# Reintroduction of Salmon Upstream of Chief Joseph and Grand Coulee Dams.

Rodney Cawston, Colville Chairman
Casey Baldwin, Colville Tribes Research Scientist

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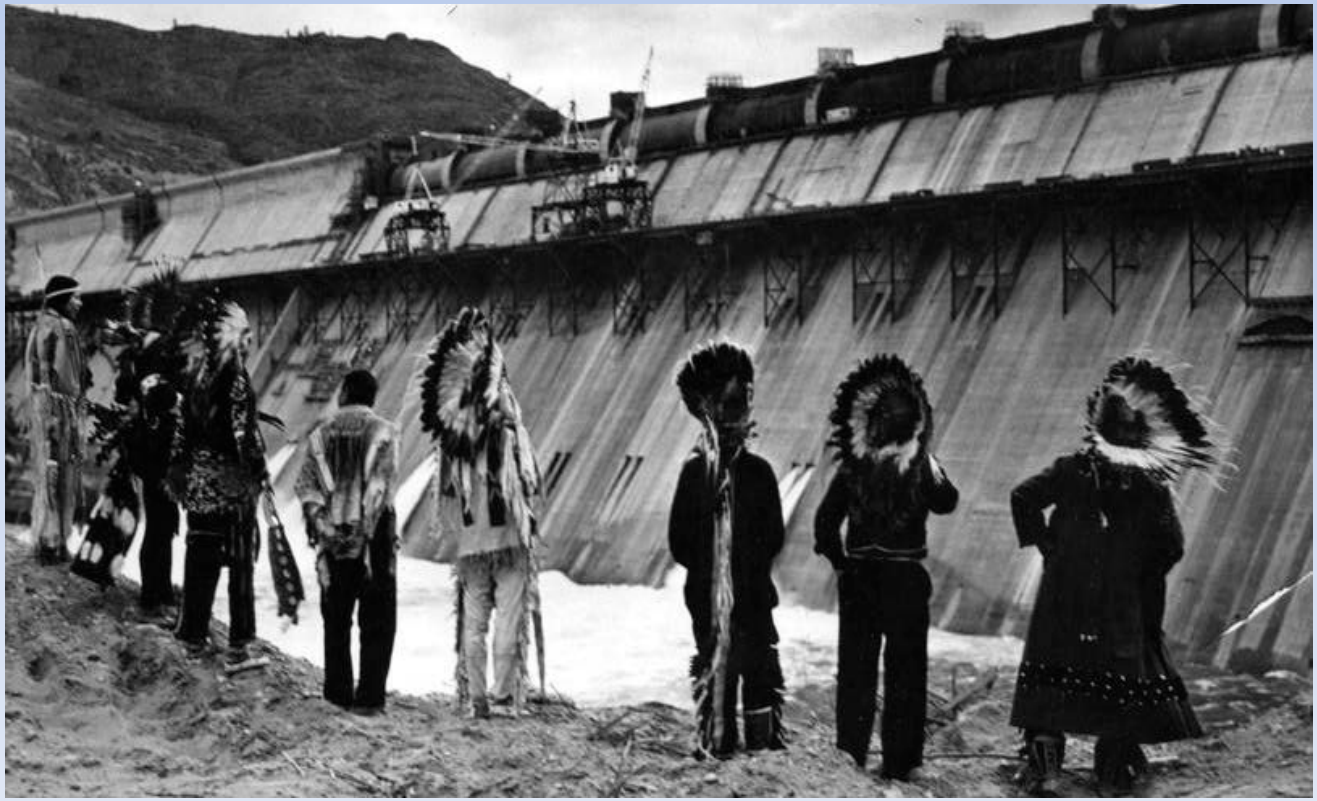
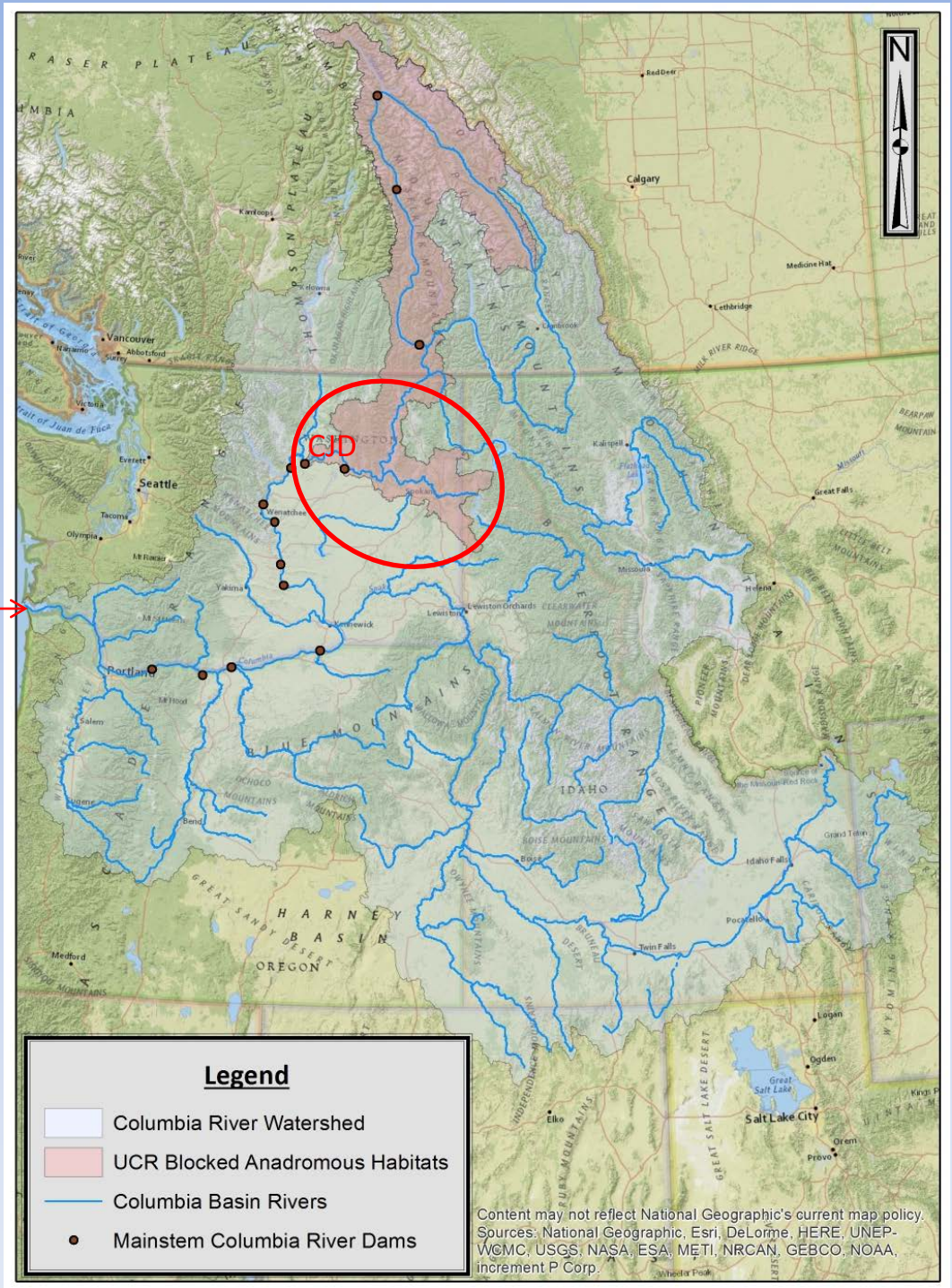
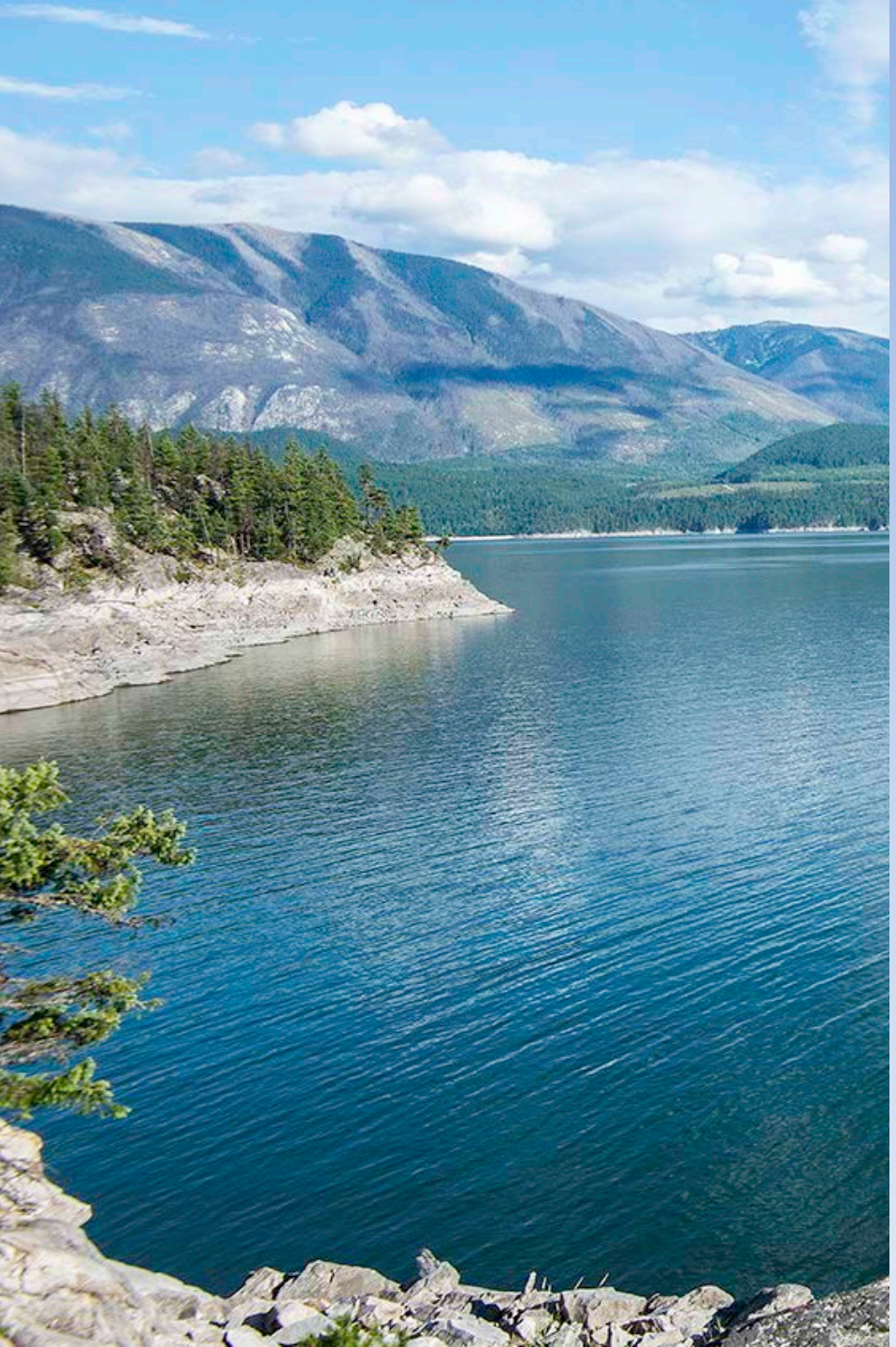
## Input & participation:

UCUT (5 tribes)
WDFW
ONA
USGS, PNNL, ICFI
DWA (Kevin Malone)
Steve Smith Consulting
BPA, USBR, USFWS, DPUD



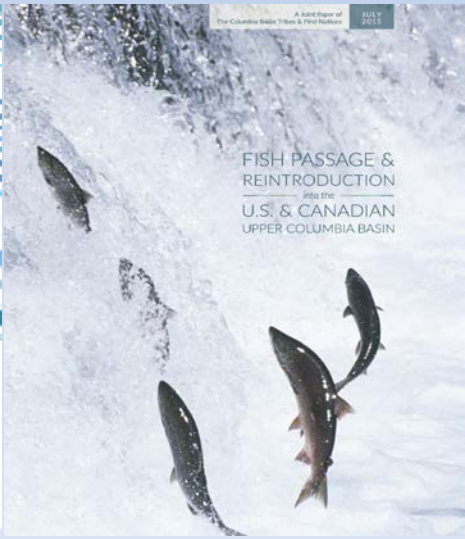

CJD
Mouth of Columbia
Legend
Columbia River Watershed
UCR Blocked Anadromous Habitats
Columbia Basin Rivers
Mainstem Columbia River Dams
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



## FISH PASSAGE AND REINTRODUCTION

# 3 forums

- Columbia River Treaty
  *6 dams (4 in Canada)*
- NPCC Fish & Wildlife Program
  *2 dams (U.S. only)*
- Tribal Initiatives




Arrow Lakes Reservoir. Photo courtesy of West Kootenay Parks

# Phased approach

✓ Phase I: Pre-assessment planning for reintroduction and fish passage.

Ongoing Phase II: Experimental, pilot-scale salmon reintroductions and interim passage facilities.

? Phase III: Construct permanent juvenile and adult passage facilities and supporting propagation facilities. Implement priority habitat improvements.

? Phase IV: Monitoring, evaluation, and adaptive management. Continue needed habitat improvements.

## Phase 1 Outline

**-Donor Stock Assessment** (*Which species and stocks are most appropriate)*

**-Risk Assessment** (*What are the risks to resident fish and downstream anadromous pops?)*

**-Habitat Assessments** (*Can the habitat support fish production?)*

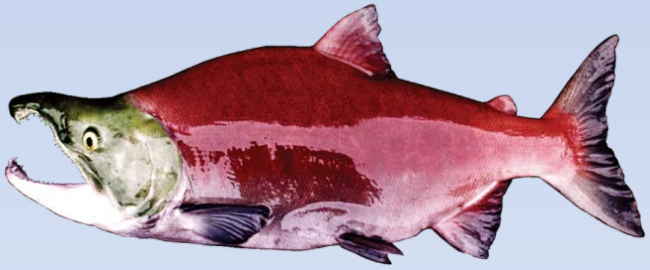
**-Review of Fish Passage Technologies**
*Is it possible to pass fish above CJD & GCD?*

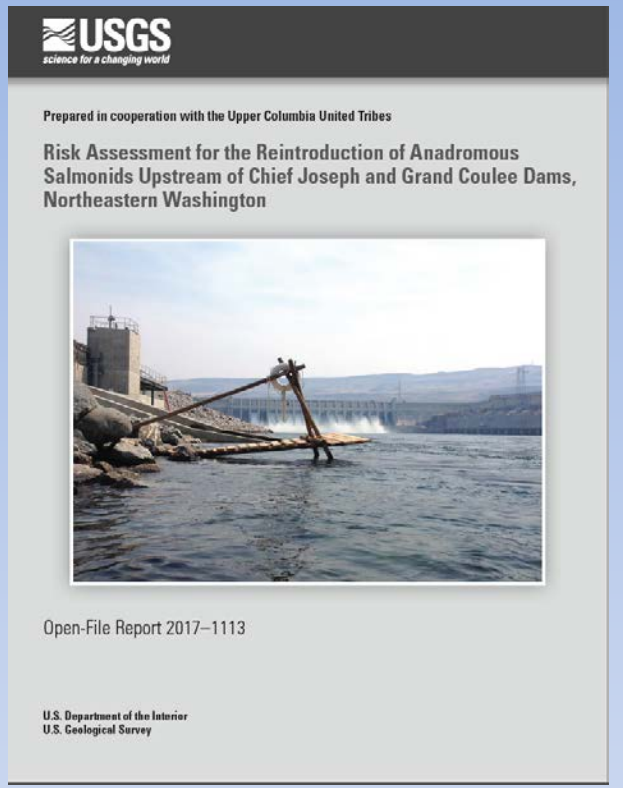
**-Life Cycle Modeling** *(What are possible outcomes, is there potential for objectives to be met?*

**- Future studies/recommendations**
*What comes next?*

# Donor Stock and Risk Assessment

- **Species (40 stocks/populations)**
  - Sockeye (7)
  - Summer/fall Chinook (10)
  - Spring Chinook (10)
  - Steelhead (7)
  - Coho (6)
- **Scored and ranked based on 6 criteria**






Feasibility testing in Phase 2 will begin with summer/fall Chinook and sockeye because they are un-listed, productive, readily available and lowest risk to downstream and upstream populations.

# *Suitable Habitats are Available*

- **Potential Habitats: >1,200 miles in U.S.**
  - 1,161 tributary miles for Steelhead
  - 355 tributary miles for spring Chinook
  - 53 miles mainstem summer/fall Chinook
- **Current Spawner Capacity Estimates:**

| Species | Low Capacity | High Capacity |
|---|---|---|
| Spring Chinook | 900 | 1,200 |
| Summer/Fall Chinook | 13,000 | 76,800 |
| Sockeye | 34,100 | 756,300 |
| Steelhead | 3,100 | 4,200 |
| **Total** | **51,100** | **838,500** |

Photo Credit: Michael Visintainer, Silver Bow Fly Shop

- **Lake Roosevelt Rearing Capacity:** 12 million – 48.5 million Sockeye

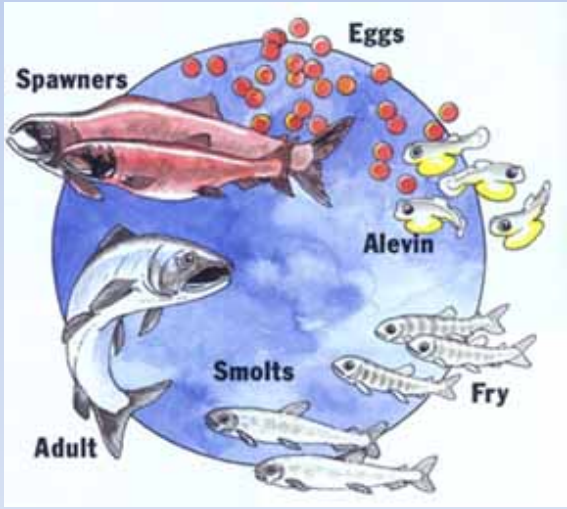
# Life Cycle Modeling Summer/Fall Chinook

## Baseline Management Scenario:

- 1.5 million hatchery smolts
- 3,000 additional surplus hatchery fish translocated
- Passage/bypass facilities at CJ and GC dams

## Baseline Results

| Modeled Population | Pre-Harvest Adults | # Harvested Adults | Adult Escapement |
|---|---|---|---|
| Rufus Woods | 16,000 | 9,400 | 6,200 |
| Sanpoil | 3,000 | 2,000 | 400 |
| Mainstem | 22,000 | 12,600 | 7,400 |
| **Total** | **41,000** | **24,000** | **14,000** |



# Harvest assumptions

- Used existing harvest frameworks and rates
- Added some additional harvest for new terminal area fishing (15% HOR ; 1% NOR)
- ~58% ER for UCR summer Chinook
- The project is successful by adding new fish, so everyone gets more harvest.

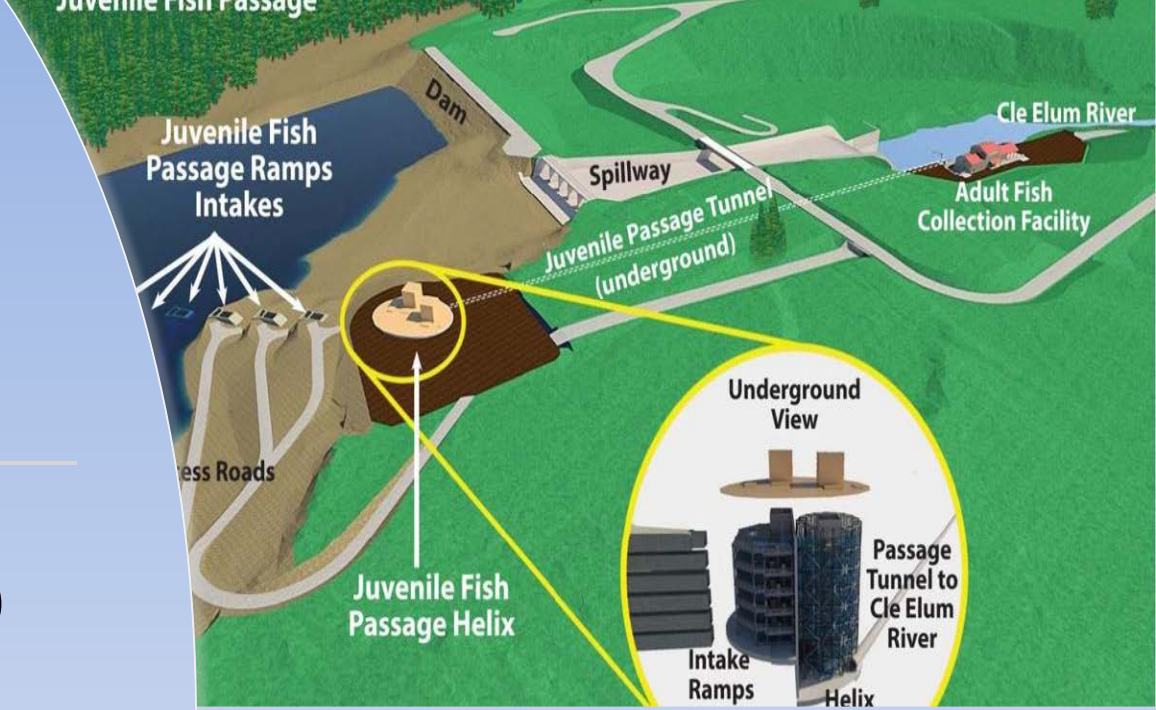
# Examples of Fish Passage

**Juvenile Passage:**

- Floating Surface Collectors
- "The Helix"
- Others - project specific (e.g. Rocky Reach corner collector)

**Adult Passage:**

- Trap & Haul
- Elevator & Locks
- Whooshh Salmon Cannon




# Phase 1 Study Conclusions

- There are good options for donor stocks
- We understand the disease risks and they are manageable
- There are large quantities of habitat in the U.S. that are available and suitable (and even more in Canada not addressed in this report)
- Passage technology exists and is being used at other high head dams
- Life Cycle Models show promising results
- Returning salmon to the blocked area will deliver cultural and economic benefits for all

**Phase 1 work affirms we should move forward into Phase 2**

# What's Next in Phase 2 Actions and Studies?

**Coordination/Planning**

- Coordination with dam owners and operators
- Coordination with Canada
- Seek funding
- Continue to foster support and build on momentum
- Finish Strategic Implementation Plan

**Implementation**

- Survival at various life stages and habitat types
- Migration timing
- Fish passage pathways and survival
- Fish passage design/planning
- Continue to implement cultural and educational releases

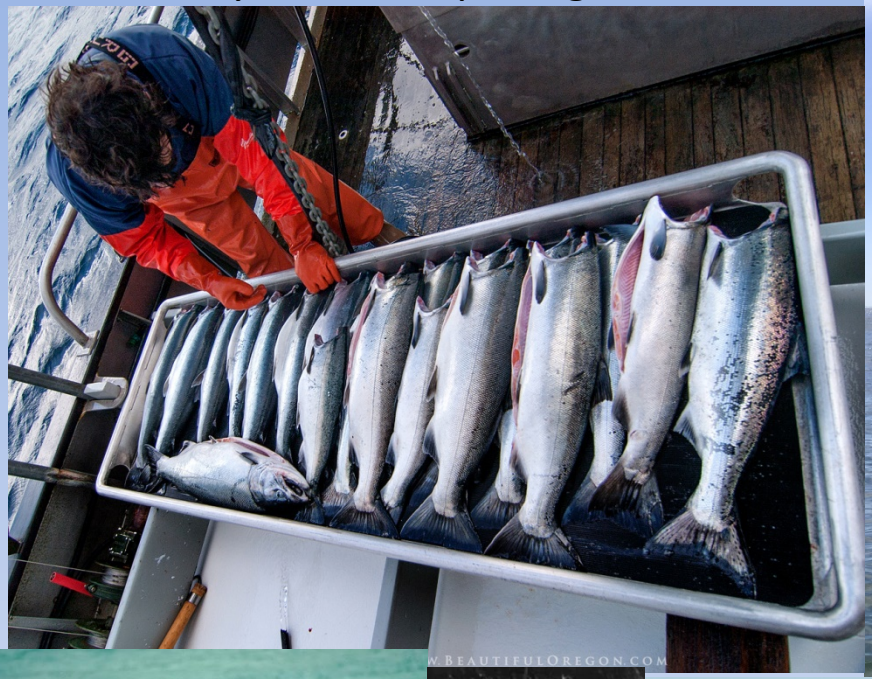
# ‘Cultural and Educational’ Releases

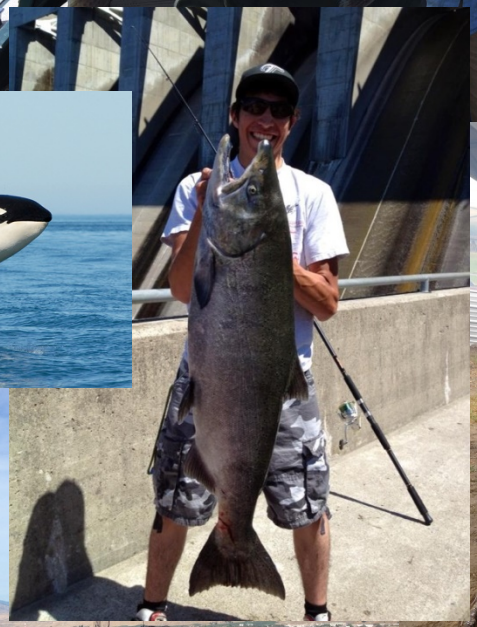
*A parallel path to the Phased approach*

- To reconnect the people with the fish and the fish with the habitat
- To have ceremonies and keep the salmon culture alive and well
- In some cases, to provide a harvest opportunity in areas that have not had anadromous fish for 60-90 years
- To educate and involve the tribal membership, youth, the general public, and other partners and stakeholders in the process of salmon reintroduction to the blocked area
- To scope reintroduction strategies and generate baseline information

# Cultural and Educational Releases 2017-2020


# Why is salmon passage into blocked areas important to PFMC?





# Current Partners and Support

- 14 Tribes Coalition (Col. River Treaty)
- Regional recommendation by the U.S. entity for the Col. R. Treaty
- NPCC F&W program (2014 amendment and 2020 addendum)
- Gov. Inslee's Southern Resident Orca Task Force
- Tribal/State/Federal 'Fish Management Initiative'
- Columbia Basin Partnership (MAFAC Task Force)
- WDFW, USGS, PNNL, ONA, BPA, USBR, ACOE, USFWS, DPUD

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? PFMC, Will the PFMC offer policy support to expand salmon distribution into the blocked area of the Upper Columbia?

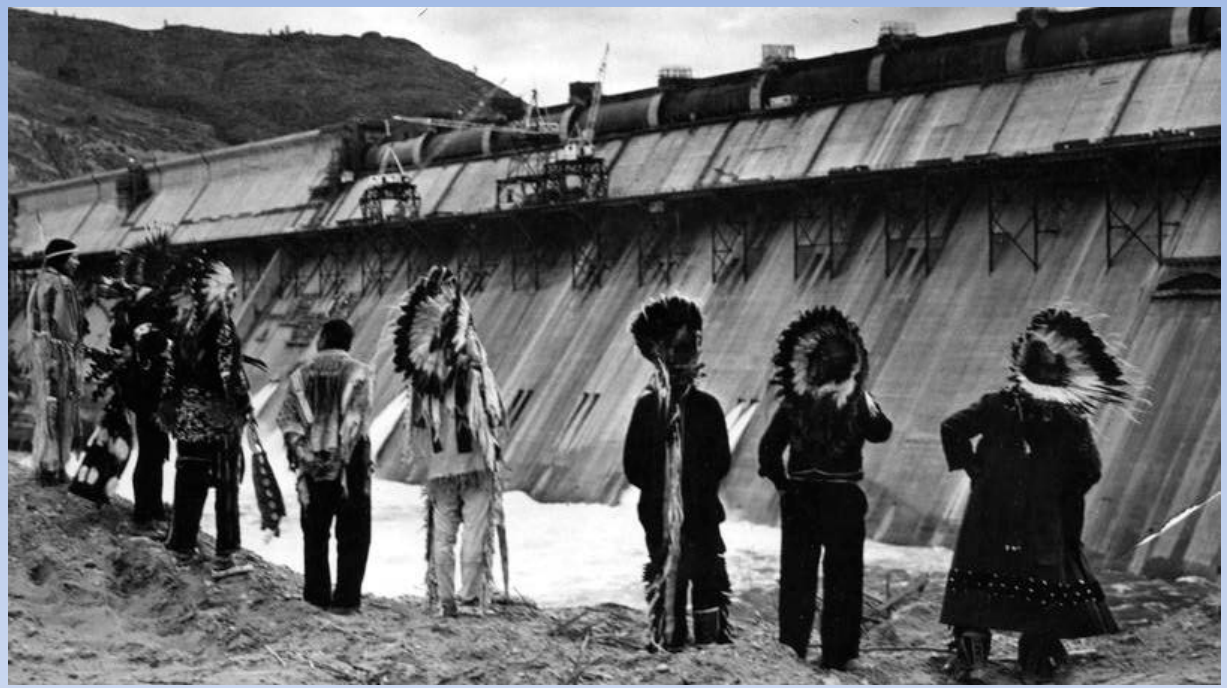
# PFMC support

We ask that the Council write a letter of support to the Colville Tribes and our UCUT partners for the salmon reintroduction effort upstream of Chief Joseph and Grand Coulee dams, as this effort will:

- Support the cultural values and subsistence fishing opportunities for tribes throughout the Pacific Northwest.
- Increase the abundance of salmon in the ocean and the Columbia River for economic, cultural and ecosystem benefits.
- Reconnect historic spawning and rearing habitat for anadromous fish.
- Restore ecosystem benefits in freshwater habitat that have been deprived of ocean-derived nutrients for many decades.

# Thank you

For more information visit: https://ucut.org/



"…after experiencing, in my life…days of our cultural darkness, now we are coming into our cultural light. Where our traditions, our ceremonies, are just shining down on everybody, and making everybody happy. And this is what we need. So let our light shine on, and let our children and our grandchildren feel that light."

*- Francis White, Coeur d' Alene tribal elder*