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**Report of the 2018 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 2018 International Year of the Salmon North Pacific Steering Committee Meeting**

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

**Keywords:** Collaboration, communication, funding strategy, future, networking, outreach, planning, research

## **Abstract**

This report documents the proceedings of the 2018 meeting of the North Pacific Steering Committee (NPSC) that took place from February 6–7 in Vancouver, Canada, to provide direction regarding the implementation of the International Year of the Salmon (IYS). 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 second 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 that were held over a two-week period in late January/early February 2018. These documents were developed at a Technical Meeting of a subset of CC members NPAFC Secretariat staff in December 2017.

The meeting highlighted continued support for the IYS. There was acknowledgement that the focus of the past year had been on building effective working relationships, and that a concerted effort will now be needed to meet our tight timeline for implementation. Through a series of breakout groups, plenary discussions, and some featured presentations from IYS partner organizations, NPSC participants made progress toward IYS implementation. Participants provided direction on IYS communication and outreach plans, including the website, key messages, social media, opening events/activities, and an outreach planning workshop. There were presentations on proposed IYS signature projects and participants provided feedback on research planning under the IYS themes. The NPSC agreed to move ahead with the Japanese delegation’s proposal of Theme Counsel Groups to be inclusive and efficient in planning IYS activities. 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
COFI	Food and Agriculture Organization’s Committee on Fisheries
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
NPFC	North Pacific Fisheries 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
TINRO	Pacific Scientific Research Fisheries Center in Russia
UBC	University of British Columbia

## **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: 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 second meeting of the NPSC that was held on

February 6–7, 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). This group held a Technical Meeting in December 2017 to develop the discussion documents on the IYS opening event, website, social media, key messages, and research and outreach activities. These documents were then reviewed and edited by the NASC and the CC in late January/early February of 2018. The purpose of the second meeting of the NPSC was to consider these discussion documents, and to review the decisions made at the recent NASC and CC meetings.

## **DAY 1**

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

The 2018 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 9 am on Feb 6, 2018, at the Blue Horizon Hotel in Vancouver, BC, Canada. Welcome addresses were made by Debra Sparrow (Musqueam First Nation) and Carmel Lowe (NPAFC President and Regional Director of Science, DFO Pacific Region). The meeting was attended by 44 people 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).

In a brief introduction, Marks Saunders acknowledged that the NPSC was pared down from the previous meeting; however, it was larger than anticipated reflecting the intention to keep all partners engaged in the process. He also noted that while the NPSC should have preceded the CC meeting it was important to maintain an aggressive timeline for implementation and this was the only timing sequence that would not result in an unacceptable delay for the fall announcements. However, it was noted that the CC was willing to go and back and reconsider some decisions based on the outcome of this meeting.

### **Objectives**

The purpose of the two-day meeting was to convene government, academic, NGO, Indigenous and industry partners to engage in planning towards implementation of the IYS, and to provide an update on the initiative's status. Participants considered proposed communication and outreach plans for the IYS, approaches to IYS 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:

- (1) Develop common understanding among IYS partners of the current status of the IYS.
- (2) Receive direction from IYS partners on major elements of IYS implementation.
- (3) Provide opportunities for IYS partners to network and become knowledgeable of each other's organizations.

### **Update on Status of the IYS**

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 March 2017 NPSC Meeting. Topics addressed included engaging NASCO and the International Atlantic Salmon Research Board (IASRB), the IYS branding process (the first test of the IYS governance structure), website development, scoping workshops and research planning. Progress made during CC, IYS Technical Team and NASC meetings were also briefly

presented.

Activities that have occurred since March 2017 included:

- Completed development of IYS brand, including logos and a slogan
- Developed criteria for use of the IYS logo in research projects, outreach and other activities
- Progress on developing the IYS website through a contract with My Loud Speaker
- Established a cloud-based hub for compilation and sharing of information on IYS activities through Microsoft 365
- Scoping workshops and research planning
  - Likely Suspects Workshop in Edinburgh, Scotland in November 2017—Atlantic and Pacific participation
  - Expedition planning meetings – January 2018 and February 2018
  - RAFOS Ocean Acoustic Monitoring (ROAM) project webinar (October 2017) and follow-up discussion (January 2018) for Pacific researchers
  - Development of IYS Prospectuses by Theme Discussion Document
- Collaboration with the IASRB on developing research priorities at the hemispheric level
- Meeting of NPAFC and NASCO Presidents, Carmel Lowe and Jóannes Hansen, in Nanaimo, BC in August 2017
- Visit from Korean government delegation in October 2017
- IYS CC met four times by teleconference and once in-person
- A subset of the IYS CC held a technical meeting in mid-December 2017 and developed the discussion documents for this meeting
- The North Atlantic Steering Committee met once in late January 2018
- At the face-to-face IYS CC meeting, members reached consensus on steps to completion for the following agenda items: key messages, website, social media ideas, outreach and research planning, options for the IYS launch and revisions to IYS Symposium Steering Committee (SSC) Terms of Reference

### **Consideration of IYS Communication and Outreach Plans—key messages, website, and social media**

NPSC participants were given a brief introduction to three topics—IYS key messages, the website, and social media—by Mark Saunders and Madeline Young (IYS Coordinator for the North Pacific). Then participants were separated into breakout groups to discuss these topics. These groups were led by Mark Saunders, Madeline Young and Caroline Graham (NPAFC Intern) (Table 3). Following breakout group discussions, the group leaders presented the main points from each of the three topics and a short concluding discussion followed.

#### *Key Messages*

Mark Saunders presented the key messages and alternatives in Discussion Document #1 (Appendix C), an outcome of the IYS Technical Committee Meeting. He also provided an update on the outcome of the CC meeting with regards to these key messages. The CC agreed that the key messages were generally appropriate but that they could benefit from professional revisions. There was agreement that the IYS needed a stronger problem statement as well as a statement that referenced climate change. The CC

determined that they would hire a contractor to finalize the key messages by the end of February 2018. Given this information, the NPSC members were then asked to go into breakout groups to discuss the following questions:

- Are these the key messages we want to convey about the IYS?
- Is there anything missing? Think about the big picture and not the specific phrasing.
- Is the approach suggested by the Coordinating Committee to hire a communications professional appropriate?

NPSC participants agreed to the general approach for key messages recommended by the CC, including working with a communications professional to develop these messages by the end of February, adding a statement on climate change, strengthening the “strapline” statement (short easily-remembered phrase) describing the IYS, and evaluating the use of the term ‘salmosphere’. The NPSC recommended that the key messages refer to ‘salmon’ rather than ‘wild salmon’ to be inclusive of hatchery salmon. Since over 30% of the salmon in the North Pacific are estimated to be of hatchery origin, excluding them from the scope of the IYS would be problematic. The NPSC also requested that the Coordinating Committee Technical Team and communications contractor consider the following suggestions when refining the key messages:

- Tailor the messages to the four audiences identified by NASCO (knowledgeable public, general public, politicians, children/youth).
- Build a story with the key messages (start with why we should care about salmon, problem statement, solution statement, etc.).
- Strengthen the description of goal(s) and elaborate on the issues/benefits of salmon.
- Emphasize how the IYS is different from what has been done in the past including the scale of connection and collaboration.
- Consider the appropriateness of key messages for fundraising.

### *Website*

Madeline Young presented the website map from Discussion Document #2 (Appendix D) to the NPSC and noted that there is a contract in place with My Loud Speaker. She then provided an update on the outcomes of the CC meeting regarding the website, which were as follows:

- Agreement that the website map was appropriate
- Need to ensure website’s capacity to gather and make available data for events and projects
- Make the website available as soon as possible and certainly by July COFI event
- Issues flagged regarding support for the website over the life of the IYS and beyond

The NPSC members then were divided into breakout groups to discuss the following questions:

- Do NPSC members agree to the general framework of the website?
- Is there anything missing?
- Are there comments or additions to the points raised during the CC meeting?

There was agreement on the general approach for the website recommended by the CC, with a request to the Coordinating Committee Technical Team to consider the following suggestions in the development of the website:

- Adding a page for sponsors/donors on website
- Consider how data will be served as the IYS develops — will it be hosted on the IYS website or externally?
- Consider where products like publications will be posted
- Consider a newsfeed page that is linked to the IP address. This would allow posts from other countries to be highlighted, making the website relevant to non-English speaking people.
- Consider how to monitor who is using the IYS logo

### *Social Media*

Madeline Young presented the social media goals and example posts for the IYS, which were provided in Discussion Document #3 (Appendix E). The goals of using social media to communicate the IYS are as follows:

- Increase IYS website traffic – social media can be used to increase IYS website traffic by directing users to the website.
- Increase IYS awareness – as the IYS is a relatively new initiative and completely new to social media, social media could be used to increase awareness. If social media users are unable to recognize what the IYS is, the initiative will have little impact.

The CC agreed that Pacific and Atlantic basins can both use the common Facebook template and can consider their own configuration of Facebook pages. NPAFC proposed to have an NPAFC IYS Facebook page, but individual parties could still have their own social media sites. NASCO will simply have individual country sites and a Twitter feed to push people to the website. NPSC members were asked for any ideas about the Pacific Facebook page(s) and other social media sites that should be considered.

There was general agreement with the approach proposed by the CC where each basin and country can consider Facebook pages using the same template and no joint NPAFC/NASCO Facebook page will be used. There was minimal interest from NPAFC member countries in having separate social media sites by country. It was agreed that the NPAFC will have one joint Facebook page for the IYS run by the IYS Secretariat. There was also interest in using Twitter, and potentially other forms of social media, in the Pacific basin.

### **Overview of the Ocean Networks Canada**

Ryan Flagg, Observatory Support Engineer, provided an overview of Ocean Networks Canada (ONC). ONC is based in Victoria, BC, but does work all over Canada, and even internationally. They are a non-profit society that is an initiative of the University of Victoria and funded almost entirely by the Canadian government. It is one of Canada's major science initiatives with core science objectives. ONC is most well-known for their ocean observatories, such as NEPTUNE and VENUS, both located off the coast of British Columbia. They also do a lot of work with big data and how to collect, store, and make data accessible. Education and outreach, with regards to their research, is also a component of their work. Other functions include ocean safety, such as providing timely alerts of dangerous events, marine mammal studies, deep sea forensic investigations, and many more. ONC will be working with our High Seas Expedition planning group to consider how their expertise may assist us in developing highly integrated data collection and communication systems across vessels participating in the expedition.

## **Consideration of IYS Communication and Outreach Plan—activities and timeline over the next year—Part One**

Sarah Robinson, NASCO Assistant Secretary, gave a brief overview of the Terms of Reference that are being developed for the workshop on IYS outreach that will be hosted by NASCO and is scheduled for late March 2018. The location is to be determined but would likely be in Belgium or Scotland. The idea of the workshop is to bring together communication expertise and develop strategies and implementation plans to reach four audiences: the knowledgeable public, the general public, politicians, and children/youth. Individuals who would be interested in participating in this workshop need to be identified quickly since the timeline is short. The idea is to have around 30 participants plus presenters who would also facilitate sessions. A draft terms of reference document will be available the week following the NPSC meeting and will be circulated to the NPSC for final comments.

NPSC participants offered feedback on the planned outreach workshop. Overall, participants felt that the objectives for outreach and the goals of the workshop should be clarified. The workshop should also have diverse representatives present. People who belong to the target audiences, or who have significant experience interacting with the target audiences, should be included in this workshop. Furthermore, whoever is going to implement outreach over the course of the IYS should be present for the workshop. It was suggested that fundraising be discussed and perhaps funders could be considered as a fifth audience. NPSC members were asked to consider who would be interested in going to this workshop and could contribute valuable insight from the Pacific basin. Mark Saunders asked NPSC members to contact him as soon as possible with the names of interested participants. While some travel funding will be available from NASCO, it will be limited, and Committee members are asked to consider sources of funding to ensure there is strong participation from the Pacific.

Following this discussion, Mark presented some examples of outreach idea for the IYS, including:

- Exhibits at natural history museums, aquaria, etc.
- Themes and sessions relating to salmon at the annual conferences of international fisheries organisations (e.g. American Fisheries Society, Fisheries Society of the British Isles)
- Development of curriculum packs for schools
- IYS Declarations relating to commitments to salmon conservation, research and Management in the legislative bodies of NPAFC and NASCO Parties/jurisdictions
- Production of information packs or templates to be adapted by Parties/jurisdictions on specific issues
- Art, music, cultural displays, chef demonstrations, etc.

NPSC participants were asked for feedback and additional outreach ideas, and they suggested the following:

- Partnering with science-based documentary companies like NOVA or National Geographic to produce a documentary
- Create a short video series and have different episodes on different topics
- Create a postal stamp for the IYS
- Have an IYS presence at Capitol Hill Ocean Week in Washington, DC, USA
- Standing Committee on Fisheries and Oceans (Canada) could hold an IYS hearing
- Recruit celebrities or well-known and well-liked government officials to endorse the IYS

- Encourage people to organize a lobby day and talk to politicians
- An organized “salmon run” race
- 50 salmon events across the hemisphere
- UNINTERRUPTED screenings in other countries
- Curriculum development for schools
- Similar events to the Olympic torch run across the world, but with salmon

The suggestions from the NPSC will be collated and sent to the IYS outreach workshop in late March.

### **Consideration of IYS Communication and Outreach Plan— activities and timeline over the next year—Part Two**

The NPSC considered the outcome of the CC meeting with regards to the launch of the IYS. The CC decided that the opening events would be as follows:

- Announcement of the IYS during a side event at the FAO COFI (Food and Agriculture Organization Committee on Fisheries) Meeting in July 2018
- Ministerial announcements by country during the same time in October 2018
- Opening events across the salmosphere (specific day/week following the ministerial announcements)

With this in mind, the NPSC was asked to form breakout groups to consider if this was an appropriate strategy for the launch of the IYS and what the launch might look like, specifically in the North Pacific. There was general agreement on the CC approach to the IYS launch, and the urgency of contacting ministers from NPAFC member countries was stressed. The NPSC asked that the CC Technical Team consider the following suggestions with respect to the opening events in 2018:

- The COFI side event should raise awareness of the upcoming IYS, specifically at high levels of government, but should not overshadow the ministerial announcements and opening events later in the fall
- Announcements should be as cohesive as possible, and they should consider a simultaneous webcast and/or press release
- Ministerial announcements should be able to be modified based on the country
- Ministerial announcement events could be more powerful with the presence of others at the event (such as youth, Indigenous People, fisherman, etc.)
- Annual or regular events related to salmon that occur during the fall within each country should be used to highlight the IYS
- Opening events should highlight the cultural aspect of the IYS as well through music, dance, art, etc.

With regards to the IYS launch in the North Pacific, it was noted that there are annual or regular salmon events that take place in the member countries during the fall. For example, in Sapporo, Japan there is a fall salmon festival, and Korea and Russia also have salmon festivals around this time. NPSC members from countries in the eastern Pacific were concerned about their abilities to host specific IYS opening events, but the salmon events that are already scheduled can be leveraged to introduce the IYS.

## Wrap-up of Day 1

Mark Saunders concluded the meeting and noted that the main points from the meeting today 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:

#### *Key messages*

- Agreed to general approach for key messages recommended by CC to work with a communications professional including:
  - Develop the key messages with a deadline for the end of February
  - Include a statement regarding climate change
  - Strengthen the “strapline” statement describing what the IYS is
  - Evaluate the use of the term “salmosphere”
- Recommend that the messages refer to “salmon” rather than “wild salmon”. Over 30% of the salmon in the North Pacific are estimated to be of hatchery origin so excluding them from the scope of the IYS would be problematic.
- Request that the Coordinating Committee Technical team consider the following suggestions in refinement of the key messages:
  - Tailor the messages to the four audiences identified by NASCO
  - Build a story with the key messages (start with why we should care about salmon, problem statement, solution statement, etc.)
  - Strengthen the description of goal(s) and elaborate on the issues/benefits of salmon.
  - Emphasize how the IYS is different from what has been done in the past including the scale of connection and collaboration
  - Appropriateness of key messages for fundraising

#### *Website*

- Agreed to general approach for website recommended by CC including:
  - Completion of website as soon as possible, but at the latest by the end of June
  - Ensure project and event pages are interactive
- Request that the Coordinating Committee Technical team consider the following suggestions in development of the website:
  - Page for sponsors/donors on website—to be addressed in sponsorship discussion paper
  - Consider how data will be served as the IYS develops—hosted on the IYS site or externally?
  - Consider where products like publications will be posted
  - Consider a newsfeed page that is linked to the IP address. People in Russia could have Russian postings highlighted—this could make the IYS website relevant for non-English speaking countries

- Concern over ability to filter who is using the IYS logo was raised—a logo usage document has been produced and will be circulated.

### *Social media*

- General agreement with approach proposed by CC whereby each basin and country can consider Facebook pages using the template and no joint NPAFC/NASCO Facebook page will be used
- Agreed that North Pacific should develop a North Pacific IYS Facebook page
- There was minimal interest in having separate social media sites by country
- Agreed to use Twitter and lay claim to #YearoftheSalmon

### *Outreach Workshop*

- The outreach/engagement workshop proposed by NASCO was endorsed as an important workshop for the IYS
- A draft TOR which will include workshop objectives and deliverables will be available early next week and will be circulated to the Steering Committee for comment—two days during the last week of March held either in Brussels or Edinburgh
- Recognized that while there will be some travel funding available from NASCO it will be limited and Committee members are asked to consider sources of funding to ensure we have strong participation from the Pacific
- Request that Steering Committee members provide by February 16:
  - An indication of their organizations interest in actively engaging in planning and and/or participating in the workshop
  - Suggestions for possible participants and their ability to provide travel funding

### *Outreach Ideas*

Many good ideas were brought to the table, including but not limited to, a salmon run, 50 salmon events, simultaneous webcast, salmon stories, UNINTERRUPTED screenings, curriculum development for schools, etc. These will be included in the meeting report and will be made available for the workshop.

### *Opening Event*

- General agreement with regards to CC approach including:
  - COFI announcement
  - Ministerial announcements – coordinated over a 24–48 hour period in October 2018
  - Opening events in countries around the hemisphere
- Process for engaging ministers from NPAFC member countries will need to begin immediately – IYS Working Group can develop timeline and materials
- Request that the Coordinating Committee Technical Team consider the following suggestions with respect to the opening events in 2018:
  - Suggest the COFI event be carefully planned to raise awareness of the pending IYS but not overshadow the ministerial announcements later in the fall
  - Suggest the announcements be as cohesive as possible (e.g. simultaneous webcast/press release)
  - Suggest the announcement events could be more powerful with the presence of others at the event (such as youth, Indigenous People, fisherman, etc.) – it is understood that who is present is more important than what is said
  - Should plan to amplify announcements with social media, website

- Should take advantage of existing events in the countries for the IYS launch

NPSC participants were asked for any additional comments or corrections on these points. A brief discussion followed about the use of the term “salmosphere” with conflicting opinions about whether it should be used to promote the IYS or not. It was agreed that a communications expert should be consulted. NPSC participants generally agreed that the use of the term “wild salmon” excludes hatchery salmon, which is not favorable, and the phrasing of the key messages should be reconsidered.

### **Overview of the Pacific Salmon Foundation**

An overview of the Pacific Salmon Foundation (PSF) was presented by Brian Riddell, President and CEO. The PSF was founded in 1987 as a charitable non-governmental organization to support Pacific salmon in British Columbia and Yukon in Canada. It has an annual budget of around \$9–10 million CAD and offers grants to community-based salmon conservation projects. The PSF works to fundraise money in order to advance scientific research related to salmon and their habitats, and to support education and outreach about salmon. They host nine community events every year where they raise, on average, \$800,000 CAD per year. It is now the largest environmental organization dedicated to the conservation and restoration of Pacific salmon and their habitats.

PSF has funded a wide variety of projects, such as the screening of the UNINTERRUPTED film in Vancouver, Pacific Salmon Explorer (data visualization tool), the Salish Sea Marine Survival Program, the Strategic Salmon Health Initiative, and many more. The heart of PSF is the stream restoration program, with around 345 stream keeper groups in British Columbia. Brian discussed the abilities of PSF to plan and host an opening event in Vancouver for the IYS, in conjunction with Long Live the Kings, based in Seattle, Washington. There have been some initial discussions about using the Jack Poole Plaza in downtown Vancouver to have an IYS opening event for the Pacific basin, or potentially just for Canada and the United States. In conclusion, this demonstrates the ability of NGOs, like PSF, to facilitate and conduct large scale projects, similar to the IYS, through partnerships and fundraising.

### **Approaches to IYS Networking— SalmonNet, symposia and workshops**

Jim Irvine, a Research Scientist at DFO, gave a presentation on DFO Salmon Net, a network of DFO staff who work on salmon that is being developed as a means of connecting people and activities to improve collaborations. A recent survey of DFO staff identified clear differences among job types in terms of people’s interest in collaboration. The IYS theme ‘Status of Salmon’ was highly rated by enhancement staff and research scientists in terms of collaborative potential, ‘Salmon in a Changing Environment’ was highly rated by scientists but few others, ‘New Technologies’ was not highly rated, ‘Connecting Salmon to People’ was highly rated by only managers, while ‘Information Systems’ was highly rated by Technical staff and Biologists. With respect to individual topics independent of themes, ‘Field Data’, ‘Data Analysis’, and ‘Better Science Communication’ were rated relatively highly by all job types, illustrating the importance of improving collaboration in areas concerned with information and data flow. Jim is working with Scott Akenhead who is developing a software system known as RoundTable<sup>™</sup> that they suggest can be used to connect DFO staff across Canada who work on salmon. This system, once developed and tested, could potentially be used to connect people working on salmon from across the hemisphere. Identifying and improving connections among people with similar interests should result in new and improved partnerships that ultimately would improve our ability to manage salmon in an uncertain future.

Shigehiko Urawa, Researcher at the Japan Fisheries Research and Education Agency, gave a presentation on an upcoming local IYS symposium in Tokyo, Japan on the Sustainable Management of Chum Salmon in Changing Environments. It will occur on March 26, 2018 during the 2018 Spring Annual Meeting of

the Japanese Society of Fisheries Science. The keynote presentation will be from Dick Beamish, Scientist Emeritus at DFO, about the IYS and international cooperation to understand Pacific salmon production. This keynote will be followed by 14 oral presentations, in three sessions, and then a panel discussion. The registration is free and the workshop will be open to the public. Shigehiko Urawa explained the upcoming First IYS Workshop on Pacific Salmon Production in a Changing Climate, which will take place immediately following the NPAFC Annual Meeting in Khabarovsk, Russia from May 26–27, 2018. The program includes 3 keynote, 25 oral, and 9 poster presentations for five IYS themes, as well as a panel discussion to identify research priorities and international cooperation for the IYS initiative. He also noted that the Second NPAFC-IYS Workshop is expected to take place in Portland, Oregon just after the NPAFC Annual Meeting, which is scheduled from May 13–17, 2019. There was a question raised about whether Chinese scientists could be invited to present at the NPAFC-IYS Workshop in May 2018, but it was agreed that a lack of funding would make this difficult.

### **Japanese Proposal: IYS Theme Counsel Groups**

Shigehiko Urawa presented the Japanese IYS-WG delegation's Draft Terms of Reference for Theme Counsel Groups to be established for each of the five IYS themes: status of salmon, salmon in a changing salmosphere, new frontiers, human dimension, and information systems (Appendix F). This proposal arose over concerns that there were few representatives from Asian countries involved in the planning and development of IYS research projects to date. There was support for the proposal of Theme Counsel Groups from the NPSC with some suggested modifications. It was recommended that three groups be established, instead of five, in order to streamline the development of signature projects. It was proposed that 'status of salmon' and 'salmon in a changing salmosphere' be combined into one Theme Counsel Group, as well as 'new frontiers' and 'information systems'. The proposal for Theme Counsel Groups was approved to be discussed in further detail during the IYS-WG meeting the following day.

### **IYS Research Planning in the North Pacific—Status of Salmon, Salmon in a Changing Salmosphere, Likely Suspects Framework, High seas expedition**

Mark Saunders began the session by reviewing the International Year of the Salmon Prospectuses by Theme Discussion Document (Appendix G). He noted that this document is still a draft but that in order to move ahead as quickly as possible with research planning, several key projects have already been identified for each theme. Preliminary discussions with the IASRB in the Atlantic basin have determined that there is significant overlap between the identified potential IYS signature projects and IASRB research priorities. There were no comments or questions from NPSC participants.

Jim Irvine gave a presentation on the "Likely Suspects" Workshop on Atlantic Salmon Mortality at Sea that took place in Edinburgh, Scotland from November 7–9, 2017. Jim, along with Sue Grant (DFO), Kim Hyatt (DFO), Michael Schmidt (Long Live the Kings), and Brian Wells (National Marine Fisheries Service), attended this workshop and represented the Pacific basin. The Likely Suspects Framework is an accounting process designed to identify and quantify mortality factors within an overall spatial/temporal framework throughout the salmon life cycle. The overall objective is to quantify the potential of each factor to influence survival. There was an acknowledgement that declines seen in Atlantic salmon populations are similar to those of many coho, sockeye, Chinook, and even year-returning pink salmon and steelhead in the southern portion of their range in the eastern North Pacific, as well as masu salmon in the western North Pacific. The workshop participants saw value in connecting across the hemisphere to tackle the issues associated with declining salmon populations. Many viewed it as a valuable learning opportunity to have diverse researchers present and agreed that Pacific researchers should continue to be involved in this initiative.

Evgeny Pakhomov, Director of the Institute for the Oceans and Fisheries at UBC, then presented a

preliminary cruise plan proposal for February–March 2019 in the Gulf of Alaska. There is very little information on salmon residing in the North Pacific Ocean during the winter months and one of the original IYS ideas was to coordinate a series of international research cruises across the North Pacific Ocean to study salmon in the high seas. So far, Dick Beamish has fundraised approximately \$1 million CAD, from NGOs, private donors and government agencies, to charter one Russian research vessel (*PROFESSOR KAGANOVSKY*) for February–March 2019 to conduct research in the Gulf of Alaska. Right now, a small technical team is planning the details of this single cruise with the possibility of coordinating a series of international cruises in 2020.

The research conducted on the cruise would likely include the following activities:

- Characterize physical and biological conditions of the high seas Pacific salmon habitat in the Gulf of Alaska
- Identify the abundance, distribution, biological status of Pacific salmon in the Gulf of Alaska
- Collect data on salmon basic biology as well as samples for stock identification, estimation of growth rate, condition, energy density, food supply and predators
- Assess the applicability of integrated survey methods for: (a) testing hypotheses on the regulation of Pacific salmon mortality during the winter high seas period; and (b) improvement of fisheries forecasting
- Conduct Pacific salmon tagging using electronic data storage tags and disk tags (if logistically permitted)

The preliminary biological sampling plan includes the following activities:

- CTD water bottle sampling for nutrients, oxygen, POM, microplankton, e-DNA, etc.
- Plankton samples (mesozooplankton): size fractionated, used for composition, abundance and biomass measurements on board
- The second plankton net will be stored and delivered to UBC for further calorimetric, isotopic analysis and other tracer elements analyses
- Macroplankton and micronekton composition, size, abundance and biomass, and tracer (stable isotopes, fatty acids, C/N, DNA, calorimetric) analyses
- Fish biology, size dependent stomach contents (usually in 10 cm intervals) from each trawl processed at sea; a subset is frozen for further detailed lab analyses
- Prey items will be identified to the lowest taxonomic level possible, counted and their weights measured
- For stock identification, genetic tissue (adipose fin) will be preserved with 99% ethanol
- Scale and otolith samples will be collected from each fish
- Ample amount of muscle tissue will be collected for various analyses (stored in the deep freezer)

Following the presentation, there were some questions raised by NPSC participants. One participant asked whether trawling for 24 hours would bias the results since some stations would be sampled at night and others during the day. It was agreed that this should be taken into consideration. Another question raised was about the depth of the trawls. The trawl depth will likely have to be adjusted as the cruise progresses. There was a consensus among NPSC participants that more than one year of data would be desirable.

## **IYS Research Planning in the North Pacific—New Frontiers, Human Dimension, Information Systems, ROAM concept**

Caroline Graham, NPAFC intern, gave an overview of the RAFOS Ocean Acoustic Monitoring project, also known as the ROAM project. This is a novel concept for salmon tracking currently being developed by a few Atlantic researchers, including Tim Sheehan (National Marine Fisheries Service), Simon Thorrold (Woods Hole Oceanographic Institute), and Jon Carr (Atlantic Salmon Federation). The concept proposes using existing SOFAR (Sound Fixing and Ranging) technology to track salmon in the high seas; however, it works in reverse so that instead of drifting tags emitting ‘pings’, which are identified by moored receivers, drifting tags identify ‘pings’ emitted from moored sound sources. Some advantages of this new method include increased ability to accurately track salmon through their entire marine phase, the enhanced potential for basin-level collaboration, its overall cheaper price tag, and its great potential for a wide variety of research projects. In October 2017, the NPAFC Secretariat hosted a webinar with a presentation by Tim Sheehan for interested participants in the Pacific, and a follow-up discussion in January 2018. While this approach is still in the development stage, there is a great amount of interest from both the Atlantic and Pacific basins to explore the use of this technology. A small workshop will be hosted by Tim Sheehan in Woods Hole in March 2018 to further explore this concept, with Pacific researchers expected to attend. There was a question raised about whether fish consumed by predators confound the tag signals and whether tags will affect behavior of the fish and/or decrease their chances of surviving. These points have previously been brought up by Pacific researchers and have been compiled into a report that will be sent to the project developers for the workshop in Woods Hole in March 2018.

### **Discussion of Current Budget and Funding Strategies**

Mark Saunders facilitated a discussion on the current budget and funding strategies. He highlighted that the approach to funding the IYS is two-pronged. There is funding to support operations of the IYS Secretariat and then funding to support IYS projects, from governments, NGOs, academia, and business. The IYS Secretariat has been operating on a limited budget that has been supported by the NPAFC, with additional contributions from the Canadian and US governments as well as the University of British Columbia. The projected costs for 2018/2019, heading into the focal year of the IYS, are about \$443,500 CAD, and there are no firm commitments from the parties. A second year of funding from Canada under a Partnership agreement will be available subject to DFO approval based on performance during this fiscal year. This estimation only includes the budget to “keep the lights on” for the IYS, and does not include funding for signature projects. It was noted that last year a similar budget was proposed, but it had to be pared down considerably. This did not allow money for many IYS scoping workshops. Furthermore, a lot of time and energy this year was devoted to building relationships across the hemisphere and making the IYS operational, but there was recognition that a lot needs to happen very quickly, since the 2019 focal year is approaching.

NPSC participants raised a number of questions about the budget and funding strategies. A question was asked about where the IYS planning workshops will be happening and NASCO’s role in these workshops. Discussions with the IASRB on research priorities and planning have very recently begun and there is hope that NASCO will take on some of the planning workshops and the cost that comes along with this. It was clarified that some workshops/activities will be Pacific-focused, while others will be international in scope. For example, a genomics workshop could be very international in scope and of interest to a wide range of researchers. It was agreed that the workshops needed to be focused in order to be productive. There were also questions about how the IYS should be presented to potential funders. There was agreement that it needs to be clarified exactly how the IYS is going to make an impact. This information needs to be on brochures and pamphlets with the goals and key messages. The NGOs want to help with fundraising, but they are unsure about where to start.

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

Mark Saunders summarized the major points of day 2 of the NPSC meeting, which included agreement on the development of Theme Counsel Groups, exposure to IYS signature project ideas, a presentation on the Pacific Salmon Foundation, 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 some urgency moving forward into the focal year, especially in terms of finding the funding to make the IYS a reality and to carry out signature projects. While it was acknowledged that the IYS would involve considerable effort and resources, it was agreed that it is a valuable idea and worth the investment. Now the work is in the details and there are lots of tasks to move forward on, such as developing the key messages, planning scoping workshops, advancing signature projects, and developing fundraising strategies. Several participants stated that they learned a lot from the meeting and would go back to their respective organizations/institutes to determine how they could help moving forward.

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**

### *Key messages*

- Agreed to general approach for key messages recommended by CC to work with a communications professional including:
  - Develop the key messages with a deadline for the end of February
  - Include a statement regarding climate change
  - Strengthen the “strapline” statement describing what the IYS is
  - Evaluate the use of “salmosphere”
- Recommend that the messages refer to “salmon” rather than “wild salmon”. Over 30% of the salmon in the North Pacific are estimated to be of hatchery origin so excluding them from the scope of the IYS would be problematic.
- Request that the Coordinating Committee Technical team consider the following suggestions in refinement of the key messages:
  - Tailor the messages to the four audiences identified by NASCO
  - Build a story with the key messages (start with why we should care about salmon, problem statement, solution statement, etc.)
  - Strengthen the description of goal(s) and elaborate on the issues/benefits of salmon.
  - Emphasize how the IYS is different from what has been done in the past including the scale of connection and collaboration
  - Appropriateness of key messages for fundraising

### *Website*

- Agreed to general approach for website recommended by CC including:
  - Completion of website as soon as possible but at the latest by late June
  - Ensure project and event pages are interactive
- Request that the Coordinating Committee Technical Team consider the following suggestions in development of the website:
  - Page for sponsors/donors on website—to be addressed in sponsorship discussion paper
  - Consider how data will be served as the IYS develops—hosted on the IYS site or externally?
  - Consider where products like publications will be posted
  - Consider a newsfeed page that is linked to the IP address. People in Russia could have Russian postings highlighted—this could make the IYS website relevant for non-English speaking countries
- Concern over ability to filter who is using the IYS logo was raised—a logo usage document has been produced and will be circulated.

### *Social media*

- General agreement with approach proposed by CC whereby each basin and country can consider Facebook pages using the template and no joint NPAFC/NASCO Facebook page will be used
- Agreed that North Pacific should develop a North Pacific IYS Facebook page
- There was minimal interest in having separate social media sites by country
- Agreed to use Twitter and lay claim to #YearoftheSalmon

### *Outreach Workshop*

- The outreach/engagement workshop proposed by NASCO was endorsed as an important workshop for the IYS
- A draft TOR which will include workshop objectives and deliverables will be available early next week and will be circulated to the Steering Committee for comment—two days during the last week of March held either in Brussels or Edinburgh
- Recognized that while there will be some travel funding available from NASCO it will be limited and Committee members are asked to consider sources of funding to ensure we have strong participation from the Pacific
- Request that Steering Committee members provide by February 16:
  - An indication of their organizations interest in actively engaging in planning and and/or participating in the workshop
  - Suggestions for possible participants and their ability to provide travel funding

### *Outreach Ideas*

Many good ideas were brought to the table, including but not limited to, a salmon run, 50 salmon events, simultaneous webcast, salmon stories, UNINTERRUPTED screenings, curriculum development for schools, etc. These will be included in the meeting report and will be made available for the workshop.

### *Opening Event*

- General agreement with regards to CC approach including:
  - COFI announcement

- Ministerial announcements—coordinated over a 24–48 hour period in October 2018
- Opening events in countries around the hemisphere
- Process for engaging ministers from NPAFC member countries will need to begin immediately— IYS Working Group can develop timeline and materials
- Request that the Coordinating Committee Technical team consider the following suggestions with respect to the opening events in 2018:
  - Suggest the COFI event be carefully planned to raise awareness of the pending IYS but not overshadow the ministerial announcements later in the fall
  - Suggest the announcements be as cohesive as possible (e.g. simultaneous webcast/press release)
  - Suggest the announcement events could be more powerful with the presence of others at the event (such as youth, Indigenous People, fisherman, etc.) —it is understood that who is present is more important than what is said
  - Should plan to amplify announcements with social media, website
  - Should take advantage of existing events in the countries for the IYS launch

*Approaches to IYS Networking—SalmonNet, symposia and workshops*

- A networking tool for staff who work on salmon known as RoundTable<sup>™</sup> is being developed by DFO that potentially could be expanded to connect salmon researchers and others working on salmon across the hemisphere
- A local IYS symposium on the Sustainable Management of Chum Salmon in Changing Environments is scheduled to occur on March 26, 2018 in Tokyo, Japan
- The First NPAFC-IYS Workshop on Pacific Salmon Production in a Changing Climate is scheduled to occur from May 26–27, 2018 in Khabarovsk, Russia directly following the NPAFC Annual Meeting
- The Second NPAFC-IYS Workshop is expected to take place in Portland, Oregon just after the NPAFC Annual Meeting, which is scheduled for May 13–17, 2019

*Japanese proposal: IYS Theme Counsel Groups*

- Agreed to form at least three Theme Counsel Groups under the IYS themes to plan and develop IYS signature projects
- Agreed to combine ‘status of salmon’ and salmon in a changing salmosphere’ themes into one Theme Counsel Group, as well as combine ‘new frontiers’ and ‘information systems’

*IYS Research Planning in the North Pacific*

- Pacific IYS Secretariat staff and IASRB representatives are just beginning discussions on overlapping research priorities and research planning
- The “Likely Suspects” Workshop on Atlantic Salmon Mortality at Sea had both Pacific and Atlantic participation and this diversity was viewed as valuable
- A single vessel high seas research cruise is being planned for February–March of 2019 in the Gulf of Alaska, with the potential for a multi-vessel international survey in 2020
- There is significant interest from the Atlantic and Pacific basins in the RAFOS Ocean Acoustic Monitoring (ROAM) project as a novel way to track salmon through the ocean phase of their life cycle

*Discussion of Current Budget and Funding Strategies*

- Projected costs for 2018/2019 for the IYS Secretariat functions, excluding funding signature projects, are \$443,500 CAD—the parties will be considering funding sources
- There is a significant amount of fundraising that needs to be done and the IYS should consult professionals in this matter
- Clear objectives and goals need to be established in order to attract funders

**Table 1.** Participants of the 2018 International Year of the Salmon North Pacific Steering Committee Meeting Agenda (February 6-7, 2018, Vancouver, BC, Canada), listed in alphabetical order by last name. All participants attended both days, with the exception of Sue Grant and Michael Schmidt, who only attended the second day, and Mark Glyde, who only attended the first day.

	<b>Name</b>	<b>Role</b>	<b>Organization</b>	<b>Country</b>
1	Luke Anderson	NPSC Member	Simon Fraser University	Canada
2	Hal Batchelder	NPSC Member	PICES	Canada
3	Richard Brodeur	NPSC Member	NMFS	USA
4	Pavel Emelin	NPAFC Intern	NPAFC Secretariat	NPAFC Secretariat
5	John Field	NPSC Member	Pacific Salmon Commission	Canada
6	Ryan Flagg	Participant	Ocean Networks Canada	Canada
7	Mark Glyde	Participant	N/A	USA
8	Caroline Graham	NPAFC Intern/Rapporteur	NPAFC Secretariat	NPAFC Secretariat
9	Sue Grant	IYS-WG Member	DFO	Canada
10	Rae Hull	Participant	UNINTERRUPTED	Canada
11	Jim Irvine	IYS-WG & NPSC Member	DFO	Canada
12	Ha Na Kim	IYS-WG Member	Korea Fisheries Resources Agency	Korea
13	Ju Kyoung Kim	IYS-WG & NPSC Member	Korea Fisheries Resources Agency	Korea
14	Suam Kim	IYS-WG Member	Pukyong National University	Korea
15	Carmel Lowe	NPAFC President; NPSC Member; CC Member	DFO/NPAFC	Canada
16	Deana Machin	NPSC Member	First Nations Fisheries Council	Canada

17	Mike Matylewich	NPSC Member	Columbia River Inter-tribal Fish Commission	USA
18	Megan McPhee	NPSC Member	University of Alaska Fairbanks	USA
19	Doug Mecum	NPSC Member; CC Member	NMFS	USA
20	Igor Melnikov	IYS-WG & NPSC Member	TINRO-Center	Russia
21	Anita Mueller	NPSC Member	Genome BC	Canada
22	Jennifer Nener	NPSC Member	DFO	Canada
23	Dion Oxman	IYS-WG & NPSC Member	ADFG	USA
24	Eygeny Pakhomov	NPSC Member	University of British Columbia	Canada
25	Jeongseok Park	NPAFC Secretariat; NPSC Member	NPAFC Secretariat	NPAFC Secretariat
26	Vladimir Radchenko	NPAFC Secretariat; NPSC Member	NPAFC Secretariat	NPAFC Secretariat
27	Brian Riddell	NPSC Member	Pacific Salmon Foundation	Canada
28	Sarah Robinson	Participant	NASCO	UK
29	Shunpei Sato	IYS-WG Member	Japan Fisheries Research and Education Agency	Japan
30	Mark Saunders	NPAFC Secretariat; IYS-WG Chair; NPSC Chair; CC Co-Chair	NPAFC Secretariat	NPAFC Secretariat
31	Michael Schmidt	Participant	Long Live the Kings	USA
32	Craig Stephen	NPSC Member	Canadian Wildlife Health Cooperative	Canada
33	Kengo Suzuki	IYS-WG & NPSC Member	Japan Fisheries Research and Education Agency	Japan
34	Shigehiko Urawa	IYS-WG Member; NPAFC-IYS Workshop Co-chair	Japan Fisheries Research and Education Agency	Japan
35	Brian Wells (called in)	NPSC Member	NMFS	USA

36	Jacques White	NPSC Member	Long Live the Kings	USA
37	Madeline Young	NPAFC Secretariat; IYS Coordinator	NPAFC Secretariat	NPAFC Secretariat
38	Aleksandr Zavolokin	NPSC Member	North Pacific Fisheries Commission	Russia

**Table 2.** 2018 International Year of the Salmon North Pacific Steering Committee Meeting agenda (February 6-7, 2018, Vancouver, BC, Canada).

<b>Tuesday, February 6—Day 1</b>	
8:30 – 9:00	Morning coffee and tea
9:00 – 10:15	Welcome, agenda review, and introductions First Nations welcome, NPAFC welcome, roundtable introductions
10:15 – 10:30	Update on status of the IYS
10:30 – 10:45	Break
10:45 – 12:00	Consideration of IYS communication and outreach plan—key messages, website, social media
12:00 – 1:00	Lunch
1:00 – 1:20	Overview of Ocean Networks Canada—Ryan Flagg, Observatory Support Engineer
1:20 – 2:30	Consideration of IYS communication and outreach plan – activities and timeline over the next year – Part One
2:30 – 2:45	Break
2:45 – 4:00	Consideration of IYS communication and outreach plan – activities and timeline over the next year – Part Two
4:00 – 4:15	Wrap-up of Day 1
<b>Wednesday, February 7—Day 2</b>	
8:30 – 9:00	Morning coffee and tea
9:00 – 9:10	Welcome and review of Day 1
9:10 – 9:30	Overview of Pacific Salmon Foundation—Brian Riddell, CEO
9:30 – 10:30	Approaches to IYS networking—SalmonNet (Jim Irvine), symposia and workshops
10:30 – 10:45	Break
10:45 – 11:05	Japanese proposal: IYS Theme Counsel Groups
11:05 – 12:00	IYS research planning in the North Pacific—Status of Salmon, Salmon in a Changing Salmosphere, Likely Suspects Framework, high seas expedition
12:00 – 1:00	Lunch

1:00 – 2:00	IYS research planning in the North Pacific—New Frontiers, Human Dimension, Information Systems, ROAM concept
2:00 – 2:30	Discussion of current budget and funding strategies
2:30 – 2:45	Concluding roundtable
2:45 – 3:15	Wrap-up and next steps

**Table 3.** 2018 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	Madeline Young	Caroline Graham
<b>Participants</b>	Luke Anderson	Richard Brodeur	Sue Grant
	Hal Batchelder	Mark Glyde	Suam Kim
	John Field	Jim Irvine	Deana Machin
	Rae Hull	Ju Kyoung Kim	Doug Mecum
	Ha Na Kim	Mike Matylewich	Igor Melnikov
	Camel Lowe	Ryan Flagg	Jennifer Nener
	Megan McPhee	Anita Mueller	Dion Oxman
	Sarah Robinson	Evgeny Pakhomov	Vladimir Radchenko
	Shunpei Sato	Jeongseok Park	Craig Stephen
	Michael Schmidt	Brian Riddell	Shigehiko Urawa
	Aleksandr Zavolokin	Kengo Suzuki	Jacques White

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# **Appendix A**

## **Annotated Agenda for the North Pacific Steering Committee Meeting**

*February 6 & 7, 2018 | Vancouver, B.C.*

*Location: Blue Horizon Hotel, 1225 Robson Street*

*Hosted by: North Pacific Anadromous Fish Commission*

*(Tel: 604-775-5550, Email: secretariat@npafc.org)*

*Meeting Chair: Mark Saunders*

### **Tuesday, February 6, 2018**

9:00 am – 4:15 pm: NPSC Meeting Day One

Lunch provided by NPAFC

Two 15-minute refreshment breaks with coffee available throughout the day

Dinner reservation – information will be provided at a later date

### **Wednesday, February 7, 2018**

9:00 am – 3:15 pm: NPSC Meeting Day Two

Lunch provided by NPAFC

One 15-minute refreshment break with coffee available throughout the day

### **Meeting Objectives**

- (1) Develop common understanding among IYS partners of the current status of the IYS.
- (2) Receive direction from IYS partners on major elements of IYS implementation.
- (3) Provide opportunities for IYS partners to network and become knowledgeable of each other's organizations.

### **DAY ONE**

(1) 8:30 – 9:00

**Morning coffee and tea**

(2) 9:00 – 10:00

**Welcome, agenda review and introductions – Mark Saunders**

- First Nations welcome (Debra Sparrow); NPAFC welcome from Dr. Carmel Lowe, NPAFC President
- Roundtable introductions
- Review of the agenda and meeting objectives
- Review of NPSC Terms of Reference

(3) 10:00 – 10:30

**Update on the status of the IYS – Mark Saunders**

- Review of activities since March 2017
- Description of the work by the IYS technical team that met in Gloucester, MA, USA, in December 2017
- Overview of the outcomes of the IYS North Atlantic Steering Committee and the IYS Coordinating Committee Meetings conducted in London, UK, prior to this meeting

- (4) 10:30 – 10:45 **Break**
- (5) 10:45 – 12:00 **Consideration of elements for an IYS communications and outreach plan – tools and products (introductory presentation, breakout groups to discuss each point below, plenary discussion)**
- Key messages for the IYS (see [Discussion Document #1](#))
  - Options for an IYS website map based on previous feedback from the North Atlantic Steering Committee and the Coordinating Committee (see [Discussion Document #2](#))
  - Options for using social media as part of the outreach program to communicate the IYS (see [Discussion Document #3](#))
- (6) 12:00 – 1:00 **Lunch**
- (7) 1:00 – 1:20 **Overview of Ocean Networks Canada and its current work – Ryan Flagg**
- (8) 1:20 – 2:30 **Consideration of elements for an IYS communications and outreach plan – activities and timeline over the next year – Part One**
- Consider possible approaches for planning IYS outreach at the salmospheric level, including the aims and content of an outreach-oriented scoping workshop to convene before the end of March to bring together NGOs, NASCO and NPAFC to identify possible outreach activities that can be undertaken at the local, regional, and hemispheric levels (see [Discussion Document #4](#))
- (9) 2:30 – 2:45 **Break**
- (10) 2:45 – 4:00 **Consideration of an IYS communications and outreach plan – activities and timeline over the next year – Part Two**
- Consider and resolve possible options for launching the IYS and identify questions that remain moving forward (see [Discussion Document #5](#)) (introductory presentation, breakout groups, plenary discussion)
- (11) 4:00 – 4:15 **Close and wrap-up of Day One**

## **DAY TWO**

- (1) 8:30 – 9:00 **Morning coffee and tea**
- (2) 9:00 – 9:10 **Welcome and review of Day One**
- (3) 9:10 – 9:30 **Overview of the Pacific Salmon Foundation and its current work, including the Salish Sea Initiative – Brian Riddell, CEO Pacific Salmon Foundation**
- (4) 9:30 – 10:30 **Approaches to IYS Networking**
- Consideration of a process for collaborating on symposia and workshops during the IYS and beyond to maximize exchange of information and people across the salmosphere
  - Discussion of the potential for an online collaboration tool – introductory presentation on DFO SalmonNet by Jim Irvine

- (5) 10:30 – 10:45      **Break**
- (6) 10:45 – 11:05      **Discussion of Japanese proposal for IYS Theme Counsel Groups**
- (7) 11:05 – 12:00      **Consideration of IYS research planning in the North Pacific – Part One**
- Consideration of the IYS Prospectuses by Theme (Discussion Document #6)
  - Update on progress for research planning under the IYS outcomes Status of Salmon and Salmon in a Changing Salmosphere
  - Overview of the Likely Suspects Framework by Jim Irvine, Brian Wells and Michael Schmidt
  - Update on the High Seas Expedition by Evgeny Pakhomov
  - Input from participants on the development of funding strategies and next steps
- (8) 12:00 – 1:00      **Lunch**
- (9) 1:00 – 2:00      **Consideration of IYS research planning in the North Pacific – Part Two**
- Update on progress for research planning under the IYS outcomes New Frontiers, Human Dimension, and Information Systems, including an overview of the ROAM concept
  - Input from participants on the development of funding strategies and next steps
- (10) 2:00 – 2:30      **Collective discussion on current budget and funding strategies – anything we have overlooked**
- (11) 2:30 – 2:45      **Concluding roundtable**
- (12) 2:45 – 3:15      **Wrap-up and next steps**

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

#### **DAY ONE**

#### **(3) Update on the status of the IYS – Mark Saunders**

*Review of activities since March 2017, including a description of the work by the IYS technical team that met in Gloucester, MA, USA, in December 2017*

Since the spring 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, North Pacific Coordinator, and Caroline Graham, NPAFC Intern). Caroline Graham, a marine biologist originally from Nashville, Tennessee, USA, joined the NPAFC Secretariat as an intern in September 2017 and has been a strong addition to the North Pacific IYS team. George Iwama left the IYS initiative to become the President of Quest University in Squamish, B.C., Canada. Prior to leaving, George completed a submission to Canada's Natural Sciences and Engineering Research Council for a C\$40M initiative called CoastNet, a Coastal Community Sustainability Network, which if funded, will provide access to research funds to address IYS priorities for Pacific and Atlantic salmon, including the Human Dimension.

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 North Atlantic Steering Committee (NASC) will have met immediately before the Coordinating Committee on January 30 & 31, 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 Gloucester, MA, USA, in mid-December 2017 to develop detailed discussion documents to inform and expedite the work of the Steering Committees and the Coordinating Committee. These documents will be reviewed during the NPSC Meeting and will have also been reviewed at the NASC and Coordinating Committee Meetings. This burst of activity is expected to set the stage to put the IYS on track to complete planning for a launch in the fall of 2018 and a focal year for outreach and research in 2019. The following activities have been addressed, or will soon be addressed, in upcoming meetings:

- 1) **Develop an IYS brand (logo, slogan and messages) and guidelines for its use;** The work on the logo and slogan was completed and accepted at the Fourth Meeting of the Coordinating Committee in September 2017. Key messages were developed by the Coordinating and Steering Committees in January/February 2018 ([Discussion Document #1](#)).
- 2) **Develop criteria for use of the IYS logo in research projects, outreach and other activities;** This work was completed and accepted at the Fourth Meeting of the IYS Coordinating Committee in September 2017.
- 3) **Develop, maintain and possibly host IYS web pages, possibly including templates for use by participants in the IYS;** A joint statement of work was developed and accepted at the Third Meeting of the IYS Coordinating Committee in March 2017 and a contract is in place with a Vancouver company, My Loud Speaker. The actual structure of the website has been challenging to agree on and a discussion document with a proposed layout was developed at the technical meeting that will be considered by the Coordinating and Steering Committees in January/February 2018 ([Discussion Document #2](#)).
- 4) **Facilitate the identification of research priorities and review of research proposals at a salmosphere level, recognizing that most IYS research is expected to be at a regional/RFMO or party/jurisdiction level;** Discussions are underway between NPAFC, the International Atlantic Salmon Research Board and its Science Advisory Group regarding a procedure to identify research priorities and coordinate research at the salmosphere level. This may require additional considerations after the Coordinating Committee Meeting on February 1 & 2, 2018.
- 5) **Facilitate the IYS international symposia through the Symposia Steering Committee;** The NPSC, NASC and Coordinating Committee have received a discussion document to consider options for planning the opening event and subsequent symposiums ([Discussion Document #5](#)). This will be linked to a research planning approach and changes to the terms of reference for the Symposium Steering Committee are being considered.
- 6) **Establish a hub for compilation and sharing of information on IYS activities;** A cloud-based Microsoft Office 365 work environment has been established to facilitate sharing information between committee members.
- 7) **Establish procedures of reporting and report to lead organizations;** An IYS Governance/Terms of Reference document was completed and agreed to at the Third Meeting of the Coordinating Committee.

In August 2017, the NPAFC President, Carmel Lowe and the NASCO President, Jóannes Hansen, met in

Nanaimo, BC, Canada, with the aim of advancing the partnership of their organizations to implement the IYS. The meeting and associated visits to fisheries and scientific sites throughout southern BC included both formal and informal exchanges between the Presidents. A considerable amount of the informal exchanges emphasized the vast amount of potential synergies that exist between the two RFMOs and the Presidents agreed to seek additional opportunities to determine how they might capitalize on these synergies to the mutual benefit of both organizations. The Presidents confirmed the commitment of both NPAFC and NASCO to work collaboratively on the IYS initiative and agreed that the focus of the partnership would be at the salmosphere level on activities in either the Pacific, Atlantic or Baltic regions that would add value to the efforts of the IYS. They also recognized that there could be benefits from improved exchanges among scientists and managers working in all regions of the salmosphere.

In October 2017, staff assisted with a Canadian tour by a Korean government delegation that included researchers and executives from universities and government agencies as well as a film crew. Staff participated in a day spent at a Qualicum hatchery on Vancouver Island, where there were stimulating exchanges of information regarding hatchery practices and research projects related to high seas salmon. Interviews were also conducted by the film crew for an IYS segment to be aired on Korean television.

A major emphasis of the workplan proposed for 2017/18 was to hold workshops to plan high-impact projects to reach the stated outcomes for the five research themes, as well as outreach. Progress on this part of the workplan will be discussed on Day Two.

*Overview of the outcomes of the IYS North Atlantic Steering Committee and the IYS Coordinating Committee Meetings that were in London, UK, prior to this meeting*

Key outcomes of the IYS North Atlantic Steering Committee Meeting (that will have met on January 30 & 31, 2018), and IYS Coordinating Committee Meeting (that will have met on February 1 & 2, 2018) will be presented.

#### **(5) Consideration of elements for an IYS communications and outreach plan – tools and products (introductory presentation, breakout groups to discuss each point below, plenary discussion)**

An introductory presentation will be given by Mark Saunders on options that have been considered for an IYS communications and outreach plan by the IYS technical team, as well as the NASC and Coordinating Committee at their January/February meetings. Break-out groups will then be formed to discuss the three topics listed below, followed by a plenary discussion.

- 1) *Key messages for the IYS* – See “Discussion Document #1: DRAFT Key Messages”.
- 2) *Options for an IYS website map based on previous feedback from the North Atlantic Steering Committee and the Coordinating Committee* – See “Discussion Document #2: DRAFT Options for IYS Website Map”.
- 3) *Options for using social media as part of the outreach program to communicate the IYS* – See “Discussion Document #3: DRAFT Using Social Media to Communicate the IYS”.

#### **(8) Consideration of elements for an IYS communications and outreach plan – activities and timeline over the next year – Part One**

*Consider possible approaches for planning IYS outreach at the salmospheric level, including the aims and content of an outreach-oriented scoping workshop to convene before the end of March that will bring together the NGOs, NASCO and NPAFC to identify possible outreach activities that can be undertaken at*

*the local, regional, and hemispheric levels* – See “Discussion Document #4: DRAFT Concepts for Planning Related to Outreach and Research Activities as Part of the IYS”. NASCO funds may be available to convene an outreach planning workshop before March 2018. Due to the limited time available to plan such a workshop, the location and date will likely be decided prior to the NPSC Meeting. The nature of such a workshop will also be discussed at the January/February NASC and Coordinating Committee Meetings. An overview of these discussions and any decisions made will be provided.

#### **(10) Consideration of an IYS communications and outreach plan – activities and timeline over the next year – Part Two**

*Consider and resolve possible options for launching the IYS and identify questions that remain moving forward* – See “Discussion Document #5: DRAFT Options for Launching the IYS”. An introductory presentation will be given by Mark Saunders on the status of planning for the launch of the IYS in the fall of 2018, which will also have been discussed at the NASC and Coordinating Committee Meetings on January 30 & 31 and February 1 & 2, 2018, respectively. Breakout groups will then be formed to discuss various options for the launch event(s), followed by a plenary discussion to summarize the outcomes of the discussions from the breakout groups.

### **DAY TWO**

#### **(4) Approaches to IYS Networking**

*Consideration of a process for collaborating on symposia and workshops during the IYS and beyond to maximize exchange of information and people across the salmosphere*

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. As an example, symposia with similar objectives are being convened in Norway and Japan to increase understanding of managing chum and Atlantic salmon, respectively, in a changing world. Ideally, the symposia organizers would collaborate on the design of the sessions and synthesize results from these and other similar symposia to provide an answer to the question of how to manage salmon in a changing future. The same approach can be applied to accumulate knowledge over the course of the IYS to address IYS outcomes.

In terms of integrated planning for workshops and symposia, it was suggested during the technical meeting in December 2017 that NPAFC and NASCO could re-task the Symposium Steering Committee (SSC) to collaborate on symposia and workshops planned over the course of the IYS. The SSC could also be tasked with organizing a closing symposium. This would ensure that activities are not duplicated unnecessarily, and symposia organizers collaborate on how they can highlight lessons learned during the IYS closing symposium.

The technical team made some suggested revisions to the SSC’s Terms of Reference and submitted it for consideration by the Coordinating Committee during their meeting on February 1 & 2, 2018 in London. The outcome of this discussion will be presented, and a plenary discussion will follow on the potential for further collaboration on symposia and workshops during the IYS and beyond.

There are also potential benefits of sharing the workshops and symposia talks with a broader audience by recording or live-streaming the events. IYS staff are currently working with the organizers of the Salmon Ocean Ecology Meeting, to be held in Newport, Oregon, from February 27–March 1, 2018, to organize a test of some recording and streaming methods.

*Discussion of the potential for a “SalmosphereNet” – online collaboration tool*

Similar issues are faced by salmon across the salmosphere, but there is minimal communication between Pacific and Atlantic researchers and managers. Dr. Jim Irvine will give a presentation on a project currently underway by Fisheries and Oceans Canada (DFO) to build an online network to connect people working on salmon-related issues across Canada. DFO is also testing cloud-based software tools, based on social media platforms, that use artificial intelligence to link people, organizations and activities. Static networks tend to fail given the high investment in time and resources required with often limited utility for the user. There is interest to expand this network to the salmosphere to facilitate the rapid connection of researchers and managers with common interests. The potential for a “SalmosphereNet” will be considered in plenary discussion.

**(7) and (9) Consideration of IYS research planning in the North Pacific – Part One and Part Two**

*Update on progress for research planning under the IYS outcomes, including an overview of the Likely Suspects Framework by Jim Irvine, Brian Wells and Michael Schmidt, an update on the high seas Expedition by Evgeny Pakhomov, and an update on ROAM*

A major emphasis of the workplan proposed for 2017/18 was to hold workshops to plan high-impact projects to reach the stated outcomes for the five research themes, as well as outreach. Unfortunately, full funding was ultimately not available, and we have proceeded to plan four of the original eight workshops, including a workshop on climate. A prospectus for the climate coupling workshop is in the final stages and the workshop will be held in April/May 2018. We have worked to plan as much as possible for the unfunded themes using emails and conference calls. A 25pp. “living document” (Discussion Document #6: IYS Prospectuses by Theme) summarizing the desired outcome for each theme, the rationale, possible projects and funding sources has been developed for consideration by the NPSC, the IYS Working Group, and the Coordinating Committee. Work and progress has been made on signature projects including:

- North Pacific High Seas Expedition: This IYS signature project presents an opportunity to make significant progress in understanding the marine life history period of Pacific salmon through an intensive coordinated program of winter and summer expeditions utilizing up to five research vessels deployed simultaneously across the North Pacific Ocean. Information, including biological materials for salmon stock identification, data for abundance estimates, and structure of nektonic communities, will be collected through the trawl surveys. This information will be 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. Cooperative high seas cruises represent a tremendous opportunity to collaborate on methods related to fisheries research in the field and for outreach through live-streaming of the exciting work being conducted onboard. Dick Beamish has been successful in raising over C\$1M towards chartering a Russian research vessel, and we have made requests for ship time from the parties in Canada, the United States, Japan and Korea. Secretariat staff have been participating in cruise planning meetings and engaging with the parties in working to secure other vessels. They have also been in conversation with other partners, such as Oceans Networks Canada and the National Film Board of Canada, who may be able to provide expertise. An IYS Working Group meeting will be held immediately prior to the NPSC Meeting on February 5, 2018 that will focus on cruise planning.
- ROAM (RAFOS Ocean Acoustic Monitoring): A novel concept for salmon tracking by a few Atlantic researchers, including Tim Sheehan (National Marine Fisheries Service), Simon

Thorrold (Woods Hole Oceanographic Institute), and Jon Carr (Atlantic Salmon Federation). The concept proposes using existing SOFAR (Sound Fixing and Ranging) technology to track salmon in the high seas; however, it works in reverse so that instead of drifting tags emitting ‘pings’, which are identified by moored receivers, drifting tags identify ‘pings’ emitted from moored sound sources. Some advantages of this new method include increased ability to accurately track salmon through their entire marine phase, the enhanced potential for basin-level collaboration, and its overall cheaper price tag. In October 2017, the NPAFC Secretariat hosted a webinar with a presentation by Tim Sheehan for interested participants in the Pacific. While this approach is still in the development stage, there is a great amount of interest from both the Atlantic and Pacific basins to explore the use of this technology. A small workshop will be hosted by Tim Sheehan in Woods Hole in March 2018 to further explore this concept, with Pacific researchers expected to attend. Secretariat staff are hosting a second meeting of Pacific researchers in late January to identify issues related to implementation in the Pacific and ensure we have appropriate representation at the Woods Hole workshop.

- Likely Suspects Framework: The Likely Suspects Framework is an accounting approach to identify likely bottlenecks across life history stages of salmon that is under development by the Atlantic Salmon Trust (AST). It represents the first of hopefully many scientific collaborations between NPAFC and NASCO, and came from discussions between NASCO and NPAFC representatives participating in NASCO’s 2017 meeting. The Framework 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. Recognizing the significant benefits that could be realized from expanding the discussion to the wider salmosphere, Pacific colleagues were invited to attend a workshop that was held in Edinburgh in November 2017.

*Input from participants on the development of funding strategies and next steps*

Consideration of funding strategy development will take place during plenary discussion in part one and part two of the North Pacific research planning agenda items.

## 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: Draft IYS key messages

#### Preamble

Key messages related to salmon have been considered previously in a number of ways. In 2007, NASCO's Public Relations Working Group developed several key messages and topics for NASCO in developing its public relations strategy, some of which were identified in 2016 by the North Atlantic Steering Committee as good examples for use for the IYS at the salmosphere level. Additionally, a subset of the North Pacific Steering Committee and contractors produced material for informing a results-based planning approach in early 2017. Language was also developed in the IYS Outline Proposal that was jointly approved by both NASCO and NPAFC at their Annual Meetings in 2016. Together, this material formed the basis of discussion by the technical team in Gloucester to form the following draft high-level messages for consideration by the steering committees that the team believes capture the overall visions and aims of the IYS.

Key messages are a critical component of the outreach necessary to make the IYS successful. Once these key messages have been agreed and finalized, we could use the website and any agreed social media platforms that are developed to help disseminate them broadly.

We have listed the key messages in this document as answers to a set of questions. We do not envisage the key messages being listed like this—we would just use the messages themselves. However, we thought it would be easier to show the questions the technical team in Gloucester used to come up with the key messages.

#### *1. What is the problem the IYS will solve?*

Wild salmon face enormous challenges throughout the varied habitats they occupy in the Northern Hemisphere. An effort beyond the capacity of any one group or country is needed to raise awareness, address knowledge gaps and devise new approaches to management.

#### ***Alternative:***

Wild salmon face enormous challenges as they migrate from the rivers and estuaries of the Northern Hemisphere to the global ocean and back. We need an effort beyond the capacity of any one group or country to raise awareness, address knowledge gaps, and find new approaches to management.

#### *2. How the IYS will solve the problem.*

Wild salmon are international travelers born in freshwater and traveling thousands of miles to feed before returning to their birthplace to reproduce. As international fish, wild salmon need collaborative international efforts to promote their conservation and management.

Through partnerships, our aspiration is that the IYS will catalyze an intense burst of outreach and research that will establish the conditions necessary for wild salmon and people to be resilient in an uncertain future.

#### ***Alternatives:***

Through partnerships, our aspiration is that the IYS will catalyze an intense burst of outreach and research that will ensure a shared future for salmon and people.

Through partnerships, our aspiration is that the IYS will catalyze an intense burst of outreach and research that will ensure resiliency for salmon and people facing an uncertain future.

Through partnerships, the IYS will catalyze an intense burst of outreach and research that will improve

the resiliency of salmon and people facing an uncertain future.

3. *Why should I care about salmon?*

Wild salmon are like canaries in the coalmine indicating that freshwater, estuarine and marine habitats are healthy enough to support them, which means they are healthy enough to support you.

Wild salmon are iconic fish. They have played a significant cultural and economic role in society for millennia.

***Alternative:***

Wild salmon act as good indicators of a healthy environment, which means that if freshwater, estuarine, and marine water bodies are healthy enough to support them, then are healthy enough to support you.

For millennia, people around the globe have relied upon the iconic wild salmon for their livelihoods, as a staple food, a source of income, and a cultural symbol.

4. *Who can be involved in the IYS?*

There is something for everyone in the IYS. You don't have to be a salmon expert to make a difference. The IYS aspires to promote outreach and research collaborations at the local, regional and hemispheric levels.

***Alternative:***

There is something for everyone in the IYS. You don't have to be a salmon expert to make a difference.

The IYS aspires to bring together youth, researchers, fishermen, Indigenous groups, managers, policymakers, and the interested public to collaborate at the local, regional, and hemispheric levels.

5. *How to get involved in IYS*

The intention of the IYS is to inspire us all to think globally and act locally. (Even small changes can make a difference.)

***Alternative:***

The IYS hopes to inspire everyone to think globally and act locally!

NOTE: The 'salmosphere' term does not appear in any of these key messages and we wondered if it should if we are planning to use this word in the IYS.

## Appendix D

### North Pacific Steering Committee Meeting Discussion Document #2: Draft options for IYS website map

#### Preamble

The North Atlantic Steering Committee (NASC) was provided with a document written by NPAFC giving possible examples for an IYS website. The feedback received from various NASC members was that their preference was for a simple landing page. This could include basic information on the IYS, with links to IYS work being carried out by NASCO, NPAFC and the various Parties/jurisdictions as desired.

Additionally, at the IYS Special Session at the NASCO Annual Meeting in June 2017, the website model used by the World Fish Migration Day seemed to be quite popular with NASCO members. With this in mind the technical IYS group would like to propose the following website framework for consideration.

#### IYS Sitemap Option for Consideration

This option for a simple IYS website is based on the idea behind the World Fish Migration Day website where in addition to general information about the initiative, any interested party can submit information on individual events to be posted, including links to external websites. For the IYS website, it could serve to present general information about the IYS agreed upon through discussion with the NASC and NPSC and would not preclude any countries or organizations from developing their own IYS webpages or websites in their own languages. In fact, it could serve as a model for how Parties and jurisdictions might structure their websites. The suggestion is that the IYS website could include a number of pages, as follows:

- an “About” page, which could contain explanatory text about the IYS. This could include text on the aims, vision, and themes, text that has already been approved between NASCO and NPAFC as part of the IYS Outline Proposal. It could also include a number of key messages and Frequently Asked Questions (FAQs) that would give simple information about the IYS initiative. These key messages and FAQs will need to be discussed and agreed by the NASC and NPSC.
- a “Salmon” page with information on the various salmon species covered under the initiative that would need to be agreed by the NASC and NPSC.
- if we were to follow the World Fish Migration Day website model, we could include a “Get Involved” page. With this feature, any user could make an account to submit and manage an IYS event or outreach/research project that will be presented on the IYS website. This information could be displayed on the “Events” and “Projects” pages.
- an “Events” and a “Projects” page, both of which could display information in a map or list view with a simple description of the event or project on the IYS website itself, and/or provide a link to another independently managed IYS webpage or website. A benefit of displaying the events on a map could be that this would enable people to see clearly the international nature of the IYS initiative. The technical team thought that it was not NASCO or NPAFC’s intention to limit any event information available on the website, and this model would not preclude any country or organization from developing their own IYS webpages or websites. The IYS website could, therefore, function as a central repository of information on IYS activities occurring throughout the salmosphere and provide people with the opportunity to find further information on external sites as well as enabling NASCO and NPAFC to keep track of what events are being planned in their basins.

A benefit of this simple approach to the website is that the amount of funding necessary to create this

website has already been agreed, and the full costs have already been paid, shared equally between NASCO and NPAFC (CAN \$15K). A more complex website, that did not seem to be palatable to many Parties, would require additional funds to be procured from each RFMO.

**Initiating the process for the website development to proceed following agreement by the Steering Committees**

Once the basic framework is approved by the Steering Committees, there is a three to four month timeline to complete the website. With a launch proposed for autumn 2018 and a focal year in 2019, the team felt that it is important that progress be made with the website as soon as possible to give the IYS an identity. All that is needed initially is agreement on a framework. Committee members will have an opportunity to review content and mock-ups through discussion documents like those accompanying this document. Progress may be expedited if the Steering and Coordinating Committees could approve the basic framework free of any specific content in advance of their meetings in late January/early February. This would enable MyLoudSpeaker to begin developing the website structure resulting in a usable website in the late spring.

An agreed and timely process for the approval of content and mock-ups will be necessary to meet the timeline as the website development takes place.

The timeline provided by MyLoudSpeaker for website development and associated deliverables can be seen below.

<b>Deliverable</b>	<b>Month 1</b>	<b>Month 2</b>	<b>Month 3</b>	<b>Month 4</b>
Analysis and Planning				
Sitemap				
Content Generation				
Search Engine Optimization*				
Copy Editing				
Wireframe**				
Design				

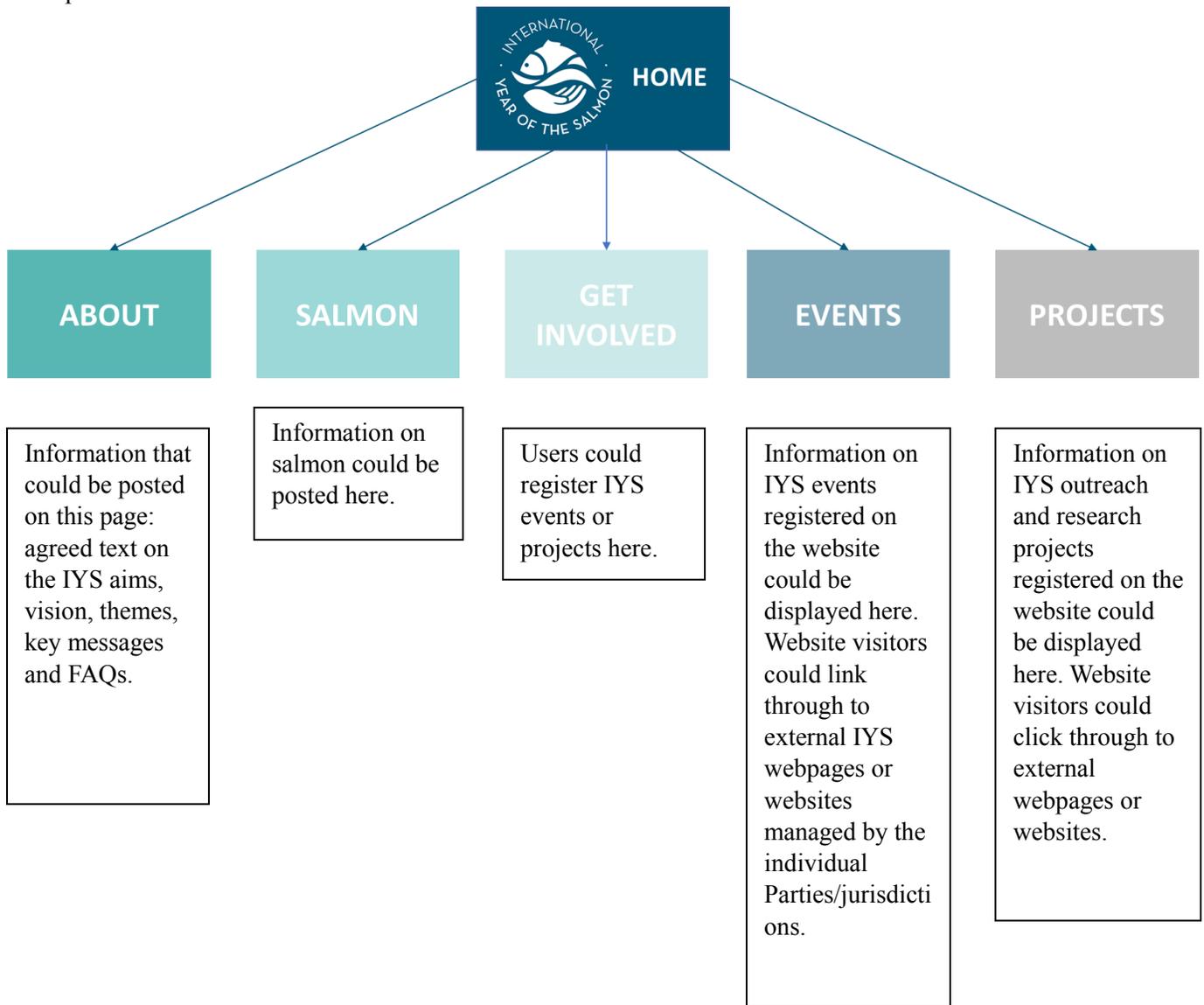
*\*Search Engine Optimization: The process of maximizing the number of visitors to a particular website by ensuring that the site appears high on the list of results returned by a search engine.*

*\*\*Wireframe: A visual guide that represents the skeletal framework of a website.*

**Website operation**

If this framework is agreed, Secretariat staff from NPAFC and NASCO w/could co-manage posting of agreed materials on the landing pages, to ensure the material and events listed are up-to-date. All Parties and jurisdictions will have the complete freedom to develop their own websites/webpages in their own languages, and they can be linked to the IYS website through its events page.

A simple IYS website framework:



## Appendix E

### North Pacific Steering Committee Meeting Discussion Document #3: Draft using social media to communicate the IYS

#### Preamble

An effective outreach programme is one of the core themes of the IYS. There are many ways to communicate information about the IYS and some of these are covered in other discussion documents (website; outreach; key messages). Social media is another way to communicate the IYS. It is a relatively easy and efficient way to reach a broad audience and jump start an outreach campaign. It is also the most effective way of reaching younger generations, which is an overall aim of the IYS. A possible approach may be to develop a plan for a phased approach for implementation, beginning with general IYS awareness, which could enable an extensive network of followers to develop. Social media could be used to deliver general information about what the IYS is, to engage people in the work of the IYS, and direct them to the IYS website where they could find additional information. Ultimately, a social media platform could provide an additional mechanism to assist in informing our followers about what they may be able to do to better ensure salmon and their varied habitats are conserved and restored against a backdrop of increasing environmental variability.

#### IYS Social Media Ideas:

##### Joint NPAFC and NASCO IYS social media platform (e.g., Facebook page)

A joint Facebook page would require someone to run the page. It would require that someone monitor the posts to ensure that no inappropriate content is posted. It could be possible for multiple users to post to the page as administrators, although this would not be particularly easy to manage. Everyone can share posts (rewritten in their own languages) through their own social media platforms and engage further with the IYS in their local area.

##### Pros:

- A single Facebook page for the IYS would enable followers to view content that is relevant to both basins.
- There are no additional costs of developing a template for the page as it has already been developed as part of the branding package. We could begin posting to the page as soon as some content is agreed.

##### Cons:

- If anyone wants to post to the page, it would require that they go through an administrator.
- There may be fewer followers to a single page than there would be to separate pages.
- Messages relevant to one basin could get lost or diluted among the other content on the page. For example, if one RFMO does not have the capacity to post on a regular basis, there could be more content from the other RFMO visible on the page.

##### Separate NPAFC and NASCO IYS social media platforms (e.g. separate Facebook pages)

Separate social media platforms will require that NPAFC and NASCO each identify someone to monitor the posts to ensure that no inappropriate content is posted. As with option 1, everyone can share posts in their own languages through their own social media platforms and engage further in the IYS in their local area.

Pros:

- This may enable us to attract more followers as people interested in species in particular basins may be more inclined to join a Facebook page about those particular species.
- This would also enable NPAFC and NASCO parties to focus posts on their particular areas of interest.
- If more people are engaging in the online discussion, we will get more attention focused on the IYS.

As in option 1, there are no additional costs of developing a template for the pages as a template that could be replicated for both separate pages has already been developed as part of the branding package. We could begin posting to the pages as soon as some content is agreed.

Cons:

- The NASCO Secretariat has indicated that they have limited existing capacity to perform these functions. This may be a concern for NPAFC as well.

#### **Additional Pages:**

Under either option, it is possible for every party/jurisdiction to use the IYS Facebook page template to create their own individual Facebook pages in their own languages.

#### **Goals of Using Social Media to Communicate the IYS**

- 1) Increase IYS website traffic – social media can be used to increase IYS website traffic by directing users to the website.
- 2) Increase IYS awareness – as the IYS is a relatively new initiative and completely new to social media, social media could be used to increase awareness. If social media users are unable to recognize what the IYS is, the initiative will have little effect. Incorporating a sharing aspect (sharing posts from other social media accounts) to the overall IYS initiative is a great way to increase awareness.

**Main Hashtags** (a hashtag is a word or phrase preceded by a hash sign(#) and used to identify messages on a specific topic on social media)

#YearoftheSalmon #salmonandpeople

These main hashtags identify the name of the initiative as well as its overall theme (excluding the words “international” and “changing world” as they make the tags too long). The main hashtags listed above are unique, meaning they are not currently being used by a campaign or organization for promotion.

## Facebook Page Template that was developed as part of the branding package exercise



### Ideas for Possible Posts to the Facebook page(s):

- 1) Links to news articles/research articles/interviews
- 2) Fun facts/trivia
- 3) Spotlights on people doing good things for salmon
  - a. Scientists
  - b. Educators
  - c. Managers
  - d. Indigenous Peoples
  - e. Volunteers
  - f. IYS Partners
- 4) Contests with prizes
  - a. Photo contest
- 5) Educational video clips/very short documentaries/animated films by school children  
*e.g.* A Social Media Story (through the National Film Board of Canada)
  - a. A proposal has recently been submitted to the National Film Board of Canada to produce a short video clip to share on social media telling the story of the “discovery” of salmon by local Vancouverites as they pass by an urban creek that has not seen salmon for decades. As people begin to realize what lies in their backyard and marvel at the resilience of this keystone species of the Canadian West Coast, they are able to ask: “are we ready to ensure the salmon’s survival?”
  - b. Although this is a Canadian example, it can be used to inspire the development of similar projects around the salmosphere
- 6) Celebrity endorsements
- 7) Event sharing

### Examples:

- 1) How do orca miscarriages relate to salmon? Check out the article below for another important reason why we need to work together for #salmonconservation #futuregenerations  
<https://psmag.com/environment/why-do-most-orca-pregnancies-end-in-miscarriage>

Visit [yearofthesalmon.org](http://yearofthesalmon.org) for links to more salmon articles #YearoftheSalmon

ENVIRONMENT

### WHY DO MOST ORCA PREGNANCIES END IN MISCARRIAGE? LOOK UPSTREAM.

Orcas are losing their babies at an unprecedented rate. The solution may lie 400 miles away.

HANNA BROOKS OLSEN · SEP 21, 2017

431 SHARES     



Google Cloud Platform  
Security that scales with your business.

- 2) Check out this interview with Mark Saunders, our **Salmon Spotlight** for this week! Mark has been instrumental in planning and implementing the International #YearoftheSalmon #salmonandpeople



Have you ever wondered what it's like to be salmon in a #changingsalmsphere? Check out the link below to experience your own interactive salmon life cycle journey:

<http://uninterrupted.ca/uninterrupted-journey/> #YearoftheSalmon #salmonandpeople

UNINTERRUPTED SHARE:  

INTRODUCTION 1 LIFE IN FRESH WATER 2 OUT AT SEA 3 FIGHTING UPSTREAM 4 HOME AT LAST

the UNINTERRUPTED JOURNEY 

## **Appendix F**

### **Draft Terms of Reference for Theme Counsel Groups**

1. Under the Terms of Reference 2 (c) for the North Pacific Steering Committee (NPSC), Theme Counsel Groups (TCGs) are established for each of IYS themes:
  - Status of Salmon (TCG-1)
  - Salmon in a Changing Salmosphere (TCG-2)
  - New Frontiers (TCG-3)
  - Human Dimension (TCG-4)
  - Information Systems (TCG-5)
  
2. Each Theme Counsel Group shall consist of experts appointed from five member countries (Canada, Japan, Korea, Russia, and USA). The NPSC will designate a leader for each TCG. TCG leaders shall be a member of the NPSC, and facilitate communications among members and with the NPSC to satisfy the mandate.
  
3. Theme Counsel Group's mandate is to support the NPSC by:
  - Recommending research and outreach priorities, and outcomes for theme
  - Proposing/assembling research and outreach plans/projects for theme activities
  - Reporting status of research and outreach activities for theme
  - Maybe others.....

## Appendix G

### International Year of the Salmon Prospectuses by Theme Discussion Document

#### List of Abbreviations

ADFG – Alaska Department of Fish and Game  
AST – Atlantic Salmon Trust  
CIMRS – Cooperative Institute for Marine Resource Studies  
DFO – Fisheries and Oceans Canada  
FIRA – Korea Fisheries Resources Agency  
FNFC – First Nations Fisheries Council  
FREA – Japan Fisheries Research and Education Agency  
IASRB – International Atlantic Salmon Research Board  
ICES – International Council for the Exploration of the Sea  
INRA – French National Institute for Agricultural Research  
IOF – Institute for oceans and Fisheries at the University of British Columbia  
IOS – Institute of Ocean Sciences  
IYS – International Year of the Salmon  
LLTK – Long Live the Kings  
NASCO – North Atlantic Salmon Conservation Organization  
NIFS – National Institute of Fisheries Science in Korea  
NGO – Non-governmental organization  
NOAA – National Oceanic and Atmospheric Administration  
NPAFC – North Pacific Anadromous Fish Commission  
NWFSC – Northwest Fisheries Science Center  
OSU – Oregon State University  
PBS – Pacific Biological Station  
PICES – North Pacific Marine Science Organization  
PSC – Pacific Salmon Council  
PSF – Pacific Salmon Foundation  
ROAM – RAFOS Ocean Acoustic Monitoring  
RPI – Rensselaer Polytechnic Institute  
SFU – Simon Fraser University  
TINRO – Pacific Scientific Research Fisheries Center in Russia  
UAA – University of Alaska Anchorage  
UAF – University of Alaska Fairbanks  
UBC – University of British Columbia  
UFFCA – Upper Fraser Fisheries Conservation Alliance  
UINR – Unama’ki Institute of Natural Resources  
UNB – University of New Brunswick  
USGS – United States Geological Survey  
UVic – University of Victoria  
UW – University of Washington

## STATUS OF SALMON

### **Theme/Outcome:**

*From Outline Proposal:* To understand the present status of salmon and their environments.

*From Planning Primer:* 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, or 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 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
- Number of annual reports on the status of salmon and their environments

### **Signature Projects:**

1. Status of Salmon Information System – Standardization, collation, and visualization of salmon abundance, distribution, and productivity data in a thoughtfully-designed framework and interactive toolset. This will allow 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. **Hemisphere:** There is power in the common presentation of status across the hemisphere as a communication tool and scientific value in comparative data sets to increase the capacity to understand factors behind change. ICES has indicated a willingness to participate in the development of a workshop/symposium on the Status of Salmon.

STATUS: Requires project team to convene and scope project. Sue Grant with DFO prepared to

assist in the coordination. Pacific Salmon Foundation and DFO collaborating on Salmon Explorer tool. Interest from First Nations. Waiting on process to engage ICES and the International Atlantic Salmon Research Board.

2. Salmon Atlas – A new version of the Atlas of Pacific Salmon originally produced by the Wild Salmon Center has been proposed. This would be an expanded, web-based, and interactive version similar to the Salmon Explorer web tool, developed by the Pacific Salmon Foundation, that allows you to look at maps and graphs depicting salmon and habitat statuses in British Columbia. **Hemisphere:** There is a consensus for the need for this project in the Pacific and there is a similar project underway in the Atlantic. The new Salmon Atlas could be expanded to cover the entire salmosphere.

STATUS: General interest from the NP Steering Committee. Requires a project team to scope and look for funding. Could be visualization tool linked to Status of Salmon Information System.

3. Riverscape – 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.

STATUS: Project scoping meeting required to bring together DFO-Luedke/Hyatt, West Coast Aquatic- Tawney Lim, Pacific Salmon Foundation, NCEAS-State of Alaska Salmon and People (SASAP), US and Canadian Ocean Observing System organizations, ONC-interest in data systems to engage citizen science/Streamkeepers, USGS- Christian Torgersen (has EU contacts), NMFS Rich Zabel and potentially NASCO scientists.

**Previous and Future Events:**

Event	Date	Location	Notes
Workshop on Standardizing Methods for Assessing Salmon and Environmental Data	TBD	TBD	
Initial Meeting of Working Group for the Pacific Salmon Atlas	TBD	TBD	

**Priorities Moving Forward:**

1) DFO has indicated a willingness to lead this initiative and ICES has indicated a willingness to assist in the development of a State of Salmon workshop. There is the potential for a State of the Salmon component of the IYS opening events.

**Funding Opportunities:**

- Nippon Foundation: Status of Salmon Information System, Salmon Atlas
- Wall Foundation: Scoping Workshop for Standardizing Methods for Assessing Salmon and Environmental Data

## SALMON IN A CHANGING SALMOSPHERE

### **Theme/Outcome:**

*From Outline Proposal:* To understand and quantify the effects of natural environmental variability and anthropogenic factors affecting salmon distribution and abundance and to make projections of their future changes.

*From Planning Primer:* 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. Developing this understanding will be strengthened by communication and collaboration at a salmosphere level, because while some effects may be localized, very likely there are similar processes occurring across the salmosphere. 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 in relation to salmon, will allow all concerned stakeholders to be more prepared for the future. By bringing people across the hemisphere together to work on understanding the changing salmosphere, the IYS aims to build partnerships and collaborations that will strengthen our overall understanding and ability to manage salmon into the future.

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

- Percent of management plans informed by future climate change projections
- Number of articles published from research done on high seas cruises associated with the IYS
- Number of salmosphere-level collaborative projects that results from planning workshops around the theme ‘Salmon in a Changing Salmosphere’
- 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 hypothesised 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: Concluded scoping workshop, final report with recommendations for next steps are being written. The recommendations will include research project concepts for both NASCO and NPAFC and partners to consider.

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) is underway and will be discussed at upcoming IYS Working Group meeting on February 5. Involve Oceans Networks Canada - integrated data system and outreach.

3. Salmon in the Future: Coupling climate and salmon – A small scoping workshop will be convened in April/May 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 which would be most likely to make significant improvements in the understanding of climate/salmon interactions and their consequences for salmon management. **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.

STATUS: A short prospectus for scoping workshop has just been completed. Considering an informal meeting with Climate Sciences meeting participants (middle of Feb) may be an opportunity to obtain informal feedback from climate scientists on the idea.

4. 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) (J. Moore – SFU and Daniel Schindler UW and others with Moore Foundation Funding), the impact of glacier retreat on salmon, 3) the impact of changing estuarine habitats on salmon- this has some interesting linkages to dramatic changes in migrating shorebirds. Interest from Ornithological Congress in summer 2018 in convening a joint session, 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 Dunwall). NMFS surveying movement into the western Arctic (Ed Farley).

STATUS: As above

5. Aquaculture/wild interactions – Considerable research is being conducted in both the Atlantic (Licetrack ~Can\$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:**

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

**Priorities Moving Forward:**

- 1) Securing research vessels from 5 NPAFC member countries for Pacific high seas cruises in 2019.
- 2) Detailed planning and convening Salmon in the Future Scoping Workshop.

**Funding Opportunities:**

- Nippon Foundation: high seas research cruises
- Wall Foundation: Salmon in the Future Scoping Workshop

## NEW FRONTIERS

### **Theme/Outcome:**

*From Outline Proposal:* To develop new technologies and analytical methods to advance salmon science and to explore the uncharted regions of the salmosphere.

*From Planning Primer:* 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 the changing salmosphere is impacting them. 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 novel analytical methods for studying salmon published under the umbrella of the IYS
- 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 on going to determine the feasibility of implementing the method in the Pacific. **Hemisphere:** A small workshop will be hosted by Tim Sheehan (NMFS) in March of 2018 (Woods Hole, MA, U.S.A) to further explore this concept. He is interested in having several people from the Pacific attend to assist in developing the concept including its applicability to all salmon across the salmosphere.

STATUS: NPAFC hosted a webinar in the fall that was well attended by North Pacific researchers. There is a follow up meeting during January to consider questions about the feasibility of application from the north Pacific perspective and to ensure we have good

attendance from the N. Pacific at the workshop.

2. Salmon Genome Map Applied – Mapping the Atlantic 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. 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:**

Event	Date	Location	Notes
ROAM Webinar- Pacific Region	October 3, 2017	Online	Video available from NPAFC Secretariat
ROAM Workshop	March 13-15, 2018	Woods Hole, USA	Interested in attendance

**Priorities Moving Forward:**

1) Follow-up meeting on ROAM with Pacific researchers.

**Potential Funding:**

- Nippon Foundation: ROAM, other telemetry methods, CSI salmon
- Wall Foundation: Scoping for the Salmon Genome Map

## HUMAN DIMENSION

### Outcome:

*Original (from Outline Proposal):* To improve the resilience of people and salmon through the connection and collaboration of salmon-dependent communities, Indigenous Peoples, youth, harvesters and resource managers across the salmosphere.

*Another Option:* To improve the resilience of people and salmon by connecting salmon-dependent communities, Indigenous Peoples, youth, harvesters, and resource managers across the salmosphere to collaboratively find innovative and adaptive solutions to sustain 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 management plans informed by roundtable discussions
- 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: Caroline developing prospectus for this project and scoping workshop. 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.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
Sustainable Management of Chum Salmon 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 in 2018 – 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 connections identified in #2; Raoul and Urawa-san as conveners of management workshops

**Potential Funding:**

- Wall Foundation: Scoping Workshop for Watershed Governance

## INFORMATION SYSTEMS

### **Theme/Outcome:**

*From Outline Proposal:* To develop an integrated archive of accessible electronic data collected during the IYS and tools to support future research.

*From Planning Primer:* Freely available information systems that house and mobilize historic and current data about salmon and their environment

### **Rationale:**

Currently, there is little information sharing and collaboration at the salmosphere level, despite the fact that there are hundreds of people and groups with similar goals working to conserve salmon. Even on smaller scales, such as national and regional, there can be minimal communication among people working towards the same goal. This can be partially attributed to the lack of centralized information systems which make data on science and management accessible to not only scientists and managers, but also the interested public. These kinds of systems can support collaborative efforts on a hemispheric scale to address common issues and face current and future challenges.

### **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
- Investment of time and funds in achieving 'Information Systems' objectives
- Number of publications using data that was downloaded from an open access platform
- Number of databases that have international standards applied

### **Signature Projects:**

1. SalmosphereNet – Similar issues are faced by salmon across the salmosphere but there is minimal communication between Pacific and Atlantic researchers and managers. A project is currently underway by Fisheries and Oceans Canada to build an online network to connect people working on salmon-related issues across the country. DFO is also testing cloud-based software tools based on social media platforms that use artificial intelligence to link people, organizations and activities. Static networks tend to fail given the high investment in time and resources required with often limited utility for the user. **Hemisphere:** There is interest to expand this network to the salmosphere. It would facilitate rapid connection of researchers and managers with common interests.

STATUS: DFO is continuing scoping this project and will report out at the North Pacific Steering Committee.

2. Salmon Project Inventory – NASCO and its International Atlantic Salmon Research Board (IASRB) maintain an inventory of marine salmon projects. **Hemisphere:** 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. 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.

STATUS: Need to have follow up conversation about how to move forward and who to consult.

**Previous and Future Events:**

Event	Date	Location	Notes

**Priorities Moving Forward:**

- 1) Convene scoping team for integrated information systems – State of Salmon and the expedition(s) might be a good place to focus – Kate Moran, Evgeny Pahkamov, Sue Grant, Genome Canada rep, Hal Batchelder PICES
- 2) Develop a scoping team for SalmosphereNet—Scott Akenhead, Jim Irvine, Rory Saunders, Kate Moran

**Potential Funding:**

- Nippon Foundation: SalmosphereNet, Salmon Project Inventory
- Wall Foundation: Scoping for the Salmosphere Net or Salmon Project Inventory

## OUTREACH AND COMMUNICATION

### **Outcome:**

*From both Planning Primer:* 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.

### **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 people who visit 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: Proposal to the committees – NASCO will consider funding a workshop in March to develop an awareness campaign at the hemispheric level.

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. 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 workshop noted in 1 above.

3. Social Media Campaign – Facebook, Twitter, and Instagram pages 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: Facebook pages are ready to implement for IYS awareness; awaiting approval from committees.

**Previous and Future Events:**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Notes</b>
Website Launch	TBD	Online	<a href="http://www.yearofthesalmon.org">www.yearofthesalmon.org</a>

**Priorities Moving Forward:**

- 1) Launch the IYS website and social media pages (Facebook, Twitter, Instagram) to initiate the first phase of the IYS outreach campaign strategy
- 2) Convene follow-up meeting with Bill Wareham from the David Suzuki Foundation
- 3) Work with Brian Riddell and Jacques White on convening a meeting of NGOs to consider Pacific Basin and hemispheric collaboration on an awareness campaign, including an opening event linked to fundraising.

**Potential Funding:** TBD.