that a TBSS on pink salmon would be held during the 2024 Annual Meeting.

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

The Steering Committee has agreed that the overarching objective for the TBSS is to provide an overview of pink salmon’s distribution, biology, potential impacts on native Atlantic salmon and management actions in the North Atlantic.

The TBSS will address this overarching objective through four detailed sub-objectives. The TBSS will:

1. Describe the natural distribution and life history of pink salmon and review its Arctic and North Atlantic range expansion.
2. Review the potential for interactions between pink salmon and Atlantic salmon in freshwater and marine environments and the potential for parasite and disease transfer.
3. Review the management of pink salmon in Atlantic salmon systems.
4. Introduce the new NASCO Working Group on Pink Salmon.

Invited experts will present under each of these sub-objectives.

## **Programme**

The TBSS will take place on Wednesday 5 June 2024, from 13:00 hrs until 17:30 hrs. The Steering Committee (Colin Bean, Ian Bradbury, Øyvind Fjeldseth, Sergey Prusov, Tim Sheehan, Tom Staveley (Chair) and Eva Thorstad) has worked with the Secretariat in planning the Special Session and has developed a Programme (below).

Written papers of the presentations will be distributed prior to the Annual Meeting; these will not be subject to review. The Steering Committee will prepare a report of the Special Session, which will include the papers presented, the transcription of any major discussions and the conclusions of the Steering Committee.

Secretariat  
Edinburgh  
5 April 2024



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***Wednesday 5 June 2024***

***Programme***

<b>Time</b>	<b>Title</b>	<b>Contributors</b>
<b><i>1. The natural distribution and life history of pink salmon and a review of the Arctic and North Atlantic range expansion</i></b>		
<b><i>Session Chair: Tom Staveley</i></b>		
13:00-13:10	Opening of the Theme-based Special Session	Tom Staveley, Chair of the TBSS Steering Committee
13:10-13:40	Introduction to pink salmon in the North Atlantic and Arctic (why are they here and where?)	Michael Millane, Inland Fisheries Ireland, European Union
<b><i>2. The potential for interactions between pink salmon and Atlantic salmon in freshwater and marine environments and the potential for parasite and disease transfer</i></b>		
<b><i>Session Chair: Colin Bean</i></b>		
13:40-14:00	Pink salmon in rivers: current knowledge, overlap and potential interactions	Eva Thorstad, Norwegian Institute for Nature Research, Norway
14:00-14:20	Pink salmon at sea: current knowledge, overlap and potential interactions	Beatriz Diaz Pauli, University of Bergen, Norway
14:20-14:40	An overview of current knowledge of, and the potential for, the transfer of diseases, infections and parasites	Åse Helen Garseth, Norwegian Veterinary Institute, Norway
14:40-14:55	<b>Questions for Session 2 Speakers</b>	
14:55-15:10	<b>Tea / Coffee Break</b>	

### **3. Management of pink salmon in Atlantic salmon systems**

*Session Chair: Eva Thorstad*

15:10-15:30	Using environmental DNA (eDNA) to estimate the distribution of pink salmon	Frode Fossøy, Norwegian Institute for Nature Research, Norway
15:30-15:50	Perspectives on pink salmon in the Russian Federation	Sergey Prusov, Polar branch of 'VNIRO' (PINRO named after N.M. Knipovich), Russian Federation
15:50-16:20	Measures to control pink salmon in Norway	Eirik Frøiland / Malin Høstmark, Norwegian Environment Agency / County Governor in Troms and Finnmark, Norway.
16:20-16:40	Overview of the monitoring and management of pink salmon outside of Norway and the Russian Federation	Tom Staveley, Swedish University of Agricultural Sciences, Sweden
16:40-16:55	<b>Questions for Session 3 Speakers</b>	

### **4. The NASCO Working Group on Pink Salmon**

*Session Chair: Tim Sheehan*

16:55-17:15	An introduction to the Working Group and its proposed Terms of Reference	Jarle Steinkjer, Norwegian Environment Agency, Norway
17:15-17:30	Further questions, Thanks and Close	Tom Staveley, Chair of the TBSS Steering Committee