



7th NPAFC ANNUAL MEETING

REPRESENTATIVES of Canada, Japan, Russia, and the United States met in Juneau, Alaska, in October 1999 for the NPAFC Seventh Annual Meeting. Observers from the North Pacific Marine Science Organization (PICES) and the North Atlantic Salmon Conservation Organization (NASCO) also attended. Mr. David Bevan, President, (who was completing his two-year term of office) chaired the meeting.

The Committee on Enforcement reviewed unauthorized salmon fishing activities in 1999 (see ENFO Highlights, page 3). To deter illegal fishing on the high seas, this year's cooperative enforcement activities will remain at levels similar to 1999. An enforcement planning and coordinating meeting was scheduled for early March 2000 in Tokyo, Japan.

The Committee on Scientific Research and Statistics (CSRS) reviewed and discussed a broad range of issues concerning Pacific salmon stocks (see CSRS Highlights, page 4). Together with PICES, we will

hold a workshop to analyze factors affecting production of juvenile salmon in October 2000 in Tokyo, Japan. In addition, PICES and NPAFC are jointly sponsoring a scientific conference, "Beyond El Niño," in La Jolla, California, in March 2000. NPAFC plans to hold a joint meeting with NASCO on the common challenges facing Pacific and Atlantic salmon in 2001.

Representatives thanked the US delegation for their hospitality and the delightful reception at the Governor's mansion.

In closing remarks, President Bevan noted that NPAFC still has much work to do by "enlisting other countries in supporting our conservation and enforcement goals, eliminating salmon poaching in the convention area, and ensuring adequate financial resources are available to maintain our enforcement and research efforts."

Alaska Lt. Governor Fran Ulmer was elected as the new NPAFC President.

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top row, l to r: V. Fedorenko, O. Gritsenko, K. Imamura, G. McMinds, V. Izmailov, G. Kristianson, D. Brock, R. Jones; bottom row (l to r): H. Omori, S. Pennoyer, D. Bevan, F. Ulmer, T. Tebb, R. Kaminokado (Byrnes Photography)

PRESIDENT'S ADDRESS

New year's greetings to all my NPAFC colleagues.

I HOPE THE NEW YEAR and new millennium have brought new energy, enthusiasm and focus to the important work in which we are individually and collectively engaged.

It seems that everywhere I turn I see reminders of how important our work is. Every day in the media are stories about the oceans, about climate changes, about fisheries, and about our need to understand our world and to care for our resources sustainably so we can pass them on in a healthy condition to future generations.

Looking back over the last year, I think we should all feel proud of the work the NPAFC has accomplished, and encouraged by the ambitious agenda we have set for ourselves this year.

Plans are well underway for an enforcement planning and coordination meeting in early March. I am delighted that Japan will be hosting this meeting as a follow-up to last March's meeting on standardization of high-seas salmon fishing enforcement in Kodiak. This opportunity for continuing discussions of the issues raised at last year's Kodiak meeting and preparing for coordinated enforcement activities this year is extremely valuable. I am very pleased to hear that all four member nations expect to participate in this meeting in Tokyo.

Last year's joint enforcement activities were highly successful, and instrumental in deterring further illegal fishing activity. A strong, coordinated presence in the North Pacific and the ability to respond quickly and effectively will be equally crucial this fishing season.

I am also encouraged by the plans of the Committee on Scientific Research and Statistics to continue to work towards

greater coordination and cooperation in science and research activities. Annual committee meetings have been productive and useful. As each member nation feels the inevitable economic pressures and stresses on its research budget and resources, increasing cooperation and coordination of our individual strengths will allow us to work together with greater efficiency and effectiveness. The ability to coordinate the limited resources of each member will be critical to achieving our mutual goals.

The Science Sub-Committee is charged this year with developing a new science plan for NPAFC. Clearly we need a plan that will provide policy makers with the best scientific information on condition of our salmon stocks. I applaud Japan's annual commitment to NPAFC of four or more research vessel cruises, which have become the mainstay of our cooperative investigations in international waters. I commend Russia's and Canada's efforts to develop quantitative methods for assessment of salmon stocks at sea. I am pleased that NPAFC is now playing a leading role in the international coordination and application of new scientific technologies for salmon stock identification. I encourage all of you to give to the Science Sub-Committee your ideas and recommendations for a new plan that will swiftly achieve our mutual goal of conservation of anadromous stocks.

Continuing the lead from last year's successful NPAFC symposium on "Recent Changes in Ocean Production of Pacific Salmon," the March 2000 "Beyond El Niño" conference is another outstanding opportunity to bring together researchers from all over the world to share their re-

sults and insights. I welcome and encourage your attendance. Then we have another joint NPAFC-PICES event to look forward to in Tokyo in October, the juvenile salmon workshop. I appreciate the excellent work of all those who are involved in organizing both of these major efforts.

I am enthusiastically looking forward to my tenure as president of NPAFC, and hope that you will always feel free to contact me with your ideas, suggestions, and concerns. The work of the NPAFC is a product of all of its members, so your active involvement is essential to its success. And I would be remiss to not mention how fortunate we are to have a highly capable staff to support our efforts. I wish to thank everybody for the hard work leading up to the successful last annual meeting, and for the continuing work on this year's committee meetings and our next annual meeting. I look forward to seeing many of you in March at the La Jolla meeting, and all of you in Tokyo next fall.

*—Lt. Governor Fran Ulmer
NPAFC President*



(Official State Photo)

ENFO HIGHLIGHTS

At our 1999 annual meeting, the Committee on Enforcement (ENFO) reviewed unauthorized salmon fishing activities in the Convention Area in 1999 on the basis of information provided by the Parties.



Canadian, Japanese, Russian, and US ENFO participants at the Seventh Annual Meeting, Juneau, Alaska.

(Paula Johnson)

Canada conducted 213 hours of air surveillance while patrolling the high seas driftnet (HSDN) threat area. The patrols involved two Canadian Armed Forces Aurora aircraft, 53 Canadian Armed Forces staff, two fishery officers from Fisheries and Oceans Canada, and two United States National Marine Fisheries Service's agents. As a result of the patrols, two vessels were sighted actively HSDN fishing (*ASTAFIEVO* and *LOBANA-1*) and several other vessels of interest were also sighted.

Japan conducted enforcement activities for 306 days at sea using 11 patrol vessels, and for 100 hours using an aircraft and a helicopter. Japanese fishermen reported sighting three vessels. One, the *HYUNG STAR*, had a Honduran flag, and two others were unidentified.

Since 1998, the Federal Border Guard Service (FBGS) of the Russian Federation has been responsible for fisheries enforcement in the Russian EEZ and the Convention Area. Cooperative enforcement activities suppressed several attempts to conduct illegal salmon fishing, including two Russian flag vessels, *LOBANA-1* and *TAYFUN-4*. But Russia was not able to carry out all planned HSDN enforcement activities because of the large involvement of the FBGS in enforcement activities inside the Russian EEZ and budgetary problems.

The United States Coast Guard vessels patrolled the HSDN high threat area for 49 days and USCG aircraft flew 236 surveillance hours. Three of ten vessels suspected of fishing in violation of the NPAFC Convention were seized (*LOBANA-1*, *YING FA* and *TAYFUN-4*).

ENFO also discussed a list of questions for standardization of enforcement practices that was developed at the 1999 Enforcement Standardization Symposium in Kodiak, Alaska, and explored areas that could assist in the planning and improving the effectiveness of HSDN patrols.

CSRS HIGHLIGHTS

1998 SALMON CATCH TRENDS

The Canadian commercial catch was roughly one half of the average catch of 64,167 t for the period 1952–1998. More than half of the catch was composed of chum salmon. The sockeye salmon catch was below the average for 1952–1998 and well below average for this cycle year since the regime shift in 1977. The pink salmon catch was well below the long-term average catch of 20,011 t and the even-year cycle average catch of 17,450 t. Chinook salmon production has decreased steadily since the early 1970s, and the 1998 catch was the third lowest on record—only about 23% of the long-term average catch of 5,123 t. In 1998, only incidental catches of coho salmon were allowed.

In Japan, the total commercial catch of all salmon species was approximately 70.2 million fish or 202,844 t (round weight). Chum salmon catches, which showed an increasing trend since the 1970s, peaked in 1996. The 1998 catch decreased to 67% of the peak, but was still at an historically high level.

The domestic commercial catch of salmon in the Russian Far East totaled 229,523 t. On the whole, catches were at a high level throughout most of the 1990s.

The pink salmon catch of 192,095 t was 83.7% of the total catch weight in 1998. The pink salmon catch of 114,370 t in western Kamchatka coast was the second highest historical record catch in this fishery region. The commercial catch by foreign fleets in the Russian EEZ totaled 16,616 t.

In Alaska, the overall catch of sockeye salmon was about 40% lower than expected, but statewide catches of pink salmon were about 20% higher than expected. In both 1997 and 1998, the Bristol Bay sockeye salmon run was considerably less than the forecasted levels.

The forecast for 1998 was for a run of 32.1 million fish and an in-Bay catch of 20.6 million. The actual run in 1998 was 19.3 million, with an in-Bay catch of 10.0 million. It is suspected that unfavourable climatic and oceanographic conditions reduced marine survival because parent-year escapements were at levels that had produced large runs in the past.

1999 SALMON CATCHES

Preliminary data show 1999 commercial catches remaining at relatively high levels for Japan, Russia, and the United States. But low abundance and restrictive harvest measures resulted in low salmon



Socializing at the receptions (top to bottom) Viatcheslav Vasiliev, Jeff Passer, Vladimir Izmailov, Andrey Poligin; Aaron Sarna and Steven Pennoyer; Pat Livingston, Bill Hines, and Gerry Kristianson (NPAFC)

Preliminary 1998 commercial catch (metric tonnes)

	Sockeye	Pink	Chum	Chinook	Coho	Masu	Total
Canada	4,833	3,900	19,797	1,203	16	-	29,748
Japan	5	22,328	178,539	205	37	1,731	202,844
Russia*	12,780	193,013	37,147	790	2,406	3	246,139
USA	59,075	169,648	76,881	7,210	17,048	-	329,862
Alaska	57,607	169,646	73,937	4,581	16,284	-	322,055
WOCI	1,468	2	2,945	2,629	764	-	7,807
Total	76,693	388,888	312,365	9,408	19,507	1,734	808,593

*Includes catch by foreign fleets in the Russian EEZ.

catches in Canada. The total catch of Fraser River, B.C., sockeye salmon in 1999 (estimated at 496,000 fish) was the lowest catch on record going back to 1889.

In Russia, pink and sockeye salmon stocks are in good condition, and the eastern Kamchatka pink salmon run reached an historical record: 81,700 t. But wild stocks of chum salmon remain in poor condition in many far-eastern regions, except for the Okhotsk region.

As of December 31, 1999, the estimated commercial harvest of chum salmon in Japan was about 48 million fish, which was 80% of the harvest in 1998. The most substantial decreases in Japanese chum harvests occurred on the Pacific coasts of Hokkaido and Honshu.

The commercial salmon harvest in Alaska was approximately 214 million fish, or about 390,000 t, which is the second largest harvest in Alaska's history. Sockeye salmon returns to Bristol Bay were above expectations, after two years of returns below preseason forecasts. But chum returns to western Alaska were depressed for the third straight year. Chinook and coho salmon catches in Oregon, Washington, and California improved over 1998 levels.

SCIENCE PLAN

The Science Sub-Committee (SSC) is drafting a new science plan for the CSRS. Since 1993 NPAFC scientists have worked under a plan addressing two critical issues: (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. The plan consisted of three components of research: (1) salmonid life history, (2) salmonid population dynamics, and (3) salmonid habitat and ecosystem. The SSC intends to revise or replace these components with a plan that will bring new

focus to our cooperative research efforts. A draft plan will be finalized at our March 2000 research meeting in La Jolla.

INTERNATIONAL COORDINATION

The CSRS has established a permanent, international Working Group on Salmon Marking to address issues regarding thermal otolith marking. The group is co-chaired by Peter Hagen, Alaska Department of Fish and Game, and Shigehiko Urawa, Fisheries Agency of Japan. At present, the group is determining how best to coordinate the assignment of thermal mark patterns to avoid duplication. At annual spring meetings, the group will identify conflicting patterns and discuss ways to avoid duplicate marks. At annual fall meetings, each country will provide a final list of thermal marks released in the previous year. Information on thermal marks is planned to be compiled into an international database, accessible on the NPAFC web pages.

ARCHIVAL TAG RESEARCH

The CSRS working group on archival tags completed its assignment, and was dissolved. The group identified important salmon research issues that could be addressed by use of archival tags: (1) stock-specific migration behaviour for conservation of stocks, (2) vertical and horizontal behaviour and associated environmental factors relating to ocean climate change, (3) swimming behaviour and bioenergetics relating to carrying capacity, (4) migration mechanisms of Pacific salmon relating to salmon enhancement, and (5) technical considerations concerning archival tags, such as location algorithms and possible incorporation of new features on the tags. The CSRS endorsed the development of archival tag research programs on these issues.

STOCK IDENTIFICATION GROUP

Genetic and other stock identification data provide valuable information for

the conservation of salmon stocks. These data can be used to investigate migration routes and the potential impact of climate change on these routes, to estimate the origin of salmon in complex mixtures, and to estimate the origin of salmon confiscated during enforcement operations. To facilitate this research, the CSRS established a new international *ad hoc* Working Group on Stock Identification. The group has three goals: (1) to develop, standardize, and disseminate genetic and other databases, (2) to encourage the development of new genetic technologies, and (3) to facilitate the dissemination of statistical techniques. Lisa Seeb, Alaska Department of Fish and Game, chairs the newly-formed group.



top: At the close of the 7th annual CSRS meeting, Oleg Gritsenko, Russia, was gratefully acknowledged for his outstanding leadership over the past two years;

bottom: Jack Helle, Chairman of the Organizing Committee, speaking at symposium

(top: Paula Johnson ; bottom: NPAFC)

INTERNATIONAL SYMPOSIUM '99

"Recent Changes in Ocean Production of Pacific Salmon"

Westmark Baranof Hotel, Juneau, Alaska, November 1-2, 1999



OVER 120 scientists, fisheries officials, and industry representatives attended the NPAFC international symposium, "Recent Changes in Ocean Production of Pacific Salmon," in Juneau, Alaska, in November 1999. Two keynote lectures and 53 scientific presentations were made.



Alaska Lt. Governor Fran Ulmer welcomed the participants: "The only way we will ever be successful in protecting and conserving our salmon resources for the future is to come to a fuller understanding of salmon and how they are affected by oceanic, climatic, and environmental conditions."

Keynote speaker, Elbert W. (Joe) Friday, Jr., Director of the Board on Atmospheric Sciences and Climate, National Research Council, Washington, DC, presented a stimulating review of what we do know about climate variability and change, concluding that:

- Human induced climate change is real
- Scientific uncertainty leads to reluctance to act or is used to buttress non-action
- There is no "soft landing spot" on the policy side; the social costs to reduce CO₂ are high, but the costs of not reducing CO₂ are extremely high.

Scientific presentations focused on physical and biological factors affecting salmon production; trends, patterns, and changes in historical salmon and environmental data; forecasts and models of salmon

dynamics; and new research technologies.

The other keynote speaker, Bruce Finney, University of Alaska, Fairbanks, provided a fascinating long-term perspective on climate variability and salmon production. Reconstructions through analysis of marine-derived nutrients in lake sediment cores, combined with carbon and other dating techniques, can extend the historical record of salmon population dynamics back thousands, even millions of years. The records show that the present warm climate is not typical of the "time of salmon" over the past two million years.

Participants enjoyed socializing at a reception hosted by the United States at the Douglas Island Pink and Chum, Inc. hatchery. Jack Helle led the group on an excursion to the Chilkat River to view a magnificent gathering of bald eagles and spawning chum salmon.

The Chairman of the CSRS, Oleg Gritsenko, summarized the results of the symposium in his closing remarks:

"Our recognition of the dependence of salmon on global processes has become more profound. These advances in knowledge could be achieved only through international cooperation of scientists. And this united effort is significantly augmented by the activities of NPAFC." Symposium proceedings will be published in the NPAFC bulletin series.



Scenes from the symposium (top to bottom): Nancy Davis and Masa-aki Fukuwaka at reception; keynote speaker, Joe Friday, discusses climate variability and climate change; Tetsuichi Nomura and Bill Heard at poster session; excursion to Chilkat River; Audience at NPAFC symposium

(Nancy Davis and NPAFC)

JUVENILE SALMON WORKSHOP

WE ARE PLEASED TO ANNOUNCE that NPAFC will be holding an international workshop, "Factors Affecting Production of Juvenile Salmon: Comparative Studies on Juvenile Salmon Ecology between the East and West North Pacific Ocean," on October 29, 2000 at the Overseas Fishery Cooperation Foundation in Tokyo, Japan. The North Pacific Marine Science Organization (PICES) is helping with organization.

The purpose is to exchange information, review, and discuss past, present, and future research on juvenile salmon in the western and eastern North Pacific Ocean. Climate variability and its influence on lower-trophic level production, predator-prey relationships, growth and behaviour of juvenile salmon are important factors to be considered. The intent is to provide a better understanding of the factors affecting ocean production of juvenile salmon and to promote cooperation in this research between NPAFC and PICES. This information will contribute to salmon biology, monitoring programs, stock assessment surveys, management, and run forecasts.

Discussion topics include: (1) review of research, (2) ocean distribution and migrations, (3) factors affecting survival, growth and other ecological aspects, and (4) future research.

The one-day session includes oral presentations and poster sessions. In the oral session, each speaker will be limited to 20 minutes (15 minutes for presentation and

5 minutes for questions and discussion). About 20 oral presentations will be selected from the submitted abstracts. The number of poster presentations selected may be limited by space availability.

Abstracts for oral and poster presentation in English must be received by April 30, 2000 at the NPAFC Secretariat. The organizing committee will select presenters by May 31, 2000. Abstracts must be 400 words or less. An abstract must include a title, the author's name and position, and a summary of the study. A second page may be added for tables and figures. The selected presenters will be notified by the NPAFC Secretariat, and will receive guidelines for submission of their extended abstracts, which are required for publication of workshop proceeding. The working language of the workshop is English. Consecutive translation will be available in Japanese and Russian during questions and discussion periods.

For participation in the workshop, the registration deadline is June 30, 2000. The workshop is open to the public, but space may be limited. Admittance may be determined by the order of registrations received at the NPAFC Secretariat. Registration can be done through the NPAFC Web site <http://www.npafc.org>.

The workshop proceedings, including extended abstracts of presentations and a discussion summary, will be published as NPAFC Technical Report in early 2001.

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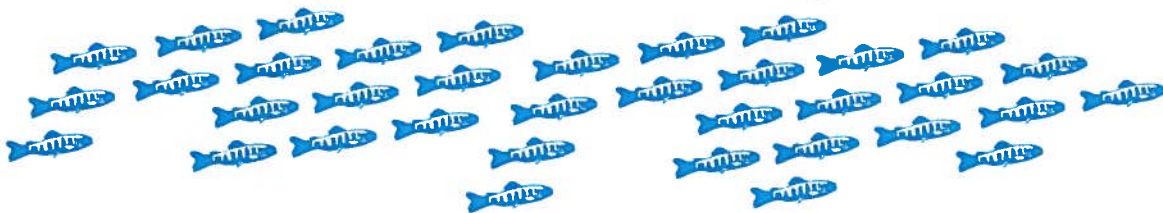
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CANADIAN AWARD

THE R. E. FOERSTER AWARD is presented annually to a scientist (and coauthors) from Fisheries and Oceans Canada, Pacific Region in recognition of an outstanding fisheries science publication. Selection of the winners is made by a panel of senior scientists. The winners of the 1998 R. E. Foerster Award, which was announced in November 1999, were D. W. Welch, Y. Ishida, and K. Nagasawa. Their paper was entitled "Thermal limits and ocean migrations of sockeye salmon (*Oncorhynchus nerka*): long-term consequences of global warming." The paper was published in the *Canadian Journal of Fisheries and Aquatic Science* (Vol. 55, pp. 937–948).

Two papers published in NPAFC Bulletin No. 1 received honorable mention. It is heartening to see the work done to support the Commission's activities recognized.

—Donald Noakes, Director, PBS, DFO, Canada



NPAFC reception at the Governor's Mansion, Juneau, Alaska
from l to r: Vladimir Fedorenko,
Mrs. Susan Knowles, Governor of
Alaska Tony Knowles, Hiroko
Omori, Wakako Morris,
Lt. Governor Fran Ulmer,
Denise McGrann

(Paula Johnson)

NEW OFFICERS

At the 7th Annual Meeting the Commission elected its officers. The two-year term of the elected officers began with the adjournment of the meeting and ends at the adjournment of the 9th Annual Meeting.

President

Fran Ulmer, United States

Vice-President

Vladimir Izmailov, Russia

CSRS Chairman

Yukimasa Ishida, Japan

ENFO Chairman

Vincent O'Shea, United States

F&A Chairman

Aaron Sarna, Canada

UPCOMING EVENTS

Enforcement Planning and Coordinating Meeting (EPCM)

March 1–3

Overseas Fishery Cooperation Foundation
Tokyo, Japan

Research Planning and Coordinating Meeting (RPCM)

March 27–28

Empress Hotel
La Jolla, California, U.S.A.

Juvenile Salmon Workshop

October 29

Overseas Fishery Cooperation Foundation
Tokyo, Japan

NPAFC 8th Annual Meeting

October 30–November 2

Ministry of Foreign Affairs
Tokyo, Japan

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The Commission invites you to submit articles and photos or slides on NPAFC-related activities for publication in the newsletter.

Masthead photo: Coast Mountain Range in southeastern Alaska. (Courtesy of NPAFC)

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Visit the NPAFC website:

<http://www.npafc.org>

for more information on events, publications, scientific documents, and salmon catch statistics.