



Canadian Yukon River Chinook Stock Rebuilding and Conservation Hatchery Considerations

Yukon River Panel
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Outline

1. Pacific Salmon Strategy Initiative (PSSI)
 - Introduction, Overview
2. Yukon River Chinook Salmon Rebuilding and Ecosystem Strategy
 - Drivers, Work to date, Next Steps
3. Conservation Hatchery
 - Scope, Considerations, and Role



PSSI - Introduction

- Launched by the Minister of Fisheries and Oceans on June 8, 2021, the \$647-million Pacific Salmon Strategy Initiative (PSSI) aims to stem historic declines in key Pacific salmon stocks and rebuild these species to a sustainable level.
- The Initiative is built on these **four key pillars**:
 - Conservation and stewardship
 - Salmon Enhancement
 - Harvest transformation
 - Integration and collaboration



PSSI - Overview

PSSI Implementation Framework


Conservation and Stewardship



Theme:
Habitat Monitoring and Assessment

Theme:
Integrated Planning and Restoration

Salmon Enhancement



Theme:
Enhancement – Conservation Focused

Theme:
Enhancement – Harvest Focused

Harvest Transformation




Theme:
Harvest Transformation - Indigenous

Theme:
Harvest Transformation – Commercial

Theme:
Harvest Transformation - Recreational

Integration & Collaboration



Theme:
Integration and Coordination

Theme:
Collaboration and Partnerships





Yukon River Chinook Salmon Rebuilding and Ecosystem Strategy

Drivers

- Protracted declines in abundance, size, and productivity.
- Record low returns and failure to meet escapement objectives in recent years.
- Yukon River Chinook expected to be listed in Fisheries Act Regulations as a major stock with legal requirements for a stock rebuilding plan.
- Identified as one of 4 priority stocks of concern in Pacific Region under PSSl. Commitment to develop stock rebuilding plan.
- Yukon River identified as one of 3 priorities for an ecosystem plan under PSSl.
- High priority for assessment by the Committee on the Status of Endangered Wildlife in Canada



Yukon River Chinook Salmon Rebuilding and Ecosystem Strategy

Work To Date

- Announced long-term closure of the Yukon River commercial fishery.
- Initiated Commercial Licence Retirement Program.
- Capacity and infrastructure funding provided to FNs, YFNSSA and YSSC.
- DFO Capacity (Habitat Restoration Biologist & Stock Rebuilding Biologist)
- Held a facilitated workshop to collaboration with YFNs, Yukon Government, YFNSSA, YSSC, DFO and SMEs on an integrated approach to developing a Yukon River Chinook Rebuilding and Ecosystem Strategy.
- Funding and Technical support to KDFN for feasibility and planning related to a conservation hatchery as a part of a community Salmon Stewardship Centre.

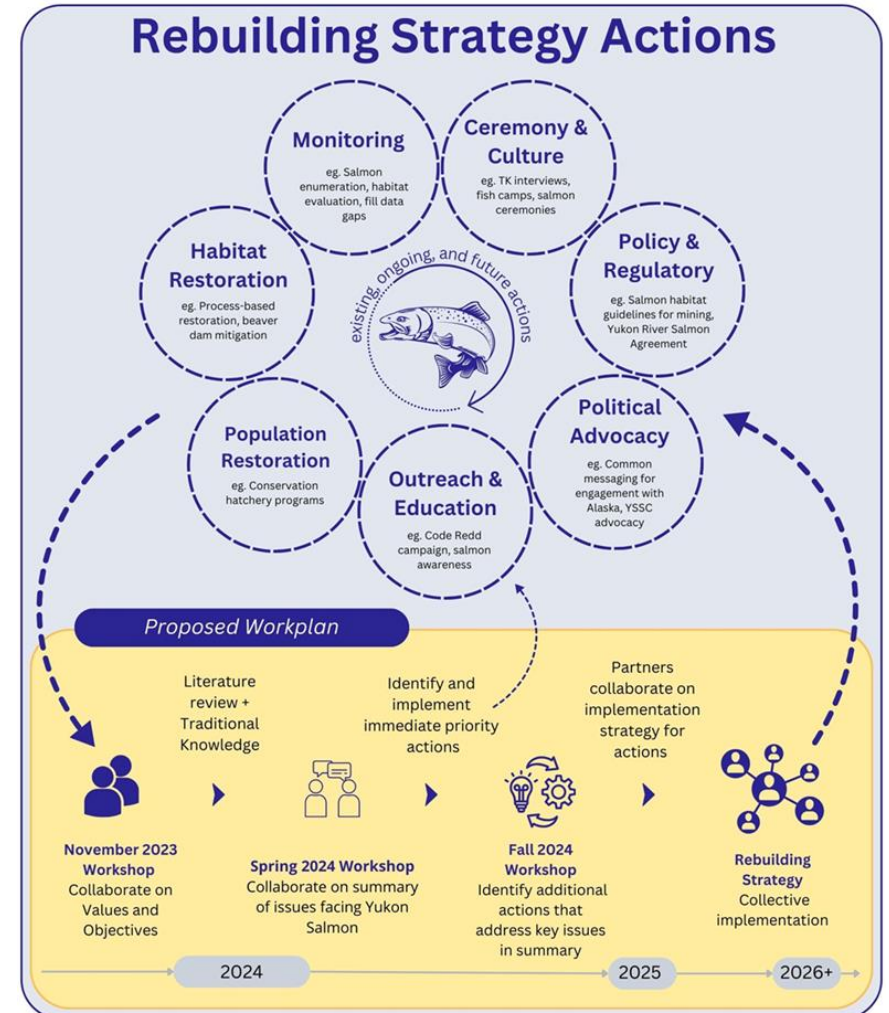




Yukon River Chinook Salmon Rebuilding and Ecosystem Strategy

Next Steps

- Three products from workshop (Summary, Briefing Note, Letter of Intent)
- Ecosystem and Population Risk Summary.
- Second workshop to collaborate and review the Risk Summary and begin work on threat assessments (Risk Assessment Methodology for Salmon).
- Use of Western Science and Traditional Knowledge.
- Identify priorities and mitigating actions.
- Act while planning; there are things we can do now.





Conservation Hatchery

Scope

- Clearly articulating the objective of a hatchery is crucial to defining its function and structure.
- A conservation hatchery is:
 - designed for short-term, surgical intervention on a sub-stock level;
 - a carefully controlled hatchery program that breed only wild fish to boost abundance of highly depleted populations;
 - smaller in scale than a production hatchery and designed with capacity for stock segregation and bio-security (redundant systems).





Conservation Hatchery

Considerations

- Use only wild broodstock.
- Broodstock should be from genetically similar populations, within a defined geographic distribution, and from similar habitat attributes (e.g. wouldn't use broodstock from a lake outlet spawning population to support a mainstem spawning population).
- Short-term boost to abundance to minimize genetic (and epigenetic) effects on the wild stock.
- Hatchery program needs to be controlled to mimic natural life history processes and timing.





Conservation Hatchery

Role

- Recent synthesized review of literature on the effects of salmon hatcheries on wild stocks (McMillan et al., 2023):
 - supports the concept of a conservation hatchery program as benefiting the abundance of wild populations.
- Not to be confused with a production hatchery intended to support fisheries.



Incubation Trays, Little Campbell River Hatchery, Vancouver Island



QUESTIONS?



Little Campbell River Hatchery, Vancouver Island