

The International Year of the Salmon (IYS)— Connecting the Pacific and Atlantic

By Mark Saunders, IYS Director
North Pacific Region



Midnight Sun over Tromsø Norway June 13, 2019. Photo credit: Mark Saunders

The midnight sun was just touching down on the horizon on June 13 at 70 degrees North in Tromsø, Norway and a small group of visitors from eastern Canada, Greenland and the United States were there to witness this from a mountain high above the city. The group was part of the 150 people attending the annual meeting of the North Atlantic Salmon Conservation Organization and its special IYS Symposium on Managing Atlantic Salmon in a Changing World.

I have been privileged to represent NPAFC and play a meaningful role in connecting our two Regional Fishery Management Organizations through the IYS initiative. These organizations were strangers and the challenges of building connections across these great distances is to foster trust among the individuals and the organizations as a whole. In 2015, at an IYS workshop in Vancouver, the NASCO Secretary Mr. Peter Hutchinson and US Head of Delegation, Mr. Dan Morris together drafted during a late-night session the document that became the Terms of Reference that our two organizations adopted in the summer of 2016. It has been imperative to maintain this relationship despite large distances.

My recent experiences attending NASCO in early-June and a Likely Suspects workshop supported by ICES and NASCO held the week of June 23, convinced me that there is a strong rationale to continue to build this relationship to efficiently share what we know, work on common problems that we are aware of now and effectively face surprises.



Mark Saunders currently works for the NPAFC Secretariat as the Director for the North Pacific Region of the International Year of the Salmon (IYS) initiative. In 2016 he retired from the Canadian Department of Fisheries and Oceans (DFO) where he headed

up a Salmon, Aquaculture and Freshwater Ecology Division at the Pacific Biological Station in Nanaimo, BC, with staff working on salmon stock assessment, freshwater habitat, molecular genetics, fish health, and marine ecology. Mark has been active at NPAFC since 2009, serving as CSRS Chairperson from 2011–2014, and he is currently the Chairperson of the International Year of the Salmon (IYS) Working Group.

A Shared Sense of Urgency

Overall both basins share the sense of urgency to understand and take action in order to preserve salmon. Despite experiencing record numbers of salmon in aggregate over the past decade with the generally strong performance of Pink and Chum salmon there has been a persistent decline in productivity for many populations of Sockeye, Coho, Chinook salmon and some Chum

salmon, particularly in the southern end of their range. Atlantic salmon at the same time are in a dire situation with unflinchingly poor survival and many populations threatened or extirpated in the southern end of the range as well.

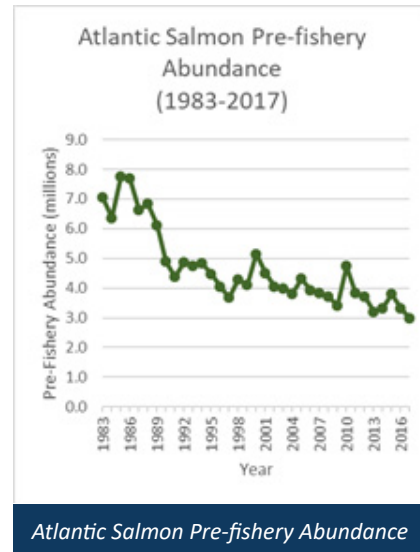
Interestingly, the decline in productivity began in both basins in the early 1990's with many populations remaining low. The decline in the early 1990's has been hypothesized to be a result of a regime shift but the common timing and persistence across the two Basins is an important clue that has not received much attention to date. Recent cross basin IYS scientific workshops have begun to consider this connection.

Common Issues

In addition to the coincident timing in the decline in productivity across the two basins the symposium demonstrated a large scope for potential collaboration on research and policy issues. The Symposium included talks on the majority of the threats to Atlantic Salmon and perhaps not surprisingly there is very strong overlap with the Pacific including these highlighted topics:

- Climate change
- Need for adaptive management
- Salmon Farming – impact of genetic introgression, disease
- Role and impact of stocking
- Invasive species
- Pink salmon (invasive)
- Freshwater habitat
- Marine mortality—estuary, coastal processes
- Biological reference points
- Need additional classification to describe populations status
- Managing salmon is managing people - increase human dimension

Two Pacific representatives gave invited talks that were well received and again highlighted the effectiveness of sharing our knowledge and experience. Ms. Tawney Lem from the West Coast Aquatic roundtable on Vancouver Island spoke on Collaborative governance and Ms. Jennifer Nener from DFO in Vancouver spoke on a Pacific perspective on managing salmon in a changing world. A detailed report on the Symposium including recommendations to NASCO and to regulators was completed by the organizing Committee and was presented to the Commission. Interestingly, they held the Symposium before the annual meeting so they could provide recommendations to the Commission. The recommendations are too numerous to list here but this form of advice was unlike anything NPAFC has produced



Pacific coast participants in NASCO's June 2019 Symposium on Managing Atlantic Salmon in a Changing World—Tawney Lem (far left), Jennifer Nener (centre right) and Mark Saunders (far right) join Doug Bliss (centre left) the Canadian member of the Symposium Steering Committee. Photo credit: Mark Saunders

and is worthy of consideration. I will make sure this report is circulated when available.

The well-attended symposium was unanimous on the need for more symposia to address the severity of the issues and the state of Atlantic Salmon. They highlighted the need for more coordination and concerted effort in relation to science overall. One of the topics that was suggested was a symposium on approaches to defining conservation limits which is a topic of interest in both basins and possibly a subject for a joint symposium. The remaining years of the IYS are an obvious vehicle to address these issues and our Coordinating Committee and its Technical should meet this year to consider coordinated action.

Continuing to Strengthen the Connections

NASCO does not have the equivalent of CSRS (Committee on Scientific Research and Statistics) so it is challenging to build connections with broader government and academic scientific community in the Atlantic basin. That being said NASCO has formed an International Atlantic Salmon Research Board with representatives from each party and has recommended we work together with this board to coordinate projects such as the Likely Suspects and ROAM. Other projects of mutual interest could also be developed and brought forward to NASCO.

I was able to build timely connections to the broader community of scientists in the Atlantic because



Plenary session at NASCO's June Symposium held in Tromsø Norway June 2019. Photo credit: Mark Saunders



Connecting with the European scientific community— Norwegian research scientists Dr. Ava Thorstad, Research scientist and Dr. Peder Fisk from the Norwegian Institute for Nature Research with Mark Saunders (centre).

of the draw of the scientific Symposium. I met with Norwegian scientists who have a lot to contribute to our understanding of salmon ecology and high seas surveys. Dr. Ava Thorstad chaired the Symposium Steering Committee and Dr. Peder Fisk is the head of the Institute for Nature Research. I learned that Norway began a new project in 2018 called “SeaSalar”. The project is focusing on salmon at sea and was initiated in Norway in 2018 (<https://www.seasalar.no>). The main aim of the project is to examine factors impacting variation in marine survival. These topics are directly related to our interests in the Pacific.

We have worked quite closely over the past two years with the NASCO Secretariat and this connection is very important. The NASCO Secretary Dr. Emma Hatfield, who started with NASCO in August 2017, was out to our opening event in Vancouver along with Deputy Sarah Robinson and the Head of Delegation to NASCO for the United States, Ms. Kim Damon-Randall. Together with me, NPAFC Executive Director Dr. Radchenko and IYS Coordinator Ms. Stephanie Taylor we are the Technical Team that supports the IYS Coordinating Committee that in turn links the IYS across the two basins. This was the last meeting for NASCO Deputy Sarah Robinson. She will be missed!! Her replacement will be announced shortly.



NPAFC IYS Director for the Pacific Mark Saunders with NASCO Secretary Dr. Emma Hatfield (far right) and NASCO Deputy Secretary Sarah Robinson (far left) in Tromsø, Norway June 2019.

One of the good examples of collaboration is the Likely Suspects Framework Project (LSF). This is the first joint NPAFC/NASCO project that was proposed by the Atlantic Salmon Trust and supported by both NASCO's Atlantic Salmon Research Board and the NPAFC. A successful workshop was held December 2017 with researchers from both basins meeting in Edinburgh, Scotland. The Workshop produced an excellent publication that describes an accounting approach to understanding the bottlenecks affecting populations of salmon across life history stages. Funding has been found by a new alliance of NGO's in the UK convened to support collaborations such as the IYS and the LSF. We hope to have funding soon in the Pacific to jointly build and apply the framework to test cases in the Pacific basin that will mirror those in the Atlantic.

In the Atlantic they have hired a scientific staff to begin working on the freshwater side of the Likely Suspects in Scotland and ICES has stepped up to fund a series of workshops to link ocean data to salmon data. This is of course a priority for the Pacific as well and we held similar workshops in January 2019 in Vancouver. We are attempting to build the LSF with collaboration on methods between the two basins and having representatives from both basins in both sets of meetings was critical and the joint discussions have moved us forward much faster than if we were working in silos. It is important to note that ICES supported the first data workshop in the Atlantic

the week of June 24 in Copenhagen and I was able to attend with travel support from ICES and Richard Brenner from the Alaska Department of Fish and Game (ADF&G) attended with support from London Fishmongers/Atlantic Salmon Trust. While I was at ICES headquarters, I met with Anne Christine Brusendorff, the Executive Secretary for ICES. We agreed that having strong and efficient mechanisms to formally and informally connect NASCO/ICES/NPAFC and PICES to work together to address the significant science and management issues facing both basins was warranted and we then agreed to discuss this further with Mr. Robin Brown the Executive Secretary for PICES and Dr. Vladimir Radchenko the Executive Director for the NPAFC.

The conservation of salmon demands a holistic approach to research and management that covers the breadth of their life history from the headwaters of freshwater systems they spawn and rear to the coastal and high seas environments where they feed and mature. Regional Fisheries Management Organizations such as NPAFC, NASCO and the Pacific Salmon Commission are the only bodies formally linking countries with the capacity to build efficient and effective connections across such large distances. With concerted effort, I believe we can continue to evolve through 2022 to be the organizations that will play a lead role in ensuring the resiliency of salmon and people in an uncertain future.



Pacific representatives Mark Saunders (2nd from the right) and Dr. Richard Brenner (far right) join ICES Salmon Group Workshop on data co-chair Gérald Chaput (centre) and Likely Suspects collaborators Dr. Ken Whelan (far left) the Research Director for the Atlantic Salmon Trust and Dr. Etienne Prévost (2nd from the left) from the UMR INRA/UPPA in France on June 28, 2019.