

# Anadromous Fish Reintroduction In the Upper Columbia River Basin An Overview

March 20, 2018

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# Presentation Outline

- History of Salmon Blockages
- Joint Fish Passage Paper
- 3 Forums for Salmon Reintroduction
- Phase 1 Work

# Columbia Basin



# Canadian Dams of Interest



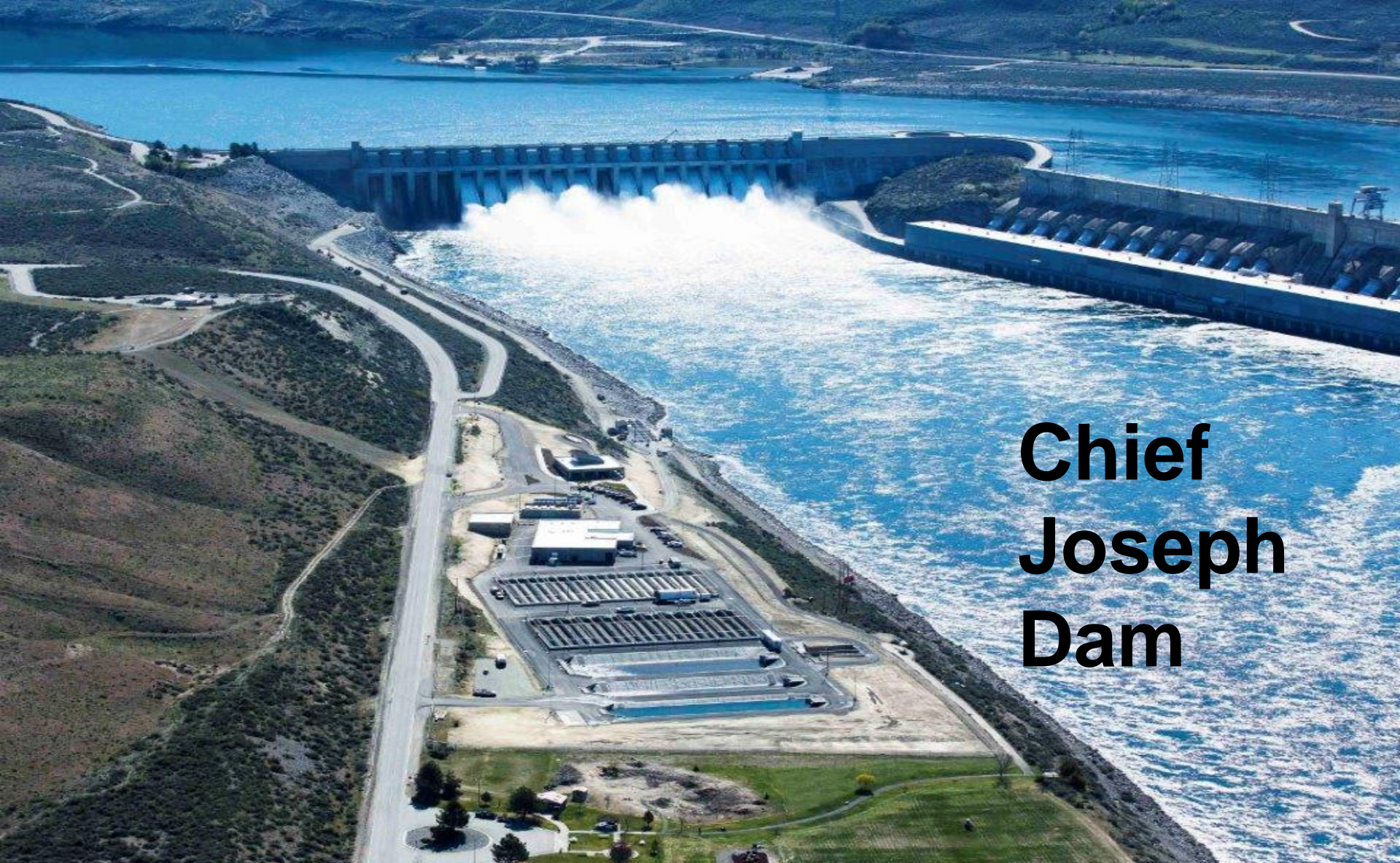


# Grand Coulee Dam

**Built in 1942**

**550' high**

**151 mile (243 km)  
reservoir**



# Chief Joseph Dam

**Built in 1955**

**236' high**

**51 mile (82 km)  
reservoir**

**2,260 Mw capacity**

# Canadian Dams



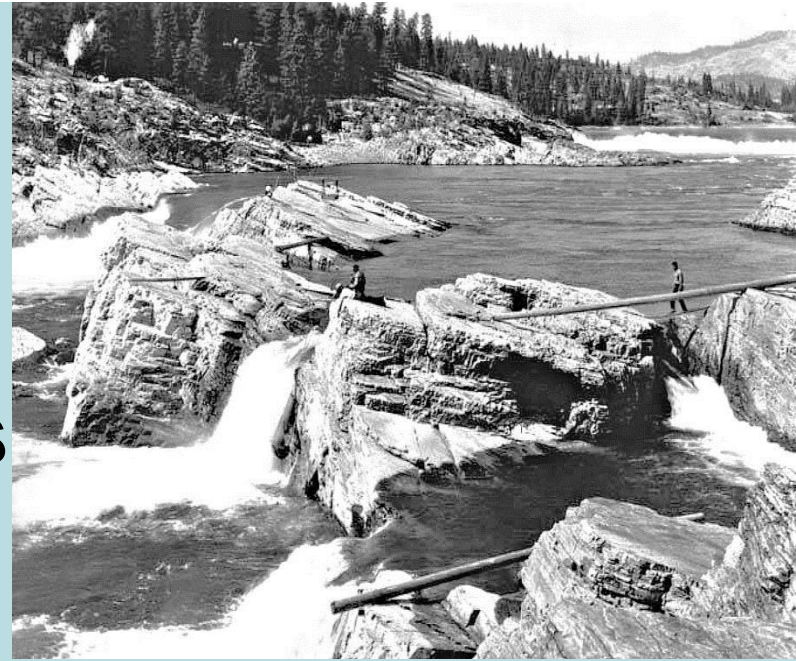


- **Annual average runs above Grand Coulee of 2.6 – 3.7 million salmon and steelhead**
- **Thousands of stream miles of mainstem and tributary habitat**
- **4 major nursery lakes**





- **5 Upper Columbia tribes annual consumption of 6.8 to 13.1 million pounds (~650,000 fish)**



- **Indigenous Nations' annual consumption of 125,000 – 750,000 salmon and steelhead**



- **Lower river tribes' annual harvest of 1.5 to 2.6 million salmon and steelhead from above Chief Joseph Dam.**

# Why Reintroduction Now?

- Unmitigated injustice to Tribes, Indigenous Nations and other upper basin communities and economies
- Technology has improved for adult and juvenile salmon passage at high head dams
- New passage technologies have little, if any impact, on current project beneficiaries: power generation, flood control, irrigation, and navigation

# Why Reintroduction Now?

- Reintroduction may be, and likely is, viable and needs to be investigated
- Nearby Sockeye & Chinook runs very productive
- U.S. federal government is requiring fish passage at most private dam blockages
- Climate Change – get the salmon back to cooler habitats



FISH PASSAGE &  
REINTRODUCTION  
*into the*  
U.S. & CANADIAN  
UPPER COLUMBIA BASIN

# Columbia River Treaty

- **December 2013:** Fish passage and reintroduction included in the U.S. Entity Regional Recommendation for the Future of the Columbia River Treaty after 2024:
  - “The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement restored fish passage and reintroduction of anadromous fish on the mainstem Columbia River to Canadian spawning grounds.”

# Columbia River Treaty

- Like hydropower and flood control, salmon reintroduction requires coordinated and strategic transboundary evaluation and implementation
  - Donor stock selection
  - Risk assessment
  - Capacity & location of fish passage facilities
  - Sequencing research and equipment
  - Coordinated artificial propagation facilities
  - Elimination of uncertainties

# Northwest Power and Conservation Council



Columbia  
River Basin  
Fish and Wildlife  
Program 2014



## Phased Approach to Reintroduction

***“Investigate habitat availability, suitability and salmon survival potential in habitats above Grand Coulee.”***



# Columbia River F&W Program

- **October 2014:** Tribes achieve an investigation of fish passage and reintroduction in Columbia River Basin Fish & Wildlife Program: Chief Joseph and Grand Coulee
- “Reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams to mainstem reaches and tributaries in the United States”
- **3 Phases**
  - Phase 1: Information Review (12/16)
  - Phase 2: Pilot Reintroductions and Interim Passage Facilities
  - Phase 3: Permanent Reintroduction and Facilities

# Tribal Action

- Tribes reserve the right to reintroduce salmon
- Pilot reintroductions are a near term possibility

# Phase 1 Implementation

- U.S. Habitat Assessment
- Donor Stock Assessment
- Risk Assessment
- Life-Cycle Modeling
  
- Review of High Head Dam Fish Passage Facilities

# Interim Phase 1 Report

- Habitat Assessment
- Donor Stock Assessment
- Risk Assessment
- Reintroduction Strategies
- High Head Dam Fish Passage Facility Options
- Life Cycle Modeling
- Alternative Fish Passage Facility Configurations
- Key Uncertainties
- Cost and Financing Considerations
- Recommendations

# Floating Surface Collector



# Whooshh “Salmon Cannon”





# West Coast Reintroductions

- 20 other West Coast watersheds
- 48 dams



**THANK**

**YOU**