Representatives from Canada, Russia, Korea, the United States and Japan met in Kushiro City, Hokkaido, Japan on May 26-27 for annual NPAFC Enforcement Evaluation and Coordination Meeting (EECM). It was the first EECM for the Korean delegation (Korea became a member of NPAFC last year.). Participants, some of whom visited Japan for the first time, experienced breeze and sunshine of the city to which spring has just come.

Attendants had discussions on several subjects, including each member's report of the enforcement efforts and sightings of illegal/suspicious vessels to date, the plan of enforcement activities for 2004, establishment of a new project, and the future task of Enforcement Procedures Working Group (EPWG).

One of the main objectives of this meeting was to exchange the information on Party's enforcement activities for more effective coordination of those activities in NPAFC Convention Area. Participants could share the information on some suspicious vessels of non-Party countries through the report from Canada and the U.S. at this meeting. While illegal vessels of the Contracting Parties have not been sighted in recent years, the Parties recognized the importance of the ongoing enforcement efforts and their cooperation, such as information sharing.

Another important subject at this meeting was a new coordinative and cooperative project called Integrated Information System (IIS). Russian delegation made a presentation of this system and Parties exchanged the opinions on the proposed new system. Russian delegation proposed to establish the database of the information of illegal and suspected vessels in the Convention Area and other related data. They stressed that the databased system would enable Parties to share the information of illegal vessels timely and promptly, which would enhance effectiveness of enforcement activities and cooperation of the Parties. After clarification of some points, the Parties reached a basic agreement to introduce this system.

The meeting was successful and fruitful, and was held in a friendly mood. The participants enjoyed the reception hosted by Japan at Kushiro Prince Hotel with participation of mayor of Kushiro City.

Another subject at this meeting was a demonstration cruise on the board of Japanese patrol vessel “Toukou maru”. During this cruise, the crew of “Toukou maru” reported new information of the suspected vessel named “Chun Jin No.1” which had been inspected a few days before. The Parties opened an extraordinary meeting on the spot to share the information and to discuss future actions.

In the evening of the day, the participants enjoyed the traditional Japanese-style party and strengthen their friendship.

This year's meeting was very productive and meaningful for the future work. The only sad news was that this was the last meeting for CDR. Greg Busch, of the U.S. Coast Guard. His dedication to NPAFC for many years is respected. He will be missed by all of us.

Akihiro Mizukawa
ENFO Chairman

EECM Participants aboard Toukou-Maru
Photo by NPAFC Secretariat
The 2004 Research Planning and Coordinating Meeting (RPCM) was held on May 12-13, at the Petropavlovsk Public Library, Petropavlovsk-Kamchatsky, Russia. This is the first time this series of meetings has been held in Russia. The participants were scientists from all the five Contracting Parties: Canada, Japan, Korea, Russia, and the United States. Technical support for the meeting was provided by the NPAFC Secretariat and the KamchatNIRO.

The Parties to the Convention have a common goal for conservation and sustainable management of anadromous fish resources in the North Pacific Ocean. The NPAFC Science Plan 2001-2005 called for cooperative research by the Parties on three main topics: 1) Bering Sea salmon research, 2) juvenile salmon research in eastern and western North Pacific waters, and 3) winter salmon research. The Bering Sea research program has turned into a large coordinated sea sampling program known as BASIS (Bering-Aleutian Salmon International Survey). The BASIS program is at its third year of implementation.

All five Parties updated and reviewed their national research programs for the year 2004 in relation to the three main topics of the NPAFC Science Plan 2001-2005. Canada focused its studies on distribution and monitoring of pink salmon and other Pacific salmon in the major inlets of British Columbia. This year an additional focus is the potential impacts of sea lice on juvenile salmon growth and survival. Japan reviewed plans for six salmon research vessels (Oshoro maru, Wakatake maru, Kaiyo maru, Shunyo maru, Kaiun maru, and Hokko maru). The Wakatake maru is used also as a platform to tag salmon with intelligent electronic tags to study migration of salmon. Japan also runs 19 other research cruises that may have incidental catches of salmon. These vessels study distribution and abundance of pelagic fish in the North Pacific Ocean. It also runs a cruise by its flagship R.V. Kaiyo maru in the BASIS program. Korea is on its second year as a new member of the NPAFC and is planning on training its scientists and participating on research vessels of member Parties to catch up on salmonid research issues, particularly on chum salmon and hatchery technology. Russia submitted 5 research cruise plans including an extensive survey by the R/V TINRO on salmon distribution, abundance, and stock intermingling throughout the Russian EEZ in the western Bering Sea. The other cruises cover northwest Pacific Ocean. The United States research cruises focus on juvenile salmon. The Southeast Coastal Monitoring (SECM) project in the Gulf of Alaska uses the R/V John Cobh and the Bering Sea BASIS research is conducted by the F/V Sea Storm. This year’s U.S. BASIS survey area extends farther to the west, covers most of the continental shelf in the eastern Bering Sea, and does not include Kotzebue Sound. Other salmon research in the coastal marine waters of Oregon, Washington, and California are also noted by the U.S. Party.

The Parties engaged in exchanges of biological specimens, data, and personnel throughout the year. Written requests made at the 2003 11th Annual Meeting for the 2004 sampling season were reiterated at the meeting. The Parties agreed to have an ad hoc Working Group of Stock Identification meet to review the requests.

The United States reported that it successfully fulfilled the 2003 requests from Russia for salmon DNA and scale baseline samples from Alaska salmon stocks (provided by Alaska Department of Fish and Game (ADFG)). The United States also received DNA baseline samples from Russia for two sockeye salmon populations. A scientist at the Korean KORDI asked for DNA samples of Alaskan chum salmon, and the United States (ADFG) complied with this request. The United States noted that some barriers to exchanges of samples for stock identification analysis have diminished. The Parties generally agreed that specimens should continue to be collected, and although it may be difficult to transfer them to the Parties, ways must be sought to disseminate materials and data collected.

Canada successfully provided sockeye and chinook salmon samples to VNIRO, and received tissue samples for micro-satellite DNA baselines from representative stocks of chum salmon. Canada requested that Japan provide tissue samples from representative chum salmon stocks in Japan for a joint Canada-Japan study of microsatellite DNA. Canada requested the United States to provide tissue samples of chum and chinook salmon from western Alaska (not including Yukon river). Canada also requested the United States to provide tissue samples from sockeye salmon in southwest Bristol Bay and Cook Inlet.

Canada has suggested that a comprehensive database on pink salmon be assembled. The proposal is to create an awareness of the potential use of pink salmon as an indicator species of ecosystem change in the North Pacific Ocean and to take the first steps within NPAFC and PICES to accumulate the data for the database. Russia also proposed an integrated data base on all the data collected by the Parties in its BASIS cruises. Discussion on a centralized database for BASIS was referred to the BASIS Working Group.

It was noted that centralized databases are not trivial issues and require a long-term commitment, and observed that there was no consensus among on how to do this work.

Korea requested to send one or two Korean otolith marking specialist(s) to be trained in Japan in November 2004 for 15 days. Korea also invited two Japanese experts to Korea in December 2004: an expert from a hatchery and an expert in stock assessment. The Parties will work bilaterally to meet the objectives.

The next RPCM is scheduled to be held in Nanaimo, Canada in the third part of April 2005. A final decision on the time and place of the meeting will be made at the 2004 NPAFC Annual Meeting.
TING AND BASIS WORKING GROUP MEETING
first time in
Kamchatky, Russia
, 2004

The BASIS (Bering-Aleutian Salmon International Survey) Working Group met on May 14 following the RPCM. The main purpose of the BASIS Working Group meeting was to coordinate activities on cruises by Japan, Russia and the United States in 2004 and to plan for the upcoming BASIS Workshop to be held after the NPAFC 12th Annual Meeting in Sapporo, Japan in October, 2004.

Japan, Russia, and the United States presented cruise plans for 2004 for the R/V Kaiyo maru, R/V TINRO, and F/V Sea Storm. Cruises will take place from June through early October. Fishing strategies, fish sampling procedures, plankton sampling and oceanographic measurements taken for each cruise were discussed in detail. Two Russian scientists will participate in the USA cruise and two Russians and one American will participate in the Japanese cruise. Cruise tracks and the need for further trawl comparisons between the country’s vessels were discussed. Primarily due to reduced ship time by the USA, trawl comparisons did not take place in 2003 and also will not take place in 2004. Communications between ships at sea and shore will be by e-mail with frequent summaries of catches and locations going to three nations points of contact.

The North Pacific Research Board funded high seas tagging project was discussed. Salmon will be tagged from the R/V Wakatake maru and the R/V Kaiyo maru in the Bering Sea and Gulf of Alaska in 2004. An aluminum “live box” based on a Norwegian design that will be constructed and evaluated on the trawl of the F/V Sea Storm in 2004. The Norwegians and Americans on the Atlantic coast have had good success capturing juvenile Atlantic salmon suitable for tagging using this device. Usually, trawl caught salmon are de-scaled and are not suited for tagging.

Documentation of parasites and injuries on salmon collected during BASIS cruises was discussed. Trawl-caught salmon can be injured during trawling and sorting so special care is made in observations of sea lice attachment and abrasions. Russia classifies injuries as “healing” or “fresh” on their catches. Russia will send to the parties photographs of the different classes of injuries that they identify.

The creation of a BASIS database was discussed within a small group and brought before the full committee for continued discussions. Each nation uses a different size trawl and further side-by-side comparisons of the catches and techniques that were done in 2002 need to be done. Hopefully, funding can be available in 2005 for more comparisons. Plankton sampling is also done differently by the three nations and feasibility of standardization of methods was discussed.

The NPAFC Secretariat distributed a draft pamphlet on the BASIS program which was discussed and suggestions for changes will be finalized by the BASIS Workgroup. The BASIS web page is also completed and is available on the NPAFC website.

Dr. Urawa from Japan presented preliminary results of NPAFC research funded by the North Pacific Research Board: “The use of Genetic Stock Identification to Determine Distribution, Migration, Early Marine Survival, and Relative Abundance of Chum Salmon in the Bering Sea.” Significant results from his study included: 1) less than 5% of the chum salmon caught by the R/V Kaiyo maru during BASIS 2002 research were maturing. Most of the chum salmon were immature age 0.1, and 0.2 fish; 2) immature chum salmon were distributed mostly north of 58 N; 3) Russian and Japanese stocks clearly dominated the catches between 175 E and 170 W; and 4) immature chum salmon stocks of western Alaska origin were distributed primarily within the offshore regions of the eastern Bering Sea.

The next BASIS Working Group meeting will be held at the NPAFC 12th Annual Meeting in Sapporo, Japan.

Loh-Lee Low, CSRS Chairman
Jack Helle, BASIS Working Group Chairman

RPCM & BASIS WG Meeting Participants
Photo by NPAFC Secretariat
The Bering-Aleutian Salmon International Survey (BASIS) is an NP AFC-coordinated program of ecosystem research on salmon in the Bering Sea. The major goal of this program, which was developed in 2001, is to clarify how changes in ocean conditions affect the survival and growth of salmon. The plan for BASIS research calls for synoptic research vessel operations across the entire Bering Sea in 2002-2006 to collect information on oceanographic conditions, salmon, and associated species. The second BASIS field season was completed in 2003. This article highlights some of the preliminary results in 2003.

Research cruises
Three trawl vessels (R/V TINRO, R/V Kaiyo maru, and F/V Sea Storm) were used for BASIS research in summer and fall 2003. The R/V TINRO (62-m long) surveyed the entire western Bering Sea inside the Russian 200-mile zone. The R/V Kaiyo maru (93-m long) surveyed deep water (basin) habitats in the central Bering Sea, including international waters of the Bering Sea (Donut Hole), as well as some waters inside the U.S. 200-mile zone. The F/V Sea Storm (38-m long) surveyed shallow water (shelf habitats) inside the U.S. 200-mile zone in the eastern Bering Sea. In addition, the R/V Wakatake maru conducted its 13th consecutive year (1991-2003) of international cooperative surveys (gillnet-longline) to investigate the condition of salmon stocks in the central North Pacific Ocean and Bering Sea in June and July.

Oceanographic conditions
Oceanographic conditions in the Bering Sea in summer and fall 2003 were characteristic of a warm year. In the western Bering Sea, surface temperature and salinity levels were substantially higher than the mean annual levels. In the central Bering Sea, the sea surface and minimum water temperatures in 2003 were warmer than in 2002, indicating weaker winter cooling. Summer water temperatures were higher in the southeastern portion of the central Bering Sea than in the northwestern portion, though sea temperature in the northwestern portion warmed to more than 9°C in fall. The seasonal increase in sea temperatures near the Aleutian Islands was comparatively small. In the southeastern Bering Sea, the lowest temperatures and highest salinities in fall were observed at the continental shelf break and north of Unimak I, due to upwelling of deeper water through Unimak Pass in the Aleutians. Higher surface temperatures were observed farther inshore in Bristol Bay. In summer, major river plumes in the eastern Bering Sea were characterized by low salinity and high temperature water masses. By fall the Yukon R. plume was cooler, and low salinities extended further south. In the central eastern Bering Sea offshore of St. Lawrence Island, surface temperatures were lower in early October compared to mid to late September due to storm activity.

Primary production at the sea surface was not in a steady state during summer and fall 2003. In summer phytoplankton biomass was relatively high offshore, north of Aleutian Islands and the continental slope in the eastern Bering Sea, and was relatively low in the central Bering Sea and western and central North Pacific. The maximum phytoplankton biomass recorded during the Kaiyo maru survey occurred north of the Islands of Four Mountains (~53°N, 170°W), where zooplankton abundance was also relatively high. In fall phytoplankton biomass was relatively high in the western portion of the central Bering Sea, on Bowers Ridge (180°), and near the Pribilof Canyon.

In fall 2003, small-sized zooplankton dominated daytime samples from shallow parts of the eastern Bering Sea, and were also relatively abundant in daytime samples from waters off eastern Siberia (Anadyr Bay), while large-sized zooplankton, primarily sagittae (arrow worms) and copepods, dominated daytime samples in other regions. In Anadyr Bay copepods dominated daytime samples and euphausiids dominated nighttime samples. BASIS scientists concluded that both daytime and nighttime plankton sampling are needed to adequately evaluate plankton biomass.

Aquamarine-colored water, indicating the presence of a coccolithophore bloom, was detected above the pycnocline (top 20 m) in Bristol Bay at 57.5°N, 166°W during early September and further north and offshore (~59°N, 170°W) later in the month. Coccolithophores are single-celled phytoplankton that grow external calcium carbonate plates, called coccoliths. The detached coccolith plates are highly reflective and easily detected by satellite ocean color data, which confirmed coccolithophore distributions observed by BASIS scientists in 2003.

Stock identification
Funding provided by the North Pacific Research Board (NPRB) helped to unite cooperative genetic stock identification (GSI) research efforts in 2003. The GSI research funded by NPRB is designed to investigate: 1) the stock composition and abundance of Asian and North American sockeye and chum salmon in the Bering Sea, 2) their seasonal migration route and timing, and 3) factors affecting the oceanic distribution and abundance of each regional stock. Samples of juvenile and immature fish collected in 2002-2004 will be examined using allozyme and DNA techniques. Recently completed analyses indicate that most (81%) of immature chum salmon in the Bering Sea in August and September 2002 were from Asian (Russia and Japan) populations (see http://www.nprb.org, Research 2003, “R0303 NP AFC Cooperative Research: Use of genetic stock identification to determine the distribution, migration, early marine survival, and relative stock abundance of sockeye and chum salmon in the Bering Sea”).

BASIS Research

Chum salmon in the Bering Sea”).

BASIS Research

Chum salmon in the Bering Sea”).
Results in 2003

Katherine Myers
University of Washington
USA

Feeding ecology of salmon
Considerable regional differences in the diets of salmon were observed in fall 2003. For example, juvenile chum, pink and sockeye salmon in the western Bering Sea fed primarily on amphipods, whereas fish, mainly walleye pollock and Pacific sand lance, formed the bulk of juvenile salmon diets in the eastern Bering Sea. Pteropods often dominated the diets of immature (age-1 and older) chum and sockeye salmon. Stomach fullness of chum, sockeye, and pink salmon was highest in the evening (9 p.m.) and lowest in the morning (6-7 a.m.). The daily food intake of chum salmon was similar in summer and fall 2003, and was nearly the same as in 2002.

Salmon tagging
Salmon tagging research in 2003 was also funded in part by the NPRB (http://www.nprb.org, see Research 2002, “R0204 NPAFC Salmon tagging”). The objectives of this research are to understand the distribution patterns, habitat utilization, and movements of salmon stocks. Data storage tag (DST) recoveries in 2003 provided new information on the temperature-depth habitats of maturing Russian, Japanese, and western Alaska salmon from the time of their release in common feeding grounds in the central Bering Sea in July to recovery in coastal fisheries, natal streams, or hatcheries, including:
- The first DSTs from Asian pink salmon;
- The second and third DSTs from Bristol Bay/North Peninsula sockeye salmon; and
- The first DST from a Russian chum salmon.

New data from Asian chum salmon DSTs will allow BASIS scientists to compare and infer possible differences in migration routes of Japanese and Russian fish. Three adult sockeye salmon recovered in the Bristol Bay area usually occupied depths from the surface to 25 m (maximum depth of 43 m), and diurnal patterns of increased vertical movements in daytime were weak or absent. Ambient temperatures ranged mostly from 6°C to 18°C. Additional information on NPAFC’s tag recovery and reward program can be found on our web page (http://www.npafc.org/, see “Fish Tag Recovery Program”).

Distribution and abundance of salmon, walleye pollock, and Atka mackerel
In the western Bering Sea, the biomass of salmon in 2003 was the highest recorded since Russian scientists began conducting salmon trawl surveys in the 1980s. Chum salmon constituted most of this biomass. Chum salmon also dominated catches in the central Bering Sea and adjacent North Pacific waters, including the Gulf of Alaska. In the central Bering Sea, the relative abundance of maturing pink salmon was about eighty times higher than in 2002. Immature sockeye salmon were distributed mainly in the eastern Bering Sea and North Pacific Ocean, and their relative abundance was highest from 155ºW to 170ºW in the eastern North Pacific. On the eastern Bering Sea shelf, catches were dominated by juvenile salmon in their first year at sea, and sockeye salmon were the most abundant species (39.2% of the total salmon catch), followed by pink (26%), chum (22.3%), coho (6.1%), and chinook (3.7%) salmon.

Distributions of juvenile salmon on the eastern Bering Sea shelf appeared to co-vary with the location of oceanographic fronts. A front separates the well-mixed coastal waters from the two-layer system located farther offshore. In fall 2003 juvenile sockeye salmon were most abundant offshore of the well-mixed coastal waters, and their distribution partially overlapped the distribution of young-of-year walleye pollock, which were the primary prey of juvenile sockeye salmon. In contrast, juvenile chinook salmon were most abundant in the coastal, low salinity waters of northern Bristol Bay (near Kuskokwim River). Juvenile coho salmon were most abundant in coastal waters near Amak Island, an area where the highest surface phytoplankton biomass was located, likely due to inputs of nutrients from Unimak Pass. BASIS scientists concluded that information on the prey species associated with these water masses is important for understanding juvenile salmon distributions in the eastern Bering Sea.

In the central Bering Sea, Atka mackerel were the most abundant non-salmonid species of fish in surface trawl catches, followed by walleye pollock. Atka mackerel were distributed mainly offshore along the western Aleutian Islands. Juvenile walleye pollock were distributed mainly along the continental shelf break of the eastern Bering Sea.

Research support is needed
Inadequate funding continues to be a major challenge to the future of BASIS research. Although each national party of NPAFC has made a substantial commitment of resources to the joint work, including research vessels and scientific expertise, analyses of many samples and data collected in 2002-2003 have been postponed until funding is available. Some participants lack even the most basic equipment for carrying out field and laboratory research and data analysis. An ad hoc External Funding Working Group was established by NPAFC in 2003 to develop a plan of action for raising non-governmental funds for BASIS. For further information, visit the NPAFC website (http://www.npafc.org/, see “BASIS”) or contact the Secretariat (secretariat@npafc.org).
Over the past several decades the biomass of Pacific salmon has shown significant fluctuations, and the pattern of these fluctuations differs among species as well as local stocks. Recent attention has focused on how the ocean environment and variable marine ecosystems affect these fluctuations and the abundance and distribution of salmon stocks. Information on the oceanic migration pattern and marine survival of individual stocks is essential for understanding the population dynamics of these species. Further, despite hatchery releases over the last decades, biological interactions between wild and hatchery fish in the ocean are poorly understood.

Stock-specific biological information has been provided by various stock identification techniques including tags, parasites, scale patterns, and genetic marks. The Workshop explored where and how these techniques are applied, what types of information are being generated, and what directions are desirable in the future. A consistent theme of the Workshop was the need for cooperation and collaboration to develop comprehensive and transferable methods and maximize research opportunities.

Contributed papers were organized around species. A synopsis of the presented work by species follows:

**Chum salmon**

Significant efforts have been directed towards gathering stock-specific information on chum salmon. Genetic databases have been particularly useful in this species. An extensive allozyme baseline was cooperatively developed and shared by the NPAFC Parties to determine stock components of mixtures of stocks at various life stages in coastal and high seas areas of the Bering Sea and Pacific Ocean. The oceanic migration pattern of Japanese chum salmon throughout their entire marine life cycle was estimated using this baseline. Stock-specific distribution and migration of juvenile and adult chum salmon of North American stocks in the shelf of eastern Bering Sea and Gulf of Alaska were also investigated using the allozyme baseline. Variation in the mtDNA control region and microsatellite loci are also under investigation. Japanese and United States laboratories are investigating DNA microarray and analysis of single nucleotide polymorphisms (SNPs) as rapid and easily-standardized methods of stock identification. In addition, mass otolith marking has been useful to determine hatchery origins, and a combination of genetic and otolith marks has been used in understanding biological interactions between hatchery and wild fish.

**Coho salmon**

Coho salmon have recently been surveyed for MHC and microsatellite loci. These genetic analyses suggest that there are clear stock-specific differences in the migratory behavior of the species. Development of standardized and comprehensive genetic databases for coho salmon has not yet become a priority among laboratories.

**Sockeye salmon**

Scale pattern analysis has been used extensively to separate eastern and western Kamchatka stocks of sockeye salmon in mixture fisheries within the Russian EEZ as well as stocks in freshwater. Expansion of these analyses to determine the continental origins of high-seas fish has not been successful because of similar scale structures among Asian and North American stocks. Baselines of allozyme, microsatellite, and SNP markers are under development to determine the composition of sockeye stock mixtures caught in the Bering Sea. The current baseline, composed of Alaskan and Russian stocks, can precisely estimate the stock origins among and within major regions of the Pacific Rim.

**Pink salmon**

Pink salmon is the most abundant species among Pacific salmon and is essential to North Pacific ecosystems. Although extensive allozyme data have were collected for pink salmon across the Pacific Rim, standardized baselines have not been used extensively as has occurred in chum, sockeye and chinook salmon. The rigid two-year life cycle has produced reproductively isolated brood lines with large genetic differences, essentially requiring two independent baselines and analyses for this species. North American and Asian stocks are currently being examined for allozyme loci, and simulations are being done on even- and odd-year data sets to determine the regional groupings for mixed-stock analyses of coastal and high-seas pink salmon.

**Conclusions**

The workshop demonstrated that information on stock identification is essential to our understanding to the marine ecosystem, potential effects of global warming, as well as the roles of hatchery releases. Significant progress has been made in stock identification, and techniques are changing rapidly with the emergence of new technologies in genetics, tagging, and microchemistry. Coordination and scientific exchanges among Pacific Rim nations is essential to insure continued progress, reduce unnecessary duplication, and maximize research opportunities.

Lisa Seeb
Shigehiko Urawa
Co-chairs of the Workshop Organizing Committee
ANNOUNCEMENTS

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

An international workshop “BASIS-2004: Salmon and Marine Ecosystems in the Bering Sea and Adjacent Waters” will be held on October 30-31, 2004 at the Sapporo Convention Center, Sapporo, Hokkaido, Japan. The workshop will be hosted and organized by the NPAFC.

The Bering-Aleutian Salmon International Survey (BASIS) is NPAFC’s coordinated program on Pacific salmon in the Bering Sea that was designed to clarify the mechanisms of biological response by salmon to the conditions caused by climate changes. This workshop will provide a forum for exchange of research results and for standardization of sampling gear, data, and analysis.

There will be approximately 20 oral and 30 poster presentations including two keynote addresses. Panel and summary session will be held at the end of the workshop.

Registration fee is US$100. The fee includes workshop attendance, reception on Saturday, October 30, and bus transportation. As space is limited, registration is accepted on a first come first served basis. Early submission of a Registration Form is recommended to ensure your participation. Registration Form is now available on our website (http://www.npafc.org). Deadline of Registration is September 30, 2004.

KEYNOTE ADDRESSES (Tentative titles)
- BASIS as a Model for International Scientific Collaboration; the Project is Greater than Just the Sum of its Parts.
  Fran ULMER (U.S. Representative to NPAFC)
- Contemporary Status of Pacific Salmon in the Pelagic Communities of the Far Eastern Seas
  Vyatcheslav SHUNTOV and Olga TEMNYKH (TINRO-Centre, Russia)

View of Sapporo City
Photo by NPAFC Secretariat

2004 NPAFC Public Lecture “Pacific Salmon, a Gift from the Sea”
How can we conserve salmon in the ocean ecosystems and make their better use?
October 23, 2004, Sapporo, Hokkaido, Japan

The first NPAFC Public Lecture will be held at the Sapporo Convention Center, Sapporo, Japan on October 23, 2004, organized by the NPAFC, Fisheries Agency of Japan, National Salmon Resources Center (NSRC), and Fisheries Research Agency (FRA). It is planned for the public and fishermen to understand the present status and prospects of Pacific salmon stocks in the ocean ecosystems. The topics include the role of NPAFC, international research activities, life histories, migration, enhancement, and conservation for salmon. In addition, posters for salmon culture, contacts between human and salmon, and research topics will be exhibited on site.

For further information, contact the NPAFC Secretariat (secretariat@npafc.org) or Shigehiko Urawa of NSRC (urawa@salmon.affrc.go.jp).

PROGRAM (Oct. 23 13:00-16:30)
- Welcome and Introduction (L. Low, CSRS Chairman)
- Salmon migration in the ocean and mystery of homing (H. Ueda, Hokkaido University)
- Ocean life of Pacific salmon and climate changes (R. Beamish, Pacific Biological Station, Fisheries and Oceans Canada)
- Sustainable salmon management in the ocean ecosystems (M. Kaeriyama, Hokkaido Tokai University)
- Better use of salmon: enhancement, fisheries and food (H. Mayama, NSRC)
- Close touch with salmon: recreation, education, and volunteer activity (G. Kristiansson, Canadian Representative to NPAFC)
- Questions and answers (hosted by N. Uki, Hokkaido National Fisheries Research Institute, FRA)

EXHIBITION (Oct. 23 10:00-18:00; Oct. 24 10:00-16:00)
- Citizens and salmon in the Toyohira River, Sapporo (hosted by Sapporo Salmon Museum)
- Salmon and traditional culture in Hokkaido (hosted by Chitose Salmon Aquarium)
- Research Topics (hosted by FRA, NSRC, and Hokkaido Fish Hatchery)
- Salmon enhancement and conservation (hosted by NSRC)
- Various utilization of salmon as food source (hosted by Hokkaido Federation of Fisheries Cooperative Associations)
News from the Secretariat

NPAFC’s Family Expanded!
Our secretary Denise gave birth to a baby boy Nicholas on St. Valentine’s Day, February 14, 2004 in Vancouver. She is now taking parental leave for one year, and enjoying every minute with her son. Nicholas is growing so quickly that she renews her surprise at his changes everyday. He already has a favourite song and a story book, and also loves to have all the attention especially from his mother. Denise will return to the office next February. We wish Denise and her family all the best.


Upcoming Events
Public Lecture – Pacific Salmon, a Gift from the Sea
Sapporo, Hokkaido, Japan: October 23, 2004
NPAFC 12th Annual Meeting
Sapporo, Hokkaido, Japan: October 24-29, 2004
NPAFC International Workshop “BASIS-2004: Salmon and Marine Ecosystems in the Bering Sea and Adjacent Waters”
Sapporo, Hokkaido, Japan: October 30-31, 2004

NPAFC REPRESENTATIVES

CANADA
Guy Beaupré
Fisheries and Oceans Canada
Russ Jones
Consultant
Gerry Kristianson
Sport Fishing Institute

JAPAN
Koji Imamura
National Federation of Medium Trawlers Associations
Tomofumi Kume
Fisheries Agency
Yasumasa Nagamine
Ministry of Foreign Affairs

REPUBLIC OF KOREA
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Fisheries Agency
Anatoly Makoev
Ministry of Agriculture
Sergey Sinyakov
KamchatNIRO

UNITED STATES
James Balsiger
NOAA/NMFS
Guy McMinds
Quinault Indian Nation
Fran Ulmer
State of Alaska

Visit the NPAFC website: http://www.npafc.org for more information on events, publications, scientific documents, and salmon catch statistics.