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**Report of the 2019 International Year of the Salmon  
North Pacific Steering Committee Meeting**

by

International Year of the Salmon Working Group  
Committee on Scientific Research and Statistics  
(CSRS)

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# Report of the 2019 International Year of the Salmon North Pacific Steering Committee Meeting

International Year of the Salmon Working Group  
Committee on Scientific Research and Statistics

**Keywords:** North Pacific, steering committee, funding strategy, outreach, planning

## Abstract

This report documents the proceedings of the 2019 meeting of the North Pacific Steering Committee (NPSC) that took place from January 21–22 in Vancouver, Canada, to provide direction regarding the implementation of the International Year of the Salmon (IYS) in the Pacific basin. The NPSC is one of two basin-scale Steering Committees that provide direction to an IYS Coordinating Committee (CC) that in turn considers issues related to overall implementation of the IYS at the hemispheric scale. This was the third meeting of the NPSC. The agenda was supported by detailed discussion documents on overarching issues of concern to be considered at meetings of all three committees, the North Atlantic Steering Committee (NASC) met September 11&12, 2018 and the CC meeting will be sometime in spring 2019.

The meeting highlighted continued support for the IYS. With the launch of the website in October 2018, there have been several projects and events posted, which NPSC members found to be a reflection of the exciting momentum that the IYS has developed over the past year. Participants provided direction on ways to improve IYS communication and outreach, including the website and social medias, and provided feedback on the strategic implementation plan. There were presentations on planned and proposed IYS signature projects and very productive discussions on communications regarding the 2019 High Seas Expedition into the Gulf of Alaska. The NPSC agreed to move ahead with the addition to the IYS Theme Counsel Group Terms of Reference, which states that each TCG will consist of up to 15 experts, with no more than three from each member nation. There was also discussion about the current budget and funding strategies, and participants agreed that the NPSC needed to move forward quickly with targeted fundraising.

## List of Acronyms

ADFG	Alaska Department of Fish and Game
CC	International Year of the Salmon Coordinating Committee
CSRS	Committee on Scientific Research and Statistics
DFO	Fisheries and Oceans Canada
IASRB	International Atlantic Salmon Research Board
IYS	International Year of the Salmon
IYS-SG	International Year of the Salmon Study Group
IYS-WG	International Year of the Salmon Working Group
NASC	North Atlantic Steering Committee
NASCO	North Atlantic Salmon Conservation Organization
NGO	Non-Governmental Organization
NMFS	National Marine Fisheries Service
NPAFC	North Pacific Anadromous Fish Commission
NPSC	North Pacific Steering Committee
ONC	Ocean Networks Canada
PICES	North Pacific Marine Science Organization
PSF	Pacific Salmon Foundation
SSC	International Year of the Salmon Symposium Steering Committee

## **Background**

In 2012, a proposal was made to the NPAFC by Canada to establish a major research initiative based on the idea of an International Year of the Salmon (Beamish 2012). Discussions continued within the NPAFC leading to the creation of the IYS Study Group (IYS-SG) in 2013, which held a scoping workshop in early 2015 to assist with the development of IYS research themes (IYS-SG 2015a). Following this meeting, a compelling rationale for the IYS was developed by the IYS-SG (IYS-SG 2015b) that was well-received at the NPAFC 2015 Annual Meeting, where it was agreed to further scope the IYS and refine research activities. An IYS Working Group was then formed.

The IYS-WG convened a second scoping workshop in April 2016. During this meeting, further progress was made towards planning for IYS implementation, including seeking early views on funding sources and strategies, identifying potential partners, and delineating a governance structure involving the lead organizations of the IYS, NPAFC and NASCO (IYS-WG 2016b). Following the second scoping meeting, the IYS-WG prepared the Outline Proposal of the IYS (IYS-WG 2016a), which was accepted by NPAFC and NASCO at the annual meetings of both organizations in May and June 2016, respectively. The initiative was funded in 2017 and 2018 by allocations of NPAFC internal funds as well as additional contributions from Canada, the United States and the University of British Columbia.

In September 2016, the IYS Coordinating Committee was formed by NPAFC and NASCO, with one of their first priorities being to finalize the IYS governance model. A draft governance document was produced by the Coordinating Committee (CC), including terms of reference for itself, two Regional Steering Committees (NPSC and NASC), and the Symposium Steering Committee (SSC). The Coordinating Committee would be responsible for coordination, planning, implementation, and administration of the IYS and reviewing its progress at the hemisphere level. Some activities included determining hemispheric research and outreach priorities, developing an IYS brand and website, and criteria for IYS endorsement. A distributed governance model was agreed upon, with all decisions of the Coordinating Committee based on recommendations from the Regional Steering Committees, and, wherever possible, organized as a range of options so as to allow for some discretion by the Coordinating Committee to make decisions in the best interests of the IYS at the hemisphere level.

In addition to making recommendations to the Coordinating Committee, the NPSC is responsible for coordinating the planning, implementation, and administration of the IYS in the North Pacific region. Activities of the NPSC include the following: engaging core partners, identifying outreach and research priorities, reviewing outreach and research proposals, developing research plans, and coordinating fundraising for activities in the North Pacific. Additional duties included developing outreach activities, target audiences, and messages in this region.

In late February/early March of 2017, the North Pacific Steering Committee met for the first time to discuss the funding strategy for the IYS and to continue the planning of IYS strategies, activities, and the opening event (IYS-WG 2017). This report documents the third meeting of the NPSC that was held on January 21–22, 2018 in Vancouver, Canada. The Committee met to consider agenda items related to implementation of the IYS, some specific to the North Pacific and others relating to coordination at the hemispheric level. The agenda was supported by detailed discussion/decision documents prepared for the Coordinating and Steering Committees by a subset of the CC (Mark Saunders, Vladimir Radchenko, Emma Hatfield, Kim Damon-Randall, with support from Madeline Young and Stephanie Taylor). This group held a Technical Meeting in

October 2018 to develop the discussion documents on the IYS sponsorship levels and IYS events and activities in 2019. The NPAFC members of the Technical Team developed the discussion documents on research planning, IYS implementation in 2018, and social media communications. The purpose of the second meeting of the NPSC was to consider these discussion documents, with a specific focus on IYS implementation in the focal year and fundraising strategies or opportunities.

## **DAY 1**

### **Welcome, Agenda Review, and Introductions**

The 2019 North Pacific Steering Committee Meeting (hereafter, the meeting) was called to order by the IYS Director for the Pacific Region, Mark Saunders (NPAFC, Canada), at 1 pm on Jan 21, 2019, at the Blue Horizon Hotel in Vancouver, BC, Canada. Welcome addresses were made by Ann Whonnock (Musqueam First Nation) and Dr. Suam Kim (NPAFC President). The meeting was attended by 28 people in person and one via phone, including IYS-WG members and other invitees (Table 1). The meeting was facilitated by Mark Saunders, who began by leading roundtable introductions of participants. He then reviewed the meeting objectives, agenda (Table 2, Appendix A) and NPSC Terms of Reference (Appendix B).

Mark Saunders welcomed all attendees and began by acknowledging the absence of many American NPSC members who were not able to attend the meeting due to the federal government shutdown. Key players were missing, including Doug Mecum and Brian Wells from NOAA. Mark introduced Anne Conner from Conner and Associates, who has been contracted to develop a funding strategy for the IYS and to help engage potential and realized funding partners in the upcoming months. Anne was not able to join in person but was able to communicate with the NPSC via telephone.

### **Objectives**

The purpose of the two-day meeting was to convene government, academic, NGO, Indigenous and industry partners to review progress on IYS implementation in 2018, engage in planning of IYS research and outreach activities. Participants considered proposed outreach plans for the IYS, reviewed implementation of IYS communications and networking, discussed current and future research planning for the North Pacific, and discussed the current budget and funding strategies. The specific goals of the meeting were to the following:

- (1) Review progress on IYS implementation through 2018.
- (2) Engage NPSC partners in the coordination of IYS research and outreach activities.
- (3) Engage NPSC partners in fundraising strategies in 2019.

### **Report on progress made on IYS implementation in 2018**

Mark Saunders presented an overview of the progress made to date on the IYS and highlighted events that have occurred in the last year, following the February 2018 NPSC Meeting. In 2018, there were seven IYS sessions held at different meetings, symposia, or workshops. This included a poster presentation on the IYS at the 4<sup>th</sup> International PICES Symposium: The Effects of Climate Change on the World's Oceans and a special session held at the 2018 Long-Term Marine Ecosystem Research International Symposium in Busan, Korea. The IYS held five workshops in 2018 including the first NPAFC-IYS workshop following the NPAFC annual meeting in Khabarovsk, Russia. The workshop had 60 participants with 26 oral presentations and eight posters. The IYS technical team conducted a meeting in Vancouver, BC with the objective of finalizing the IYS website text and developing the materials for a subsequent Coordinating Committee meeting.

While the focal year of the International Year of the Salmon is 2019, opening events began in the fall of 2018. In Vancouver, BC, the NPAFC and Pacific Salmon Foundation (PSF) held an IYS North Pacific Opening Event with an audience of media and over 100 leaders in salmon conservation from government, Indigenous groups, NGOs, academia, and industry from around the Pacific Rim. Following this opening event, the International Year of the Salmon was announced and launched in several countries including the United States, Japan, Korea, Russia, and several within the European Union.

A complete list of IYS related activities can be found in Appendix C.

### **Overview of the IYS Signature Project**

Vladimir Radchenko, Executive Director of the NPAFC, gave an overview presentation on the IYS Signature Project, a month-long cruise expedition into the Gulf of Alaska with a total of 19 scientists aboard from the five member countries of the NPAFC. The Russian research vessel *Professor Kaganovskiy* has been commissioned for the purpose of the cruise. It left Vladivostok, Russia on January 11<sup>th</sup> and intends on docking into Coal Harbour, Vancouver on February 14<sup>th</sup>. He informed the members of the NPSC that the deadline for the approval of NPAFC Doc. 1807 outlining the cruise objectives and rationale has passed, with no comments. Therefore, the cruise plan is agreed upon by the NPAFC.

The cruise will aim to answer a series of hypothesis, including the following:

- The effects of loss of ice and warm water events on the distribution and conditions on salmon;
- The presence of longer food chains due to warming pelagic ecosystems;
- If size-dependent mortality within first ocean year regulates Pacific salmon production;
- The carrying capacity in the Gulf to support salmon stocks that is exceptionally important for further development of ocean ranching;
- The shortage of forage zooplankton resources at the high seas in winter;
- Pacific salmon diet is mostly micronekton/squid-based in the winter in Gulf of Alaska;
- Mesocale physical features are known to greatly enhance background productivity;
- Pacific salmon use magnetic forces to home;
- Documenting health conditions of the out-migrating Pacific salmon juveniles.

He reviewed previous expeditions into the Gulf of Alaska that has not been conducted since the 1960s. In 1963, a longline survey was conducted and found mostly sockeye salmon. The following year, the survey showed coho and Chinook were found closer to shore in comparison to sockeye and steelhead.

### *Cruise Plan and Sampling*

The cruise plan was originally set for the research vessel to leave from Dutch Harbor, Alaska and conduct surveys in the Gulf of Alaska and dock in Vancouver. It has since been updated to leave and return from Vancouver, BC. Total days at sea will be 27 and the return date to Vancouver will be on March 18<sup>th</sup>. While surveying, the vessel will be systematically sampling a grid of locations and will be acquiring measurements of sunlight on the sea surface to compare phytoplankton composition in filtered water, from 10 am to 4 pm. The vessel will be casting several trawl nets, including three plankton at 0–200m, a Juday net at 0–200m and at 0–50m, and one midwater trawl conducted in the top 50 m water layer. Multi-frequency acoustic observations will be made, and a ferry box will be using the ships seawater delivery system to continuously measure subsurface salinity, temperature, fluorescence, oxygen, and turbidity.

A live fish box will be deployed on selective trawls, to keep fish alive for sampling and tagging with satellite

tags. Disk tags will be attached to maturing chum, sockeye, coho, and Chinook salmon.

### *Communication Plan*

Chrys Neville and Dick Beamish of DFO have been leading the communication efforts for the cruise. They are hoping to have daily satellite communications with scientist on the cruise, and Chrys Neville will be recording video. NPAFC and IYS accounts on social media will be used as a news feed for the expedition, and a web page on the IYS website will have communication updates from the vessel, as well as general information on the cruise.

### *Expected achievements and contributions*

Expected achievements and reporting to come out of the cruise is listed below:

- Novel information on the abundance, distribution, biological status and habitat conditions of Pacific salmon in the Gulf of Alaska and adjacent waters of the northeastern Pacific during winter will be obtained;
- A wide array of biological samples will be collected for Pacific salmon stock identification (including otoliths), estimation of growth rate, health and bioenergetic status and food supply;
- Applicability of integrated survey methods will be assessed for testing of hypothesis on Pacific salmon mortality regulation at the high seas in winter and for improvement of fisheries forecasting;
- Pacific salmon tagging experiment will be conducted by archival and disk tags (if live fish will be available);
- A summary of the Gulf of Alaska Expedition will be published by the participants and the project coordinator;
- A workshop will be organized late in 2019 in which all participants will be invited (venue TBA). Preliminary interpretations of data will be presented;
- Fishing for 24 hours provide information on the fish community (predators and prey) in the Gulf of Alaska and assess the winter ecological conditions of the winter foraging habitats in the northwestern Pacific. Fishery forecasting can be notably improved with this information, if regularly collected;
- The impact of the developing ocean warming event in the Gulf of Alaska and on Pacific salmon condition will be examined. There were very limited biological samples from the high trophic levels at the time of the previous 'Blob'. Such understandings are highly important to evaluate potential salmon resilience in a warming ocean;
- Plankton and micronekton abundance will be related to diets and food consumption of Pacific salmon allowing estimates of carrying capacity of the northeastern Pacific, assessment of competition between species/stocks, and likelihood of competition between wild and hatchery fish. This will underpin recommendation of further salmon hatchery program development;
- A comprehensive survey of salmon health and diseases in the High Seas will be available for the first time. Obtained scientific data will heavily contribute to solve disputes around salmon net-pen farming in the coastal waters, where wild salmon stocks migrate.

Following the end of the presentation, NPSC member Jacques White asked if anybody will be collecting pH or alkalinity data and Vladimir Radchenko responded positively.

### **Discussion of Research Planning**

Mark Saunders led a discussion involving research planning and the overall funding strategy. He began with an overview of the strategic implementation plan, including the vision and the five research themes that are outlined in Appendix D. The discussion transitioned to focus on the IYS Theme Counsel Groups and the

discussion from the IYS-Working group. The working group had decided that each TCG shall consist of up to 15 experts, with no more than three experts from one country. Members may be drawn from university, government, NGOs, and private organizations. The complete terms of reference for the TCGs can be found in Appendix E.

Hal Batchelder asked if a slot can be made available for each TCG to have at least one relevant expert from the Atlantic basin. This would bridge support from the NGOs located in the Atlantic and that the TCGs should be updated to reflect that. Another question regarding how we would ask for funding for specific TCG high impact projects came up. A 1–2 page concept proposal will be drafted as part of the funding strategy. Jacques White asked that the timeline for TCG outputs are. He reasoned that the first thing a potential funder is going to ask is (1) how much money is required and (2) when can they expect to see results? This requires establishing a timeline and a metric of success for each of the high-impact projects listed in each TCG. The contracted Conner and Associates will provide the IYS with advice on how to go after funding resources that we may need. Funding will then be allocated to cover the research outputs of the TCGs as well as the internal administrative costs.

### *Breakout Groups*

After the overview presentation and questions from Mark Saunders, the NPSC members were split into three breakout groups. These groups were led by Stephanie Taylor, Nathan Bendriem, and Mark Saunders. The breakout groups were asked the following four questions regarding the TCGs and Strategic Implementation Plan:

- Is the logic of the (strategic planning) approach sound?
- Will the Theme Counsel Groups as proposed, work to generate innovation?
- Do you have any suggestions for improvement of the development strategy?
- Can you suggest particular funds, foundations, or individuals that we should be engaging for overall, or topic-specific, funding?

The breakout groups reconvened for a plenary session and to report out the results. A summary of the discussion includes:

#### *Is the logic of the (strategic planning) approach sound?*

- More details needed regarding the outcomes and actions to be taken in the development plan

#### *Will the Theme Counsel Groups as proposed, work to generate innovation?*

- More details needed in regard to the actions and responsibilities of the TCGs
- Incentive needed for people to participate in TCGs
  - Intellectual property issues need to be addressed
  - Need to ensure members have time to do the work
  - Chair and Vice-chair need to have time to be corralling members and ensuring work progresses along
- Communication needs to be clearly outlined
  - Schedule
  - Avenue – keeping in mind the language barrier

#### *Do you have any suggestions for improvement of the development strategy?*

- Revisions to the language in the development plan needed – currently out of date
- A path to getting funding and our requirements needs to be laid out

- Outside the box thinking and brainstorming for potential funders or in-kind donations needed
- Clarity needed on final products, process, and requirements

*Can you suggest particular funds, foundations, or individuals that we should be engaging for overall, or topic-specific, funding?*

- Specific foundations depend on the project some suggestions include:
  - Carnegie Melon
  - Moore Foundation
  - Gates Foundation

## **Wrap-up of Day 1**

Mark Saunders concluded the meeting and noted that the main points from the meeting Day 1 would be compiled and presented the following morning.

## **DAY 2**

### **Welcome and Review of Day 1**

Mark Saunders began the second day of the NPSC meeting by reviewing key outcomes from the previous day. The following list of main points from each of the key discussion topics was presented to the NPSC:

- Reported on progress and highlighted opening event in Vancouver
  - Cruise is tangible evidence that the IYS is moving ahead and is more than an idea. We are in full swing!
- Discussion of strategic implementation plan
  - Key element to approach developing projects is through the Theme Counsel Groups
    - Revised the terms of reference to include a maximum membership of 15
    - Concerns regarding the timeline for implementation
- Development strategies involve creating meaningful connections.

Anne Conner of Conner and Associates introduced herself and her role with the IYS. Dennis Zimmermann asked what her approach is to fundraising, and Anne explained that it is focused on building relationships, and that she plans on going after the larger funders first.

### **Coordination of 2019 Activities including IYS planning, workshops, meetings, and events – Part 1.**

#### *Review of Calendar of Events*

Mark Saunders gave an overview of the 2019 activities and events in the North Pacific and Atlantic. The upcoming workshops and symposium will focus mainly on salmon ecology and new technologies, such as genomic-based tools, otolith microchemistry and environmental DNA. The IYS will also take advantage of planned workshops, by highlighting them on the website and on social medias, to build connections and push for collaboration from people or groups that may not have heard about the workshop.

Following the NPAFC annual meeting in Portland, the IYS will hold the second NPAFC-IYS workshop in partnership with the Salmon Ocean Ecology Meeting. The workshop will be held from May 18–20 and the

NPAFC is currently accepting abstract submissions. PICES will be holding a Salmon in a Changing Salmosphere workshop during their annual meeting in Victoria, BC on October 16–27. Mark Saunders has submitted a request to hold a two-day meeting during the workshop, which would highlight the results from the 2019 Gulf of Alaska Expedition and would discuss approaches for moving forward in collaborative ocean research.

NPSC member, Jonathon Moore has received funding to host a workshop on the science of Pacific salmon at the upcoming American Fisheries Society meeting in Reno, Nevada from September 29<sup>th</sup> to October 3<sup>rd</sup>. The 2019 Hokkaido Salmon Conference will be held on May 25<sup>th</sup> and features a strong component on human dimension. The IYS has been in contact with organizers of the World Salmon Forum and the symposium is expecting to have NGOs from the Atlantic basin present, such as the Atlantic Salmon Trust. A full list of planned events related to the IYS in 2019 can be found in Appendix F.

#### *International Year of the Salmon Workshop on Salmon Data and Trends*

Dr. Jim Irvine gave an overview presentation of the IYS workshop on salmon data and trends, that took place on January 23–24, 2019. The workshop stemmed from the need to assemble and integrate salmon data more completely and efficiently. While data is the root of knowledge, it has been challenging to maintain and document the existing data, as well as identifying the uncertainty associated with the metadata. During the workshop, scientists whose research has focused on sockeye, chum, Chinook, Atlantic, and pink salmon will provide a quick synopsis on the status of the respective species, including what data is available, what the trends in population abundances are, and what data is missing. Doing so will help identify a series of legacy datasets, and where possible, associated standards such as accuracy and reliability of the data. These legacy datasets will show broad temporal patterns and provide a retrospective analysis for workshop attendees to understand what caused the changes in productivity that we are witnessing today and help predict the future of these salmonid species in a changing ecosystem. These questions will be answered at three different scales, including the ocean basin (Atlantic and Pacific), regional scale (e.g., Central BC; Southeast Alaska, Eastern Kamchatka) and local population (e.g., Yukon river Chinook). Following the two-day Salmon Data workshop will be the International Salmon Data Laboratory (ISDL). Graph database companies such as NEO4J want to showcase their technology and offered to work with the salmon data workshop attendees, to connect all the data and sources.

### **Overview of Long Live the Kings**

Jacques White presented an overview of Long Live the Kings (LLTK). LLTK was founded in 1986 by Jim Youngren as a non-governmental organization to fund raise for salmon in the Puget Sound. The mission of LLTK is to restore wild salmon and steelhead and to support sustainable fishing in the Pacific Northwest.

LLTK started off as an organization that focused addressing the decline in wild Chinook through hatchery enhancement and artificial propagation. The organization raised hatchery Chinook in a natural pond, in contrast to the concrete raceways seen in many hatchery facilities, on a very small river. In the Puget Sound, there have been 80% cuts in harvest from 1984 to 2010. This stems from a 10x decline in marine survival of coho, Chinook, and steelhead stocks within the Salish Sea. In contrast, those stocks found on the western coast of Washington and BC (i.e., West Coast of Vancouver Island) show no visible trend in decline of marine survival. While marine survival for these stocks are quite variable, they generally have remained stable since the 1970s. There has been a sustained warm periods of sea surface temperature within the Strait of Juan de Fuca and the Salish Sea, which could play a role in the decline of marine survival. The city of Seattle, as well as many urbanized centers within Western Washington, have seen a rise in coastal infrastructure, in the same area in which the 4<sup>th</sup> largest Chinook run migrates up and down river. Concerns regarding disease and the overall physical health of smolts and adults has risen due to the degradation and pollution of the waterways surrounding Seattle. Furthermore, there have been a ten-fold increase in

pinnipeds in the Salish Sea, which could yield an increase in predation on salmon smolts entering the marine environment. Jacques mentioned that hatcheries may also lead to a reduction in wild populations as relatively little is known about the effects of captive rearing and the large release of hatchery fish on both wild populations and the hatchery populations themselves. Southern Resident Killer Whales, who primarily feed on Chinook salmon, have experienced population declines due to the reduction in Chinook abundance. LLTK aims to rebuild salmon populations and advance the science for improving marine survival that will provide the necessary diet for these killer whales.

#### *How Is LLTK addressing these threats*

LLTK's strategy includes advancing science, improving management, and implementing solutions necessary for the well-being of salmon. They advocate for sustainable fishing in a growing economic and urban world. From their work, two populations of Hood Canal Summer chum populations have fully recovered. In addition, native steelhead are returning to Hood Canal rivers in a 10-fold increase. Another success includes the return of Spring Chinook to the Skokomish River for the first time in 65 years. LLTK has partnered with the Salish Sea Marine Survival Project and raised over \$20 million to conduct over 80 studies across the Salish Sea. The SSMSP research identified that impacts to survival begin in freshwater, and that many fry and smolt enter the sea with a heavy toxic burden as they migrate out of the freshwater system. Salmon that enter the ocean as fry from an urban or developed stream comprise a very low percentage of the return class, in comparison of fry that migrate out of streams in non-developed streams in agricultural areas. To address these threats, LLTK and SSMSP aims to manage marine predation on juvenile salmon and support resilient hatchery and wild populations. In addition, LLTK hopes to restore access to 16 miles of habitat on the Nooksack river and address flow and migration issues at Hood Canal Bridge.

#### **Coordination of 2019 Activities including IYS planning, workshops, meetings, and events – Part 2.**

##### *Other Possible Events*

During the coffee break, Stephanie Taylor and Nathan Bendriem handed out a set of three sticky notes to each member for them to write down ideas regarding possible events and projects for the IYS. The suggestions fell into five different categories: existing IYS related projects, existing IYS related events, organizations with IYS related work/activities, declarations, legislation, treaties, government priorities, and related items related to the IYS and recommended actions. The main points from the sticky notes are summarized below:

##### Existing IYS Related Projects

- Restoration of Departure Bay Creek by Departure Bay Association
- “Salmon Ocean” basecamp list serve site
- Salmon escapement estimation projects (map of BC with streams identified)

##### Existing IYS Related Events

- Atlantic
  - November 2019 in Scotland: integrate salmon biology conference (expected 250 participants)
- Canada
  - School releases of salmon fry in BC, Yukon, Quebec, Maritimes + Newfoundland
  - PICES-2019 – Victoria
    - W18 – Developing a collaboration, integrated ecosystem survey, program to determine climate/ocean mechanisms affecting the productivity and distribution of salmon across the North Pacific Ocean.

- Encourage NASCO to co-sponsor session and send 2 people.
  - Salmon releases from DFO SEP and Public Involvement Programs in BC. Contact DFO SEP- Jim Irvine.
- Japan
  - Oct 15 Science café at Chitose Aquarium
  - Annual events to outreach:
    - Shibetsu Salmon Museum, September
    - Sapporo Sake Festival, Sapporo Salmon Museum
- Korea
  - Fry release festival in March (FIRA and Taehwa River EcoCenter)
  - 2019 Salmon Festival in October
  - Eco-educational program on salmon for primary, secondary students
- USA
  - 2019 Salmon Recovery Conference April 8-9 Tacoma Convention Center
  - “Survive the Sound” 2019, May 6-10, 2019
  - PSC mini-workshop
    - “Coastwide variation in environmental indicators and salmon production and implication for fisheries management under the Pacific Salmon Treaty”. Feb 13-14, Portland, OR.
  - Long Live the Kings Spring Gala – March 14, 2019

#### Organizations with IYS Related Work/Activities to Possibly Collaborate With

- Yukon:
  - Yukon River Panel
  - Yukon River Inter-Tribal Fish Commission
  - Yukon Salmon Sub-Committee
  - Yukon River Drainage Fisheries Association
- Canadian Wildlife Federation
- Circumpolar Interests
  - Arctic Council
  - Gwich'in Council International
- Wild Salmon Center
- United Nations

#### Declarations, Legislation, Treaties, Government Priorities/Programs, and Related Items which relate to the IYS

*Investigation into the activities stemming from these needs to be done to look for possible connections with IYS. They are also items that need to be kept in mind by the IYS Secretariat as they complete IYS projects and related work.*

- Incorporation of Environmental Variables into several renewed chapters of the PST. John Holmes.
- United Nations Declaration of Indigenous People.
- Canada’s Wild Salmon Policy Implementation Plan activities
- Increase pressure on DFO to deliver core fundamental pieces
  - State of salmon (abundance + trends)

- Data available
- Publish science advice
- Engagement on BC salmon restoration and innovation fund toward project development
- BC Wild Salmon Strategy
- BC Salmon Restoration and Innovation Fund

#### Recommended Actions to be taken by the IYS Secretariat

- Outreach event at Patagonia Store
- Seminar presentation at University on IYS objectives and implementation with audience (students) able to relay info back to sources, lab groups, etc., to increase event posting to IYS website
- Traditional Ecological Knowledge Workshop – different knowledge systems
- Salmon Network Mappings/ Scalability Workshop
- Identify attractive/exciting projects to link with fundraising calls
- Determine data available

### **IYS Communications**

#### *Website*

Stephanie Taylor, the IYS Coordinator for the North Pacific, gave an overview of the IYS website, which was officially launched in October 2018. Google analytics for the IYS website have been collected since December 2018. As of January 18<sup>th</sup>, the website had an average of approximately 1,000 monthly visitors, 78% of whom were new visitors to the site. Most visitors to the website are heading directly to the website (36%) or referred to the website from other sites such as the NPAFC website (31%). Social media also plays a role directing traffic to the website, with 9% of visitors coming to the website from social media. Most visitors to the website are located in North America, although the website has been visited by people located in all NPAFC member countries. As of January 18<sup>th</sup>, there were 39 events registered on the website, the majority of which are located in the Atlantic basin. There have also been 12 projects registered, all but three of which are located in the Atlantic basin. Stephanie Taylor brought up the website onto the projector and provided a visual tour of where the events and projects were registered, as well as the process to register an event and project onto the website.

#### *Social Medias*

Nathan Bendriem, the IYS Coordinator Assistant for the North Pacific presented on the IYS social media pages. The IYS Facebook and Twitter accounts were both launched after the 2018 IYS-WG meetings. The purpose of the IYS social media accounts is to communicate the IYS to the general public, increase awareness of the IYS, and to increase traffic to the website. Google Analytics has shown that approximately 9% of website visitors are coming to the website. As of January 18<sup>th</sup>, the IYS twitter account has 336 followers and the IYS Facebook page has 334 followers. Analytics from the social media accounts show that the IYS Opening Event in Vancouver had a pronounced effect on impressions. Impressions are instances where content from the social media accounts is included in individuals' feeds. Since the opening event in Vancouver, the average number of impressions has increased. Both accounts also showed a steady increase in followers since the opening event. Top posts on the accounts include a photo from the IYS Photo Contest, the announcement of the IYS website launch, and a study on the impacts of Pink salmon on foodwebs. Most of the twitter followers have scientific news as their primary interest, as well as wild and natural places, so it is no surprise that postings related to salmon studies attracts a lot of attention. However, the demographics of the followers on both twitter and the Facebook page are dominantly from Canada and the U.S. There are several followers from the United Kingdom and a total of 12 from Russia, Korea, and Japan. When this was brought up to the IYS-WG, it was determined that twitter is not the primary social media platform in Korea, and likely Japan and Russia as well. Instagram is much more popular in those countries. It was decided to

allow for the Instagram account of the Year of the Salmon to be reinstated, and this message was shared with the NPSC.

Following the presentation, John Holmes asked how much effort is spent on social medias and Stephanie responded that it took a lot of effort. The IYS's social media presence is growing and must continue to do so which will require more time spent on posting and engaging our followers. Dennis Zimmermann brought up the point that we should be doing more to enhance our social media presence. The IYS Secretariat was advised that one option to increase our following is to send out emails to numerous NGOs asking for a follow on Twitter and Facebook.

### *Communication to NPSC*

Mark Saunders brought up a discussion point regarding how communications between the IYS Secretariat and the IYS-NPSC could be improved. Additional outreach strategies to improve communications from the IYS Secretariat to the public was also brought up. It was decided that the IYS-NPSC would receive a weekly email from Mark Saunders with a bulleted list of updates regarding the IYS-Secretariat. This would be in place of a weekly blog that will likely not be read due to the busy schedules of the members of the IYS-NPSC. Mark Saunders sent the first email update to the steering committee on February 4<sup>th</sup>.

### **Coordination of 2019 Activities including IYS planning, workshops, meetings, and events – Part 3.** *Vancouver Celebration of IYS cruise with Prof. Kaganovskiy*

Mark Saunders introduced the next agenda item, which focuses on the Vancouver Celebration of the IYS Cruise. Once the cruise docks into Vancouver on March 18<sup>th</sup> at the completion of the expedition, the IYS is planning on holding a media event on the vessel itself, followed by an evening reception with the crew and the North Pacific salmon leadership, likely held at the Vancouver Aquarium. Mark opened the conversation to include discussion with NPSC members. Hal Batchelder mentioned that Chrys Neville, who will oversee communications on the vessel, should interview each scientist aboard about their respective roles and their research objectives during the expedition. This requires prior consent from the scientists to be interviewed but having this type of coverage is a key item for providing science communication from the salmon scientists to the stakeholders and general public. Furthermore, the IYS an engage the media's interest in the cruise by getting the word out and formatting the coverage in a way that the IYS would like it covered, before the media formats the story on their own terms. The IYS has generated a list of reporters and media outlets from the opening event in October and will be using that list as a starting point of contact. Rae Hull mentioned that she has numerous contacts from CBC and will be happy to pass them on.

### *NPAFC Second Workshop*

Following the NPAFC annual meeting in Portland, the IYS will hold its second IYS-NPAFC workshop in partnership with the Salmon Ocean Ecology Meeting. This will include an evening event on Tuesday, May 14<sup>th</sup> to bring together a number of potential and realized funders, foundations, and local politicians. This event will be by invitation only, and it was brought up that Frank L "Larry" Cassidy Jr., former NPAFC commissioner, should be present. An additional event will be held on Friday, May 18<sup>th</sup> for the IYS to bring in and engage with the public.

### **The Metrics of Success**

The purpose of this agenda item is to discuss the following questions:

- How do we demonstrate what the IYS has achieved?
- What metrics do we wish to develop?
- How do we want to communicate the success?

Mark opened the floor for discussion, regarding the thoughts of an annual publication highlight the accomplishments of the IYS. John Field emphasized the importance of documenting the successes of the IYS. Hal Batchelder notes that the number of publications that come out from the findings of the 2019 Gulf of Alaska expedition will be quite large, proving that there is value in the IYS initiative. Any publication resulting from this cruise, and the cruises in 2020–2022, should be published in an IYS book. Dennis Zimmermann brought up the idea of creating an infographic from the findings on the cruise, as that is a great way to visualize and communicate the 2019 expedition. Suam Kim, NPAFC President, followed up by mentioning that the number of lectures from schools and universities regarding the results of the cruise expeditions will be another way to measure success. Mark Saunders shares that he received a call from a filmmaker based in Victoria, BC who has worked on the Nature of Things (CBC-Canada) and Nature (US) and is interested in documenting the IYS. The filmmaker is interested in bridging the lack of coverage of the nature of salmon and how they connect to people throughout the world.

### **Planning IYS Wrap-Up Symposium and Event**

Mark Saunders gave an overview of the Terms of Reference for the Wrap-Up Symposium, to be held in 2022. The TOR can be found in Appendix G.

The idea of the Wrap-Up Symposium is to have a large congress of people in a meeting, with concurrent sessions to highlight what we have learned since the first year of the IYS in 2018. It would include members of both the Pacific and Atlantic basins. In addition, we are hoping to create a large publication of the findings that have come out of the IYS signature projects, including the numerous cruise expeditions in the Pacific. Jacques White and Gerry Kristianson suggested that the event could be like that of New Year's Eve celebrations, in which celebrations across the hemispheres begin at their respective time and locations.

### **Outreach Strategies**

To disseminate important information on salmon and their environment, the IYS intends to facilitate an international outreach campaign regarding the status and future of salmon in a changing salmosphere. This outreach campaign will reach across the hemisphere to bring the important information to not only scientists, policy makers, managers, and harvesters, but also the public, regarding salmon and the challenges they face. This will be facilitated in multiple and innovative ways, such as through a website, social media, and videos/films, and will be facilitated in part by NGOs across the salmosphere committed to salmon conservation and sustainable management. Mark Saunders opened discussion on how the IYS can provide outreach at the local, regional, and hemispheric scale.

Gerry Kristianson begins by mentioning the IYS should try to find ways for partners to incorporate IYS messages into their respective markets, and respective domestic programs.

### **Other**

Jordan Point of the First Nations Fishery Council mentioned that the Human Dimension Theme Counsel Group should have participation and representation from Indigenous peoples and brought up the UN Declaration on Indigenous Rights. The diet of Indigenous communities has been affected in recent years, and no longer matches the diet that these communities had in the 1960s. Today, the diet has been altered due

to a diminishing salmon resource and increasing barriers of access to salmon, which becomes a concern of food security. Jordan emphasized that the human dimension theme needs to encompass more than a symbolic event, and that there is a substantial scientific component within the human dimension research theme. When salmon is reintroduced into the diets of Indigenous communities, the rate of diabetes decreases from 80% to 3%. Dennis Zimmermann corroborated the importance of the UN Declaration of Indigenous Rights and mentions that the development of an ethical space requires the understanding of 4 pillars: Truth and Reconciliation, Treaties, Case Law, and the UN Declaration of Indigenous Rights. John Field followed up by mentioning that by next month, the PSC Southern Endowment Fund should have decided on a proposal to conduct a non-economic valuation of First Nations Food, Ceremonial, and Social (FSC) fisheries. As the human dimension theme develops more over time, the IYS will include a larger representation of Indigenous peoples, and provide a clear overview of how the Human Dimension TCG will incorporate these ideas and issues in their outcomes and deliverables

## **Wrap-up and Next Steps**

Mark Saunders summarized the major points of Day 2 of the NPSC meeting, which included discussion on improving communications, engaging the media for the IYS signature project high seas cruise, a presentation on Long Live the Kings, and the need to move forward on outreach, research, and fundraising.

## **Concluding Roundtable**

The meeting was concluded by NPSC participants sharing their final thoughts during a roundtable. Participants thanked the IYS and NPAFC Secretariat staff for organizing the meeting and for all their hard work on the IYS. Many participants noted that there is need to have funding organizations interested in the IYS by the NPAFC annual meeting in May. The launch of the cruise should gauge more interest within social media and by different fundraising organizations. Numerous participants expressed how pleased they were with the progress since the last NPSC meeting in 2018. The International Year of the Salmon website has seen a lot of visitors and the number of projects and events that are being posted speaks to the value of the IYS and its early success. Communication from the Secretariat to the Steering Committee will be improved, beginning with a weekly bulleted list to update participants. Additionally, outreach to people in Japan, Korea, and Russia needs to increase, especially in terms of participation in future Steering Committee meetings. It was expressed that our social medias are crucial for the success of the IYS, and we will be improving our online presence and extending our reach to a greater audience. It was noted that Anne Conners will be contacting the participants of the meeting over the next couple of months as part of the fundraising strategy.

Mark Saunders thanked all NPSC participants for their time and stated that he was very encouraged by recent meetings/events and will try and keep building momentum around the IYS moving forward. There are several pressing issues at hand, one of which is fundraising, and the IYS recognizes that we need assistance from others in this process. Key outcomes will likely be decided at the NPAFC and NASCO Annual Meetings in May and June, respectively, and we must be prepared for these meetings. Finally, the IYS Secretariat will produce a report from this NPSC meeting to be circulated to participants.

## **Summary of Key Points**

*Report on progress made on IYS implementation in 2018*

- Seven IYS Sessions at meetings/symposia/workshops
  - Poster session at 4<sup>th</sup> International Symposium: The Effects of Climate Change on the World's Oceans.
  - Half-day session on the IYS during the 2018 Long-Term Marine Ecosystem Research

- International Symposium in Busan, Korea.
- Five IYS Workshops
  - 1<sup>st</sup> NPAFC/IYS Workshop was held in Khabarovsk, Russia with over 60 participants, 26 oral presentations and eight poster presentations.
  - IYS workshop Toward Effective Coupling of the Science of a Changing Climate with Salmon and People held in Santa Barbara in collaboration with NCEAS.
- Over 80 meetings with partners/potential partners.

#### *Overview of the IYS Signature Project*

- Vessel for high seas cruise on the way to Vancouver.
- Daily communications from cruise to Secretariat is expected and will be linked to social medias as well as the IYS website.

#### *Discussion of Research Planning*

- Participants want a more clearly defined fundraising plan outlined.
- Concerns came up regarding the timeline of the TCG groups to ensure that Chairs and Co-Chairs progress in implementing high-impact projects.

#### *Coordination of 2019 Activities including IYS planning, workshops, meetings, and events*

- Upcoming workshops to focus on New Frontiers and new technologies such as otolith microchemistry, as well as eDNA and genomics.
- Following the NPAFC annual meeting in May will be the 2<sup>nd</sup> IYS-NPAFC workshop, Salmon Ocean Ecology in a Changing Climate, help in partnership with the Salmon Ocean Ecology Meeting.
- The IYS Salmon Data workshop will look at broad temporal patters for three salmon data categories and scales from overview species presentations on Chinook, chum, Atlantic, pink, and sockeye salmon.
  - Participants will aim to link state changes and trends to potential drivers and mechanisms.
- Two events will be held around the IYS High Seas Cruise including a departure event (February 15<sup>th</sup>) with media present to talk to the scientists and an arrival event (March 18<sup>th</sup>) including an evening reception with the crew and North Pacific salmon leadership.

#### *Overview of Long Live the Kings*

- Long Live the Kings (LLTK) is an NGO that supports sustainable fishing and aims to restore wild salmon and steelhead populations in the Pacific Northwest.
- The goals of the organization are to advance science, improve, management, and implement solutions on behalf of salmon.
- Due to their efforts, some populations of native steelhead in the Hood Canal River have improved ten-fold.
- For the first time in 65 years, Spring Chinook have returned to the Skohomish River
- LLTK is leading the charge to understand and mitigate low salmon survival in the marine environment through the Salish Sea Marine Survival Project.
  - Over 80 studies across Salish Sea conducted to determine the primary factors affecting juvenile Chinook, coho, and steelhead marine survival.

- Provides more insight on changing prey composition, entry timing, and disease susceptibility.

#### *IYS Communications*

- The website has seen increasing traffic and projects/events being posted weekly.
- Social medias have taken off with the start of a Facebook and twitter account
  - Need to engage more followers in Korea, Japan and Facebook.
- IYS will reinstate an Instagram account to reach to followers in Japan, Korea, and Russia.
- Communications from the Secretariat to the NPSC members needs improvement.
  - Mark Saunders will be sending out a weekly bulleted email with updates and news regarding progress on IYS events.

#### *Planning IYS Wrap-Up Symposium and Event*

- 2022 wrap up symposium will include a large congress of people with concurrent sessions highlighting the knowledge that is generated from IYS signature and high impact projects.
- We are hoping to create a large publication based on the findings of the signature projects and continuous learning that has taken place over the timeline of the IYS.

#### *The Metrics of Success*

- One way to visualize and communicate the findings of the 2019 high seas cruise will be through an infographic.
- the number of lectures from schools and universities regarding the results of the cruise expeditions will be another way to measure success.

#### *Outreach Strategies*

- To reach audiences at local and hemispheric levels, it was brought up that IYS will collate a library of publications that come out through the IYS signature projects.
- Outreach strategy should try to find ways for partners to incorporate the IYS messages into their respective projects/events/initiatives.

**Table 1.** Participants of the 2019 International Year of the Salmon North Pacific Steering Committee Meeting Agenda (January 21–22, Vancouver, BC, Canada), listed in alphabetical order by last name. All participants attended both days, with the exception of Jordan Point, David Travia, Anita Mueller, and Gerry Kristianson who only attended the second day, and Justine Nelson, Allan Berezny and Fiona Beaty, who only attended the first day. Anne Conner was present via telephone.

	<b>Name</b>	<b>Role</b>	<b>Organization</b>	<b>Country</b>
1	Hal Batchelder	NPSC Member	PICES	Canada
2	Fiona Beaty	NPSC Attendee	UBC	Canada
3	Nathan Bendriem	NPAFC Secretariat/Intern, Rapporteur	NPAFC Secretariat	Canada
4	Allan Berezny	NPSC Attendee	UBC	Canada
5	Anne Conner	NPSC Attendee	Conner and Associates	USA
6	John Field	NPSC Member	Pacific Salmon Commission	Canada
7	John Holmes	NPSC Attendee	DFO	Canada
8	Rae Hull	Participant	UNINTERRUPTED	Canada
9	Jim Irvine	IYS-WG & NPSC Member	DFO	Canada
10	Paul Kariya	NPSC Attendee	Great Bear Initiative	Canada
11	Ju Kyoung Kim	IYS-WG & NPSC Member	Korea Fisheries Resources Agency	Korea
12	Suam Kim	NPAFC President/IYS-WG	Pukyong National University	Korea
13	Gerry Kristianson	NPSC Attendee	Sport Fishery Advisory Board	Canada
14	Sukyung Lee	NPSC Member	Korea Fisheries Resources Agency	Korea
15	Jonathan Moore	NPSC Attendee	Simon Fraser University	Canada
16	Anita Mueller	NPSC Member	Genome BC	Canada
17	Justine Nelson	NPSC Attendee	Rivershed Society of BC	Canada
18	Jennifer Nener	NPSC Member	DFO	Canada
19	Dion Oxman	IYS-WG & NPSC Member	ADFG	USA
20	Jeongseok Park	NPAFC Secretariat; NPSC Member	NPAFC Secretariat	Canada
21	Jordan Point	NPSC Member	First Nation Fishery Council	Canada
22	Vladimir Radchenko	NPAFC Secretariat; NPSC Member	NPAFC Secretariat	Canada
23	Shunpei Sato	IYS-WG Member	Japan Fisheries	Japan

			Research and Education Agency	
24	Mark Saunders	NPAFC Secretariat; IYS-WG Chair; NPSC Chair; CC Co-Chair	NPAFC Secretariat	Canada
25	Kengo Suzuki	IYS-WG & NPSC Member	Japan Fisheries Research and Education Agency	Japan
26	Stephanie Taylor	NPAFC Secretariat, Rapporteur	NPAFC Secretariat	Canada
27	David Travia	NPSC Attendee	Province of BC	Canada
28	Christie Whelan	NPSC Attendee	BC Salmon Restoration Fund (DFO)	Canada
29	Jacques White	NPSC Member	Long Live the Kings	USA
30	Dennis Zimmermann	NPSC Attendee	Yukon River Panel	Canada

**Table 2.** 2019 International Year of the Salmon North Pacific Steering Committee Meeting agenda (January 21–22, 2019, Vancouver, BC, Canada).

<b>Monday, January 21—Day 1</b>	
	Welcome, agenda review, and introductions
1:00 – 1:45	First Nations welcome, NPAFC welcome, roundtable introductions, and review of terms of reference
1:45 – 2:15	Report on progress made on IYS implementation in 2018
2:15 – 2:45	Overview of the IYS Signature Project
2:45 – 3:00	Break
3:00 – 3:20	Review Strategic implementation plan, including Theme Counsel Groups and overall funding strategy
3:20 – 4:00	Breakout Session on improvements and alteration to strategic implementation plan and specific funding strategy
4:00 – 4:55	Plenary Session to report out and discuss results of breakout session
4:55 – 5:00	Close and wrap up of Day One
<b>Tuesday, January 22—Day 2</b>	
8:30 – 9:00	Morning coffee and tea
9:00 – 9:15	Review Calendar of events
9:15 – 9:25	Salmon Data Workshop overview
9:25 – 9:35	Vancouver Celebration of IYS Cruise overview

9:35 – 9:50	NPAFC Second Workshop discussion
9:50– 10:30	Brainstorming other possible events
10:30 – 10:45	Break
10:45– 11:05	Overview Presentation of Long Live the Kings
11:05 – 12:00	IYS Communications
12:00 – 1:00	Lunch
1:00 – 1:30	Planning IYS Wrap-Up Symposium and Event
1:30 – 2:00	The Metrics of Success
2:00 – 2:30	Outreach Strategies
2:30 – 2:45	Break
2:45 – 3:15	Wrap-up and next steps
3:15 – 4:00	Concluding Roundtables

**Table 3.** 2019 International Year of the Salmon North Pacific Steering Committee Meeting breakout groups with leaders and then participants listed in alphabetical order by last name.

<b>Leader</b>	Mark Saunders	Stephanie Taylor	Nathan Bendriem
<b>Participants</b>	Allan Berezny	Jennifer Nener	Dion Oxman
	Jonathan Moore	Jim Irvine	Dennis Zimmermann
	John Holmes	Rae Hull	John Field
	Christie Whelan	Vladimir Radchenko	Jacques White
	Kengo Suzuki	Shunpei Sato	Jeongseok Park
	Suam Kim	Ju Kyoung Kim	Fiona Beaty
	Hal Batchelder	Sukyung Lee	David Travia

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# Appendix A



## 2019 IYS North Pacific Steering Committee Meeting

*January 21 & 22, 2019 | Vancouver, B.C.*

### ***Location:***

*Day One: Garibaldi Rm, Blue Horizon Hotel, 1225 Robson St*

*Day Two: Rm 320, Morris J Wosk Centre for Dialogue, 580 W Hastings St*

***Hosted by:*** North Pacific Anadromous Fish Commission (Tel: 604-775-5550, Email: [secretariat@npafc.org](mailto:secretariat@npafc.org))

***Meeting Chair:*** Mark Saunders

### **Monday, January 21, 2019**

1:00 pm – 5:00 pm

One 15-minute coffee break

Dinner reservation – information will be provided at a later date

### **Tuesday, January 22, 2019**

9:00 am – 4:00 pm

Lunch provided by NPAFC

Two 15-minute coffee breaks

## ***Annotated Agenda***

### **Meeting Objectives:**

- (1) Review progress on IYS implementation through 2018
- (2) Engage NPSC partners in the coordination of IYS research and outreach activities
- (3) Engage NPSC partners in fundraising strategies in 2019.

### **DAY ONE**

#### **(1) 1:00 – 1:45 Welcome, agenda review and introductions – Mark Saunders**

- First Nations welcome (Ann Whonnock, Squamish Nation); NPAFC welcome from Dr. Suam Kim, NPAFC President
- Roundtable introductions
- Review of the agenda and meeting objectives

- Review of NPSC Terms of Reference

**(2) 1:45 – 2:15 Report on progress made on IYS implementation in 2018 – Mark Saunders**

*To ensure all committee members understand activities and progress made to date.*

- Review of activities since February 2018, including IYS Opening Events (see [Discussion Document #1](#))
- Description of the work by the IYS technical team that met in Vancouver, in October 2018 (see [Discussion Document #2](#))

**(3) 2:15 – 2:45 Overview of the IYS Signature Project – Vladimir Radchenko**

*To ensure all committee members are aware of the progress made and current status of the IYS Signature project – the high seas research cruise.*

15 minute presentation and 15 minute discussion

**(4) 2:45 – 3:00 Break**

**(5) 3:00 – 5:00 Discuss research planning – Mark Saunders**

*To ensure all committee members are familiar with IYS projects and research. To also ensure all partners are familiar with the strategic plan, a living document that describes our approach to research planning for the IYS. To gather feedback on the general document, projects, and any other suggestions.*

- 3:00 – 3:20
- Review strategic implementation plan, including Theme Council Groups and overall funding strategy for secretariat and research, outreach activities

- 3:20 – 4:00
- Breakout Session on improvements and alterations to strategic implementation plan and specific funding strategies; (see [Discussion Document #3](#))
    - Is the logic of the approach sound?
    - Will Theme Counsel Groups as proposed work to generate innovation?
    - Do you have any suggestions for improvement of the development strategy?
    - Can you suggest particular funds, foundations, or individuals that we should be engaging for overall funding or topic specific?

- 4:00 – 4:55
- Plenary Session to report out and discuss results of Breakout Session

**(6) 4:55 – 5:00 Close and wrap up of Day One**

## DAY TWO

(1) 8:30 – 9:00 **Morning coffee and tea**

(2) 9:00 – 10:30 **Coordination of 2019 Activities including IYS planning, workshops, meetings, and events.**

*To ensure all committee members are aware of all 2019 IYS events and to coordinate events between partners.*

9:00 – 9:15	<ul style="list-style-type: none"><li>• Review calendar of events (see <a href="#">Discussion Document #4</a>)</li></ul>
9:15 – 9:25	<ul style="list-style-type: none"><li>• Salmon Data Workshop – Jim Irvine</li></ul>
9:25 – 9:35	<ul style="list-style-type: none"><li>• Vancouver celebration of IYS cruise with Prof. Kaganovskiy – Mark Saunders</li></ul>
9:35 – 9:50	<ul style="list-style-type: none"><li>• NPAFC Second Workshop – May 2019, Portland, OR – Speaker TBD<ul style="list-style-type: none"><li>○ Engaging funders</li><li>○ Public bridging event</li></ul></li></ul>
9:50 – 10:30	<ul style="list-style-type: none"><li>• Brainstorm other possible events<ul style="list-style-type: none"><li>○ Are there other events that we should be considering?</li></ul></li></ul>

(3) 10:30 – 10:45 **Break**

(4) 10:45 – 11:05 **Overview presentation of Long Live the Kings (an IYS Partner) – Jacques White**

*To familiarize committee members with the work of one of our partners.*

(5) 11:05 – 12:00 **IYS Communications – Stephanie Taylor**

*To familiarize committee with the website and social medias and the engagement plan for both.*

- Update on the launch of the website, report Google Analytics results
  - Input from participants on increasing the number of projects and events from the North Pacific registered on the website
- Update on the social medias, including the results of analytic reports (see [Discussion Document #4](#))
  - Input from participants on options to increase engagement on social media in Asia.
- Communications to the NPSC
- Communication with the public
  - Input from participants on current progress and possible improvements

(6) 12:00 – 1:00 **Lunch**

(7) 1:00 – 1:30 **Planning IYS Wrap-Up Symposium and Event**

*To receive input on a plan for the 2022 IYS Wrap-Up Symposium, including suggestions for location and event type.*

(8) 1:30 – 2:00 **The Metrics of Success**

*To consider approaches to measuring and reporting the success of the IYS.*

- How do we demonstrate what the IYS has achieved?

(9) 2:00 – 2:30 **Outreach Strategies**

*Brainstorming of approaches to outreach at local, regional and hemispheric scales.*

(10) 2:30 – 2:45 **Break**

(11) 2:45 – 3:15 **Wrap-up and next steps**

(12) 3:15 – 4:00 **Concluding roundtable**

## ***Explanatory Notes on the Draft Agenda***

### **DAY ONE**

#### **(2) Report on progress made on IYS implementation in 2018**

*Review of activities since February 2018, including a description of the work by the IYS technical team that met in Vancouver, BC, CA, in October 2018.*

Since the February meeting, a small executive group consisting of Carmel Lowe, Doug Mecum and Vladimir Radchenko, who are North Pacific representatives on the IYS Coordinating Committee, have been providing direction to the IYS Secretariat (Mark Saunders, North Pacific Director, Madeline Young/Stephanie Taylor, North Pacific Coordinator, and Nathan Bendriem, NPAFC Intern). Madeline Young left the IYS initiative to take up a role with Fisheries and Oceans Canada. Stephanie Taylor, who joined the NPAFC Secretariat in July 2018 as the NPAFC Intern has moved into Madeline's role. Nathan Bendriem, a marine scientist originally from Knoxville, Tennessee, USA, joined the NPAFC Secretariat as an intern in December 2018 and has been a strong addition to the North Pacific IYS team.

The IYS Coordinating Committee has met by teleconference four times since both organizations agreed to implement the IYS in the summer of 2016 and will have met for the first time in person on February 1 & 2, 2018 in London, UK. The second in-person meeting of the Coordinating Committee will be on January 28 & 29, 2019 (*subject to change due to U.S. government shutdown*). The North Atlantic Steering Committee (NASCO) met in person on September 10&11, 2018.

A subset of the IYS Coordinating Committee (Emma Hatfield and Kim Damon-Randall from NASCO, and Mark Saunders, Vladimir Radchenko and Madeline Young from NPAFC) held a technical meeting in Vancouver, BC, CA in mid-October 2018 to finalize the IYS website text and develop detailed discussion documents to inform and expedite the work of the Steering Committees and the Coordinating Committee. The following activities have been addressed, or will soon be addressed, in upcoming meetings:

- 1) **Review of activities since February 2018, including IYS Opening Events;** the IYS Secretariat in the North Pacific held over 80 meetings in 2018, as well as many symposia and workshops. In the fall of 2018, there were 17 IYS Opening Events held across the northern hemisphere (Discussion Document #1).
- 2) **Description of the work by the IYS technical team that met in Vancouver, in October 2018;** IYS governance documents were reviewed and updated, website text including the sponsorship document was finalized, and documents related to the coordinating committee were developed (see Discussion Document #2).

#### **(5) Discuss research and outreach planning – Mark Saunders (introductory presentation, breakout groups to discuss prepared questions, plenary discussion)**

An introductory presentation will be given by Mark Saunders on the IYS strategic plan. The strategic plan is a living document which describes the approach to IYS research planning. Break-out groups will then be formed to discuss the three topics listed below, followed by a plenary discussion.

- 1) *Feedback on the general document including potential projects, discussion of current projects, and any missing items* – See "Discussion Document #3".

- 2) *Development of Theme Council Groups, review of proposal from IYS-Working Group for co-chairs and discussion of Theme Council Group membership*
- 3) *Discussion of the overall funding strategy for secretariat and research, outreach activities*
- 4) *Discussion of specific activities and funding strategies, looking for support from committee members*

## **DAY TWO**

### **(2) Coordination of 2019 Activities including IYS planning, workshops, meetings, and events**

*Review of upcoming events and activities in the IYS focal year and beyond.*

There are a number of workshops and symposia that are being planned or could be considered over the next four years. They will play a major role in accumulating knowledge to address the five IYS research themes/outcomes. A calendar of all IYS events has been created (see [Discussion Document #4](#)).

Presentations will be given on the following upcoming events:

- (1) Salmon data workshop (Jan. 23 & 24, 2019)
- (2) Vancouver celebration of the IYS cruise with Prof. Kaganovskiy (Mar. 18, 2019)
- (3) Second NPAFC-IYS Workshop (May 18 – 20, 2019)
  - Methods of engaging funders and a public bridging event will be discussed

The end of this session will be spent brainstorming other possible events.

### **(5) IYS Communications – Stephanie Taylor**

*Review of IYS website launch and social media accounts. Discussion and development of communications to NPSC and public.*

In early fall 2018, the IYS website was officially launched. Since its launch, 37 events and 11 projects have been registered on the site as part of the IYS. Stephanie Taylor will give an overview presentation of the website and the Google Analytics report for the website. She will also go over the social media accounts and the IYS social media strategy (see [Discussion Document #5](#)). Participants will be invited to discuss how to increase engagement on the website and social media across the Pacific Rim and how to increase the number of projects registered on the website.

Participants will also be asked to discuss communication between the secretariat and the NPSC, and give suggestions for increasing communications with the public.

### **(8) The Metrics of Success**

Consideration needs to be given to how we recognize success to enable an evaluation of the IYS to take place. Given the different approaches to IYS in the Atlantic and Pacific, the measures will need to be considered at the basin scale within the relevant committees and groups. The members of the Committee will be asked to discuss the merit of having hemispheric metrics of success and what these could be.

The reporting of activities and the IYS website pages for organizations or individuals to register events and projects have taken into consideration the agreed themes of the IYS (Annex 1). Therefore, some data will hopefully be collected about events and activities related to the themes. The members of the Committee are asked to discuss the importance of delivery on all the identified themes and; 1) whether there is a need to encourage this, and 2) how this could be done.

# Appendix B

## Terms of Reference for the IYS North Pacific Steering Committee

1. NPAFC as the lead organization for the North Pacific establishes the IYS North Pacific Steering Committee to remain active for the effective duration of the IYS.
2. The North Pacific Steering Committee shall consist of:
  - (a) One representative from each NPAFC party, a representative of the NPAFC Secretariat, and invited representatives from core partners. It would be desirable to have both scientists and managers involved
  - (b) and ideally representatives with experience of outreach initiatives and additional experts, as needed to support IYS functions.
  - (c) The North Pacific Steering Committee may co-opt, as required, additional representatives to serve on the North Pacific Steering Committee who have expertise relevant to a specific activity being undertaken by the Committee.
  - (d) The North Pacific Steering Committee may designate a Chairperson or Co-Chairpersons and establish working groups or other subordinate body or person as it requires to fulfill its tasks.
3. The North Pacific Steering Committee's mandate is to coordinate the planning, implementation and administration of the IYS and review its progress in the North Pacific. The North Pacific Committee will undertake the following activities:
  - engage core partners;
  - resolve species, life stages and geographical areas of the North Pacific Ocean to be included in the IYS, in addition to those identified in section 5 of the Outline Proposal;
  - develop criteria for IYS endorsement, identify outreach and research priorities, review outreach and research proposals, identify research priorities and develop research plans for activities engaged at the basin and local scale; including ensuring that IYS data sets, once developed, are archived and available in public archives;
  - develop outreach activities, target audiences and messages;
  - coordinate fundraising in support of its functions and activities;
  - make recommendations to the Coordinating Committee to support its work, wherever possible framed as a range of options so as to allow some discretion by the Coordinating Committee to take decisions in the best interest of the IYS at a salmosphere level;
  - review progress of the IYS at the basin/local level; and
  - such other tasks as may be identified by the lead organisations.
4. The Chair of the North Pacific Steering Committee will report to NPAFC and the Coordinating Committee on the work of the North Pacific Steering Committee.
5. The North Pacific Steering Committee will operate by consensus.
6. The costs incurred by each North Pacific Steering Committee member in participating in the Committee's work, including any fees for service, should be borne by the organization appointing the Committee member, if otherwise will not be decided by the NPAFC.
7. The North Pacific Steering Committee may incur costs, including engaging professional support, in accordance with budgetary provision and spending plans made by NPAFC or funds raised from other

sources and made available to the North Pacific Steering Committee through the NPAFC. The NPAFC Executive Director shall ensure that the receipt and expenditure of funds are consistent with NPAFC's Financial Rules.

# Appendix C

## North Pacific Steering Committee Meeting Discussion Document #1: Activities and Events in 2018

### Preamble

The International Year of the Salmon (IYS) is a five-year outreach and research initiative of the North Pacific Anadromous Fish Commission (NPAFC) and North Atlantic Salmon Conservation Organization (NASCO). The goal of the IYS is to motivate a hemispheric-wide partnership of government, academia, NGOs, Indigenous Peoples, and industry that will drive an intense burst of outreach and research to create a well-informed community of decision makers and establish the conditions necessary for the resilience of salmon and people in an uncertain future.

2018 marked the first year of the initiative with several opening events and receptions in North America, Europe, and Asia. Numerous programs, projects, workshops and symposia are currently proposed and planned throughout the Northern Hemisphere in 2019, the focal year of the IYS. This document serves as a highlight of the workshops, symposia, and meetings that took place in 2018, which will be built upon in the upcoming year.

Not surprisingly, 2018 was a very busy year as the IYS held workshops and symposia to both develop priorities and plans for high-impact projects to address research outcomes as well as further the understanding associated with these outcomes. In addition, IYS posters were presented at numerous conferences/meetings to raise awareness of the Year of the Salmon.

In 2018, there were over 80 meetings with partners or potential partners of the IYS. Partnerships crossing cultures and great distances unquestionably take time to develop. Our relationship with NASCO and Atlantic partners grew very positively in 2018, particularly after face to face meetings of the two Presidents and our IYS Coordinating Committee and its technical team. These workshops, symposia, and opening events had a large presence in social media, which in turn has resulted in a larger online following for the announcement of future IYS-related events, projects, and meetings.

The document is divided into IYS sessions that took part in meetings/symposia/workshops, followed by workshops and meetings conducted on behalf of the IYS, and concludes with a detailed account of the opening events throughout the Northern Hemisphere.

### IYS Sessions at Meetings/Symposia/Workshops

- Salmon Ocean Ecology Meeting, Newport ,OR (February 2018)
  1. Presentation introducing IYS and brainstorming session on a workshop to discuss climate impact on salmon production (held in June 2018)
- International Symposium: Understanding Changes in Transitional Areas of the North Pacific, La Paz, Mexico (April 2018)
  1. IYS poster presentation
- 4th International Symposium: The Effects of Climate Change on the World's Oceans, Washington DC, USA (June 2018)
  1. IYS poster presentation
- Salmon Café 2018, Morioka, Iwate, Japan (June 2018)

1. Presentation to introduce IYS
- Science Café at the Chitose Aquarium, Chitose, Hokkaido, Japan (August 2018)
  1. IYS poster presentation
- Autumn Salmon Park Festival at the Shibetsu Salmon Museum, Shibetsu, Hokkaido, Japan (September 15-30, 2018)
  1. IYS poster presentation
- Event for Salmon Day at the Chitose Aquarium, Chitose, Hokkaido, Japan (November 11, 2018)
  1. – IYS poster presentation
- PICES 2018 Annual Meeting: Toward integrated understanding of ecosystem variability in the North Pacific, Yokohama, Japan (October/November, 2018)
  1. IYS poster presentation
- Alaska Salmon and People Project (SASAP) Workshop, Santa Barbara, CA (November 2018)
  1. Lessons learned from SASAP and how to include IYS in legacy
- The Yukon Salmon Resiliency Conference, Whitehorse, Yukon (November 2018)
  1. 100 attendees registered from Yukon First Nation Governments, Renewable Resources Councils, Management Agencies, not for profits and the public. The conference included an IYS presentation.
- IYS Special Session at the 2018 Long-Term Marine Ecosystem Research International Symposium, Busan, Korea (December 2018)
  1. A special half-day session on the Pacific salmon monitoring program and the IYS initiative/activities
- IYS Special Session at 12th Conference of the Salmon Science Society, Hakodate, Hokkaido, Japan (December 1, 2018)
  1. Eight presentations at the special session on “Debate on Diverse Aspects of Salmon” associated with IYS theme “Human Dimensions” to provide an opportunity for practical consideration on the diverse values of salmon and their possible contributions to local communities in northern Japan.
  1. IYS poster presentation

### **IYS Workshops**

- NGO Outreach and Communication Workshop, Edinburgh, UK (March 2018)
  1. Goal: to develop an IYS communications plan at the hemispheric level
  2. Deliverables: report written and communications plan are under development
- 2<sup>nd</sup> NPAFC/IYS Workshop, Khabarovsk, Russia (May 2018)
  1. 60 participants
  2. Workshop participants presented 26 oral presentations and eight posters addressing the following topics related to the IYS research themes
  3. Deliverable: NPAFC Technical Report 11
- IYS Local Symposium on Sustainable Management of Chum Salmon in Changing Environments, Tokyo, Japan (March 2018)
  1. In order to endorse effective IYS projects in Japan, the symposium aimed to: (1) comprehend the vision of IYS program; (2) understand the present status of chum salmon populations and their habitats (IYS Theme 1); (3) assess effects of environmental variability on chum salmon distribution and survival (IYS Theme 2); (4) evaluate new research

technologies to advance salmon science (IYS Theme 3); and (5) identify future research topics for the sustainable management of chum salmon. The program was composed of one keynote presentation by Dick Beamish (Emeritus Scientist, Fisheries and Oceans Canada) and 14 oral presentations in three sessions, followed by a panel discussion.

2. Deliverable: Proceedings were recorded in the August and October issues of the science journal *Aquabiology* Volume 40 (2018).
- Toward Effective Coupling of the Science of a Changing Climate with Salmon and People, Santa Barbara, CA (June 2018)
    1. Scoping workshop with 25 participants
    2. Objectives:
      - Understand the current state of knowledge with respect to mechanisms linking changes in climate to changes in the salmosphere, ultimately aimed at understanding climate drivers of variations in salmon abundance and productivity
      - Determine hypotheses and high-impact research projects that could be undertaken to test these hypotheses and significantly improve our understanding of climate/salmon interactions and their consequences for salmon management
      - Develop suitable model structure(s) that will allow for the design, construction and application of a model or models that are capable of re-creating historical patterns of abundance and, based on IPCC climate scenarios, extending future climate scenarios into future salmosphere scenarios (or salmon abundance and productivity scenarios, with or without fishery or other salmon economy scenarios)
    3. Deliverable: NPAFC publication outlining potential projects
  - ROAM Workshop, Woods Hole, MA (June 2018)
    1. Preliminary webinar and phone calls held with Pacific participants prior to the workshop
    2. 30 participants, including four Pacific representatives
    3. Objective: to further inform and gauge interest from members of the international salmon tracking community on ROAM technology
    4. Deliverable: Pacific report prepared by Kintama

### **IYS Meetings**

- Over 80 meetings with partners/potential partners in 2018
- IYS Working Group Meeting at the 26<sup>th</sup> NPAFC Annual Meeting, Khabarovsk, Russia (May 2018)
  - Submitted two requests for funding to CSRS/NPAFC were recommended for submission by CSRS to F&A: (1) a funding request for IYS year three of planning and launch of the focal year, and (2) a funding request for an IYS Open (Bridging) Event for the Public in Portland (in association with the 2019 NPAFC-IYS Workshop).
- 2<sup>nd</sup> NPAFC/NASCO Presidents' Meeting, Edinburgh, UK (October 2018)
  - Reaffirm commitment of both organizations to the IYS
- IYS Technical Team Meeting, Vancouver, BC (October 2018)
  - Objective: Finalisation of IYS website text and development of materials for subsequent Co-ordinating Committee Meeting.
- 

### **IYS Opening Events**

## Canada

1. **The International Year of the Salmon North Pacific Opening Event** (October 11, 2018, Vancouver, BC, Canada)

The IYS North Pacific Opening Event—hosted by the North Pacific Anadromous Fish Commission (NPAFC) and the Pacific Salmon Foundation—was held at Jack Poole Plaza in downtown Vancouver, overlooking Burrard Inlet. An audience of media and over 100 leaders in salmon conservation from government, Indigenous groups, NGOs, academia, and industry from around the Pacific Rim were in attendance.

Preceding the Opening Event activities was an International Expert Panel consisting of Mark Saunders (CAN), Jim Irvine (CAN), Dick Beamish (CAN), Brian Riddell (CAN), Shunpei Sato (JPN), and Suam Kim (ROK). The members of the expert panel provided a more detailed overview of the IYS, its themes, research, and projects. They also fielded questions from media and audience members.

After a traditional First Nations welcome from Chief Wayne Sparrow of Musqueam Indian Band on behalf of the local Musqueam, Squamish, and Tsleil-Waututh Nations, Dr. Brian Riddell (PSF) and Mr. Mark Saunders (NPAFC) reflected on the challenges faced by Pacific salmon and described the IYS initiative as an innovative part of the solution.

As part of the IYS launch, the Honourable Jonathan Wilkinson, the Minister of Fisheries, Oceans and the Canadian Coast Guard, introduced the Government of Canada's Wild Salmon Policy 2018–2022 Implementation Plan. This five-year plan outlines concrete actions the Department of Fisheries and Oceans will take to help rebuild Pacific wild salmon populations and their habitats. The Minister also announced that Fisheries and Oceans Canada has acted on all of the recommendations of the Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River and released its third and final Cohen Status, which details actions taken to address each recommendation.

Following the Minister, British Columbia Premier John Horgan announced the completion of the Wild Salmon Advisory Council report, which is the first step in the development of a renewed provincial approach to protecting and enhancing wild salmon. Chief Bob Chamberlin and dignitaries from NPAFC member countries Japan, the Republic of Korea and the United States closed the IYS announcements.

During the opening event, NPAFC also unveiled plans for a High Seas Expedition that will take place in late February through late March 2019 in the Gulf of Alaska aboard the 62 m Russian Research Vessel *PROFESSOR KAGANOVSKY*, with scientists participating from all five NPAFC countries. The end-of-winter trawl survey in the Gulf of Alaska will, for the first time, provide a comprehensive understanding of the abundance, condition, country of origin, and location of stocks from salmon producing countries. This information is needed to understand how climate and the changing ocean environment affect salmon production. The CAN\$1.2M project has been jointly funded by a combination of government, industry, NGO and private contributions.

The North Pacific IYS Opening Event can be viewed here: <https://youtu.be/O6eQr13ipZs>.

2. **Canadian North Atlantic Opening** (November 15, 2018, Fredericton, NB)  
Speaker: Patricia Saulis, Executive Director, Maliseet Nation Conservation Council

## The European Union

3. **European Union's Announcement** (October 24, 2018, online)  
[https://twitter.com/EU\\_MARE/status/1055098471408115714](https://twitter.com/EU_MARE/status/1055098471408115714).

4. **Finland** – Press release by the Minister of Agriculture, Jari Leppä (October 2018)
5. **German Launch of the International Year of the Salmon** (October 12, 2018, Buisdorf, Germany)  
Michael Stübgen, State Secretary of the Federal Ministry of Food and Agriculture, and Ursula Heinen-Esser, Minister for the Environment, Agriculture, Nature Conservation, and Consumer Protection of North Rhine-Westphalia, opened the IYS for Germany on Friday, October 12<sup>th</sup> at the salmon counting station at the Sieg-Wehr in Buisdorf. Representatives of salmon resettlement programmes from the federal states were invited to the event and pupils were honoured for their commitment to water protection. Afterwards the fish trap of the salmon counting station was presented and interested visitors were invited to visit the exhibition on the migratory fish programme on the Rhine in the "Wissenhaus Wanderfische".

Links: [https://www.bmel.de/DE/Wald-Fischerei/05\\_Fischerei/Internationale-Fischerei/Texte/internationales\\_jahr\\_des\\_lachses.html?nn=809668](https://www.bmel.de/DE/Wald-Fischerei/05_Fischerei/Internationale-Fischerei/Texte/internationales_jahr_des_lachses.html?nn=809668)

6. **Ireland** –TD for Galway East, Sean Canney, and Fisheries Protection staff (4 December)
7. **Norway** – Minister of Climate and Environment, Ola Elvestuen (13 November)
8. **Portugal** –Minister of the Sea, Ana Paula Vitorino (date TBD)
9. **Sweden** –Director General for the Swedish Agency for Marine and Water Management Jakob Granit (November 29, 2018)
10. **Scotland** – Cabinet Secretary Roseanna Cunningham (October 25, 2018)
11. **The United Kingdom** – Institute of Fisheries Management 49th Annual Conference (October 16, 2018, Hull, United Kingdom)  
The Minister of State for Agriculture, Fisheries and Food (George Eustice) launched the International Year of the Salmon 2019 for England during the opening session of this year’s Institute of Fisheries Management annual conference.

The theme for this year’s conference was Thriving or Surviving – Creating Resilient Fisheries. The programme of talks incorporates sessions from the freshwater, transitional and marine environments. Conference sessions covered a wide range of topics over the three days including: Resilient Fisheries, Yorkshires Rivers, Resilient Environments, Mitigation and Recovery, Future Proofing Fisheries, Resilient Angling and Habitat Management for Fish.

Links: <https://ifm.org.uk/events/event/ifm-49th-annual-conference-thriving-or-surviving-creating-resilient-fisheries/>

12. **Wales** – Press release by the Cabinet Secretary Lesley Griffiths (October 2018)

#### **Republic of Korea**

13. **Yangyang Salmon Festival** (October 18–21, 2018, Yangyang, Gangwon Province)

The Yangyang Salmon Festival took place from October 18–21, 2018 near Namdaecheon, an important salmon spawning ground in Yangyang, Gangwon Province, Republic of Korea. Thousands of people with their kids had an enjoyable and educational time with many interesting salmon-related experiences like catching salmon with their bare hands and other cultural and local salmon food events during the festival.

In association with the salmon festival, Korea Fisheries Resources Agency (FIRA) hosted a series of ecotourism experience programs to welcome salmon returning to their natal streams. Additionally, the Chairman of the FIRA, Mr. Hyun Seok Shin (Former Deputy Minister of Oceans and Fisheries, MOF) made the IYS ministerial announcement during his congratulatory speech at the beginning of the 2018 Yangyang Salmon Festival.

Links:

[http://salmon.yangyang.go.kr/site/salmon\\_festival/index.jsp](http://salmon.yangyang.go.kr/site/salmon_festival/index.jsp)  
[http://www.fira.or.kr/english/english\\_index.jsp](http://www.fira.or.kr/english/english_index.jsp)

#### **14. The Republic of Korea's International Year of the Salmon (IYS) Declaration Ceremony**

(October 20, 2018, Yangyang, Gangwon Province)

The Republic of Korea's IYS announcement was made on October 20, 2018, during the Yangyang Salmon Festival in Yanagyang, Gangwon Province, Republic of Korea. In addition to the IYS declaration ceremony, the Korea Fishery Resources Agency (FIRA) announced that it will start securing salmon embryos for the purpose of increasing salmon resources and fishery income and creating social value using salmon resources. Most of the salmon returning to Myungpacchun (the main Korean salmon rivers) this year were release in 2015 (15,000) and 2016 (16,800). After harvesting, end-of-life salmon is provided free of charge to private companies in the biotech and food sectors, which is expected to contribute to salmon industry development and private job creation.

#### **15. Eco-educational Program on Salmon** (late October 2018, Ulsan)

An eco-educational program is being planned for the fall of 2018 by the Taehwa River Eco-Center in Ulsan, Republic of Korea. This outreach activity is especially focused on kids generating knowledge about the ecological importance of Pacific salmon and their spawning behavior and raising the public awareness. The contents and progress of the IYS activities and international cooperation/efforts among the North Pacific Anadromous Fish Commission (NPAFC) member countries, the North Atlantic Conservation Organization (NASCO), academia, and the private sector, including the IYS Information Video, will also be introduced during the program.

Links: <http://taewha.oneh.co.kr/>

### **Russia**

#### **16. Global Fishery Forum & Seafood Expo 2018** (September 15, 2018, St. Petersburg)

There was an opening ceremony for the International Year of the Salmon at the Global Fishery Forum & Seafood Expo 2018, which has been established by the world community of scientists and ecologists and will include a series of events designed to resolve the problems of maintaining global stocks of these types of fish.

The International Year of the Salmon opening ceremony was held on the Forum's third day and was attended by Deputy Minister of Agriculture and head of the Federal Agency for Fishery Ilya Shestakov, NASCO President Jóannes Hansen, NPAFC President Suam Kim, NPAFC Executive Director Vladimir Radchenko, Director of the Russian Research Institute of Fisheries and Oceanography (VNIRO) Kirill Kolochin and Director of WWF Russia Igor Chestin.

The Second Global Fishery Forum & Seafood Expo 2018 took place in St. Petersburg from 13 through 15 September at the Expo Forum Convention and Exhibition Complex. The event was organized by the Federal Agency for Fishery and the operator was the Roscongress Foundation.

Link: [www.fishexpoforum.com](http://www.fishexpoforum.com)

### **The United States**

#### **17. The President's and the People's Fish – The Cultural and Historical Importance of Atlantic Salmon in New England** (October 30, 2018, Boston, MA)

In the Greater Atlantic Region of NOAA Fisheries, the IYS was launched on October 30, 2018 at the New England Aquarium. The event included an opening lecture by Catherine Schmitt and Madonna Soctomah. Catherine Schmitt is from Maine Sea Grant and is the author of The Presidential Salmon, a detailed history about wild Atlantic salmon in Maine. Catherine's book describes how from 1912–1992, the first recreationally caught Atlantic salmon from the Penobscot River was given to the President of the United States. Catherine will highlight Atlantic salmon,

their importance to our cultures, and our efforts to restore them. Madonna Soctomah, Former Passamaquoddy Tribal Representative with the Maine State Legislature and St. Croix International Waterway Commissioner will speak about the cultural importance of Atlantic salmon to the Passamaquoddy Tribe. The IYS political announcement was delivered by Donna Wieting, Director of the NOAA Office of Protected Resources.

Links: <https://www.neaq.org/learn/lectures/>

## Japan

### 18. FAJ Press Release for the Opening of IYS (October 11, 2018, Tokyo, Japan)

The Fisheries Agency of Japan (FAJ) has distributed a press release on "the International Year of the Salmon (IYS)" in conjunction with the IYS opening event in Vancouver, Canada on October 11, 2018. The brief description is followed:

Anadromous salmon migrate widely in the ocean and finally return to their natal river for spawning. They are indispensable creatures in the diverse ecosystems, and closely related with people as important resource for fisheries, provisions and cultures in Japan as well as other countries. However, the abundance of Japanese chum salmon returns has been decreasing in changing environments such as global warming. To review human concerns and future for salmon and enhance international research and technologies for their sustainable conservation and utilization, the North Pacific Anadromous Fish Commission (NPAFC), North Atlantic Salmon Conservation Organization (NASCO) and their member countries will jointly launch "the International Year of the Salmon (IYS)" with focal year in 2019.

The IYS is an international project hosted by two RFMOs: NPAFC and NASCO. As a NPAFC member country, the FAJ will promote IYS activities in cooperation with the Japan Fisheries Research and Education Agency (FRA).

The FAJ press release is available from the following website:

<http://www.jfa.maff.go.jp/j/press/kokusai/181011.html>

### 19. Japanese Website and Poster for IYS (September/December 2018, Japan)

A Japanese website (<http://hnf.fra.affrc.go.jp/iys/index.html>) was set to introduce the IYS program including background, vision, target species, themes, governance, and activities. In addition, IYS poster was printed and distributed to approximately 600 facilities (governments, laboratories, NGOs, educational facilities, fisheries associations, hatcheries, aquariums, museums etc.) throughout Japan.

### 20. Fall Salmon Festival (October 13, 2018, Sapporo, Japan)

The opening of the International Year of the Salmon (IYS) was announced to several thousands of the public who took part in the Fall Salmon Festival, being held in the front square of the JR Sapporo Station, downtown Sapporo, Japan, on October 13, 2018. This annual festival was hosted by the Hokkaido Set Net Fisheries Association with local fisheries associations to promote the consumption of high-quality chum salmon caught in the coastal areas of Hokkaido. Participants were treated with traditional salmon egg bowls and salmon soups. Staffs of the Hokkaido National Fisheries Research Institute (HNFRI) set a booth including posters, flags and a computer quiz program, so that people were educated in the IYS program and associated NPAFC and HNFRI activities for the sustainable conservation of high-seas salmon.

## Other Milestones:

- IYS website launched in October 2018
- IYS social media sites launched in March/April 2018
- IYS Photo Challenge complete in November 2018 (48 photo submissions)

## Appendix D

### North Pacific Steering Committee Meeting Discussion Document #3: International Year of the Salmon Strategic Implementation Plan

#### Preamble

The following is a “living document” outlining a rationale, expected outcomes, example impact measures, ideas for signature projects, status, priorities moving forward and funding opportunities for each theme of the IYS (status of salmon, salmon in a changing salmosphere, new frontiers, human dimension, and information systems, as well as outreach and communication). It is expected that the NPAFC IYS Secretariat will keep this document updated throughout the planning process for the IYS. Discussions with NASCO are underway regarding the potential engagement of Atlantic researchers directly in research planning and contributing to this document. Funding required for projects could be from any number of sources including governments, NGO’s, foundations or private donors. They could be cash or in-kind.

#### LIST OF ABBREVIATIONS

ADFG – Alaska Department of Fish and Game  
DFO – Fisheries and Oceans Canada  
FNFC – First Nations Fisheries Council  
IASRB – International Atlantic Salmon Research Board  
ICES – International Council for the Exploration of the Sea  
IYS – International Year of the Salmon  
NASCO – North Atlantic Salmon Conservation Organization  
NCEAS – National Center for Ecological Analysis and Synthesis  
NGO – Non-governmental organization  
NOAA – National Oceanic and Atmospheric Administration  
NPAFC – North Pacific Anadromous Fish Commission  
PBS – Pacific Biological Station  
PICES – North Pacific Marine Science Organization  
PSC – Pacific Salmon Council  
PSF – Pacific Salmon Foundation  
ROAM – RAFOS Ocean Acoustic Monitoring  
SASAP – State of Alaska’s Salmon and People  
SFU – Simon Fraser University  
UBC – University of British Columbia  
USGS – United States Geological Survey  
UVic – University of Victoria  
UW – University of Washington

## STATUS OF SALMON

### **Theme/Outcome**

The present status of salmon and their environments is understood.

### **Rationale:**

Salmon are a keystone species and iconic indicators of ecological health. However, there is no centralized source of information on the status of salmon and their environment, nor any consistent methodology for reporting and understanding these population and environmental variables. To effectively manage salmon, we must first be able to share the status of salmon and their environments in a consistent manner on an accessible platform. Then we can consider how this differs across watersheds, regions, countries, and across the hemisphere, and we can begin to understand how to sustainably manage salmon at different scales and work towards the resiliency of both salmon and people.

### **Detailed Outcome:**

The International Year of the Salmon (IYS) intends to bring together interested partners from across the salmosphere to create a platform for sharing data regarding the status of salmon and their environments that can be used to inform research, outreach, policy development, and management actions. This platform would be an open-access tool that utilizes different types of knowledge (local, scientific, traditional) to assess the overall status of salmon and their environments across the salmosphere. Furthermore, the IYS seeks to review approaches to assessing the status of salmon and their environments and promote a consistent methodology for measuring and reporting these variables. This would facilitate greater overall understanding of salmon and would allow the status of these species to be more easily tracked into the uncertain future.

### **Example Impact Measures Associated with Outcome:**

- Percent of salmon populations whose status is reported using a consistent convention
- Percent of environmental and salmon data holdings available on an open common platform
- Percent of fisheries management plans informed by information on environmental variability
- Percent of data sets that use consistently collected and reported data on salmon status and environmental variables
- 

### **Signature Projects:**

#### **1. Salmon – Status**

- **Goals/purpose:** Develop common approach to assess and report on the status of salmon including data standards and methods for data collation and assessment.
- **Need/rationale:** Many people are confused about the status of salmon. There is power in the common presentation of status across the hemisphere as a communication tool to move all four major audiences from awareness to action. There is scientific value in comparative data sets to increase the capacity to understand factors behind change.
- **Outcome/impact:** Drawing data into a standardized form will innervate pathways to more rapid assessment of status and fast, clear communication and scientific output. This will facilitate data exploration to generate and critically examine hypotheses about salmon population trends and features. Comparative studies across species, populations, life

history types and stages will be the engine that drives deep understanding of linkages to climate and salmon productivity.

- **Why critical to the overall goals of IYS.** Resilience demands rapid reaction to changing conditions and having a trusted and comprehensive view of the status of salmon is foundational.
- **Budget:** TBD.
- **Potential partners/funders:** Government/Academia, NGOs – Pacific Salmon Foundation, NCEAS, ICES

**Status:** Canada's DFO is hosting a workshop on Salmon Status and Trends in late January 2019 to draw together scientists interested in working with others on representative time series of data and associated meta-data to understand salmon status and trends. The primary goal of this workshop will be to identify a series of legacy datasets and standards associated with major categories of data. Later, a separate workshop will focus on identifying the coastal and high seas climate and oceanographic data that can be linked to salmon data. It is envisaged that these datasets will be the focus of subsequent analytical workshops; additional workshops may concentrate on communication of scientific results to disparate audiences: fellow scientists, general public (press, social media), fisheries and habitat managers, senior decision-makers. Ideally these separate but linked workshops focusing on data, analysis, and communication will take place over the course of IYS.

## 2. Salmon – Riverscape

- **Goals/purpose:** Develop common approach to assess and report on the status of salmon watersheds including data standards and methods for data collation and assessment. A collective review of approaches to assessing the status of river basins and watersheds. There are a wide variety of approaches to assessing the status of watersheds across the salmosphere. New and emerging ideas utilize technology and engage Indigenous Peoples and citizen science. **Hemisphere:** Sharing and documenting best practices can better inform scientists and regulators
- **Need/rationale:** Freshwater environments are increasingly threatened. Understanding the current and future status of salmon requires and understanding of the health of river environments.
- **Outcome/impact:** People understand the condition of aquatic environments that salmon depend upon and this information can inform regulators in a more holistic manner.
- **Why critical to the overall goals of IYS.** Resilience demands rapid reaction to changing conditions and having a trusted and comprehensive view of the status of river systems is foundational
- **Budget:** TBD
- **Potential partners/funders:** Salmon State, SASAP, West Coast Aquatic, Province of BC, USGS, PSF
- **Status:** Project scoping meeting required to bring together DFO (Luedke/Hyatt), West Coast Aquatic (Tawney Lim), Pacific Salmon Foundation, NCEASState of Alaska Salmon and People (SASAP), US and Canadian Ocean Observing System organizations, ONC (interest in data systems to engage citizen science/stream keepers), USGS (Christian Torgersen – has EU contacts), NMFS (Rich Zabel) and potentially NASCO scientists.

## 3. Salmon – Atlas

- **Goals/purpose:** Develop a web-based visualization tool (Atlas) to convey the status of salmon and their environment
- **Need/rationale:** The status of salmon is a complicated story about hundreds of populations that utilize aquatic environments from the top of watersheds thousands of kilometers inland and out to the high seas. An atlas/visualization tool to utilize data from Salmon – Status and Salmon – Riverscape is needed to tell this story to all audience groups.
- **Outcome/impact:** People are fascinated with these iconic fish and people, ranging from general public through to scientists and regulators, want to understand the status of salmon.
- **Why critical to the overall goals of IYS:** Determining a common approach to Status of Salmon is key but communicating it effectively is just as important.
- **Budget:** TBD. Initial scoping could be done by conference call.
- **Potential partners/funders:** Wild Salmon Center has an existing system that could be updated, and the Pacific Salmon Foundation has developed the Salmon Explorer visualization tool.
- **Status:** There is a consensus for the need for this project in the North Pacific Steering Committee (NPSC). The Status of Salmon/Salmon in a Changing Salmosphere Theme Counsel Group to consider. There is a similar project underway in the Atlantic.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
International Year of Salmon (IYS) Workshop on Salmon Status and Trends	January 23–24, 2018	TBD	
Initial Meeting of Working Group for the Pacific Salmon Atlas	TBD	TBD	

## SALMON IN A CHANGING SALMOSPHERE

### **Theme/Outcome:**

The effects of natural environmental variability and human factors affecting salmon distribution and abundance are understood and quantified.

### **Rationale:**

As natural environmental variability, climate change, and human actions continue to alter ecosystems, salmon face an uncertain future. In this time of rapid change, new insights are needed on how these changes will affect salmon to effectively manage what can be controlled and mitigate what cannot. Some effects may be localized but it is very likely there are similar processes occurring across the salmosphere. Thus, communication and collaboration is needed at the salmosphere level. If we can learn how the salmosphere is evolving to better predict changes, we can be adaptive and effective in managing these challenges to improve the resiliency of salmon and the people that depend on them.

### **Detailed Outcome:**

The IYS seeks to bring together researchers across the salmosphere to share findings regarding the effects of the changing environment on salmon, due to both natural variability and human impacts. Through a series of high impact projects, the IYS aims to better understand what challenges salmon will face in the future in order to prepare people, such as Indigenous Peoples, policymakers, and managers, to meet those challenges. Projects such as a series of high seas research cruises in the North Pacific, a framework for identifying bottlenecks across salmon life history stages, and an examination of climate change and future projections of salmon productivity, will allow all concerned stakeholders to be more prepared for the future.

### **Example Impact Measures Associated with Outcome:**

- Percent of management plans informed by future climate change projections
- Number of publications that incorporate/quantify uncertainty
- Percent of stock assessments that include ecosystem level information

### **Signature Projects:**

1. **Likely Suspects Framework** – An accounting approach to identify likely bottlenecks across life history stages of salmon. The Likely Suspects is a framework under development by the Atlantic Salmon Trust that places candidate mortality factors within an overall spatio/temporal framework of Atlantic salmon throughout the smolt migration phase, both freshwater and marine, with a view to quantifying the potential of each factor to influence survival. The principle objective is to quantify the number of salmon that are dying on their initial migration and at sea, in comparison to earlier periods of higher marine survival, and to allocate these “lost” fish to the various known or hypothesized sources of mortality. A workshop was conducted in November 2017 to discuss further development and refinement of the Likely Suspects concept, taking account of previous and on-going related research in the North Atlantic and the wider salmosphere, including the Pacific Basin.

**Hemisphere:** Convergent development of this idea in both basins has resulted in a joint scoping workshop.

STATUS: Convened a scoping workshop in November 2017, final report with recommendations for next steps written. Significant benefits were realized from having joint Atlantic and Pacific representation at the workshop. Agreement was reached that specific follow up tasks would be developing a common language/currency, establishing an operating framework for working together (e.g. meetings/discussion forum) and sharing information to align approaches so that data are comparable. In terms of research

activities:

1. One research proposal is to assess similarities and differences in marine survival/abundance trends across salmon species at hemispherical scale.
2. Similarly, a new research priority will be jointly investigating climate change drivers and impacts on salmon at hemispherical scale.

These research topics would help identify broader scale factors potentially contributing to changes in salmon productivity and are well aligned with International Year of the Salmon (IYS) priorities.

2. **Winter and summer high seas expeditions in the Pacific basin** – There is an opportunity to make significant progress in understanding the marine life history period of Pacific salmon through an intensive coordinated research program in the North Pacific. Large scale winter and summer expeditions utilizing up to five research vessels deployed simultaneously across the North Pacific Ocean has been proposed to NPAFC as an IYS Signature Project. Information, including biological materials for salmon stock identification, data for abundance estimates, and structure of nektonic communities will be collected through the trawl surveys and supplemented by oceanographic, hydrobiological, and trophological studies in the summer-autumn season as well as the wintering period. The objective of these expeditions is to provide estimates of salmon spawning stock recruitment for 3–4 age cohorts of chum and sockeye salmon. These data can then be utilized for fishery forecasting in subsequent years. High seas cruises also represent a tremendous opportunity for outreach (e.g., live streaming). **Hemisphere:** Potential to collaborate on methods related to study of salmon on the high seas including methods and collections.

STATUS: Planning of high seas cruise(s) was discussed at the February 5, 2018 IYS Working Group meeting. It was agreed that the NPAFC IYS-WG would focus on planning for a single cruise in 2019, to test the methodologies, and work towards a multi-vessel series of cruises for 2020 across the North Pacific. The 2019 High Seas Expedition will take place in late February through late March in the Gulf of Alaska aboard the 62m Russian Research Vessel “Professor Kaganovsky”, with scientists participating from all five NPAFC countries. The end-of-winter trawl survey in the Gulf of Alaska will, for the first time, provide a comprehensive understanding of the abundance, condition, country of origin and location of stocks from salmon producing countries. This information is needed to understand how climate and the changing ocean environment affect salmon production. The \$CAN1.2M project has been jointly funded by a combination of government, industry, NGO and private contributions.

3. **Salmon in the Future: Coupling climate and salmon** – A small scoping workshop was convened in June 2018 to bring 15–20 climate and salmon experts together to review the current state of knowledge with respect to the changes in climate driving factors and the underlying mechanisms in the salmosphere and consider the coupling mechanism between these drivers and salmon survival. At this workshop, research topics/projects that would be most likely to make significant improvements in the understanding of climate/salmon interactions and their consequences for salmon management were identified, **Hemisphere:** Salmon populations particularly in the southern regions of their range in the Atlantic and Pacific basins have undergone comparable declines in productivity since the mid-1990s. Collaborative examination of the climate drivers affecting salmon in the past and the future will benefit from joint efforts. ICES and PICES strategic initiative on understanding climate impacts on ecosystems can be a potential mechanism.

**Salmon in the Future: Other topics** – A number of other topics are being explored by IYS partners in the North Pacific that could benefit from hemispheric collaboration, including: 1) the impact of rising sea levels on salmon in coastal and estuarine ecosystems (J. Moore (SFU) and Daniel Schindler (UW) and others with Moore Foundation Funding) 2) the impact of glacier retreat on salmon (J. Moore (SFU) and Daniel Schindler (UW) and others with Moore Foundation Funding). 3) the impact of changing estuarine habitats on salmon—has some interesting linkages to dramatic changes in migrating shorebirds, and 4) development of projections of salmon distribution and productivity—DFO Central and Arctic Scientist has been using Facebook to track movement of Atlantic Salmon into the Arctic (Karen Dunmall). NMFS surveying movement into the western Arctic (Ed Farley).

4. **Aquaculture/wild interactions** – Considerable research is being conducted in both the Atlantic (Licetrack ~ CAD\$1M) and Pacific basins examining the interaction of wild and open-net pen raised salmon with respect to pathogen transfer and the effect of sea lice. **Hemisphere:** Collaboration on this research could expedite increased understanding and implementation of solutions.

STATUS: The research programs in the two basins need to be compared and joint work scoped.

**Previous and Future Events:**

Event	Date	Location	Notes
Likely Suspects Workshop	November 7–9, 2017	Edinburgh, Scotland	
NPAFC-IYS Workshop on Pacific Salmon Production in a Changing Climate	May 26–27, 2018	Khabarovsk, Russia	In conjunction with NPAFC Annual Meeting; Objectives are to: (1) improve knowledge of the distribution, growth and survival of Pacific salmon in the ocean (current status); (2) increase understanding of the causes of variations in Pacific salmon production (mechanisms); (3) anticipate future changes in the production of Pacific salmon and the marine ecosystems producing them (e.g. modelling); and (4) promote IYS activities
Salmon Futures/Climate Coupling Workshop	June 2018	Santa Barbara, California	
Joint Salmon Ocean Ecology Meeting and 2 <sup>nd</sup> NPAFC-IYS Workshop after 2019 NPAFC Annual Meeting	May 18–21, 2019		Emphasis on ‘status of salmon’ and ‘salmon in a changing salmosphere’ themes

**Priorities Moving Forward:**

- 1) Securing research vessels from 5 NPAFC member countries for Pacific high seas cruises in 2020.
- 2) Completing report from Salmon Climate Coupling Workshop.
- 3) NPAFC-IYS Workshop in 2019.

## NEW FRONTIERS

### **Theme/Outcome:**

New technologies and analytical methods are advanced and applied to salmon research. Research is carried out to fill gaps in poorly studied regions of the salmosphere.

### **Rationale:**

With so many recent advancements in technology and analytical methods, it is now possible to use these tools to make major advancements in understanding salmon and how they may be impacted by changing environments. From new telemetric methods of tracking salmon, to the use of environmental DNA, to isotope and otolith studies, there are groups of people across the salmosphere already doing this groundbreaking work. Their efforts can be linked and amplified through the IYS to more rapidly and efficiently realize their development and application to gaps in our understanding.

### **Detailed Outcome:**

The IYS aims to further advances in new/emerging technologies and analytical methods that are immediately available to study salmon and understand their life history patterns and to better manage these species. The IYS seeks to facilitate collaboration between groups across the salmosphere who have similar research objectives and could benefit from developing and sharing new/emerging technology. These collaborations and advancements will enhance the ability, from a local to a salmosphere level, to effectively manage salmon for the resiliency of salmon and people into the future.

### **Example Impact Measures Associated with Outcome:**

- Number of salmosphere-scale collaborative projects focusing on new/emerging technologies
- Number of collections of salmon scales and otoliths that are identified
- Percent of salmon researchers who understand and have access to otolith microchemistry laboratories
- Percent of salmon managers and researchers who understand the potential uses for genomics technologies to conduct genetic stock identification and have access to genomics tools and expertise to assess salmon condition

### **Signature Projects:**

1. **ROAM** - ROAM is an example of a new telemetric tagging method to delineate migratory pathways of salmon at sea and explore causes of marine mortality. The concept is currently being explored by Atlantic researchers out of NOAA Fisheries, Woods Hole Oceanographic Institution, and the Atlantic Salmon Federation. Discussions are ongoing to determine the feasibility of implementing the method in the Pacific. **Hemisphere:** There is interest in this applying this technology in the Pacific.

**STATUS:** In October 2017, the NPAFC hosted a webinar with a presentation by Tim Sheehan to introduce the new acoustic tracking platform to interested participants in the Pacific region. In January 2018, a follow up meeting was held to discuss potential interest and feasibility. These meetings generated several questions from Pacific researchers. A third meeting was organized by DFO on May 30, 2018 to allow Pacific researchers to prioritize their questions and concerns regarding the ROAM technology and its application to Pacific salmon. On June 7–8, 2018, a two-day ROAM workshop was held at the Woods Hole Oceanographic Institute in Woods Hole, MA, to further inform and gauge interest from members of the international salmon tracking community. Approximately 30 people from North America and Europe representing federal and state governments, conservation organizations, consulting companies, universities

and telemetry manufactures attended the two day workshop. Pacific participants at the ROAM workshop included Erin Rechisky (Kintama Research Services, Nanaimo), Richard Dewey (Ocean Networks Canada at UVic), Michael Schmidt (Long Live the Kings, Seattle) and Michelle Rub (NOAA, NWFSC). A report of the workshop was prepared by Erin Rechisky and David Welch for DFO. The authors indicated that the technology is still in the very early stages of development and there may be some challenges to successfully implementing it in the Pacific. Over the next year or two several initial technical results should become available from east coast initiatives (such as the range of the transmitters) that will strongly drive the economics of a successful tracking study. If these results should prove favourable then it might be appropriate to proceed with parallel investigations on the Pacific coast as several aspects of west coast salmon biology coupled with aspects of our geography may make the technology appropriate for use on this coast.

2. **Salmon Genome Map Applied** – Mapping the salmon genome is as significant for salmon as mapping the human genome is for humans. We are all familiar with genetic stock ID tools that while available have been very expensive to apply. New microfluidic (tiny amounts of chemicals) high-throughput sequencers and robots allow us to cost-effectively determine stocks of origin in near-real time to inform research and new approaches to in-season management. Sequencing hatchery brood stock can effectively tag an entire release brood and this Parentage Based Tagging can be used to manage fisheries. eDNA has the potential to allow us to map the distribution and abundance of salmon from simple water samples collected in freshwater and marine environments. New chip technology can tell us what genes are turned on in fish to assess its physiological condition which will inform salmon management and forecasting.

**Hemisphere:** Collaboration among government, academic, and private labs will expedite the development and application of these tools. There is potential for funding for hemispheric-scale research.

STATUS: Had initial discussions with Anita Mueller (Genome BC) and Nathan Taylor (DFO/PBS)—need to convene a small scoping workshop (ICES is holding a special session along a similar line that Nathan is participating in).

3. **Advanced methods in telemetry. New tags and sensor arrays** – In addition to the ROAM technology there are many possible modifications to existing telemetry arrays applied through SalSeaTrack and other initiatives on both coasts such as the Ocean Tracking network. Could gliders and buoys be effectively fitted with sensors? East coast just had a regional telemetry workshop, but we did not connect in time to get Pacific folks out to the meeting. **Hemisphere:** A coordinated hemispheric push could address current limitations.

STATUS: Discussions with IASRB/SAG and IYS Steering Committee to strike a telemetry group.

4. **CSI Salmon - Retrospective analyses of scale and otolith collections** – Studies could link oceanographic data to growth patterns in the North Pacific as well as determine the past distribution of salmon in coastal and high seas using isotope ratios determined using microchemistry. Bone microchemistry to differentiate between stocks, characterize movement, and determine natal origin can be performed on expeditions as well as with historic collections. **Hemisphere:** The laboratory and intellectual capacity required to conduct this work is not universally available. Collaboration among pockets of expertise to refine methods and apply it to collections from both basins is an

expedient use of resources. The project could be framed as a “forensics” project to gain the attention of the public and decision-makers.

STATUS: Dion Oxman (ADFG) prepared to assist in convening a workshop prospectus. Evgeny Pakhomov (UBC) very active in the field and chief scientist for the expedition.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
ROAM Webinar-Pacific Region	October 3, 2017	Online	Video available from NPAFC Secretariat
ROAM Workshop	June 2018	Woods Hole, USA	Interested in attendance from Pacific region

**Priorities Moving Forward:**

- 1) Determine priority for a scoping workshop.

## HUMAN DIMENSION

### **Outcome:**

Communities, Indigenous Peoples, youth, harvesters, scientists and resource managers across the northern hemisphere share knowledge and collaborate in the development of new tools and approaches to restoring managing and sustaining salmon.

### **Rationale:**

Since the wellbeing of salmon and people are inextricably linked, it is important that the IYS considers the human dimensions of our associations with salmon. Salmon are not only an important source of food to many people, they are also culturally significant and an important aspect of many coastal economies. As the global population and demand for salmon rises, while climate change alters ecosystems, there is increased uncertainty around the fate of salmon. Looking to the future, it will be imperative to create tools and frameworks for acting quickly and effectively to manage salmon on multiple levels, from local to hemispheric, so as to increase the resilience of both salmon and people.

### **Detailed Outcome:**

The human dimension of the IYS seeks to involve all interested parties—researchers, managers, policymakers, Indigenous Peoples, harvesters, and the public—in collaborating to increase the resiliency of both salmon and people. The IYS strives to increase resiliency by developing innovative decision-making tools that incorporate multiple types of knowledge (scientific, local, traditional) and input from all stakeholders. Furthermore, by generating new and adaptive solutions to management, through strategies that incorporate multiple scales of governance and adaptive mechanisms that allow for fast action, the IYS seeks to leave a legacy of well-informed decision-makers that can effectively sustain, restore, and manage salmon. By facilitating conversations and collaboration across the salmosphere, people can work together to successfully manage salmon across all levels, from local to hemispheric.

### **Example Impact Measures Associated with Outcome:**

- Percent of fisheries management plans informed by information on environmental variability
- Percent of fisheries and watershed management plans informed by roundtable processes.
- Percent of fisheries management plans that incorporate multiple types of knowledge

### **Signature Projects:**

1. **Deciding to Sustain Salmon (aka Watershed Governance)** – The life history of salmon plays out across a spatial continuum of ecosystems from headwaters of river basins to the high seas. Their persistence demands that humans collectively manage the cumulative impacts of their interactions on salmon and their ecosystems along this same continuum. Collaborative processes to bring diverse interests together to plan activities in watersheds and coastal environments in a holistic manner are in place or being considered throughout the world. **Hemisphere:** There is an opportunity to compare processes throughout the hemisphere and draw attention to best practices. The European Union has a watershed governance pilot in four countries and we will be connecting with several pilot processes on Canada's west coast (i.e., West Coast Aquatic).

STATUS: Prospectus for a workshop has been developed. Mark engaging European Union and BC watershed governance processes.

2. **Development of salmon fishery management systems for a changing world** – Designing a modern salmon management system that draws on multiple types of knowledge (scientific, local, traditional) is prepared for high levels of uncertainty, and respects the needs and rights of Indigenous Peoples. Two symposia are already planned on managing salmon in a changing world, one for Atlantic salmon and a second for chum salmon in Japan. Establish a Human Dimension Theme Counsel Group to scope projects within this outcome.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
Sustainable Management of Chum in Changing Environments Symposium	March 26, 2018	Tokyo, Japan	Spring Annual Meeting of the Japanese Society of Fisheries Science; In order to endorse effective IYS projects, the present symposium will encourage to: (1) comprehend the vision of IYS program; (2) understand the present status of chum salmon populations and their habitats; (3) assess effects of environmental variability on chum salmon distribution and survival; (4) evaluate new research technologies to advance salmon science; and (5) identify future research topics associated with IYS for the forecast of chum salmon distribution and production, and their sustainable management
Workshop on Managing the Atlantic salmon in a rapidly changing environment – management challenges and possible responses	June 2019	Norway	In conjunction with NASCO Annual Meeting; a half-day or two-day symposium to allow for identification of challenges specific to the North Atlantic salmon, to assist in clarifying the role NASCO can play in addressing them in the future and to provide a basis for a major outreach initiative to increase public and political awareness of these challenges
Strategies for Watershed Governance Workshop	March/April 2018	TBD	

**Priorities Moving Forward:**

- 1) Scoping a workshop on strategies for watershed governance—including Nathan Young (UOttawa), FNFC, PSF—Brian Riddell, EU Water Initiative, POLIS—Oliver Brandes at UVic, and Tawney Lem.
- 2) Working with Nathan Young, FNFC, Yukon Panel, Jaime Snook (Goose Bay, Labrador), Gord Sterritt (PSC FN Caucus), Shelley Denny, and Carl McLean (NASCO Commissioner) to connect Indigenous groups in order to document the cultural importance of salmon across the salmosphere.
- 3) Scoping a strategy to define a modern management system—include Jennifer Nener (DFO) and First Nations/Indigenous Peoples connections identified in #2; Raoul and Urawa-san as conveners of management workshops.

## INFORMATION SYSTEMS

### **Theme/Outcome:**

Freely available information systems that house and mobilize historic and current data about salmon and their environment.

### **Rationale:**

Hundreds of organizations across the salmosphere are working on salmon issues but we remain poorly connected and fail to take full advantage of our collective capacity to address common issues. We lack the ability to adequately integrate/analyze and share salmon and related human systems data at all scales. Our data systems no longer match our technological capacity and social inquiry needs. We have the technology to support resilience by rapidly sharing data and intelligence about what we know, collaborative work on what we know we don't know and effectively responding to completely unexpected surprises.

### **Detailed Outcome:**

The IYS seeks to create an open-access information system(s) that will house and mobilize historic, current, and future data on salmon research and management for the entire salmosphere. This system(s) will incorporate multiple types of knowledge (scientific, local, traditional) and will integrate the management side as well. It will facilitate collaboration and data sharing around the salmosphere to enhance our capacity to understand and effectively conserve salmon. This will be one of the most important legacies of the IYS and leverage the collective capacity of the salmosphere to build a resilient future for salmon and people.

### **Example Impact Measures Associated with Outcome:**

- Percent of environmental and salmon data holdings available on open-access information system(s)
- Number of individuals/organizations contributing to the information system
- Number of publications using data that was downloaded from an open access platform
- Number of databases that have international standards applied

### **Signature Projects:**

#### 1. **SalmonNet** –

- **Goals/purpose:** Use cloud-based software tools based on social media platforms that use artificial intelligence to link people, organizations and activities
- **Need/rationale:** A hemispheric inventory of salmon research, management and outreach projects would assist to connect researchers and result in faster transfer of new technologies and methods Static networks tend to fail given the high investment in time and resources required with often limited utility for the user.
- **Outcome/impact:** People are instantly connected to people and activities in the salmosphere that they have an interest in.
- **Why critical to the overall goals of IYS.** Resilience depends on rapid access to people and knowledge and the ability to continuous learn.
- **Budget:** TBD.
- **Potential partners/funders:** NCEAS, Neo4J, Wild Salmon Center, NPAFC has been in discussion with a US company based in Portland, Oregon (<http://www.sitkatech.com/>) that specializes in high level tracking of projects using cloud-based systems NASCO and its International Atlantic Salmon Research Board (IASRB) maintain an inventory of marine salmon projects.

- **Status:** DFO is continuing scoping a small pilot project and reported out at the North Pacific Steering Committee Meeting on February 7, 2018

**2. Salmon – Data Mobilization**

- **Goals/purpose:** Mobilize salmon and related human system data into an open and transparent cloud-based system.
- **Need/rationale:** Salmon and related human system data reside in disaggregated data sets that range from spreadsheets on an individual’s PC to corporate mainframe databases. Clues and answers to large questions lie in composite or connected data. The technology to serve these data are available but the cost of standardizing and collating is staggering so remains unaddressed. This is one of the greatest impediments for almost all IYS outcomes. Artificial intelligence is where the breakthrough will come. Look to “Pull” rather than “push” people. Need incentives including compensation for effort and training for new systems.
- **Outcome/impact:** TBD.
- **Why critical to the overall goals of IYS.** Innovation and answers to fundamental questions will come from integrated data
- **Budget:** TBD.
- **Potential partners/funders:** NCEAS, Neo4J – and their large corporate companies. Oceans Networks Canada and US Marine Data Centers. North Pacific Research Board. ICES and PICES.
- **Status:** Preliminary discussions with NCEAS, Neo4J and independent specialists.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>

**Priorities Moving Forward:**

- 1) Convene scoping team Salmon Data Mobilization from Information/New Frontiers Theme Counsel Group
- 2) Develop a scoping team for SalmonNet from Information/New Frontiers Theme Counsel Group

## OUTREACH AND COMMUNICATION

### **Outcome:**

People understand the value of healthy salmon populations and engage to ensure salmon and their varied habitats are conserved and restored against the backdrop of increasing environmental change (NPAFC/NASCO accepted).

### **Rationale:**

Salmon are very important ecologically, economically, and culturally, yet many people are unaware of the challenges they face and will continue to face into the future. An integral part of conserving salmon includes communicating the value of healthy salmon and healthy ecosystems to the wider public to motivate conservation and management efforts that will ensure the persistence of these keystone species far into the future. With a rapidly changing salmosphere and an uncertain future for these fish, the outreach and communications piece is vital to ensure that we are building resilient futures for salmon and people.

### **Detailed Outcome:**

To disseminate important information on salmon and their environment, the IYS intends to facilitate an international outreach campaign regarding the status and future of salmon in a changing salmosphere. This outreach campaign will reach across the hemisphere to bring important information to not only scientists, policy-makers, managers, and harvesters, but also the public, regarding salmon and the challenges they face. This will be facilitated in multiple and innovative ways, such as through a website, social media, and videos/films, and will be facilitated in part by NGOs across the salmosphere committed to salmon conservation and sustainable management.

### **Example Impact Measures Associated with Outcome:**

- Number of followers on social media sites: Facebook, Twitter, Instagram
- Number of visits to the IYS website
- Number of NGO partners involved in the outreach campaign
- Increase in citizen science involvement
- Number of media outlets reporting on salmon and their habitat
- Number of news stories about the IYS and IYS projects

### **Signature Projects:**

#### **1. Coordinated international awareness campaign to be considered by Pacific and Atlantic**

**NGO's** – NASCO NGO's are prepared to be engaged in the IYS outreach and have requested that they be consulted in advance. Long Live the Kings in Seattle, Washington, has volunteered to lead coordination between Pacific NGOs.

STATUS: An Outreach and Communications workshop was held in March 2018 to develop an IYS communications plan at the hemispheric level. Report written and communications plan are under development.

2. **Media Campaign** – Multiple production companies have expressed interest in collaborating with the IYS to produce various salmon-related media projects. One interested collaborator is the production company behind UNINTERRUPTED (<http://uninterrupted.ca/>), a cinematic spectacle on Pacific salmon that was projected onto Vancouver's Cambie Bridge nightly throughout the 2017 summer, reaching a total of 30,000 people. UNINTERRUPTED producers are exploring the possibility of running the project in Vancouver again in the summer of 2019 and are in talks with NPAFC Secretariat staff to help secure the funding required. Another example is the National Film Board of Canada, with whom there have been initial discussions regarding a short film to be distributed over social media. This short video is currently in the planning phase and will revolve around the "discovery" of salmon by local Vancouverites as they pass through an urban stream after a disappearance that lasted for decades. **Hemisphere:** The production groups are

interested in international scope projects. Uninterrupted producers have been approached by cities such as London, England that are interested in hosting the production in some form. The NFB of Canada is interested in features on salmon that go beyond Canada and are willing to work with us on projects that include the Atlantic. They also have international partners.

STATUS: Follow-up scoping meeting required—potentially the March 2018 workshop noted in 1 above.

3. **Social Media Campaign** – Facebook and Twitterpages will enable the IYS to spread outreach messages and information about the IYS to a wide audience, and specifically targets a younger generation, who are the future scientists, managers, policy-makers, and harvesters. This campaign will be facilitated through the NPAFC and NASCO Secretariats.

STATUS: IYS North Pacific Twitter and Facebook pages launched in March 2018.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
Website Launch	September 2018	Online	<a href="http://yearofthesalmon.org">yearofthesalmon.org</a>
IYS Outreach and Communications Workshop	March 27 & 28, 2018	Edinburgh, UK	Waiting on completion of report and IYS Communications Strategy

## Appendix E

### IYS Theme Council Groups Terms of Reference

1. Four Theme Counsel Groups (TCGs) were established, under the Terms of Reference for the North Pacific Steering Committee (NPSC):
  - Status of Salmon and Salmon in a Changing Salmosphere (TCG-1)
  - Human Dimension (TCG-2)
  - New Frontiers and Information Systems (TCG-3)
  - Outreach and Communication (TCG-4)
  
2. Each Theme Counsel Group shall consist of up to 15 experts, with no more than 3 experts from one country:
  - Members may be drawn from government, university, Non-governmental and private sector organizations.
  - Each TCG member will identify and engage other experts within their own country. The NPAFC Secretariat will maintain a master inventory of experts associated with each TCG from all countries.
  - Each TCG will nominate a Chair and Vice-chair for approval by the CSRS.
  - TCG Chair and Vice-chair positions will normally be filled by one representative from a country in the eastern Pacific and one from a country in the western Pacific. Chairs and Vice-chairs will become members of the NPSC and help facilitate communication among NPSC members to satisfy the TCG mandate.
  
3. The Theme Counsel Groups' mandate is to support the NPSC by:
  - Recommending research and outreach priorities, and outcomes for each theme
  - Proposing/assembling research and outreach plans/projects by theme
  - Reporting status of research and outreach activities by theme

Theme Counsel Group	Canada	Japan	Republic of Korea	Russia	United States
TCG-1: Status of Salmon in a Changing Salmosphere	1.	1.	1.	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
TCG-2: Human Dimension	1.	1.	1.	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
TCG-3: New Frontiers and Information Systems	1.	1.	1.	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
TCG-4: Outreach and Communication	1.	1.	1.	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.

# Appendix F

## North Pacific Steering Committee Meeting Discussion Document #4: Planned and Proposed Activities

### Preamble

The International Year of the Salmon (IYS) is a five-year outreach and research initiative of the North Pacific Anadromous Fish Commission (NPAFC) and the North Atlantic Salmon Conservation Organization (NASCO). The IYS goal is to inspire/motivate/activate a new hemispheric-wide partnership of government, academia, NGOs, Indigenous Peoples, and industry that will drive an intense burst of outreach and research to create a well-informed community of decision-makers who can establish the conditions necessary for the resilience of salmon and people in an uncertain future.

Establishing the conditions necessary for resilience of salmon and people by the end of 2022 is a bold objective, requiring rigor to establish programs, projects, workshops and symposia that will make this possible. A suite of six objectives stated as **OUTCOMES** describe the conditions that when considered collectively will allow us to achieve our **VISION**.

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### IYS OUTCOMES

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<b>Status of salmon</b>	The present status of salmon and their environments is understood
<b>Salmon in a changing salmosphere</b>	The effects of natural environmental variability and human factors affecting salmon distribution and abundance are understood and quantified
<b>New frontiers</b>	New technologies and analytical methods are advanced and applied to salmon research. Research is carried out to fill gaps in poorly studied regions of the salmosphere
<b>Human dimensions</b>	Communities, Indigenous Peoples, youth, harvesters, scientists and resource managers across the Northern Hemisphere share knowledge and collaborate in the development of new tools and approaches to restoring, managing and sustaining salmon
<b>Information systems</b>	Freely available information systems contain historic and current data about salmon and their environment
<b>Salmon outreach and communication</b>	People understand the value of healthy salmon populations and engage to ensure salmon and their varied habitats are conserved and restored against the backdrop of increasing environmental change

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Projects and activities will be sought that are deemed to be high-impact with respect to making significant progress in achieving the five research outcomes and the single outreach outcome. Specifically, we will look for high-impact projects that will significantly address barriers or gaps that have hindered achieving each outcome to this point.

The IYS consists of a planning phase for outreach and research during 2018/19, a focal year in 2019 with outreach and research continuing through the end of 2022. In the Pacific, IYS **Theme Counsel Groups** composed of experts will conduct research planning for the research and outreach outcomes. Workshops with small groups of experts drawn from the Theme Counsel Groups have and will be convened to develop recommendation for his impact projects. The Theme Counsel Groups and IYS staff in the Secretariat will also coordinate the planning of symposia or workshops that will contribute to the research and outreach outcomes. This could for most outcomes be a strategic series of symposia with cumulative learning that builds over the four years and culminates at the wrap-up symposium.

### **Activities in the Pacific Region in 2019**

Table 1 below outlines the planning workshops funded in part by NPAFC while workshops or symposia that will contribute directly to a research or outreach outcome are outlined in Table 2.

*Planned and Proposed Activities for the Pacific Basin*

**Table 1** Workshops and Meetings to plan IYS research activities.

<b>Workshops and Meetings details</b>	<b>Amount Required</b>	<b>NPAFC Budget 2018/19</b>	<b>Funds from Partners</b>	<b>Unfunded</b>	<b>Notes</b>
<p>“Status of salmon” meetings and workshops to discuss planning, will require approximately \$40K for a series of workshops but partners will be sought. DFO is contributing \$20K for an initial workshop to agree on approaches to defining and communication the status of salmosphere (Vancouver BC; January 23–24, 2019). Subsequent workshops partially funded. Further funding will be requested from partners.</p>	\$25 000	\$9 000	\$16 000	\$0	Support activities for the Status of Salmon/Salmon in a changing Salmosphere Theme Counsel Group
<p>“Information Systems” meetings and workshops to discuss planning—salmon intelligence network—Salmon Connect (Vancouver, B.C.; facilitation \$5K, travel \$15K; January 25, 2019). Subsequent workshops TBD.</p>	\$20 000	\$10 000	\$0	\$10 000	Use 10K as seed money to leverage the full amount.
<p>“Human Dimension” meetings for the Theme Counsel Group to conduct planning—small group meetings including Indigenous Peoples, managers, academics (Location TBD; April 2019; facilitation \$5K, travel \$15K)</p>	\$20 000	\$10 000	\$0	\$10 000	First will be a small scoping meeting with ~15 participants.
<p>“New Frontiers” meetings and workshops to discuss planning.</p> <p>(1) Otolith microchemistry (April 2019; Location TBD; \$20K—\$15K travel and \$5K facilitation)</p> <p>(2) eDNA and genomics (June 2019; Location TBD; \$20K—\$15K travel and \$5K facilitation)</p>	\$40 000 \$20 000 \$20 000	\$20 000	\$0	\$20 000	Use 10K as seed money for workshop. Genome BC is interested in partially funding the genomics workshop but requires an application for a grant.
	<b><u>\$105 000</u></b>	<b><u>\$49 000</u></b>	<b><u>\$16 000</u></b>	<b><u>\$40 000</u></b>	

**Table 2.** Workshops/Symposia/Activities to contribute to research and outreach outcomes

<b>Workshops/Symposia/Activities details</b>	<b>Amount Required</b>	<b>NPAFC Budget 2018/19</b>	<b>Funds from Partners</b>	<b>Unfunded</b>	<b>Notes</b>
<b>High seas Winter cruise aboard chartered Russian vessel</b>	\$1.3M	\$0	\$1.3M	\$0	This IYS Signature project has been funded by voluntary contributions from Canada and the Province of British Columbia with the majority provided by NGO's and private donors. This survey of the Gulf of Alaska will be the proof of concept for game changing work linking survival to ocean climate mechanisms in the high seas. Potential for a high profile event when the vessel completes the Cruise in mid March 2019.
<b>The Second NPAFC-IYS Workshop: Salmon Ocean Ecology in a Changing Climate (Portland OR; May 18-20, 2019) will be held in partnership with the Salmon Ocean Ecology Meeting. The focus will be on the New Frontiers theme.</b>	\$51 000	\$11 600	\$38 500 <i>From registration fees</i>	\$900	A public "bridging" event is being planned between the NPAFC meeting and the Workshop. A reception with dignitaries to garner support for the IYS is being developed for one evening during the annual meeting.
<b>Public Bridging Event May 17</b>	\$6 000	\$6 000	\$0	\$0	
<b>"Salmon in a changing salmosphere" meetings and workshops to discuss planning (\$15K travel, \$5K facilitation).</b>	\$20 000	\$10 000	\$0	\$10 000	This will be used to further develop the Likely Suspects Framework, in particulate engagement in ICES'PICES data workshop.
<b>PICES workshop to summarize what was learned during the March research cruise and how to move forward with integrated ocean studies of mechanisms affecting salmon productivity has been approved (October 2019; Victoria B.C.; not part of NPAFC 2018/19 budget).</b>			N/A	\$0	
<b>After initial workshops, looking for support to allow Pacific representatives to travel to subsequent meetings with ICES.</b>					
<b>The Third NPAFC-IYS Workshop (Hakkodate, Japan; Date 2020)</b>	TBD	N/A*			

<b>The Fourth NPAFC-IYS Workshop (City TBD, Republic of Korea; 2021)</b>	TBD	N/A*		
	<b>\$1.37M</b>	<b>\$26 000</b>	<b>\$1.34 M</b>	<b>\$19 000</b>

*Details of Workshops/Symposia/Meetings to be held in the Pacific in 2019.*

*Status of Salmon Workshop #1*

**When:** January 23-24, 2019

**Where:** Morris J. Wosk Centre for Dialogue, 580 W Hasting St., Vancouver BC

**Expertise Required:** Salmon ecologists with experience categorizing temporal and spatial status and trends of salmon; individuals experienced in developing scientific databases; salmon ecologists

**Objectives:**

- Overview case studies used in Pacific and Atlantic basins to categorize temporal and spatial status and trends of salmon. Data sets need not be thoroughly analyzed or detailed but should be examples where data are being used or have the potential to be used to represent status and where there is the potential to learn from further analysis. Case studies should encompass have a range of data quality/quantity examples.
- Propose requirements and standards for different categories of data ranging from poor to excellent that are consistent across species/regions/agencies. These may be linked to spatial and temporal scales for comparisons among species and populations, including levels of aggregation.
- Begin a catalog of salmon data sets, their availability, and the gaps needed to fill in order to achieve specific scientific and management goals.
- Document the requirements for future data assembly projects: data structures (inclusion of metadata), management issues (resourcing, ownership, publication rights), timelines, standards
- Develop plans for a subsequent series of workshops. For instance:
  - describe how targeted data sets might be analyzed;
  - next steps to developing data standards;
  - discuss how we could share analytical methods to test hypotheses arising from these workshops;
  - discuss how new analytical approaches could be more easily and safely applied by biologists who are not professional statisticians or programmers; and
  - identify additional data sets required to address hypotheses about cause and effect.
- Document workshop findings in a report.

*Information Systems Workshop #1*

**When:** January 25, 2019

**Where:** Pacific Salmon Commission, 600-1155 Robson St., Vancouver BC

**Expertise Required:** individuals with experience in information flow and knowledge management; salmon ecologists with experience in data management; experts in graph database technology

**Objectives:** This workshop will focus on the International Salmon Data Laboratory (ISDL) (previously Salmosphere Net) project. ISDL intends to:

- develop tools and workflows for better information flow and knowledge management which will aid in the creation of new best practices.
- Allow for easy sharing of salmon data and metadata, in turn allowing for increased complex analyses
- Deliver examples of workflows from field data to decision support products

- Help salmon biologists take advantage of emerging technology by leveraging the power of new graph-database technology, specifically neo4j – who is a sponsor – and new tools built on neo4j

*Human Dimension Workshop #1*

**When:** April, 2019

**Where:** TBD

**Expertise Required:** Salmon ecologists with community connections; Indigenous peoples; managers; recreational and commercial salmon harvesters; individuals with experience in collaboration and knowledge sharing between diverse groups.

**Objectives:** Small group meeting to plan opportunities for collaboration and knowledge sharing between communities, Indigenous Peoples, youth, harvesters, scientists, and research managers across the Northern Hemisphere. The group will also discuss potential new tools that could be developed to achieve this goal. Approaches to restoring, managing, and sustaining salmon will also be discussed.

*New Frontiers #2 – Otolith Microchemistry Workshop*

**When:** April 2019 – to be confirmed

**Where:** TBD

**Expertise Required:** Salmon ecologists with knowledge / experience with otolith microchemistry; microbiologists.

**Objectives:** New Frontiers will be the main focus of the Second NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate. This workshop will build off the otolith microchemistry related outcomes of that workshop. Leading experts in salmon ocean ecology and otolith microchemistry will come together to discuss the potential for otolith microchemistry as a salmon management tool.

*New Frontiers #1 - eDNA and Genomics Workshop*

**When:** June, 2019 – to be confirmed

**Where:** TBD

**Expertise Required:** Salmon ecologists with knowledge / experience with eDNA and genomics; geneticists; microbiologists.

**Objectives:** New Frontiers will be the main focus of the Second NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate. This workshop will build off the eDNA and genomics related outcomes of that workshop. Leading experts in salmon ocean ecology and eDNA will come together to discuss the potential for eDNA to be used to track salmon when at sea. During the high seas research cruise in March 2019, eDNA samples will be collected, the efficacy and results of these samples will also be discussed.

*Second NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate*

**When:** May 18-20, 2019

**Where:** Embassy Suite by Hilton Portland Downtown, Portland, OR

**Expertise Required:** Salmon ecologists with knowledge/experience related to the objectives below; climate scientists, oceanographers; individuals with knowledge and expertise of integrated information / management systems; salmon ecologists.

**Objectives:** The IYS Workshop will bring together scientists, managers and other stakeholders to consider the current status and future of salmon and their habitats for the conservation of anadromous populations in a changing world. Presenters are encouraged to address one of the following workshop

objectives within the framework of their selected topic session. Workshop objectives include the following:

- Improve current knowledge of the migration, distribution, growth and survival of salmon and their environment in the ocean;
- Increase understanding of the causes of variations in salmon production in a changing climate;
- Anticipate future changes in the distribution and abundance of salmon and their marine ecosystems;
- Develop and apply new technologies and analytical methods to research and management of salmon; and
- Invent integrated information/management systems to support research, sustainable management, and public understanding for the conservation of salmon.

*The Science Of Pacific Salmon Conservation: Foundations, Myths, and Emergin Insights*

**When:** September, 2019

**Where:** Reno, Nevada

**Expertise Required:** Experts in the applied salmon sciences, including: genetics, evolution, ecology, geomorphology, hydrology, oceanography, and climate science.

**Objectives:**

- To distill historical and emerging science to inform salmon conservation and management
- To highlight key foundations and advances in applied Pacific salmon science that are relevant to their conservation and management
- To discuss emerging tools and their application, such as genomics
- To examine emerging evidence for impacts of pressures such as:
  - Ocean competition
  - Climate change
  - Hatcheries
  - Rise of marine predators
- To address common misperceptions in salmon conservation and management
- Collectively synthesis the big ideas in salmon science relevant to their conservation and effective management

*Salmon in A Changing Salmosphere Workshop #1*

**When:** October 19&20, 2019

**Where:** Victoria BC

**Expertise Required:** Oceanographers with experience in complex ocean models; salmon ecologists with knowledge / experience in ocean mechanisms affecting salmon productivity and climate change; researchers with expertise in climatic modelling.

**Objectives:** In conjunction with PICES, this workshop will summarize the outcomes of the March 2019 high seas research cruise and appropriate next steps. The information from the cruise will hopefully be used for integrated ocean studies of mechanisms affecting salmon productivity.

*Salmon in A Changing Salmosphere Workshop #2*

**When:** Late 2019/Early 2020

**Where:** Russia

**Expertise Required:** Oceanographers with experience in complex ocean models; salmon ecologists with knowledge / experience in ocean mechanisms affecting salmon productivity and climate change; researchers with expertise in climatic modelling.

**Objectives:** This workshop will review in detail the outcomes of the 2019 Gulf of Alaska winter research cruise.

*Third NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate*

**When:** 2020

**Where:** Hakodate, Japan

**Expertise Required:** TBD

**Objectives:** TBD

*Fourth NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate*

**When:** 2021

**Where:** Republic of Korea

**Expertise Required:** TBD

**Objectives:** TBD

*Proposed and Planned Events- Pacific Basin*

*Wild Salmon Policy Implementation Plan: From Policy to Action*

**When:** February 23<sup>rd</sup>, 2019

**Where:** Delbrook Community Recreation Centre 851 West Queens Road, North Vancouver, BC

**Objectives:** Workshop to explore how StreamKeepers can help participate in the Wild Salmon Policy Implementation Plan.

*2019 Hokkaido Salmon Conference*

**When:** May 25<sup>th</sup>, 2019

**Where:** Sapporo, Hokkaido, Japan

**Objective:** This is a NGO conference focused on outreach and communication around salmon in Hokkaido. The conference is held only in Japanese.

*World Salmon Forum*

**When:** August 21<sup>st</sup>-23<sup>rd</sup>, 2019

**Where:** Carnation, WA, USA

**Objectives:** The World Salmon Forum is designed to bring together wild salmon conservation groups from around the world to share new policies and measures that will provide for the survival of Atlantic and Pacific salmon, seatrout, and steelhead populations.

*Coho Festival 2019*

**When:** September 8<sup>th</sup>, 2019

**Where:** Ambleside Park, West Vancouver, BC

**Objective:** The Coho Festival is put on by the Coho Society of the North Shore to raise awareness of current and potential threats to the local waterways and salmon fisheries. The event aims to raise funds for the local environmental groups involved in stream protection and salmonid enhancement.

## Activities in the Atlantic Region in 2019

This section outlines the workshops and symposia that have been added to the International Year of the Salmon events page on the website.

### Details of Workshops/Symposia/Meetings to be held in the Atlantic in 2019.

#### *Wild Atlantic Salmon Conference 2019*

**When:** January 22<sup>nd</sup>-23<sup>rd</sup>, 2019

**Where:** Scandic Nidelven, Trondheim, Norway

**Objective:** A scientific conference for scientists, managers, and all others who are interested in new knowledge on Atlantic salmon.

#### *Annual Meeting of the International Commission for the Protection of the Rhine*

**When:** Jan 22<sup>nd</sup>, 2019

**Where:** Koblenz, Germany

**Objective:** In 2019, the annual meeting of the ICPR fish experts about the reintroduction of migratory fish in the Rhine catchment will stand in the light of the International Year of the Salmon. Experts from the countries in the Rhine catchment will share data and experiences on the state of reintroduction of Atlantic Salmon in the Rhine and its tributaries.

#### *Atlantic Salmon Ecosystems Forum*

**When:** Mar 12<sup>th</sup>-13<sup>th</sup>, 2019

**Where:** Hôtel Château Laurier, Quebec City, Québec, Canada

**Objective:** The forum focuses on research and management that improves our understanding of the ecosystem processes that influence riverine, estuarine, and marine habitats. The forum attracts a diverse audience interested in engaging in meaningful discussions pertaining to the past, present, and future of diadromous species science, management, conservation, and restoration, with an emphasis on re-establishing lost biological, physical, and social connections between and among humans, habitats, and fish – particularly salmon.

#### *Tomorrows Management of Baltic Salmon*

**When:** Mar 20<sup>th</sup>-21<sup>st</sup>, 2019

**Where:** Lulea, Sweden

**Objective:** Researchers, decision makers, local and regional fisheries managers as well as the interested and engaged are all welcome to attend. This will be a great opportunity to hear the latest about the future long-term management plan and current status of Baltic salmon as well as new management techniques, the trolling fishing at sea, and latest salmon disease research from experts from Sweden, Canada, Finland, Norway, Germany, Denmark, and Estonia.

#### *Fisheries Management Scotland Annual Conference*

**When:** March 29<sup>th</sup>, 2019

**Where:** National Museum of Scotland, Edinburgh UK

**Objective:** Working with partners in the Missing Salmon Project, the Fisheries Management Scotland Annual Conference will focus on how key pressures on wild salmon are being addressed and prioritized, drawing on international best practice. The discussion will be based around several workshops in which various pressures, and means to address them, will be examined, including salmon farming, renewable energy, predation, hatchery enhancement and invasive species.

*75<sup>th</sup> Annual Northeast Fish & Wildlife Conference*

Special Symposia on Salmon and People in a Changing World

**When:** April 14<sup>th</sup>-16<sup>th</sup>, 2019

**Where:** Groton, CT, USA

**Objective:** This symposium focuses on the International Year of the Salmon initiative to manage wild Atlantic salmon and to raise awareness of what humans can do better to ensure salmon and their varied habitat are conserved and restored against the backdrop of increasing environmental variability.

*NASCO Symposium 2019: Managing the Atlantic Salmon in a Rapidly Changing Environment*

**When:** Jun 3<sup>rd</sup>-4<sup>th</sup>, 2019

**Where:** Scandic Ishavshotel, Tromso, Norway

**Objective:** To mark the International Year of the Salmon, a two-day Symposium will be held ahead of the North Atlantic Salmon Conservation Organization's (NASCO) Annual Meeting. The focus will be on challenges facing the Atlantic salmon and possible responses that can help conserve this precious resource in a rapidly changing environment.

The Symposium is structured under two main themes:

- 1) Climate change and state of the salmon, with scientific overviews being provided on these subjects; and
- 2) Management challenges and solutions.

Perspectives will be provided from several different viewpoints, including managers, scientists, NGOs and Indigenous People. Participation in finding solutions to the many challenges facing this iconic species is encouraged through discussion, the provision of posters and networking during the event's social activities.

*54<sup>th</sup> European Marine Biology Symposium*

**When:** August 25<sup>th</sup>-29<sup>th</sup>, 2019

**Where:** University College Dublin, Dublin 4, Ireland

**Objective:** The social program will provide opportunities to sample the city's famous cultural life and explore the UNESCO Dublin Bay Biosphere.

The Symposium's themes this year are:

- Blue growth

- Rapid change
- Fundamental biological traits
- Movement and redistribution of species

### **Proposed and Planned Events- Atlantic Basin**

#### *4-H Grows Salmon*

**When:** Jan 19<sup>th</sup>-Mar 17<sup>th</sup>, 2019

**Where:** 8487 U.S. 9, Lewis, NY, USA

**Objective:** The 4-H kids will learn about environmental stewardship by taking part in raising salmon from egg to release size.

#### *IYS Maine Kick-Off Event*

**When:** Jan 24<sup>th</sup>, 2019

**Where:** Maine Discovery Museum, Maine, USA

**Objective:** an exhibit from Maine artist Karen Talbot: Maine's River Run Fish, in celebration of the International Year of Salmon. In addition to the art exhibit, the MSF Pop-up Event will include brief presentations on the history of salmon in Maine, the scientific study of Atlantic salmon that NOAA has done (and continues to do), and Karen's work to meld the scientific with the artistic to tell the story of Maine's river run fish, and salmon in particular.

#### *Launch of 'Salmon School'*

**When:** March 17<sup>th</sup>, 2019

**Where:** Mill Big, County Cork, Ireland

**Objective:** A launch and viewing opportunity for the the aquatic and graphic exhibits that will form the basis of this unique new educational facility, at which schools and visitors will be hosted from 1 April 2019.

#### *Laxens år*

**When:** April 2<sup>nd</sup>-3<sup>rd</sup>, 2019

**Where:** Stockholm, Sweden

**Objective:** Two day seminar in the presence of H.M. The King of Sweden Carl XVI Gustaf. This will be hosted by different Swedish Governmental Organizations including the Baltic Salmon Fund. More details to come.

#### *Salmo Albis*

**When:** June 4<sup>th</sup>-5<sup>th</sup>, 2019

**Where:** Bad Schandau, Germany

**Objective:** The event aims to inform the public about the status of the reintroduction of Atlantic salmon into the River Elbe and its tributaries and links various activities relating to the International Year of the Salmon.

*The Two Great Game Fairs*

**When:** June 15<sup>th</sup>-16<sup>th</sup> 2019

**Where:** 5B Woodgrange Rd, Downpatrick BT30 8JE, UK

**Objective:** The intention to have a specially dedicated branded International Year of the Salmon Pavilion at two award winning game fairs (in Northern Ireland and the Republic of Ireland).

## Appendix G

### International Year of the Salmon Wrap Up Symposium Steering Committee Terms of Reference

*Adapted from IYS Opening Symposium Steering Committee Terms of Reference*

1. The NPAFC and NASCO, as the lead organizations, jointly establish the IYS Symposium Steering Committee.
2. The Symposium Steering Committee shall consist of:
  - a) not more than three representatives from each lead organizations, including one representative of the Secretariats of each lead organization, and one representative from any co-covening organization. It would be desirable to have both managers and scientists involved with subject matter for each theme. The Symposium Steering Committee will appoint one Co-Chair from among the representatives of each of the two lead organizations.
  - b) The Symposium Steering Committee may co-opt additional reps with specific expertise to serve on the Symposium Steering Committee as required
3. The Symposium Steering Committee's mandate is to plan for, organize and run an international symposium in 2022 to conclude the IYS consistent with the vision, themes and scopes of the IYS. The Symposium Steering Committee will undertake the following activities:
  - a) agreeing on the dates and venue for the symposium
  - b) developing objectives and the programme, including identifying and inviting keynote (invited) speakers and soliciting contributed papers;
  - c) establishing a web page for registrations;
  - d) seeking sponsors and supporters
  - e) dealing with all financial matters
  - f) making arrangements for publication of the proceedings; and
  - g) other tasks to ensure a well-run, prestigious and well reported symposium
4. Co-chairs of the Symposium Steering Committee, or their designee, will report to the Coordinating Committee on the work of the Symposium Steering Committee.
5. The Symposium Steering Committee will operate by consensus of the lead organizations.
6. Costs incurred by each Symposium Steering Committee member in participating in the Committee's work, including any fees for service, should be borne by the Party appointing the Committee member
7. The Symposium Steering Committee may incur costs, including engaging professional support, in accordance with budgetary provision and spending plans made by the lead organizations or funds raised from other sources and made available to the SSC through the lead organizations. The Executive Director / Secretary of each lead organization shall ensure that the receipt and expenditure of funds are consistent with that lead organization's Financial Rules