The NPAFC Workshop on

Interactions Between Salmon, Ecosystems, and Climate: From Mechanisms to Predictive Models

Dates: May 16–17, 2026

Venue: Morris J. Wosk Centre for Dialogue
580 West Hastings Street, Vancouver, BC, V6B 1L6, Canada

Website: https://workshop.npafc.org

Host: The North Pacific Anadromous Fish Commission (NPAFC)

FIRST ANNOUNCEMENT and CALL FOR PAPERS

The North Pacific Anadromous Fish Commission (NPAFC) is pleased to invite you to the NPAFC Workshop on *Interactions Between Salmon, Ecosystems, and Climate: From Mechanisms to Predictive Models* to be held on May 16–17, 2026, in Vancouver, BC, Canada. The Workshop will bring together scientists, managers, and other stakeholders to consider the current status and future of salmon and their habitats for the conservation of anadromous populations in a changing world.

DEADLINE for ABSTRACT SUBMISSION is January 15, 2026

Background

The North Pacific Anadromous Fish Commission (NPAFC) developed and approved a new Science Plan during the 2023 annual meeting. The 2023–2027 Science Plan builds on previous international collaborative research efforts, including work for the International Year of the Salmon. The main goal of the 2023–2027 Science Plan is to "Establish a research framework to develop a mechanistic understanding of the effects of a changing climate on salmon abundance and distribution trends in the North Pacific Ocean." The research objectives are as follows:

1. Improve knowledge of the relative biomass, distribution, migration, and fitness of Pacific salmon in the ocean (Present Knowledge);
2. Understand causes and anticipate changes in the production of Pacific salmon and the marine ecosystems producing them (Forward Action).

In addition to the 2023–2027 Science Plan, the Basin-scale Events and Coastal Impacts (BECI) project is currently under active development (https://beci.info/about-us/), which also builds in part on achievements during the International Year of the Salmon project and has been shaped with NPAFC's interest in climate impacts on Pacific salmon. The BECI project aims to establish a North Pacific Ocean Knowledge Network that works toward integrating climate, oceanographic, ecological, biological, socioeconomic, and traditional knowledge across national and disciplinary boundaries. BECI plans to focus initially on Pacific salmon as an exemplar species, then expand to other commercially and ecologically important transboundary species. The knowledge network seeks to:

1. Connect diverse data sources on ocean conditions and climate impacts throughout the North Pacific basin;
2. Transform fragmented information into synthesized, actionable knowledge; and
3. Deliver timely, accessible insights to support climate-informed decision making.

The research priorities outlined in the NPAFC 2023–2027 Science Plan and the BECI project underscore the need for a Second NPAFC Science Workshop to synthesize findings, address mechanistic knowledge NPAFC gaps, and optimize collaborative frameworks. Such a workshop would enable critical evaluation of progress on key objectives—including salmon biomass dynamics, climate-driven distribution shifts, and ecosystem productivity—while fostering integration across oceanographic, ecological, and fisheries datasets. By consolidating basin-scale research efforts and advancing methodological standardization, the workshop would directly enhance the North Pacific Ocean Knowledge Network, ensuring robust, interdisciplinary science to predict and mitigate climate impacts on Pacific salmon. Given the accelerating pace of environmental change, this workshop represents a necessary step toward refining hypotheses, aligning international research agendas, and strengthening the empirical foundation for sustainable management.

Workshop Objectives

- Advance mechanistic understanding of climate-driven changes in Pacific salmon abundance and distribution.
- Improve synthesis and interoperability of multidisciplinary data for the North Pacific Ocean Knowledge Network.
- Identify critical knowledge gaps and prioritize research to forecast salmon responses under future climate scenarios.

Topic Sessions

Topic 1. Linking climate-ocean variability to salmon population dynamics

Outcome: The relative contributions of natural environmental variability and anthropogenic factors on Pacific salmon distribution and abundance are quantified and integrated into predictive models for future habitat and productivity shifts.

There are multiple and complex reactions of Pacific salmon populations across the North Pacific to environmental changes: shifts in marine carrying capacity and thermal habitats, seasonal redistribution (including potential Arctic expansion), and increasingly extreme interannual fluctuations in run strength. These changes reflect both direct climate impacts (e.g., ocean warming, altered prey fields) and cumulative anthropogenic stressors. Recent events—including record-high and record-low returns of key stocks occurring in adjacent years—highlight the urgent need to: (1) identify threshold mechanisms driving high-amplitude variability; (2) disentangle climate signals from intrinsic population dynamics, (3) develop models that can project both gradual trends and extreme fluctuations. Understanding these dynamics will improve forecasts of economic and ecological risks, particularly for fisheries facing increasingly unpredictable interannual variability.

Sub-sessions

1-1. Mechanisms Behind Shifting Salmon Distributions
1-2. Decoding Extreme Population Fluctuations
1-3. Next-Generation Modeling Approaches
1-4. Summary and discussion

Topic 2. Data integration frameworks: harmonizing oceanographic, ecological, and fisheries datasets (Tools, standards, and case studies for cross-disciplinary synthesis)

Outcome: Agreement on core metadata standards and interoperability protocols for sharing oceanographic, ecological, and fisheries datasets is achieved.

Pacific salmon research and management depend on diverse datasets, including oceanographic conditions, ecosystem indicators, and fisheries-dependent/independent data. However, these datasets often exist in

disparate formats, with inconsistent metadata, spatial/temporal resolutions, and access protocols. This fragmentation hinders the ability to (a) conduct comprehensive, basin-scale analyses of climate-salmon interactions, (b) validate mechanistic models linking environmental change to salmon productivity, and (c) support timely, science-based decision-making under climate uncertainty. Developing robust techniques to collate historical datasets, standardize modern data collection methods, and demonstrate successful multi-dataset integration through case studies is essential to overcome fragmentation, maximize the value of existing data, and build a unified knowledge base for addressing climate-driven challenges in Pacific salmon conservation and management.

Sub-sessions

2-1. Overcoming Data Fragmentation: Standardization Needs

- Critical gaps in metadata
- Case studies of successful harmonization
- Prioritizing FAIR (Findable, Accessible, Interoperable, Reusable) principles for NPAFC datasets

2-2. Emerging Tools for Unified Data Synthesis

- Standardizing genetic baselines
- Platforms for real-time data sharing

2-3. Summary and discussion

Topic 3. Identify critical knowledge gaps and prioritize research to forecast salmon responses under future climate scenarios

Outcome: A prioritized list of critical knowledge gaps and practical solutions to address them, including thresholds for salmon resilience, key uncertainties in forecasting models, recommended strategies.

Despite decades of extensive research by NPAFC countries, critical uncertainties persist regarding Pacific salmon dynamics, including whether winter constitutes a survival bottleneck, the drivers behind declining age-at-maturity and body size (environmental stress vs. evolutionary adaptation), and the extent of inter/intraspecific competition in changing ecosystems. These unresolved questions stem from contradictory hypotheses, monitoring gaps (particularly in winter), and inconsistent evidence across studies, hampering science-based management decisions. This workshop will prioritize these knowledge gaps and develop targeted research strategies—including experimental studies, synthetic data analyses, and emerging technologies—to transform speculation into evidence-based thresholds for conservation and fisheries management, ensuring NPAFC's science can address these pressing challenges in a rapidly changing North Pacific.

Oral and Poster Presentations

The workshop will be a hybrid meeting with in-person and virtual accessibility. The workshop will conduct oral and poster presentations in English. Sessions will be comprised of contributed presentations, which will be selected for oral or poster presentation.

Key Dates for Workshop

August 1, 2025	Workshop Announcement and call for papers
January 15, 2026	Abstract submissions due
February 15, 2026:	Announcement of abstract selection to authors
Late February, 2026:	Second Announcement of workshop and registration
Early March, 2026:	Workshop registration opens
April 23, 2026:	Workshop registration deadline
May 16–17, 2026:	Workshop
July 30, 2026:	Extended abstracts due

Workshop Venue

Morris J. Wosk Centre for Dialogue at 580 West Hastings Street, Vancouver, BC, V6B 1L6, Canada.

Registration

Free

Hotel Accommodations

Hotel information will be available on the workshop website (https://workshop.npafc.org).

Submitting Abstracts

- ✓ Abstracts for oral and poster presentations must be received by **January 15, 2026**. Please e-mail abstracts to the NPAFC Secretariat (secretariat@npafc.org).
- ✓ Abstracts must be prepared according to the guidelines and sample format (see below).
- ✓ The Science Committee will select abstracts by **February 15, 2026**, 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.
- ✓ Presenters who had their abstracts selected will not need to resubmit them unless there are updates that include new results.
- ✓ Presenters may withdraw their abstracts if they are unable to attend the workshop. If you want to withdraw your abstract, please send an e-mail to the NPAFC Secretariat (secretariat@npafc.org) **no later than March 30, 2026**.

Abstract Guidelines

- ✓ Limit the abstract to 400 words and submit using Microsoft Word according to the sample format shown below.
- ✓ Tables and figures are not included in the abstract.
- ✓ Indicate the intended topic session (and sub-session).
- ✓ Specify the presenter with an asterisk (*). Please use full first and last names for each author (not just first initial).
- ✓ State the preference for (1) oral (in-person), (2) virtual presentation (via Zoom), (3) poster, or (4) oral (in-person), but virtual or poster presentations are acceptable. The Science Committee reserves the right to change the presentation from an oral/virtual to a poster presentation depending on time constraints.
- ✓ The abstract should begin with a clear statement of the problem or objectives, give a brief summary of methods and the major results, and end with a substantial conclusion. Do not use vague statements, such as "results will be discussed."
- ✓ Selected abstracts will be included in the program and abstract booklet.
- ✓ Authors are responsible for clarity and accuracy of the information presented in the abstracts, as they may not be edited during the process of compiling the abstract booklet.

Sample Format for Submitting Abstracts

Topic Session: 1. Linking climate-ocean variability to salmon population dynamics
Preferred Presentation Format: (4) oral (in-person), but virtual or poster presentations are acceptable

Title: Late ocean entry timing provides resilience to populations of Chinook and sockeye salmon in the Fraser River

Authors: Richard J. Beamish*, Ruston Sweeting, and Chrys Neville
Pacific Biological Station, Fisheries and Oceans Canada, 3190 Hammond Bay Rd., Nanaimo, BC, V9T 6N7, Canada (*E-mail: richard.beamish@xxxx.ca; Tel: 1-250-756-xxxx; Fax: 1-250-756-xxxx)

Abstract: Most sockeye salmon from the Fraser River enter the Strait of Georgia by early May and most Chinook salmon by mid May. There are populations of Chinook salmon from the South Thompson River

area and one population of sockeye salmon from the Harrison River that enter the Strait of Georgia almost two months later. The productivity of these species with a late ocean entry life history strategy has been exceptional in recent years. The reasons for the recent improved productivity of the late ocean-entry life history type are not known, but the success identifies the importance of a temporal spread in ocean entry timing of the aggregate of populations. The recent success also reminds us that ocean entry timing of the aggregate of populations has evolved to be able to adapt to long-term changes in the timing of prey populations in the early marine period.

Workshop Proceedings

Presenters who had their abstracts selected will be asked to submit an extended abstract by **July 30, 2026**. The extended abstracts will be compiled into workshop proceedings and published as a NPAFC Technical Report after the workshop. The Technical Report will be available online at the NPAFC website.

Science Committee

- Aleksei Somov, Chairperson (TINRO, Russia; SSC)
- Jackie King (Pacific Biological Station, DFO, Canada; SSC)
- Jong Kuk Choi (Aquatic Living Resources Center of East Sea, East Sea Branch, FIRA, Korea; SSC)
- Shunpei Sato (Fisheries Resources Institute, FRA, Japan; SSC)
- Kathrine Howard (Alaska Fisheries Science Center, NOAA, USA; SSC)
- William Stanbury (NPAFC Secretariat, Canada)

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