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I. Introduction
I. Introduction

The Annual Report summarizes the activities of the Commission in 2019. This Report provides descriptions of the IYS Working Group and North Pacific Steering Committee meetings on January 20–25, 2019 along with the International Year of the Salmon Workshop on *Salmon Status and Trends* and the First IYS Data Laboratory (ISDL) Workshop; the e-mail Joint Patrol Schedule Meeting (JPSM) from March 18–21, 2019; the ENFO Workshop on New technologies in combating IUU fishing on May 12, 2019; the Second NPAFC-IYS Workshop on *Salmon Ocean Ecology in a Changing Climate* on May 18–20, 2019; and includes all major discussions taken place and documents approved at the 27th Annual Meeting of the Commission in Portland, Oregon, USA (May 13–17, 2019). This Report also contains a description of the Commission’s activities after the 27th Annual Meeting in May 2019. Some of the NPAFC activities described in this Report were presented by the Executive Director to the Commission at the 28th NPAFC virtual e-mail Annual Meeting in May 2020.
II. General Information
II. 1. Foundation & Goals of the NPAFC

The North Pacific Anadromous Fish Commission (NPAFC) was established under the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean (hereafter the Convention), signed by Canada, Japan, the Russian Federation, and the United States of America (original Parties) at Moscow on February 11, 1992. Japan ratified the Convention on May 26, the Russian Federation—on November 4, Canada—on November 6, and the United States—on November 9, 1992. The Convention entered into force on February 16, 1993. On May 27, 2003, the Republic of Korea deposited its instrument of accession to the Convention and became a NPAFC member.

The NPAFC promotes the conservation of salmonids and ecologically related species in the North Pacific Ocean and its adjacent seas by prohibiting direct salmon fisheries on the high seas of the North Pacific, minimizing incidental salmon catch by other fisheries in the area and prohibiting retention onboard vessels of salmon taken as an incidental catch.

The Commission is composed of five Contracting Parties, each appointing up to three Representatives, and the Secretariat. There are three standing committees: Committee on Scientific Research and Statistics (CSRS), Committee on Enforcement (ENFO), and Committee on Finance and Administration (F&A). CSRS includes the Science Sub-Committee and four Working Groups: WG on Stock Assessment; WG on Salmon Marking; WG on Stock Identification; and the International Year of the Salmon WG. Plenary sessions of the annual meeting are open to the public; all non-public meetings are closed but observers and guests are invited annually.

A general description of the Commission’s goal, structure, and activities is available in four NPAFC languages at https://npafc.org/about/.
II. 2. Convention Area

The Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean pertains to the area of the North Pacific Ocean and its adjacent seas, north of 33 degrees North Latitude in international waters (high-seas) beyond the 200-mile zones of the coastal States. The activities under this Convention, for scientific purposes, may extend farther southward in the North Pacific Ocean and its adjacent seas in areas beyond the 200-mile zones.

Map credit: modified from ©FAO 2016 (http://www.fao.org/fishery/rfb/npafc)
II. 3. Species

Anadromous fish hatch in freshwater and migrate to the ocean where they spend the majority of their lives. After growing large, these fish return to freshwater to spawn. Common anadromous fish include salmon, smelt, sturgeon, and lamprey.

Six species of Pacific salmon (pink, chum, sockeye, coho, Chinook, and cherry) and steelhead trout are covered by the Convention. These species are characterized by different levels of their abundance in different regions, but they are equally important regarding the Convention. A detailed description of ocean ecology of listed species is available in the recently published NPAFC Anniversary book—Beamish, R.J. (Ed.). 2018. The ocean ecology of Pacific salmon and trout. American Fisheries Society, 1,090 pp. ISBN-13: 978-1-934874-45-5

Brief descriptions of anadromous salmon species protected by the Convention are available at https://npafc.org/species/. While formal images of salmon species are available through the link, they are presented here by high-quality photos collected during the IYS program implementation.

Pink Salmon

Pink salmon are the most abundant species of Pacific salmon and originate both in Asia and North America. Upon emergence, pink salmon fry migrate quickly to the sea and grow rapidly as they make extensive feeding migrations.

Pink salmon have a fixed two-year life cycle. After less than eighteen months in the ocean, maturing fish return to their river of origin to spawn. An odd-year dominance cycle of pink salmon exists in many regions of the North Pacific, meaning that the number of adults returning to freshwater in an odd-numbered year is much higher than the number returning in an even-numbered year. Adults are the smallest Pacific salmon and range from 45–55 cm in length and 1.0–2.5 kg in weight. Pink salmon die after spawning (semelparous).

How to distinguish the ocean phase: Pink salmon have large oval black spots on the back (dorso-laterally) of the body and on both lobes of the tail fin. Scales are very small. A large hump develops on the back of maturing males. The meat is pink, relatively soft, and is relatively low in fat content compared with Chinook and sockeye salmon.
**Chum Salmon**

Chum salmon are the second most abundant species of Pacific salmon and originate both in Asia and North America. The fish spawn in streams and the fry migrate to the sea soon after emergence from the gravel.

Immature chum salmon distribute themselves widely over the North Pacific Ocean and the maturing adults return to their home streams in summer or autumn at various ages, usually after spending 2 to 5 winters at sea. Adults have been reported up to 108.8 cm in length and 20.8 kg in weight. Chum salmon die after spawning (semelparous).

*How to distinguish the ocean phase:* Chum salmon do not have spots on the body or tail. The tail fin has distinct silver streaks. Compared with other Pacific salmon, the caudal peduncle is relatively narrow, and the pupil of the eye is relatively large. The meat is pale pink, slightly firm, and relatively low in fat content compared with Chinook and sockeye salmon.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Onchorhynchus keta</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Chum salmon</td>
</tr>
<tr>
<td>Other common names:</td>
<td>Dog salmon</td>
</tr>
<tr>
<td>Japanese</td>
<td>シロザケ (Shirozake)</td>
</tr>
<tr>
<td>Korean</td>
<td>연어 (Yeoneo)</td>
</tr>
<tr>
<td>Russian</td>
<td>Кета (Keta)</td>
</tr>
</tbody>
</table>

**Sockeye Salmon**

Sockeye salmon are the third most abundant species of Pacific salmon and originate both in Asia and North America. Typically, juvenile sockeye salmon utilize lakes as rearing areas for one to three years after emergence from the gravel, but some populations can utilize stream areas for rearing and may migrate to sea soon after emergence.

Sockeye salmon spend 1–4 years in the ocean before returning to fresh water to spawn. Body size of adults is variable and can range 45–60 cm in length and 1.6–3.2 kg in weight. Sockeye salmon die after spawning (semelparous).

*How to distinguish the ocean phase:* Sockeye salmon do not have black spots present on the body or tail. Scales are neatly arranged in regular rows on the body. Meat color is bright red, relatively firm, and high in fat content compared to chum and pink salmon.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Onchorhynchus nerka</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Sockeye salmon</td>
</tr>
<tr>
<td>Other common names:</td>
<td>Red salmon, Bluebacks</td>
</tr>
<tr>
<td>Japanese</td>
<td>ベニザケ (Benizake)</td>
</tr>
<tr>
<td>Korean</td>
<td>홍연어 (Hongyeoneo)</td>
</tr>
<tr>
<td>Russian</td>
<td>Нерка (Nerka)</td>
</tr>
</tbody>
</table>
**Coho Salmon**

Coho salmon originate both in Asia and North America. Coho salmon fry generally remain in freshwater for one to two years and then migrate to the ocean. After approximately 18 months at sea, the fish return to their freshwater spawning areas.

The adult size is variable with lengths ranging from 40–88 cm and weighs from 1.2–6.8 kg. Coho salmon die after spawning (semelparous).

**How to distinguish the ocean phase**: Coho salmon have small black spots on the back that may also be present on the upper lobe of the tail. The tail has bright but not well-demarcated silver coloration. The caudal peduncle is relatively broad and the base of the teeth in the lower jaw is white. The meat is pink and firm and can have a drier texture than other Pacific salmon species when cooked.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>English</th>
<th>Other common names: Silver salmon</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Oncorhynchus kisutch</em></td>
<td>Coho salmon</td>
<td></td>
</tr>
<tr>
<td><strong>Japanese</strong></td>
<td>ギンザケ (Ginzake)</td>
<td></td>
</tr>
<tr>
<td><strong>Korean</strong></td>
<td>은연어 (Eunyeoneo)</td>
<td></td>
</tr>
<tr>
<td><strong>Russian</strong></td>
<td>Кижуч (Kizhutch)</td>
<td></td>
</tr>
</tbody>
</table>

**Chinook Salmon**

Chinook salmon originate both in Asia and in North America. Chinook salmon are not as abundant as chum, pink, and sockeye salmon and can grow to a body size larger than other Pacific Salmon. The length of an adult varies from 58–89 cm, or larger. The typical weight range of the Chinook salmon is 4.5–22.5 kg. Their life history includes an array of variations.

*Stream-type* Chinook salmon spend one year as fry or parr in fresh water before migrating to the sea. Typically, this type will return to their natal river in the spring or summer several months prior to spawning. *Ocean-type* Chinook salmon migrate to sea during their first year of life, normally within three months after emergence from the river gravel, and return to their natal river in the fall shortly before spawning.

**How to distinguish the ocean phase**: Chinook salmon have small round black spots on the back and both lobes of the tail fin and black color along the base of the teeth in the lower jaw. Meat color is pink, although some Chinook salmon have white meat due to the difference in how they process pigments in the food they consume. The meat is quite firm and has a relatively high fat content compared to chum and pink salmon.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th><em>Oncorhynchus tshawytscha</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>Chinook salmon</td>
</tr>
<tr>
<td><strong>Other common names</strong>: King salmon, Spring salmon, Blackmouth, Tyee</td>
<td></td>
</tr>
<tr>
<td><strong>Japanese</strong></td>
<td>マスノスケ (Masunosuke)</td>
</tr>
<tr>
<td><strong>Korean</strong></td>
<td>왕연어 (Wangyeoneo)</td>
</tr>
<tr>
<td><strong>Russian</strong></td>
<td>Чавыча (Tshawytscha)</td>
</tr>
</tbody>
</table>
**Cherry Salmon**

Cherry salmon originate only in Asia. Most of them mature at three or four years of age, after spending one or more years in rivers and one winter in the ocean. The size of adults varies greatly, generally 50 cm or more in length and 2–2.5 kg or more in weight.

They return to their natal river in March–May, spend the summer in the river, and move to headwaters for spawning in the fall.

**How to distinguish the ocean phase:** Cherry salmon most closely resemble coho salmon. Cherry salmon have small black spots on their back and a dark underlying hue under their silvery scales. The meat is bright red, has a firm texture, and is more moist and fatty than coho salmon.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Oncorhynchus masou</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Cherry salmon</td>
</tr>
<tr>
<td>Japanese</td>
<td>サクラマス (Sakuramasu)</td>
</tr>
<tr>
<td>Other common names:</td>
<td>マス (Masu salmon)</td>
</tr>
<tr>
<td>Korean</td>
<td>시마연어 (Simayeoneo)</td>
</tr>
<tr>
<td>Russian</td>
<td>Сима (Sima)</td>
</tr>
</tbody>
</table>

**Steelhead Trout**

Steelhead trout is the anadromous form of rainbow trout. Steelhead trout originate in both North America and Asia. Most steelhead remain in freshwater for 2–3 years, spend 2–3 years in the ocean, and return to their natal river to spawn. Adults typically range from 50–58 cm in length and 1.4–6.8 kg in weight. Some steelhead may spawn more than once (iteroparous).

**How to distinguish the ocean phase:** Steelhead trout have small black spots present on the head, back, and tail fin. Silver marking on the tail is confined to the center area. The head is relatively small and the tail is relatively large when compared to Pacific salmon. The tail is not forked. The meat is light pink and has a firm texture.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Oncorhynchus mykiss</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Steelhead trout</td>
</tr>
<tr>
<td>Japanese</td>
<td>スチールヘッド・トラウト (Steelhead)</td>
</tr>
<tr>
<td>Korean</td>
<td>무지개송어 (Steelhead Songeo)</td>
</tr>
<tr>
<td>Russian</td>
<td>Стальноголовая форель, микижа (Raduzhnaya forel)</td>
</tr>
</tbody>
</table>
How Atlantic Salmon is Different from Pacific Salmon

Atlantic salmon is one species, *Salmo salar* (Pacific salmon comprise six species).

Prior to introductions by humans, the historical distribution of Atlantic salmon included the North Atlantic, breeding in rivers of Western Europe, Iceland, Greenland, and the East coast of North America.

Atlantic salmon is iteroparous, unlike Pacific salmon which is semelparous. Iteroparous means that Atlantic salmon can survive spawning, return to the ocean, repeat their migration to freshwater, and spawn more than once.

Ocean-run Atlantic salmon have large conspicuous black spots above the lateral line, and on the top and sides of the head on the gill cover. Pacific salmon do not have black spots on the gill cover.

The North Atlantic Salmon Conservation Organization is the international organization responsible for the conservation, restoration, and national management of wild Atlantic salmon stocks (NASCO; [http://www.nasco.int](http://www.nasco.int)).

Wild Atlantic salmon catch comprises less than 0.1% of farmed Atlantic salmon harvest while wild Pacific salmon catch exceeds farmed Pacific salmon production (mostly coho and Chinook) by more than 5 times.
II. 4. Scientific Research

The Committee on Scientific Research and Statistics (CSRS) was established by the Commission under Articles VII, VIII, and IX of the Convention. In general, the purposes of the CSRS are to review and coordinate the collection and exchange of scientific data and specimens, coordinate and assess scientific studies of anadromous stocks and ecologically related species in the Convention Area and adjacent to it, coordinate scientific exchanges, review proposed scientific research programs, and make recommendations to the Commission. CSRS usually holds its meetings during the annual meeting of the Commission.

The Convention Article VII stipulates that the Parties shall cooperate in the conduct of scientific research in the North Pacific Ocean and its adjacent seas beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, for the purpose of the conservation of anadromous stocks including, as appropriate, scientific research on other ecologically related species. To achieve this goal, the Commission needs the best available scientific information on the condition of anadromous populations, ecologically related species, and their marine ecosystems.

With respect to fisheries and scientific research in the Convention Area, the Parties cooperate in collecting, reporting and exchanging biostatistical information, fisheries data, catch and fishing effort statistics, biological samples and other relevant data pertinent to the purpose of this Convention. Plans to exchange salmon data and samples are compiled and adopted annually. At the annual CSRS meeting, the Parties submit their scientific research plans for salmon and their reports on results of their previous scientific research and catch data. Parties also submit fry, juvenile, and smolt releases, and discuss cooperative research. The advance exchange of information on research programs and cruises to collect scientific and fishing information in the Convention Area is instrumental to the planning and successful implementation of these plans. Cooperative scientific research programs are other efficient tools used to obtain better scientific information on the ecological mechanisms regulating production of anadromous populations, climate impacts on Pacific salmon populations, and the utility of using salmon populations as indicators for the condition of North Pacific marine ecosystems. Scientists also meet at symposia and workshops between annual meetings.

Pacific salmon catches by all countries are currently at historic high levels, but in some areas and for some species such as Chinook salmon (Oncorhynchus tshawytscha) and coho salmon (O. kisutch), abundances are low, and ocean survival is poor. In general, scientists do not understand enough about the mechanisms that regulate production of Pacific salmon to explain the current trends in abundance. There is general agreement that climate and ocean conditions have a major influence on production, and variability has recently increased adding to a background of large climatic changes and frequent extreme events. For example, a major change in the intensity of the Aleutian Low around 1977 is generally acknowledged as improving the production of Pacific salmon that rear in the Bearing Sea. Climate effects and habitat changes in fresh water have been shown to have important influences on Pacific salmon production, but the increasing production of Pacific salmon from hatcheries identifies the influence of the ocean as the fry and smolts spend only a minimum time in fresh water. As another example, notably warmer conditions in the northeastern North Pacific during “the Blob” in 2014–2016 left lesser-quality food available to young salmon entering the ocean. It might also shift predator distributions in ways that contributed to low returns of salmon.

CSRS established the Science Sub-Committee (SSC) to facilitate planning of cooperative activities and coordination of national research programs. Since 2011, the SSC has been under the leadership of Shigehiko Urawa from Japan. Among other duties, the SSC formulates and reviews the implementation of the NPAFC Science Plan, which is a long-term plan for cooperative scientific research. With the adoption of the International Year of the Salmon (IYS) initiative in 2016, the SSC decided to integrate a new NPAFC Science Plan (2016–2020) with the IYS scientific program that is also directly relevant to NPAFC’s primary objective of promoting the conservation of anadromous populations of Pacific salmon and steelhead trout within the Convention Area.

The primary goal of the Science Plan is to understand variations in Pacific salmon productivity in a changing climate. Research objectives are to: (1) improve knowledge of their distribution, growth and survival in the ocean (current status); (2) increase understanding of the causes of variations in Pacific salmon and steelhead trout production (mechanisms); and (3) anticipate future changes in the production of Pacific salmon and steelhead trout and the marine ecosystems producing them (e.g., modelling). NPAFC Science Plan research themes (followed by IYS themes in brackets) are:

- (1) Status of Pacific salmon and steelhead trout (Status of Salmon);
- (2) Pacific salmon and steelhead trout in a changing North Pacific Ocean (Salmon in a Changing Salmosphere);
- (3) New technologies (New Frontiers);
- (4) Management systems (Human Dimension); and
- (5) Integrated information systems (Information Systems).
The IYS contributes to the Science Plan implementation by creation of an international framework for collaborative research and outreach. This framework engages international scientists from academia, government, industry, and nongovernmental organizations, and explores additional funding opportunities. New cooperative research projects under the IYS umbrella include collection and synthesis of existing data and associated metadata to generate and test specific hypotheses, integration of ecological monitoring programs in the ocean using research vessels and/or remote sensing, conceptual and quantitative modeling, process-oriented field and laboratory studies, and retrospective analyses.

Scientific results from cooperative studies will progressively reduce major gaps in knowledge with respect to the research themes, as well as make significant contributions to the IYS initiative in collaboration with other partners including the North Atlantic Salmon Conservation Organization (NASCO), North Pacific Fisheries Commission (NPFC), North Pacific Marine Science Organization (PICES), Pacific Salmon Commission (PSC), and others. New scientific information will also contribute to effective enforcement activities by member nations to protect Pacific salmon from illegal, unreported, and unregulated (IUU) fishing in the Convention Area.

Four working groups are currently functioning within the CSRS. The Working Group on Stock Assessment (WGSA) operates under the chairmanship of Andrew Munro from the United States, who assumed the Chairperson's duties after the 2018 Annual Meeting. In May 2019, WGSA met to summarize and discuss the latest statistical information on Pacific salmon catches and hatchery releases. WGSA members reviewed recent anomalous observations in salmon stock status in fishery regions with linking them to changes in salmon ecosystems. Environmental conditions are rapidly changing in both the freshwater and marine environments including increased water and air temperatures, droughts, and unusual weather patterns (e.g., fall typhoons in Korea). Salmon survival and growth generally declined in the last few years throughout the North Pacific, although mechanisms differ among areas. For some species and populations in the North Pacific, there were differences in survival that varied by latitude, with poorer survival in southern latitudes, and better survival in northern latitudes. This was particularly the case for pink salmon throughout the North Pacific, and sockeye salmon in the eastern north Pacific. In Canada and the United States, Chinook and coho salmon have exhibited poor survival throughout their range.

The working group discussed preparation of a collaborative multi-nation report focusing on status and trends of Pacific salmon for next year’s meeting and workshop. Members planned to communicate in the coming months to clarify objectives, timeline, and expectations of the report and to work towards the development of a template that each Party would be expected to follow.

WGSA members also considered an outcome of the IYS workshop on Pacific and Atlantic salmon status and trends that was held by NPAFC and Fisheries and Oceans Canada (DFO) in Vancouver, BC, on 23–24 January 2019. The workshop was attended by 25 international salmon experts and scientists with expertise in salmon in the Pacific, Atlantic, and Arctic oceans. Overview presentations on state changes and trends were provided for sockeye, pink, chum, Chinook, and Atlantic salmon with incidental information provided for steelhead trout, coho, and cherry salmon. Legacy datasets were identified, temporal patterns documented, state changes and trends discussed in relation to potential drivers and mechanisms, and future work needs identified.

The Working Group on Salmon Marking (WGSM) is chaired by Dion Oxman from the United States. At the 2019 Annual Meeting, the WGSM considered and summarized each member country’s report on salmon marking, proposed mark plans for brood year 2019, coordination of the otolith mark plans, tagging activities, as well as the WGSM contribution to the 2016–2020 NPAFC Science Plan implementation. There has been good compliance with the established country codes. The mark coordination effort continues to be effective and has significantly minimized mark duplication. Despite steady increases in the total number of proposed mark releases, of the 388 mark patterns proposed for brood year 2019, there were only three duplicates among countries. Those duplicates were reconciled prior to the meeting so no duplicate marks within species are present in the proposed 2019 otolith mark plan. The practice of exchanging mark plans prior to the meeting continues to minimize these conflicts. Although the number of mark patterns released throughout the Pacific Rim has remained high in recent years (355 in 2015; 355 in 2016; 391 in 2017; 400 in 2018; 388 in 2019), collaborative relationships will continue to contribute significantly to the success of the working group.

Development and updating of the high seas Otolith Mark Database continues successfully. Countries download their otolith marking and release information to the database online. The data are accessible to all users through the NPAFC website. Although entry of otolith mark images is labor intensive, all countries have made a significant effort to update the image archive.

Tagging releases are continued from the Japanese R/V Hokko maru into the central Bering Sea (NPAFC Doc. 1839). In summer 2018, 36 chum salmon were tagged by disk and archival tags including 19 AZBL archival tags (temperature, depth), 12 bio LOGGER tags (temperature, depth, light level), four DST-magnetic tags (temperature, depth, Earth's magnetic field, tilt), and one pop-up satellite tag (PSAT; temperature, depth, light level). Unfortunately, neither disc or archival tags, nor any data from the PSATs have been
recovered from chum salmon released in the summer of 2018. During the 2019 IYS High Seas Winter Survey (Russian R/V *Professor Kaganovskiy*), two coho were tagged with NPAFC disc tags and released into the eastern Gulf of Alaska.

From Chinook salmon in the Unalaska Bay, Archival tag data, however, were retrieved through the Argos satellite system from 10 PSATs between January and July 2018. These tags were attached to Chinook salmon in the fall of 2017. The United States plans to release steelhead trout with PSATs into the Situk River, Alaska.

A new tagging poster design—in four languages with an emphasis on rewards—was created by S. Sato and S. Urawa and was approved for use by the working group. Since no tags have been recovered and returned since 2017, the WGSN requested at the 2018 Annual Meeting that F&A provide funding to support a draw to encourage fishermen and salmon hatcheries to return recovered high-seas tags to the WGSN from June 1, 2018 to December 31, 2020. The WGSN proposed a single prize of $300 (CDN) for each tag return, to be awarded at the 2021 Annual Meeting.

The working group continues working on two projects that would facilitate and assist research associated with the 2016–2020 Science Plan: (1) development of a high seas otolith mark recovery database, and (2) development of an online interactive mapping system (IMS) to visualize and study the distribution and movement patterns of Pacific salmon and steelhead trout throughout the Pacific Rim. The recovery database is ready to be tested with about 300 samples provided by Japan. Mark recovery data from 31 pink salmon otoliths collected during the 2019 IYS Gulf of Alaska Expedition, will be added to the test database once analysis is complete. Access to the high seas otolith mark recovery database is restricted to the WGSN members until the database is complete. The ADF&G work on the IMS development is temporarily delayed due to staffing shortages as well as personnel and administrative changes in 2018 and 2019.

The WGSN established relationships with scientists and hatchery managers from the People’s Republic of China. In July 2018, James Li Xin from China reached out to the WGSN Chairperson through the NPAFC Secretariat to discuss marking 100,000 chum salmon and releasing them into the Tumen River. They planned to rear and mark these chum salmon at the Mi Jiang Salmon Hatchery in Hunchun City, Yanbian Korean Autonomous Prefecture in China. This group was being raised for experimental purposes to test rearing and marking procedures and was assigned a mark of 6H. Unfortunately, the broodstock was relocated to another facility, so the hatchery tested their marking equipment and protocols using brook trout, which resulted in a clear 8H, mark pattern. This work was part of the “Take Me Home—Recover Chinese Chum Salmon Project” and was privately funded by the Forever Nature Capital Foundation (FNCF). Intention was expressed to collect and mark chum salmon in 2019. In July 2019, FNCF Communication Officer Mr. Li Xin requested again two otolith marks for the Tumen River hatchery and the Dongning hatchery chum salmon releases. Dion Oxman assigned two unique otolith marks 4,4,2H and 4H4 for the Chinese hatcheries’ otolith marking operations.

A preliminary number of otolith-marked salmon to be released from Pacific Rim hatcheries reached 2.6 billion, or 53.6% of all released juvenile salmon in 2019.

The **Working Group on Stock Identification (WGSI)** was established in 1999 on an ad hoc basis and was changed to a full working group in 2011. Its goals are to develop, standardize, and disseminate genetic and other databases among the Parties, to encourage the development of new genetic technologies, and to facilitate the dissemination of statistical techniques. Bill Templin, from the United States, has served as a Chairperson for WGSI since 2019.

At the 2019 Annual Meeting, WGSI reviewed a stock identification research and genetic baseline activities in the NPAFC member countries, considered genetic sample exchange rules under ABS (Access and benefit sharing) Guidelines, discussed new developments in technologies and methods, and compiled the WGSI work plan. Member countries shared their results in the development of new genotyping-by-synthesis panels for Pacific salmon and steelhead that will enable higher stock resolution for management.

The United States presented genetic results of salmon samples collected from the IUU vessel F/V *Run Da* intercepted by the U.S. Coast Guard (Doc. 1859). Most of the samples were originally identified as chum salmon and initial genetic analysis was performed with 13 microsatellites. This analysis revealed that most of the samples were not chum salmon. Species identification of the samples was performed by SNP analyses and determined that one chum salmon, four Chinook salmon, and 47 pink salmon were present in the 52 samples collected. Discussions about access to these samples is ongoing among the parties.

The **International Year of the Salmon Working Group (IYS WG)** is the only group that met intersessionally in Vancouver, B.C. on January 20–23, 2019. Mark Saunders is the IYS WG Chairperson.
In 2019, the focal year of the IYS, there was a significant number of event registrations and IYS promotions on social media. In total, there were 182 events and 56 projects registered on the IYS website at the end of the 2019 focal year. The website was visited by 17,985 users within 132 countries. IYS Twitter account grew by over 150% in 2019, with an increase in followers from approximately 300 at the start of the year to over 750 followers at the end of February 2020. Our audience had increased levels of engagement with IYS posts on Instagram and Facebook. There were 4,073 engagements on Twitter and 1,798 on Facebook over the course of 2019. Currently, these accounts are managed by the Public Relations and Communications Coordinator, who will further develop these networks and use the established platforms to their fullest potential to reach and interact with larger audiences.

At the Annual Meeting in May 2019, the IYS WG members reviewed the 2018/19 Fiscal Year’s activities with approval of the IYS WG and the North Pacific Steering Committee (NPSC) reports; reviewed the Terms of Reference for the group; discussed potential NPAFC activities aligned with the Science Plan and IYS research including the high seas research cruise proposal, engagement of Theme Counsel Groups to plan and coordinate research and outreach activities throughout the Pacific Basin; and a series of NPAFC-IYS workshops to be held in conjunction with the annual meetings in 2019–2021.

In 2019, there were over 96 meetings between IYS partners and potential partners. Thus far, IYS staff has been successful at establishing collaborations with over 35 partners in the North Pacific representing government science from five countries, academia, First Nations, NGO’s and industry, who are participating in the development and implementation of IYS on a broad scale. In the Atlantic basin, NPAFC continues to work with the main IYS partners. The workshops, symposia, and events for the IYS focal year and 2019 Gulf of Alaska Expedition had a large presence on social media, which in turn has resulted in a larger online following for the announcement of future IYS-related events, ongoing projects, and meetings.


The IYS signature project, a five-week expedition studying salmon in the Gulf of Alaska on board the R/V Professor Kaganovskiy was successfully completed on March 18, 2019. This privately organized expedition was funded with C$1.3M in cash contributions from DFO, the Province of B.C., the Pacific Salmon Foundation, the Pacific Salmon Commission (Northern Endowment Fund), the Pacific Salmon Farmers Association, Harmac Pacific, and Sitka Foundation. A team of 21 scientists from five NPAFC member countries cruise were at sea from mid-February to mid-March and covered a grid of 60 stations travelling 4,800 nautical miles conducting fishing and oceanographic sampling to describe the distribution, abundance and condition of salmon and other pelagic species and the associated ocean conditions. The expedition had two major objectives: to test the hypothesis that the abundance of salmon is largely determined by the end of their first winter at sea and to see if an international team can effectively work together to make the discoveries we need to make in a future of rapidly changing ecosystems. The expedition proved to be an extremely successful proof of concept that validates the IYS initiative (see details in NPAFC Doc. 1858). It will be instrumental to plan the next steps which include planning future cruises in 2020 and 2021.

Development of two other signature projects, the “Likely Suspects” Framework and the Data Mobilization project, is ongoing. The Likely Suspects concept positions candidate mortality factors (i.e., “suspects”) within an overall spatio-temporal framework covering the freshwater migration and marine phases of the life cycle. Key geographical areas and periods where mortality factors are known or thought to operate are characterized as ecosystem “domains.” Expedition data mobilization should be launched in 2020. One of the goals of the project is to have all the data collected during the IYS international surveys (2019, 2020, and 2021) openly available to the science community. To achieve this, the NPAFC partnered with the Tula Foundation (Victoria, BC), and the Secretariat worked with them to develop the methods to standardize and share the data. The science team will have first access to publication of information, but it will be open to all users via a website to be maintained at UBC.

On 17 October 2019, the NPAFC statistical data files and statistics metadata report were respectively updated with the information on Pacific salmon catches and hatchery releases in 2018. Data sets were verified by comparison with available published information and clarifications by the CSRS Points of Contact.
Several scientific articles and reviews were published in the semi-annual Newsletter issues Nos. 45 and 46. This includes a topical article in *A Rapidly Changing World, Are Mixed-stock Fisheries the Best Option?* by Stephanie Taylor, review on *The RAFOS Ocean Acoustic Monitoring (ROAM) Tag: A Highly Accurate Fish Tag for At-sea Movement Studies* by Camrin D. Braun with four co-authors from the University of Rhode Island and Woods Hole Oceanographic Institution, wrap-up summary of the Second NPAFC-IYS Workshop in Portland, Oregon, USA by the Workshop Chairperson Ed Farley, prospects article *Resilience of Salmon Fishers in an Uncertain Future* by Nathan Bendriem, and wrap-up summaries of the IYS Implementation Progress in 2018 and its Focal Year of 2019 and IYS-related activities’ review *The International Year of the Salmon (IYS)—Connecting the Pacific and Atlantic* by Mark Saunders, as well as *Updated Instructions for Sampling Salmon Tissues for DNA Stock Identification* compiled by the WGSI.

### II. 5. Enforcement in 2019

The 2019 e-mail Joint Patrol Schedule Meeting was proposed to begin on Monday, March 18, 09:00 a.m., and adjourn at 10:00 a.m. on Thursday, March 21, 2019 (Vancouver time). The Secretariat prepared, in cooperation with the Parties’ Meeting Points of Contact, a meeting schedule and procedure that was approved by the ENFO Points of Contact by e-mail on March 14, 2019. The Secretariat uploaded the draft chart with the Parties’ schedules filled in on March 18 and finalized it on March 21, 2019. No revisions/adjustments were received from the Parties during the meeting. The joint patrol schedule was completed, and meeting report (NPAFC Doc. 1814) was submitted for ENFO review on March 21, 2019.

In total, 260 days of ship and 430 hours of aerial patrols were performed by four NPAFC member countries in 2019. Canada deployed shipriders aboard the U.S. Coast Guard Cutter *MELLON*, patrolling the North Pacific and conducting boardings under the WCPFC and NPFC High Seas Boarding and Inspection (HSBI) processes. Groups of unidentified fishing vessels were repeatedly detected in the northwestern North Pacific by Russian aerial patrols. These vessels had disconnected satellite positioning transmitters, no fleet numbers, and no flags to indicate their nationality. However, the features of these vessels indicated that they were not used for fishing anadromous species.

Ten biweekly e-mail conferences were conducted by ENFO from early July to November 2019 (the same number as in 2018). The Secretariat created a secure web page on the NPAFC website to upload the Parties’ reports. Four NPAFC member countries delivered 20 e-mail reports prepared in accordance with the established template: Canada—3, Japan—5, Russia—8, and U.S.—4 reports.

The list of apprehended illegal salmon fishing vessels (22 vessels including F/V *Run Da*) in the NPAFC Convention Area has been updated as of July 3, 2018. From 1993–2019, the cooperative enforcement efforts of the NPAFC Parties resulted in the detection of 50 vessels conducting directed driftnet fishing operations for salmon in the Convention Area. Of those vessels, 22 were apprehended (Table 1). No IUU fishing or vessel of interest sighting was reported during the 2019 patrol season. Twelve other Regional Fisheries Management Organizations’ IUU Vessel Lists have been available on the ENFO public webpage, which are linked to each IUU list of their own websites.

**Table 1.** Statistics of detection and apprehension of vessels conducting directed driftnet fishing operations for salmon in the NPAFC Convention Area by the enforcement agencies of Contracting Parties, 1993–2019.

<table>
<thead>
<tr>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

Mr. Sean Wheeler (DFO, Canada) represented NPAFC at the 4th NPFC Technical and Compliance Committee (TCC) Meeting in Tokyo, Japan in July 2019. NPAFC has requested NPFC to share salmon bycatch/retention information, based on the Memorandum of Cooperation between the two commissions signed in May 2019. NPFC encouraged its members, on a voluntary basis, to report significant encounters of salmon during inspection to the SWG (Small Working Group) on Operational Enforcement, which will discuss any report on a case-by-case basis. Based on consensus, the SWG will determine what information may be provided to the NPAFC.

Prior to the 27th Annual Meeting, the ENFO held a one-day Workshop on *New Technologies in Combating IUU Fishing*. The workshop proposal was developed by the Secretariat staff together with the ENFO Chairperson Mike Carlson and submitted to the
ENFO Points of Contact. After revision, an updated agenda was distributed on January 18, 2019, and finalized after obtaining all seven invited speakers’ agreements on March 22, 2019. The primary workshop objective was to review new technologies and approaches to fight IUU fishing in the North Pacific Ocean. At the workshop, contemporary observation and surveillance technologies were presented by representatives of such industry leaders as UrtheCast, CLS, Vulcan, and MDA-Maxar together with reviews on IUU-fishing related issues by NOAA, the New Zealand Ministry for Primary Industries, and the Global Fishing Watch.

At the 2016 Annual Meeting in Busan, Korea, ENFO tasked the Secretariat to prepare a review on the FAO Port State Measures Agreement implementation in the NPAFC member countries. Extracting relevant information required some time, and a review was prepared for publication in early 2019. Information was requested from partner RFMOs with a technical compliance function. The secretariats of IATTC, NAFO, and NPFC significantly contributed to the review. A draft manuscript was submitted to the Parties for their commentaries and additions in early January 2019 and then published in the NPAFC Newsletter #45, p. 10–26.

Besides this publication, several articles related to NPAFC enforcement activities were published in Newsletter issues 45 and 46. These articles include NPFC Compliance—Challenges and Mitigation Tools by Peter Flewwelling, Compliance Manager at the North Pacific Fisheries Commission (NPFC), NPFC Marks its Fifth Year of Operation and Opens a New Era of Cooperation with NPAFC by Dae-Yeon Moon, NPFC Executive Secretary, The ENFO Integrated Information System (IIS): Rise and Fall by the Executive Director, and secretarial review International Collaboration Key Element for Success in Combating IUU Fishing—2019 ENFO Meeting and Workshop.

II. 6. Statistics

The time series of catch and hatchery release statistics are a useful tool for researchers interested in Pacific salmon and steelhead production under conditions of changing ocean climate and ecosystems. In 2013, work began to create electronic data files that combined NPAFC statistics with time series data and to make these statistics available to the public. The time series data are available for download from the NPAFC website (https://npafc.org/statistics/) and have replaced the hard-copy and on-line versions of the NPAFC Statistical Yearbooks.

Commercial catch and hatchery release statistics are available for all the Commission member countries. Sport and subsistence catch data are available for Canada, Russia, and USA. Depending on the reporting area, some catch statistics are available for the period starting in 1925 and some hatchery release statistics are available starting from 1952. All data files are regularly updated by the Secretariat upon receiving data from member countries and their verification by the Working Group on Stock Assessment. In this Report, all statistical data presented is based on the NPAFC data files updated on July 31, 2019. The last year reported in the data files is 2018 with inclusion of some data from 2019 as preliminary information.

An updated metadata document “NPAFC Statistics: Description of Pacific Salmonid Catch and Hatchery Release Data Files” has been available online since 17 October 2019 (https://npafc.org/statistics). It describes the data sources and data file organization.

The average annual total catch of Pacific salmon and steelhead trout by NPAFC member countries between 1993 and 2019 was 916,747 metric tonnes (mt). Since the world capture fisheries catch varied in the range of 89.6–96.4 million mt in 2016–2018 with an average of 93.0 million mt, Pacific salmon represented about 1.0% (by weight) of capture fisheries harvest.

In 2019, the overall Pacific salmon catch was 563,276 thousand fish or 968,729 mt. Russia caught the largest proportion of the total catch (499,207 mt, 51.5% of total weight) followed by the United States (406,959 mt, 42.0% of total weight)—most of which were caught in Alaska (401,994 mt)—Japan (59,460 mt, 6.1%), Canada (2,973 mt, 0.3%), and Korea (130 mt, < 0.1%). Pink and chum salmon made up most of the total catch (54.2% and 24.1% by weight, respectively), followed by sockeye salmon (18.5%) and coho salmon (2.4%). Chinook salmon (0.6%), cherry salmon (0.2%), and steelhead trout (< 0.1%) were less than 1% of the catch by weight.

Total Pacific salmon commercial catch in 2019 is the ninth highest among odd years in harvested salmon weight and still surpasses all even years’ figures besides 2018. The highest annual catches on record occurred during five of the six most recent odd-numbered years (i.e., 2007, 2009, 2011, 2013, and 2015) and 2018, when more than one million metric tonnes were caught. Typically, more adult salmon are caught in odd-numbered years than even-numbered years because the most frequent species in the catch, pink salmon, are more abundant in odd-numbered years.

In harvested numbers, 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 were the second lowest recorded from 1993–2019; for pink salmon (1,297 g)—third lowest after 1999 and 2018. Salmon catches in southern areas have reduced while northern regions remain stable. The combined total catch of Russia and U.S.A. exceeded 96% in fish numbers and 93% in weight for the first time. Pink and chum salmon contribute 85% of caught fish numbers and 78% of total catch weight; this is near the average value for 1993–2019.

Hatchery releases of salmon and steelhead from NPAFC member countries have been stable since 1993, with approximately 5 billion fish released annually. However, in 2019, the numbers of released salmon juveniles increased by more than half a million and reached a historic high of 5,517 thousand fish—primarily because of increased Asian hatchery chum salmon releases and sockeye salmon from spawning channels in Canada. Hatcheries released 2,023 million fish (37% of the total) in the United States, 1,918 million (35%) in Japan, 1,181 million (21%) in Russia, 384 million (7%) in Canada, and 11 million (< 1%) in Korea.

Pink salmon percentage in total released juvenile salmon lowered to 24.6% (1,357 million fish) and chum salmon percentage grew to 62.9% with almost 3.5 (3,469) million of juvenile chum released in 2019. For other salmon species, hatchery releases were sockeye (341 million, 6%), Chinook (241 million, 4%), coho (82 million, 2%), and cherry salmon (8 million, <1%). For steelhead trout, it was 20 million (<1%).

Please refer to Tables 2–7 and Figures 1–6 for annual commercial catch of salmon and steelhead trout in number of fish and weight in tonnes by country and species, 1993–2019.
Table 2. Annual commercial catch of salmon and steelhead trout by country in thousands of fish, 1993–2019.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
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<th>Republic of Korea</th>
<th>Russia</th>
<th>United States</th>
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<td>416,073</td>
<td>9,392</td>
<td>70,260</td>
<td>158</td>
<td>182,427</td>
<td>153,836</td>
</tr>
<tr>
<td>1999</td>
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Note: 2006–2019 catches do not include catch by foreign fleets operating in the Russian EEZ.

Figure 1. Annual commercial catch of salmon and steelhead trout by country in millions of fish, 1993–2019.
Table 3. Annual commercial catch of salmon and steelhead trout by country in tonnes round weight, 1993–2019.

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Note: 2006–2019 catches do not include catch by foreign fleets operating in the Russian EEZ

Figure 2. Annual commercial catch of salmon and steelhead trout by country in thousands of tonnes (round weight), 1993–2019.
### Table 4. Annual commercial catch of salmon and steelhead trout by species in thousands of fish, 1993–2019.

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<tr>
<th>Year</th>
<th>Total</th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Steelhead</th>
<th>Cherry</th>
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<td>8,641</td>
<td>844</td>
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</table>

Note: 2006–2019 catches do not include catch by foreign fleets operating in the Russian EEZ; 1993–2001 catches do not include catch by Korea; the count of cherry salmon is underestimated.

![Total Commercial Catch](image)

**Figure 3.** Annual commercial catch of salmon and steelhead trout by species in millions of fish, 1993–2019.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Steelhead</th>
<th>Cherry</th>
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<td>323,188</td>
<td>317,972</td>
<td>46,354</td>
<td>13,482</td>
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<td>392,533</td>
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<td>10,413</td>
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<td>14,107</td>
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Note: 2006–2019 catches do not include catch by foreign fleets operating in the Russian EEZ; yearly totals from 1993 to 2016 include Korean catches.

Figure 4. Annual commercial catch of salmon and steelhead trout by species in thousands of tonnes (round weight), 1993–2019.

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<th>Republic of Korea</th>
<th>Russia</th>
<th>United States</th>
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<td>7.21</td>
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Figure 5. Annual hatchery releases of salmon and steelhead trout by country in millions of fish, 1993–2019.

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<tr>
<th>Year</th>
<th>Total</th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Steelhead</th>
<th>Cherry</th>
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<td>1993</td>
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<td>1,365,381</td>
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<td>289,037</td>
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<td>113,659</td>
<td>291,930</td>
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<td>282,690</td>
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<td>13,855</td>
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</table>

Figure 6. Annual hatchery releases of salmon and steelhead by species in millions of fish, 1993–2019.
III. The 2019 IYS Working Group and North Pacific Steering Committee (NPSC) Meetings
The International Year of the Salmon Working Group (IYS-WG) was formed at the NPAFC 23rd Annual Meeting in Kobe, Japan, in 2015. Since the inaugural meeting, the IYS WG annually holds two face-to-face meetings in a year, one during the Commission’s annual meeting and the other before the NPSC meeting in Vancouver, the host city of the NPAFC Headquarters, at the beginning of calendar year.

### III. 1. Time and Place of the Meetings

The IYS-WG met on January 20 & 21, 2019, at the Blue Horizon Hotel, in Vancouver, BC, Canada. The purpose of the meeting was to review progress made on the IYS to date, including signature projects and next steps, to discuss the implementation of the Theme Counsel Groups, and to determine the next steps of the IYS Working Group with respect to the development of research and outreach plans that reflect NPAFC priorities.

The North Pacific Steering Committee (NPSC) meeting took place from January 21–22 in the same venue to provide direction regarding the implementation of the International Year of the Salmon (IYS) in the Pacific basin. The NPSC is one of two basin-scale Steering Committees that provide direction to an IYS Coordinating Committee (CC) that in turn considers issues related to overall implementation of the IYS at the hemispheric scale. This was the third meeting of the NPSC. The agenda was supported by detailed discussion documents on overarching issues of concern that were presented by both the NPSC and North Atlantic Steering Committee (NASC) when they met from September 11–12, 2018.

### III. 2. Participants

IYS-WG participants for both days included Mark Saunders (Chairperson) and Jim Irvine from Canada, Kengo Suzuki and Shunpei Sato from Japan, Sukyung Lee, Ju Kyoung Kim and Suam Kim from Korea, and Dion Oxman from the United States. Other participants included Vladimir Radchenko, Jeongseok Park, Stephanie Taylor, and Nathan Bendriem from the NPAFC Secretariat (Table 8).

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
<th>City &amp; Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Nathan Bendriem</td>
<td>NPAFC Intern</td>
<td>NPAFC</td>
<td>USA</td>
</tr>
<tr>
<td>2 Jim Irvine</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>DFO</td>
<td>Canada</td>
</tr>
<tr>
<td>3 Ju Kyoung Kim</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Korea Fisheries Resources Agency</td>
<td>Korea</td>
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<td>4 Suam Kim</td>
<td>NPAFC President</td>
<td>Pukyong National University</td>
<td>Korea</td>
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<td>5 Sukyung Lee</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Korea Fisheries Resources Agency</td>
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<tr>
<td>6 Dion Oxman</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Alaska Department of Fish and Game</td>
<td>USA</td>
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<td>7 Jeongseok Park</td>
<td>NPAFC Secretariat; NPSC Member</td>
<td>NPAFC</td>
<td>Canada</td>
</tr>
<tr>
<td>8 Vladimir Radchenko</td>
<td>NPAFC Secretariat; NPSC Member</td>
<td>NPAFC</td>
<td>Canada</td>
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<td>9 Shunpei Sato</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Japan Fisheries Research and Education Agency</td>
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<tr>
<td>10 Mark Saunders</td>
<td>NPAFC Secretariat; IYS-WG Chair; ICC Co-Chair</td>
<td>NPAFC</td>
<td>Canada</td>
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<tr>
<td>11 Kengo Suzuki</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Japan Fisheries Research and Education Agency</td>
<td>Japan</td>
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<tr>
<td>12 Stephanie Taylor</td>
<td>NPAFC Secretariat; IYS Coordinator / Rapporteur</td>
<td>NPAFC</td>
<td>Canada</td>
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</table>

The NPSC meeting was attended by 30 people including IYS-WG members and other invitees (Table 9). The meeting was facilitated by Mark Saunders, who began by leading roundtable introductions of participants. He then reviewed the meeting objectives, agenda (See section III.3) and NPSC Terms of Reference. NPAFC Intern Nathan Bendriem served as a rapporteur for the meeting.
Table 9. Participants of the 2019 IYS North Pacific Steering Committee meeting (January 21–22, Vancouver, BC, Canada), listed in alphabetical order by last name.

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organization</th>
<th>Country</th>
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</thead>
<tbody>
<tr>
<td>1 Hal Batchelder</td>
<td>NPSC Member</td>
<td>PICES</td>
<td>Canada</td>
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<tr>
<td>2 Fiona Beaty</td>
<td>NPSC Attendee</td>
<td>UBC</td>
<td>Canada</td>
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<tr>
<td>3 Nathan Bendriem</td>
<td>NPAFC Secretariat/Intern, Rapporteur</td>
<td>NPAFC Secretariat</td>
<td>Canada</td>
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<tr>
<td>4 Allan Berezny</td>
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<td>Canada</td>
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<td>5 Anne Conner</td>
<td>NPSC Attendee</td>
<td>Conner and Associates</td>
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<tr>
<td>6 John Field</td>
<td>NPSC Member</td>
<td>Pacific Salmon Commission</td>
<td>Canada</td>
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<tr>
<td>7 John Holmes</td>
<td>NPSC Attendee</td>
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<td>Canada</td>
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<tr>
<td>8 Rae Hull</td>
<td>Participant</td>
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<td>Canada</td>
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<tr>
<td>9 Jim Irvine</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>DFO</td>
<td>Canada</td>
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<tr>
<td>10 Paul Kariya</td>
<td>NPSC Attendee</td>
<td>Great Bear Initiative</td>
<td>Canada</td>
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<td>11 Ju Kyoung Kim</td>
<td>IYS-WG &amp; NPSC Member</td>
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<tr>
<td>12 Suam Kim</td>
<td>NPAFC President/IYS-WG</td>
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<td>Korea</td>
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<td>13 Gerry Kristianson</td>
<td>NPSC Attendee</td>
<td>Sport Fishery Advisory Board</td>
<td>Canada</td>
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<td>14 Sukyung Lee</td>
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<td>Korea Fisheries Resources Agency</td>
<td>Korea</td>
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<td>15 Jonathan Moore</td>
<td>NPSC Attendee</td>
<td>Simon Fraser University</td>
<td>Canada</td>
</tr>
<tr>
<td>16 Anita Mueller</td>
<td>NPSC Member</td>
<td>Genome BC</td>
<td>Canada</td>
</tr>
<tr>
<td>17 Justine Nelson</td>
<td>NPSC Attendee</td>
<td>Rivershed Society of BC</td>
<td>Canada</td>
</tr>
<tr>
<td>18 Jennifer Nener</td>
<td>NPSC Member</td>
<td>DFO</td>
<td>Canada</td>
</tr>
<tr>
<td>19 Dion Oxman</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>ADFG</td>
<td>USA</td>
</tr>
<tr>
<td>20 Jeongseok Park</td>
<td>NPAFC Secretariat; NPSC Member</td>
<td>NPAFC Secretariat</td>
<td>Canada</td>
</tr>
<tr>
<td>21 Jordan Point</td>
<td>NPSC Member</td>
<td>First Nation Fishery Council</td>
<td>Canada</td>
</tr>
<tr>
<td>22 Vladimir Radchenko</td>
<td>NPAFC Secretariat; NPSC Member</td>
<td>NPAFC Secretariat</td>
<td>Canada</td>
</tr>
<tr>
<td>23 Shunpei Sato</td>
<td>IYS-WG Member</td>
<td>Japan Fisheries Research and Education Agency</td>
<td>Japan</td>
</tr>
<tr>
<td>24 Mark Saunders</td>
<td>NPAFC Secretariat; IYS-WG Chair; NPSC Chair; CC Co-Chair</td>
<td>NPAFC Secretariat</td>
<td>Canada</td>
</tr>
<tr>
<td>25 Kengo Suzuki</td>
<td>IYS-WG &amp; NPSC Member</td>
<td>Japan Fisheries Research and Education Agency</td>
<td>Japan</td>
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<tr>
<td>26 Stephanie Taylor</td>
<td>NPAFC Secretariat, Rapporteur</td>
<td>NPAFC Secretariat</td>
<td>Canada</td>
</tr>
<tr>
<td>27 David Travia</td>
<td>NPSC Attendee</td>
<td>Province of BC</td>
<td>Canada</td>
</tr>
<tr>
<td>28 Christie Whelan</td>
<td>NPSC Attendee</td>
<td>BC Salmon Restoration Fund (DFO)</td>
<td>Canada</td>
</tr>
<tr>
<td>29 Jacques White</td>
<td>NPSC Member</td>
<td>Long Live the Kings</td>
<td>USA</td>
</tr>
<tr>
<td>30 Dennis Zimmermann</td>
<td>NPSC Attendee</td>
<td>Yukon River Panel</td>
<td>Canada</td>
</tr>
</tbody>
</table>

Remark: All participants attended both days, with the exception of Jordan Point, David Travia, Anita Mueller, and Gerry Kristianson who only attended the second day, and Justine Nelson, Allan Berezny and Fiona Beaty, who only attended the first day. Anne Conner was present via telephone.
III. 3. Agendas

IYS-WG Chairperson Mark Saunders opened the working group meeting and welcomed all participants. This opening was followed by a welcome from Dr. Suam Kim, President of the North Pacific Anadromous Fish Commission and Dr. Vladimir Radchenko, Executive Director of the North Pacific Anadromous Fish Commission Secretariat, and roundtable introductions. The agenda was reviewed, which included the following items:

**Day 1 (January 20, 9 am – 5 pm)**

1. Welcome and introductions (30 minutes)
2. Review of the agenda (10 minutes)
3. Review of IYS-WG Terms of Reference (15 minutes)
4. Discussion of progress on implementation of IYS Theme Counsel Groups (TCGs) (30 minutes)
   a. Membership considerations
   b. Selection of Chairs and Co-Chairs
5. Report on progress made on IYS implementation in 2018, including review of IYS launch events (75 minutes)
7. Review of 2019 IYS Expedition Cruise Plan (60 minutes)
   a. Presentation on progress by Vladimir Radchenko, (NPAFC) (30 minutes)
   b. Discussion
8. Effectiveness of IYS Communications (30 minutes)
   a. Website
   b. Social medias (Facebook and Twitter)
   c. Communication to IYS WG members and other committees from IYS Secretariat
9. Review of progress made on IYS Signature Projects and next steps (45 minutes)
   a. ROAM
   b. Likely Suspects
   c. High Seas Expeditions 2020–2022
10. Review of changes proposed by IYS Technical Team to the Sponsorship document—ICC (18)16 (10 minutes)
11. Revision of Theme Counsel Group Terms of Reference (10 minutes)
12. Consideration of NPAFC priorities and plans by IYS Research Theme/Science theme (90 minutes)
    a. Status of Pacific salmon and steelhead trout (status of salmon)
    b. Pacific salmon and steelhead trout in a changing North Pacific Ocean (salmon in a changing salmosphere)
    c. New technologies (new frontiers)
    d. Management systems (human dimensions)
    e. Integrated information systems (information systems)
13. Prioritization and coordination of planned and proposed IYS workshops (60 minutes)
    a. Second NPAFC-IYS Workshop
14. Development of IYS Workplan including budget (60 minutes)
    a. Review progress made to date in 2018/19 Fiscal Year in accordance with the tasked outlined in the IYS Workplan.
15. Revision of Theme Counsel Group Terms of Reference (10 minutes)
16. Other (30 minutes)
17. Summary and next steps (15 minutes)

Mark Saunders suggested adding a review of the progress made in the current fiscal year on activities and priorities outlined in the previous IYS Workplan and it was added to the agenda after "Report on progress made on IYS implementation in 2018." This change was accepted, and no other changes were suggested. The IYS Working group accepted the amended agenda.

**Day 2 (January 21, 9 am – 12 pm)**

12. Consideration of NPAFC priorities and plans by IYS Research Theme/Science theme (90 minutes)
    a. Status of Pacific salmon and steelhead trout (status of salmon)
    b. Pacific salmon and steelhead trout in a changing North Pacific Ocean (salmon in a changing salmosphere)
    c. New technologies (new frontiers)
    d. Management systems (human dimensions)
    e. Integrated information systems (information systems)
13. Prioritization and coordination of planned and proposed IYS workshops (60 minutes)
    a. Second NPAFC-IYS Workshop
14. Development of IYS Workplan including budget (60 minutes)
    a. Review progress made to date in 2018/19 Fiscal Year in accordance with the tasked outlined in the IYS Workplan.
15. Revision of Theme Counsel Group Terms of Reference (10 minutes)
16. Other (30 minutes)
17. Summary and next steps (15 minutes)
There was general support for the agenda among participants. However, it was noted that the updated Theme Counsel Groups Terms of Reference should be revisited by the IYS Working Group and it was added to the agenda after “Development of IYS Workplan including budget.”

Annotated agenda for the North Pacific Steering Committee meeting was presented as follows:

### Day 1 (Monday, January 21, 1 pm – 5 pm)

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00–1:45</td>
<td>Welcome, agenda review, and introductions, First Nations welcome, NPAFC welcome, roundtable introductions, and review of terms of reference</td>
</tr>
<tr>
<td>1:45–2:15</td>
<td>Report on progress made on IYS implementation in 2018</td>
</tr>
<tr>
<td>2:15–2:45</td>
<td>Overview of the IYS Signature Project</td>
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<tr>
<td>2:45–3:00</td>
<td>Break</td>
</tr>
<tr>
<td>3:00–3:20</td>
<td>Review Strategic implementation plan, including Theme Counsel Groups and overall funding strategy</td>
</tr>
<tr>
<td>3:20–4:00</td>
<td>Breakout Session on improvements and alteration to strategic implementation plan and specific funding strategy</td>
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<tr>
<td>4:00–4:55</td>
<td>Plenary Session to report out and discuss results of breakout session</td>
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<tr>
<td>4:55–5:00</td>
<td>Close and wrap up of Day One</td>
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### Day 2 (Tuesday, January 22, 8:30 am – 4 pm)

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30–9:00</td>
<td>Morning coffee and tea</td>
</tr>
<tr>
<td>9:00–9:15</td>
<td>Review Calendar of events</td>
</tr>
<tr>
<td>9:15–9:25</td>
<td>Salmon Data Workshop overview</td>
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<tr>
<td>9:25–9:35</td>
<td>Vancouver Celebration of IYS Cruise overview</td>
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<tr>
<td>9:35–9:50</td>
<td>NPAFC Second Workshop discussion</td>
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<tr>
<td>9:50–10:30</td>
<td>Brainstorming other possible events</td>
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<tr>
<td>10:30–10:45</td>
<td>Break</td>
</tr>
<tr>
<td>10:45–11:05</td>
<td>Overview Presentation of <em>The Long Live the Kings</em></td>
</tr>
<tr>
<td>11:05–12:00</td>
<td>IYS Communications</td>
</tr>
<tr>
<td>12:00–1:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:00–1:30</td>
<td>Planning IYS Wrap-Up Symposium and Event</td>
</tr>
<tr>
<td>1:30–2:00</td>
<td>The Metrics of Success</td>
</tr>
<tr>
<td>2:00–2:30</td>
<td>Outreach Strategies</td>
</tr>
<tr>
<td>2:30–2:45</td>
<td>Break</td>
</tr>
<tr>
<td>2:45–3:15</td>
<td>Wrap-up and next steps</td>
</tr>
<tr>
<td>3:15–4:00</td>
<td>Concluding Roundtables</td>
</tr>
</tbody>
</table>

### III. 4. Outcome of Meetings

The IYS Working Group meeting report has been released as NPAFC Doc. 1815, which consists of the following sections:

*Discussion of Progress on Implementation of IYS Theme Counsel Groups (TCGs)*
Two membership configurations were proposed for the IYS-WG members to consider. The first configuration was to have open, unlimited enrollment in each TCG. In addition to drawing members from NPAFC members, any government, academic, NGO, and other people would be allowed and invited to join. The second configuration proposed was to restrict membership of the TCGs to NPAFC members and develop a mechanism to engage a larger group of scientists and other interested people. Members of the IYS-WG indicated that the current list of potential TCG members is out of date and inaccurate. They decided that unrestricted membership in the TCGs would inhibit its ability to function.

The Working Group decided to restrict membership in each TCG to up to three experts from each NPAFC member country. These experts would then be responsible for managing and consulting with an extended list of experts from within their country. This extended list will be a distribution list which will receive e-mail updates on progress and requests for involvement in various projects and activities. The Japanese delegation raised concerns over communications between TCG members, as many Japanese scientists interested in the TCGs do not speak English. This concern was echoed by the Korean delegation. Both the Japanese and Korean delegations also raised the concern that there are not many salmon scientists to be added to the TCGs. The Korean delegation was not certain they would be able to provide members to the TCG's. The IYS-WG acknowledged that there may not be representatives from every country in all TCGs but agreed to have complete representation where possible. They also recommended that consideration needs to be given to communication between TCG members, with particular attention paid to language barriers. The terms of reference for the TCGs were revised and accepted by members of the IYS-WG (see below).

1. Four Theme Counsel Groups (TCGs) were established, under the Terms of Reference for the North Pacific Steering Committee (NPSC):
   ○ Status of Salmon and Salmon in a Changing Salmosphere (TCG-1)
   ○ Human Dimension (TCG-2)
   ○ New Frontiers and Information Systems (TCG-3)
   ○ Outreach and Communication (TCG-4)

2. Each Theme Counsel Group shall consist of up to 15 experts, with no more than 3 experts from one country:
   ○ Members may be drawn from government, university, non-governmental and private sector organizations.
   ○ Each TCG member will identify and engage other experts within their own country. The NPAFC Secretariat will maintain a master inventory of experts associated with each TCG from all countries.
   ○ Each TCG will nominate a Chair and Vice-chair for approval by the CSRS.
   ○ TCG Chair and Vice-chair positions will normally be filled by one representative from a country in the eastern Pacific and one from a country in the western Pacific. Chairs and Vice-chairs will become members of the NPSC and help facilitate communication among NPSC members to satisfy the TCG mandate.

3. The Theme Counsel Groups' mandate is to support the NPSC by:
   ○ Recommending research and outreach priorities, and outcomes for each theme
   ○ Proposing/assembling research and outreach plans/projects by theme
   ○ Reporting status of research and outreach activities by theme

The IYS-WG members also decided to hold space on each TCG for a key expert from the Atlantic.

With the changes made to the TCG function and organization, each country required time to review and propose possible members and no Chairs and Co-Chairs were selected. It was decided that in addition to sending a list of members, each country will have the opportunity to nominate a member for the Chair/Vice-chair position in each TCG. The IYS-WG members also agreed to explore the possibility that the Chairs and Vice-chairs for each TCG be selected from existing NPAFC Working Groups. Each TCG will then appoint a Chair and Vice-chair from the nominees.

Report on Progress made on IYS Implementation in 2018 and IYS Workplan objectives

Mark Saunders, Chair of the IYS-WG and Director for the IYS in the North Pacific, gave a presentation on the progress made on IYS Implementation in 2018. In 2018, the IYS Secretariat held over 80 meetings with partners, hosted five workshops, and held seven IYS sessions at international meetings. There was a Presidents Meeting held again in Edinburgh, where the NPAFC and NASCO presidents met and discussed their continued work and commitment to the IYS. In the fall of 2018, there were 20 IYS opening events across the hemisphere, including the Pacific Rim opening event organized by the IYS secretariat held in Vancouver in October. He also
acknowledged the difficulties moving forward for a coordinated, hemispheric wide approach as NPAFC and NASCO priorities differ, however, a group of NGOs associated with NASCO are considering an alliance to fund a research coordinator. He emphasized the interest from politicians and high-level government officials the opening events have fostered across the hemisphere and how this can be leveraged into further support for the IYS. Moving forward, increased political engagement is required to ensure IYS is included in government activities relating to salmon.

Throughout 2018, there was a continued executive level of engagement of NASCO and NPAFC to affirm commitments to the IYS partnership. Mark Saunders reported that due to the USA government shutdown, convening the second face-to-face Coordination Committee meeting has met with significant challenges and has been postponed from the end of January 2019 to March 2019. Other progress presented at the meeting included:

- IYS announcements and opening events were successfully carried out across the hemisphere including the opening event in Vancouver for the Pacific Rim.
- Dr. Vladimir Radchenko gave a brief overview of the official announcement of the IYS made at the RFMO Secretariat session of COFI with NASCO.
- The signature project is finalized, and the ship is on its way to Vancouver; it will arrive on February 18, 2019 to pick up the scientists before heading into the Gulf of Alaska for a month.
- Mark Saunders acknowledged the hard work Madeline Young (former IYS Coordinator) put into developing the IYS website and social media accounts, in addition to developing a relationship with NASCO.
- Doug Mecum, Carmel Lowe, and Mark Saunders met with Joe Mentor to review the Strategic Implementation Plan which outlines the plans for outreach and each of the IYS research themes/outcomes.
- This plan led to the potential donation of $50,000 to the IYS from Tides Canada for communications.
- IYS Secretariat had hired Conner & Associates, a consulting firm, to help develop a fundraising strategy and to go after funds.
- There have been many successful IYS workshops, while more planning is required for upcoming workshops.

**Review of the 2019 Expedition Cruise Plan**

IYS-WG participants were given a brief overview of the 2019 Expedition Cruise Plan, a month-long cruise expedition into the Gulf of Alaska with a total of 19 scientists aboard from the five member countries of the NPAFC by Dr. Vladimir Radchenko, Executive Director of the NPAFC.

The Russian research vessel Professor Kaganovskiy has been chartered for the purpose of the cruise. It left Vladivostok, Russia on January 11th and will dock in Coal Harbour, Vancouver on February 14th. Dr. Radchenko informed members of the NPSC that the deadline for the approval of NPAFC Doc. 1807 outlining the cruise objectives and rationale had passed, and it had been agreed upon as no comments were received.

The cruise will aim to answer a series of hypotheses, related to the following:

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

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

After the presentation, Mark Saunders asked the IYS-WG to consider the IYS communications with respect to the cruise. It was
suggested that videos from the cruise should be added to the NPAFC website, either in each country’s native language or dubbed in each language. Dr. Suam Kim offered to use his personal contacts within the Korean media to get information about the cruise out. Korea mentioned that Korea Fisheries Resources Agency (FIRA) has contacts in the media and can send a letter with information on the cruise to newspapers. He also offered to help connect the IYS Secretariat with the FIRA communications team. All countries agreed having materials available in their native languages would be helpful to communicate with the general public.

**Effectiveness of IYS Communications**

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

The IYS-WG then discussed how to increase the number of events and projects registered on the IYS website in the Pacific basin. Canada recommended that a way to filter projects be added so that people can more easily find relevant projects. Canada also suggested the IYS Secretariat set up a meeting with DFO community advisors to discuss their projects and encourage them to register key projects on the website. Japan and Korea felt it would be difficult to get higher engagement on the website from their respective countries due to the language barrier. Japan felt very few Japanese projects and events were registered on the website because most organizers do not speak English and could not fill out the project description in English, which is required. The IYS-WG decided that to increase engagement within Japan, the Japanese delegation would encourage their contacts to register events and projects. To overcome the language barrier, it was agreed that the main description would remain in Japanese and that a few key phrases would be translated into English through Google Translate.

Mark Saunders suggested that the IYS-WG consider how each country can engage project submissions to the website. He suggested that perhaps there are specific projects in each country that can be pursued to establish something by 2022 and that the communications people within each country’s government be tasked with organizing this information.

Nathan Bendriem, the NPAFC Intern gave a presentation on the IYS social media pages. The IYS Facebook and Twitter accounts were both launched after the 2018 IYS-WG meetings. The purpose of the IYS social media accounts is to communicate the IYS to the general public, increase awareness of the IYS, and to increase traffic to the website. Google Analytics has shown that approximately 9% of website visitors are coming to the website via social media. As of January 18th, the IYS twitter account has 336 followers and the IYS Facebook page has 334 followers. Analytics from social media accounts show that the IYS opening event in Vancouver had a pronounced effect on impressions. Impressions are instances where content from social media accounts are included in individuals' feeds. Since the opening event in Vancouver, the average number of impressions has increased. Both accounts also showed a steady increase in followers since the opening event. Top posts on the accounts include a photo from the IYS Photo Contest, the announcement of the IYS website launch, and a study on the impacts of Pink salmon on food webs.

As with the IYS website, the majority of our followers are located in Canada and the United States. The other three NPAFC member countries make up less than 1% of our twitter followers, and approximately 5% of our Facebook followers. The IYS-WG discussed how to increase engagement on social media in the western North Pacific. Korea pointed out that not many members of younger generations in Korea use Facebook or Twitter and suggested setting up an Instagram account as well. The IYS-WG agreed that an IYS Instagram account should be set up. Both Korea and Japan once again stated that the biggest barrier to increasing social media engagement in their countries was the language barrier. The IYS-WG suggested that some content in Japanese, Korean, and Russian be developed for social media, perhaps from the Gulf of Alaska cruise, to increase engagement in the western Pacific.

Mark Saunders acknowledged that the communications between the IYS Secretariat and the IYS-WG need improvement. He suggested setting up more regular communication such as a newsletter or blog. The IYS-WG agreed that a regular communication schedule and method was required, but not one that would add additional work for the IYS Secretariat. The IYS-WG agreed that a blog written by Mark Saunders periodically should be set up. Mark Saunders agreed to look into setting up a blog on a member only platform and sending the details to the IYS-WG.
Stephanie Taylor, the IYS Coordinator for the North Pacific gave a brief overview of the ROAM (RAFOS Ocean Acoustic Monitoring) project and the progress made to date. ROAM is a new at-sea monitoring program that is being pursued in the Atlantic basin. Unlike traditional acoustic monitoring, the tags in the ROAM system emit “ongs” that are identified by drifting receivers around the basin. This technology is referred to as RAFOS float. ROAM offers location estimates, the ability to tag smaller individuals (via archival tags), and the infrastructure has a long lifetime and the ability to be used for multiple species, bringing down the cost.

The NPAFC held a webinar on ROAM for interested North Pacific researchers in October 2017. This was followed up by discussions in January 2018 and a meeting at the Pacific Biological Station in Nanaimo, BC, Canada in May 2018. In June, several North Pacific researchers and members of the IYS Secretariat attended a ROAM workshop held in Woods Hole, MA, USA. There were two reports created from this workshop, which are in Appendix E. One report by Kintama Research recorded concerns with implementing the ROAM technology in the North Pacific brought up by the workshop participants. These concerns include worries that the current salmon fisheries closures will thwart the recovery of tags, uncertain oceanographic conditions that enhance or inhibit ROAM detections in the surface mixed layer, to date no site or marine mammal permitting has been carried out in the Pacific, survival rate cannot be determined, and limitations imposed by the continental shelf are unknown. Participants were also concerned that tagging fish with RAFOS tag would harm them. The Kintama report also recorded potential Pacific fisheries questions that could be addressed by ROAM. These include improving the ability to forecast return timing and migratory pathways, refining hypotheses about mechanisms that affect salmon recruits per adult spawner, and testing whether there are differences between odd and even years effects on other salmon species distribution from the odd-year abundances of pink salmon.

The IYS-WG agreed that ROAM is a promising project but decided to wait until more information on its efficacy is available from the Atlantic. NOAA researchers are currently testing ROAM in the Atlantic basin. The IYS-WG feels that if the technology can be proven in the Atlantic and the live capture box being tested on the Gulf of Alaska expedition works, ROAM could be used as part of the five vessel North Pacific survey in 2021.

Mark Saunders gave an overview of progress on the Likely Suspects framework. Likely Suspects is an accounting approach to identify likely bottlenecks across life history stages of salmon. In November 2017, a group of scientists from the Atlantic and Pacific gathered in Edinburgh to develop the framework. The Atlantic Salmon Trust continued to develop the framework after the November 2017 meeting and published a ‘Blue Book’ on the framework in the fall of 2018. Likely Suspects places candidate mortality factors within an overall spatio/temporal framework of 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.

Mark Saunders gave a brief overview of the current plan for the 2021 five vessel research survey. If funded, the survey will cover five sectors, across the entire North Pacific Ocean. The 2021 survey will build and expand upon the 2019 cruise. The goal of the expedition is to again have scientists from all five NPAFC member countries working together to conduct high seas research. The hypotheses will be informed by the outcomes of the 2019 cruise. Mark Saunders and Ed Farley (NOAA) are working on a cruise plan for the 2021 expedition; progress on the plan has been halted due to the U.S. government shutdown. Mark and Ed will work on it once the U.S. government reopens. The 2021 cruises will look to connect data from the high seas to coastal work conducted by each NPAFC member country.

Russia has indicated that they may provide a second vessel, if the first one can be chartered, similar to how the Professor Kaganovskiy has been chartered for 2019. Canada has a new research vessel coming online in 2019, which Mark Saunders is submitting a request for it to be used in the 2021 survey. Korea has offered to support the 2021 cruises by coordinating coastal work but is unable to provide a vessel for the cruise. Dr. Suam Kim has submitted a request for some high seas oceanographic work in 2021, in a small area outside the Japanese EEZ. The results of this work could be included with the 2021 cruise. Japan has no plans for a research cruise in 2021 and indicated that it would not be possible for a Japanese ship to be involved in the 2021 survey because the ship time for 2021 has already been allocated. The research vessel Bell M. Shimada from the U.S. may be available for the research cruise.

The IYS-WG agreed that further work on the 2021 cruise plan and obtaining vessels is needed. They agreed to revisit the cruise once the plan has been completed by Mark Saunders and Ed Farley.
In October 2018, the technical team updated the proposed sponsorship levels and names. Sponsors should be recognized according to the level of their support (amounts in USD or equivalent in relevant currencies). Pool sponsor: up to $1,000; Stream sponsor: up to $10,000; River sponsor: up to $100,000; Ocean sponsor: up to $1,000,000; Salmospheric sponsor: more than $1,000,000. These updates were presented to the IYS-WG for their approval. The IYS-WG accepted the changes made by the technical team. Dr. Vladimir Radchenko suggested a second set of sponsorship levels be created with lower dollar values for individuals of the public who may want to donate to the IYS. He suggested using stages of salmon life history (egg, alevin, etc.) as the level names. The IYS-WG discussed whether smaller donations should be accepted. The US delegation suggested that if smaller donations were accepted, it be done in a way that does not cost more than the donations. The IYS Secretariat agreed to investigate if a second sponsorship scheme is feasible.

Mark Saunders reviewed the IYS strategic implementation plan briefly, including the vision and five research themes that are also outlined in the NPAFC Science Plan for 2016–2020. The conversation focused on the efficacy of the strategic implementation plan to engage researchers, government, and possible funders in Japan, Korea, and Russia. Japan is concerned that there is a large amount of uncertainty in the plan currently. To successfully get support from the Japanese government, the strategic implementation plan will need a detailed description of every proposed project, the resources required, where the funds are expected to be found, proof of concept work, and the outcomes or benefits of the project. Furthermore, it was noted that the plan should clearly outline what will be done for each budget item. Korea agreed with Japan that more details, especially regarding how relevant the work is to the Korean and Japanese governments, was needed in the strategic implementation plan. Korea also suggested that there could be connections between the IYS and Korea’s proposed ecosystem research cruises, which could be used to increase Korea’s involvement in the IYS. Japan has conducted numerous scientific surveys within the Japanese science plan, and they would like to contribute the results of these surveys to those of the IYS high seas cruises. The discussion revealed that all of the countries are interested in the possible scientific outcomes of the IYS; however, there is still too much uncertainty regarding the outcomes and how the IYS will align with government priorities for Japan and Korea to get involved further. Further work is needed to develop a common understanding of the IYS, to continue to learn from each other and build relationships, and to develop a way to achieve this across the language barrier.

The planned and proposed IYS workshops for the Pacific and Atlantic basins in 2019 and beyond were reviewed, including the Status of Salmon Workshop, Information Systems Workshop, Human Dimensions Workshop, Otolith Microchemistry Workshop, eDNA and Genomics Workshop, Second NPAFC-IYS Workshop on Salmon Ocean Ecology in a Changing Climate, Salmon in a Changing Salmosphere Workshop, etc. The IYS Secretariat receives regular invitations to host IYS workshops or sessions at other meetings. In 2019, there are many planned and proposed workshops, which have been separated into two categories. The first type of workshop is planning focused. In these workshops, the goal is to plan the implementation and completion of signature projects or work related to IYS themes such as New Frontiers. The other type of workshop is a learning workshop where the goal is to learn more about a specific topic or to move project work forward. The upcoming workshops and symposia will focus mainly on salmon ecology and new technologies, such as genomic-based tools, otolith microchemistry and environmental DNA. The IYS will also take advantage of planned workshops, by highlighting them on the website and social media, to build connections and push for collaboration from people or groups that may not have heard about the workshop.

During the NPAFC annual meeting in Portland, there will be a networking event on May 14th, where potential funders will be invited to learn more about the IYS and on May 17th, there will be a public bridging event. Following the NPAFC annual meeting, the IYS will hold the Second NPAFC-IYS workshop in partnership with the Salmon Ocean Ecology Meeting. The workshop will be held from May 18–20. PICES will be holding a workshop titled Developing a collaborative, integrated ecosystem survey program to determine climate/ocean mechanisms affecting the productivity and distribution of salmon and associated pelagic fishes across the North Pacific Ocean during their annual meeting in Victoria, BC on October 19–21, 2019. The workshop will highlight the results from the 2019 Gulf of Alaska Expedition and discuss approaches for moving forward in collaborative ocean research.

Dr. Suam Kim requested that the NPAFC-IYS workshop registration fee be waived for Kevin Bailey, a colleague who would attend the workshop and write an article about it. This request had been reviewed and approved by the workshop organizing committee. There was also a question about where the funding for the public bridging event was obtained from as it was not in the original budget for the second NPAFC-IYS workshop. CSRS submitted a funding request to the 2018 F&A but it was covered by the U.S. voluntary contribution.
Development of IYS Workplan including budget

The IYS-WG reviewed the 2018/19 IYS Workplan and updated it for 2019/20. The workplan was updated to reflect the work that had been completed in 2018. The proposal for study groups with the Atlantic was not accepted by NASCO, therefore the IYS Secretariat was unable to complete that portion of the workplan. NASCO did not offer any alternative to the study groups; however, the NASCO NGO members have formed a consortium and are considering a research coordinator for the Atlantic who would coordinate IYS related research activities with the IYS Secretariat. The IYS-WG updated the workplan to reflect this but included a stipulation that the IYS Secretariat continue to work with NASCO to develop a mechanism for coordinating research at the hemispheric scale.

The 2019/20 IYS Workplan is:

a. Participate in the North Pacific Steering Committee, including:
   i. Development of research priorities, plans and fundraising strategies for IYS Outcomes and Signature Projects.
   ii. Provide direction to the Coordinating Committee in planning and carrying out IYS implementation.
   iii. Form Theme Counsel Groups and assist them in planning for IYS research and outreach activities in the Pacific basin.

b. Provide input to the Coordinating Committee on the development of a mechanism to coordinate research at the hemispheric scale.

Mark Saunders presented the IYS-WG with a proposed budget for the 2019/20 fiscal year. He recognized that F&A has said that they no longer have the ability to support the IYS Secretariat and, without external funding, the IYS Secretariat would be unable to function after the end of the current fiscal year. He requested that the IYS-WG come up with a contingency plan if the IYS Secretariat is unsuccessful raising the money, as without one the IYS would come to a halt halfway through the focal year. To help raise funds, Conner and Associates has been contracted as they specialize in this area. The upcoming research cruise will provide a big media boost for the IYS, which could stimulate donations. Mark Saunders is also pursuing voluntary contributions from Canada and the United States.

All IYS-WG members were concerned that we were entering the focal year of the IYS with no funding support. It was also acknowledged that Canada has been the biggest contributor to the IYS, and this could change with the outcome of the Canadian federal election in October 2019. Dr. Vladimir Radchenko said that the NPAFC no longer has the ability to fund the IYS and that Russia, Japan, and Korea do not have a mechanism to send separate voluntary contributions to the IYS. The IYS-WG agreed to see if enough funds could be raised by the NPAFC annual meeting in May. The issue of funding would be revisited then if necessary.

Both the IYS workplan and budget were approved. The IYS Secretariat is to provide an extended workplan with budget to the IYS-WG by the end of February 2019.

Each participant had a chance to voice their final thoughts during a roundtable at the close of the meeting. Participants thanked the organizers of the meeting. It was recognized that representatives continued work on developing a common vision of the IYS is necessary despite the language barrier. The urgency for funding and concrete details on IYS activities and outcomes was noted by participants. It was also agreed that over the next few months the TCGs need to be set up and start working on fulfilling IYS objectives.

The NPSC meeting report was presented to the CSRS in the NPAFC Doc. 1816, which consists of following sections:

Report on progress made on IYS implementation in 2018

NPSC reviewed the progress made to date on the IYS and highlighted events that have occurred in the last year, following the February 2018 NPSC meeting. There were seven IYS sessions held at different meetings, symposia, or workshops. This included a poster presentation on the IYS at the 4th International PICES Symposium: The Effects of Climate Change on the World's Oceans and a special session held at the 2018 Long-Term Marine Ecosystem Research International Symposium in Busan, Korea. The IYS held five workshops in 2018 including the First NPAFC-IYS workshop following the NPAFC annual meeting in Khabarovsk, Russia. The workshop had 60 participants with 26 oral presentations and eight posters. The IYS technical team conducted a meeting in Vancouver, BC with the objective of finalizing the IYS website text and developing the materials for a subsequent Coordinating Committee meeting.
While the focal year of the International Year of the Salmon is 2019, opening events began in the fall of 2018. In Vancouver, the NPAFC and Pacific Salmon Foundation held an IYS North Pacific Opening Event with an audience of media and over 100 leaders in salmon conservation from government, Indigenous groups, NGOs, academia, and industry from around the Pacific Rim. Following this opening event, the International Year of the Salmon was announced and launched in several countries including the United States, Japan, Korea, Russia, and several within the European Union.

Overview of the IYS Signature Project was presented to the NPSC in a similar manner as at the IYS WG meeting (see above). The communication plan for the 2019 Gulf of Alaska expedition was reviewed in more detail. Chrys Neville and Dick Beamish of DFO have been leading the communication efforts for the cruise. They are hoping to have daily satellite communications with scientist on the cruise, and Chrys Neville will be recording video. NPAFC and IYS accounts on social media will be used as a news feed for the expedition, and a web page on the IYS website will have communication updates from the vessel, as well as general information on the cruise.

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

Breakout Groups

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

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

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

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

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

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

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

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

- Revisions to the language in the development plan needed—currently out of date
- A path to getting funding and our requirements needs to be laid out
- Outside the box thinking and brainstorming for potential funders or in-kind donations needed
- Clarity needed on final products, process, and requirements
Can you suggest particular funds, foundations, or individuals that we should be engaging for overall, or topic-specific, funding?

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

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

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

He announced the second NPAFC-IYS workshop in partnership with the Salmon Ocean Ecology Meeting that will be held following the NPAFC Annual Meeting in Portland from May 18–20. The NPAFC is currently accepting abstract submissions. PICES will be holding a Salmon in a Changing Salmosphere workshop during their annual meeting in Victoria, BC on October 19–21, which would highlight the results from the 2019 Gulf of Alaska Expedition and would discuss approaches for moving forward in collaborative ocean research.

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

Dr. Jim Irvine gave an overview presentation of the IYS workshop on Salmon Status and Trends that took place on January 23–24, 2019 (See NPAFC Technical Report #13 for details). The workshop stemmed from the need to assemble and integrate salmon data more completely and efficiently. While data is the root of knowledge, it has been challenging to maintain and document the existing data, as well as identifying the uncertainty associated with the metadata. During the workshop, scientists whose research has focused on sockeye, chum, Chinook, Atlantic, and pink salmon will provide a quick synopsis on the status of the respective species, including what data is available, what the trends in population abundances are, and what data is missing. Doing so will help identify a series of legacy datasets, and where possible, associated standards such as accuracy and reliability of the data. These legacy datasets will show broad temporal patterns and provide a retrospective analysis for workshop attendees to understand what caused the changes in productivity that we are witnessing today and help predict the future of these salmonid species in a changing ecosystem.

These questions will be answered at three different scales, including the ocean basin (Atlantic and Pacific), regional scale (e.g., Central BC; Southeast Alaska, Eastern Kamchatka) and local population (e.g., Yukon river Chinook). Following the two-day Salmon Data workshop will be the International Salmon Data Laboratory (ISDL) Workshop (See NPAFC Technical Report #14 for details). Graph database companies such as NEO4J want to showcase their technology and offered to work with the salmon data workshop attendees, to connect all the data and sources.

The next discussed event focused on the Vancouver Celebration of the 2019 IYS Cruise. Once the cruise docks in Vancouver on March 18th at the completion of the expedition, the IYS is planning on holding a media event on the vessel itself, followed by an evening reception with the crew and the North Pacific salmon leadership, likely held at the Vancouver Aquarium. Hal Batchelder mentioned that Chrys Neville, who will oversee communications on the vessel, should interview each scientist aboard about their respective roles and their research objectives during the expedition. This requires prior consent from the scientists to be interviewed but having this type of coverage is a key item for providing science communication from the salmon scientists to the stakeholders and general public. Furthermore, the IYS can engage the media’s interest in the cruise by getting the word out and formatting the coverage in a way the IYS would like, before the media formats the story on their own terms. The IYS has generated a list of reporters and media outlets from the opening event in October and will be using that list as a starting point of contact. Rae Hull mentioned that she has numerous contacts from CBC and will be happy to pass them on.

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

During the coffee break, Stephanie Taylor and Nathan Bendriem handed out a set of three sticky notes to each member for them to write down ideas regarding possible events and projects for the IYS. The suggestions fell into five different categories: existing IYS related projects, existing IYS related events, organizations with IYS related work/activities, declarations, legislation, treaties, government priorities, and items related to the IYS and recommended actions. The main points from the sticky notes are summarized in the NPAFC Doc. 1816 (p. 9–10).

**Overview of Long Live the Kings**

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

LLTK started off as an organization that focused on addressing the decline in wild Chinook through hatchery enhancement and artificial propagation. The organization raised hatchery Chinook in a natural pond, in contrast to the concrete raceways seen in many hatchery facilities, on a very small river. In Puget Sound, there have been 80% cuts in harvest from 1984 to 2010. This stems from a tenfold decline in marine survival of coho, Chinook, and steelhead stocks within the Salish Sea. In contrast, those stocks found on the western coast of Washington and BC (i.e., West Coast of Vancouver Island) show no visible trend in decline of marine survival. While marine survival for these stocks are quite variable, they generally have remained stable since the 1970s. There has been a sustained warm period of sea surface temperature within the Strait of Juan de Fuca and the Salish Sea, which could play a role in the decline of marine survival. The city of Seattle, as well as many urbanized centers within Western Washington, have seen a rise in coastal infrastructure, in the same area in which the 4th largest Chinook run migrates up and down river. Concerns regarding disease and the overall physical health of smolts and adults has risen due to the degradation and pollution of waterways surrounding Seattle. Furthermore, there has been a tenfold increase in pinnipeds in the Salish Sea, which could yield an increase in predation on salmon smolts entering the marine environment. Jacques mentioned that hatcheries may also lead to a reduction in wild populations as relatively little is known about the effects of captive rearing and the large release of hatchery fish on both wild populations and the hatchery populations themselves. Southern Resident Killer Whales, who primarily feed on Chinook salmon, have experienced population declines due to the reduction in Chinook abundance. LLTK aims to rebuild salmon populations and advance the science for improving marine survival that will provide the necessary diet for these killer whales.

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

**IYS Communications**

Effectiveness of IYS Communications was reviewed in the same manner as at the IYS WG meeting including presentations on the IYS website, social media, and communication to NPSC. Following the presentation on social media, John Holmes asked how much effort is spent on working with these platforms and an answer was that it took a lot of effort. The IYS’s social media presence is growing and must continue to do so which will require more time spent on posting and engaging our followers. Dennis Zimmermann brought up the point that we should be doing more to enhance our social media presence. The IYS Secretariat was advised that one option to increase our following is to send out e-mails to numerous NGOs asking for a follow on Twitter and Facebook.

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

**The Metrics of Success**

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

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

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

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

Mark Saunders gave an overview of the Terms of Reference for the Wrap-Up Symposium, to be held in 2022. The idea of the Wrap-Up Symposium is to have a large congress of people in a meeting, with concurrent sessions to highlight what we have learned since the first year of the IYS in 2018. It would include members of both the Pacific and Atlantic basins. In addition, a large publication of the findings that have come out of the IYS signature projects, including the numerous cruise expeditions in the Pacific, should be created. Jacques White and Gerry Kristianson suggested that the event could be like that of New Year’s Eve celebrations, in which celebrations across the hemispheres begin at their respective time and locations.

**Outreach Strategies**

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

**Other**

Jordan Point of the First Nations Fishery Council mentioned that the Human Dimension Theme Counsel Group should have participation and representation from Indigenous peoples and brought up the UN Declaration on Indigenous Rights. The diet of Indigenous communities has been affected in recent years, and no longer matches the diet that these communities had in the 1960s. Today, their diet has been altered due to a diminishing salmon resource and increasing barriers of access to salmon, which becomes a concern of food security. Jordan emphasized that the human dimension theme needs to encompass more than a symbolic event, and that there is a substantial scientific component within the human dimension research theme. When salmon is reintroduced into the diets of Indigenous communities, the rate of diabetes decreases from 80% to 3%. Dennis Zimmermann corroborated the importance of the UN Declaration of Indigenous Rights and mentions that the development of an ethical space requires the understanding of 4 pillars: Truth and Reconciliation, Treaties, Case Law, and the UN Declaration of Indigenous Rights. John Field followed up by
mentioning that by next month, the PSC Southern Endowment Fund should have decided on a proposal to conduct a non-economic valuation of First Nations Food, Ceremonial, and Social (FSC) fisheries. As the human dimension theme develops more over time, the IYS will include a larger representation of Indigenous peoples and provide a clear overview of how the Human Dimension TCG will incorporate these ideas and issues in their outcomes and deliverables.

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

Mark Saunders thanked all NPSC participants for their time and stated that he was very encouraged by recent meetings/events and will try and keep building momentum around the IYS moving forward. There are several pressing issues at hand, one of which is fundraising, and the IYS recognizes a need for assistance from others in this process.
IV. 2019 Joint Patrol Schedule Meeting
IV. 1. Time and agenda of the e-mail Meeting

The Committee on Enforcement Joint Patrol Schedule Meeting (JPSM) was held virtually by e-mail communication from March 18–21, 2019. On behalf of the ENFO Chairperson, Mr. Mike Carlson, the Secretariat welcomed all participants to the Joint Patrol Schedule Meeting (JPSM) and declared the meeting open. The JPSM agenda focused on coordination of the 2019 NPAFC Enforcement Joint Patrol Schedule.

IV. 2. Participants

The names of the participants and their e-mail addresses were submitted to the Secretariat in advance of the meeting. The JPSM E-mail Points of Contact (*) were the Parties’ spokespersons. Participants were copied on all e-mail correspondence.

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<tr>
<th>From NPAFC Parties</th>
<th>Party</th>
<th>E-mail Points of Contact</th>
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<tbody>
<tr>
<td>Canada</td>
<td>Fariz Ahmadov*</td>
<td>Egor Konstantinov</td>
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<td>Sean Wheeler</td>
<td>Sergey Mamedov</td>
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<td>Alexey Safronov</td>
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<td>Japan</td>
<td>Manabu Baba*</td>
<td>Oleg Volkov*</td>
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<td>Takuya Endo</td>
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<td>Hiroki Nishizawa</td>
<td>Lane Munroe*</td>
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<td>NPAFC Secretariat</td>
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<td>Vladimir Radchenko</td>
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IV. 3. Coordination of the 2019 NPAFC Joint Patrol Schedule

The 2019 e-mail Joint Patrol Schedule Meeting was proposed, and held, from March 18–21, 2019 (Vancouver time). Before the meeting, each Party nominated and informed the Secretariat of the List of Delegation including Meeting Points of Contact (MPoC) and delegation members’ names and e-mail addresses. The list was uploaded to the secured JPSM webpage. Throughout the meeting, this list was used for communication.

The Secretariat created a secure JPSM webpage on the Commission’s website and uploaded each Party’s tentative patrol schedule as information became available. Access to the webpage is passcode-protected and the code was distributed to the above-nominated meeting participants only.

The Secretariat uploaded the draft joint patrol chart with the Parties’ schedules filled in on March 15, 2019. The joint patrol chart was finalized on March 19, 2019. No revisions/adjustments were received from the Parties during the meeting. By the morning of March 21, 2019, the joint patrol schedule was completed.

After the JPSM, the Secretariat distributed the draft JPSM report among the ENFO PoCs and all the JPSM participants for their consideration and approval on Friday, March 22, 2019. The final patrol schedule chart was uploaded to the secure JPSM webpage.

On May 8, 2019, the Russian Party submitted a revised national patrol schedule with NPAFC Doc. 1860. The joint patrol schedule chart was updated and included in Rev. 1 of the JPSM report (Appendix 1).
V. 1. Time and Place of the Meeting

The Twenty-seventh Annual Meeting of the Commission was held at the Embassy Suites by Hilton Portland Downtown, Portland, Oregon, USA on May 13–17, 2019. Plenary sessions were presided over by Dr. Suam Kim, President of the Commission.

The Committee on Enforcement (ENFO) met on May 13–14, with Mr. Michael Carlson from Canada as the meeting Chairperson. A one-day ENFO workshop was held in conjunction with the Annual Meeting on 12 May 2019 at the same venue.

The Committee on Scientific Research and Statistics (CSRS) met on May 13–16, with Dr. Masa-aki Fukuwaka from Japan as Chairperson. The Second NPAFC-IYS Workshop was held in conjunction with the Annual Meeting at the same venue on 18–20 May 2019.

The Committee on Finance and Administration (F&A) met on May 15 and 16, with Dr. Vladimir Belyaev from the Russian Federation as Chairperson.
V. 2. Participants

**Canada**

*Representatives*
Gerald Kristianson  
Carmel Lowe  (*Head of Delegation*)

*Advisers and Experts*
Fariz Ahmadov  
Terry Beacham  
Mike Carlson  
Nicole Gallant
Sue Grant  
John Holmes  
Jim Irvine  
Chrys Neville
Mary Thiess  
Sean Wheeler

**Japan**

*Representatives*
Masaki Hoshina  
Junichiro Okamoto  (*Head of Delegation*)

*Advisers and Experts*
Masa-aki Fukuwaka  
Kazuhiito Imaji  
Satoko Ishikawa  
Toshihiko Saito  
Hayato Saneyoshi  
Shunpei Sato  
Kengo Suzuki  
Shigehiko Urawa  
Kazuyuki Yamaya

**Republic of Korea**

*Representatives*
Ju Kyoung Kim  
Suam Kim  (*NPAFC President*)  
Hee Yeon Lee  (*Head of Delegation*)

*Advisers and Experts*
Eun Ah Kim  
Na Ri Kim  
Sukyung Lee  
Jae Geol Yang  
Sang-Seon Yun  
Seong-Min Yun

**Russian Federation**

*Representatives*
Vladimir Belyaev  (*Head of Delegation*)

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Alexander Bugaev  
Alexander Kaev  
Anastasia Khrustaleva  
Nataliya Klovach  
Igor Melnikov  
Svetlana Naydenko  
Olga Temnykh
United States

Representatives
Doug Mecum (NPAFC Vice President, Head of Delegation)
Joseph Mentor, Jr.
Bill Templin (Alternate)

Advisers and Experts
Matt Alward
Kenneth Baltz
Lee Blankenship
Lance Campbell
Allison Caputo
Willard Ellis
Edward Farley
Andrew Gray

Neala Kendall
Chris Kondzela
Sara LaBorde
Staci MacCorkle
John McKenzi
Andrew Munro
Paul Ortiz
Dion Oxman

Lynn Palensky
Glenn Reed
Jim Seeb
Lisa Seeb
Ken Warheit
Jordan Watson
Laurie Weitkamp
Jacques White

Observers
North Atlantic Salmon Conservation Organization (NASCO)
North Pacific Marine Science Organization (PICES)
North Pacific Fisheries Commission (NPFC)
Pacific Salmon Commission (PSC)
Overseas Fisheries Development Council (Taiwan)

Kim Damon-Randall
Hal Batchelder
Kenji Kagawa
Dae-Yeon Moon
John Field
Tsung-Yueh Tang

VIP
Representative Ken Helm (Oregon State Legislature)

Guests
Murray Bauer
Richard Beamish
Gregory Busch
Vincent O'Shea
Gary Smith

Secretariat
Vladimir Radchenko
Jeongseok Park
Jennifer Chang
Mariia Artiushkina
Nathan Bendriem
Mark Saunders
Stephanie Taylor

Executive Director
Deputy Director
Administrative Officer
Administrative Assistant
Intern
IYS Director, North Pacific Region
IYS Coordinator, North Pacific Region
V. 3. Agenda

Agenda for the Commission's Plenary Sessions

1. Opening by the President of NPAFC, Dr. Suam Kim
2. Opening addresses, introduction, and report on delegation memberships
3. Introduction of observers
4. Adoption of agenda
5. Meeting procedures
   a. Attendance at meetings
   b. Schedule of sessions
   c. Press policy
   d. Minutes
6. Executive Director's report
7. Consideration of enforcement
   a. Review activities contrary to provisions of the Convention and enforcement actions taken by the Parties (Article IX, 2 and 5)
   b. Presentation on the F/V Run Da case—the United States
   c. Review of report of the Joint Patrol Schedule Meeting (JPSM), March 18–21, 2019
   d. Review progress on Port State Measures (LoA Recommendation #24)
   e. Review 2018 ENFO Workshop recommendations
   f. Review 2019 ENFO Workshop outcome and development of recommendations to the Commission
   g. Internal discussion on ENFO requirements from CSRS
   h. Cooperation with relevant international organizations and invitations to State or entity (Article IX, 9 and 10)
   i. Updates on collaboration with NPFC (LoA Recommendation #36) and consideration on the NPFC High Seas Boarding Inspection as implications for salmon bycatch detection
   j. Invitations to international organizations, States and entities to participate as observers at the 2020 NPAFC Annual Meeting
   k. Biweekly email conferences
   l. Development of new ENFO communication tools
   m. Review of Parties’ proposals on joint projects to be financed by the Commission
   n. Updating of ENFO Points of Contact lists
   o. Future meetings
   p. Adoption of ENFO Report
8. Consideration of scientific research and statistics
   a. Review of 2018 salmon catches and enhancement production (Article VII, 2 and 3, ToR 3)
   b. Review of scientific research activities in relation to the 2016-2020 NPAFC Science Plan Components (Article VII and IX, 6 and 8, ToR 3 and 13)
   c. Coordination of scientific research activities (Article IX, 6 and 8, ToR 1 and 8)
   d. Cooperation with relevant international organizations and invitations to State or entity (Article IX, 9 and 10, ToR 14 and 15)
   e. Status Reports on Projects (ToR 9; Rules of Procedure 25)
   f. ENFO/CSRS Working Group on Inter-committee Coordination (WGIC) meeting (Article VII, 1, ToR 4 and 5)
   g. Review of Parties’ proposals on joint projects to be financed by the Commission (ToR 2)
   h. Future meetings (Article VII, 5, ToR 8)
   i. Adoption of CSRS Report

9. Consideration of administrative and fiscal matters
   a. Consideration of Auditor’s Report and selection of an auditor
   b. Current financial situation for the fiscal year began July 1, 2018
   c. Budget Projection for fiscal year beginning July 1, 2019
   d. Budget Estimate for fiscal year beginning July 1, 2020
   e. Budget Forecast for fiscal year beginning July 1, 2021
   f. Consideration on the NPAFC Financial Situation: The Current Status and Future Expectations
   g. Administrative report for 2018/19
   h. Administrative matters
   i. Review of ENFO and CSRS recommendations on joint projects to be financed by the Commission
   j. Schedule of future Annual Meetings
   k. Other business
   l. Adoption of F&A Report

10. Executive Director’s Performance Review Assessment
11. Deputy Director’s term of office and related issues
12. 2019 NPAFC Award presentation
13. Consideration of the Working Group report on the International Year of the Salmon project developments
14. Other business
15. Schedule of Twenty-eighth Annual Meeting
16. Summary minutes of plenary sessions
17. News Release
18. Closing remarks
19. Adjournment

V. 4. Opening Remarks

There were addresses of welcome and statements by the NPAFC President, Representative of the Oregon State Legislature, Hon. Ken Helm, Representatives of Canada, Japan, the Republic of Korea, the United States, and Russia.

Opening remarks by NPAFC President, Dr. Suam Kim:

Representatives, Delegates, Advisors, Observers, and Distinguished Guests,

It has already been a year since the 26th NPAFC Annual Meeting was held in Khabarovsk in Russia last May. Many people and organizations of the member nations have actively involved in NPAFC’s business, so that it became a year in which all of our events were successfully carried out. And, we gathered back in Portland, the beautiful city of the United States, to discuss and plan more valuable work in the future. Many thanks to the U.S. government for arranging this nice venue of Annual Meeting. I would also like to thank the delegation of the United States, the local community, and the staff of the NPAFC Secretariat for their contribution on the many small details of our Annual Meeting.
As everyone here knows, salmon is a creature that used to be a major driving force in the early development of our human society in the Pacific Northwest. Young salmon born in a river descend along the river to the sea, become adult salmon there, and move back to the home river again for spawning where they were born a few years ago. Our ancestors who lived in the coastal areas of the Pacific collected these returning salmon and ate them as food, traded them as a commodity, and used them in artwork for creating a culture. We have witnessed and confirmed these cases in each region where we hold Annual Meeting around the Pacific Rim, and furthermore, we can see how salmon give meaning to our humanity and human society. It makes us fall into deep thought about our existence on Earth. This awareness of the relationship between people and salmon has created the concept of International Year of the Salmon (IYS), and we have done that noble work for last several years.

Portland has many special features and fame such as “City of Roses,” “Beer-town,” “most environmentally conscious city” and so on. However, from our perspective on salmon, I would like to add one more name, “City of Salmon.” The Columbia River passing through Portland stretches about 2,000 km from the estuary to inland, and numerous salmon enter the Columbia River. They swim up to the upper stream for spawning, but encounter the huge obstacles that man made on the way to spawning sites. Electricity is the most essential one for the development of human society, and dams for hydroelectric power which were built everywhere in the river blocked salmon to the upper stream. Therefore, a dam becomes a fatal factor in the survival of the salmon. On the other hand, humanity has been trying to find a way for human society to coexist with salmon. Suggestions, measures, and actions to increase salmon survival have been discussed in the community along the Columbia River, especially City of Portland. Portland is a city where human efforts to conserve nature and salmon are particularly prominent. And, we are here to do this important work.

Little later, Executive Director Vladimir Radchenko and IYS Director Mark Saunders will report the details of our IYS activities accomplished last year. However, I would like to say that we have been very successful on IYS. In Russia and Canada, we made the declaration of the IYS internationally, and member countries have conducted international or domestic salmon symposia and outreach activities in their own countries actively. Above all, the Signature survey, involving scientists from all five NPAFC countries, was conducted in the eastern Pacific last February through March, allowing scientists to better understand the causes of salmon mortality in the ocean. This success of the Signature survey will further increase the likelihood of carrying out the planned Pan Pacific survey in 2021.

Also, the collaboration activity with NASCO, our partner organization on the Atlantic side, has been more active than ever before. The joint declaration of the IYS, the discussion on the protection of salmon species in the Northern Hemispheric level, and the participation at partner’s annual meeting were the major achievements between two organizations last year. To strengthen our understanding on marine ecosystems and to protect the resources in Salmosphere, the cooperation with NASCO is very important and essential. Also, the collaboration with NPFC and PICES has accelerated recently in Pacific side. The exchange of Memorandum of Cooperation with NPFC which will be signed today, and the joint workshop with PICES in their annual meeting in October will help to protect salmon species reduced from illegal fishing as well as climate change, and to promote the joint investigation on marine ecosystem research in the future.

Our Committees also have worked hard. The ENFO has found one illegal fishing vessel in our Convention Area last summer, and the list of apprehended illegal salmon fishing vessels has been updated. The joint effort of ENFO and CSRS has renamed as “The ENFO/CSRS Working Group on Inter-committee Coordination (WGIC),” and the creation of a new working group is to seek out the goal of improving enforcement effectiveness and collection of scientific data efficiently. The CSRS and IYS completed the first IYS Workshop successfully last year, and the second one will be open right after the end of the Annual Meeting. I am pretty sure that this Annual Meeting will be a new milestone for NPAFC, and appreciate in advance for your time and efforts sacrificed in this meeting.

I appreciate the sincere dedication of all NPAFC staff, especially, the Executive Director of the Secretariat, Vladimir Radchenko, for preparation of this meeting. Also, we have an excellent team of interpreters who have involved in annual meetings for several years. Without their devotion, our Annual Meeting cannot be prepared in such a nice way. In closing, I would like to welcome all of you to this special event. I wish all of you a fruitful week of work. Now, I announce the opening of 27th Annual Meeting of the NPAFC.
Opening remarks by the Representative of the Oregon State Legislature, Hon. Ken Helm:

Welcome! It is my distinct pleasure to welcome you to Portland to begin your Annual Meeting.

My name is Ken Helm, I am a State Representative from Oregon and I represent about 66 thousand people here in the Portland Area. I serve the 34th District in Oregon. I am truly humbled and grateful to be in a room filled with people like me, who are concerned with the fate of salmon and salmonids in our world, and are working to protect and promote them.

Oregon, along with your nations, has a long history of relationships with salmon and steelhead species, it is very deep. I’d like to remind people when I can that the ground that we are standing on right now once belonged to our indigenous people and still does. And they had a long-standing relationship with salmon long before my ancestors reached this land. And I think it is particularly important to remember those roots, because at the bottom of the relationship with salmon is a personal one, and I know that all of you in your countries have members of your populations that care deeply about the fish and the lands which they inhabit, spawn, and rear, and utilize later in their life, and all the things that those fish bring back to our land when they come home to spawn and die.

So, my task is to welcome you, and every task comes with an opportunity as well, and here is my opportunity today. And that is to help you remember that I personally am a true friend of salmon species. I grew up fishing in the Sierra Mountains in California, I moved to Oregon as a young man and began fishing for steelhead in my home stream of the Deschutes River, which is a tributary of Columbia River. And I’ve chased wild steelhead on the border of California and Oregon all the way to Washington, British Columbia and Alaska. I return as often as I can to be with those rivers and those fish.

I fight for wild salmon in our legislature here and it was my distinct pleasure this year to join with two other legislators. First from Alaska—Representative Geran Tarr, and another from Washington—Representative Debra Lekanoff to entertain a joint resolution in each of our legislatures to celebrating and pledging to participate in the International Year of the Salmon. That resolution passed the House of Representatives just a few days ago with nearly unanimous votes in favor, and is onto our Senate now. That is a demonstration of our commitment to wild fish here in the States.

So again, I welcome you, I encourage your productive talks for the next few days. I am with you and many others here in Oregon are with you in your work. Good luck with your work!

Opening remarks by Dr. Vladimir Belyaev, Head of the Russian delegation:

Dear Mr. President, Dear Members of Delegations, Dear Guests,

I am happy to be here together with you to discuss the problems and the issues with preservation and use of Pacific salmon. On behalf of Russian delegation, I welcome you to the 27th Annual Meeting of the NPAFC. First of all, I want to thank the Secretariat and Dr. Radchenko for having organized this meeting. I want to sincerely thank the U.S. Party for giving us an opportunity to meet in a beautiful “City of Roses”—Portland.

For 27 years we have been working in NPAFC, united by a common goal and a good will. During these years a lot was done to protect salmon from illegal fishing in open sea, as well as to learn how salmon function and survive.

The expedition on VNIRO Pacific fleet’s R/V Professor Kaganovskiy to study salmon in Gulf of Alaska was a big step to move forward in scientific cooperation for Russia, Canada, United States, Japan and Korea. All that became possible only thanks to joint efforts of all countries. I would like to particularly highlight the contribution of famous Canadian scientist Dr. Richard Beamish.

I’d like to mention that in Saint Petersburgh at the Global Fishery Forum and Seafood Expo the Head of Federal Agency for Fisheries of Russia Mr. Ilya Shestakov, NPAFC President Suam Kim, and NASCO President Jóhannes Hansen had a very useful meeting with a very productive discussion in the framework of the forum.

The cooperation of scientists from our countries has elevated our understanding of salmon to the highest level. NPAFC did a lot to spread the word. The conferences and symposia held by NPAFC and published scientific works were very instrumental. Last year in Khabarovsk we had the First NPAFC-IYS Workshop and the outcomes were published in the Technical Report No. 11. This year we are waiting for new presentations at the Second NPAFC-IYS Workshop.
Today we can summarize the results of 2018 catches. The catch in Russia grew again and, in 2018, it was almost 670 thousand tonnes. That is an absolute record for over 100 years of observations. We presented to this session the data on Russian catches of Pacific salmon, which I am sure will be useful to everyone, especially managers and scientists.

Let me introduce our delegation members. [Introduction of the members of the Russian delegation].

And now I would like to wish everyone productive work in our session, let’s resolve our problems, let’s answer our questions and touch upon all issues that we can resolve during our meeting. Thank you.

Opening remarks by Dr. Carmel Lowe, Head of the Canadian delegation:

Mr. President, Distinguished Delegates, Observers, Ladies and Gentlemen,

My name is Carmel Lowe, and I am the Head of the Canadian delegation and Regional Director of Science for the Pacific Region of Fisheries and Oceans Canada. It is an honour for me to be joining all of you this week, and I would like to begin by expressing my gratitude to the United States for hosting the 27th Annual Meeting of the NPAFC in this beautiful and historic port city. I am also inspired by the fact that we are meeting in the Columbia River basin which is historically so important for the Pacific salmon production.

The NPAFC is an important partnership for Canada which we value highly. It is an essential institution that has to work if our fishers and coastal communities are to continue relying on salmon fisheries in the North Pacific for their economic future. The conservation of Pacific salmon is an issue that occupies much of my attention day to day. NPAFC’s many contributions to scientific exchange and enforcement have helped Canada advance its own Pacific salmon policies and approaches to management.

Given the continued uncertainty surrounding the various factors that may affect the health of Pacific salmon and steelhead, particularly in the marine environment, the scientific collaboration that takes place through the NPAFC is instrumental. Specifically, the work of the Committee on Scientific Research and Statistics (CSRS) contributes to our understanding of relevant and at times unexpected trends including, for example, climate impacts on Pacific salmon in the NPAFC Convention Area, productivity trends by population, and the interactions between wild and hatchery salmon.

I would like to congratulate the team of 21 international scientists from Canada, Japan, Korea, Russia, and the United States for successfully completing and safely returning from a 5-week expedition in the Gulf of Alaska aboard a Russian research trawler Professor Kaganovsky. I must also thank everyone who was involved and supported this expedition from land. The expedition was a signature event in our delivery of the International Year of Salmon program this year. It was hugely successful on several fronts, serving as a platform to test and validate tools for at-sea genetic stock identification, and gathering a comprehensive suite of biological and oceanographic information to support analyses that I am confident will lead to better predictions of how the changing ocean environment affects salmon stock. These analyses will provide new insights into the factors that ensure or compromise the salmon’s survivability during their first winter at sea—something we understand plays a controlling role in determining their overall productivity. This flagship survey would not have been possible without the funding and the donations from private individuals, Non-Governmental and Government organizations including the Pacific Salmon Foundation, the Sitka Foundation, the B.C. Salmon Farmers Association, Fisheries and Oceans Canada and the Province of British Columbia. I would also like to express special gratitude to Fisheries and Oceans Canada Scientist Emeritus Dr. Richard Beamish and the three Chief Scientists in this expedition, Dr. Vladimir Radchenko (NPAFC), Dr. Laurie Weitkamp (NOAA), and Professor Evgeny Pakhomov (University of British Columbia) for their roles in the design of this expedition, as well as Mark Saunders for successfully leading the IYS activities in the Pacific Region.

The effective enforcement of the prohibition on fishing for anadromous fish on the high seas of the North Pacific also remains a priority for Canada. Canada hopes to build on the high level of cooperation among the Parties in the surveillance and enforcement area to deter illegal fisheries and to do this in a cost-effective manner to enhance our respective enforcement contributions. The joint enforcement efforts of the Parties in 2018 resulted in an 80 tonnes seizure of illegally caught salmon by a driftnet vessel on the high seas of the north-western part of the Pacific Ocean. This demonstrates the importance of continuing multilateral enforcement cooperation in the North Pacific. My colleagues representing Canada in the Committee on Enforcement will share Canada’s plans with regards to increasing our capacity and efforts in the North Pacific in the coming years.
Externally, strengthened collaboration between the NPAFC and other North Pacific organizations, such as the North Pacific Fisheries Commission, will ensure the effective and efficient use of resources in pursuing this goal of eliminating IUU fishing in the North Pacific.

In order to continue the positive work of this Commission, Canada notes the importance of the long-term fiscal sustainability of this organization, and ensuring that its activities are efficient and effective. As the home of the Secretariat, Canada seeks to provide guidance and support to the Commission in this respect.

I would like to thank the Secretariat for all its hard work and dedication throughout the year to ensure that the Commission’s work is meaningful, and specifically for all the work required to make our meeting this week a success. Finally, I would like to thank the interpreters for their exceptional service throughout this meeting.

Now, let me introduce you to the members of Canada’s delegation. [Introduction of the members of the Canadian delegation].

We look forward to a fruitful week ahead working with all of you. Thank you.

Opening remarks by Mr. Junichiro Okamoto, Head of the Japanese delegation:

Mr. President, Delegates, Observers, Ladies and Gentlemen,

I am Junichiro Okamoto, Head of Japanese delegation. On behalf of the Japanese delegation, I would like to express our appreciation to the Government of Oregon State and the Government of United State of America for hosting the 27th Annual Meeting of NPAFC in this beautiful city with lots of greenery, Portland.

Since the inception of the NPAFC, the Parties have been dedicating their efforts to both enforcement and scientific research activities to promote the conservation of anadromous stocks in the North Pacific Ocean under the Convention.

Enforcement activities have been efficient and effective under the framework of information exchange among the Parties. Our proactive enforcement activities through swift information exchange have brought about many remarkable achievements.

As for the scientific research, based on the NPAFC Science Plan, many beneficial research programs such as International Year of the Salmon project have been developed and implemented through cooperation among the Parties. In Japan, the long-term decreasing trend of the rate of chum salmon returns is one of the biggest concerns for us. We are required to investigate the causes of the chum salmon population fluctuations for the sustainable management of chum salmon stock. International cooperation is indispensable for the effective research and management of Pacific salmon, which migrate globally in the ocean. Japan has been working hard to develop and conduct further beneficial research. We have committed ourselves to continue our efforts through cooperation with international organizations as well as other Parties.

Furthermore, through the success of the international cooperative winter research cruise, and the scientific workshops and public events held annually under the IYS project, there is considerable progress in the accumulation and exchange of scientific knowledge among the Parties, and in the dissemination of knowledge on the social and cultural values of salmon. I would like to congratulate on progress of IYS projects and am respectful to contributions endeavored by people to success of IYS activities. In addition, Japan, on this occasion, also wants our NPAFC Parties to share proposition to keep careful watch over the financial soundness and future sustainability of NPAFC.

I would like to take this opportunity to express our respects to Dr. Kim, President of the NPAFC and the Chairpersons of its three committees. We believe that we will have meaningful discussions under your strong leadership. I assure you of the fullest cooperation of my Delegation in making these meetings run smoothly and efficiently.

Let me also express our appreciation to all the staff of the Secretariat for your hard work and contributions to NPAFC activities. It goes without saying that we owe it much to the Executive Director, Dr. Vladimir Radchenko and his staff that our activities have been meaningful and successful.

We deeply appreciate Dr. Radchenko for his dedication to the NPAFC. I also appreciate the interpreters for their service for this meeting.
Here, let me spare some time to introduce our members. [Introduction of the members of the Japanese delegation].

Finally, Mr. President, I conclude my speech by hoping that this year’s meeting will be successful.

Thank you.

Opening remarks by Ms. Hee Yeon Lee, Head of the Korean delegation:

Mr. President, Distinguished Delegates, Observers, Ladies and Gentlemen,

My name is Hee Yeon Lee, and I am Head of the Korean delegation and Deputy Director at the International Cooperation Division of the Ministry of Oceans and Fisheries of the Republic of Korea. First of all, the Korean delegation thanks the U.S. Party for hosting the 27th Annual Meeting of the North Pacific Anadromous Fish Commission with their warm hospitality in the beautiful city of Portland, the “twin city” of Ulsan Metropolitan City of Korea which has Taehwa River where chum salmon fry are released and return every year. We look forward to learning more about Portland and enjoying the amenities of this great port city. We would also like to extend our appreciation to the Executive Director and all the staff of the Secretariat for their hard work in organizing this meeting.

We congratulate the NPAFC ENFO colleagues on another very successful high seas enforcement season last year, and thank you for your big achievement. The Chinese flagged fishing vessel, Run Da, conducting illegal high sea driftnet (HSDN) fishing in the Convention Area was intercepted by the United States Coast Guard (USCG) Cutter last June. As a result of boarding and inspection, 80 tonnes of whole frozen salmon were discovered. As I understand, some samples from the salmon are being analyzed for genetic identification and origin of the salmon. We look forward to hearing more details about this successful case during this week.

As part of continuing multilateral enforcement cooperation, the Korean government, in collaboration with the Korean Navy, is continuing its effort to monitor any possible illegal fishing activity occurring in the Convention Area to prevent, deter, and eliminate IUU fishing. Taking this opportunity, I would encourage other Parties to provide any information on potential IUU vessels or HSDN vessels entering one of the Korean ports to ENFO Points of Contact for Korea. Based on such information, Korean skillful port inspectors will conduct port state measures, thereby contributing to the eradication of such vessels. As many of you may recall, the Korean government conducted port State inspections against the illegal HSDN fishing vessel, Arvid, and the illegal transshipping vessel, Bellatrix, which came to Busan port in May 2010, and confiscated 28 tonnes of salmon. As a Party of FAO Port State Measures Agreement, the Korean government will continue to contribute to the international fisheries community.

We also congratulate the team of 21 scientists on successfully completing the Gulf of Alaska international expedition early this year aboard the charted Russian Research Vessel, Professor Kaganovskiy. We believe that this expedition has proved that international collaboration is very effective, and provide baseline measurements of major pelagic ecosystem components including abundance of Pacific salmon in the Gulf of Alaska in the winter season and other useful scientific information. We also look forward to the summary of the result from the expedition during this week.

Korea, as a state of origin of anadromous species, continues to cooperate with other NPAFC member countries to expand release operations of chum salmon fry and identify migration routes and distribution. Through this meeting, we would like to share information on the changing trends in post-release mortality and return rates, the impact of climate change to salmon migration routes, changes in stock abundance, etc., and contribute to the research and conservation of salmon resource.

We hope many progressive ideas are shared and meaningful discussions take place on the conservation and management of the anadromous fish stock during this week. We would like to once again thank our host for putting this meeting together so wonderfully.

In closing, we anticipate a productive week ahead working with all of you.

Now, please allow me to introduce the members of the Korean delegation.

[Introduction of the members of the Korean delegation].

Thank you very much.
Mr. President, Distinguished Delegates, Observers, Ladies and Gentlemen,

My name is Doug Mecum, and I am the head of the U.S. delegation and the Deputy Regional Administrator for the Alaska Region of the National Marine Fisheries Service. The U.S. delegation is honored to host the 27th Annual Meeting of the North Pacific Anadromous Fish Commission in Portland, Oregon known as the “City of Roses.” Portland is also the “Twin City” of Khabarovsk where the Russian Party did an outstanding job in hosting the 26th Annual Meeting. We look forward to a productive and fruitful meeting here in Portland. Dr. Radchenko and his staff and our IYS Director Mark Saunders and his staff deserve our deepest thanks for all of their hard work in organizing the Annual Meeting and the IYS Science Workshop as well as an “IYS Friend Raiser” reception tomorrow night at the Ecotrust facility and a “IYS Science Bridging” Event on Friday afternoon.

Collaboration among the NPAFC Parties reached a new level during 2019 as scientists from all countries participated in a historic and unprecedented research survey during the winter season in the Central Gulf of Alaska. These types of surveys provide critical information on winter ecology of Pacific salmon during this period of increasing environmental variability. The lingering effects of large-scale changes to marine ecosystems in the North Pacific Ocean and Bering Sea are still being felt in U.S. salmon fisheries. Lower than expected returns of Chinook and sockeye salmon across the Gulf of Alaska continue to be observed along the West Coast of North America. Once again, managers have needed to significantly reduce commercial and recreational harvests of salmon in some areas. At the same time, record runs of sockeye and pink salmon have been observed in rivers entering the eastern Bering Sea. Interestingly, a pattern of late return timing was observed across both regions for sockeye salmon. The United States looks forward to continued discussions with our colleagues in NPAFC on Pacific salmon marine research and coordination during this meeting and at the IYS workshop on “Salmon Ocean Ecology in a Changing Climate” that follows our Annual Meeting.

The United States thanks all of the Parties for their enforcement cooperation during 2018. The U.S. extends our sincere thanks to the enforcement agencies from Japan, Russia, Republic of Korea and Canada for providing aircraft and surveillance support during the U.S. Coast Guard Cutter ALEX HALEY’s patrol in the Convention Area. We commend several of the multilateral efforts to address IUU threats. The U.S. Coast Guard was able to conduct nine WCPFC boardings and issued 28 potential violations to flag States for enforcement action. There was continued collaboration with Japan to support effective aerial surveillance and cooperation with Canada who provided 546 satellite acquisition frames to identify IUU activity. The United States coordinated bilaterally with China to address the threat of large-scale high-seas driftnet fishing in the NPAFC Convention Area by hosting four Chinese ship riders and two Korean observers onboard the U.S. Coast Guard Cutter ALEX HALEY during their 91-day high seas patrol. Most importantly, this direct coordination with the China Coast Guard resulted in the seizure of the IUU fishing vessel Run Da with 80 tonnes of illegal salmon onboard. A total of 52 salmon were sampled from the total catch and subsequent genetic analyses for species identification revealed the sample consisted of one chum salmon, four Chinook salmon and 47 pink salmon. The fishing vessel admitted to using 8–9 kilometers of high-seas driftnet. In total, nine people including the Captain and owner were sent to prison and the seized vessel was sold for scrap. The United States believes that the close working relationships that the Parties developed during the virtual joint patrol scheduling meetings were absolutely critical to the successful planning and implementation of joint patrol efforts—this NPAFC best practice should be celebrated and continued. In that regard, the United States will soon commence high seas enforcement efforts and is looking forward to continued close collaboration with our NPAFC partners to achieve successful coordinated multilateral enforcement operations in 2019.

In closing, we anticipate a productive week ahead and the United States looks forward to renewing and strengthening our relationships within the NPAFC, its committees, and the Parties. In addition we look forward to seeing all of you this evening at our opening reception at the Portland City Grill.

And now, please allow me to introduce the members of the United States delegation.

[Introduction of the members of the U.S. delegation].

Thank you.
President Kim introduced Mr. Tsung-Yueh Tang, observer from Overseas Fisheries Development Council, Taiwan, who delivered an opening address:

Mr. Chair, Distinguished Delegates, Ladies and Gentlemen,

On behalf of the Fisheries Agency of Taiwan, I sincerely thank the members of NPAFC and the Executive Director for inviting Taiwan as an observer to attend the 27th Annual Meeting of NPAFC. Also, I would like to thank the United States of America for hosting this meeting and the city of Portland for its hospitality.

As one of the major fishing players in the world, Taiwan recognizes its role of sharing the responsibilities to ensure the sustainability of the living marine resources and the conservation of the ecosystem where the resource spawns or habitats. By participating in regional fisheries management organizations and, complying with applicable RFMOs’ conservation and management measures, Taiwan has committed to be a responsible member in the international fishing society, and it is pleased to work with the international community for improvement on fisheries management and scientific research.

In the past years, Taiwan dispatched patrol vessels to the North Pacific Ocean to deter potential IUU fishing activities and legislated against driftnet operation in high seas. In addition, since the last time Taiwan attended this meeting as an observer, it has undertaken significant efforts in its fisheries management and the capability to conduct monitoring, control and surveillance of Taiwanese vessels operating in the North Pacific Ocean has been enhanced accordingly.

Lastly, Taiwan maintains its position that it has no intention to develop anadromous fisheries while recognizing the objective and enforcement measure of the Convention for the Conservation of Anadromous stocks in the North Pacific Ocean. By dispatching patrol vessels to the North Pacific Ocean continuously, Taiwan is keen to contribute to the robust management of North Pacific fishing stock, and to promote good governance among RFMOs coherently.

I wish the Commission successful deliberations this week.

Thank you for your attention.

Ms. Kim Damon-Randall, observer from the North Atlantic Salmon Conservation Organization (NASCO), who delivered an opening address:

Distinguished Delegates, Observers, Ladies and Gentlemen,

I would like to first extend my gratitude to the Honorable President Professor Suam Kim and Executive Director Dr. Vladimir Radchenko for the invitation to the 27th NPAFC Annual Meeting during the International Year of the Salmon. On behalf of the North Atlantic Salmon Conservation Organization (NASCO), which is the sister organization of NPAFC, I congratulate you on this Annual Meeting in the beautiful city of Portland, Oregon.

It is my great honor and pleasure to speak at the 27th Annual Meeting of NPAFC today as the observer for NASCO. I am the Head of Delegation to NASCO for the United States and we share many of the same problems with respect to declining salmon populations. NASCO was founded to conserve, restore, enhance and rationally manage wild Atlantic salmon in the international waters of the North Atlantic Ocean and its adjacent seas north of 36° North, beyond areas of fisheries jurisdiction of the coastal States of Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Norway, the Russian Federation, and the United States of America.

Since 1984, NASCO has contributed greatly to effective conservation and management of wild Atlantic salmon in the North Atlantic, through a number of measures, including: the creation of a salmon protection zone beyond areas of fisheries jurisdiction and in most parts of the North Atlantic beyond 12 nautical miles; regulatory measures for salmon fisheries; the implementation of the Precautionary Approach to salmon management; the publication of Resolutions, Agreements and Guidelines relating to NASCO’s three key theme areas, i.e., ‘management of North Atlantic salmon fisheries’, ‘habitat protection and restoration’ and ‘aquaculture, introductions and transfers and transgenics’; to which all the NASCO Parties are committed; and through a program of scientific advice and research.
Salmon are an important biological, cultural and economic resource throughout the North Atlantic and North Pacific Oceans and the Baltic Sea. Working together, the NPAFC and NASCO have been able to successfully implement the International Year of the Salmon—a program of new collaboration, outreach and research across the Northern Hemisphere designed to advance understanding and awareness of the issues facing salmon throughout their range.

The IYS effort has enabled our two organizations to greatly strengthen our relationship by developing greater understanding of our respective cultures and priorities through face-to-face meetings of our two Presidents, the IYS Coordinating Committee and the IYS Technical Team. In fact, NASCO was able to participate in the Pacific launch of the IYS in Vancouver, Canada in October 2018 by combining this visit with a meeting of the IYS Technical Team. Similarly, the NPAFC President, Professor Suam Kim, was able to attend the Scottish IYS launch during a visit to the NASCO President, Mr. Jóannes Hansen, in Scotland in October 2018. I am particularly pleased with progress on the joint effort in relation to the Likely Suspects Framework that has benefitted from hemispheric collaboration. NASCO has worked with the International Council for the Exploration of the Sea (ICES) this year to set up a series of three collaborative workshops that will advance knowledge for improved assessment of salmon stocks and contribute to the Likely Suspects Framework.

The IYS effort, our two organizations, and salmon conservation will all greatly benefit from the continued collaborative relationship that we have been building over the last several years. I personally look forward to learning more about NPAFC while attending the meeting this week including discovering more about your issues, procedures and most importantly, getting to know more of the people in this organization. I wish you great success in your deliberations and hope for meaningful results for the conservation of anadromous fish stocks in the Pacific and across our planet.

Thank you.

Mr. Kenji Kagawa, Chairman and Dr. Dae Yeon Moon, Executive Secretary of the North Pacific Fisheries Commission (NPFC) as observers at the meeting on behalf of their respective organization. Mr. Kagawa made opening remarks:

Good morning Dr. Suam Kim, President of NPAFC, Dr. Vladimir Radchenko, Executive Director, Distinguished Delegates of NPAFC Members, and Ladies and Gentlemen, it is a great pleasure and honor for us to be here with you as an observer for your Annual Meeting of the North Pacific Anadromous Fish Commission.

As the Chair of the North Pacific Fisheries Commission, I would like to express my sincere gratitude to all Members of NPAFC and the Secretariat for kindly inviting us to this meeting.

As you are aware, our two commissions have continuously cooperated by attending each other’s meetings as an observer for the past three years and exchanged views on future cooperation in the areas of mutual interest especially science as a priority area of potential collaboration and cooperation, with efforts in the near future for collaboration on mutually beneficial compliance activities.

Last year we agreed to advance on the development of a formal arrangement through a Memorandum of Cooperation (MOC) and thanks to the efforts of Members of both commissions, we have finally agreed on a final MOC text which we are going to sign during this meeting to commence our official cooperation activities.

On behalf of the NPFC, I sincerely welcome this MOC as this is our first formal arrangement with another organization since the NPFC was established, and we look forward to giving it our full support to make our cooperation fruitful.

I wish to express my sincere gratitude to the Members of both commissions who have contributed to the development of this formal link between our organizations and I also am very grateful to both secretariats for their assistance and preparation to move forward on this important task.

I believe that this MOC commits us to work together more closely to establish and maintain consultation, cooperation and collaboration with respect to matters of common interest to the two commissions, thus achieving our common goals, conservation and sustainable use of fish resources in the North Pacific Ocean.

Taking this opportunity, I would like to invite representatives of the NPAFC to participate in our 5th Annual Meetings of the
Commission scheduled to take place in Tokyo, Japan during July 11–18, where both commissions can have an opportunity to discuss the implementation of this MOC.

Mr. President, I understand that you have a full agenda in front of you for the coming five days so I will close my statement now by thanking you and the NPAFC Members again for giving us this opportunity.

We wish you every success in this important meeting. Thank you very much.

Dr. Hal Batchelder, Deputy Executive Secretary of the North Pacific Marine Science Organization (PICES) as observers at the meeting on behalf of his respective organization. Dr. Batchelder made opening remarks:

Mr. President, Distinguished Delegates, Observers, Ladies and Gentlemen,

My name is Hal Batchelder and I am the Deputy Executive Secretary of PICES. On behalf of our Chairman, Dr. Chul Park, I would like to express our appreciation for the invitation to participate as an observer at the 27th Annual Meeting of the Commission.

In many ways, PICES and NPAFC are organizational “fraternal twins”—born at the same time, with similar Contracting Parties, and similar geographic scope but with different and complementary mandates. Over the years, the two organizations have engaged in joint activities and many individuals have played important roles in both organizations.

PICES wishes to extend our congratulations to NPAFC on the highly successful IYS scientific expedition to the Northeast Pacific. We look forward to the next phase of collaborations with NPAFC on the implementation of the International Year of the Salmon program, including the Workshop which follows this Annual Meeting and the NPAFC/PICES Workshop that will take place during the PICES Annual Meeting in Victoria, Canada in October. We believe that these will be effective opportunities to build support for the additional IYS surveys of the North Pacific.

PICES also wishes to collaborate with NPAFC to ensure that the United Nations Decade of Ocean Science for Sustainable Development (2021–2030) is designed to meet the objectives of both our organizations.

We wish you a most successful and productive meeting here in Portland.

Mr. John Field, Executive Secretary of the Pacific salmon Commission (PSC) as observers at the meeting on behalf of his respective organization. Mr. Field made opening remarks:

Good morning Ladies and Gentlemen, Distinguished Delegates, and Valued Colleagues. My name is John Field, and I serve as the Executive Secretary of the Pacific Salmon Commission (PSC) in Vancouver, Canada.

I am honored to be invited here to the NPAFC’s 27th Annual Meeting as an observer, and it is good to see so many familiar faces from our shared work in Pacific salmon management and conservation. I look forward to connecting with you, and to meeting new colleagues as the meeting unfolds.

The PSC and the NPAFC share many things beyond our common host city of Vancouver. Both organizations realize that Pacific salmon stocks face an array of threats in the marine and freshwater phases of their lives. Both organizations see the value of enhanced research in these areas. And both organizations realize that such threats can only be addressed through renewed commitment to international cooperation and redoubled efforts to secure the required financial and human resources from our member countries.

In the PSC, these realizations have led to significant amendments to our treaty’s management measures that entered into force just this year. These changes will remain in effect for the next 10 years, and address the varying status of regional Chinook, chum, sockeye, coho, and pink salmon stocks. Canada and the United States have agreed through these amendments to reduce harvest rates on Chinook salmon, expand monitoring of sentinel stocks, and improve their ability to institute mark-selective fisheries. They have also committed to incorporating climate change into their assessment models for certain stocks, and are seeking increased domestic funding to make these changes a reality.
As the PSC undertakes these efforts, I am pleased to report communication and cooperation with the NPAFC remains excellent. Dr. Carmel Lowe from Canada serves on the PSC’s Committee on Scientific Cooperation, ensuring timely exchange of views on emerging science. Mr. Doug Mecum from the United States serves on one of our five regional management panels, as well as our northern endowment fund committee. Finally, Dr. Vladimir Radchenko and I engage regularly through the International Year of the Salmon North Pacific Steering Committee and the PSC’s Northern Endowment fund was pleased to provide funding for the recent Gulf of Alaska winter survey we’ll hear more about this week.

I look forward to continued cooperation between the world’s two Pacific salmon treaty organizations, including efforts like the IYS and its workshop next weekend where one of my staff will present his work. But most importantly, I wish you a pleasant and productive meeting during your stay here in the unique and historic city of Portland.

V. 5. Executive Director’s Report

The Executive Director’s (ED) report (NPAFC Doc. 1813) was submitted to the Parties prior to the meeting along with Circular Letter #391 dated April 12, 2019. Prior to the Annual Meeting, it was updated with new information on NPAFC events and activities of the 2018/2019 Fiscal Year to May 7, 2019.

The report reviewed the status of implementation of the Commission’s decisions and the committees’ recommendations that were approved by the Commission at the Twenty-sixth Annual Meeting in Khabarovsk, the Russian Federation. The Executive Director presented information on cooperation with relevant international organizations, descriptions of the Commission’s activities in the areas of enforcement, scientific research and statistics, publications, and a summary of the Secretariat’s performance, including management of the Commission’s funds.

(a) Enforcement-related section of the Executive Director’s report

This section of the ED report mainly covered the ENFO activities and events that took place in 2018 as in 2019, including a one-day ENFO workshop on New Technologies in Combating IUU Fishing (see section II. 5. “Enforcement in 2019”), the 2019 JPSM meeting (see section IV “2019 Joint Patrol Schedule Meeting”), updating the Enforcement Activities webpage, and publishing a review on the FAO Port State Measures Agreement implementation in NPAFC member countries (NPAFC Newsletter #45, p. 10–26).

Mr. Sean Wheeler (DFO, Canada) represented NPAFC at the 4th NPFC Technical and Compliance Committee (TCC) Meeting in Tokyo, Japan from July 11–13, 2019. He delivered an opening statement with proposals on further development of inter-commission cooperation.

Detailed description of these and other enforcement-related activities are described in the section “VI. 1. Consideration of Enforcement” of this Annual Report.

(b) Science and Statistics in the Executive Director’s report

In the report, scientific research and statistics matters were represented by information of the CSRS recommendations at the 2018 Annual Meeting, implementation of the IYS initiative, cooperation with international organizations, scientific expeditions and meetings.

The Gulf of Alaska expedition was the first international integrated winter pelagic ecosystem research survey with a focus on Pacific salmon. The research team included 21 scientists from Canada, Japan, Korea, Russia and the United States. The expedition covered an area of approximately 700,000 km² and completed a 60-station survey grid from February 16 to March 18, 2019. For the first time abundance estimates for salmon in the Gulf of Alaska were received (about 55 million fish), at-sea genetic sequencing was successfully performed to reveal a real-time stock composition of coho and Chinook salmon, first video was recorded on adult salmon behavior within the trawl net, etc. (see details in NPAFC Doc. 1858).
According to the request from a NPAFC partner, the Pacific Salmon Foundation, the Secretariat established business relationships with the Forever Nature Capital Foundation (FNCF), whose representatives participated in the 2018 NPAFC Annual Meeting and the First NPAFC-IYS Workshop in Khabarovsk, Russia. In July 2018, FNCF Communication Officer Mr. Li Xin informed that the newly built chum salmon hatchery near Hunchun City has intention to mark chum salmon in release along the Tumen River and requested a mark code for their marking program. Request was immediately forwarded to the WGSM Chairperson Dr. Dion Oxman, and, after clarification, unique otolith mark 6H was assigned for the Chinese Tumen River Hatchery's operations.

The NPAFC statistical data files and statistics metadata report were updated with information on Pacific salmon catches and hatchery releases in 2018 after the 27th Annual Meeting.


(c) Cooperation with relevant international organizations

This section of the ED report begins from sub-chapter “Cooperation with UN and FAO,” which covers relationships with several other international organizations working under umbrella of different UN and FAO programs.

In late December 2018, Under-Secretary-General for Legal Affairs and United Nations Legal Counsel, Mr. Miguel de Serpa Soares requested the NPAFC to contribute to Part I of the UN Secretary-General Report on Oceans and Law of the Sea. The contribution should be dedicated to a specific topic “Ocean Science and the United Nations Decade of ocean science for Sustainable Development.” The Secretariat compiled a four-page executive summary based on the recent CSRS activities and submitted it to DOALOS on January 18, 2019. The summary included five sections:

- NPAFC efforts in advancing ocean science;
- NPAFC initiatives and projects related to the UN Decade of ocean science for Sustainable Development;
- emerging ocean science technologies at the service of NPAFC;
- science-policy interface in the NPAFC; and
- integration of traditional knowledge in the NPAFC research and outreach programmes.

Translation of the executive summary to Russian, was submitted on February 13, 2019. Submissions are available to view at https://www.un.org/depts/los/consultative_process/contribution_20.html together with another twenty contributions from UN members and international organisations.

Another request of Mr. Miguel de Serpa Soares was to contribute to the consultations related to the performance reviews of regional fisheries management organizations and arrangements. The contribution was requested in relation to the planned fourteenth round of consultations of States parties to the 1995 United Nations Fish Stocks Agreement for two days in May 2019 to focus on the aforementioned topic. The Secretariat compiled a seven-page reference document titled Performance review of international organisation, The NPAFC experience and submitted it before the deadline on March 29, 2019.

In February 2019, an invitation was received from the FAO PSMA Secretariat and RSN Secretariat to the NPAFC to contribute to preparation and attend at the Second Meeting of the Parties to the 2009 FAO Agreement on Port State Measures in Santiago, Chile on 3–6 June 2019. The meeting will be followed by the 3rd Meeting of the Part 6 Working Group on 7 June 2019. The RSN Secretariat requested information related to the PSMA status in NPAFC member countries, conservation and management measures in place related to port State measures and their conformity with the PSMA, monitoring of compliance with these CMMs, initiatives related to promotion of the PSMA as a tool to combat IUU fishing, capacity building activities for contracting Parties/Members on the PSMA, and other relevant information to be included not specified above. Brief information was submitted in early April 2019 along with the reference to the NPAFC Newsletter article “Port State Measures Implementation in the NPAFC Member Countries: A Review” // NPAFC Newsletter #45, p. 10–26 https://npafc.org/wp-content/uploads/2019/02/NWSL45.pdf#page=10.

In March 2019, PICES Executive Secretary Robin Brown encouraged the NPAFC to contribute to UN Decade of Ocean Science for Sustainable Development (2021–2030). It was decided at the 2019 Annual Meeting that CSRS Chairperson Masa-aki Fukuwaka would attend the Regional Planning Workshop for the North Pacific and Western Pacific Marginal Seas towards the UN Decade of
Ocean Science to understand the project for possible contributions by the NPAFC. In June 2019, Dr. M. Fukuwaka—upon invitation by the Head of IOC Regional Office for the Western Pacific (WESTPAC) Mr. Wenxi Zhu—participated in the Regional Planning Workshop, which was held in Tokyo, Japan, from 31 July to 2 August 2019.

In early June 2019, the Secretariat received an information note from the Secretariat of the Convention on Biological Diversity UN Environment Programme (CBD UNEP). This information note contains the CBD Secretariat’s view on ways and means how CBD Parties, other Governments, and relevant organizations can contribute to the process of the Post-2020 global biodiversity framework development.

Upon the Commission’s approval, the Secretariat collaborated with the CBD Secretariat in the past. With their financial support, the NPAFC Deputy Director Jeongseok Park represented the Commission at meetings of the First and Second Sustainable Ocean Initiative (SOI) Global Dialogue with Regional Seas Organizations and Regional Fisheries Bodies on Accelerating Progress towards the Aichi Biodiversity Targets in Seoul in September 2016 and April 2018. The main goal of these meetings was to facilitate cross-sectoral regional-scale dialogue between regional environmental organizations and RFMOs to accelerate regional and national efforts toward the achievement of the Aichi Biodiversity Targets and Sustainable Development Goal (SDG) 14 related to marine biodiversity. In 2017, the NPAFC Secretariat participated in several virtual dialogues to support the implementation of SDG 14 to highlight the Commission’s activities. Submitted materials highlighted the International Year of the Salmon (IYS) and other Commission’s projects and activities.

From the received information note, the Secretariat considers that it will be appropriate to participate in future CBD UNEP activities as follows:

- Participate in global, regional, and thematic consultations during 2019–2020 by e-mail;
- Participate in the meetings of the Open-Ended Intersessional Working Group (OEWG) on the preparation of the Post-2020 global biodiversity framework by writing, sharing information, opinion and analysis, and using funded opportunities;
- Deliver views and/or substantive input/comments to the discussion documents on the Post-2020 framework, as they are made available for consultation in the CBD Post-2020 website.

This proposal has been sent to the NPAFC Points of Contact for their endorsement. No objection was received, and the CBD Secretariat was assured of our ongoing support.

On August 12, 2019, Large Marine Ecosystems (LME) Community invited the NPAFC to fill a questionnaire on matters of specific interests for LME projects, but also of interest for a wider audience comprising the International Waters Community. The LME project is GEF financed, UNDP implemented, and IOC-UNESCO executed. At the last meeting in Marrakech, Morocco, in November 2018, the participants proposed that a medium-term strategy/roadmap, aimed at better formatting of the LME Consultation Meeting’s structure and contents, be prepared and proposed at the LME 21 meeting. This initiative should be carried out in the participatory manner, and this questionnaire is the first step towards the development of the roadmap. The Secretariat has filled the questionnaire related to issues of NPAFC interest, the major thematic technical area NPAFC is involved, and suggestions to improve in the execution of breakout sessions at LME meetings.


On August 27, 2019, an invitation was received from the Under-Secretary-General for Legal Affairs and United Nations Legal Counsel, Mr. Miguel de Serpa Soares, to recommend experts for appointment to the Pool of Experts of the Regular Process. The Secretariat has reported to the Commission on all the Regular Process developments starting from 2016 (see ED reports 2016–2019). Considering appointment of experts to the Pool, the Parties were informed that topics are too general to appoint an expert on specific salmon-related issues. E.g., experts are required on such general topics as “fish,” and “North Pacific.” There were no suggestions received from the Parties.
An informal intersessional RSN meeting took place at the FAO headquarters in Rome, Italy, on 20 November 2019 on the sidelines of the International Symposium on Fisheries Sustainability. Invitation to the NPAFC Secretariat was acknowledged. Representatives of 12 RFMOs, including the Inter-American Tropical Tuna Commission (IATTC) and the Pacific Salmon Commission (PSC), attended the meeting chaired by the RSN Chairman Guillermo Compean (IATTC) and RSN Secretary Piero Mannini. Meeting participants discussed the draft agenda for the 8th RSN meeting, draft RSN Terms of Reference, Draft Questionnaire on RSN’s Financial Needs and Potential Donors, and a Draft RSN survey on administrative issues for RFMOs and RFBs. A brief RSN questionnaire was distributed on December 16, 2019 and completed by the NPAFC Secretariat the same day.

On November 27, 2019, the Secretariat received information from the UN Division for Ocean Affairs and the Law of the Sea (DOALOS) that the President of the BBNJ Conference, Mrs. Rena Lee, had prepared the following documents for the fourth session of the Conference:

- “Revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction—Note by the President” (Advance, unedited version—in English); and
- An informal document indicating the changes that were introduced to the draft text of an agreement contained in document A/CONF.232/2019/6, in English.

According to the draft, the agreement will regulate access to marine genetic resources, besides the use of fish and other biological resources as a commodity (i.e. fishing), and collection of marine genetic resources during marine scientific research. Collection of marine genetic resources will become a subject of notification to the secretariat, while licensing and contributions become a subject of notification to the special fund. The agreement will also embrace the establishment of marine protected areas and marine technology (relevant data, information, knowledge and research) exchange. Utilization of the intellectual property rights in this relation is still disputed in the draft. A significant additional function that can be entrusted to the RFMOs is an environmental impact assessment that will be required under the emerging agreement. Nevertheless, draft Article 4 (3) stipulates that an agreement shall be interpreted and applied in a manner that respects the competences of, and does not undermine, relevant legal instruments and frameworks and relevant global, regional, subregional and sectoral bodies.

In general, draft text of a BBNJ agreement was still in review by the Conference. Most of the text was presented in brackets which meant there are two or more alternative options within a provision, or support has been expressed for a “no text” option, either within a provision or in relation to a provision as a whole. Part VI, Institutional Arrangements looked to be agreed upon in general with the Conference of the Parties as a governing and regulatory body, a Scientific and Technical Body as a standing advisory committee, and a secretariat. The Secretariat functions can be performed by the DOALOS or one of the competent existing international organizations. The BBNJ Conference delegations were invited to submit to the DOALOS secretariat textual proposals for consideration at the 4th Conference session planned to be held from 23 March to 3 April 2020 in New York. The Secretariat has forwarded documents along with brief commentaries for the Parties’ consideration.

Since 2019, the Common Oceans ABNJ Program Newsletter has been distributed to the Secretariat.

On 16 December 2019, the UN Assistant Secretary-General Mr. Stephen Mathias requested the NPAFC to contribute to Part I of the UN Secretary-General Report on Oceans and Law of the Sea. The contribution should be dedicated to a specific topic “Sea-level rise and its impacts.” The Secretariat compiled a two-page executive summary based on the recent NPAFC publications/presentations and submitted it to DOALOS in January 2020. The summary included estimates of sea-level rise rates in the North Pacific region, information on main threats to salmon stocks sustainability under sea-level rise impact, results of estuaries classification and resistance studies. As expected, submissions will be later available to view from the UN website together with other contributions from the UN members and international organisations.

A brief article on “Focal year for IYS to address challenges to salmon management” was published in the RSN Newsletter No. 18 (http://www.fao.org/documents/card/en/c/CA3925EN) in January 2019.

The Secretariat has also received several invitations to the NPAFC to attend UN and FAO meetings in 2019:

- Invitation from the UN DOALOS to the Multi-stakeholder Dialogue / Capacity-building Partnership Event on the Regular Process scheduled to be held from 24 to 25 January 2019 at UN Headquarters in New York, NY, U.S.A.;
- Invitation from the UN Assistant Secretary-General Mr. Stephen Mathias to the NPAFC to attend the 14th round of consultations of
On June 16, 2019, Mr. Mish Hamid, Project Manager, The Global Environment Facility (GEF), United Nations Environment Programme invited the NPAFC to the 21st Annual Large Marine Ecosystems Consultative Meeting (LME 21) in Cartagena, Colombia, on September 18–20, 2019. The topic of 2019 year’s meeting was: Building Partnerships around LME’s in Support of the 2030 UN Sustainable Development Agenda;

- Invitation from Mr. Henock Legesse Workie, UN DOALOS, to the Twelfth Meeting of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, which was held at the UN Headquarters in New York from 29 to 30 July 2019;
- Invitation from the FAO Official-Correspondence-Group (CPAC) to the 10th Session of the Sub-Committee on Aquaculture, Trondheim, Norway, 23–27 August 2019. Invitation was forwarded to the Parties, but no observer was designated. On August 21, 2019, the Secretariat received the new issue of the FAO Aquaculture e-Bulletin;
- Invitation from Ms. Eliana Haberkon, RSN Secretariat, to the FAO International Symposium on ‘Fisheries Sustainability: Strengthening the Science Policy nexus,’ to be held at FAO Headquarters, Rome, Italy, 19–21 November 2019. An informal RSN meeting was held on the sidelines of this event;
- Dr. Qu Dongyu, who took office on August 1, 2019, as Director-General of the UN Food and Agriculture Organization has invited the NPAFC to attend the 17th Session of the Sub-Committee on Fish Trade of the Committee on Fisheries (COFI), which was held in Vigo from November 25 to 29, 2019;
- In early September 2019, the CBD Secretariat informed that the thematic consultation on marine and coastal biodiversity for the post-2020 global biodiversity framework, originally scheduled to take place 6–8 November 2019 in Montreal, Canada is postponed to November 13–15, 2019 in the same place. The meeting will now be referred to as the “thematic workshop on marine and coastal biodiversity for the post-2020 global biodiversity framework.”

The above-listed invitations were acknowledged but not taken up because such business trips are not budgeted for the 2018/19 or 2019/20 fiscal years.

The NPAFC contacts with the North Pacific Marine Science Organization (PICES) continued with attendance at each others’ meetings. PICES Secretariat staff supported the IYS implementation and actively participated in IYS-related events. Deputy Executive Secretary, Dr. Hal Batchelder participated in the IYS North Pacific Steering Committee Meeting in Vancouver, B.C., Canada on January 21–22, 2019, the Salmon data workshop in Vancouver on January 23–24, 2019, the 27th Annual Meeting and the 2nd NPAFC-IYS workshop in Portland, Oregon, U.S.A. on May 13–17 and 18–20, 2019. PICES Executive Secretary Robin Brown participated in the celebration of the IYS cruise on board the R/V Professor Kaganovskiy at the Burrard Dry Dock pier and Vancouver Aquarium on March 18, 2019. In return, PICES invited the Commission to attend at the 2019 PICES Annual Meeting in Victoria, B.C., Canada, on October 16–27, 2019.

During the 2019 PICES Annual conference, NPAFC and PICES successfully completed three days of meetings from October 19–21. As part of the International Year of the Salmon initiative, ocean and salmon scientific experts from around the Pacific Rim were brought together to explore findings from the ground-breaking 2019 winter expedition to the Gulf of Alaska and plan for a fully pan-Pacific expedition in March of 2021. During the first two days, the NPAFC co-hosted a workshop that convened salmon/fish specialists, oceanographers, climatologists and resource managers from around the Pacific Rim and abroad to review the scientific results of the March 2019 survey. Presenters included the 2019 High Seas Expedition scientists and guests from a wide variety of partner organizations including Fisheries and Oceans Canada, Pacific Branch of VNIRO (TINRO), NOAA Fisheries, the Pacific Salmon Foundation, the University of British Columbia, the University of Victoria and Hokkaido National Fisheries Research Institute. Twenty-three oral presentations were delivered. The workshop was completed with the panel discussion and facilitated a session on the planning for 2020/2021 survey design and approaches. See details in the NPAFC media release at uploads/2019/11/NPAFCIYS-Article-October-28-2019-For-Immediate-Release.pdf and the newsletter article by M. Harris Proven Potential of Integrated Ecosystem Research in Expanding Human Understanding of the High Seas Environment (Newsletter #47, p. 20–27). The workshop outcome and proposal for the next year NPAFC/PICES topic session was delivered to the PICES Science Board by the Executive Director, and the proposal was accepted.

In March 2019, PICES Executive Secretary Robin Brown sent a letter to the NPAFC Secretariat with invitation to the Commission to play a role in development of the UN Ocean Science Decade plan (see above in the section “Cooperation with UN and FAO”). Preliminarily, this issue was discussed by phone. PICES has agreed to support the development of the plan on the Ocean Science Decade and are serving as a co-sponsor (with IOC.WESTPAC) of a North Pacific Regional Workshop (to be held in Tokyo on July 31–August 2, 2019) where priorities and opportunities will be discussed. Mr. Brown listed several possible ways for NPAFC to participate.
including nomination of a member of the International Steering Committee for the project; co-leadership of one of the Working Group/Sub Themes at the Regional Workshop, e.g., WG2—A healthy and resilient ocean ecosystem, and WG5—A sustainably harvested, productive ocean: seafood security; contribution to a list of important sustainability questions that need to be addressed on the Ocean Decade and expected outcomes, and co-sponsoring the workshop. The letter was responded to with a promise to consider the proposal at the NPAFC Annual Meeting in Portland.

On September 16, 2019, PICES Executive Secretary Robin Brown requested 18 international organizations describe approaches and practices that are applied in their scientific activities. In reply, PICES was informed that, at the 1993 NPAFC Annual Meeting, the CSRs identified the following two critical issues for research by the Parties: 1) factors affecting current trends in ocean productivity in the North Pacific Ocean and their impacts on salmonid carrying capacity, and 2) factors affecting changes in biological characteristics (growth, size and age at maturity, oceanic distribution, survival, and abundance) of Pacific salmon. A research planning and coordinating group reviewed each party’s planned research activities that are related to these two issues and, based on these planned activities, developed the first NPAFC Science Plan for 1995–1996.

Since 2000, a five-year term is the agreed upon length for NPAFC Science Plans. It was decided that Science Plan implementation would be followed by a NPAFC Symposium, which would be held back-to-back with the annual meeting. A NPAFC Bulletin volume would then be published with symposium proceedings including all major outcomes of the Science Plan implementation. The same approach was applied to the major NPAFC scientific program—the Bering-Aleutian Salmon International Survey (BASIS) with the follow-up symposium in 2008 and publishing the NPAFC Bulletin #5 in 2009. Since 2015, the NPAFC Bulletin and Technical Report articles are registered with D.O.I.s through Crossref. A monthly report provided by Crossref helps to determine the utility and level of interest in each publication, i.e., there is a technical “tracking tool.”

Recently, the Commission slightly modified the planning and reporting approach due to adoption of the multiyear International Year of the Salmon (IYS) project. The current NPAFC Science Plan (2016–2020) is almost completely integrated with the IYS programme, besides the outreach section. The Science Plan outcomes are reviewed at the annual NPAFC-IYS workshops. The Third NPAFC-IYS Workshop in Hakodate, Japan will also review results of the NPAFC Science Plan (2016–2020) implementation while the IYS wrap-up symposium is preliminarily planned to be held in 2022. Current scientific findings and salmon stocks monitoring results are also presented by parties as scientific documents, which contribute annually to the NPAFC publication database, and newsletter articles. The NPAFC also issued special publications devoted to the Long-term Research and Monitoring Plan (LRMP) for Pacific Salmon in the North Pacific Ocean and a bibliography on Climate Impacts on Pacific Salmon.

The NPAFC supports several databases with important scientific information for international salmon research: the salmon catch and hatchery releases data files, the otolith mark library and database, and the disk and archival tagging and recovery database. Use of the NPAFC website is regularly monitored with production of a monthly report. There is a procedure of samples, data and personnel exchange between the NPAFC Parties that support cooperative scientific work in the North Pacific Ocean. Results of such cooperative research are also reported in the form of scientific documents. Besides the described “community service,” CSRs also cooperate with the Committee on Enforcement to increase the efficiency and effectiveness of enforcement operations. The Working Group on Inter-committee Coordination was recently established to facilitate information exchange and activity coordination. At the annual meeting, scientists deliver overview presentations on recent changes of salmon migration patterns, stock conditions, tools and results of findings in the field of salmon stock identification, etc.

From June–July 2019, the Executive Director and PICES Executive Secretary Robin Brown discussed a set of issues related to human resources and budgeting. PICES provided valuable commentaries on the parental policy issue, ex-officio member status, and balancing of negative sick leave.

The signing of a Memorandum of Cooperation (MoC) became the most prominent event in the continuing development of a tightening relationship with the North Pacific Fisheries Commission (NPFC).

NPFC Chairperson Mr. Kenji Kagawa and Executive Secretary Dr. Dae-Yeon Moon attended at the ENFO Workshop and 2019 NPAFC Annual Meeting in Portland, Oregon, U.S.A. At the first Plenary Session, NPAFC and NPFC signed a formal cooperation agreement (Memorandum of Cooperation, MoC) to foster and strengthen the long-term relationship between the two intergovernmental organizations. As it is stated in the NPAFC/NPFC Memorandum of Cooperation, the five-year implementation plan shall be mutually developed and agreed upon by both commissions. The Secretariat drafted the Work Plan to implement the NPAFC/NPFC Memorandum of Cooperation, 2021–2025 in December 2019 and submitted it to the NPFC Secretariat for an informal review.
On March 19, 2019, the NPFC invited delegated NPAFC representative(s) to the 4th Scientific Committee meeting and Small Scientific Committee (SSC) meetings to be held in Jeju, Republic of Korea during April 15–26, 2019. CSRS Chairperson, Dr. Masa-aki Fukuwaka assigned Dr. Oleg Katugin from Russia to serve as an observer at the NPFC Scientific Committee meeting on behalf of the NPAFC. Dr. Katugin introduced the 2019 Gulf of Alaska cruise to the participants during the NPFC Scientific Committee meeting. An observer’s report was delivered to CSRS at the 2019 Annual Meeting.

Upon the NPFC invitation and the Commission’s decision, Sean Wheeler from Canada attended the 3rd Meeting of the Technical and Compliance Committee in Tokyo, Japan during July 13–14, 2019. In his opening remarks to the meeting, Mr. Wheeler mentioned the NPAFC/NPFC MoC completion, the NPFC request for NPFC inspectors’ action regarding salmon bycatch monitoring, F/V Run Da apprehension in the NPAFC/NPFC Convention Area in June 2018 as a good example of potential collaboration at sea since apprehended illegal catch included salmon (NPAFC responsibility), shark and squid (NPFC responsibility).

On May 27, 2019, the ENFO Chairperson, Mike Carlson sent a letter to the NPFC with a formal request to amend their boarding inspection forms to capture the presence of any salmon bycatch or retention. The training materials for inspectors were also proposed to include information on the NPAFC restrictions on salmon retention. Mr. Carson also asked about opportunities to collect genetic samples during boarding, if it will be possible, and that the NPFC transmit relevant occurrences to the NPAFC ENFO. Upon request, the NPFC encouraged its members, on a voluntary basis, to report significant encounters of salmon during inspection to the Small Working Group (SWG) on Operational Enforcement (OE), which will discuss any report on a case-by-case basis. Based on consensus, the SWG OE will determine what information may be provided to the NPAFC. The NPFC was informed on this decision by letter of Dr. Moon of July 24, 2019.

On September 3, 2019, the NPFC Secretariat distributed the NPFC 2019 IUU Vessel List and a copy of CMM 2017-02 To Establish a List of Vessels Presumed to Have Carried Out IUU Activities in the NPFC Convention Area in their efforts to widely publicize IUU Vessels. The attached list includes 33 vessels of unknown nationality. The current NPFC IUU Vessel List remains in force until replaced by this list on 29 November 2019, see both lists at https://npafc.org/iuu-vessel-lists/.

Dr. Dae-Yon Moon wrote an article titled “NPFC Marks its Fifth Year of Operation and Opens a New Era of Cooperation with NPAFC” (Newsletter #46, p. 28–29) to highlight recent NPFC news and describe potential areas of inter-commission cooperation.

Collaboration with NASCO continued in 2019 mostly within the IYS framework. Unfortunately, the IYS Coordinating Committee Meeting planned for January 29–30, 2019 in Boston, U.S.A. was cancelled due to the United States federal government shutdown from December 2018–January 2019.

Meanwhile, NASCO supported several scientists from the Atlantic basin to attend the IYS Workshop on Salmon Status and Trends, which was held at the Morris J. Wosk Centre for Dialogue on January 23–24, 2019. The workshop was attended by 28 scientists from the Pacific and Atlantic sides of Canada and the United States, and from Japan.

On May 21, 2019, NASCO submitted their part of the mutual report to the DFO Partnership Fund, which had awarded both organizations a two-year grant in 2017, which was used for the IYS implementation. The report content from the NPAFC side was delivered to the Commission at the 27th Annual Meeting.

In June 2019, the IYS Director for the North Pacific Mr. Mark Saunders attended the 36th NASCO Annual Meeting in Tromsø, Norway on June 5–7, 2019, and the two-day IYS Symposium on Managing Atlantic Salmon in a Changing World on June 3–4, 2019. On behalf of the NPAFC, he delivered an opening statement, met with IYS partners from the NASCO Secretariat, the International Atlantic Salmon Research Board (IASRB), and the Atlantic Salmon Trust Board. He discussed a coordination of projects of mutual interest including the Likely Suspects Framework and ROAM. A report on Mr. Saunders’ business trip is published in his article for the NPAFC Newsletter #46, p. 24–27.

On October 4, 2019, the Technical Group for the IYS Coordinating Committee took place to define NASCO plans regarding IYS activities. Many questions were discussed including the IYS legacy after the focal year, the IYS signature projects, website management, IYS-related publications and future meetings. NASCO has informed NPAFC that they will move forward with several projects beyond the end of the focal year including the Likely Suspects Framework, the ‘ROAM’ initiative, and the 2022 closing Symposium (in conjunction with the NPAFC). Any other proposed ‘IYS-labelled’ activities would have to be decided by Council prior to any commitment being made. Future cooperation between NASCO and NPAFC may be fostered through scientific cooperation. The members of the IASRB will be encouraged to attend NPAFC science meetings and report back to Council while NPAFC members
will be encouraged to attend the IASRB and Council meetings as an observer. The final NASCO activity report should be delivered by
the Parties at the 2020 NASCO Annual Meeting to capture a full record of the activities delivered during the focal year of the IYS. After
the focal year, the North Atlantic Steering Committee and the IYS Coordinating Committee will be disbanded; no meetings for these
Committees are planned. The NASCO Secretariat has discussed options for a process to plan the IYS 2022 Wrap up Symposium with
Council.

The Pacific Salmon Commission (PSC) continues to support the IYS implementation. The PSC Executive Secretary, Mr. John Field
actively participated in the IYS WG and NPSC meetings in Vancouver on January 20–22, 2019, and Pacific salmon data workshop in
Vancouver on January 23–24, 2019. The PSC kindly provided their boardroom and coffee/tea service for the International Salmon Data
Laboratory (ISDL) workshop on January 25, 2019. The main objective of the workshop was to accumulate ideas about the future of
salmon data processing and create a four-year work plan (2019–2022) with projects, deliverables, benefits, and budget (see NPAFC
Technical Report #14).

At the 2019 NPAFC Annual Meeting, there was a quick discussion with John Field and Sue Grant (DFO, Canada) about potential
benefits of more regular dialog with local BC/Vancouver salmon colleagues. It was suggested that NPAFC, DFO, Pacific Salmon
Foundation (PSF), and PSC staff would benefit from having informal exchanges in person about common concerns/approaches
related to salmon conservation and research. This would be a platform where more regular but informal dialog could occur outside
the limits of usual venues. Example topics may include: 1) Recent observed extrema, environmental conditions; 2) New tools/ platforms showing promise; and 3) Stock abundance trends across species/watersheds. Two confab meetings took place in the PSC
board room in September and November 2019, and the next confab meeting is planned for January 2020. It will be facilitated by
Professor Mark Winston (SFU) to approve a Statement of Purpose and adopt a work plan for 2020.

Mr. Ricardo Federizon, Senior Fisheries Management Coordinator of the Northwest Atlantic Fisheries Organization (NAFO)
visited the NPAFC Secretariat on January 14, 2019. Informal discussions on NAFO and NPAFC approaches to the conservation of resources, including the importance of urging Parties to build national vessel monitoring systems (VMS) and the exchange of VMS data, took place at the meeting.

On July 24, 2019, NAFO invited NPAFC to attend at the 41st NAFO Annual Meeting in Bordeaux, France on 23–27 September 2019
in an observer capacity. The invitation has been forwarded to the NPAFC Points of Contact, but no appropriate option to send an
observer was found. After the meeting NAFO distributed a press release to inform partners on the following significant decisions:

- NAFO made traditional total allowable catch (TAC) and quota decisions
- NAFO agreed to a process to address the recommendations of the 2018 Performance Review, along with an annual progress
  reporting procedure
- NAFO continued its commitment to transparency and agreed to post vessel registry on the NAFO website
- NAFO increased its Monitoring, Control and Surveillance data availability to at sea and in port inspectors
- NAFO continued to make progress on the NAFO Observer Application for the instantaneous reporting of scientific and catch data
to the NAFO Secretariat
- NAFO re-elected, Stéphane Artano (France in respect of St. Pierre et Miquelon), as the NAFO President, and Temur Tairov (Russia)
as Vice-Chair of the NAFO Commission, for an additional two-year term.

Upon an invitation from the International Pacific Halibut Commission (IPHC), the NPAFC Deputy Director Jeongseok Park
attended, in an observer capacity, the 95th Session of the IPHC Annual Meeting in Victoria, B.C. on January 28–February 1, 2019.
Given that observers are not offered time to make statements at their opening session, when they opened the meeting, the IPHC
Chairperson acknowledged and thanked the NPAFC Deputy Director for attending as an observer. During their meeting, the
Commission adopted the Pacific halibut mortality limits by IPHC Regulatory Area as 17,513.20 metric tonnes. They also reviewed and
updated the IPHC five-year Biological and Ecosystem Science Research Program (primary research areas: Migration; Reproduction;
Growth; Discard Mortality Rates (DMRs) and discard survival; and Genetics and genomics).

Acknowledging Mr. Jeongseok Park’s previous career with the Indian Ocean Tuna Commission's (IOTC) Second Performance
Review, and as the former head of delegation for the Republic of Korea to IOTC and NPAFC, the IPHC invited him to serve as an
external panellist to the IPHC Second Performance Review Panel. The Deputy Director’s involvement with the IPHC performance
review process can be extremely useful for the NPAFC in the future, when the Commission may also go through the NPAFC second
performance review; therefore, the Executive Director authorized Mr. Park’s work in this capacity.
On October 18, 2019, the IPHC distributed to partner organizations the Report of the 2nd IPHC Performance Review. The Performance Review was carried out over the course of 2019 via three face-to-face meetings of the panel members: one in Seattle, USA (4–6 June 2019), one in New York City, USA (25 August 2019) and one in Ottawa, Canada (7–11 October 2019). The Panel held several additional teleconferences, both among themselves, and with stakeholders. The meeting was also supported by independent legal and science experts who each dedicated additional working days to providing technical reviews and reports on specific components of the review criteria relevant to their areas of expertise. A subset of Panel recommendations includes 54 items while more than half of them are related to updating of the Convention with references to relevant new international instruments and principles, articles for “Definitions,” “Objective,” “Area of Application of the Convention,” “General Principles,” establishment of a Compliance Committee, standards for collection and sharing of data, etc. There is also a recommendation to consider options to investigate pan-Pacific stock structure and migration of Pacific halibut. The IPHC Rules of Procedure should be modified to include a clear category and recognition for observer organisations, which would be in addition to the general public. Other recommendations are related to the IPHC work planning, meeting reporting, information transparency, and stakeholders’ involvement.

In June 2018 and April 2019, the West & Central Pacific Fisheries Commission (WCPFC) List of IUU Vessels was received (unchanged for the last five years), acknowledged and uploaded on the NPAFC website (see at https://npafc.org/iuu-vessel-lists/). In July and October 2019, the Secretariat was informed that the next issues of the WCPFC Quarterly Newsletter are now available on the WCPFC website.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) continued to inform the Secretariat on new ICCAT Newsletter issues (#30, 31), the 2019 Meeting of the Standing Committee on Research and Statistics, and the Joint tuna RMFO Bycatch Working Group Meeting. ICCAT has also invited NPAFC to attend the 26th ICCAT Regular Meeting in Palma de Mallorca, Spain, from 18 to 25 November 2019, and this invitation has been forwarded to the NPAFC Points of Contact. No observer was designated.

On August 13, 2019, the C4ADS, a non-profit organization dedicated to providing data-driven analysis and evidence-based reporting on global conflict and transnational security issues, distributed a release on the report String Attached: Exploring the Onshore Networks Behind Illegal, Unreported, and Unregulated Fishing. The report concluded with four recommendations to RFMOs including increase reporting requirements for vessels and vessel owners, standardize and publicize lists of authorized vessels to improve visibility of global fishing operations, increase the accountability of non-compliant flag states and port states, and target IUU fishing alongside the crimes closely linked to it. The report is available for downloading at https://www.c4reports.org/strings-attached.

In September 2019, NGO BBcom Secure GmbH Germany shared with the NPAFC an Unmanned Aerial Vehicle (UAV) based concept to combat illegal fishing. The Secretariat considers this submission as feedback to the 2019 ENFO Workshop on emerging technologies to combat IUU fishing. Information was forwarded to the ENFO Points of Contact along with announcement of the 8th e-mail conference of the 2019 NPAFC Enforcement Season.

In November 2019, the Secretariat and UBC IOF staff greeted Dr. Matthias Egger and his colleague in Vancouver before the next leg of the Ocean Cleanup expedition into the Big Garbage Patch. Dr. Egger and his laboratory in the Netherlands were instrumental in developing a protocol of the macro- and microplastic distribution research, a process to collect microplastic samples, and contribute to the topical presentation at the NPAFC/PICES workshop in October 2019. A plan to prepare an article with inclusion of the 2019 Gulf of Alaska research cruise was briefly discussed with professors E. Pakhomov and B. Hunt (UBC).

The Secretariat is also involved in a regular information exchange through the Caribbean Regional Fisheries Mechanism (CRFM) Secretariat network (news releases, CANARI Policy Briefs, consulting and other job opportunities, newsletters, announcements, briefing meetings, webinars and other events, PR, general discussions), the International Seafood Sustainability Foundation (ISSF), the World Rivers Day Secretariat—media releases and activity updates—North American university-based Salmon Science Network updates, and reports and electronic newsletter of the NEREUS Program of the Nippon Foundation & UBC.

**List of Actions from the NPAFC Performance Review Report**

Most of the recommendations included in the List of Actions (LoA) on the Prioritized Recommendations from the NPAFC Performance Review Report have been completed. Two actions were in progress under ENFO supervision at the time of 2019 Annual Meeting (Appendix 2).
At the 2019 Annual Meeting, after the NPAFC signed a MoC with NPFC, the Secretariat organized a review and summary of commentaries on the MOU content to prepare the implementation plan. Russia suggested that since NPFC and NPAFC fishing areas overlap, both commissions should work together to develop some sort of regulation. All Parties discussed the implementation of High Seas Boarding Inspection under the NPFC and implications in the overlapping convention areas. Canada suggested that high seas boarding and inspection under NPFC could illuminate the issue of salmon bycatch in the Convention Area. The USA agreed to provide information on salmon observed during boardings to the NPAFC. The USA noted that there are limited options in certain circumstances where salmon are found under NPFC, and further measures may be necessary in the NPFC. It was agreed by the Committee that the NPAFC ENFO needs to understand further the potential issue of bycatch in the Convention Area.

The Committee agreed that a formal request be made to the NPFC to request the members of NPFC include options for inspectors to record the detection of salmon bycatch and communicate any detections to the NPAFC. The ENFO Chairperson, Mr. Carlson, offered to reach out to the Technical Compliance Committee (TCC) Chair of NPFC to have further discussions regarding this matter. The committee also identified the NPAFC observer who would attend the NPFC TCC Meeting, which is going to be held in Tokyo, Japan in July 2019. Mr. Sean Wheeler from Canada was appointed to be the observer for attending the NPFC TCC Meeting in July 2019.

(e) Publications

The following publications were produced in 2019:

- NPAFC Technical Report Nos. 12, 13, 14, and 15
- Records of the Annual Meeting 2019 (in print and website)
- Agenda Booklets for the 27th Annual Meeting and Program and Abstracts Booklet for the Second NPAFC-IYS Workshop (in print)
- Annual Report 2018 (on the website)
- Newsletters No. 45, 46 (on the website)

The NPAFC website has been kept up to date and webpages updated. The Secretariat continued to translate five key web pages into the Commission's languages. The NPAFC Facebook page https://www.facebook.com/NPAFC/ was updated with 12 posts in 2019. The Wikipedia page was last updated in 2019 on December 8th.

(f) Secretariat’s Performance

During the reporting period, all Secretariat staff members performed their duties in accordance with the Rules of Procedure, Financial Rules, Staff Rules, decisions of the Commission, job descriptions, and Secretariat Business Plan. The individual work plans for the Secretariat staff were created and implemented.

There is one Secretariat staff change in 2019. Ms. Alanna Harlton was hired as Web/Publication Manager on April 1, 2017 and resigned on August 31, 2019. A new Web/Publication Manager, Mr. William Stanbury, was hired on a competitive basis on October 1, 2019.

V. 6. Consideration of Enforcement

At the 2019 Annual Meeting, the Commission received from the Chairperson of the Committee on Enforcement Mr. Michael Carlson, the Report of the ENFO (Doc. 1862), which contained information on the committee’s cooperative efforts to conduct enforcement activities in the Convention Area. After review, the Commission adopted the ENFO report, including its recommendations.
V. 7. Consideration of Scientific Research and Statistics

At the 2019 Annual Meeting, the Commission received from the Chairperson of the Committee on Scientific Research and Statistics (CSRS) Dr. Masa-aki Fukuwaka the Report of the CSRS (Doc. 1863). The report contains preliminary information on Pacific salmon catches and enhancement production in 2018, and on multiyear trends of catches and hatchery releases. The report also contained information on cooperative scientific activities conducted by CSRS. After review, the Commission adopted the CSRS report, including its recommendations.

Salmon Catches

The Working Group on Stock Assessment, in cooperation with the Secretariat, summarized preliminary 2018 commercial salmon catches based on documents and e-mails received by the Commission (Table 10). The total catch of salmon in the North Pacific was 651.3 million fish or 1,067.2 thousand metric tonnes. Russia caught the largest proportion of the total catch (676.2 thousand metric tonnes, 63.4% of total weight) followed by the United States (286.8 thousand metric tonnes, 26.9% of total weight), most of which were caught in Alaska (278.1 thousand metric tonnes), Japan (91.3 thousand metric tonnes, 8.6%), Canada (12.6 thousand metric tonnes, 1.2%), and Korea (240 metric tonnes, < 1%).

Pink and chum salmon made up the majority of the total catch (55.5% and 25.5% by weight, respectively), followed by sockeye salmon (16.0%), and coho salmon (2.4%). Chinook salmon, cherry salmon, and steelhead trout were less than 1% of the catch by weight.

Table 10. Preliminary 2018 commercial salmon catches in Canada, Japan, Korea, Russia, and the United States. Commercial catches by foreign fleets in the Russian EEZ are not included. Japanese catch data are based on Japan Fisheries Research and Education Agency data sources, not official statistics. Commercial catch weight for Alaska is based on landed weight (Alaska Department of Fish and Game).

(a) Preliminary 2018 commercial catch in millions of fish.

<table>
<thead>
<tr>
<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>2.618</td>
<td>0.240</td>
<td>0.751</td>
<td>0.198</td>
<td>0.152</td>
<td>-</td>
<td>-</td>
<td>3.959</td>
</tr>
<tr>
<td>Japan</td>
<td>0.000</td>
<td>7.309</td>
<td>26.706</td>
<td>0.001</td>
<td>0.001</td>
<td>-</td>
<td>0.000</td>
<td>34.017</td>
</tr>
<tr>
<td>Korea</td>
<td>-</td>
<td>-</td>
<td>0.096</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.096</td>
</tr>
<tr>
<td>Russia</td>
<td>19.536</td>
<td>420.805</td>
<td>49.772</td>
<td>4.430</td>
<td>0.072</td>
<td>0.010</td>
<td>-</td>
<td>494.625</td>
</tr>
<tr>
<td>USA</td>
<td>51.647</td>
<td>41.118</td>
<td>21.197</td>
<td>4.012</td>
<td>0.619</td>
<td>-</td>
<td>0.015</td>
<td>118.608</td>
</tr>
<tr>
<td>Alaska</td>
<td>50.649</td>
<td>41.118</td>
<td>20.348</td>
<td>3.737</td>
<td>0.266</td>
<td>-</td>
<td>0.000</td>
<td>116.117</td>
</tr>
<tr>
<td>WOC</td>
<td>0.998</td>
<td>0.000</td>
<td>0.849</td>
<td>0.275</td>
<td>0.353</td>
<td>-</td>
<td>0.015</td>
<td>2.491</td>
</tr>
<tr>
<td>Total</td>
<td>73.801</td>
<td>469.472</td>
<td>98.522</td>
<td>8.641</td>
<td>0.844</td>
<td>0.010</td>
<td>0.015</td>
<td>651.305</td>
</tr>
</tbody>
</table>

WOC: Washington, Oregon, and California

(b) Preliminary 2018 commercial catch in metric tonnes (round weight).

<table>
<thead>
<tr>
<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td>Canada</td>
<td>6,899</td>
<td>514</td>
<td>3,790</td>
<td>586</td>
<td>820</td>
<td>-</td>
<td>-</td>
<td>12,609</td>
</tr>
<tr>
<td>Japan</td>
<td>0</td>
<td>9,715</td>
<td>80,338</td>
<td>2</td>
<td>5</td>
<td>1,254</td>
<td>0</td>
<td>91,314</td>
</tr>
<tr>
<td>Korea</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>240</td>
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<td>Russia</td>
<td>43,280</td>
<td>511,093</td>
<td>110,763</td>
<td>10,682</td>
<td>363</td>
<td>20</td>
<td>-</td>
<td>676,201</td>
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<tr>
<td>USA</td>
<td>121,369</td>
<td>70,822</td>
<td>77,411</td>
<td>13,840</td>
<td>3,331</td>
<td>-</td>
<td>68</td>
<td>286,841</td>
</tr>
<tr>
<td>Alaska</td>
<td>118,791</td>
<td>70,822</td>
<td>73,992</td>
<td>13,062</td>
<td>1,432</td>
<td>-</td>
<td>1</td>
<td>278,100</td>
</tr>
<tr>
<td>WOC</td>
<td>2,578</td>
<td>0</td>
<td>3,419</td>
<td>778</td>
<td>1,899</td>
<td>-</td>
<td>67</td>
<td>8,741</td>
</tr>
<tr>
<td>Total</td>
<td>171,548</td>
<td>592,144</td>
<td>272,542</td>
<td>25,110</td>
<td>4,519</td>
<td>1,274</td>
<td>68</td>
<td>1,067,205</td>
</tr>
</tbody>
</table>

WOC: Washington, Oregon, and California
Canada (Doc. 1837)

This document reports final catch estimates for 2017 and preliminary catch estimates for 2018 for the six major salmon species in British Columbia and Yukon fisheries. Catch is reported for commercial fisheries (numbers and total weight) in tidal waters and recreational (numbers only) and aboriginal fisheries (numbers only) in tidal and non-tidal waters. Catches include non-Canadian origin fish caught in BC and exclude Canadian origin fish caught in fisheries outside the British Columbia.

Japan (Doc. 1821)

The commercial catches in coastal and offshore areas of Japan in 2018 totaled 34.0 million fish (91.3 thousand metric tonnes), including 26.7 million chum (80.3 thousand metric tonnes) and 7.3 million pink (9.7 thousand metric tonnes) salmon. The official specific statistics data may be available by the end of March 2020.

Korea (Doc. 1828)

Total catch of chum salmon in 2018 was 95,993 fish (240.2 metric tonnes). Of these, 77,351 fish (196.3 metric tonnes) were caught from coastal areas (i.e., mostly the set-net fishery) during commercial fisheries and 18,642 fish (43.9 metric tonnes) from rivers for hatchery purposes. Total catch of chum salmon (number) along the coasts (80.6%) was higher than in rivers (19.4%).

Russia (Doc. 1836 Rev. 1)

In 2018, the total commercial catch of Pacific salmon in the Russian Far East was 494.6 million fish (676.2 thousand metric tonnes). The primary species caught were pink (75.6% by weight), followed by chum (16.4%), sockeye (6.4%) and coho salmon (1.6%).

United States

i. Alaska

The Alaska salmon commercial harvest of all salmon species combined for 2018 totaled 116.1 million fish (278.1 thousand metric tonnes). The catch composition by landed weight in Alaska was 42.7% sockeye, 26.6% chum, 25.5% pink, 4.7% coho, and < 1% Chinook salmon.

ii. Washington, Oregon, and California

The 2018 preliminary total commercial catches of salmon and steelhead trout landed in Washington, Oregon, and California was 2.5 million fish (8.7 thousand metric tonnes). The commercial catch composition by weight in Washington, Oregon, and California was 39.1% chum, 29.5% sockeye, 21.7% Chinook, 8.9% coho, and < 1% steelhead trout and pink salmon.

Salmon Enhancement Production (Docs. 1822, 1828, 1836 Rev. 1, 1837)

The Working Group on Stock Assessment, in cooperation with the Secretariat, compiled preliminary estimates of 2018 hatchery releases of juvenile salmon and steelhead from documents and e-mails received by the Commission (Table 11).

The total number of hatchery fish released from NPAFC member countries in 2018 was 4.9 billion fish, a quantity that has been stable since 1993. In 2018, hatcheries released 2,147 million fish (43.7%) in the United States, 1,648 million (33.6%) in Japan, 842 million (17.2%) in Russia, 262 million (5.3%) in Canada, and 11 million (< 1%) in Korea. Hatchery releases were primarily chum (2,915 million, 59.4%) and pink (1,437 million, 29.3%), followed by Chinook (235 million, 4.8%), sockeye (215 million, 4.4%), coho salmon (80 million, 1.6%), steelhead trout (20 million, < 1%), and cherry salmon (7 million, < 1%).

Canada (Doc. 1837)

This document summarizes release information for salmon including steelhead trout from Fisheries and Oceans Canada (DFO) and Freshwater Fisheries Society of BC enhancement facilities in BC in 2017 and 2018. Thermal marks are used to evaluate hatchery rearing and release strategies and are used to distinguish hatchery from wild fish in terminal fisheries. In 2018, releases totaled 261.7 million fish comprising sockeye salmon (53.0%, produced in spawning channels), chum salmon (23.6%), Chinook salmon (14.6%), pink salmon (5.6%), coho salmon (3.1%), and steelhead trout (< 1%).
Four species of anadromous Pacific salmon (chum, pink, cherry, and sockeye salmon) are currently enhanced in Japan. A total of 1,648.1 million young salmon were released from Japanese hatcheries in 2018, of which 1,527.9 million (92.7%) were chum salmon. Japanese hatcheries also released 112.8 million pink salmon fry (6.8% of total), 7,224 thousand cherry salmon (< 1%), and 187 thousand sockeye salmon (< 1%) in the spring and fall of 2018.

The total number of chum salmon fry released was 10.7 million fish in 2018 (2017 brood year) and 10.9 million in 2019 (2018 brood year). No other salmon species were released.

In 2018, Russian hatcheries released 842.3 million Pacific salmon fry and smolts. Releases were comprised of 67.4% chum, 30.5% pink, 1.7% sockeye, and < 1% of each of coho, Chinook, and cherry salmon.

In 2018, releases for Washington, Oregon, California and Idaho totaled 312.9 million fish. These releases comprised 59.4% Chinook, 16.1% chum, 12.5% coho salmon, 6.4% steelhead trout, 5.4% sockeye, and < 1% pink salmon.

Although Pacific salmon abundance in the North Pacific has declined somewhat since 2009, as indexed by aggregate commercial catches, catches remain near all-time high levels (Figure 7). The total catch in 2018 exceeded one million metric tonnes (1,067 thousand metric tonnes; 651.3 million fish), the highest catch for an even-numbered year. The highest annual catches on record occurred during five of the six most recent odd-numbered years (i.e., 2007, 2009, 2011, 2013, and 2015) when more than one million metric tonnes were caught. Typically, more adult salmon are caught in odd-numbered years than even-numbered years because the most frequent species in the catch, pink salmon, are more abundant in odd-numbered years.

Pink and chum salmon dominate Asian catches. In general, catches over the last 10 years have been declining (Figure 8). However, catches in 2018 were higher than any year since 2010, and especially pink salmon was the highest catch ever. Russia currently catches the largest proportion of the Asian catch, although prior to 2005, Japan often caught a greater proportion. Catches by the Republic of Korea are relatively minor.

### Table 11. Preliminary 2018 hatchery releases in NPAFC member countries in millions of fish.

<table>
<thead>
<tr>
<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada</strong></td>
<td>138.661</td>
<td>14.721</td>
<td>61.835</td>
<td>8.002</td>
<td>38.224</td>
<td>-</td>
<td>0.285</td>
<td>261.728</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>0.187</td>
<td>112.766</td>
<td>1,527.884</td>
<td>-</td>
<td>-</td>
<td>7.224</td>
<td>-</td>
<td>1,648.061</td>
</tr>
<tr>
<td><strong>Korea</strong></td>
<td>-</td>
<td>10.710</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10.710</td>
</tr>
<tr>
<td><strong>Russia</strong></td>
<td>14.306</td>
<td>257.159</td>
<td>567.337</td>
<td>2.546</td>
<td>0.949</td>
<td>-</td>
<td>-</td>
<td>842.297</td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td>61.723</td>
<td>1,052.345</td>
<td>747.397</td>
<td>69.907</td>
<td>195.437</td>
<td>-</td>
<td>20.037</td>
<td>2,146.846</td>
</tr>
<tr>
<td><strong>Alaska</strong></td>
<td>44.734</td>
<td>1,051.799</td>
<td>697.061</td>
<td>30.731</td>
<td>9.528</td>
<td>-</td>
<td>-</td>
<td>1,833.853</td>
</tr>
<tr>
<td><strong>WOCI</strong></td>
<td>16.989</td>
<td>0.546</td>
<td>50.336</td>
<td>39.176</td>
<td>185.909</td>
<td>-</td>
<td>20.037</td>
<td>312.993</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>214.877</td>
<td>1,436.991</td>
<td>2,915.163</td>
<td>80.455</td>
<td>234.610</td>
<td>7.224</td>
<td>20.322</td>
<td>4,909.642</td>
</tr>
</tbody>
</table>

WOCI: Washington, Oregon, California, and Idaho
Interannual variability in the total catch in North America has been more pronounced during the last decade than in previous decades, primarily because of variability in pink salmon catches (Figure 9). The relative abundance of salmon species varies with latitude (Table 10a). In Alaska, sockeye and pink salmon are the primary species, followed by chum salmon. In Canada, chum, sockeye, and pink salmon were the most abundant species caught. In Washington, Oregon, and California, chum, sockeye, and Chinook salmon are typically the most abundant species caught. A particularly low catch of pink salmon (70.8 thousand metric tonnes) in 2018 resulted in the lowest total catches of salmon in North America since 1978.

North Pacific salmon hatchery statistics have been fairly stable since 1993 with approximately 5 billion fish released annually (Figure 10) but have declined slightly each year since 2014, primarily because of reduced Asian hatchery releases. Asian hatchery releases generally exceeded 2.5 billion released annually since 1981 (Figure 11). Asian hatchery releases are predominately chum salmon. North American hatchery production has exceeded 2 billion releases since 1988. Pink and chum salmon are the primary species released from North American hatcheries, mostly from Alaska (Figure 12). Canadian enhanced sockeye salmon are largely produced in spawning channels. In Washington, Oregon, and California, Chinook salmon are the primary species produced.

Figure 7. North Pacific commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).
Figure 8. Asian commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).

Figure 9. North American commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).
Figure 10. Annual North Pacific hatchery releases (millions of fish) of Pacific salmon by member countries from 1971 to 2018.

Figure 11. Annual Asian hatchery releases (millions of fish) of Pacific salmon by species from 1952 to 2018.
Figure 12. Annual North American hatchery releases (millions of fish) of Pacific salmon by species from 1952 to 2018.

Review of Scientific Research Activities in Relation to the 2016–2020 NPAFC Science Plan Components (Article VII and IX 6. and 8. ToR 3 and 13) (Docs. 1804, 1856)

Abstracts of scientific documents submitted to the Commission between adjournment of the 2018 Annual Meeting and April 30, 2019 were compiled in Doc. 1856.

After Doc. 1856 was submitted, two new documents and five revised documents were submitted for consideration at the 2019 CSRS meeting. The complete list of documents submitted to the Commission up to the 2019 Annual Meeting is provided in Doc. 1804.

In total, 47 documents were submitted for consideration by CSRS at the 2019 meeting. The number of documents pertaining to the 2016–2020 Science Plan components (some documents related to more than one component) and other topics includes the following:

1. Status of Pacific salmon and steelhead trout: n=24
2. Pacific salmon and steelhead trout in a changing North Pacific Ocean: n=17
3. New technologies: n=23
4. Management systems: n=10
5. Integrated information systems: n=13
6. Other topics: n=13

The number of documents submitted by the Parties or working groups includes the following:

Canada: n=7
Japan: n=11
Korea: n=4
Russia: n=6
United States: n=14
Canada, Japan, Korea, Russia and the United States: n=1

Working Groups:

Working Group on Salmon Marking: n=1
International Year of the Salmon (IYS) Working Group: n=2
NPAFC Secretariat n=1
One document submitted in 2016 was revised (Doc. 1647 Rev. 3), two documents submitted in 2018 were revised (Docs. 1764 Rev. 1, 1807 Rev. 1), and five documents submitted in 2019 were revised (Docs. 1823 Rev. 1, 1829 Rev. 1, 1831 Rev. 1, 1835 Rev. 1, 1836 Rev. 1).

Three documents were bibliographic references. Compilations of references were submitted by Japanese (Doc. 1826), Russian (Doc. 1835 Rev. 1), and American (Doc. 1852) researchers in relation to the NPAFC Science Plan in 2016–2020.

In presentations to CSRS, each country provided a summary highlighting their research activities:

Canada

An overview follows from Doc. 1841 that summarizes Canadian research in relation to the 2016–2020 NPAFC Science Plan with a focus on activities planned during 2019/2020. Doc. 1841 also includes results from recent studies not previously documented to NPAFC including non-NPAFC publications.

**Status of Salmon and Salmon in a Changing Ocean**

Canada continues to monitor the status and important biological characteristics (e.g., salmon size, age composition, return timing, survival) for various key (important) salmonid populations. Time series information on catches, spawner escapements, and regional salmon production trends for hatchery and wild stocks were documented in Doc. 1837. DFO monitors the ocean ecology of salmon along the continental shelf of Vancouver Island as well as the inside waters of the Salish Sea (Strait of Georgia and Puget Sound). Doc. 1840 describes juvenile salmon surveys planned next year that are part of long-term research programs initiated in 1997–1998.

Thermal marking continues to play an important role for both stock, hatchery, and fisheries management and research in Canada. Doc. 1843 summarizes all thermally marked salmonids released from BC hatcheries in 2018 by species, hatchery mark, facility, release location and release number. Doc. 1842 reports Canada's plans to thermally mark approximately 74 million Pacific salmon from the 2019 brood year for release in 2020/21.

Doc. 1838 described the ongoing juvenile salmon program in the northern Strait of Georgia, Discovery Islands and Johnstone Strait conducted by the Hakai Institute. Sampling is carried out to evaluate the oceanographic controls of prey phenology, quantity and quality of migrating juvenile salmon including stock-specific migratory behavior; examine feeding, growth and condition across a gradient of prey quantity and quality; determine juvenile salmon parasite and pathogen infection dynamics and; estimate mortality rates. In 2019, the Hakai Institute will also begin experimental testing of the response of juvenile salmon to conditions of pCO$_2$, temperature, and prey availability.

The goal of DFO's State of the Salmon program led by S. Grant is to track and understand Canadian Pacific salmon population trends. It will achieve this goal by developing tools and processes to foster collaboration among salmon-ecosystem experts. This Program also integrates information across Fraser sockeye salmon life-history stages, to categorise survivals (average, below or above average) of 19 populations for the upcoming return year. Since salmon ecosystems are experiencing unprecedented changes, historical correlations are increasingly unreliable for forecasting; qualitative processes provide additional insight into salmon survival.

A central problem in understanding how salmon respond to global changes is distinguishing the effects of local drivers from regional and global drivers that are shared among many populations. Several researchers in the Ecosystem Science Division of DFO are examining time series observations of annual production variations for sockeye salmon populations originating from freshwater systems around the rim of the North Pacific Ocean. Canada would like to establish more formal collaborations with researchers from other nations to better understand what is controlling salmon productivity, beginning with sockeye salmon.

As described in Doc. 1841, we invite researchers elsewhere to collaborate with us by contributing observations on annual production, productivity indices and biological traits, and to supplement those currently assembled annually for sockeye index stocks returning to BC. Improved international collaboration will provide a cost-effective means to facilitate the rapid identification of basin-wide, versus local area, salmon production trends on an annual basis. This information can be used as a basis for improvements in timely advice to assessment biologists, fisheries managers, and stakeholders.
In January 2019, Canada hosted an IYS workshop on Pacific and Atlantic salmon status and trends in Vancouver, BC. The primary goal was to bring together salmon ecologists working on representative time series of data and associated metadata to understand salmon status and trends. The specific objectives of the workshop were to: 1) identify a series of legacy datasets (and associated standards where possible), 2) look at broad temporal patterns for salmon data categories, and 3) link observed state changes and trends to potential drivers and mechanisms. Participants included scientists from Canada, Japan, Korea, Russia, USA, England, and France. Organizers plan to publish results from the workshop in NPAFC Technical Report 13.

As part of the IYS Signature Gulf of Alaska Expedition in March 2019, summarized in Doc. 1858, Canadian scientists pursued various lines of research alongside the international team of researchers. For example, water samples from 60 stations were collected for environmental DNA to investigate species composition as well as preferences in salmon prey species. Tissue samples from 255 salmon were collected to assess health and condition by means of analysis on a high throughput multiplex qPCR platform. Finally, a novel approach in in-field genetic stock identification by single nucleotide polymorphism sequencing was performed onboard the research vessel in a world-first proof of concept experiment.

Human Dimension

A management decision-support tool was developed to inform rebuilding plans for depleted Pacific salmon under various productivity regimes, with application to Fraser River sockeye salmon and Nass River chum salmon (Doc. 1841). This tool simulates population dynamics and evaluates impacts of various management actions under different hypotheses about climate driven changes in productivity. Implications of time-varying productivity on reference points for management were also evaluated and a publication is planned.

New Frontiers and Information Systems

In 2018, Canada applied direct DNA sequencing to genotype Chinook salmon and coho salmon. For Chinook salmon, a panel of primers has been developed where approximately 390 amplicons are amplified via a highly multiplexed single polymerase chain reaction, with at least one single nucleotide polymorphism (SNP) scored at each amplicon. For coho salmon, a panel has been developed to amplify 490 amplicons. Both panels are being used to evaluate whether parental-based tagging is a practical alternative to the present coded-wire tag program for Chinook and coho salmon.

Doc. 1827 describes the stock composition of central Bering Sea sockeye salmon estimated using microsatellite variation. Alaska-origin sockeye were most abundant in the catch (71.5%, primarily from Bristol Bay), followed by Russian-origin (26.3%), and Canadian-origin (2.1%) salmon.

Canada continues to lead in the examination of the feasibility of applying new information sharing technology to improve communication and collaboration in the management, assessment and harvesting of salmon. In January 2019, an IYS International Salmon Data Laboratory workshop was held in Vancouver, BC. Participants included Pacific and Atlantic salmon scientists as well as experts in a new generation of technology, tools, and practices for collecting, integrating, analyzing, and communicating information. The goal was to identify how the needs of salmon researchers can be better achieved through the application of modern technology for data processing, analysis, and presentation. Plans are to publish workshop findings in NPAFC Technical Report 14. Proposals to apply these techniques to real data have been developed with a view to initiating a major initiative this coming year.

Japan

Japan provided information on research surveys conducted in the Bering Sea from the R/V Hokko maru. Five species of salmon were sampled and the CPUE for chum was lower in 2018 than in 2017. Lower CPUE of chum was due to an abundance of ocean age one and ocean age two fish. Although mean SST of the 2018 survey area was equivalent to the average temperature observed from 2007–2017, vertical temperatures down to 200 m depth showed warm anomalies. Mean biomasses of zooplankton collected by NORPAC and BONGO nets were relatively low, as compared with that observed in past surveys.

Japan also described the estimation of genetic stock composition of chum salmon collected in the Bering Sea. In 2018, the estimated stock contribution for Japan was 24.3%, while the estimated stock contribution from Russia was 70.2% using SNP markers. Abundance of Japanese stocks in 2018 were similar to that of 2016. Spatial analysis of the sample set in 2018 showed wide distribution of Russian stocks in the survey area and a predominant distribution of Japanese stocks in the northeast survey area.
Relationships between ocean age two fish of Japanese stocks in the Bering Sea and total adult return (two to four years old fish) indicated significant correlations. This result suggests that CPUEs of Japanese stocks in the summer Bering Sea may reflect total Japanese stock abundance.

**Korea**

Korea provided two presentations. The first was a summary of results “Changes in chum salmon catch and re-capture of released fry in the Taehwa River, Ulsan, Korea.” The catch of chum salmon in Taehwa River, Ulsan Metropolitan City in Korea has gradually increased since 2000. However, chum salmon catch has shown a decreasing trend after the catch amount of chum salmon peaked in the years 2013 and 2014. Although there were two typhoons in autumn 2016 and 2018, they might not be the main cause of lower chum salmon catches. In the presentation, from March to May in 2017 and 2018, Korea recaptured fry at four spots. In addition, the number of salmon fry released in 2017 were two times greater than in 2018. As a result, 155 and 1,429 salmon were caught in 2017 and 2018. Korea could not find the exact cause, however the mean water temperature in 2017 was 1–2°C higher than 2018. This might suggest that fry move to coastal areas early or died.

The second presentation reported results of “Population genetic structure of chum salmon from Korea: identification of management units for its conservation.” Chum salmon’s homing behavior sometimes leads to decreases of within-population genetic diversity resulting from limited gene flow occurring among geographically disconnected populations, elevating the risk of local extinction. As an effective application of genetic data to fisheries management, elucidating the population genetic structure of chum salmon using molecular markers will assist in determining its management units. Using mtDNA control region sequences and eight nuclear microsatellite loci, Korea assessed the current population status of chum salmon in Korea by estimating the level of genetic diversity and genetic structure for 16 populations (including ten wild and six hatcheries) from 11 tributaries within major returning river basins. The analyses showed that similar levels of genetic diversity exist between wild and hatchery populations with a total of seven mtDNA haplotypes and an average 25.4 alleles per microsatellite. Both markers revealed that genetic differentiation (\(F_{ST}\)) between populations tends to be low, suggesting a moderate level of gene flow taking place among those populations. For future conservation, Korea suggests that the Korean salmon population be considered as a single stock for its management unit. Nonetheless, Korea will make an effort to preserve the unique haplotypes only detected in particular populations.

**Russia**

Russia provided its presentation on the results on Pacific salmon research in the Far East of Russia in 2018. A general increasing trend in Pacific salmon catches was observed in the Far East of Russia in 2000s. In 2018, a historic maximum of salmon catch (676 thousand metric tonnes) was recorded in Russia. A notable increase in total catches of salmon from Kamchatka Peninsula was observed in 2018. The share of Kamchatka stocks in the total salmon catch in the Far East of Russia was almost 73%. The main catch of pink salmon was provided by Kamchatka stocks. The situation, typical for even years, was observed in eastern Kamchatka, where, as on the western coast, the historical maximum catch of pink salmon of even non-dominant generation was recorded. Chum and sockeye salmon catches remained relatively stable.

In the Russian Far Eastern seas and adjacent Pacific Ocean waters, large-scale pelagic surveys are traditionally conducted by Russian scientists, and these surveys are aimed at integrated studies of Pacific salmon in marine and oceanic ecosystems. In 2018, the following surveys were conducted: (1) In Pacific waters in the Russian EEZ, the survey was conducted on board the R/V Professor Kaganovskiy during May 31–July 3; (2) In the western Bering Sea, the survey was conducted on board the R/V Professor Levandov and R/V TINRO during September 29–October 11; and (3) In the Okhotsk Sea basin, the survey was conducted on board the R/V Professor Kaganovskiy during October 14–November 2. The results from these surveys made it possible to assess stock levels of Pacific salmon in the Russian Far Eastern seas and adjacent Pacific Ocean waters.

Results from intraspecific identification studies showed that, in the Okhotsk Sea survey area, most pink juveniles (56%) originated from rivers in West Kamchatka and the continental part of the Okhotsk Sea coast. The abundance of Eastern Kamchatka pink salmon juveniles caught in the southwestern part of the Bering Sea was higher than the abundance of pink salmon juveniles caught in the Okhotsk Sea. Anomalously high numbers of pink salmon (1.1 billion individuals) were estimated in Pacific waters in the summer of 2018. On the basis of these data, high numbers of pink salmon approaching the Sea of Okhotsk basin (mainly to the coast of western Kamchatka) were expected.
Biological monitoring on Pacific salmon during their freshwater period of life is being conducted by fisheries institutes in the Far East of Russia. Different aspects of salmon biology are considered, oriented towards assessments of abundance of regional salmon stocks and development of recommendations on their rational use.

**United States**

The United States provided an overview of research activities in support of the 2016–2020 NPAFC Science Plan in four major research areas.

**Migration and Survival Mechanisms of Juvenile Salmon in Ocean Ecosystems**

The U.S. continues to conduct integrated ecosystem surveys in the inside waters of southeast Alaska (annually), eastern Bering Sea (annually) and in the Arctic (opportunistically). These surveys collect data on the physical and biological oceanographic environment and juvenile salmon and associated nekton. The data from the surveys illustrate that climate variation is associated with shifts in the food web that effects growth and fitness of juvenile salmon during their first ocean summer. In some salmon species/stocks, low lipid content of juvenile salmon at the end of their first summer is associated with their subsequent marine survival.

**Climate Impacts on Pacific Salmon Production in the Bering Sea, Gulf of Alaska, and U.S. Arctic**

The effects of the anomalously warm sea temperatures in the Gulf of Alaska from 2014 to 2017 are still being felt as many salmon populations have not yet recovered. Some implications of this anomalous event are continued lower marine survival for some salmon species dwelling inside waters of southeast Alaska and Prince William Sound. The U.S. is also conducting research on the impact of loss of sea ice in the eastern Bering Sea and Arctic on these large marine ecosystems and the effect of salmon migration, distribution and fitness during their first summer at sea. More information on results from these research activities will be presented at the 2nd NPAFC-IYS Workshop to be held on May 18–20, 2019, Portland, Oregon, USA.

**Biological Monitoring of Key Salmon Populations**

The Alaska Department of Fish and Game scientists continue to monitor commercial catch and escapement for salmon species returning to Alaskan rivers. The U.S. continues to monitor the impact of climate variation on ecosystem function and juvenile salmon distribution, migration, growth and fitness. The Southeastern Coastal Monitoring survey is conducted annually. The survey provides information on the physical and biological oceanographic conditions of the inside waters for southeastern Alaska, growth and fitness of juvenile salmonids and the index of juvenile pink salmon abundance is utilized to forecast returns of adult pink salmon to southeast Alaska the following year. More information on the survey is provided in Doc. 1846.

The northeastern Bering Sea survey is conducted annually. The integrated ecosystem surveys provide information on the impact of loss of sea ice on this important region. One outcome of the survey is an index of juvenile Yukon River Chinook salmon abundance. The abundance index is significantly related to returns of adult Yukon River Chinook salmon two to four years later. Roughly 50% of the adult Yukon River Chinook salmon are from stocks that spawn in the Yukon Territory of Canada. The forecast is used to help manage harvest (subsistence or commercial) of these Chinook salmon that migrate upriver to help ensure that enough adult Chinook salmon pass the border into Canada to spawn. More information on the 2019 survey can be found in Doc. 1845. The U.S. provides annual estimates of salmon bycatch that occurs incidentally in groundfish fisheries in the BSAI and GOA (Doc. 1855). In 2018 within the BSAI, 17,379 Chinook and 308,263 “other” salmon which are mostly chum salmon were incidentally captured. Within the GOA, 17,184 Chinook and 8,682 “other” which are mostly chum salmon, were incidentally captured. Information on genetic stock identification for these Chinook salmon incidentally captured in 2017 can be found at the Alaska Fisheries Science Center website: [https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-390.pdf](https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-390.pdf) and [https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-391.pdf](https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-391.pdf).


The information on high-seas coded-wire tag recoveries for salmon captured within U.S. groundfish fisheries in the BSAI and GOA was reported in Doc. 1851. During 2017–2018, 237 coded wire tags were recovered from salmon. The report contains tables containing the date and hatchery of release and date and location where they were recovered. The size of salmon recovered is also
recorded. A workshop to standardize estimates of age from Chinook salmon scales was held and reported in Doc. 1783. The outcome of the workshop was the development of a Salmon Scale Wiki interactive website designed for scale age readers to gain knowledge and share information about estimating ages of Chinook salmon. More information can be found in Doc 1849.

**NPAFC Enforcement Action**

In June 2018, the U.S. Coast Guard Cutter Alex Haley intercepted and seized the vessel Run Da about 1,300 km east of Hokkaido, Japan. On board was one tonne of squid, 80 tonnes of frozen whole salmon, five tuna, and 10 sharks. Fifty-two salmon samples were collected for genetic analysis and transferred to NOAA's Alaska Fisheries Science Center, Auke Bay Laboratories in Juneau, Alaska. Genetic analysis revealed that out of the 52 samples collected 47 were pink salmon, four were Chinook salmon, and one was a chum salmon as reported in Doc 1859.

**Work Plan Itemization**

The committee recommended the following Work Plan for the CSRS in 2019/2020:

<table>
<thead>
<tr>
<th>2018/2019 Work Plan Item</th>
<th>Terms of Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A review progress on the 2016–2020 Science Plan;</td>
<td>3</td>
</tr>
<tr>
<td>B report on last year's salmon catches, escapement, and wild and artificial production of juvenile salmon;</td>
<td>3 and 13</td>
</tr>
<tr>
<td>C review results of salmon stock assessment research and the condition of salmon stocks;</td>
<td>4</td>
</tr>
<tr>
<td>D review and summarize results of this year's salmon research in the Convention Area and adjacent seas;</td>
<td>8</td>
</tr>
<tr>
<td>E exchange biological samples as necessary;</td>
<td>8</td>
</tr>
<tr>
<td>F review and summarize salmon research plans for next year in the Convention Area and adjacent seas;</td>
<td>8</td>
</tr>
<tr>
<td>G propose data exchanges;</td>
<td>8</td>
</tr>
<tr>
<td>H review any documents submitted to the Commission prior to this year's annual meeting;</td>
<td>12 and 13</td>
</tr>
<tr>
<td>I the Parties will review any research proposals submitted in accordance with Article VII paragraph 6;</td>
<td>1</td>
</tr>
<tr>
<td>J consider international collaboration with relevant organizations;</td>
<td>14</td>
</tr>
<tr>
<td>K consider a report to the Commission.</td>
<td>11</td>
</tr>
</tbody>
</table>

The Parties summarized their respective national research plans for 2019 and presented proposed research cruise activities. A summary of the 2019 salmon research cruises, including objectives, survey areas, and tentative dates are listed in Appendix 3.

Major Canadian research activities organized according to the themes of the 2016–2020 Science Plan were outlined in Doc. 1841 and highlighted in the Canadian review of research activities under Agenda 6.

Canadian cruise plans for salmon research for fiscal year 2019–2020 include an inshore program with sampling along and off the west coast of British Columbia and an inshore program with sampling conducted in the Salish Sea (encompassing the Strait of Georgia and Puget Sound) (Doc. 1840). These surveys are part of long-term research programs that were initiated in 1997–1998, however in 2017, the offshore program began integrated with other pelagic research programs to develop a synoptic pelagic survey on the continental shelf off the west coast of Vancouver Island. This integrated survey will continue in 2019 (Appendix 3).

Japan's national research plan is described in Doc. 1673. The plan includes three research topics.

J-1: Monitoring of major salmon populations;
J-2: Salmon studies in the ocean; and

Japanese cruise plans for salmon research in 2019 are described in Doc. 1809. The Japan Fisheries Research and Education Agency R/N Hokko maru will conduct a summer monitoring survey for salmon and their habitat in the central Bering Sea. The Hokkaido University T/V Oshoro maru will complete salmon research in the western North Pacific Ocean in middle May 2019 (Appendix 3). In addition, Japanese research vessels are scheduled to conduct eight research cruises for pelagic fishes and squids in the North Pacific Ocean in 2019 (Doc. 1810). These surveys have a possibility of incidental catch of salmon during fishing operations with driftnets or trawl nets. In the case of driftnet operations, the length of driftnets will be less than 2.5 km.
The **Korean** 2019 research plan involves investigations of mortality and climate change effects on salmon (Doc. 1829 Rev. 1). To reveal mechanisms of mass mortality of chum salmon during their early life in rivers and coastal areas in conjunction with return rate fluctuations, research will be conducted in the following seven areas:

**K-1:** Identify prey and predator species for juvenile salmon in rivers and coastal areas  
**K-2:** Estimate stage-by-stage survival rate after releasing salmon to rivers and coastal areas  
**K-3:** Monitor environmental factors in the river and coastal areas  
**K-4:** Examine growth rate during the early life history using size, otolith, and DNA, and compare the growth rate between hatchery and wild juvenile salmon  
**K-5:** Investigate the optimal release period for juvenile salmon  
**K-6:** Monitoring of fish parasites in chum salmon migrating to Korea  

Climate change effects on salmon distribution, migration route, and abundance will also be investigated. This research includes:

- continuous monitoring of environmental conditions in the Korean waters, and  
- climate change effects on the biological characteristics of chum salmon returning to Korean waters.

Other studies will include otolith thermal marking of Korean chum salmon to provide information about growth, survival during the early ocean life stage, and hatchery origins from releases in 2019 (2018 brood year). A multiplex PCR set using microsatellite loci of chum salmon will be developed to investigate genetic variation and population structure of Korean populations for stock identification. The genetic structure of non-anadromous and anadromous cherry salmon populations will be investigated using mitochondrial DNA to obtain baseline data for development of a strategy for conservation and management.

Korea has no plan for conducting ocean salmon surveys in 2019.

Current **Russian** salmon research is being conducted as described in Doc. 1231. Russian salmon studies in 2019 relevant to the NPAFC Science Plan for 2016–2020 include the following components:

**R-1:** Status of Pacific salmon and steelhead trout (status of salmon)  

(1) Monitoring key salmon populations returning to Russian Far East river systems  

Russia will continue to monitor catch, escapement, and hatchery releases for salmon populations returning to coastal river systems. The monitoring program includes the following items:

- salmon catches and escapement;  
- timing and number of adult returns;  
- body size and age at maturity;  
- otolith mark studies to assess status of wild and hatchery stocks; and  
- epidemiological studies of pathogenic organism.

(2) Monitoring key salmon populations in the Marine and Ocean Ecosystem  

Russian research activities on juvenile salmon will take place in coastal waters of Western Kamchatka, and deep-water areas in the Okhotsk and western Bering Seas. Oceanographic and plankton data as well as data on stomach content of salmon and other nekton species will be collected in major marine areas off the coasts of Kamchatka, and in the Far Eastern seas during the summer–fall season. Juvenile salmon seasonal distribution, migration, population characteristics, and survival will be estimated through different approaches. Stock abundance, habitat conditions, feeding behavior, and trophic interactions of Pacific salmon juveniles and other major nekton species will be studied. Identification of pink salmon stocks in the Okhotsk Sea based on genetic (mtDNA) methods will be investigated to forecast of returns and possible catches of pink salmon in the following year.

Russian research activities on anadromous salmon will take place in the northwestern Pacific Ocean. The primary objective of this research is the estimation of anadromous pink salmon abundance for short-term forecasting of spawner returns and possible catches.
R-2: Pacific salmon and steelhead trout in changing North Pacific Ocean

In recent years, there have been increases in the abundance of salmon on some northern coasts of the Far Eastern seas. At the same time, a noticeable decrease in salmon abundance has been observed at the southern edges of distribution. These geographical shifts in salmon abundance may be related to climate-induced changes in environments operating at regional and local scales.

In 2019, Russia plans to continue studying the linkages between environmental changes and Pacific salmon production to understand and quantify the effects of environmental variability affecting salmon distribution and abundance in the Far Eastern seas and adjacent Pacific waters.

In 2019, Russia plans to conduct surveys in the northwestern Pacific Ocean, Okhotsk and Bering Seas. The information from previous surveys will be used to improve our understanding of how climate change will affect Pacific salmon production and ecosystems of the Far Eastern seas and adjacent Pacific waters.

R-3: New technologies

In 2019, Russia plans to continue the development and application of stock identification methods and models for management of Pacific salmon.

Russian activities under this component of the NPAFC Science Plan in 2019 will include:

- identification of Asian stocks of pink salmon in the Okhotsk Sea based on genetic (mtDNA) methods;
- otolith mark releases for assessment of wild and hatchery stocks in the Far East rivers and near-shore districts; and
- identification of Asian stocks of pink and chum salmon in the Okhotsk Sea based on otolith marking methods.

Three Russian research vessels are scheduled to conduct salmon surveys in summer and fall 2019 (Doc. 1834).

In summer, R/V \textit{TINRO} will conduct a summer monitoring survey in the Pacific waters between Kamchatka and Hokkaido from June–July (Appendix 2). The primary objectives are to collect biological information on plankton and nekton communities and to describe the physical and biological oceanographic conditions in this region. The major purpose of these studies is the estimation of anadromous Pacific salmon abundance and biomass for short-term forecasting of their returns and possible catches on the coasts of the Sea of Okhotsk.

In fall, R/V \textit{TINRO} will operate in the western Bering Sea during September 27–October 7. The R/V \textit{TINRO} and R/V \textit{Professor Kaganovskiy} will operate at the same time in the southern Okhotsk Sea from October 10–November 4. The major purpose of these studies is the estimation of juvenile Pacific salmon abundance for forecasting of their returns and possible catch in the following years.

In addition, R/V \textit{Professor Kaganovskiy} conducted a survey in Pacific waters outside the Russian EEZ for estimation of mature and immature Pacific salmon and other nekton species abundance and biomass in January 16–31, 2019. After that, R/V \textit{Professor Kaganovskiy} conducted the first comprehensive survey of Pacific salmon in the Gulf of Alaska (GoA) from February 16–March 18, 2019. The R/V \textit{Professor Kaganovskiy} conducted epipelagic surveys in the western Subarctic front zone of the North Pacific outside the Russian EEZ in January 2019 (Doc. 1808). The main objectives of the expedition were to identify the stock specific rearing areas for all species of salmon, their abundances, spatial distribution, and their condition.

The United States’ national salmon research plan is identified in Doc. 1853 and follows the four components identified under the 2016–2020 Science Plan:

U-1 Migration and survival mechanisms of juvenile salmon in ocean ecosystems:

Research activities take place primarily in the coastal waters of the eastern Gulf of Alaska, eastern Bering Sea, and the U.S. Arctic (BASIS).

U-2 Climate impacts on Pacific salmon production in the Bering Sea, Gulf of Alaska, and the U.S. Arctic:
Research activities encompass those listed under U-1 with emphasis on monitoring biological and physical environments (integrated ecosystem surveys) over a number of years to understand the impact of climate change and variability on salmon and groundfish (walleye pollock, Pacific cod, sablefish, rockfish) within the U.S. eastern Pacific Ocean, Large Marine Ecosystems.

U-3 Biological monitoring of key salmon populations:

Key populations monitored during the ocean surveys include Southeast Alaskan pink, chum, and Chinook salmon, eastern Gulf of Alaska shelf for Chinook salmon, western Alaska for Chinook and chum salmon, western Alaskan sockeye salmon, and stocks monitored at the NMFS Auke Creek Weir and Little Port Walter Marine Station.

U-4 Development and applications of stock identification methods and models for management of Pacific salmon:

Research activities are designed to find and apply markers capable of identifying populations of salmon migrating in the North Pacific Ocean and Bering Sea.

In addition to continued monitoring of thermally marked salmon in research activities outlined above and in U-1, the United States will also continue to collect and report on high-seas coded-wire tags (CWT) recovered from both the Bering Sea and North Pacific Ocean. These CWT recoveries come from research surveys by NPAFC member Parties and from salmon caught as bycatch in U.S. Gulf of Alaska and Bering Sea-Aleutian Islands groundfish fisheries.

The United States cruise plans for 2019 were summarized in Doc. 1846 for Southeast Alaska (summer) and Doc. 1845 for the northern Bering Sea (late summer). The survey vessels used will include R/V Sashin, R/V Medeia, and R/V Northwest Explorer (Appendix 3).

The CSRS considered requests for exchanges of samples and data. Each Party updated the list of sample and data requests (Appendix 4).

Review of Parties’ Proposals on Joint Projects to be Financed by the Commission

The CSRS requested the Committee on Finance and Administration to approve use of the NPAFC fund to support the following item:

Appendix 5. Funding request for the International Year of the Salmon year 4 of the planning phase and the focal year

The International Year of the Salmon initiative, as proposed in NPAFC Document 1663, was approved by the NPAFC and the North Pacific Salmon Conservation Organization (NASCO) in mid-2016. The IYS was explicitly integrated into the 2016–2020 NPAFC Science plan (Document 1665) with themes that have been linked to the Science Plan themes and CSRS Working Group activities.

As described in the Report of the Executive Director on the Commission’s Activities and the Secretariat’s Performance (NPAFC Doc. 1813), significant progress was made implementing the IYS initiative in 2018/19. At the time of this report, the IYS Secretariat had over 160 meetings, hosted seven workshops, held 10 IYS sessions at international meetings and officially launched the IYS in the North Pacific. There were 20 opening events held across the northern hemisphere in the fall of 2018. The IYS signature project, the five-week International Gulf of Alaska Expedition, was successfully completed on March 18, 2019. The scientific crew consisted of 21 scientists, from all five NPAFC member countries, covered 4,800 nautical miles and covered a grid of 60 stations. The team used emerging scientific techniques for the first time to determine the origin stock of captured fish at sea. They were able to determine species specific abundances in the Gulf of Alaska. The expedition was considered a success by all involved and attracted enormous media attention.

A substantial effort was also made by both NPAFC and NASCO to strengthen our partnership through face-to-face meetings and refining meeting arrangements to ensure the cultural and procedural expectation of both organizations are met. Unfortunately, the fifth meeting of the Coordinating Committee was cancelled due to the U.S. government shutdown, however, the IYS technical team, a subset of the Coordinating Committee was able to meet in October 2018 to continue to refine the implementation of the IYS across the northern hemisphere.
The NPAFC Working Group and the North Pacific Steering Committee, which includes IYS Working Group members, met for the third time in late January 2019. Further details on the IYS implementation and records of these meetings have been provided in the IYS WG Report (NPAFC Doc. 1815) and the IYS NPSC Report (NPAFC Doc. 1816) endorsed by CSRS at the First Plenary Session of the 2019 Annual Meeting. Participants in both meetings provided direction on IYS communication and outreach plans, including how to engage a wider audience in the western Pacific, and provided suggestions for soliciting external funding for the IYS. Information gathered from the working group and committee members was used by Conner & Associates, who are contracted to help the IYS secretariat solicit external funding. The IYS Secretariat and Conner and Associates are preparing a funding request document, modelled after the IYS Strategic Implementation Plan that will be used to engage funders.

The focus of 2019/20 will be to continue to develop relationships with partners, obtain external funding, plan and host IYS workshops and symposia and implement the 2021 Pan-Pacific high seas survey and the Likely Suspects Framework through the IYS WG and Theme Counsel Groups. We will also continue outreach with the public during the focal year (see 2018/19 IYS Workplan).

This request is for $443.5K. This includes $248.5K in operating funds for the IYS Secretariat and a further $195K to support project and fund development. The highest priority is for the $248.5K in core funding elements listed here. These funds allow the IYS Secretariat to function at a base level and are an essential component of funding proposals as the majority of funders will expect some investment by the NPAFC and often stipulate that core operating costs are not eligible expenditures. The IYS Secretariat will continue to actively seek external funding to cover the $195K for project planning and fund development.

V. 8. Consideration of Administrative and Fiscal Matters

The Commission received from Dr. V. Belyaev, Chairperson of the Committee on Finance and Administration (F&A), the Report of the F&A (Doc. 1864), which contained information relative to the administration and finances at the Commission. After review, the Commission adopted the F&A report, including its recommendations.

Among fiscal matters, the F&A considered the Auditor’s Report covering the period July 2017 to June 2018 (Doc. 1805) and the separate report itemizing expenditures of several accounts (Doc. 1806), which were sent to NPAFC and F&A Points of Contact on August 20, 2018 (Memo #G18-18, F18-09) for their review.

The Japanese and the U.S. Parties pointed that transferring funds from the Working Capital Fund (WCF) to the Special Purpose Fund for the IYS is not correctly reflected in the Auditor’s Report. The money transfer should be made in the 2018/19 FY because the Commission at the 2018 NPAFC Annual Meeting in Khabarovsk, Russia, approved such transfer in the discussion about the budget appropriation for 2018/19 FY and should not be reflected in the report. The Executive Director explained that the transfer was reflected to show the balance of the Special Purpose Fund at the beginning of the fiscal year. It is further commented by the Japanese Party that as long as the decision by the Commission about transfer of the WCF was done for the budget of 2018/19 FY, the Auditor should have not transferred the WCF at the end of the 2017/18 FY, and instead this should have been done in the current 2018/19 FY. The Japanese Party considers this an error and, on the condition that the Secretariat and the Auditor will appropriately reflect the decision of the Commission in accounting in the future, the Auditor’s Report presented could be accepted. The Secretariat assured that for future auditing, fund transfer will only be done based on the committee’s decision. That is, it will reflect the date and year of the decision, the amount to be transferred, and to/from which account. A decision was made at this Annual Meeting among all the Parties that starting from this year the Secretariat would record what funds are going to be transferred, if any, from which account, on which day, and from which year the funds would be extended. The Auditor is not to make any recommendation on such requirement. It was agreed among all Parties that the Japanese and US Parties should come up with the exact language for the Auditor and the Secretariat to implement in this report for future references.

The reports were approved on September 4, 2018. In accordance with Article XI 6. of the Convention, the committee recommended the reappointment of the Loewen Kruse Chartered Accountants as auditors for the 2019/20 fiscal year.

In order to help F&A understand the current 2018/19 FY financial situation before approving the Financial Projection for the 2019/20 FY, the Secretariat provided a preliminary report on the status of appropriation and expenditure of the General Funds, Working Capital Fund, and the Special Fund on Scientific Research of the 2018/19 fiscal year. The table shared expenditures for the current fiscal year based on the actual expenses up to March 31, 2019, and projections from April 1 to June 30, 2019. Parties acknowledged the document for the current 2018/19 fiscal year.
Canada suggested that the Secretariat should encourage its staff to take vacation leave in order to avoid the accrual in the budget and maintain a work-life balance. It was also suggested that footnotes should be included for all future budget documents, especially when describing any expenditures for the IYS. In addition, the contractual services should be reflected under Temporary Personnel and not Overtime. The U.S. Party suggested separating expenses for the IYS Gulf of Alaska Expedition from the rest of the expenditures of the Special Fund for the IYS for a better and clearer understanding.

The document (Doc. 1751 Rev. 1) covering Budget Projection for 2019/20 and Estimate for 2020/21 fiscal years (as estimate and forecast) was submitted by the Secretariat via e-mail to the F&A Points of Contact on September 7, 2018 (Memo #F18-13) and was adopted by the Commission as the Budget Estimate via e-mail on February 8, 2019 (Memo #G19-01, F19-01). Parties acknowledged Doc. 1857 for the projected 2019/20 FY. The committee recommended adoption of the Budget Projection for the Fiscal Year beginning July 1, 2019. The committee acknowledged that a revised version of the 2020/21 FY Budget Estimate and Appropriation may be submitted by the Secretariat in August/September 2019 together with the Auditor’s Report for the 2018/19 fiscal year.

In conformity with the Financial Rules, the Budget Forecast for the Fiscal Year beginning July 1, 2021, will be reviewed at the 2020 Annual Meeting in Hakodate, Japan. The budget forecast is intended for the guidance of the Parties.

In order to consider concerns about potential deficits in the future NPAFC budgets, all Parties agreed at the 2018 F&A meeting that the Secretariat should explore NPAFC history to see how the requests for increase of annual contribution fees were submitted in the past. The Secretariat prepared a background document in detail and circulated it on November 27, 2018 through Memo #G18-27, F18-22 to the F&A and NPAFC Points of Contact for comments and edits. The document was approved on December 27, 2018.

Previously, the Commission tasked the Secretariat to prepare a background document on the financial status of NPAFC, in order to consider it at the next NPAFC Annual Meeting, and to make a decision with regards to an increase of the Parties’ annual contribution in 19–20 months before the first day of the fiscal year, in which an increase would take place. If the Commission decides to increase the annual contribution at the 2019 Annual Meeting, an increased amount would be paid by the Parties for the 2021/22 FY. The first instalment will be due on July 1, 2021.

The Secretariat proposes that a one-time increase of C$35,000 per member country for the annual contribution starting from the 2021/22 FY is moderate and reasonable to ensure and maintain the stability of the NPAFC financial statuses in the nearest future. All Parties agreed in principle that there is a need to increase their annual contribution to the NPAFC in order to continue the functionality of the Secretariat. All Parties agreed to an increase of their annual contribution based on the rate of inflation in Canada, and the earlier the increase of annual contribution comes into effect the better.

Russia, Canada, Korea, and USA indicated that their increased annual contributions can take effect in the 2020/21 FY. Japan indicated that their increase of annual contribution will only be possible beginning in the 2021/22 FY. Japan also indicated that it might be easier to increase their annual contribution by a fixed amount of C$20,000 for the next 10 years, rather than increasing it annually based on the current rate of inflation (between 1%–3%). However, even in such case, the increase would still most likely be effective in the 2021/22 FY. The committee recommended increasing annual contribution by 2% annually starting from the 2021/22 FY.

Management of the Commission’s Money

As reported in Doc. 1806 “Details of Items in the Auditors’ Report (NPAFC Doc. 1805),” the 2017/2018 fiscal year ended with a surplus of $140,496 (all figures are in Canadian funds). Comparing with figures from the working document “Financial situation of current fiscal year” distributed at the 26th Annual Meeting in Khabarovsk, this amount is higher than expected by $81,786. The biggest part of this saving is a room and audio-visual equipment rental for the Annual Meeting that was provided by the Russian Party for free. Postponement of the renewal of furniture, telephone system, and computers since the current equipment is still in operational condition, has also contributed to the total savings.

Working Capital Fund balance was supported by the General Fund surplus. After transferring allocated funds to the Special Purpose Fund for the IYS, the WCF balance equalled $179,531 at the 2017/18 fiscal year end. This consists of the Contingency Fund—$75,000, Severance Fund—$16,029, and Moving Fund with a balance of $88,502.

According to the Auditor’s suggestion with respect to legal obligations, the Commission should now accrue amounts for unused vacation leave for all permanent staff at year end. Change in accrued staff vacation will be included in the personnel services cost like a change in retirement benefits effects the WCF balance. In 2017/18 fiscal year, this increased the personnel services cost by $19,447.
The Special Fund for Scientific Research did not undergo any unexpected changes. Its balance at the end of 2017/18 fiscal year was $31,567.

New figures for 2018/2019 fiscal year became available in August 2019 after completion of auditing (see below).

- **Among administrative matters**, F&A considered and adopted the Administrative Report (Doc. 1812).

### NPAFC Internship

The 2018/2019 NPAFC Intern, Ms. Stephanie Taylor completed her internship program on December 21, 2018. It included multitask support for the IYS project: preparation of the IYS Opening event in Vancouver, compiling materials for the IYS video clip, editing and proofreading of Technical Report #11, drafting the IYS Social Media Strategy and other discussion documents for the NPSC and IYS WG meetings in January 2019, organising the IYS photo contest, preparing the IYS posters, supporting communication with numerous IYS partners, and attending IYS-related meetings and conference calls. Ms. Taylor maintained the NPAFC and IYS Facebook and Twitter accounts, photo and video repository for the IYS. She wrote an article on one of the basic fishery management issues related to anadromous fish stocks (“In a Rapidly Changing World, Are Mixed-stock Fisheries the Best Option?”) for NPAFC Newsletter No. 45 (p. 35–42). After the internship, Ms. Taylor accepted the IYS Coordinator position, which became vacant after Madeline Young’s transfer to DFO.

Mr. Nathan Bendriem joined the Secretariat as an Intern on December 3, 2018. Nathan began his Masters of Science in September 2016, at the University of British Columbia. His research focused on the use of genomic technologies to provide a cost-effective alternative for assessment and management of wild coho salmon, and to select for broodstock in land-based coho salmon farms. During his internship program, Nathan helped with different aspects of the IYS implementation, in particular the coordination of workshops, budget, and writing technical reports, organization and implementation of workshops and symposiums, development of media strategy for the 2019 International Gulf of Alaska Expedition, and the creation of a brochure and webpage around the expedition. Nathan worked with many partners and expressed interest in socio-economic aspects of fisheries. He wrote an article on aspects of fishery management that can increase the resilience of salmon and people in a changing world titled “Resilience of Salmon Fishers in an Uncertain Future” for NPAFC Newsletter No. 46 (p. 37–44). He has completed the internship by working together with the Secretariat staff at the 27th NPAFC Annual Meeting.

Proceeding from the gained experience, the Secretariat proposes having two interns for the 2019 program: Ms. Moronke Harris and Ms. Laura Tessier, both from Canada.

### V. 9. News Releases

The Commission reviewed and adopted the news releases proposed by the Secretariat and the Press Committee (Appendix 7, i-vi)

### V. 10. Closing Remarks

There were closing remarks of the Representatives of Canada, Japan, Korea, the United States, and Russia. Then, NPAFC President Dr. Suam Kim closed the session with an adjournment speech.

**Closing remarks by Dr. Vladimir Belyaev, Head of the Russian delegation:**

Ladies and Gentlemen, Distinguished Colleagues, Mr. President,

I believe that we have had a very productive week here in the city of Portland. Basically, we have reconfirmed our projects, our desire to continue with our research efforts, and enforcement activities. All of us together have made a major stride in our process of knowledge acquisition.
I also believe that this year and last year have been particularly successful. Of particular note is the fact that we did manage to have a joint expedition to the waters of Alaska, it’s been noted throughout the meeting on many occasions, and yet I think it is a memorable event. First of all, it was our first such an experience and looking back it was an excellent and very productive experience that would help us in all of our future efforts. Also, it validated another idea, namely, that we should continue with such efforts and, if possible, expand such efforts in the northern part of Pacific Ocean. And from what I understand most of our scientists from out countries would be very happy to join those expeditions.

I would also like to note that our ENFO people are also doing an excellent job, because these are the individuals who are there to, if need be, physically protect our salmon resources. They are showing excellent results, and they have learned how to work together. There is an ongoing collaboration between our border patrol services, so ultimately a day will come when there will be no room for any poachers in our waters.

I wish you all safe trips back home and all the very best. Thank you for your help, assistance and cooperation, it was a pleasure working with you. Thank you.

Closing remarks by Dr. Carmel Lowe, Head of the Canadian delegation:

Dear President, Heads of Delegation, Advisors, Delegates, Observers and Distinguished Guests,

I wish to say just a few final remarks after another successful Annual Meeting of our Commission here in Portland. First and foremost, I extend my sincerest appreciation to our hosts, the United States of America, for selecting this beautiful city for our meeting venue and for an outstanding opening reception on Monday evening and IYS fundraising event on Tuesday evening. I think I speak for everyone when I say that we thoroughly enjoyed the delectable food and the opportunity to connect with NPAFC friends old and new as part of these gatherings. At the event on Tuesday, I had the opportunity to speak to many representatives from organizations across the U.S. who are seized with the vision of our International Year of the Salmon and eager to find ways to support it—I believe this bodes very well for the continued success of our flagship project.

For most of us it was a very busy week—taking stock of the progress achieved over the course of the past year by each of our committees, and developing plans to further advance our priorities over the course of the coming year. The workshop held by our ENFO committee just prior to this meeting and its further deliberations during the course of this week’s proceedings demonstrated the importance of international collaboration and cooperation in successfully deterring IUU fishing and afforded the parties opportunities to exchange intelligence on emerging practices of illegal fishers that will demand new types of surveillance technologies, approaches and actions.

Our CSRS committee exchanged the usual data on catch and hatchery production within the jurisdictions of the Parties and developed updated statistics on the status of salmon in the North Pacific. Significantly, they provided us with an impressive summary of achievements to date with respect to implementation of International Year of the Salmon project including a very successful all-party expedition to the Gulf of Alaska this past winter. They also advanced plans to deliver meaningful outcomes for each of the projects Six Themes, including an ambitious five vessel Pan-Pacific survey in 2021. The successful achievement of these outcomes is going to be vitally important for the effective management of these economically, socially and culturally important species going forward given the very compelling evidence in each of our jurisdictions for significant and widespread variations in their distribution, abundance, and productivity.

The F&A committee had some very challenging deliberations—but in the tradition of cooperation and mutual respect, all Parties were afforded the opportunity to share their perspectives, and through the building of a common understanding we were able to reach consensus on a path forward for the range of administrative and financial challenges the Commission is facing. Our reality is that we have bold and ambitious plans to advance our mandate and such plans are not cheap. It is clear that we cannot realize our ambitions on our own and we will all need to work hard to mobilize others to join our efforts—but it is equally clear from the positive engagements at the fundraising events that we are well positioned to do so.

Our progress this week, and indeed over the past year, would not have been possible without strong leadership and so I extend my appreciation to our President, Dr. Suam Kim, to Mr. Mike Carlson, Chairperson of ENFO, Dr. Masa-aki Fukuwaka, Chairperson of CSRS, Mr. Mark Saunders, IYS Director, and Mr. Vladimir Belyaev, Chairperson of our Finance and Administration committee, for their dedication and professionalism in working with their committee members to make this happen.
I also extend my appreciation to Dr. Radchenko and the Secretariat staff who worked tirelessly to enable this very successful meeting—we know how much work goes into ensuring our meetings run smoothly and we are deeply grateful to each of you. Next to the interpreters—we made you work very hard this year, but without you there is no way we could have achieved the levels of common understanding that we required to support our decisions. So, thank you. On behalf of my fellow Commissioner Mr. Gerry Kristianson and all of the Canadian delegation, we wish you success in your NPAFC endeavors over the coming year and look forward to seeing you all in Hakodate, Japan in May 2020.

**Closing remarks by Mr. Junichiro Okamoto, Head of the Japanese delegation:**

Mr. President, Committee Chairpersons, Delegates, Observers, the Secretariat, Stakeholders from the city of Portland and the government of United States, and Interpreters, in closing the 27th NPAFC Annual Meeting, I would like to say a few words on behalf of the Japanese delegation.

In this Annual Meeting, as in the case with previous annual meetings, we had active discussions on various issues for further development of NPAFC activities. I highly appreciate that as in the case with previous meetings, thanks to the leadership of the chairpersons of CSRS, ENFO, and F&A Committees and the support by the Secretariat, and flexible and constructive will to solve issues demonstrated by the President Kim and all the delegation members, we were able to reach an agreement on various issues.

The ENFO committee had active discussions on efforts to deter IUU fishing. The CSRS committee, among other things, had active discussions on the IYS project highlighting the successful outcomes achieved so far and how to further cooperate among the nations going forward. At F&A, we had serious discussions on the issue of future contributions for the continued fiscal health of the Commission.

I believe that to maintain and further develop the activities which contribute to the objective of the Commission—“conservation of the anadromous fish in the North Pacific”—it is important to keep a close eye on the financial conditions of the NPAFC while keeping in mind the unique situation of each member country and working together based on the principle of mutual understanding and cooperation among all the member countries.

It has been 27 years since the inception of the NPAFC. Japan is fully committed to continued efforts for further development of the Commission in cooperation with all the members.

The Annual Meeting in 2020 is scheduled to be held in Hakodate, Japan. The city of Hakodate is known as one of the best tourist attractions in Japan and has the history of having developed as a center of seafood industry. In that sense, it is very fitting for us to gather in Hakodate and discuss conservation of marine resources. I count on your cooperation for fruitful discussions at the next meeting.

I would like to take this opportunity to thank President Kim, the committee Chairpersons and members for efficient operation of the meetings.

In closing, I would like to express my appreciation to the city of Portland and the government of the United States for the opportunity to spend this time in Portland. My heartfelt appreciation also goes to the Secretariat, delegates, observers, and the local people who supported the meeting.

I also would like to thank the interpreters who have greatly contributed to the smooth communication. I would like to close my remarks by saying that I look forward to seeing all of you in the Annual Meeting in Japan next year.

**Closing remarks by Ms. Hee Yeon Lee, Head of the Korean delegation:**

Mr. President, Executive Director, Distinguished Delegates, Ladies and Gentlemen,

We have come to the end of a remarkably well-organized and enjoyable 27th Annual Meeting.

Let me begin by thanking our hosts, the Government of the United States for hosting this meeting and for their hospitality.
Also, on behalf of the Korean delegation, I would like to express my cordial gratitude to the Commission President, Dr. Suam Kim, Executive Director, Dr. Vladimir Radchenko, Distinguished Delegates of NPAFC Members, Committee Chairpersons of CSRS, ENFO and F&A, Observers and Interpreters. Without everyone’s cooperation, it would not be easy to deal with each agenda and finish this meeting successfully.

Moreover, I would like to extend my appreciation to all the delegates, experts for your passion and participation. Under the same common objective of the successful management and conservation of the North Pacific anadromous fish, we together had a lot of discussion and conversations during this week. Were it not for your participation, the meaningful discussions of this week would not have been possible. I myself also have learned a lot from every discussion and talk we had and every person I met.

Last but not least, I would like to express my heartfelt appreciation to the NPAFC Secretariat and excellent staffs for their hard work in preparing this wonderful meeting. I sincerely hope to see everyone here again next year in Japan. Thank you very much.

Closing remarks by Mr. Douglas Mecum, Head of the United States delegation:

Mr. President, Fellow Representatives and Delegates, Ladies and Gentlemen.

We have reached the end of another NPAFC Annual Meeting. We are grateful to all the parties for their cooperation and we are pleased with the results of our collaborative efforts to advance the goals and objectives of our Commission. The United States congratulates USCG Captain (Retired) Vincent O’Shea on receiving the NPAFC Award for 2019. We are grateful for the support of the parties in recognizing Capt. O’Shea for the NPAFC’s highest honor.

The United States is pleased to have participated in another very productive CSRS meeting where our scientists provided input and leadership on important research objectives within the Science Plan and the International Year of Salmon. We are also thankful for everything we have learned from our fellow scientists at this meeting. Working together we demonstrate that strong collaborative research efforts in the North Pacific Ocean can greatly improve our understanding of salmon marine ecology. A prime example of this collaboration was the highly successful international research effort during last winter in the Gulf of Alaska. We continue our commitment to joint high seas research in the North Pacific Ocean during 2021 and we look forward to further discussions on research priorities during the upcoming IYS workshop on Salmon Ocean Ecology in a Changing Climate this weekend.

The U.S. delegation commends the Enforcement Committee for their hard work and significant results. Collectively, the Parties agreed to continue an aggressive, well-coordinated and effective patrol effort to combat IUU fishing in the Convention Area. The USCG high-endurance cutter, MELLON, will continue to patrol in the U.S. EEZ and in the Convention Area and USCG District 17 will dedicate 270 aircraft hours and 81 cutter days to patrol the North Pacific Ocean High Threat Area in 2019. The USCG will continue to work with Canada for RADSAT support and continue in cooperation with NPAFC Party enforcement agencies. The USCG intends to use “Local Notices to Mariners” prior to and during the high threat season to leverage Merchant Mariner sightings of potential illegal activities for potential enforcement actions. The USCG also plans a rendezvous with ships from USCG and Russian Border Service in support of the Convention.

Additionally, ENFO conducted a highly productive one-day workshop regarding contemporary approaches to Monitoring, Control, and Surveillance development utilizing collaborative organizations and new technologies to combat IUU fishing in the NPAFC Convention Area. The continued practice of utilizing new technologies and information sharing by NPAFC parties will result in optimal use of scarce enforcement assets for greater efficiency and effectiveness in joint enforcement operations. The ENFO also agreed to hold another workshop at next year’s meeting with a theme of stopping illegal transshipment in the NPAFC Convention Area. Further, the joint ENFO/CSRS working group continued their cooperative dialogue towards furthering the complementary goals of using scientific information to improve patrol planning and enforcement effectiveness. This year the ENFO/CSRS working group discussed Dynamic Ocean Management and genetic sampling of salmon and ways for enforcement to utilize this information for joint patrol planning and operations. Finally, the ENFO/CSRS working group formalized this highly successful Working Group on Inter- committee Coordination (WGIC) with the WGIC’s Terms of Reference.

The United States congratulates the Finance & Administration Committee on their excellent work. In particular the United States recognizes Dr. Belyaev for his patience and skillful leadership in dealing with many difficult issues. The Secretariat continues to manage the budget with great diligence and to conduct our meetings with great efficiency. Although we have added some significant expenses associated with the IYS initiative over the past few years, the overall condition of the budget remains healthy. We are pleased that the Parties have agreed to increase our annual contributions in order to ensure the financial stability of the commission going forward. It was gratifying to see that this year’s solicitation for interns yielded 21 applicants and we are pleased with the F&A committee’s decision to authorize two highly qualified intern positions for the coming year.
In closing, we thank President Kim for his skillful leadership this week, as well as our committee Chairpersons Masa-aki Fukuwaka, Mike Carlson, and Vladimir Belyaev for their steady leadership and our Science Sub-Committee and many Working Group Chairpersons for their hard work and guidance. And we thank all of the participants for making this meeting a success. Once again, Executive Director Vladimir Radchenko, Deputy Director Jeongseok Park, Jennifer Chang, and Mariia Artiushkina have orchestrated a flawless NPAFC Annual Meeting. We also recognize the effort put forth by IYS Coordinator Mark Saunders and his staff Stephanie Taylor, Nathan Bendriem, and Dennis Zimmermann in organizing the highly successful “Friend Raiser” and the IYS Bridging Event. We owe all them a huge debt of gratitude for making a meeting with many difficult issues run very smoothly. And as always, we thank our interpreters for their important contribution to our increased understanding of the nature of Pacific salmon.

Once again, we extend our sincere gratitude to all of the parties for their friendship and their cooperation and support of the NPAFC mission. On behalf of the United States delegation, I wish you all a safe journey home and we look forward to seeing you at the 28th Annual Meeting of the NPAFC in Hakodate, Japan. Thank you.

Closing remarks by NPAFC President, Dr. Suam Kim:

Representatives, Delegates, Advisors, Observers, and Ladies and Gentlemen,

I am pleased to announce that we have completed the 27th Annual Meeting with fruitful and productive results. As you heard the reports from the Committee Chairpersons, we have very successful six days. The ENFO workshop was held on Sunday, and we listened to the enforcement experience at other areas of the Earth, and we learned about the new technologies for detecting IUU fishing vessels efficiently. This learning process will definitely help our Convention’s mission, protecting salmon species in the North Pacific.

The opening ceremony of the Annual Meeting was also memorial event. Addresses of National Delegates and Reports of Executive Director and IYS Director captured the essence of NPAFC activity last year. Everyone was excited to hear and see the achievement of the IYS, especially the Gulf of Alaska survey conducted by five member nations. Also, at the wonderful reception, we all congratulated Captain Vincent O’Shea as the recipient of the 2019 NPAFC Award. His contribution to protect salmon on the high seas was great!

I think that the meeting went smoothly and efficiently. Every Committee member has worked very hard on current hot issues we are facing. Committee members have exchanged their opinion actively on how we stop the illegal fishing in our Convention Area, and how we collect the knowledge on suitable salmon management. Valuable advice and many suggestions for efficient conservation, enforcement and enhancement of Pacific salmon were raised during the meeting. The ENFO Committee decided to hold ENFO Workshop at the next Annual Meeting at Hakodate, Japan. The CSRS with IYS, by the successful first ocean cruise, proposed the second cruise plan to be conducted in the winter of 2021. This large-scale research collaboration will give us valuable understanding on salmon ecology.

Frankly speaking, the last five days were one of my busiest days in my life. The Heads of Delegation (HoD) meeting was held three times, and sometimes continued until late evening. There were very exciting and lengthy discussions to solve our challenges. Sometimes, we had a hard time to reach the consensus. However, we exchanged wisdom for every delicate issue, and we even compromised between us. The Heads of Delegation with F&A members reviewed the performance of the Executive Director, and his achievement was excellent last year. He has attended many international meetings to propagate the NPAFC as well as IYS activities. To improve the budget situation, the Parties agreed to increase annual fee from 2021/22 fiscal year. Also, the HoD approved another three-year term of office for the Deputy Director.

Finally, I would like to express my sincere thanks to Secretariats, all interpreters, local organizers and U.S. Government for excellent preparations and hosting for this Annual Meeting. I think I have the good fortune to have very valuable human resources within the NPAFC. Without their dedication, this meeting cannot be successful. Thanks again, and see you at Hakodate next year.

Adjournment

The 27th Annual Meeting of the North Pacific Anadromous Fish Commission was adjourned at 11:20 a.m. on May 17, 2019.
VI. The Commission’s Activities After the 27th Annual Meeting
VI. 1. Consideration of Enforcement

Ten e-mail conferences were conducted from early July to November 2019 (the same number as in 2018). The Secretariat created a secure web page on the NPAFC website to upload the Parties’ reports. Four NPAFC member countries delivered 20 e-mail reports prepared in accordance with the established template: Canada—3, Japan—5, Russia—8, and U.S.—4 reports. No IUU fishing or vessel of interest sighting was reported.

VI. 2. Consideration of Scientific Research and Statistics

Implementation of the International Year of the Salmon Initiative

The 2019/20 IYS Work plan was adopted at the 27th NPAFC Annual Meeting. In 2019, the focal year of the IYS, there was a significant amount of activity with registering events and IYS promotions on social media. In total, there were 182 events and 56 projects registered at the IYS website at the end of the 2019 focal year. The website was visited by 17,985 users within 132 countries. The IYS Twitter account had an over 50% growth rate in 2019, with an increase in followers from approximately 300 at the start of the year to over 523 followers at the end of 2019. Our audience had increased levels of engagement with IYS posts on Instagram and Facebook. There were 4,073 engagements on Twitter and 1,798 on Facebook over the course of 2019. In 2020, these accounts will be managed by the Public Relations and Communications Coordinator, who will further develop these networks and use the established platforms to their fullest potential to reach and interact with larger audiences.

In 2019, there were over 96 meetings between IYS partners and potential partners. Thus far, IYS staff has been successful at establishing collaborations with over 35 partners in the North Pacific representing government science from five countries, academia, First Nations, NGO’s and industry, who are participating in the development and implementation of IYS on a broad scale. In the Atlantic basin, NPAFC continues to work with the main IYS partners. The workshops, symposia, and events for the IYS focal year and 2019 Gulf of Alaska Expedition had a large presence on social media, which in turn has resulted in a larger online following for the announcement of future IYS-related events, ongoing projects, and meetings.


Two other signature projects, the “Likely Suspects” Framework and a Data Mobilization project, are currently under development in the Secretariat. The Likely Suspects concept positions candidate mortality factors (Suspects) within an overall spatio-temporal framework covering the freshwater migration and marine phases of the life cycle. Key geographical areas and periods where mortality factors are known or thought to operate are characterized as ecosystem “domains.” Expedition data mobilization will launch in 2020. One of the goals of the project is to have all the data collected during the IYS international surveys (2019, 2020, and 2021) openly available to the science community. To achieve this, the NPAFC will partner with the Tula Foundation (Victoria, BC) and the Secretariat are currently working with them to develop the methods to standardize and share the data. The science team will have first access to publication of information, but it will be open to all users via a website to be maintained at UBC. Beginning in 2020, and in collaboration with the Tula Foundation, data collected in the 2019 expedition will be integrated into the Canadian Integrated Ocean Observing System, a component of the Global Ocean Observing System (GOOS) framework.

A list of IYS Publications in 2019 includes six articles and seven abstracts/presentations. The IYS WG and North Pacific Steering Committee (NPSC) reports will be presented to the Commission in detail as NPAFC Documents at the 28th Annual Meeting in 2020.
VI. 3. Consideration of Administrative and Fiscal Matters

2018/19 fiscal year Auditors’ Report and selection of an auditor

In July 2019, the Loewen Kruse Chartered Accountants conducted the audit of the commission’s financial statements for the year ended June 30th. After the draft review and approval, the Auditor’s report was finally received on 2 August 2019.

The Auditors’ Report (Doc. 1868) and the separate report itemizing expenditures of several accounts (Doc. 1869) were sent to the Points of Contact on September 13, 2019 (Memo #G19-21, F19-07) for their review. The documents were approved on September 27, 2019. According to the Auditor’s Report, the General Fund surplus totaled $46,710. Comparing with figures from the working document “Financial situation of current fiscal year” distributed at the 27th Annual Meeting in Portland, this amount is higher than expected by $33,194. Part of this savings is from Personnel Services due to the Web/Publication Manager’s leave without pay. Moderate savings were attained under Travel (no President’s travel paid by NPAFC), Printing (due to electronic distribution of the Annual Report), and Equipment (telephone system upgrade postponement) budget lines. The amount spent for Contractual Services is more than budgeted due to spending for IT and website handling service in condition of the Web/Publication Manager’s leave. Interpretation equipment was expensive than budgeted due to an additional meeting day for the ENFO Workshop. The NPAFC was charged more than projected for the coffee service at the Annual Meeting (see Hospitality & Miscellaneous), but $1,504 was refunded after negotiations in 2019/20 Fiscal Year (Table 12).

Working Capital Fund (WCF) balance was supported by the General Fund surplus and positive changes in the Pension Plan balance, partially due to unfunded liability repayment since September 2018. In general, the WCF balance equalled $258,300 at the 2018/19 Fiscal Year end. This consists of the Contingency Fund—$75,000, Severance Fund—$24,741, and Moving Fund with a balance of $158,559. The Special Fund for Scientific Research (SFSR) did not undergo any unexpected changes. Its balance at the end of the 2018/19 Fiscal Year was $31,595. Funds transferred to the Special Purpose Fund for the IYS were spent with a Free Balance of $37,541 (already decided by the Commission to spend in 2019/20 Fiscal Year).

According to the auditor’s opinion in all material respects for the Commission as at June 30, 2019, the financial statements present fairly, and the Commission’s financial performance and cash flows for the 2018/19 Fiscal Year are in accordance with the financial rules outlined in the NPAFC Handbook.

Increasing communication to public via the Internet tools and social media

Since the adjournment of the 27th Annual Meeting to date, 20 news items were posted on the NPAFC Facebook page in total. Salmon-related news, NPAFC announcements, promotional videos, etc. are available for public viewing from this social media platform. A Facebook page for the IYS was completed in May 2020 with 184 posts, and a Twitter account was created—with 521 tweets. The NPAFC LinkedIn page—with five posts—and Instagram account https://www.instagram.com/internationalyearofthesalmon (445 followers, 308 following)—with 111 posts, were created in late 2019. Based on gained experience, a discussion document on the social media strategy development was presented at the IYS WG in Vancouver in February 2020. It is included in the IYS WG report. The Wikipedia page https://en.wikipedia.org/wiki/North_Pacific_Anadromous_Fish_Commission created in 2016, is regularly updated with inclusion of new information, the last time—about the IYS implementation and publications.

Increasing communication to audience from the NPAFC member countries

As it was expected in the IYS focal year, the number of visits to the NPAFC website significantly grew in 2019, almost twice the number of visits compared to 2018 (Table 13). This increase reflects a growing public interest in the Commission’s activities and projects including the IYS implementation and the Gulf of Alaska expeditions. Likely, due to wide coverage of the 2019 Gulf of Alaska expedition in Canadian media, the most significant growth is observed for Canadian visitors, more than 2.4 times in comparison with 2018. Visitors from Japan and Russia also showed a two-fold growth in session numbers at the NPAFC website.
Table 12. Statement of Operations for the fiscal year ended 30 June 2019 (after the Auditor’s Report—2019)

NORTH PACIFIC ANADROMOUS FISH COMMISSION

Statement of Operations
Year Ended June 30, 2019

<table>
<thead>
<tr>
<th></th>
<th>General Fund</th>
<th>Working Capital Fund</th>
<th>Special Fund for Scientific Research</th>
<th>Special Fund for IYS</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsorships and registration fees</td>
<td>$</td>
<td>$ 72,704</td>
<td>$ -</td>
<td>$ 1,050,081</td>
<td>$ 1,122,785</td>
<td>$ 240,273</td>
</tr>
<tr>
<td>Contributions from contracting parties</td>
<td>900,001</td>
<td>-</td>
<td>-</td>
<td>900,001</td>
<td>900,000</td>
<td></td>
</tr>
<tr>
<td>Levies</td>
<td>55,940</td>
<td>-</td>
<td></td>
<td>55,940</td>
<td>54,255</td>
<td></td>
</tr>
<tr>
<td>Interest and other</td>
<td>15,235</td>
<td>-</td>
<td>404</td>
<td>294</td>
<td>15,933</td>
<td>9,321</td>
</tr>
<tr>
<td></td>
<td>915,236</td>
<td>128,644</td>
<td>404</td>
<td>1,050,375</td>
<td>2,094,659</td>
<td>1,203,849</td>
</tr>
<tr>
<td>EXPENSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel services</td>
<td>518,327</td>
<td>38,841</td>
<td>-</td>
<td>162,550</td>
<td>719,718</td>
<td>743,697</td>
</tr>
<tr>
<td>Contractual services</td>
<td>169,534</td>
<td>-</td>
<td></td>
<td>169,534</td>
<td>169,166</td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td>66,816</td>
<td>2,333</td>
<td></td>
<td>52,167</td>
<td>121,316</td>
<td>135,750</td>
</tr>
<tr>
<td>Rentals</td>
<td>82,677</td>
<td>-</td>
<td></td>
<td>82,677</td>
<td>22,673</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>9,147</td>
<td>-</td>
<td></td>
<td>44,638</td>
<td>53,785</td>
<td>21,185</td>
</tr>
<tr>
<td>Hospitality and miscellaneous</td>
<td>22,261</td>
<td>-</td>
<td></td>
<td>22,261</td>
<td>14,463</td>
<td></td>
</tr>
<tr>
<td>Supplies</td>
<td>8,673</td>
<td>-</td>
<td></td>
<td>4,565</td>
<td>13,238</td>
<td>30,528</td>
</tr>
<tr>
<td>Printing</td>
<td>1,561</td>
<td>-</td>
<td></td>
<td>1,561</td>
<td>2,434</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>493</td>
<td>-</td>
<td></td>
<td>493</td>
<td>1,201</td>
<td></td>
</tr>
<tr>
<td>2019 NPAFC-IYS workshop expense</td>
<td>-</td>
<td>59,732</td>
<td>-</td>
<td>-</td>
<td>59,732</td>
<td>-</td>
</tr>
<tr>
<td>2019 ENFO Workshop expense</td>
<td>-</td>
<td>13,561</td>
<td>-</td>
<td>-</td>
<td>13,561</td>
<td>-</td>
</tr>
<tr>
<td>2019 IYS Bridging event expense</td>
<td>-</td>
<td>13,210</td>
<td>-</td>
<td>-</td>
<td>13,210</td>
<td>-</td>
</tr>
<tr>
<td>2019 IYS Intl GOA Expedition</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>1,016,169</td>
<td>1,016,169</td>
</tr>
<tr>
<td>2018 October IYS Opening Event</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>19,325</td>
<td>19,325</td>
</tr>
<tr>
<td>2019 Data workshop</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>16,754</td>
<td>16,754</td>
</tr>
<tr>
<td>2019 NPSC Meeting</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>12,422</td>
<td>12,422</td>
</tr>
<tr>
<td>2018 IYS Climate Workshop</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>9,529</td>
<td>9,529</td>
</tr>
<tr>
<td>2018 Fall IYS photo contest prize</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>2018 NPSC Meeting</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>13,083</td>
<td>-</td>
</tr>
<tr>
<td>2018 First NPAFC-IYS workshop</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>5,937</td>
<td></td>
</tr>
<tr>
<td></td>
<td>879,489</td>
<td>127,677</td>
<td>404</td>
<td>1,339,119</td>
<td>2,346,285</td>
<td>1,178,488</td>
</tr>
<tr>
<td>EXCESS (DEFICIENCY) OF REVENUE OVER EXPENSES - page 6</td>
<td>$ 35,747</td>
<td>$ 967</td>
<td>$ 404</td>
<td>(288,744)</td>
<td>(251,626)</td>
<td>$ 25,361</td>
</tr>
</tbody>
</table>
Table 13. Number of visits to the website in 2015–2019 by visitors from member countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5,136</td>
<td>43.30%</td>
<td>7,459</td>
<td>42.00%</td>
<td>6,275</td>
<td>38.25%</td>
</tr>
<tr>
<td></td>
<td>2,859</td>
<td>24.10%</td>
<td>4,465</td>
<td>25.10%</td>
<td>5,740</td>
<td>34.99%</td>
</tr>
<tr>
<td>Japan</td>
<td>1,191</td>
<td>10.00%</td>
<td>2,327</td>
<td>13.10%</td>
<td>2,360</td>
<td>14.39%</td>
</tr>
<tr>
<td></td>
<td>758</td>
<td>6.40%</td>
<td>930</td>
<td>5.20%</td>
<td>1,182</td>
<td>7.21%</td>
</tr>
<tr>
<td>Korea</td>
<td>320</td>
<td>2.70%</td>
<td>456</td>
<td>2.60%</td>
<td>848</td>
<td>5.17%</td>
</tr>
<tr>
<td>Totals</td>
<td>10,264</td>
<td>100%</td>
<td>15,637</td>
<td>100%</td>
<td>16,405</td>
<td>100%</td>
</tr>
</tbody>
</table>

Among non-member countries, the United Kingdom leads with 729 sessions, followed by People’s Republic of China (676), India (265), Ukraine (213) and Germany (207).

In 2019, 83.6% of all the visits (new and returning visitors) to the NPAFC website were by people in member countries. This is the lowest percentage for the years under monitoring. In 2014–2016, it varied from 86.4% to 90.0%. This is a testament to the success of IYS program outreach around the World. Among the most frequently viewed web pages, there is a prevalence of the /IYS/, /workshop-2019/, /species/, /statistics/, /salmon-escapement/, /npafc-documents/, /internship/, /technical-report/, /inpfc/, /newsletter in descending order of view numbers.

Promotional lectures on the NPAFC activities and projects including the IYS

Ten interviews to media were delivered by the Executive Director on the IYS initiative and the Gulf of Alaska expedition in 2019:

- Mariya Kabushkina / Khabarovskiy Krai Fisherman—in April 2019;
- Sergei Saktaganov / [County Gazette]—in January, April, and September 2019;
- Carla Wilson / Times Colonist—in March 2019;
- Stu McNish / Oh Boy Productions—in February, March, and October 2019;
- Annie Law / Fairchild TV—in April 2019; and
- Iayisha Khan / Vancouver Observer—in April 2019.

There were two popular science publications in a journal which the Secretariat cooperated with, since the 27th Annual Meeting in Portland, Oregon, U.S.A.:


The Secretariat is also involved in a regular information exchange through several communication networks:

- The Caribbean Regional Fisheries Mechanism (CRFM) Secretariat network (news releases, CANARI Policy Briefs, consulting and other job opportunities, newsletters, announcements, briefing meetings, webinars and other events, PR, general discussions);
- NEREUS Program of the Nippon Foundation & UBC reports and electronic newsletter; and
- Combating IUU Fishing Group of LinkedIn portal.

In general, effectiveness of NPAFC communications to the community and the world in 2019 was maintained on a relevant level.
VII. People and Events
Presidents

- Vyacheslav Zilanov 1993–1995
- David Bevan 1997–1999
- Fran Ulmer 1999–2001
- Anatoly Makoedov 2001–2003
- Dohyung Koo 2007–2008
- Suam Kim 2008–2009 2018–Present
- James Balsiger 2009–2011
- Vladimir Belyaev 2011–2014
- Junichiro Okamoto 2014–2016
- Carmel Lowe 2016–2018
Representatives (Participated at the Annual Meeting)

Canada

Victor Rabinovitch
1993–1994

Darlene Weir
1993–1994

Garnet Jones
1993–1999

Gary Williamson
1994–1997

David Bevan
1996–2002

Gerry Kristianson
1997–2012
2018–Present

Russ Jones
1999–2008

Guy Beaupré
2002–2012

George Hungerford
2012–2018

Terry Tebb
2012–2016

Robin Brown
2013–2015

Carmel Lowe
2015–Present
Representatives (Participated at the Annual Meeting)

Japan

Masahiro Ishikawa 1993–1994
Koji Imamura 1993–2009
Satoshi Watanabe 1995–1997

Shuji Ishida 1997–1999
Ryozo Kaminokado† 1999–2000
Shiro Yuge 2000–2002
Tomofumi Kume 2004–2005

Yoshimi Suenaga 2005–2006
Daishiro Nagahata 2006–2009
Yukihiro Sakamoto 2009–2010
Junichiro Okamoto 2009–Present

Shingo Kurohagi 2011–2012
2019–Present
Shigeto Hase 2012–2016
Masaki Hoshina 2016–2019
Representatives (Participated at the Annual Meeting)

Korea

Joon Suk Kang 2003–2004
Bong Se Oh 2003–2004
Dong Yeob Yang 2003–2004
Chong Rok Park 2004–2005

Sukyung Kang 2004–2009
Yang Soo Kim 2004–2006
Yong Kuk Lee 2005–2006
Chiguk Ahn 2006–2007

Dohyung Koo 2007–2008
Ki Baik Seong 2007–2012
Jeongseok Park 2010–2017

Jang-Woo Seo 2010–2012
Ju Kyoung Kim 2012–2016 2019–Present
Bundo Yoon 2012–2013
Do Hyun Lee 2016–2019
Korea

Chan Soo Park
2017–2019

Hee Yeon Lee
2019

( Participated at the Annual Meeting)
Representatives

(Rparticipated at the Annual Meeting)

Russia

Vyacheslav Zilanov
1993–1997

Vladimir Fedorenko
1993–1999

Vladimir Pautov
1993–2001

Vladimir Izmailov
1996–2001

Sergey Dyagilev
2001–2006

Anatoly Makoedov
2001–2006

Sergey Sinyakov
2001–2006

Mikhail Glubokovskiy
2006–2009
2015–2017

Sergey Maksimov
2006–2010

Vladimir Belyaev
2009–Present

Kirill Kolonchin
2017–Present
Representatives (Participated at the Annual Meeting)

USA

Alec Brindle 1993–1994
Steven Pennoyer 1993–2000
Fran Ulmer 1994–2004
James Balsiger 2000–2018
Alan Austerman 2004–2007
Guy McMinds† 1996–2004
Earl Krygier 2014–2018
Joseph Mentor 2018–Present
Gary Smith 2006–2018
Roland Maw 2007–2011
Earl Krygier 2014–2018
Joseph Mentor 2018–Present
Douglas Mecum 2018–Present
Committee Chairpersons

CSRS Chairpersons

- **Leo Margolis**
  1993–1995
- **Loh-Lee Low**
  1995–1997
  2003–2005
  2014–2016
- **Oleg Gritsenko**
  1997–1999
- **Yukimasa Ishida**
  1999–2001
  2007–2009
- **Richard Beamish**
  2001–2003
- **Vladimir Karpenko**
  2005–2007
- **Jin Yeong Kim**
  2009–2011
- **Mark Saunders**
  2011–2014
- **Igor Melnikov**
  2016–2018
- **Masaaki Fukuwaka**
  2018–Present

Committee Chairpersons

**Igor Melnikov**
2016–2018

**Masaaki Fukuwaka**
2018–Present

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ENFO Chairpersons

Dennis Brock 1993*, 1997–1999
Vladimir Izmailov 1994–1996
Satoshi Watanabe 1996–1997
Shuji Ishida 1997

Vincent O’Shea 1999–2001
Igor Rypalov 2001–2003
Takashi Kato 2003–2004
Akihiro Mizukawa 2004–2005

Koji Miyaura 2005
Mike Cerne 2005–2007
Robert Martinolich 2007–2009
Paul Steele 2009

Jun Imamura 2009–2011
Jeongseok Park 2011–2014
Alexey Monakhov 2014–2015
Oleg Volkov 2015–2016

* – as a Chairman of the Sub-Committee on Enforcement within Committee on Enforcement, Finance and Administration (CEFA)
ENFO Chairpersons

Philip Thorne
2016

Steven White
2016–2018

Michael Carlson
2018–Present
F & A Chairpersons

Richard Lauber 1993–1996
Vladimir Izmailov 1996–1997
Shuji Ishida 1997–1999
Ryozo Kaminokado 1999

Aaron Sama 1999–2000
James Balsiger 2001–2003
Vladimir Shevlyakov 2003–2005

Koji Miyaura 2005–2006
Kazuaki Tanaka 2006–2007
Hiromi Isa 2007
Sergey Maksimov 2007–2009

Gary Smith 2011–2014
Jeongseok Park 2014–2016
Junichiro Okamoto 2016–2018
Vladimir Belyaev 2018–Present

Junichiro Okamoto 2016–2018
Vladimir Belyaev 2018–Present
Executive Directors

Shigeto Hase  
1993–1994  
(Interim Executive Director)

Irina Shestakova  
1994–1999

Vladimir Fedorenko  
1999–2013

Vladimir Radchenko  
2013–Present

Deputy Directors

Wakako Morris  
1993–1994  
(Interim Deputy Director)

Hisashi Endo  
1994–1997

Hiroko Omori  
1997–2000

Yoshikiyo Kondo  
2000–2003

Toshinori Uoya  
2003–2006

Shigehiko Urawa  
2006–2010

Nancy Davis  
2010–2017

Jeongseok Park  
2017–Present
Administrative Officers

Jennifer Chang 2015–Present

Web/Publication Manager

Harold Belongilot 2015–2017
Alanna Harlton 2017–2019
William Stanbury 2019–Present

IT/Admin Assistant

Claudia Chan 2013–2015

Administrative Assistants

Jennifer Chang 2015
Yuko Uchida 2015–2017
Maria Artushkina 2017–Present

Trainee

Youngho Park 2012–2013

Secretaries

Heather Nevin 1993–1995
Marijke Nap† 1995–1997
Denise McGrann-Pavlovic 1997–2010
Claudia Chan 2010–2013
Secretaries

Elena Dryagina 2013
Betty Kao 2013–2014
Joyce Tang 2014–2015
Jennifer Chang 2015

Interns

Yuka Ogata 2011 Jan–Jul
Yulia Simakova 2014–2015
William Stanbury 2016–2017

Madeline Young 2016–2017
Caroline Graham 2017–2018
Pavel Emelin 2017–2018
Stephanie Taylor 2018

Nathan Bendriem 2018–2019
Laura Tessier 2019
Moronke Harris 2019–2020
1994

April I. Shestakova takes office as Executive Director, replacing S. Hase, Interim Executive Director.

July H. Endo takes office as Deputy Director.

October 10–15 2nd Annual Meeting of the Commission in Vladivostok, Russia.

1995

March 6–10 Research Planning and Coordinating Meeting, Seattle, Washington, USA

November 5–10 3rd Annual Meeting of the Commission in Seattle, Washington, USA

1996

October 21–25 4th Annual Meeting of the Commission in Tokyo, Japan

October 28–29 International Symposium on Assessment and Status of Pacific Rim Salmon Stocks in Sapporo, Japan

1997

January L. Margolis passes away. (Canadian scientist and First CSRS Chairman)

February 11 F&A Working Group Meeting in Vancouver, Canada

March 4–6 Research Planning and Coordinating Meeting (RPCM) in Vancouver, Canada

October 27–31 5th Annual Meeting of the Commission in Victoria, Canada

1998

March 24–25 Research Planning and Coordinating Meeting (RPCM) in Vancouver, Canada

March 26–27 Workshop "Climate change and Salmon Production" in Vancouver, Canada

May Office relocated from UBC campus to Downtown Vancouver.

November 6 NPAFC and PICES sign MOU.

November 1–6 6th Annual Meeting of the Commission in Moscow, Russia
1999
March 16–19 Enforcement Standardization Symposium in Kodiak, Alaska, USA
March 24–26 Research Planning and Coordinating Meeting (RPCM) in Vancouver, Canada
July V. Fedorenko takes office as Executive Director.
July R. Carlson passes away. (American marine fisheries biologist)
October 24–29 7th Annual Meeting of the Commission in Juneau, Alaska, USA
November 1–2 International Symposium “Recent Changes in Ocean Production of Pacific Salmon” in Juneau, Alaska, USA

2000
March 1–3 Enforcement Planning and Coordinating Meeting (EPCM) in Tokyo, Japan
March 23–26 NPAFC Co-sponsors El Niño Conference in La Jolla, CA, USA
March 27–28 Research Planning and Coordinating Meeting (RPCM) in La Jolla, California, USA
October 29 International Workshop “Factors Affecting Production of Juvenile Salmon: Comparative Studies on Juvenile Salmon Ecology between the East and West North Pacific Ocean” in Tokyo, Japan
October 30–November 2 8th Annual Meeting of the Commission in Tokyo, Japan
November NPAFC 5 year Science Plan was adopted.
December Y. Kondo takes office as Deputy Director

2001
March 19–20 Research Planning and Coordinating Meeting (RPCM) in Seattle, Washington, USA
March 21 International Workshop on Salmonid Otolith Marking in Seattle, Washington, USA
May 14–17 Enforcement Evaluation and Coordination Meeting (EECM) in Petropavlovsk-Kamchatsky, Russia
October Plan for NPAFC Bering-Aleutian Salmon International Survey (BASIS) in 2002-2006 was presented.
October 28–November 2 9th Annual Meeting of the Commission in Victoria, Canada
2002

January 28–February 1 NPAFC Co-sponsors Stock Enhancement and Sea Ranching Symposium in Kobe, Japan.

March 12–13 Research Planning and Coordinating Meeting (RPCM) in Vancouver, Canada

March 14–15 Joint Meeting of IBSFC, ICES, NASCO, NPAFC, PICES on “Causes of Marine Mortality of Salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea” in Vancouver, Canada

May 7–9 Enforcement Evaluation and Coordination Meeting (EECM) in Kodiak, Alaska, USA

May 27–29 Bering-Aleutian Salmon International Survey (BASIS) Working Group Meeting in Vladivostok, Russia

October 6–11 10th Annual Meeting of the Commission in Vladivostok, Russia

2003

May 21–22 Enforcement Evaluation and Coordination Meeting (EECM) in Queen Charlotte City, BC, Canada

May 27 Republic of Korea became the fifth member of the Commission.

May 29–30 Research Planning and Coordinating Meeting (RPCM) in Seattle, Washington, USA

May 30 Bering-Aleutian Salmon International Survey (BASIS) Working Group Meeting in Seattle, Washington, USA

October 23–31 11th Annual Meeting of the Commission in Honolulu, Hawaii, USA

November 1–2 International Workshop on “Application of Stock Identification in Defining Marine Distribution and Migration of Salmon” in Honolulu, Hawaii, USA

December T. Uoya takes office as Deputy Director.

2004

May 12–13 Research Planning and Coordinating Meeting (RPCM) in Petropavlovsk-Kamchatsky, Russia

May 14 Bering-Aleutian Salmon International Survey (BASIS) Working Group Meeting in Petropavlovsk-Kamchatsky, Russia

May 26–27 Enforcement Evaluation and Coordination Meeting (EECM) in Kushiro City, Hokkaido, Japan

October The NPAFC Public Lecture “Pacific Salmon a Gift from the Sea” took place in Sapporo, Hokkaido, Japan

October 24–29 12th Annual Meeting of the Commission in Sapporo, Hokkaido, Japan

October 30–31 International Workshop “BASIS-2004: Salmon and Marine Ecosystems in the Bering Sea and Adjacent Waters” in Sapporo, Hokkaido, Japan
2005

April 21–22 Research Planning and Coordinating Meeting (RPCM) in Nanaimo, BC, Canada

May 18–19 Enforcement Evaluation and Coordination Meeting (EECM) in Vladivostok, Russia

October

- New NPAFC Science Plan 2006-2010 was approved.
- 13th Annual Meeting of the Commission in Seogwipo, Jeju Island, Republic of Korea
- 2nd NPAFC-PICES Joint Symposium “The status of Pacific salmon and their role in North Pacific marine ecosystems” in Seogwipo, Jeju Island, Republic of Korea

2006

February 28–March 1 Enforcement Evaluation and Coordination Meeting (EECM) in Juneau, Alaska, USA

March 2 Enforcement Symposium in Juneau, Alaska, USA

April 24–25 Research Planning and Coordinating Meeting (RPCM) in Sapporo, Hokkaido, Japan


October 23–27

- 14th Annual Meeting of the Commission in Vancouver, BC, Canada
- S. Urawa takes office as Deputy Director.

2007

February 28–March 1 Enforcement Evaluation and Coordination Meeting (EECM) in Busan, Republic of Korea

April 25–27 Research Planning and Coordinating Meeting (RPCM) in Honolulu, Hawaii, USA

October

- Long-Term Monitoring and Research Project funded by Moore Foundation was started.
- 15th Annual Meeting of the Commission in Vladivostok, Russia
2008

February 27–29 Enforcement Evaluation and Coordination Meeting (EECM) and North Pacific IUU Tripartite Meeting in Vancouver, BC, Canada

April 7–9 First Meeting for the Long-Term Research and Monitoring Plan (LRMP) in Sokcho, Republic of Korea

April 10–11 Research Planning and Coordinating Meeting (RPCM) in Sokcho, Republic of Korea

September 29–October 2 Second Meeting of the LRMP in Nanaimo, BC, Canada

November 17–21 16th Annual Meeting of the Commission in Seattle, WA, USA


2009

February 23–25
Enforcement Evaluation and Coordination Meeting (EECM) and 2nd Enforcement Workshop in Fukuoka, Japan

April 21–23
Research Planning and Coordinating Meeting (RPCM) in Yuzhno-Sakhalinsk, Russia

June 18–20
Third Meeting of the Long-Term Research and Monitoring Plan (LRMP) in Hon-Shiogama, Japan

November 2–6
17th Annual Meeting of the Commission in Niigata, Japan

December 1
Deputy Director’s term in office of S. Urawa extended for one year.

2010

April 20–21 Enforcement Evaluation and Coordination Meeting (EECM) in Yuzhno-Sakhalinsk, Russia

May 19–20 Research Planning and Coordinating Meeting (RPCM) in Vancouver, Canada

November 1–5 18th Annual Meeting of the Commission in Busan, Korea

December 1 N. Davis takes office as Deputy Director
2011

January–July
The first NPAFC intern Ms. Y. Ogata from Japan, worked at the NPAFC Secretariat.

February 23–24
Enforcement Evaluation and Coordination Meeting (EECM) in Honolulu, Hawaii, USA

April 11–19
Research Planning and Coordinating Meeting (RPCM) by email communication

October 23–28
19th Annual Meeting of the Commission in Nanaimo, BC, Canada

October 30–31
NPAFC International Workshop on Explanations for the High Abundance of Pink and Chum Salmon and Future Trends in Nanaimo, BC, Canada

2012

January
The first NPAFC trainee Mr. Youngho Park from Korea starts working at the Secretariat

March 27–28 Enforcement Evaluation and Coordination Meeting (EECM) and Enforcement Workshop on “Procedures of Interception and Seizure of Vessels of Interest on the High Seas” in Jeju Island, Korea

April 10–18 Research Planning and Coordinating Meeting (RPCM) by email communication

October 7–12 20th Annual Meeting of the Commission in St. Petersburg, Russia

2013

March 26–27 Committee on Enforcement (ENFO) Meeting in Vancouver, British Columbia, Canada

April 23–24 Committee on Scientific Research and Statistics (CSRS) Meeting in Honolulu, Hawaii, USA

April 25–26 NPAFC 3rd International Workshop on Migration and Survival Mechanisms of Juvenile Salmon and Steelhead in Ocean Ecosystems in Honolulu, Hawaii, USA

June 30 Vladimir Fedorenko retires after 14 years of service

July 1 Vladimir Radchenko takes office as Executive Director

September 23–27 Committee on Finance and Administration (F&A) Meeting by email communication

November 12–15 21st Annual Meeting by email communication
Meeting and Events—28 Years of History

2014

March 11–14 Virtual Enforcement Evaluation and Coordination Meeting (EECM) by email communication

March 12–16 22nd Annual Meeting of the Commission in Portland, Oregon, USA

September 8 Second NPAFC intern, Ms. Yulia Simakova from Russia starts working at the Secretariat

October 17 NPAFC-PICES Collaborative Workshop on Linkages between the winter distribution of Pacific salmon and their ecosystems, Yeosu, Republic of Korea.

2015

February 17–19 The International Year of the Salmon (IYS) Scoping Meeting in Vancouver, BC, Canada

March 2–5 Joint Patrol Schedule Meeting (JPSM) by email communication

May 11–15 23rd Annual Meeting of the Commission in Kobe, Japan

May 17–19 The NPAFC International Symposium on Pacific Salmon and Steelhead Production in a Changing Climate: Past, Present, and Future in the Kobe International Conference Center, Kobe, Japan

October 1 Third NPAFC intern, Mr. Minho Kang from Republic of Korea starts working at the Secretariat

December 1 Ms. Wakako Morris takes annual leave with consequent retirement on January 15, 2016, after 30 years of service at the INPFC and NPAFC Secretariats.

2016

February 29–March 3 Joint Patrol Schedule Meeting (JPSM) by e-mail communication

March 15–16 The 2nd International Year of the Salmon (IYS) Scoping Meeting in Vancouver, BC, Canada

May 16–20 24th Annual Meeting of the Commission in Busan, Republic of Korea

May 20 the 2016-2020 NPAFC Science Plan is adopted

September 6 Fourth NPAFC intern, Ms. Madeline Young from Canada starts working at the Secretariat

September 19 Fifth NPAFC intern, Mr. William (Bill) Stanbury from Canada starts working at the Secretariat
2017
February 14–16 Joint Patrol Schedule Meeting (JPSM) by e-mail communication
February 28–March 2 The 2017 IYS Working Group and North Pacific Steering Committee (NPSC) meetings, Richmond, BC, Canada

May 15–19 25th Annual Meeting of the Commission in Victoria, BC, Canada
May 15 25th NPAFC Anniversary Celebration
August 14–17 NASCO President, Jóannes Hansen visit to NPAFC
September 15 Sixth NPAFC intern, Ms. Caroline Graham from the United States starts working at the Secretariat
December 1 Seventh NPAFC intern, Mr. Pavel Emelin from Russia starts working at the Secretariat

2018
February 5–8 The 2018 IYS Working Group and North Pacific Steering Committee (NPSC) meetings, Vancouver, B.C., Canada
March 12–20 Joint Patrol Schedule Meeting (JPSM) by e-mail communication
May 20 ENFO Workshop on the IUU threat and indicators and warnings in the North Pacific Ocean in Khabarovsk, Russian Federation
May 21–25 26th Annual Meeting of the Commission in Khabarovsk, Russian Federation
May 26–27 First NPAFC-IYS Workshop on Pacific Salmon Production in a Changing Climate in Khabarovsk, Russian Federation
July 4 Eighth NPAFC intern, Ms. Stephanie Taylor from Canada starts working at the Secretariat
October 11 The IYS Opening event in Vancouver, B.C., Canada
October 23–26 NPAFC President, Dr. Suam Kim visit to NASCO
December 4 Ninth NPAFC intern, Mr. Nathan Bendriem from the United States starts working at the Secretariat

2019
January 20–22 The 2019 IYS Working Group and North Pacific Steering Committee (NPSC) meetings, Vancouver, B.C., Canada
February 16–March 19 First International Gulf of Alaska cruise on board of R/V Professor Kaganovskiy
March 18–21 Joint Patrol Schedule Meeting (JPSM) by e-mail communication
May 12 ENFO workshop on New Technologies in Combating IUU Fishing in Portland, Oregon, U.S.A.
May 13–17 27th Annual Meeting of the Commission in Portland, Oregon, U.S.A.

July 1 Tenth NPAFC intern, Ms. Laura Tessier from Canada, starts working at the Secretariat
October 19–21 NPAFC/PICES Workshop on Developing a collaborative, integrated ecosystem survey program to determine climate/ocean mechanisms affecting the productivity and distribution of salmon and associated pelagic fishes across the North Pacific Ocean in Victoria, BC on October 19–21, 2019.
September 2 Eleventh NPAFC intern, Ms. Moronke Harris from Canada starts working at the Secretariat
### Joint Scheme of Patrolling 2019

<table>
<thead>
<tr>
<th>Month</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
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<td>Canada</td>
<td>Aircraft</td>
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<td>Russia</td>
<td>East Arctic Border Directorate</td>
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<td>Sakhalin Border Directorate</td>
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<td>United States</td>
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**Local Calendar**

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<thead>
<tr>
<th></th>
<th>Aircraft</th>
<th>Surface</th>
<th>Reserve</th>
<th>Program</th>
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<td>Red</td>
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<td>Orange</td>
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</table>

**TBA:** Tentatively between May & August 2019, details TBA

**FAI 144 hours / 36 days JCO To be Decided**

**US Coast Guard will be conducting flights out of Japan**

**CGC MELTON will be supporting the NPAFC during June-September**

**Note:** Reserve will be flown if earlier flights are cancelled due to weather, maintenance, etc.
## List of Actions on Prioritized Recommendations from the NPAFC Performance Review Report (in Progress)

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<tbody>
<tr>
<td>24</td>
<td>The Commission should encourage the Parties to become parties to the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, and ENFO should analyze that applicability of the Agreement to the NPAFC context and provide recommendations to the Commission thereon.</td>
<td>1. Parties will report on their accession to the Agreement at 2012 Annual Meeting.</td>
<td>Each Party will give a proposal at 2013 Annual ENFO Meeting.</td>
<td>In progress</td>
<td>In progress</td>
<td>Revisit the issue at 2014 Annual Meeting.</td>
<td>Revisit the issue at 2015 Annual Meeting.</td>
<td>Revisit the issue at the 2020 NPAFC Annual Meeting. Currently, Canada, Japan, the Republic of Korea, and the United States ratified or acceded to the PSM Agreement.</td>
</tr>
<tr>
<td>36</td>
<td>The Commission should consider the rationale and modus operandi for how best to engage with the new North Pacific RFMO.</td>
<td>Memorandum of Cooperation between the two organizations will be drafted and presented for approval by the Commission tentatively at 2013 Annual Meeting, depending on the time of formation of the new organization.</td>
<td>The organization is not yet formed.</td>
<td>In progress</td>
<td>In progress</td>
<td>In progress</td>
<td>Collaborative enforcement strategy with NPFC will be discussed at the NPF 2015 Annual Meeting.</td>
<td>Enforcement collaboration has been proposed to NPFC. Development of collaborative strategy was discussed at the 2019 NPAFC Annual Meeting. It is agreed that a request to NPFC for detection of salmon bycatch should be submitted. Collaborative enforcement strategy with NPFC will be discussed at the 2020 NPAFC Annual Meeting.</td>
</tr>
</tbody>
</table>
### Research Vessel Cruise Plans in 2019 and a Future Cruise

<table>
<thead>
<tr>
<th>Party/Program</th>
<th>Survey Region</th>
<th>Vessel and Tentative Dates</th>
<th>Research Focus</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada/ DFO Nanaimo</td>
<td>Canada EEZ: waters surrounding Vancouver Island and central coast of British Columbia, (Strait of Georgia, Gulf Islands, Eastern Discovery Islands, Johnstone Strait), and Puget Sound</td>
<td>The chartered commercial trawl vessel; June 17–July 7, September 10–28, 2019 (preliminary schedule)</td>
<td><strong>Trawl surveys:</strong> The objectives of these surveys are to provide estimates of numbers of Pacific salmon entering and rearing in the Strait of Georgia; collect biological information on Pacific salmon and associated fish community and their interactions/competition; collect DNA samples for stock identification purposes and to examine stock specific information on abundance, migration timing and distribution of juvenile salmon; examine possible interactions between juvenile salmon and other pelagic species encountered in surveys including diet overlap and competition and predation; describe the ambient oceanographic conditions; measure the changes in the condition and distribution of individual stocks of Chinook and coho salmon during their first marine summer and relate to early marine growth and subsequent survival of the stock; and quantify the biomass of zooplankton and describe zooplankton species community composition. The objective of summer surveys are to provide biomass estimates of pelagic fish assemblages; examine species distribution and association with oceanographic conditions and prey communities; collect oceanographic data and provide zooplankton sampling; collect biological samples, including tissue collection for DNA analyses and identification of juvenile salmon stocks; and enumerate stomach contents of juvenile salmon, Pacific herring and other important pelagic fishes for predator-prey and bioenergetics studies.</td>
<td>Chrys Neville, DFO, Nanaimo, <a href="mailto:chrys.neville@dfo-mpo.gc.ca">chrys.neville@dfo-mpo.gc.ca</a>; NPAFC Doc. 1840</td>
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<tr>
<td>Party/Program</td>
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<tr>
<td>Canada/ DFO Nanaimo</td>
<td>Canada EEZ: southern Queen Charlotte Sound, Queen Charlotte Strait, and Johnstone Strait</td>
<td>The chartered commercial trawl vessels, M/V Nordic Pearl and M/V SeaCrest: June 15–19; September 30–October 9, 2019</td>
<td>Trawl surveys: The objective of surveys in June and October is to provide estimates of juvenile salmon, and determine their diet, relative growth and energy density at different locations of their migration to open ocean through Johnstone Strait; to collect information on associated physical oceanography; and to assess the distribution and biomass of zooplankton.</td>
<td>Chrys Neville, DFO, Nanaimo, <a href="mailto:chrys.neville@dfo-mpo.gc.ca">chrys.neville@dfo-mpo.gc.ca</a>; NPAFC Doc. 1840</td>
</tr>
<tr>
<td>Japan/ FRA Sapporo</td>
<td>NPAFC Convention Area: Bering Sea</td>
<td>R/V Hokko maru: July 17–August 9, 2019</td>
<td>Surface trawl survey: hook-and-line gear will also be used. The objective is to obtain information on the distribution, abundance, and other biological characteristics.</td>
<td>Kengo Suzuki, HNFRI, <a href="mailto:skengo@affrc.go.jp">skengo@affrc.go.jp</a>; NPAFC Doc. 1809</td>
</tr>
<tr>
<td>Japan/ Hokkaido University</td>
<td>NPAFC Convention Area: North Pacific Ocean and Bering Sea</td>
<td>T/V Oshoro maru: Western North Pacific: May 10–21, 2019</td>
<td>Automatic squid jigging, drift gillnet, long-line, and hook-and-line will be used. The objective is to obtain biological data on the distribution and ecology of salmon and other pelagic fishes. A research gillnet less than 2.5 km in length will be used;</td>
<td>Kengo Suzuki, HNFRI, <a href="mailto:skengo@affrc.go.jp">skengo@affrc.go.jp</a>; NPAFC Doc. 1809</td>
</tr>
<tr>
<td>Russia/ Pacific Branch of VNIRO (TINRO)</td>
<td>Russian EEZ and NPAFC Convention Area: northwestern North Pacific</td>
<td>R/V TINRO June 1–July 13, 2019</td>
<td>Midwater trawl (model RT/TM 80/396 m) survey: The primary objects are to collect biological information on plankton and nekton communities and describe the physical and biological oceanographic conditions in this region. The major purpose of these studies is the estimation of anadromous Pacific salmon abundance and biomass for short-term forecasting of their returns and possible catch.</td>
<td>Olga Temnykh, Pacific Branch of VNIRO (TINRO), <a href="mailto:olga.temnykh@tinro-center.ru">olga.temnykh@tinro-center.ru</a>; NPAFC Doc. 1834</td>
</tr>
<tr>
<td>Party/Program</td>
<td>Survey Region</td>
<td>Vessel and Tentative Dates</td>
<td>Research Focus</td>
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<tr>
<td>Russia/Pacific Branch of VNIRO (TINRO)</td>
<td>Russian EEZ: western Bering Sea; southern Okhotsk Sea</td>
<td>R/V TINRO: September 27–October 7, 2019 R/V Professor Kaganovskiy and R/V TINRO: October 10–November 4, 2019</td>
<td><strong>Midwater trawl (model RT/TM 80/396 m) survey:</strong> The major purpose is estimation of catadromous Pacific salmon abundance and biomass for forecasting returns and possible catch in the following years. Studies of salmon distribution, salmon food habits, dependence of salmon feeding on biomass and composition of plankton and nekton communities, changes of biological condition of salmon during the catadromous migrations and foraging, salmon spatial differentiation, structure of stocks contributing to the mixture and the influence of abiotic environment upon the salmon quantitative allocation and migration are planned.</td>
<td>Olga Temnykh, Pacific Branch of VNIRO (TINRO), <a href="mailto:olga.temnykh@tinro-center.ru">olga.temnykh@tinro-center.ru</a>; NPAFC Doc. 1834</td>
</tr>
<tr>
<td>Russia/Pacific Branch of VNIRO (TINRO)</td>
<td>Out of Russian EEZ and Convention Area: Gulf of Alaska (GoA)</td>
<td>R/V Professor Kaganovskiy: January 16–31, 2019; February 16–March 18, 2019</td>
<td><strong>Trawl survey:</strong> The main objectives of the expedition are to identify the stock specific rearing areas for all species of salmon, their abundances, spatial distribution and their condition and to study the ocean ecology of Pacific salmon in western Subarctic front zone of North Pacific in the winter.</td>
<td>Alexey A. Somov, Pacific Branch of VNIRO (TINRO), <a href="mailto:aleksey.somov@tinro-center.ru">aleksey.somov@tinro-center.ru</a>; NPAFC Doc. 1808</td>
</tr>
<tr>
<td>USA/NMFS, Southeast Alaska Coastal Monitoring</td>
<td>U.S. EEZ: northern region of Southeast Alaska</td>
<td>R/V Sashin: May 30–31, 2019; F/V Medea: June 18–23; July 26–31; August 20–26, 2019</td>
<td>The cruise of the R/V Sashin in May will focus on oceanography (it is not a trawl survey). Summer cruises of the F/V Medea will be <strong>surface trawl surveys:</strong> sampling will include oceanographic and surface trawl stations in Icy/Chatham Straits, Stephens Passage. The objective of Southeast Coastal Monitoring Project research is to evaluate the status of the pelagic ecosystem including juvenile salmon and other pelagic fish species in the northern region of Southeast Alaska.</td>
<td>James Murphy, NMFS, NOAA, Auke Bay Labs, <a href="mailto:jim.murphy@noaa.gov">jim.murphy@noaa.gov</a>; NPAFC Doc. 1846</td>
</tr>
<tr>
<td>USA/AFSC/ADF&amp;G/APU</td>
<td>U.S. EEZ: Northern Bering Sea</td>
<td>R/V <em>Northwest Explorer</em>: August 27–September 20, 2019</td>
<td><strong>Pelagic trawl surveys:</strong> Primary objectives of the survey include estimate abundance, distribution, size, and stock-structure of juvenile Chinook salmon in the coastal Northeast Bering Sea shelf; collect information on the pelagic fish ecosystem in the coastal Northeast Bering Sea shelf; collect electronic oceanographic data and water samples for temperature, salinity, chlorophyll, nutrients, and particulate organic carbon with a SBE9-11 CTD and Niskin bottles; and collect zooplankton and ichthyoplankton samples with a 20 cm and 60 cm bongo array.</td>
<td>James Murphy, NMFS, NOAA, Auke Bay Labs, <a href="mailto:jim.murphy@noaa.gov">jim.murphy@noaa.gov</a>; NPAFC Doc. 1845</td>
</tr>
</tbody>
</table>

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1863 (App. 2): 46
## Sample and Data Requests (2019 CSRS Meeting)

<table>
<thead>
<tr>
<th>Request No.</th>
<th>Requesting Party</th>
<th>Requested Party</th>
<th>Request</th>
<th>Research Purpose</th>
<th>Contact Persons</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>R17-01</td>
<td>Russia</td>
<td>USA Canada</td>
<td><strong>Sockeye salmon genetic samples</strong> (tissues) requested from adult fish (n=100). Samples from next water objects: Columbia River, Fraser River, Skeena River, Nass River, Henderson Lake, Sprout Lake, Great Central Lake, Babine Lake, Taku River.</td>
<td>Development of SNP baseline data</td>
<td>Alexander Bagaev (<a href="mailto:bugaev.a.v@kamnipro.ru">bugaev.a.v@kamnipro.ru</a>) contacts Bill Templin (<a href="mailto:bill.templin@alaska.gov">bill.templin@alaska.gov</a>)</td>
<td>Request was completed.</td>
</tr>
<tr>
<td>C18-02</td>
<td>Canada</td>
<td>Japan</td>
<td><strong>Sockeye salmon tissues collected</strong> from immature fish caught during the 2018 Japanese central Bering Sea salmon research cruise.</td>
<td>Evaluate stock composition of sockeye salmon distributed in the central Bering Sea in 2018.</td>
<td>Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) contacts Shunpei Sato (<a href="mailto:shuns@frc.afrc.go.jp">shuns@frc.afrc.go.jp</a>)</td>
<td>Request was completed.</td>
</tr>
<tr>
<td>C19-01</td>
<td>Canada</td>
<td>Japan</td>
<td><strong>Sockeye salmon tissues collected</strong> from immature fish caught during the 2019 Japanese central Bering Sea salmon research cruise.</td>
<td>Evaluate stock composition of sockeye salmon distributed in the central Bering Sea in 2019.</td>
<td>Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) contacts Shunpei Sato (<a href="mailto:shuns@frc.afrc.go.jp">shuns@frc.afrc.go.jp</a>)</td>
<td></td>
</tr>
<tr>
<td>R19-01</td>
<td>Russia</td>
<td>USA Canada</td>
<td><strong>Coho salmon</strong> genetic samples collected from spawning populations (2–3 per region). Number of fish should be about 100 fish per collection. Fin clip preserved in alcohol preferred. <strong>United States:</strong> Different regions of Alaska: (1) Chukchi Sea/ Kotzebue Sound, (2) Norton Sound, (3) Yukon River, (4) Bristol Bay (Kuskokwim River), (5) Alaska peninsula, (6) Aleutian Islands, (7) Cook Inlet, (8) Kodiak/Afognak Islands, (9) Prince William Sound, (10) Southeast Alaska, (11) Washington (Puget Sound), (12) Oregon (Columbia River), (13) California. <strong>Canada:</strong> different regions of British Columbia: Nass River, North Coast, Queen Charlotte Islands, Skeena River, Fraser River, Central Coast, South Coast, Vancouver Island.</td>
<td>Augmentation of baseline.</td>
<td>Alexander Bagaev (<a href="mailto:bugaev.a.v@kamnipro.ru">bugaev.a.v@kamnipro.ru</a>) contacts Jim Seeb (<a href="mailto:jseeb@u.washington.edu">jseeb@u.washington.edu</a>) and Bill Templin (<a href="mailto:bill.templin@alaska.gov">bill.templin@alaska.gov</a>) for USA. Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) for Canada.</td>
<td></td>
</tr>
<tr>
<td>Request No.</td>
<td>Requesting Party</td>
<td>Requested Party</td>
<td>Request</td>
<td>Research Purpose</td>
<td>Contact Persons</td>
<td>Comments</td>
</tr>
<tr>
<td>------------</td>
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<td>----------</td>
</tr>
<tr>
<td>R19-02</td>
<td>Russia</td>
<td>USA Canada</td>
<td><strong>Chinook salmon</strong> genetic samples collected from spawning populations (2–3 per region). Number of fish should be about 100 fish per collection. Fin clip preserved in alcohol preferred. <strong>United States:</strong> Different regions of Alaska: (1) Chukchi Sea/ Kotzebue Sound, (2) Norton Sound, (3) Yukon River, (4) Bristol Bay (Kuskokwim River), (5) Alaska peninsula, (6) Aleutian Islands, (7) Cook Inlet, (8) Kodiak/Afognak Islands, (9) Prince William Sound, (10) Southeast Alaska, (11) Washington (Puget Sound), (12) Oregon (Columbia River), (13) California. <strong>Canada:</strong> different regions of British Columbia: Nass River, North Coast, Queen Charlotte Islands, Skeena River, Fraser River, Central Coast, South Coast, Vancouver Island.</td>
<td>Augmentation of baseline.</td>
<td>Alexander Bugaev (<a href="mailto:bugaev.a.v@kamnipro.ru">bugaev.a.v@kamnipro.ru</a>) contacts Jim Seeb (<a href="mailto:jseeb@u.washington.edu">jseeb@u.washington.edu</a>) and Bill Templin (<a href="mailto:bill.templin@alaska.gov">bill.templin@alaska.gov</a>) for USA; Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) for Canada.</td>
<td></td>
</tr>
<tr>
<td>R19-03</td>
<td>Russia</td>
<td>USA Canada</td>
<td><strong>Sockeye salmon</strong> genetic samples collected from spawning populations (2–3 per region). Number of fish should be about 100 fish per collection. Fin clip preserved in alcohol preferred. <strong>United States:</strong> (1) Southeast Alaska, (2) Washington, (3) Oregon. <strong>Canada:</strong> (1) Nass River, (2) Queen Charlotte Islands.</td>
<td>Augmentation of baseline.</td>
<td>Alexander Bugaev (<a href="mailto:bugaev.a.v@kamnipro.ru">bugaev.a.v@kamnipro.ru</a>) contacts Jim Seeb (<a href="mailto:jseeb@u.washington.edu">jseeb@u.washington.edu</a>) and Bill Templin (<a href="mailto:bill.templin@alaska.gov">bill.templin@alaska.gov</a>) for USA; Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) for Canada.</td>
<td></td>
</tr>
<tr>
<td>R19-04</td>
<td>Russia</td>
<td>USA Canada</td>
<td><strong>Pink salmon</strong> genetic samples collected from spawning populations. <strong>United States:</strong> Samples collected from 2–3 odd-year and 2–3 even-year populations from (1) Washington, (2) Oregon. <strong>Canada:</strong> Samples collected from and 2–3 populations. <strong>Even-year:</strong> different regions of British Columbia: Nass River, North Coast, Skeena River, Central Coast, South Coast, Vancouver Island.</td>
<td>Augmentation of baseline.</td>
<td>Alexander Bugaev (<a href="mailto:bugaev.a.v@kamnipro.ru">bugaev.a.v@kamnipro.ru</a>) contacts Jim Seeb (<a href="mailto:jseeb@u.washington.edu">jseeb@u.washington.edu</a>) and Bill Templin (<a href="mailto:bill.templin@alaska.gov">bill.templin@alaska.gov</a>) for USA; Terry Beacham (<a href="mailto:Terry.Beacham@dfo-mpo.gc.ca">Terry.Beacham@dfo-mpo.gc.ca</a>) for Canada.</td>
<td></td>
</tr>
</tbody>
</table>
NPAFC FUNDING REQUEST FORM

This form is to be used by CSRS or ENFO when requesting funds from F&A

Date: May 16, 2019

Project requests for NPAFC funds must fall within the mandate of Commission activities and highlight expected benefits, if funded. These funds are not expected to subsidize or offset budgets for the normal operations of each Party. Approved projects must improve understanding of the biology or promote the sustainability or protection of Pacific salmon. Projects must be completed within specific timeframes and not be funded on an ongoing basis. Approval requires a consensus of all Parties.

Requesting Committee: CSRS

Title of Request: Funding Request for the International Year of the Salmon (IYS), year 4 of planning and the focal year

Relevance to committee’s Terms of Reference, Science Plan, etc.

The International Year of the Salmon initiative, as proposed in NPAFC Document 1663, was approved by the NPAFC and the North Atlantic Salmon Conservation Organization (NASCO) in mid-2016. The IYS themes were explicitly integrated into the 2016–2020 NPAFC Science plan (Document 1665) themes CSRS Working Group activities.

As described in the Report of the Executive Director on the Commission’s Activities and the Secretariat’s Performance (NPAFC Doc. 1813), significant progress was made implementing the IYS initiative in 2018/19. At the time of report writing, the IYS Secretariat held over 160 meetings, hosted seven workshops, held 10 IYS sessions at international meetings and officially launched the IYS in the North Pacific. There were 20 opening events held across the northern hemisphere in the fall of 2018. The IYS signature project, the five-week International Gulf of Alaska Expedition, was successfully completed on March 18, 2019. The scientific crew consisted of 21 scientists, from all five NPAFC member countries, covered 4,800 nautical miles and covered a grid of 60 stations. The team used emerging scientific techniques to for the first time determine the origin stock of captured fish at sea. They were able to determine species specific abundances in the Gulf of Alaska. The expedition was considered a success by all involved and attracted enormous media attention.

A substantial effort was also made by both NPAFC and NASCO to strengthen our partnership through face-to-face meetings and refining meeting arrangements to ensure the cultural and procedural expectation of both organizations are met. Unfortunately, the fifth meeting of the Coordinating Committee was cancelled due to the U.S. government shutdown, however, the IYS technical team, a subset of the Coordinating Committee was able to meet in October 2018 to continue to refine the implementation of the IYS across the northern hemisphere.

The NPAFC Working Group and the North Pacific Steering Committee, which includes IYS Working Group members, met for the third time in late January 2019. Further details on the IYS implementation and records of these meetings have been provided in IYS WG Report (NPAFC Doc. 1815) and the IYS NPSC Report (NPAFC Doc. 1816) endorsed by CSRS at the First Plenary Session of the 2019 Annual Meeting. Participants in both meetings provided direction on IYS communication and outreach plans, including how to engage a wider audience in the western Pacific, and provided suggestions for soliciting
external funding for the IYS. Information gathered from the working group and committee members was used by Conner & Associates, who are contracted to help the IYS secretariat solicit external funding. The IYS Secretariat and Conner and Associates are preparing a funding request document, modelled after the IYS Strategic Implementation Plan (Memo #G18-23, F18-18) that will be used to engage funders.

The focus of 2019/20 will be to continue to develop relationships with partners, obtain external funding, plan and host IYS workshops and symposia and implement the 2021 Pan-Pacific high seas survey and the Likely Suspects Framework through the IYS WG and Theme Counsel Groups. We will also continue outreach with the public during the focal year (see 2018/19 IYS Workplan).

This request is for $443.5K (See Appendix A). This includes $248.5K in operating funds for the IYS Secretariat and a further $195K to support project and fund development. The highest priority is for the $248.5K in core funding elements listed here. These funds allow the IYS Secretariat to function at a base level and are essential component of funding proposals as the majority of funders will expect some investment by the NPAFC and often stipulate that core operating costs are not eligible expenditures. The IYS Secretariat will continue to actively seek external funding to cover the $195K for project planning and fund development.

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>FY 2019/20</th>
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<tbody>
<tr>
<td>Wages for Administration</td>
<td>$166,039</td>
</tr>
<tr>
<td>Travel to support IYS Administration</td>
<td>$43,000</td>
</tr>
<tr>
<td>IYS Administration–Operation funds</td>
<td>$39,555</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$248,594</strong></td>
</tr>
</tbody>
</table>

The operating budget includes salaries for a part-time North Pacific IYS Director, a full-time IYS Coordinator, a part-time Communications Officer and a part-time Administration Clerk. The Director will be responsible for overall management of the N. Pacific Operations and the Coordinator will assist with operations, coordinate activities for research and fundraising, lead IYS planning of science and outreach programs for the N. Pacific, meeting planning, managing program records, and assist with administration where needed. The Communications Officer will lead IYS N. Pacific communications including building international and media partnerships, developing materials to promote the IYS, acting as a liaison between the NPAFC and the public, managing the IYS website and social media sites. The Administration Clerk will be responsible for the administration of the IYS, including IYS related fiscal matters.

Fund development will continue to work with current partnerships and funders such as Tides Canada/Moore Foundation and the Pacific Salmon Foundation but will seek additional large contributions from government, Foundations and private donors through a series of targeted meetings with funders identified by Conner and Associates and NPPC members.

The Likely Suspects framework project has a number of emerging partners including the European Union, ICES and a group of 25 UK NGOs in the Atlantic that have formed a coalition to pool funding and resources to fund Likely Suspects freshwater case studies. The IYS Secretariat submitted an expression of interest to the British Columbia Salmon Restoration and Innovation (BCSRIF) fund regarding IYS activities in British Columbia. On May 7, 2019, the IYS Secretariat was asked to submit a complete proposal by BCSRF, highlighting the Likely Suspects and 2021 High Seas Expedition projects. The Secretariat is close to securing approximately US$500K in funding from the National Center for Ecological Analysis and Synthesis/Moore Foundation for data mobilization associated with the Likely Suspects Framework.

Total amount requested (Canadian dollars): **$443,594**
Date(s) of Expenditure:

1. Continued executive level engagement of NASCO and NPAFC to affirm commitments to the IYS partnership to consider improvements to governance arrangements and communication, including face to face meeting of CC—to be determined.
2. Continued engagement of NASCO and partners in research and outreach planning specifically in the implementation of the Likely Suspects Project—throughout 2019/20.
4. Manage IYS website and social media sites—part time Communications Officer hired July 2019.
5. Continue to develop results-based plans for outreach and each of the IYS research themes/outcomes—Theme Counsel Groups formed February 2019, chairs and vice-chairs assigned May 2019, first meetings summer 2019.
6. Develop partnerships to fund IYS projects—throughout 2019/20; BC SRIF application to be submitted May 24, 2019.

Expected benefits to the Commission:

The IYS is a mechanism to engage partners in the work of the NPAFC Science Plan. This has the potential to leverage current investments in science by the Parties and significantly enhance the progress and outcomes required to understand and manage salmon effectively in a rapidly changing environment. The public and media attention the IYS has generated has positioned the NPAFC at the forefront of salmon management activities in the North Pacific and exposed the Commission to many new partners, from various sectors. At the opening event in October 2018, both the Canadian federal government and the Government of British Columbia used the event to make important announcements regarding their management of Pacific salmon, and have continued to include IYS, and thus NPAFC in their programming.

The Coordinating Committee and the North Pacific Steering Committee will facilitate planning the activities and continue to find resources required for IYS research and outreach projects. Donors and funders external to the Parties are showing strong interest in the IYS, and are beginning to commit funds to IYS projects, but have not been inclined to fund IYS management infrastructure.

Supplementary Information (abstract, project organization, timeframe, etc):

The CSRS is also requesting the assistance of F&A to continue to identify IYS champions at the Commission level.

In addition to providing excellent direction to the IYS Coordinating and Steering Committees, Commissioner Dr. Carmel Lowe and Commissioner Mr. Doug Mecum were able to champion the IYS at a high level within the Canadian and United States governments respectively. As champions they were able to ensure high level engagement of the IYS within government, academia, NGO’s and the private sector within their countries. The IYS overall could benefit from similar champions from Japan, Korea, and Russia to assist the Working Group members with engagement, communication, and fundraising.
Appendix 1 – Detailed Budget for the International Year of the Salmon for FY 2019/20

<table>
<thead>
<tr>
<th>Wages for Administration</th>
<th>FY 2019/20</th>
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<tbody>
<tr>
<td>NP Director (0.5 time)</td>
<td>$50,000</td>
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<tr>
<td>NP Coordinator (full-time)</td>
<td>$63,479</td>
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<tr>
<td>NP Communications Officer (part-time)</td>
<td>$27,560</td>
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<td>Administration Clerk (part-time)</td>
<td>$25,000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$166,039</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Travel to support IYS Administration</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Domestic travel</td>
<td>$10,000</td>
</tr>
<tr>
<td>2020 NPAFC Annual Meeting and 3rd IYS Workshop Japan (May)—Saunders/Taylor</td>
<td>$10,000</td>
</tr>
<tr>
<td>2020 Face-to-Face IYS Coordinating Committee Meeting (Date &amp; Location TBD)—Radchenko/Saunders</td>
<td>$8,000</td>
</tr>
<tr>
<td>North Pacific Steering Committee Meeting</td>
<td>$15,000</td>
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<tr>
<td><strong>Total:</strong></td>
<td><strong>$43,000</strong></td>
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</table>

<table>
<thead>
<tr>
<th>IYS Administration—Operation funds</th>
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<tbody>
<tr>
<td>NPAFC Communications: communications materials—brochures, posters, promotional items, advertising, webcasting, and hosting on-line</td>
<td>$15,000</td>
</tr>
<tr>
<td>IYS Website – additional items to add to contract*</td>
<td>$1,055</td>
</tr>
<tr>
<td>Supplies ($10K), computers ($4K), Office 365 ($5K), phone bills ($2K), misc. ($2.5K)</td>
<td>$23,500</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$39,555</strong></td>
</tr>
</tbody>
</table>

| Administration Total | **$248,594** |

<table>
<thead>
<tr>
<th>Project Management and Fund Development</th>
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</thead>
<tbody>
<tr>
<td>Travel to support existing and establish new partnerships and manage projects</td>
<td>$15,000</td>
</tr>
<tr>
<td>Support for State of Salmon/Salmon in a Changing Salmosphere Theme Counsel group to host meetings/symposia</td>
<td>$20,000</td>
</tr>
<tr>
<td>Support for New Frontier's/Data Theme Counsel Group to host meetings/symposia</td>
<td>$20,000</td>
</tr>
<tr>
<td>Support for Human Dimension meetings for the Theme Counsel group and Management Steering Committee</td>
<td>$20,000</td>
</tr>
<tr>
<td>Support for Outreach Theme Counsel Group and Study Group to meet and host workshops/symposia</td>
<td>$20,000</td>
</tr>
<tr>
<td>Support for final congress</td>
<td>$0</td>
</tr>
<tr>
<td>Partnership and funding development contract and related travel</td>
<td>$100,000</td>
</tr>
<tr>
<td>Total</td>
<td>$195,000</td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$443,594</td>
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</tbody>
</table>

**To be completed by F&A:**
If accepted, funds will be charged to:

- [ ] Working Capital Funds $____________
- [ ] SFSR Funds $____________
- [ ] General Funds $____________
- [ ] Others $____________
Annex A

IYS Workplan for the 2019/20 Fiscal Year

Background

The International Year of the Salmon initiative, as proposed in NPAFC Document 1663, was approved by the NPAFC and the North Pacific Salmon Conservation Organization (NASCO) in mid-2016. The IYS was explicitly integrated into the 2016–2020 NPAFC Science Plan (Document 1665) with themes that have been linked to the Science Plan themes and CSRS Working Group activities.

As described in the IYS Annual Report (Memo #F18-08, S18-07), significant progress was made towards implementing the IYS initiative in 2017/18. Due to the considerable effort required to conduct planning and coordination, an IYS Pacific Secretariat was established to conduct the work. A substantial effort was also made by both NPAFC and NASCO to strengthen our partnership through face-to-face meetings and refining meeting arrangements to ensure the cultural and procedural expectations of both organizations are met. The Coordinating Committee (CC) held a face-to-face meeting in late January 2018 in London, England. CC members continue to consider the formation of Research and Outreach Study Groups to plan and coordinate outreach activities, research activities and associated workshops/symposia at the hemispheric level throughout the initiative. An IYS Implementation Strategy for the Pacific Basin has been developed to support the research planning process in the North Pacific that will be linked to hemispheric activities when there are shared research priorities.

At the 26th annual meeting, the NPAFC conditionally approved C$300,000 to be used for year three of the IYS planning and launch for the fiscal year. Among the C$300,000, C$272,000 was used from the Moving Fund, C$15,000 was used from the Special Fund for Scientific Research (SFSR), and C$13,000 was used from the amount reserved for annual travel of CSRS Chairperson or his/her appointed designated (also from the Moving Fund), as proposed by the United States. The approval of the budget presented by the IYS Working Group was conditional on the IYS Working Group examining the priorities, identifying strategies for fundraising, and providing outcomes to the F&A within 90 days of the annual meeting (August 23, 2018). This was completed, and the budget approved. An additional C$77,500 voluntary contribution was received from the United States and was incorporated into the budget, resulting in an overall budget of C$372,500 (+$74,750 from Canada).

For the 2019/20 fiscal year, the NPAFC has indicated that the IYS funding should originate from external donors. To help generate donations, the IYS Secretariat has engaged Conner and Associates to provide contracted development (fundraising) capacity to implement a partnership development strategy. The IYS Working Group Secretariat has proposed a budget of $458,585 for the 2019/20 FY. A total of $263K of the budget covers administration to keep the IYS Secretariat functioning in particular implementing the IYS communications, fund-raising, planning and implementation of the highest priority signature projects—the 2021 High Seas Surveys and the Likely Suspects. Resources to conduct projects developed this fare in the IYS Implementation Plan and those that will be put forward by the Theme Counsel Groups will require external funding. The Workplan also includes projected budgets through completion of the IYS in 2022.

Objectives and Deliverables

1. Continued executive level engagement of NASCO and NPAFC to affirm commitments to the IYS partnership to consider improvements to governance arrangements and communication. Significant effort was made in 2018/19 by both NPAFC and NASCO to strengthen our partnership through face-to-face meetings and refining meeting arrangements to ensure the
2. cultural and procedural expectations of both organizations are met. NPAFC President Suam Kim travelled to Edinburgh to attend the IYS Opening in Scotland and to meet with NASCO President Joanannes Hansen. This level of engagement will continue in 2019/20 and another face-to-face meeting of the Coordinating Committee will be held (date to be determined). Deliverable: Hold a face-to-face meeting of the coordinating committee and have an NPAFC representative attend NASCO’s annual meeting.

3. Continued engagement of NASCO and partners in research and outreach planning specifically in the implementation of the Likely Suspects Project. The IYS WORKING GROUP has formed the Theme Counsel Groups to plan and coordinate research activities by theme. We are holding space on each group for a representative from the Atlantic. Atlantic involvement has yet to be confirmed. Until the Groups are confirmed staff will work on an ad hoc basis with the NASCO parties and partners. Several NGOs in the Atlantic have formed a coalition to jointly fund research and outreach activities in relation to the IYS with a focus on the Likely Suspects Framework and are looking to combine their efforts with efforts undertaken in the Pacific. We are pursuing resources to establish freshwater case studies that will be linked to coastal and high seas surveys (2021 Expeditions). The Likely Suspects will be supported by data mobilization and salmon networking cloud-based system development. Deliverable: Coordinate with Pacific and Atlantic to implement the Likely Suspects Framework and hold workshops to share results.

4. Implementation of the 2021 Expedition
The end-of-winter trawl survey in the Gulf of Alaska conducted in February–March 2019 was a successful proof of concept that demonstrated that a collaborative research model was successful and will provide an understanding of the abundance, condition, country of origin and location of stocks from salmon producing countries in the northeastern Pacific Ocean. The expedition had two major objectives: (1) to test the hypothesis that the abundance of salmon is largely determined by the end of their first winter at sea, and (2) to see if an international team can effectively work together to make the discoveries we need to make in a future of rapidly changing ecosystems. The Gulf of Alaska expedition demonstrated the importance of future international cruises involving all Pacific salmon producing countries. The results are being widely used for outreach purposes by a number of partners including UBC, PSF, NOAA, and DFO. A research plan for a 2021 five vessel Pan-Pacific salmon ecosystem is underway and will be the highest priority Signature Project in the Pacific. An NPAFC/PICES joint session examining the preliminary results of the 2019 GoA Expedition and approaches to the multi-national Pan-Pacific High Seas Survey project will be held at the PICES 2019 Annual Meeting, Victoria, BC, Canada, October 2019. Deliverable: Research and operational plan for the 2021 surveys and secure commitments of funds or vessel time. Report from the PICES workshop.

5. Manage IYS website and social media sites.
The IYS website launched in October 2018, IYS North Pacific Facebook and Twitter pages were launched in March 2018, the IYS North Pacific Instagram page was launched in January 2019. Through funding from Tides Canada, a part-time Communications Specialist was hired in February 2019 to assist in general IYS outreach and communications during the focal year. A long-term media plan is under development. Use of the IYS website across the hemisphere has steadily grown since it was launched. After being in use for seven months, it has become clear that there are areas of the website that could be updated to better meet the needs of the public. The website design will be revisited and updates such as filtering projects by subject area and color-coding events based on whether they are past or present will be suggested. A long-term management plan for the website, including troubleshooting for when issues arise will be created.

1063 (App. 10)......63
Deliverable: Develop a long-term communications plan for social media and management plan for the IYS website. Revisit the website structure and propose updates as needed.

6. Continue to develop results-based plans for outreach and each of the IYS research themes/outcomes.
   A major emphasis of the work plans proposed for 2017/18 and 2018/19 was to hold workshops to plan high-impact projects to reach the stated outcomes for the five research themes, as well as outreach. Since full funding was not available, some elements of four of the original eight workshops were not completed. Moreover, upon recommendation by the North Pacific Steering Committee, four Theme Counsel Groups were formed to complete planning under the following research themes: (1) status of salmon and salmon in a changing salmosphere, (2) human dimension, (3) new frontiers and information systems, (4) outreach and communication. Workshops will be conducted on high impact projects related to Genomics and the use of micro-chemistry to determine the ocean distribution of salmon (CSI Salmon).
   Deliverables: Facilitate the Theme Counsel Groups as they work on the IYS research theme/outcome activities. Reports on Genomics and CSI Salmon.

7. Develop partnerships to fund IYS projects.
   The NPAFC Secretariat will continue work to identify and pursue potential sources of funding for secretariat capacity and projects. Contracted development expertise will provide direction to partnership development for IYS projects. An application to the British Columbia Salmon Restoration and Innovation Fund was submitted on April 16, 2019. The proposal focuses on building an effective network, mobilizing data and signature projects—High Seas Expeditions 2021 and the Likely Suspects framework. Data mobilization will be tested using The International Salmon Data Laboratory (ISDL) concept has been supported by Neo4j, a graph database software company. Neo4j has offered use of its technology free of charge and is supporting Systum Inc. as they work to develop the underlying code of the ISDL. The ISDL may also be connected to the State of Alaska Salmon and People (SASAP) project, pending approval from the Moore Foundation for the repurposing of funds from the State of Alaska and Salmon People Project.
   Deliverable: Continue to work to develop partnerships and secure funding for IYS activities.

8. Plan and coordinate IYS workshops and symposia.
   The remaining IYS theme planning workshops will be completed in 2019/20. The Theme Counsel Groups will plan and coordinate research activities and associated workshops/symposia in the Pacific throughout the IYS initiative. A list of upcoming IYS workshops in the Pacific has been shared with NASCO and a similar list from the Atlantic has been shared with NPAFC. The technical team will help facilitate the presence of scientists from both basins at workshops, to include a hemispheric element. The IYS Secretariat has partnered with SFU to hold a symposium at the American Fisheries Society Annual Meeting in September 2019. There will also be an IYS workshop at the PICES Annual meeting in October 2019. The Symposium Steering Committee initially formed as part of the governance arrangements to coordinate the Opening Symposium will be tasked with organizing a wrap-up Symposium in 2021/22.
   Deliverable: Plan the two upcoming IYS workshops in Fall 2019 and support the Theme Counsel Groups in their theme planning workshops.

   Deliverable: Meet objectives within operating budgets.
Annex B

International Year of the Salmon (IYS)
IYS North Pacific Steering Committee Research Planning and Coordination Meeting

DRAFT AGENDA

Purpose: To convene a meeting of the IYS North Pacific Steering Committee and IYS Working Group to review progress in 2019 and develop funding strategies for Signature Projects and research theme projects identified by expert teams.

Dates: 3 days

Location:
To be determined

Day 1
- Welcome and introductions
- Review meeting objectives
- Review of IYS progress

Day 2
- Discussion of funding strategies for outreach and IYS outcomes/research themes
- IYS Symposium linkages to research themes
- Wrap up and Next steps

Participants: North Pacific Steering Committee including IYS-Working Group and Theme Counsel Members

Deliverables:
- Meeting report
- Research workplans and funding strategies for IYS in the North Pacific
Proposal for 2020 NPAFC-IYS Workshop

Title: Third NPAFC-IYS Workshop on Linkage between Pacific Salmon Production and Environmental Changes

Date: May 23–25, 2020

Venue: Hakodate Research Center for Fisheries and Oceans (20-5 Benten-cho, Hakodate, Hokkaido 040-0051, Japan; https://center.marine-hakodate.jp/en/)

Co-sponsors/Partners (TBC): PICES, Fisheries Agency of Japan (FAJ), Japan Fisheries Research and Education Agency, Hokkaido Research Organization, Hokkaido University, and others

Science Committee (SC): Ed Farley (SSC, IYS WG, USA), Jim Irvine (SSC, IYS WG, Canada), Ju Kyoung Kim (SSC, IYS WG, Korea), Svetlana Naydenko (SSC, Russia), Shigehiko Urawa* (SSC, Chairperson, IYS WG, Japan), Mark Saunders (IYS WG & NPSC Chairpersons), Jeongseok Park (NPAFC Secretariat)
*Chairperson

Local Organizing Committee (LOC): TBD

Background:
The North Pacific Anadromous Fish Commission (NPAFC) and North Atlantic Salmon Conservation Organization (NASCO) are leading to promote a grand program “International Year of the Salmon (IYS)” with focal year in 2019. The IYS is an international framework for collaborative outreach and research. Through outreach efforts the IYS will raise awareness of what humans can do to better ensure salmon and their varied habitats are conserved and restored against increasing environmental variability. The IYS overall theme is “Salmon and People in a Changing World” with six themes: (1) Status of Salmon; (2) Salmon in a Changing Salmosphere; (3) New Frontiers; (4) Human Dimension; (5) Information Systems; and (6) Outreach and Communication. The IYS will stimulate an investment in research and leave a legacy of knowledge, data/information systems, tools, and a new generation of scientists better equipped to provide timely advice to inform rational management of salmon. The IYS program is assimilated in the 2016–2020 NPAFC Science Plan, whose research themes are (1) Status of Pacific salmon and steelhead trout; (2) Pacific salmon and steelhead trout in a changing North Pacific Ocean; (3) New technologies; (4) Management systems; and (5) Integrated information systems. The progress of Science Plan will be reviewed through the series of NPAFC-IYS workshops.

Purposes:
- Improve current knowledge of the migration, distribution, growth and survival of salmon and their environment in the ocean;
- Increase understanding of the causes of variations in salmon production in a changing climate;
- Anticipate future changes in the distribution and abundance of salmon and their marine ecosystems;
- Develop and apply new technologies and analytical methods to research and management of salmon; and
- Invent integrated information/management systems to support research, sustainable management, and public understanding for the conservation of salmon.
Tentative Topics (Topics will be determined after the Second NPAFC-IYS Workshop):

(1) Perspectives of salmon production in changing environments (moderators: SC & TCG-1)
   • Current status of key salmon populations and their habitats
   • Effects of freshwater habitat changes on salmon production
   • Salmon survival mechanisms in the early ocean life and winter periods
   • Cause of variations in abundance, growth and survival of salmon
   • Effects of climate change on future distribution and carrying capacity of salmon and their ecosystems

(2) New technologies/integrated information systems for salmon research and management (moderators: SC & TCG-3)
   • Molecular stock identification, genomics, and environmental DNA
   • Intelligent tags, remote sensing, and salmon observation systems
   • Salmon enhancement/conservation renovations
   • Common information and data management systems

(3) Salmon and people in a changing world (moderators: SC, TCG-2 & TCG-4)
   • International/regional connection and collaboration for sustainable resource management
   • Habitat protection and restoration activities
   • Various linkage between salmon and local fisheries/culture/education/recreation etc.
   • Resilience of salmon and people: lessons from the 2011 disaster in eastern Japan

Oral and Poster Presentations:
The workshop will be conducted by oral and poster presentations basically in English. Sessions will be comprised of contributed presentations, which will be selected for oral or poster presentation.

Abstracts:
✓ Abstracts for oral and poster presentations must be received by the NPAFC Secretariat by e-mail (secretariat@n pacf.org) no later than January 15, 2020.
✓ Abstracts must be prepared according to guidelines and sample format.
✓ The Science Committee will select abstracts by mid-February 2020, and authors will be notified of the results by the NPAFC Secretariat.
✓ Presenters who had their abstracts selected will receive guidelines for their oral or poster presentations and a formatting guide for extended abstracts from the NPAFC Secretariat.

Workshop Proceedings:
Oral and poster presenters are asked to submit an extended abstract that is due at the time of the workshop. The extended abstracts will be compiled into the workshop proceedings and issued as a NPAFC Technical Report after the workshop. The Technical Report will be available online at the NPAFC website.

Key Dates for Workshop:
Mid-July 2019: Develop the workshop plan by SC with TCGs, LOC and Secretariat
Late-July 2019: First announcement of workshop and call for papers
January 15, 2020: Abstract submission due
Mid–February 2020: Announcement of abstract selection to authors
Late–February 2020: Second announcement of workshop and registrations
Early–March 2020: Workshop and hotel registrations open
Mid-April 2020: Workshop and hotel registrations due
May 23–25, 2020: Workshop
June 30, 2020: Extended abstracts due
Registration:
Regular Registration: **US$150 (C$200 or 16,600 yen)**
Student Registration: Free except for reception
Registration includes:
- Transportation (shuttlebus) between official hotel and venue
- Attendance all oral and poster sessions
- A program and abstract booklet
- Coffee/tea breaks
- Reception on May 23, 2020 (with fee 6,000 yen for students and companions)

Cost Estimates:
- Room and equipment rentals: 26,500 yen (C$319) in total
  - Oral (big) room (120 people in classroom style): 800 yen/h x 10 h x 3 days = 24,000 yen
  - Poster room: free at entrance space (40 posters in max)
  - Equipment (project, screen, microphone etc.): free
  - WiFi: free
  - Banners: 2,500 yen
- Coffee/tea breaks (two breaks/day for 3 days): 462,000 yen (C$5,566)
- Reception (May 23 evening for 85 people): 510,000 yen (C$6,145)
- Transportation between hotel and venue (two shuttles for 3 days): 363,000 yen (C$4,373)
- Printing and shipping of program and abstract booklet: 150,000 yen (C$1,807)
- Inviting keynote speakers (one from each countries): 1,300,000 yen (C$15,663)

Total Cost: **2,811,500 yen (C$33,873)**
Estimate of Registration (US$150 x 80 people): 1,328,000 yen (C$16,000)
External funding from FAJ and others (TBD): 1,483,500 yen (C$17,873)
Request to F&A: none

*C$1.00 = 83 yen as of April 26, 2019*

Other Consideration:
Lunch
- There are few restaurants near the venue.
- Require preliminary order for lunch (around C$10 for a lunch box)

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FOR IMMEDIATE RELEASE

NORTH PACIFIC ANADROMOUS FISH COMMISSION HOLDS 27TH ANNUAL MEETING

Portland, Oregon, USA (May 17, 2019)—The 27th Annual Meeting of the North Pacific Anadromous Fish Commission (NPAFC) was held from May 13–17, 2019, in Portland, Oregon, USA.

The NPAFC is an international organization that promotes the conservation of Pacific salmon and steelhead in the North Pacific and its adjacent seas. It serves as a venue for cooperation in and coordination of enforcement activities and scientific research. The vast majority of salmon catches in the North Pacific originate from NPAFC member countries, which are Canada, Japan, the Republic of Korea, the Russian Federation, and the United States.

At the Commission’s Annual Meeting, Plenary Sessions and the Commission’s three standing committees, Enforcement, Scientific Research and Statistics, and Finance and Administration, were convened to discuss issues related to salmon and steelhead in the NPAFC Convention Area, which is the high seas of the North Pacific north of 33°N latitude.

This year, the Commission presented Capt. John Vincent O’Shea, United States Coast Guard (USCG) (Ret.) with the prestigious NPAFC Award for his significant contributions to the NPAFC for many years. He is a retired USCG Captain and Senior Executive with more than 25 years of experience managing marine fisheries policy issues at the regional, national, and international levels. His last assignment in the USCG was Chief of Operations for the 17th Coast Guard District, in Alaska. Capt. O’Shea was given the NPAFC Award in recognition of his sustained contributions in the areas of compliance and enforcement to the Commission’s mission to conserve and manage anadromous salmon and steelhead stocks in the North Pacific Ocean and its adjacent seas.

At the Commission’s enforcement meetings, the coordinated enforcement efforts of the NPAFC member countries in 2018 covered significant portions of the NPAFC Convention Area, over 400 hours of aircraft patrols, and more than 100 ship days, to deter and interrupt illegal, unreported, and unregulated (IUU) fishing activity. These combined multilateral efforts identified multiple possible instances of IUU fishing in 2018, and one Chinese flagged fishing vessel, Run Da, conducting illegal high-seas drift net (HSDN) fishing was intercepted by the USCG Cutter Alex Haley in June. The joint boarding and inspection of the Run Da revealed 80 tons of frozen salmon and one ton of squid on board. This vessel was added to the list of apprehended illegal salmon fishing vessels in the NPAFC Convention Area.

At the Commission’s scientific meetings, leading salmon researchers from member countries reviewed commercial catch statistics compiled from information provided by each of the member nations. Preliminary 2018 North Pacific-wide salmon catches exceeded one million metric tonnes (1,067 thousand metric tonnes; 651.3 million fish).

Pink salmon constituted the majority of the total commercial catch (55% by weight) followed by chum (26%) and sockeye salmon (16%). Coho comprised 2% of the catch, while Chinook salmon, cherry salmon, and steelhead trout were each less than 1% of the catch by weight.
In 2019, salmon research surveys are planned to take place in the Bering Sea, the southern Chukchi Sea, the northwestern North Pacific, and the southern Sea of Okhotsk. Researchers will be examining conditions such as migration timing, abundance, distribution, survival, marine ecology, run size forecasting, stock identification, and salmon growth and body condition at sea. On March 18, 2019, the International Gulf of Alaska Expedition 2019 was successfully completed with 21 scientific personnel from five Pacific Rim countries (Canada, Japan, Korea, Russia, and the United States) aboard the chartered Russian Research Vessel Professor Koganovskiy. Such international expedition is the first in decades to study salmon in the high seas and has already made many exciting discoveries.

The Commission discussed activities and plans for the International Year of the Salmon (IYS) which has a focal year in 2019 with research and outreach projects and events continuing through 2022. In October 2018, the NPAFC officially announced the start of the IYS by holding an opening event in Vancouver, BC, Canada. They released a call to action for an intense burst of outreach and research through 2022 that will fill knowledge gaps, develop tools to equip and train a new generation of scientists and managers and raise awareness among decision makers, which, in combination, will achieve the conditions necessary for the future resilience of salmon and people in a rapidly changing world.

The five-day NPAFC Annual Meeting closed with an invitation from Japan to the Parties to attend the 2020 Annual Meeting in Hakodate, Japan.

-END-

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About NPAFC

The NPAFC is an international organization that promotes the conservation of salmon (chum, coho, pink, sockeye, Chinook, and cherry salmon) and steelhead trout in the North Pacific and its adjacent seas, and serves as a venue for cooperation in and coordination of scientific research and enforcement activities. The NPAFC Convention Area is located in international waters north of 33°N latitude in the North Pacific, Bering Sea and the Sea of Okhotsk. NPAFC member countries include Canada, Japan, the Republic of Korea, the Russian Federation, and the United States of America.
North Pacific Anadromous Fish Commission

FOR IMMEDIATE RELEASE

INTERNATIONAL COLLABORATION IS KEY ELEMENT FOR SUCCESS IN COMBATING ILLEGAL FISHING IN THE NORTH PACIFIC

Portland, Oregon, USA (May 17, 2019)—At the Annual Meeting of the North Pacific Anadromous Fish Commission (NPAFC), fisheries enforcement representatives from member countries (Canada, Japan, the Republic of Korea, the Russian Federation, and the United States) reported on the successful 2018 efforts to combat IUU (illegal, unreported, and unregulated) fishing on the high seas of the North Pacific.

Prior to the 2019 Committee on Enforcement (ENFO) regular meeting, a one-day ENFO workshop on “Combating IUU Fishing and New Technologies” was held. At the workshop, there were presentations from six invited global enforcement and commercial experts. Presentations focused on overviews of contemporary approaches to Monitoring, Control and Surveillance (MCS) development, including collaborative organizations and new technologies in combating IUU fishing that could potentially be applied within the NPAFC Convention Area.

Vessels fishing on the high seas historically used large-scale high-seas driftnets (HSDN)—a gear that is now internationally banned due to the high rates of bycatch of non-target species, including salmon. The Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean further prohibits fishing for salmon within the high seas of the North Pacific Ocean. The NPAFC member countries have achieved a unique forum for successful and efficient enforcement of these conservation measures within the NPAFC Convention Area. These efforts have brought pressure on fishing vessels and their flag States and drastically reduced high-seas driftnet and salmon fishing within the North Pacific.

The coordinated enforcement efforts of the NPAFC member countries in 2018 covered significant portions of the NPAFC Convention Area with over 400 hours of aircraft patrols, and more than 100 ship-days, to deter and interrupt IUU activity. These combined multilateral efforts identified multiple possible instances of IUU fishing in 2018. A Chinese flagged fishing vessel, Run Da, conducting HSDN fishing was intercepted by the United States Coast Guard (USCG) Cutter Alex Haley in June. After a joint boarding and inspection on June 16 by the USCG and the People’s Republic of China (PRC) Coast Guard shipriders, custody of the vessel was transferred from the USCG Cutter Alex Haley to the PRC Coast Guard Vessel 2301 on June 21, 2018, for prosecution. The joint boarding team discovered 80 tonnes of frozen salmon and one ton of squid on board. This vessel was added to the list of apprehended illegal salmon fishing vessels in the NPAFC Convention Area.

Member countries also discussed the status of acceptance of the Food and Agriculture Organization Port State Measures Agreement. This international agreement is designed to harmonize and strengthen controls and deter illicit activity by preventing illegally caught fish from entering the global marketplace. The Agreement went into force on June 5, 2016. Currently, 60 members have formally deposited their instruments of adherence. The Republic of Korea acceded on January 14, 2016; the U.S. ratified on February 26, 2016; and Japan deposited its instrument of accession to the Agreement on May 19, 2017. Effective and consistent application of this Agreement by nations will add a new level of determent by decreasing the profitability of illegal transshipping of fish at sea and in port.
Ongoing efforts to curtail the large-scale HSDN threat by continuing a constant vigilance at sea and ports is crucial for sustainable fisheries management and the conservation of salmon in the North Pacific. Multilateral enforcement operations coordinated in the NPAFC arena, regular information exchanges between NPAFC-member enforcement agencies, and a consistent enforcement presence in the North Pacific, all act as effective deterrents against IUU fishing activities.

-END-

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The NPAFC Convention Area is located in international waters north of 33°N in the North Pacific, Bering Sea and the Sea of Okhotsk.

North Pacific Anadromous Fish Commission

FOR IMMEDIATE RELEASE

HIGH SEAS PACIFIC SALMON RESEARCH REVIEWED AND PLANNED AT NPAFC ANNUAL MEETING

Portland, Oregon, USA (May 17, 2019)—International scientific experts of the North Pacific Anadromous Fish Commission (NPAFC) member countries (Canada, Japan, the Republic of Korea, the Russian Federation, and the United States) completed a five-day meeting in Portland, Oregon, USA, to review current information related to salmon abundance and biology during the Commission’s 27th Annual Meeting.

In addition to presenting salmon catch and hatchery statistics, scientists planned, reviewed, and coordinated exchanges of scientific data and samples, and assessed scientific studies of Pacific salmon and steelhead in international waters and the adjacent areas of the North Pacific.

The International Year of the Salmon (IYS) Signature Project, The International Gulf of Alaska Expedition was the first large-scale, integrated, winter, pelagic ecosystem research survey, with a particular focus on Pacific salmon. This expedition covered an area of approximately 700,000 km² between February 16 and March 18, 2019. A summary of preliminary findings of this expedition onboard the R/V Professor Kaganovskiy was reviewed and additional research cruise plans for 2019 were also discussed. These could include salmon surveys in the Bering Sea, the northwestern North Pacific, and the southern Sea of Okhotsk. Research cruises may employ survey vessels from a variety of sources including government, university, and chartered fishing boats. Research survey objectives vary by season and location, and include data-gathering on topics such as, migration timing, abundance, distribution, survival, marine ecology, run size forecasting, stock identification, and salmon growth and body condition.

The Commission discussed activities and plans for the IYS, which has a focal year in 2019 with research and outreach projects and events continuing through 2022. In October 2018, the NPAFC officially announced the start of the IYS by holding an opening event in Vancouver, BC, Canada. They released a call to action for an intense burst of outreach and research through 2022 that will fill knowledge gaps, develop tools to equip and train a new generation of scientists and managers, and raise awareness among decision-makers, which, in combination, will achieve the conditions necessary for the future resilience of salmon and people in a rapidly changing world.

The current 2016–2020 NPAFC Science Plan supports the NPAFC’s primary objective of promoting the conservation of Pacific salmon and steelhead trout within the Convention Area, and is integrated with the IYS initiative. To review the research progress for the NPAFC Science Plan, and to promote IYS activities and outreach in member countries, it was agreed that the third NPAFC-IYS Workshop on “Linkage between Pacific Salmon Production and Environmental Changes” will be held in Hakodate, Japan on May 23–25, 2020, following the 28th NPAFC Annual Meeting. The objectives of the workshop will be to: (1) improve current knowledge of the migration, distribution, growth, and survival of salmon and their environment in the ocean; (2) increase understanding of the causes of variations in salmon production in a changing climate; (3) anticipate future changes in the distribution and abundance of
salmon and their marine ecosystems; and (4) develop and apply new technologies and analytical methods to the research and management of salmon; and (5) invent integrated information/management systems to support research, sustainable management, and public understanding for the conservation of salmon.

-END-

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North Pacific Anadromous Fish Commission

FOR IMMEDIATE RELEASE

NORTH PACIFIC SALMON CATCHES REMAIN HIGH IN THE WEST BUT DECLINE IN THE EAST

Portland, Oregon, USA (May 17, 2019)—The North Pacific Anadromous Fish Commission (NPAFC) announced preliminary North Pacific-wide total salmon catches for 2018, as reported by its member countries Canada, Japan, the Republic of Korea, the Russian Federation, and the United States. Although Pacific salmon abundance in the North Pacific has declined somewhat since 2009, as indexed by aggregate commercial catches, catches remain at near all-time high levels. The total catch in 2018 exceeded one million metric tonnes (1,067 thousand metric tonnes; 651.3 million fish), the highest catch for an even-numbered year.

The member nations’ portions of the total catch included 63% by Russia (676.2 thousand metric tonnes), 27% by the United States (286.8 thousand metric tonnes; Alaska—278.1 thousand metric tonnes), 9% by Japan (91.3 thousand metric tonnes), 1% by Canada (12.6 thousand metric tonnes), and less than 1% by Korea (240 metric tonnes).

Pink salmon constituted the majority of the total commercial catch (55% by weight) followed by chum (26%) and sockeye salmon (16%). Coho comprised 2% of the catch, while Chinook salmon, chum salmon, and steelhead trout were each less than 1% of the catch by weight.

Pink and chum salmon dominate Asian catches. The majority of pink salmon were caught by Russia, which was 86% of the total North Pacific pink salmon catch of 592.1 thousand metric tonnes. The total catch of chum salmon was 272.5 thousand metric tonnes, with the largest portions of the catch by weight from Russia (41%) and Japan (29%). Catches by Asian member countries in 2018 were higher than any year since 2010, and the pink salmon catch was the highest on record.

Interannual variability in the total catch in North America has been more pronounced during the last decade than in previous decades, primarily because of variability in pink salmon catches. The relative abundance of salmon species varies with latitude. In Alaska, pink and sockeye salmon are the primary species, followed by chum salmon. In Canada, sockeye, pink, and chum salmon have historically comprised the largest catch, but in 2018 sockeye, chum and Chinook salmon were the most abundant species caught. In Washington, Oregon, and California, chum, sockeye, and Chinook salmon are typically the most abundant species caught. A particularly low catch of pink salmon (71.3 thousand metric tonnes) in 2018 resulted in the lowest total catches of salmon in North America since 1978.

Hatchery releases of salmon and steelhead from NPAFC member countries have been fairly stable since 1993, with approximately 5 billion fish released annually, but have declined slightly each year since 2014, primarily because of reduced Asian hatchery releases. Hatcheries released 2,147 million fish (44% of the total) in the United States, 1,648 million (34%) in Japan, 842 million (17%) in Russia, 262 million (5%) in Canada, and 11 million (< 1%) in Korea.
Hatchery releases were mostly chum (2,915 million, 59%) and pink salmon (1,437 million, 29%), followed by Chinook (235 million, 5%), sockeye (215 million, 4%), and coho salmon (80 million, 2%), steelhead trout (20 million, <1%), and cherry salmon (7 million, <1%).

Table 1. Preliminary 2018 commercial salmon catches in Canada, Japan, Korea, Russia, and the United States. Commercial catches by foreign fleets in the Russian EEZ are not included. Japanese catch data are based on Fisheries Research Agency data sources, not official statistics. Commercial catch weight for Alaska is based on landed weight (Alaska Department of Fish and Game).

(a) Preliminary 2018 commercial catch in millions of fish.

<table>
<thead>
<tr>
<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>2,618</td>
<td>0.240</td>
<td>0.751</td>
<td>0.198</td>
<td>0.152</td>
<td>-</td>
<td>-</td>
<td>3,959</td>
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<tr>
<td>Japan</td>
<td>0.000</td>
<td>7.309</td>
<td>26.706</td>
<td>0.001</td>
<td>0.001</td>
<td>-</td>
<td>0.000</td>
<td>34.017</td>
</tr>
<tr>
<td>Korea</td>
<td>-</td>
<td>-</td>
<td>0.096</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.096</td>
</tr>
<tr>
<td>Russia</td>
<td>19.536</td>
<td>420.805</td>
<td>49.772</td>
<td>4.430</td>
<td>0.072</td>
<td>0.010</td>
<td>-</td>
<td>494.625</td>
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<tr>
<td>USA</td>
<td>51.647</td>
<td>41.118</td>
<td>21.197</td>
<td>4.012</td>
<td>0.619</td>
<td>0.015</td>
<td>118.608</td>
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</tr>
<tr>
<td>Alaska</td>
<td>50.649</td>
<td>41.118</td>
<td>20.348</td>
<td>3.737</td>
<td>0.266</td>
<td>-</td>
<td>0.000</td>
<td>116.117</td>
</tr>
<tr>
<td>WOC</td>
<td>0.998</td>
<td>0.000</td>
<td>0.849</td>
<td>0.275</td>
<td>0.353</td>
<td>-</td>
<td>0.015</td>
<td>2.491</td>
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<tr>
<td>Total</td>
<td>73.801</td>
<td>469.472</td>
<td>98.522</td>
<td>8.641</td>
<td>0.844</td>
<td>0.010</td>
<td>0.015</td>
<td>651.305</td>
</tr>
</tbody>
</table>

WOC: Washington, Oregon, and California

(b) Preliminary 2018 commercial catch in metric tonnes (round weight).

<table>
<thead>
<tr>
<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
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<tr>
<td>Canada</td>
<td>6,899</td>
<td>514</td>
<td>3,790</td>
<td>586</td>
<td>820</td>
<td>-</td>
<td>-</td>
<td>12,609</td>
</tr>
<tr>
<td>Japan</td>
<td>0</td>
<td>9,715</td>
<td>80,338</td>
<td>2</td>
<td>5</td>
<td>1,254</td>
<td>0</td>
<td>91,314</td>
</tr>
<tr>
<td>Korea</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>240</td>
</tr>
<tr>
<td>Russia</td>
<td>43,280</td>
<td>511,093</td>
<td>110,763</td>
<td>10,682</td>
<td>363</td>
<td>20</td>
<td>-</td>
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</tr>
<tr>
<td>USA</td>
<td>121,369</td>
<td>70,822</td>
<td>77,411</td>
<td>13,840</td>
<td>3,331</td>
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<td>286,841</td>
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<td>118,791</td>
<td>70,822</td>
<td>73,992</td>
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<td>1,432</td>
<td>-</td>
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<td>WOC</td>
<td>2,578</td>
<td>0</td>
<td>3,419</td>
<td>778</td>
<td>1,899</td>
<td>-</td>
<td>67</td>
<td>8,741</td>
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<td>Total</td>
<td>171,548</td>
<td>592,144</td>
<td>272,542</td>
<td>25,110</td>
<td>4,519</td>
<td>1,274</td>
<td>68</td>
<td>1,067,205</td>
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WOC: Washington, Oregon, and California

Table 2. Preliminary 2018 hatchery releases in NPAFC member countries in millions of fish.

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<th></th>
<th>Sockeye</th>
<th>Pink</th>
<th>Chum</th>
<th>Coho</th>
<th>Chinook</th>
<th>Cherry</th>
<th>Steelhead</th>
<th>Total</th>
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<td>Canada</td>
<td>138.661</td>
<td>14.721</td>
<td>61.835</td>
<td>8.002</td>
<td>38.224</td>
<td>-</td>
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<td>Japan</td>
<td>0.187</td>
<td>112.766</td>
<td>1,527.884</td>
<td>-</td>
<td>-</td>
<td>7.224</td>
<td>-</td>
<td>1,648.061</td>
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<tr>
<td>Korea</td>
<td>-</td>
<td>-</td>
<td>10.710</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10.710</td>
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<td>Russia</td>
<td>14.306</td>
<td>257.159</td>
<td>567.337</td>
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<td>0.949</td>
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<td>747.397</td>
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<td>697.061</td>
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<td>-</td>
<td>-</td>
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<td>WOCI</td>
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<td>0.546</td>
<td>50.336</td>
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<td>-</td>
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<td>Total</td>
<td>214.877</td>
<td>1,436.991</td>
<td>2,915.163</td>
<td>80.455</td>
<td>234.610</td>
<td>7.224</td>
<td>20.322</td>
<td>4,909.642</td>
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WOCI: Washington, Oregon, California, and Idaho
Figure 1. North Pacific commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).

Figure 2. Asian commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).
Figure 3. North American commercial catch (thousands of metric tonnes) of Pacific salmon by species from 1925 to 2018 (2018 catches are preliminary).

Figure 4. Annual North Pacific hatchery releases (millions of fish) of Pacific salmon by member countries from 1952 to 2018.

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About NPAFC

The NPAFC is an international organization that promotes the conservation of Pacific salmon (chum, coho, pink, sockeye, Chinook, and cherry salmon) and steelhead trout in the North Pacific and its adjacent seas, and serves as a venue for cooperation in and coordination of scientific research and enforcement activities. The NPAFC Convention Area is located in international waters north of 33° N latitude in the North Pacific, Bering Sea and the Sea of Okhotsk. NPAFC member countries include Canada, Japan, the Republic of Korea, the Russian Federation, and the United States of America.
North Pacific Anadromous Fish Commission

FOR IMMEDIATE RELEASE

NPAFC INTERNATIONAL AWARD FOR SALMON AND STEELHEAD CONSERVATION PRESENTED TO CAPT. JOHN V. O’SHEA, USCG (RET.)

Portland, Oregon, USA (May 17, 2019)– Capt. John V. O’Shea, USCG (Ret.) received the 2019 North Pacific Anadromous Fish Commission Award at the Commission’s 27th Annual Meeting. Capt. O’Shea is a retired U.S. Coast Guard Captain and Senior Executive with more than 25 years of experience managing marine fisheries policy issues at the regional, national, and international levels. His last assignment in the Coast Guard was Chief of Operations for the 17th Coast Guard District, in Alaska.

Capt. O’Shea was selected for the award in recognition of his sustained contributions in the areas of compliance and enforcement to the Commission’s mission to conserve and manage anadromous salmon and steelhead stocks in the North Pacific Ocean and its adjacent seas. He contributed substantially to the functioning of the Commission’s Committee on Enforcement (ENFO) for many years. From 1991–1996, he served at the USCG Headquarters, Office of Law Enforcement as Program Manager for Fisheries Law Enforcement. In this position, he was responsible for Policy and Resources for all of the Coast Guard’s fisheries law enforcement domestic and foreign activities. He coordinated Coast Guard participation in the NPAFC as part of the Coast Guard’s on-going operations in the North Pacific against the use of large-scale high-seas driftnets.

In 1991, Capt. O’Shea was the Senior USCG member of the U.S. Delegation attending the final negotiating meeting in Ottawa, Canada, where an agreement was reached on the details of the structure of the NPAFC. This marked the beginning of what would become his 10-year involvement with the NPAFC ENFO. In 1993, Capt. O’Shea was a member of the U.S. State Department delegation that negotiated a bi-lateral boarding agreement with the People’s Republic of China (PRC). Thanks to his involvement during the negotiation, the resulting agreement brought substantial benefits to both parties, reflected in the fact that it has remained in effect for more than 25 years. The US-PRC Boarding Agreement provisions facilitate fisheries boarding on the high seas and enable the deployment of PRC fisheries enforcement officers onboard USCG vessels conducting High Sea Driftnet (HSDN) patrols. As a result, the Agreement has enhanced the efficacy and efficiency of the U.S. and other NPAFC member patrol efforts. From 1999–2001, Capt. O’Shea chaired the Committee on Enforcement working with ENFO members from all of the Parties to improve the visibility, efficiency and effectiveness of HSDN patrols. Thanks to the results of their efforts, HSDN cases are rare events now and, when they do occur, they are often the result of a multi-nation effort coordinated through the mechanisms of NPAFC.

Capt. O’Shea stated: “It is a great privilege to have been a part of this important and effective intergovernmental organization and to be honored with the distinguished North Pacific Anadromous Fish Commission Award. I am grateful to the United States for nominating me for this award and for the Commissioners who approved the award. It has been a great honor for me to be a member of the U.S. delegation to the NPAFC over the years. In accepting this award, I recognize the contributions, cooperation and great efforts of all my dedicated ENFO colleagues from Canada, Japan, the Republic of Korea, the Russian Federation, and the U.S., who supported me, and who continue to work tirelessly to...
support the goals of the Commission. It is indeed the highest honor for me. Thank you so much.”

Established in 2011, the NPAFC Award is given to recognize an individual or group whose sustained and significant contributions in scientific research, enforcement, international cooperation, or management have helped improve the conservation of anadromous salmon and steelhead stocks in the North Pacific Ocean.

Capt. John V. O’Shea is the recipient of the 2019 NPAFC Award.

-END-

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FOR IMMEDIATE RELEASE

FOCAL YEAR IN FULL FLIGHT FOR THE INTERNATIONAL YEAR OF THE SALMON (IYS)

Portland, Oregon, USA (May 17, 2019)—Agreement was reached at the 27th Annual Meeting of the North Pacific Anadromous Fish Commission (NPAFC) to continue implementation of the International Year of the Salmon (IYS) initiative with full force. A commitment of resources has been made to support collaboration with partners across the Northern Hemisphere to implement coordinated outreach and research, including continued commitment to build a five-country research plan for a high seas expedition across the North Pacific in the winter of 2021. On the evening of May 14th, the NPAFC hosted a reception with active and potential partners from around the Pacific Rim to raise awareness of the IYS. The importance of international collaboration was brought to light with stories from scientists including Dr. Laurie Weitkamp from the National Marine Fisheries Service laboratory in Newport, Oregon, who participated in the recent Gulf of Alaska Expedition this past February.

Environmental changes and human impacts across the Northern Hemisphere are placing salmon at risk. With increasingly variable aquatic conditions, we need more responsive and efficient approaches to understand and respond to the changes. While the challenges we face across the Northern Hemisphere are shared, there are limited connections between us. The IYS aspires to protect salmon by bringing people together to share and develop knowledge, raise public awareness and take action.

The IYS initiative has established partnerships and investments to kick-start research and public action in Europe, North America and Asia to give salmon the best chance to survive and thrive. They strive to leave a legacy of knowledge, data information systems, tools and a new generation of scientists and decision makers empowered to sustain salmon and the ecosystems they depend on.

The year of 2019 is the focal year of the International Year of the Salmon with research and outreach projects and events continuing through 2022. In October 2018, the NPAFC officially announced the start of the IYS by holding an opening event in Vancouver, BC, Canada. They released a call to action for an intense burst of outreach and research through 2022 that will fill knowledge gaps, develop tools to equip and train a new generation of scientists and managers and raise awareness among decision makers, which, in combination, will achieve the conditions necessary for the future resilience of salmon and people in a rapidly changing world.

On January 21–22, 2019, NPAFC hosted the third meeting of the North Pacific Steering Committee in Vancouver, with IYS partners from around the Pacific Rim. Participants discussed options to implement the plan to conduct outreach and research planning across the “salmosphere”, a strategy to generate funding support for IYS related activities, and the implementation of the IYS signature project.

On March 18, 2019, the International Gulf of Alaska Expedition 2019 was successfully completed with 21 scientific personnel from Canada, Japan, the Republic of Korea, the Russian Federation, and the United States aboard the chartered Russian Research Vessel Professor Kaganovskiy. Such international expedition is the first in decades to study salmon in the high seas and has already made many exciting discoveries. Stay tuned as this exciting initiative unfolds!
Members of the scientific team from Canada, Japan, Korea, Russia, and the United States upon the successful completion of the International Gulf of Alaska Expedition in Vancouver, BC, Canada, February 16–March 18, 2019.

-END-

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IX. List of 2019 Documents
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<td>Secretariat</td>
<td>Preliminary Cruise Plan of the R/V Professor Kaganovskiy to Study the Ocean Ecology of Pacific Salmon in the Winter in the Gulf of Alaska</td>
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<td>Russia</td>
<td>Preliminary Cruise Plan of the R/V Professor Kaganovskiy to Study the Ocean Ecology of Pacific Salmon in the Northwestern Pacific Ocean in Winter 2019</td>
<td>A. Somov</td>
<td>TINRO</td>
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<td>Japan</td>
<td>Cruise Plans of Japanese Research Vessels Involving Incidental Takes of Anadromous Fish in the North Pacific Ocean in 2019</td>
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<td>Canada, Japan, Korea, Russia, USA</td>
<td>Report of the 2019 International Year of the Salmon North Pacific Working Group Meeting</td>
<td>NPAFC IYS Working Group</td>
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<td>1816</td>
<td>Canada, Japan, Korea, Russia, USA</td>
<td>Report of the 2019 International Year of the Salmon North Pacific Steering Committee</td>
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<td>1817</td>
<td>USA</td>
<td>Proposed Thermal Marks for Brood Year 2019 Salmon in Alaska</td>
<td>D. Oxman</td>
<td>ADF&amp;G, Juneau</td>
<td>Mar 2019</td>
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<td>1818</td>
<td>USA</td>
<td>Releases of Otolith Marked Salmon from Alaska in 2018</td>
<td>D. Oxman</td>
<td>ADF&amp;G, Juneau</td>
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<td>1823(Rev. 1)</td>
<td>Japan</td>
<td>Releases of Otolith Marked Salmon from Japan between Summer of 2017 and Spring of 2018</td>
<td>K. Yamaya, M. Kuwaki, S. Urawa</td>
<td>FRA, Sapporo</td>
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<td>Microsatellite Identification of Sockeye Salmon Rearing in the South Central Bering Sea During Summer 2018</td>
<td>T. Beacham C. Wallace S. Sato</td>
<td>DFO, Nanaimo</td>
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<td>Otolith Thermal Mark for BroodYear 2018 and Proposed Thermal Marks for Brood Year 2019 Chum Salmon in Korea</td>
<td>J.K. Kim C.H. Jeon S.M. Youn</td>
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<td>Population Genetic Structure of Chum Salmon (Oncorhynchus keta) from Republic of Korea</td>
<td>E.A. Kim S.G. Kim</td>
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<td>Marked Salmon Production by the Hatcheries of Russia in 2018</td>
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<td>Biostatistical Information on Salmon Catches, Escapement and Enhancement Production in Russia in 2018</td>
<td>N. Klovach O. Temnykh V. Shevlyakov A. Lysenko E. Golub O. Burlak A. Bugaev A. Kaev I. Golovanov V. Ostrovsky</td>
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<td>Canadian Salmon Catch and Enhanced Salmon Production in 2017 and 2018</td>
<td>M. Thiess J. Bateman S. Hamilton M. Beere</td>
<td>DFO, Nanaimo DFO, Vancouver DFO, Nanimo BC FLNRO</td>
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<td>Juvenile Salmon Migration Observations in the Discovery Islands and Johnstone Strait in British Columbia, Canada in 2018</td>
<td>B. Johnston J. Gan S. Godwin M. Krkosek B. Hunt</td>
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<td>Recoveries of High Seas Tags and Tag Releases from High Seas Research Vessel Surveys in 2018 and the Winter of 2019</td>
<td>NPAFC Working Group on Salmon Marking</td>
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<td>C. Neville J. King</td>
<td>DFO, Nanaimo</td>
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<td>Proposed Thermal Marks for Salmon from Canada, Brood Year 2019</td>
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<td>1845</td>
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<td>Northern Bering Sea Surface Trawl and Oceanographic Survey Plan, 2019</td>
<td>J. Murphy S. Garcia K. Cieciel B. Harris E. Farley</td>
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<td>Southeast Alaska Coastal Monitoring Survey Plan for 2019</td>
<td>J. Murphy A. Piston E. Fergusson A. Gray</td>
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<td>Annual Survey of Juvenile Salmon, Ecologically-Related Species, and Biophysical Factors in the Marine Waters of Southeastern Alaska, May–August 2017</td>
<td>E. Fergusson J. Watson A. Gray J. Murphy</td>
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<td>2018 Pink Salmon Harvest Forecast Models from Southeast Alaska Coastal Monitoring Surveys</td>
<td>J. Murphy A. Wertheimer E. Fergusson A. Piston S. Heinl C. Waters J. Watson A. Gray</td>
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<td>1849</td>
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<td>Salmon Scale Wiki—an Interactive Online Protocol for Estimation of Chinook Salmon (Oncorhynchus tshawytscha) Scale Ages</td>
<td>B. Agler L. Wilson R. Brenner</td>
<td>ADF&amp;G, Juneau</td>
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<td>High Seas Salmonid Coded-Wire Tag Recovery Data, 2017</td>
<td>M. Masuda, E. Fergusson, J. Moss, J. Murphy, V. Tuttle, T. Holland</td>
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<td>Incidental Catches of Salmonids by U.S. Groundfish Fisheries in the Bering Sea/Aleutian Islands and the Gulf of Alaska, 1990–2018</td>
<td>G. Schnaittacher, R. Narita</td>
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