Radchenko Vladimir, NPAFC Secretariat

Participants' name tags of the last NPAFC face-to-face meeting attended by PICES, February 2020
Plan of NPAFC presentation at the PICES FIS meeting:

- Pacific salmon updates
- The International Year of the Salmon (IYS) signature projects updates
  - The Pan Pacific research survey
  - Likely Suspects Framework
  - IYS Data Mobilization project
- NPAFC and PICES in UN Decade of Ocean Science
- Meetings, workshops, symposia
- NPAFC publications of mutual interest
Commercial Salmon Catches in NPAFC Member Countries

- Total Pacific salmon commercial catch in 2019 is the ninth highest among odd years in harvested salmon weight (968,729 metric tons) and still surpasses all even years’ figures besides 2018;

- In harvested numbers (563.276 million fish), Pacific salmon commercial catch in 2019 is the fifth highest after 2009, 2011, 2013 and 2018);

- Average individual weight of sockeye (2,371 g) and chum (3,167 g) salmon occurred to be second lowest in 1993-2019; for pink salmon (1,297 g) – third lowest after 1999 and 2018;

- Salmon catches in southern areas have reduced while northern regions keep stable trends. Joint portion of Russia and U.S.A. in total catch first exceeded 96% in fish numbers and 93% in weight;

- Pink and chum salmon contribute 85% of caught fish numbers and 78% of total catch weight that is near the average value for 1993-2019

- Preliminary estimates of salmon run magnitude and commercial fishery catch in 2020 are significantly less than the last five-year average for all salmon species
In 2019, numbers of released salmon juveniles increased by more than the half of billion and reached the historical high level of 5,517 million fish;

Pink salmon percentage lowered to 24.6% and chum salmon percentage grew to 62.9% with almost 3.5 billion of juvenile chum released
### The IYS Timeline

<table>
<thead>
<tr>
<th>Period</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2016 – 2018</strong></td>
<td><strong>Setting the stage:</strong> planning, coordinating, enlisting partners and contributors</td>
</tr>
<tr>
<td><strong>Fall 2018</strong></td>
<td><strong>Opening event</strong></td>
</tr>
<tr>
<td><strong>2019</strong></td>
<td><strong>IYS focal year:</strong> field seasons, new data collection</td>
</tr>
<tr>
<td><strong>2020 – 2021</strong></td>
<td>Signature projects development, continuation of new data collection</td>
</tr>
<tr>
<td></td>
<td><strong>Uncertainties related to COVID19 pandemics</strong></td>
</tr>
<tr>
<td><strong>2022</strong></td>
<td><strong>Pan-Pacific integrated high seas expedition analyses, publications, wrap-up symposium</strong></td>
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*INTERNATIONAL YEAR OF THE SALMON*
2020 Gulf of Alaska expedition

The second expedition to study the mechanisms that regulate the production of Pacific salmon covered an area of 648,000 km$^2$ between March 11 and April 7, 2020 with an international research team of 12 scientists from Canada, Russia and the United States. In total, 566 salmon (234 Chum salmon, 118 Coho salmon, 51 Sockeye salmon, 136 Pink, 26 Chinook salmon, and 1 Steelhead trout) were caught.

The expedition highlighted the need for continued international research “from coast to coast” to identify mechanisms that regulate Pacific salmon survival and fitness in the high seas.
Due to restrictions related to the COVID-19 pandemic, CSRS recommended a postponement of the Pan Pacific winter survey until 2022.
Objective: Develop a relatively simple conceptual model linking observations of bottlenecks for salmon survival across life history stages through collaboration with salmon researchers from the Atlantic and the Pacific basins

Main partners: NASCO, Atlantic Salmon Trust, Pacific Salmon Commission, First Nation Fisheries Council, DFO, US NMFS, Long Live the Kings

Approach: The conceptual model and case use studies will be developed through a series of Salmonscape virtual workshops

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Expected Progress</th>
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<tr>
<td>October 2020</td>
<td>Technical Advisory Groups and Project Management Team will be formed</td>
</tr>
<tr>
<td>December 2020</td>
<td>Salmonscape workshops will be completed</td>
</tr>
<tr>
<td>January 2021</td>
<td>Project Team will be formed; Principal Investigators, postdoc, Data Scientist, and Data Technician will begin their contracts</td>
</tr>
<tr>
<td>February 2021</td>
<td>Salmonscape Technical Report will be completed</td>
</tr>
<tr>
<td>December 2021</td>
<td>Initial database will be completed</td>
</tr>
<tr>
<td>August 2022</td>
<td>LSF user interface will be completed</td>
</tr>
<tr>
<td>November 2022</td>
<td>Initial results will be presented at the IYS Wrap-up Symposium</td>
</tr>
<tr>
<td>December 2022</td>
<td>The final overview report and user interface will be completed and Project Team members will complete their contracts</td>
</tr>
</tbody>
</table>
**IYS Data Mobilization – Roadmap development**

**Expected outcome:** Freely available information systems contain historic and current data about salmon and their environment

**Timeline:** Present through December 2022

**Partners:** National Center for Ecosystem Analysis and Synthesis (NCEAS)/Moore Foundation, Atlantic Salmon Trust/Missing Salmon Alliance, and Hakai Institute/Tula Foundation

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<tr>
<td>September – November 2020</td>
<td>Establish data mobilization governance</td>
</tr>
<tr>
<td>October 2020 – May 2021</td>
<td>Assessment of barriers to data mobilization - State of Alaska Salmon and People Project (SASAP) experience</td>
</tr>
<tr>
<td>September 2020 – February 2021</td>
<td>Test application of standardization and synthesis for High Seas Survey data</td>
</tr>
<tr>
<td>2021 – 2022</td>
<td>Test applications of standardization and synthesis through a series of salmon management case-use studies in the Atlantic and Pacific basin as part of the Likely Suspects Framework</td>
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NPAFC and PICES in UN Decade of Ocean Science

Conference call of May 15, 2020. Discussed topics:

• Creation of a Study Group on NPAFC and PICES involvement into the UN Decade of Ocean Science (two members from each secretariat and scientific community, four in total)

• Reviewing and updating (if needed) the NPAFC-PICES Framework for Enhanced Scientific Cooperation in the North Pacific Ocean

NPAFC CSRS Chairperson, Dr. M. Fukuwaka:
“CSRS can contribute to the UN Decade of Ocean Science by sharing scientific knowledge with PICES”

Potential ideas for a mutual project theme development

- IYS High-seas expeditions; Salmon as long distance migratory fish
- International networking in small pelagic fish and phys./bio. oceanographic research
- Research and management of common pelagic fish stocks

This is the time to start discussing a new mutual project to contribute to the UN Decade of Ocean Science
IYS Working Group and North Pacific Steering Committee

• Met in Vancouver, B.C., Canada on February 25-28, 2020

• 33 participants including PICES Deputy Executive Secretary Hal Batchelder

Both meetings highlighted continued support for the IYS. Increased number of events and projects was registered on the IYS website along with the growth.

Participants provided direction on ways to improve communication and outreach, including the website and social media, and provided feedback on Signature projects. Report on preliminary results from the 2019 High Seas Expedition was well received.

There were presentations on planned IYS signature projects and productive discussions on communications regarding the Pan Pacific High Seas Expedition planned to survey the breadth of the North Pacific. The NPSC reviewed the effectiveness and membership of the Theme Counsel Groups, discussed the current workplan and budget, and participants suggested alternative fundraising opportunities and strategies.

See details in the NPAFC Docs #1913, Rev. 3, 1914 at https://npafc.org/published-documents-2020/
Wednesday, October 28, 2020

VS4 (S14): FIS Topic Session
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

Scientific Program: 21 presentations including 18 oral and 3 e-posters:

- Pakhomov, E.A., and A.N. Kanzeparova. Comparative oceanographic conditions during the International Gulf of Alaska Expeditions 2019 and 2020
- Rosengard, S.Z., et al. Co-variability of Fraser River sockeye productivity and phytoplankton biomass distributions in the Northeastern Subarctic Pacific Ocean
- Hunt, B.P.V., et al. Food web structure and salmon trophic ecology in late winter in the Gulf of Alaska
- Beamish, R.J. Gulf of Alaska expeditions in 2019 and 2020
- Wells, B.K. An ecosystem-science approach to support salmon management …
Winter ecology of Pacific salmon
Hybrid – Virtual Conference

February 8, 9, 10, 2021 in the North America,
February 9, 10 and 11, 2021 in Asia
Five venues (conference centers): Vladivostok, Hokkaido, Juneau, Vancouver, Portland

- Overview and Objectives: Beamish, R.J., and B.E. Riddell
- Key note Speaker: Radchenko, V.I., NPAFC

Topics to be covered:
1 – Salmon catches, distributions, and fish conditions
2 – Salmon diets and relation to zooplankton observations
3 – Relationships between oceanography and salmon catches
4 – Abundance of Pacific salmon including methods
5 – Energy density and early marine growth
6 – Squid catches and relationships to salmon diets
7 – Myctophids  8 – Predators  9 - Pathogens and parasites
10 – Environmental observations and distributions
11 – Phytoplankton observations and distributions
12 – Zooplankton and Fish Bi-catch observations and distributions
13 – Oceanography inter-relationships and patterns
14 – Nets, trawls and fishing  15 – Hypotheses for Pink salmon location
16 – What determines first ocean winter survival
17 – Salmon returns to British Columbia in 2019 and 2020
18 – Results and relationships of environmental DNA measurements

Extended abstracts will be published by NPAFC
The Third NPAFC-IYS Workshop on *Linkages between Pacific Salmon Production and Environmental Changes*

May 22–24, 2021
Hakodate Arena,
Hakodate, Japan

Due to COVID-19 Pandemic, the workshop has been postponed from May 2020 to May 2021.
Abstracts that have been already accepted are not required to be resubmitted. Call for paper is reopened. The deadline for updates or new abstracts is no later than **January 15, 2021**

Future IYS-related meetings

• NPAFC/PICES session on *Implementing a collaborative, integrated ecosystem high seas survey program* ..., 28 October 2020

• IYS Salmonscape workshops TBA, 2020

• Hybrid-Virtual Conference on *Winter ecology of Pacific salmon*, 8-10 February 2021

• The IYS WG and NPSC meetings, Vancouver, February 2021

• Third NPAFC-IYS Workshop, Hakodate, Japan, 22-24 May 2021
Publications: Proceedings of the 2\textsuperscript{nd} NPAFC-IYS Workshop on \textit{Pacific Salmon Production in a Changing Climate}

May 18-20, 2019, Portland, Oregon, U.S.A. in partnership with Salmon Ocean Ecology Meeting (SOEM)

More than 150 participants from the NPAFC member countries and China

The Technical Report is available at \url{https://npafc.org/technical-report/}

Workshop presentations – at \url{https://npafc.org/workshop-presentations-2019/}
NPAFC and IYS on social media

162 posts in Facebook and 244 tweets in Twitter in 2020 to date

Find NPAFC also on Wikipedia and LinkedIn!

Where is the Vessel now?

Vessel Route

We receive the vessel’s coordinates daily. This map shows the vessel’s progress to date – April 7, 2020 (arrival)

Note: each feather on the arrow is 10 knots of wind

@yearofthesalmon

Facebook.com/NPAFC

@internationalyearofthesalmon
Healthy salmon stocks are the great aim, the great aspiration, and the great hope of the NPAFC