

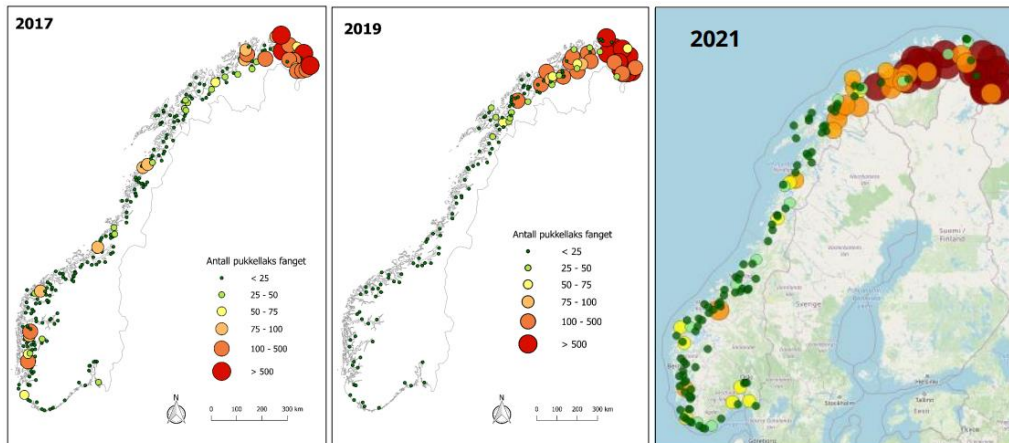
NASCO ANNUAL MEETING, 6-9th JUNE 2022

REPORT TO IFM

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Part of the NGO Group



Spread of Pink salmon in Norwegian rivers (Frøiland, NEA(22)16).

HEADLINES

- **ICES assessment for 2022 could not be fully completed due to the Russian illegal invasion of Ukraine preventing the WGNAS meetings, but salmon stocks remain in poor condition following decline since 1980s.**
- **ICES advice, based on 2021 assessment, remains that no catch is permissible in interceptory fisheries, or in individual rivers unless stocks exceed the Conservation Limit.**
- **Regulatory measures for the Faroes and West Greenland fisheries.**
 - **No quota set for Faroe fishery, 2021-23.**
 - **West Greenland quota remains at 27t (and 3t in East Greenland), despite 40t harvest in 2021. A new agreed multi-year measure includes a real-time adjustment to allow for lag in catch declaration (fishing stops at 49% of TAC).**
- **Dramatic increase of pink salmon has been reported in northern Norwegian rivers. This invasive species could be a major threat to British Isles Atlantic salmon and their river ecosystems.**
- **Salmon by-catch in marine fisheries (inshore and offshore) is becoming, again, an important topic requiring data and information updates.**
- **Most IYS Tromsø (2019) recommendations made to NASCO are now being enacted.**
- **NASCO External Performance Review process is underway, to report by next Meeting in June 2023.**
- **NASCO issues statements on pink salmon invasion (CNL(22)47) and marine salmon farming (CNL(22)49 and CNL(22)50).**
- **There is a heartening and impressive increase in applied salmon research that is now delivering genuinely new knowledge and understanding to inform better management...a POSITIVE!!!**

INTRODUCTION

This report describes key events and outcomes of the 39th Annual Meeting of NASCO, held in Edinburgh in 2022, as seen through the Non-Governmental Group (NGO) Group of 45 NGOs through which the IFM has a formal observer representation. This was the first face to face meeting held since 2019, due to the Covid restrictions, so it was good to meet colleagues properly again.

As usual in this report reference is made to reports that are available on the NASCO website. The meetings schedule is in CNL(22)02 and a summary of all the business is in CNLnnnn.

NASCO annual meetings conform to a fixed agenda revolving around the routine work of the three commissions (American, West Greenland and Northeast Atlantic) NASCO's support committees and boards, notably the International Salmon Research Board (IASRB), with Special Sessions on selected themes. Three themes this year were (i) Progress with the 2019 Tromsø Symposium recommendations on addressing future salmon management challenges, (ii) the Implementation Plans and (iii) Evaluation of Annual Progress Reports of Parties.

An important emerging development this year is the 3rd External Performance Review of NASCO, to which the IFM has made an individual submission as well as contributing to the joint NGO input. There was a short presentation on that by the Review Panel chairman.

INTERNATIONAL ATLANTIC SALMON RESEARCH BOARD (CNL(21)12)

Review of metadatabase (established in 2014) of Salmon Survey Data and Sample Collections of Relevance to Mortality of Salmon at Sea. The review was a recommendation in 2021 and was completed by a Working Group (ICR(22)03) through remote meetings (your correspondent was part of that group). The Group had a wide remit beyond the immediate metadatabase review. It advised stopping the Metadatabase, but leaving it in a revised, updated state on the NASCO Website. Further important recommendations were for the IASRB to consider its vision, scope and purpose; assess if its funding is commensurate with these; identify the priorities that the Parties have for the Board and consider establishing a process for requesting and reviewing research proposals. These latter recommendation would be dealt with by an intersessional meeting

Successor to SALSEA-Track. SALSEA-Track was concluded in 2020 and a final presented to NASCO last year with a request for successors, as a key project to be supported by NASCO. Two options were emerging last year (described in 2021IFM Report):

(1) the ROAM project, developing novel acoustic tracking technology for following oceanic salmon migrations;

(2) International Salmon Modelling and Management Initiative (ISMMI), being an international-scale integrated programme to pull together ecosystem data, develop and apply modelling to better understand marine mortality and to develop management tools based on whole life cycle analysis. ISMMI was based in the concept of the ongoing Likely Suspects Framework Programme (LSF) of the Atlantic Salmon Trust and funded by the Missing Salmon Alliance.

The ISMMI proposal for a one-year Phase I, reflecting the huge task of assembling the international consortium necessary, was not accepted by the IASRB on the recommendation of its Science Advisory Group (SAG). This was not due to the technical content of the proposal but because the funding rules precluded offers for proposal development. This was odd given the general support for ISMMI; but there may be scope for resurrection, as the LSF demonstrates the value of the approach.

RESEARCH PROJECTS OF INTEREST TO NASCO (ICR(22)07)

There are several active projects mainly on smolt migration and life at sea, which are starting to generate valuable new data on salmon migration routes. These were listed in the IFM 2021 report. Of note to watch are

SMOLTrack III, a multi-project programme aimed at understanding the components of smolt and post-smolt mortality during river and coastal migration. An EU-funded funded project, it is a consortium of groups from Denmark, Finland, England, Ireland; Norther

Ireland, Portugal, Spain and Sweden. In three work packages it will study in-river losses, the effects of temperature and the effects of handling and tagging on predation risk.

SMOLTrack I, a natural complement to SMOLTrack III, this seeks to investigate mortality components from coast to returning adult. A theme is critically evaluate the suitability of the tagging methods and data (tagging small fish with technology sufficient to gather useful time series of environmental data is a compromise due to fish size and tag size). In two work packages it will (1) use latest miniaturised tags to track thermal regimes occupied by salmon smolts and young adults at sea and (2) survival from adults tagged at West Greenland back to river.

The Likely Suspects Framework, an initiative proposed by Walter Crozier in 2017, taken up and delivered by the Atlantic Salmon Trust (see the AST Blue Book), funded by the Missing Salmon Alliance and led by Dr Colin Bull. As hinted by the name, the core of the 5 year project is developing a conceptual model and statistical modelling Framework. In five work packages it establishes a wide ranging, publicly interoperable data resource (SalHub); a statistical full life cycle and life-history-based framework; a system of Decision Support Tools (DST) to enable managers to interrogate and use the DSTs; a demanding analysis of coast and oceanic productivity indices (prey-predator-environment-based) that influence salmon mortality and lastly a mop-up phase that combined the new knowledge into the modelling framework that will have long-term durability and flexibility.

In short it is applying modern powerful statistics and modelling to big data and makes big demands on our understanding of salmon population dynamics, life history theory and marine ecosystem ecology and dynamics. The LSF is linked with ICES (through WKSalm I, II and II) and other groups in Atlantic and Pacific basins where similar preoccupations with the big knowledge gaps are leading to innovative research and practical applications

SAMARCH. A seven year project funded by the EU Interreg France (Channel)-England Programme, this is a 10-partner collaborative project led on the English side by the Wildlife and Game Conservation Trust (WGCT). It uses genetics, tracking, growth analysis and life cycle modelling to better understand mortality and population dynamics from parr to return in salmon and sea trout populations across La Manche (see SAMARCH website for details). Stakeholder engagement forms a specific work package and provisional results on coastal movements are already informing revision of coastal marine species fishing regulation by IFCA. There is also a big commitment to education and training from school to post-graduate level.

More detail on all the above can be found in ICR(22)07rev, on NASCO 2022 Conference website.

NASCO maintains an inventory of research that conveys the full scale of the work on Atlantic salmon.

NASCO also runs a rivers Database that is to be updated (CNL(22)12) as a flagship communications tool, and is already a useful resource that NASCO used for its State of North Atlantic Salmon Report (2019). The next SNAR will come after 2024.

ICES (WGNAS) ASSESSMENT AND ADVICE

The ICES stock assessment and advice to NASCO could not be completed this year due to the illegal invasion of Ukraine by Russia preventing necessary meetings. All parties made written and verbal statements condemning Russia's action. The Russian Federation delegation protested these statements, but they remain in the proceedings.

ICES advice remains unchanged from last year (*sal.oth.nasco* – <https://doi.org/10.17895/ices.advice.19706143>) The overall presentation to Council is available as document CNL(22)09, information relating to NEAC is in presentation NEA(22)15.

Marine survival trends, indexed by return rates, were not updated for 2022 so the information remains as last year. 1SW salmon showed some small upturn in 2020 against a long-term decline since the 1980s (Fig 1). 2SW survival has trended upwards since about 2005, giving no long term overall trend, after a long period of decline since the 1980s. The proportion of 1SW in the catch has declined across all NEAC countries.

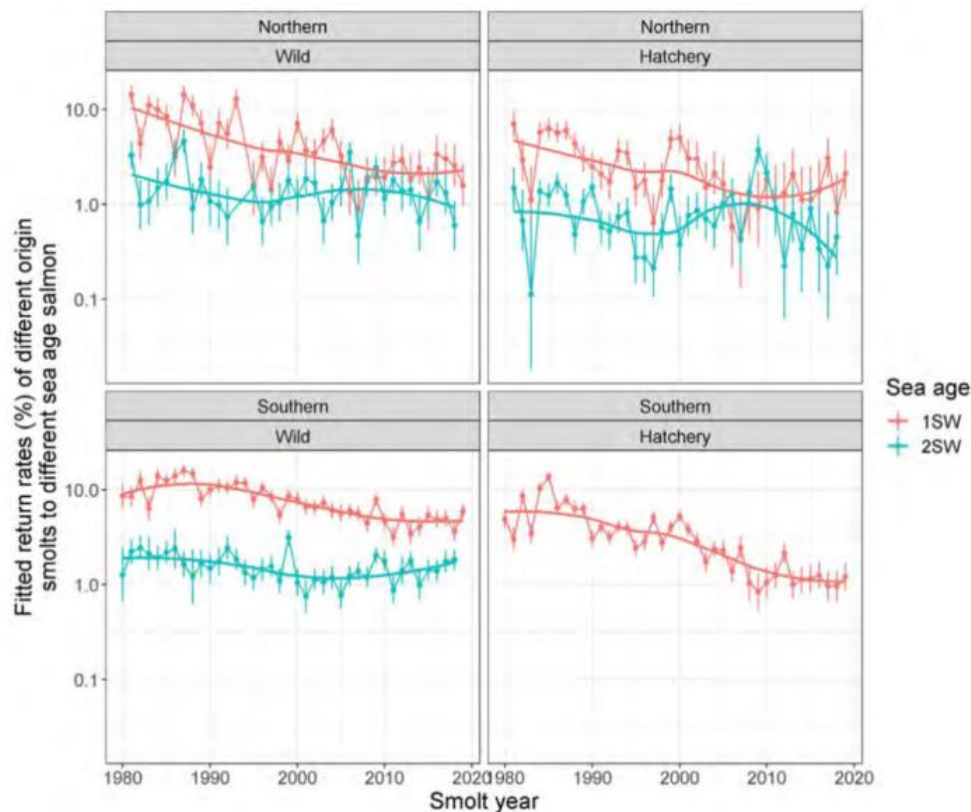


Fig 1 Marine return rates for NEAC wild and hatchery salmon (WGNAS 2021) as reported in 2022.

WEST GREENLAND COMMISSION (WGC)

The background is that for several years scientific catch advice has been no permissible catch at West Greenland, nevertheless there is a 30t quota and for some years it has been regularly exceeded. A complication has lain with the WG catch recording system and in the partial

allocation of catch to East Greenland where there is a very small fishery. This is a low level, sporadic (because of ice preventing fishing) fishery, lying in the NEAC area, that has taken up to 3t annually; although it is not subject to regular monitoring and assessment and its source populations are not well-known. But it could increase with climate change and represents high seas mixed stock exploitation in the same way as the much larger West Greenland fishery. Therefore, it needs to be better described and evaluated.

This year a major change was agreed that sets multi-year regulations for WG which build in a lag time for catch-recording to set an early warning system setting closure at 49% of the TAC (TAC is 27t).

NORTHEAST ATLANTIC COMMISSION (NEAC)

Faroes fishery. No quota to be allowed for next 3 years, unless the Framework of Indicators indicates that a reassessment of stocks is warranted.

ICES advice (see above, from 2021) is in NEA(22)15 and sal.neac.all. Summary:

- 1SW maturing fish in 2021 are at risk of suffering reduced reproductive capacity
- 1SW non-maturing fish are at reproductive capacity.

Forecasts indicate

- 1SW maturing fish could suffer reduced reproductive capacity post-2021
- 1SW non-maturing fish could be at risk of suffering reduced reproductive capacity post-2021

Catch options.

- For regional (North and South) level: No 2022-2024 catch options because no probabilities that NEAC combined 1SW and MSW will meet or exceed the Spawning Escapement Reserve, simultaneously any catch options.
- For country level (1SW): No catch options because no probabilities (0% or close to 0%) that the 1SW of MSW will meet or exceed the SER simultaneously at country level for any TAC option.

Pink Salmon (*Onchorhynchus gorbuscha*). A presentation by Eirik Frøiland from Norway (NEA(22)16), demonstrated the exponential increase in abundance of this invasive Pacific species in Northern Norwegian rivers (Fig 2), having spread from Russia after successful introductions in 1985-2002. As we know, the vanguard of this invasion is already showing up in eastern rivers of Scotland and England.

Historical river catches in Norway

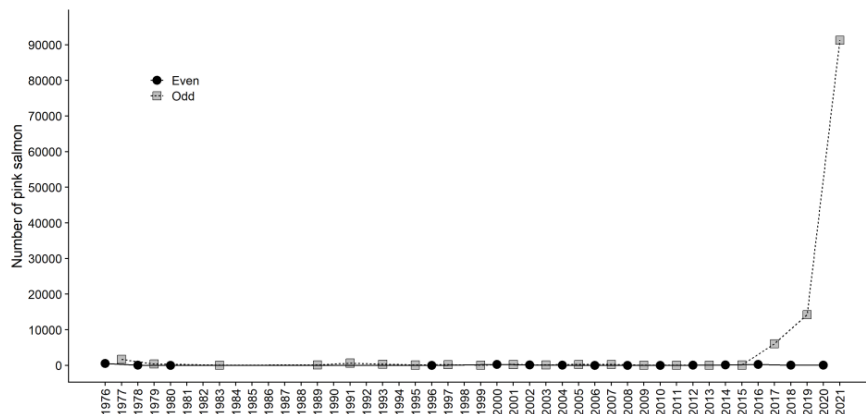


Figure 2. Pink salmon (odd years) exponential increase in Norway



Fig 3. Examples of the fish recovered from rivers (from Frøiland, NEA(22)16).

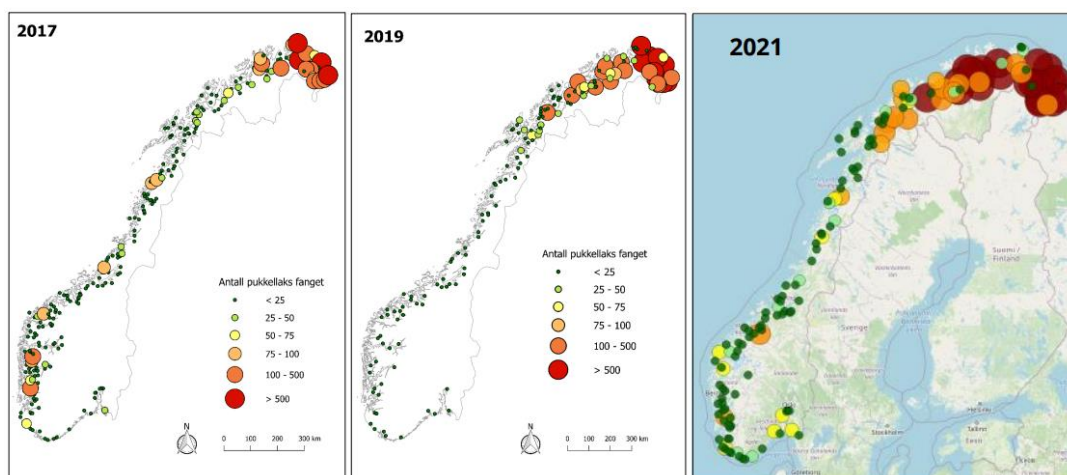


Figure 3 Extent of spread in Norwegian rivers (from Frøiland, NEA(22)16).

Eirik Frøiland described how odd year pinks are breeding successfully in the rivers, becoming the dominant salmonid and listed the range of threats to native Atlantic salmon biodiversity

and water quality. Norway is undertaking major trapping programmes on many rivers to eradicate breeding adults, with some success; but the scale of the problem is enormous (Figs 2 and 3). He drew attention to the wider scale threats to other countries and called for collaboration on monitoring, research and control actions. NASCO issued a statement (CNL(22)47) supporting the recommendations.

THE THIRD PERFORMANCE REVIEW

This is a keenly awaited major review of NASCO's organisation roles and performance is taking evidence from all quarters (IFM has submitted comments and contributed to the NGO joint evidence). It will report in 2023.

CLIMATE CHANGE

This all pervasive, huge threat to salmon (as well as much else) was a backdrop to many of the discussions on research, regulation, and management. It will be the subject of NASCO's Special Session in 2023.

AQUACULTURE

Amid continuing concern over the effects on salmon NASCO issued two statements on marine salmon farming (CNL(22)49 and CNL(22)50) and announced commissioning of a systematic review of the scientific evidence on the impacts of lice and farm escapes on wild salmon to be led by Dr Paddy Gargan (CNL(22)07). This formed part of the IYS Tromsø recommendations (see next).

INTERNATIONAL YEAR OF THE SALMON (IYS) LEGACY ACTIVITIES

A NASCO / NPAFC (North Pacific Fisheries Commission) Concluding IYS Symposium be held in October 4-6, 2022, in Vancouver. Other activities lying with this realm include the NASCO Salmon Rivers Database, The State of North Atlantic Salmon Report and progress with the eleven recommendations of the Tromsø IYS Symposium (CNL(22)14) would be reviewed.

Nigel Milner

04/07/2022