North Pacific Anadromous Fish Commission

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HIGH SEAS PACIFIC SALMON RESEARCH REVIEWED AT NPAFC ANNUAL MEETING

Busan, Republic of Korea (May 20, 2016)–International scientific experts of the North Pacific Anadromous Fish Commission (NPAFC) member countries (Canada, Japan, Korea, Russia, and United States) completed a five day meeting in Busan, Korea, to review current information related to salmon abundance and biology at the Commission's 24th Annual Meeting.

In addition to presenting salmon catch and hatchery statistics, scientists from NPAFC member countries planned, reviewed, and coordinated exchanges of scientific data and samples, and assessed scientific studies of Pacific salmon and steelhead in international waters and adjacent areas of the North Pacific.

Salmon research cruise plans for 2016 were discussed. These will include salmon surveys in the Gulf of Alaska, the Bering Sea, the northwestern and central North Pacific, and the southern Okhotsk Sea. Research cruises will 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.

Exploring the value of using time series data based on biophysical monitoring along salmon migration corridors, investigators reported on techniques for improving a prediction model for forecasting the Southeast Alaska pink salmon harvest. In part, these model improvements are based on juvenile pink salmon abundance and body condition, predator abundance, zooplankton abundance, and local and basin-scale physical conditions.

Another study examined survival rates for British Columbia sockeye salmon smolts and compared this data with sea surface temperature and ocean productivity indices. Higher smolt survival was associated with warmer sea surface temperatures located off the west coast of Vancouver Island and colder sea temperatures on the north coast of British Columbia. However, these correlations were weak and additional effort might be directed at developing phenological indices of variability in factors that potentially affect the seasonal timing of biological production.

Results from several salmon stock composition studies were reported. Stock composition of immature sockeye salmon caught in the summer in the central Bering Sea were determined to be almost all Alaskan fish (mostly originating from Bristol Bay) with small contributions of fish originating from British Columbia and Russia (non-Alaska less than 10%). Juvenile chum salmon caught in the Bering Sea and Chukchi Sea in late summer/fall originated from western Alaska. Studies of ocean distribution of salmon at different life history stages contribute to the knowledge of salmon ocean migration routes.

Investigators on salmon research surveys in the central Bering Sea observed that the total numbers of chum salmon captured by trawl in 2015 was similar to that in 2014, however, lower than that of 2007-2013. They also observed that the summer seawater temperature in the Bering Sea increased over the past eight years.

Scientific investigators reported on techniques for improving estimates of the abundance of hatchery and wild salmon across the Pacific Rim with the goal of making this information available for improved salmon management. Estimates were reported for pink, chum, and sockeye salmon in major regions of the North Pacific from 1952 through 2015 in terms of total returns (i.e., catch plus escapement) of natural- and hatchery-origin salmon. Results suggest the proportion of hatchery-origin chum salmon abundance peaked in the late 1990's at approximately 70%, and is currently about half that percentage. Hatchery-origin pink salmon currently comprise about 19% of the returns and hatchery-origin sockeye salmon constitute about 4% of total returns. Total adult biomass exceeded 5 million metric tonnes in 2009 and again in 2013 when biomass of immature salmon was included. Regional experts were encouraged to examine these results to find if estimates can be more finely tuned.

This year, the previous 5-year science plan elapsed and a new 5-year plan has been adopted. Looking ahead, scientists agreed there is a compelling need for new international cooperative research that provides better scientific information on the ecological mechanisms regulating the production of anadromous populations, climate impacts on salmon populations in North Pacific marine ecosystems, and the utility of using salmon as indicators of North Pacific marine ecosystem conditions.

Improved understanding of the mechanisms regulating the distribution and abundance of Pacific salmon and steelhead trout will promote the conservation of anadromous populations in the North Pacific Ocean, and it will also allow for better forecasts of salmon production trends in the future, enhance sustainable fisheries management, improve food security, and advance economic security in member nations.

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Contact: Vladimir Radchenko
NPAFC Executive Director
Phone: +1-604-775-5550
Email: secretariat@npafc.org
Website www.npafc.org

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, Republic of Korea, Russian Federation, and United States of America.
