

# IYS Activities and Updates

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The International Year of the Salmon (IYS) is a five-year outreach and research initiative of the North Pacific Anadromous Fish Commission (NPAFC) and the North Atlantic Salmon Conservation Organization (NASCO), with a vision to set the conditions for the resilience of salmon and people in a changing world. The IYS Secretariat was able to stay productive throughout 2020 despite facing new challenges and is busy working on planning an intense burst of outreach and activities through to the end of the initiative in 2022. The conditions to build resilience between salmon and people depend on connecting people and organizations to effectively collaborate in sharing and generating knowledge and taking action for salmon. Twenty-twenty was a year defined by stark and unexpected global changes due to the COVID-19 pandemic. Despite this, the IYS managed to leverage its opportunities through virtual meetings and activities and remain consistent in connecting with its partners, both new and old, around the Northern Hemisphere. In 2020, the IYS largely focused on three signature projects: the Pan-Pacific Winter High Seas Expedition, the Likely Suspects Framework, and Data Mobilization.

## High Seas Expeditions

Despite the unprecedented setbacks of the pandemic, the IYS had a rewarding and productive year. The second expedition to study the winter ecology of Pacific salmon in the Gulf of Alaska was successfully completed in April of 2020. The IYS and the Pacific Salmon Foundation (PSF) were able to hold an in-person media event for the launch of the expedition in Point Hope Shipyard in Victoria, BC, one week before COVID-19 lockdown measures went into effect. Twelve scientists from Canada, Russia, and the United States spent a month at sea studying the winter ecology of Pacific salmon aboard the Canadian fishing vessel turned research vessel for the purpose of the expedition, the Pacific Legacy No.1. Following the expedition, a virtual press conference and information session for funders and friends was hosted by the IYS and PSF to discuss preliminary results.

This expedition built on the findings from the 2019 International Gulf of Alaska Expedition, and contributes to setting the stage for the Pan-Pacific Winter High Seas Expedition currently being planned for winter 2022. Given the challenges of completing an international survey during the pandemic, the difficult decision was made to postpone the 2021



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multi-vessel research expedition to winter of next year. However, this challenge has brought new opportunities for the IYS to bring more partners on board, and to continue building momentum and raising funds to ensure a successful Expedition in 2022.

The 2022 IYS [Pan-Pacific Winter High Seas Expedition](#) will send out multiple vessels to the North Pacific Ocean to survey Pacific salmon and their ecosystems in the high seas. Along with increasing our understanding of the mechanisms driving Pacific salmon survival and productivity, these surveys will provide information on Pacific salmon distribution and abundance. The NPAFC member countries (Canada, Japan, the Republic of Korea, the Russian Federation, and the United States) are working collaboratively around the Pacific Rim to ensure a successful Expedition with the greatest survey area possible to be covered by multiple vessels sampling simultaneously.

For many months now, the IYS has been working to engage academic researchers from the University of British Columbia and the University of Victoria in research related to the 2022 Expedition using funding provided by NPAFC's grant from the British

Columbia Salmon Restoration and Innovation Fund (BC SRIF). Nine projects were granted funding in December 2020. This funding will allow academic partners to staff post-doctoral fellow and graduate student positions to undertake research projects related to the Expedition. This funded research focuses on eight key areas of study: biological oceanography, chemical oceanography, physical oceanography, acoustics, modelling, salmon feeding ecology and energetics, salmon distribution, abundance, and migration, and salmon genetics and stock identification. In 2021, the IYS team will focus on connecting with researchers in these key areas from other NPAFC member countries. Likewise, the IYS staff continues to meet regularly with the 2022 Expedition cruise planning team, composed of the Chief Scientist, country leads from all five NPAFC member countries, and key scientists. Currently, this team has been working on tackling the standardization of sampling methods across the vessels.

The BC SRIF continues to provide funding for the 2022 Expedition, and the IYS is pleased to announce that in 2020 the North Pacific Research Board (NPRB) agreed to contribute USD 350K to the Expedition. At present, we have CAD 300K in funding committed by Fisheries and Oceans Canada as a part of their BC SRIF funding. Approximately CAD 2M is still required for a charter vessel to ensure comprehensive coverage of two zones in the Central North Pacific. The IYS continues to seek funding from interested parties and organizations.

### Likely Suspects Framework

The IYS has received funding from the Pacific Salmon Commission's Southern Endowment Fund to develop and carry out a series of workshops termed the 'Salmonscape Workshop Series,' that will take place from December 2020–March 2021. This workshop series is considered Phase 1 of the Likely Suspects Framework (LSF) project in the Pacific, with the objective of gathering experts who can assist in guiding the development of the LSF for the Pacific region. The LSF takes a general approach to estimating the numbers of fish associated with each life history stage for a population of salmon and identifying the candidate mortality factors (the Likely Suspects) across the freshwater and marine phases of the salmon life cycle. The project, which has been well underway in the Atlantic, aims to engage Indigenous Peoples, federal and local governments, NGOs, industries, and academia in the implementation of the holistic LSF approach to informing management decisions affecting salmon populations over their complete life history.



*From left to right: Scientists Alexei Somov, Christoph Deeg, and Igor Grigorov onboard the Pacific Legacy No. 1 during the 2020 Gulf of Alaska Expedition. Photo Credit: Svetlana Esenkulova*

The Salmonscape Workshop Series consists of one focus group and three linked virtual workshops designed to define management case-use studies in the northeast Pacific, that can then be used to test the LSF on a group of salmon populations. This will eventually demonstrate the applicability of the LSF approach, with the intent of applying it broadly across the salmosphere. In 2020, the IYS Secretariat, with the support of a Planning Team and with meeting support from ESSA Technologies, successfully completed its initial focus group. This focus group concentrated on asking managers, decision-makers, and knowledge holders to identify a set of key scientific, management and decision-making challenges that they face considering the impacts of rapidly changing socio-ecological conditions. The focus group was also given an opportunity to address and discuss some proposed solutions to these challenges. The outcomes of the initial focus group are being used to guide the subsequent three workshops, which will take place between January and March of 2021. Workshop #1 will bring experts together to recommend a

life history-based approach to identify risk across the salmon life cycle and assess management approaches to mitigation. Workshop #2 will consider how to address data mobilization challenges and needs, and Workshop #3 will be used to identify case-use studies in the northeast Pacific where the approach can be tested.

### Data Mobilization

To link both the information generated by the High Seas Expeditions and the Likely Suspects Framework, the IYS continues to pursue its Data Mobilization effort. This Signature Project is a concerted effort on the part of the IYS and various other organizations to build a framework of data, models, and knowledge networks that are standardized, accessible, and easy to navigate for dynamic groups of researchers, academics, scientists, conservationists, and resource managers. Arguably, one of the largest barriers to salmon research is rapid access to standardized data. In partnership with the Tula Foundation/Hakai Institute, the IYS is using a federated approach to standardize IYS high seas data so that it can be rapidly discovered and synthesized. In 2020, the IYS initiated the NPAFC ad hoc Study Group on High Seas Data Standardization/Mobilization to develop an agreement between the NPAFC member countries on approaches to collecting and mobilizing high seas data. The IYS will be using the 2022 Expedition to test this approach. The IYS has also been working with its partners across the hemisphere to pursue broader data mobilization goals related to the development of a standardized salmon vocabulary, the application of graph database technology, and the mobilization of historic marine salmon data.

### IYS Activities

Throughout 2020, the IYS has been steadily working on improving its online presence. The IYS website has been undergoing significant upgrades to better inform the public about the IYS initiative, progress, objectives, and Signature Projects. The [new version of the website](#) has been officially launched in January 2021. The IYS is expecting to see a notable increase in website traffic after these changes are implemented, and the IYS hopes the updated website will attract new audiences and potential funders. Likewise, IYS activity on social media has remained consistent throughout 2020 and has achieved rapid follower growth despite it being a very busy year for news. The average engagement rate for the IYS on Twitter in 2020 was over 3% (anything above 1% is considered great)! The IYS Public Relations and Communications Coordinator has been maintaining a consistent posting schedule, as well as making sure that the IYS online presence

remains interesting, engaging, and clear to its many audiences.

In 2020, there were a number of IYS workshops, symposia, and meetings, both in person and virtual. While in-person meetings were still permitted at the beginning of the year, the IYS held a media event at the launch of the 2020 Gulf of Alaska Expedition in March, and members from the IYS team attended and presented at the 20<sup>th</sup> Salmon Ocean Ecology Meeting: Salmon in Dynamic Habitats and Food Webs in Monterey, USA that same month. Virtual events included the virtual press conference and information session for the 2020 Gulf of Alaska Expedition, led by Dr. Richard Beamish and Dr. Brian Riddell.

The IYS, in partnership with co-conveners from across the North Pacific, hosted a session (S14: Implementing a collaborative, integrated ecosystem high seas survey program to determine climate/ocean mechanisms affecting the productivity and distribution of salmon and associated pelagic fishes across the North Pacific Ocean) at the 2020 North Pacific Marine Science Organization (PICES) Virtual Annual Meeting in October, during which researchers from the 2019 and 2020 Gulf of Alaska Expeditions shared their preliminary findings. The IYS also gave a talk on the 2022 Expedition in another session of the PICES Annual Meeting (S1: How does 30 years



*IYS staff members from left to right: Stephanie Taylor—IYS High Seas Coordinator, Camille Jasinski—IYS Public Relations & Communications Coordinator, Moronke Harris—former NPAFC intern, Laura Tessier—former IYS Coordinator, at the 2020 IYS NPSC and WG Meetings reception held at the Vancouver Club in February 2020.*

of research on changing North Pacific ecosystems inform the UN Decade of Ocean Science for Sustainable Development Goals?). There was a very positive response from session attendees about the research the IYS is doing in the high seas and the upcoming 2022 Expedition.

In August 2020, The IYS presented an overview of the IYS and participated in an expert panel for an online lecture series hosted by the Explorer's Club, which is based in New York City. The title of this lecture series was "[Salmon—Great Leap for a Future](#)," and it brought together a number of the world's foremost salmon scientists, advocates, conservationists, anglers, filmmakers and authors who have worked to save the species. The talk explored the mythology of this 'King of Fish,' its place in history, and the close relationship between salmon and humans from the Paleolithic time to the present. The IYS is hoping that this event, and more like it in the future, will open up possibilities of building connections and online outreach capabilities, particularly for the 2022 Expedition. To date, the online talk has over 117 thousand views.

Additionally, the IYS had over 150 partner meetings in 2020, with organizations such as Fisheries and Oceans Canada (DFO), the National Oceanic and Atmospheric Administration (NOAA), the Pacific Salmon Commission (PSC), First Nations Fisheries Council (FNFC), the North Pacific Research Board (NPRB) and the Pacific Salmon Foundation (PSF), just to name a few. The IYS continues to collaborate with partners around the Pacific and Atlantic basins and is hoping to continue expanding its network in the future.

## The 2020 IYS Photo Challenge

Last year, the IYS challenged its audiences to think about what salmon mean to them and their community during the unprecedented circumstances that defined 2020 by posting a photo challenge. The requirements asked participants to send a photo of salmon, as well as a write-up about what salmon means to them and their community. The IYS received over 25 submissions, all of which included amazing photos of salmon alongside interesting and personal write-ups. Although the IYS could only pick one winner for the grand prize of \$500, it is currently in the process of creating a photo story that includes the most interesting and thoughtful submissions from the contest which will be published on the IYS website.

The winner of the 2020 IYS Photo Challenge: Dr. Paul Vecsei, from Northwest Territories, Canada.

Paul Vecsei has worked in northern Canada as a fisheries biologist for over a decade. He recently spent two years as a salmon biologist with Fisheries and Oceans Canada in the Yukon and is now back in the Northwest Territories doing fish work with the Tlicho Government. His underwater photo career began with placing juvenile Arctic grayling in a Ziploc and photographing them. Much has changed and as the equipment became more sophisticated, so have the results. Featured in National Geographic Photo of the Day, magazines, online features and journals, his underwater images of fish have become well-known. "I am particularly interested in Pacific salmon life history and try to spend as much time with these fish in their environment." I call the winning shot: Narcissus because like in Greek mythology, the huge Chum Salmon was so impossibly handsome that he fell in love with

Winning Photo



*Narcissus—Dr. Paul Vecsei, winner of the 2020 IYS Photo Challenge.*

his own image reflected in a pool of water and is photographed at the moment he tries to kiss himself." Paul received his MSc in Zoology from the University of Guelph, Ontario and his PhD from the University of Georgia, Athens, USA.

### *IYS Photo Challenge Runner Ups:*

The IYS would like to share the two runner-up winners of the 2020 Photo Challenge, whose submissions came very close to winning the grand prize.

2<sup>nd</sup> place: Glen and Carrie Sheckells from Kodiak, Alaska

"Adapt or perish. Change is necessary for survival. Salmon embody this basic principle by serving as a steadfast and dependable, yet adaptable and dynamic resource and connection to this ever-changing world. A connection between man and nature; a connection across cultures; and a connection to our future. A revered resource of our Kodiak native peoples, salmon is a sacred vessel for ensuring cultural preservation and growth across hundreds of generations. Salmon also serve as the basis for our diverse Kodiak community of today by affording job opportunities to all demographics, at all skill levels, and encouraging corporate investment into our local economy. Salmon connects our Kodiak community to the bustling industries of commercial fishing, large scale processing, and international shipping. Salmon also underlie our tourism and arts industries, allowing us to showcase Kodiak's skills, cultures, and uniqueness to the world. Salmon means connection...to nature, to history, and to each other."

3<sup>rd</sup> place: Fernando Lessa, Vancouver, BC

"This image was taken in the Fraser Valley, less than 100 km from Vancouver, a couple of weeks ago.

I believe it is a very important photograph, since despite all the issues with Pacific wild salmon, it's important what are we protecting, Pacific wild salmon! In the image, you can see around 1,000 sockeye, from an overlooked run, that this year reached almost 12,000 fish! Was lucky to have the chance to document such a unique moment!"

The IYS would like to give a deep thank you to everyone who submitted their photos and stories to the photo willchallenge. We are excited to share our updates as we continue to work on putting together a photo story about what salmon mean to people and communities around the Northern Hemisphere.

### **Upcoming IYS activities**

The IYS is looking forward to a busy and productive 2021. In addition to continuing its progress in planning the 2022 Pan-Pacific Winter High Seas Expedition and its Likely Suspects Framework and Data Mobilization projects, the IYS is anticipating a long list of planned activities for the year. The IYS is hosting its annual Working Group and North Pacific Steering Committee meetings in February 2021, but this year they will be in a virtual format. The IYS will continue to engage its Working Group and North Pacific Steering Committee on current and upcoming events and determining its next steps through 2022, including planning for the IYS Concluding Symposium and the IYS legacy.

2<sup>nd</sup> Place



*A salmon jumping behind a bear—Glen & Carrie Sheckells.*

3<sup>rd</sup> Place



*Salmon in the Fraser Valley, BC—Fernando Lessa.*



CCGS Sir John Franklin. Photo Credit: Canadian Coast Guard

Additionally, IYS staff will be virtually attending the Conference on Abundance Dynamics, Stock Assessment, and Artificial Reproduction of Pacific Salmon in the Northern Pacific in February 2021. This is an international conference organized by the Russian Federal Agency for Fishery and the Russian Federal Research Institute of Fisheries and Oceanography that brings together experts from around the North Pacific to discuss significant fluctuations in the abundance of Pacific salmon and the simultaneous decline in salmon harvests in the Russian Far East, Japan, and North America. Main conference topics will include abundance dynamics and stock status of Pacific salmon in changing environments, the forecasting of Pacific salmon runs and feasibility of prognoses, and artificial reproduction and its influence on the production of Pacific salmon.

The IYS continues to make progress on its Salmonscape Workshop Series, a part of the Likely Suspects Framework, which will run from January to March 2021. This virtual series consists of a focus group followed by three linked workshops that bring experts with the overall goal to define management case-use studies in the Northeast Pacific that can be used to test the Likely Suspects Framework

approach on a group of salmon populations. The IYS will host its first workshop, 'Approaches to Salmon Life History Modelling,' in January 2021. Its second workshop, 'Salmon Data Mobilization,' and the third workshop, 'Northeast Pacific Case-use Studies,' will take place in March 2021.

The NPAFC will be hosting its third NPAFC-IYS Workshop, 'Linkages between Pacific Salmon Production and Environmental Changes,' in May 2021. This is an annual workshop that will include research related to the IYS. The workshop will be held virtually and will focus on salmon production in changing environments, new technologies and integrated information systems for salmon research and management, and resilience for salmon and people with a case study from the Great East Japan Earthquake in 2011.

IYS staff are also planning to attend a number of other virtual workshops and symposia throughout the year, including the Salmon Ocean Ecology Meeting, the Salmon Recovery Conference, and MCEAS 2020—Navigating global change in the marine environment symposium.