January 7, 2021

MEMORANDUM

TO: **Fish and Wildlife Committee Members**

FROM: **Stacy Horton, Washington Policy Analyst/Biologist**

SUBJECT: **Cultural and Educational Releases of Salmon Upstream of Chief Joseph and Grand Coulee Dams**

BACKGROUND:

Presenter: Casey Baldwin, Senior Research Scientist, Colville Confederated Tribes

Summary: Casey will provide an overview of the Colville Tribes cultural and educational releases of adult salmon upstream of Chief Joseph and Grand Coulee dams. Cultural and educational releases are on a parallel path to the Council's Phased approach and include conducting ceremonies, evaluating effectiveness of releasing adult salmon and providing fish for harvest or ecological benefits in areas that have been deprived of salmon for 60-110 years. The Colville Tribes conducted PIT and acoustic tagging and spawning ground surveys to evaluate some of the adult salmon released thus far. The results of these monitoring efforts will provide effectiveness information and may help guide future salmon studies and/or restoration efforts.

Relevance: The 2014/2020 Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program contains a strategy for *Anadromous Fish Mitigation in Blocked Areas* that includes measures for reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams to mainstem reaches and tributaries in the United States. A phased approach is required, with the first phase calling for an investigation of habitat availability, suitability and salmon survival potential in habitats above Grand Coulee, which might include selective releases of salmon

and steelhead. An investigation of scientific feasibility and possible cost of upstream and downstream passage options for salmon and steelhead is needed.

Background: The 2014/2020 Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program contains a strategy for *Anadromous Fish Mitigation in Blocked Areas* that includes measures for reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams to mainstem reaches and tributaries in the United States. A phased approach is required, with the first phase calling for an investigation of habitat availability, suitability and salmon survival potential in habitats above Grand Coulee, which might include selective releases of salmon and steelhead. An investigation of scientific feasibility and possible cost of upstream and downstream passage options for salmon and steelhead is needed. Before funding new investigations, the Council is to be provided a report for consideration of subsequent work to advance the reintroduction planning process.

In May 2019, UCUT submitted their Fish Passage and Reintroduction Phase 1 Report: Investigations Upstream of Chief Joseph and Grand Coulee Dams to the Council. The UCUT report evaluated donor stocks, risks to resident and anadromous stocks, habitat availability and suitability, passage technologies, life cycle model development, and finally, goals and objectives for Phase 2 studies. Conclusions of their report included modeling that indicated hundreds of miles of habitat are available for Spring chinook and steelhead, existing options for donor stocks, life cycle models developed for summer/fall chinook and sockeye show promising results, risks are manageable, passage technology exists, and finally that cultural and economic benefits will result.

In 2019, the Northwest Power and Conservation Council asked the Independent Scientific Advisory Board (ISAB) to review the Upper Columbia United Tribes' (UCUT) *Fish Passage and Reintroduction Phase 1 Report: Investigations Upstream of Chief Joseph and Grand Coulee Dams*. The ISAB review (ISAB 2019-3) found the donor stock process and recommendations to be scientifically credible, that habitat capacity and assessments provided reasonable hypotheses and will require additional information for future decisions, that the life cycle model provided a simple way to integrate data, and that a strategic plan will be needed so that future steps and adaptive management are able to address uncertainties. The ISAB found that all elements of the Phase 1 requirements were met except for the cost of passage options, noting that cultural releases of adult salmon as well as some preliminary experiments will help develop future design and cost analyses.

More Info:

2014/2020 Columbia River Basin Fish and Wildlife Program

Upper Columbia United Tribes Phase 1 Report:
Fish Passage and Reintroduction Phase 1 Report: Investigations Upstream of Chief Joseph and Grand Coulee Dams

UCUT video of the Phase 1 results
https://protect-us.mimecast.com/s/PitwCzplGqswvj2H4k8GU?domain=ucut.org

ISAB review of the UCUT Phase 1 report:
ISAB Review of the Upper Columbia United Tribes' Fish Passage and Reintroduction Phase 1 Report: Investigations Upstream of Chief Joseph and Grand Coulee Dams (Reintroduction Report)

Staff paper: Review of Fish Passage Technologies at High-Head Dams

The Colville Tribes Cultural and Educational Releases of Salmon into the Blocked Area Upstream of Chief Joseph and Grand Coulee Dams

Casey Baldwin, Colville Tribes F&W, Research Scientist

NPCC Fish Committee Meeting
January 12, 2021

TRIBAL TRIBUNE

NEWS SPORTS OPINION SOCIAL MEDIA ADVERTISING OPPORTUNITIES

FEATURED

CTFW reports 'naive adult' Chinook salmon have spawned in San Poil River

Justus Caudell/Tribal Tribune Oct 29, 2020 Updated Oct 29, 2020 0

Screencapture

Courtesy CTFW

CTFW released 100 Chinook into San Poil in August

KELLER – In August, the Colville Tribal Fish and Wildlife Department trapped and hauled 100 adult chinook salmon from Wells Fish Hatchery, below Grand Coulee and Chief Joseph dams – the two massive concrete structures that have blocked migration of salmon into the northern reaches of the Columbia River and its tributaries for nearly seven decades – and released them into the San Poil River.

Now, CTFW has announced surveys have shown those salmon successfully spawned in the San Poil.

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Some Good 2020 News: Salmon Spawning In Upper Columbia River After 80 Years

By Courtney Flatt December 13, 2020

rand Coulee Dam was built between 1933 and 1941, it effectively blocked salmon from traveling to the upper reaches of the Columbia River. CREDIT: U.S. Bureau of Reclamation

THE SPOKESMAN-REVIEW

Spokane, Washington Est. May 19, 1883

Gonzaga Basketball WSU Football Outdoors 2020 Pac-12 football preview NWPrepsNow Gonzaga Women's Ba

SPORTS › OUTDOORS

For the first time in more than 80 years, salmon spawning in the upper Columbia River

UPDATED: Thu., Dec. 17, 2020

Pictured here is one of the 36 redds found by Colville tribal fishery biologists in the Sanpoil River, a tributary of the Columbia River. (Courtesy of the Colville Tribe)

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By Eli Francovich
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For the first time in more than a generation, chinook salmon have spawned in the upper Columbia River system.

Colville Tribal biologists counted 36 redds (a gravely nest in which female salmon lay their eggs) along an 8-mile stretch of the Sanpoil River, a tributary of the Columbia, in September.

"I was shocked at first, then I was just overcome with complete joy," said Crystal Conant, a Colville Tribal member from the Arrow Lakes and SanPoil bands. "I don't know that I have the right words to even explain the happiness and the healing."

The news is a step toward full reintroduction of the migratory fish and another watershed cultural moment for the region's tribes. Since the Chief Joseph and Grand Coulee dams were built in the 1950s and 1930s, respectively, salmon have been blocked from returning to spawning beds in the upper Columbia River.

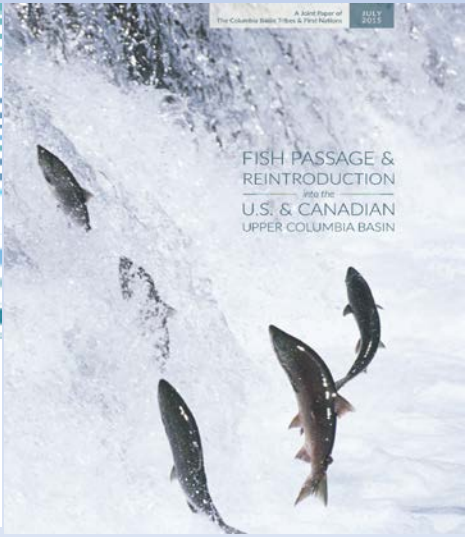
For decades, tribal leaders and scientists have dreamed of bringing the fish back to their native beds. Since 2014, the Columbia River tribes have worked on a plan that examines habitat, fish passage and survival among other things.

"It's an exciting project. It's been rewarding to work on," said Casey Baldwin, a research scientist for the Colville Tribe. "The long-term

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



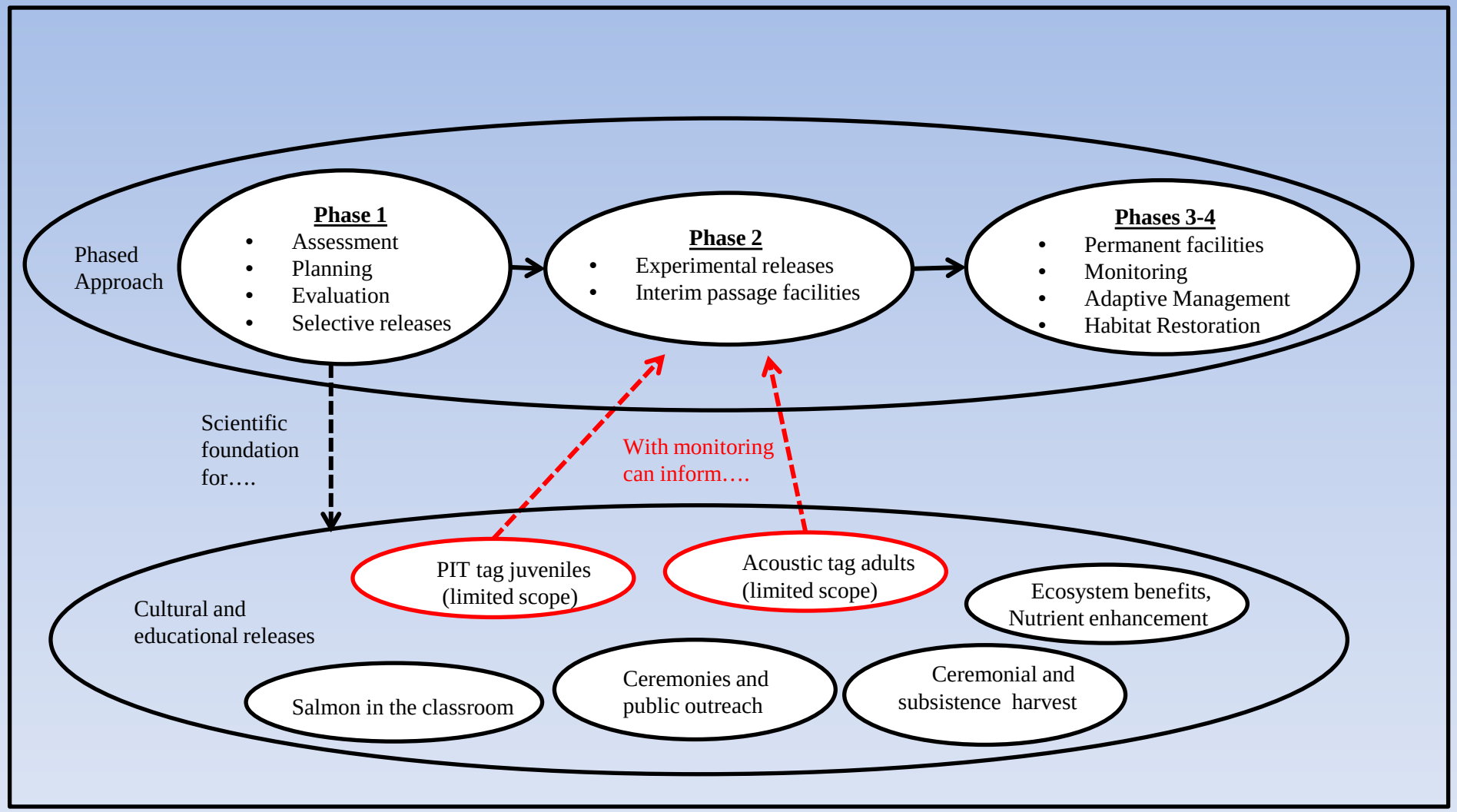
Arrow Lakes Reservoir. Photo courtesy of West Kootenay Parks

‘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 60-110 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

Parallel Paths



Summary of Cultural Releases 2019-2020

- 2019 Ceremonies (Nespelem, Keller, Kettle Falls, 30 fish each)
- 2019 Rufus Woods tracking (59 acoustic tags + 93 PIT)
- 2020 Lake Roosevelt acoustic tagging study
  - 50 acoustic tags (25 at Geezer Beach, 25 at Northport)
- 2020 Sanpoil R. (100 PIT tags)

All 392 fish were surplus hatchery summer Chinook from Wells Hatchery

Colville Tribes Cultural Releases 2019

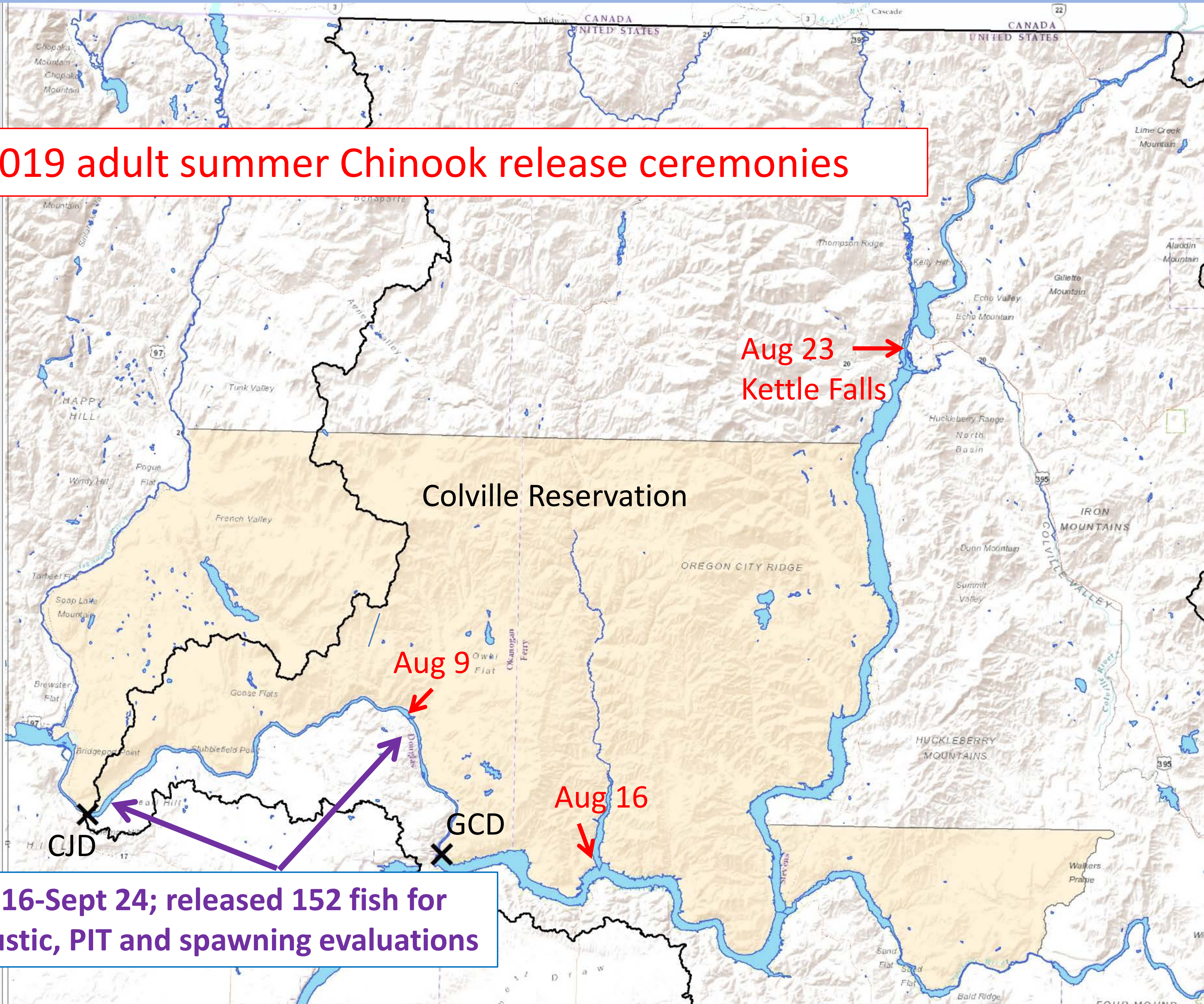
CCT Cultural Releases 2019

Colville Tribes Cultural Releases 2019

Colville Tribes Cultural Releases 2019

Colville Tribes Cultural Releases 2019

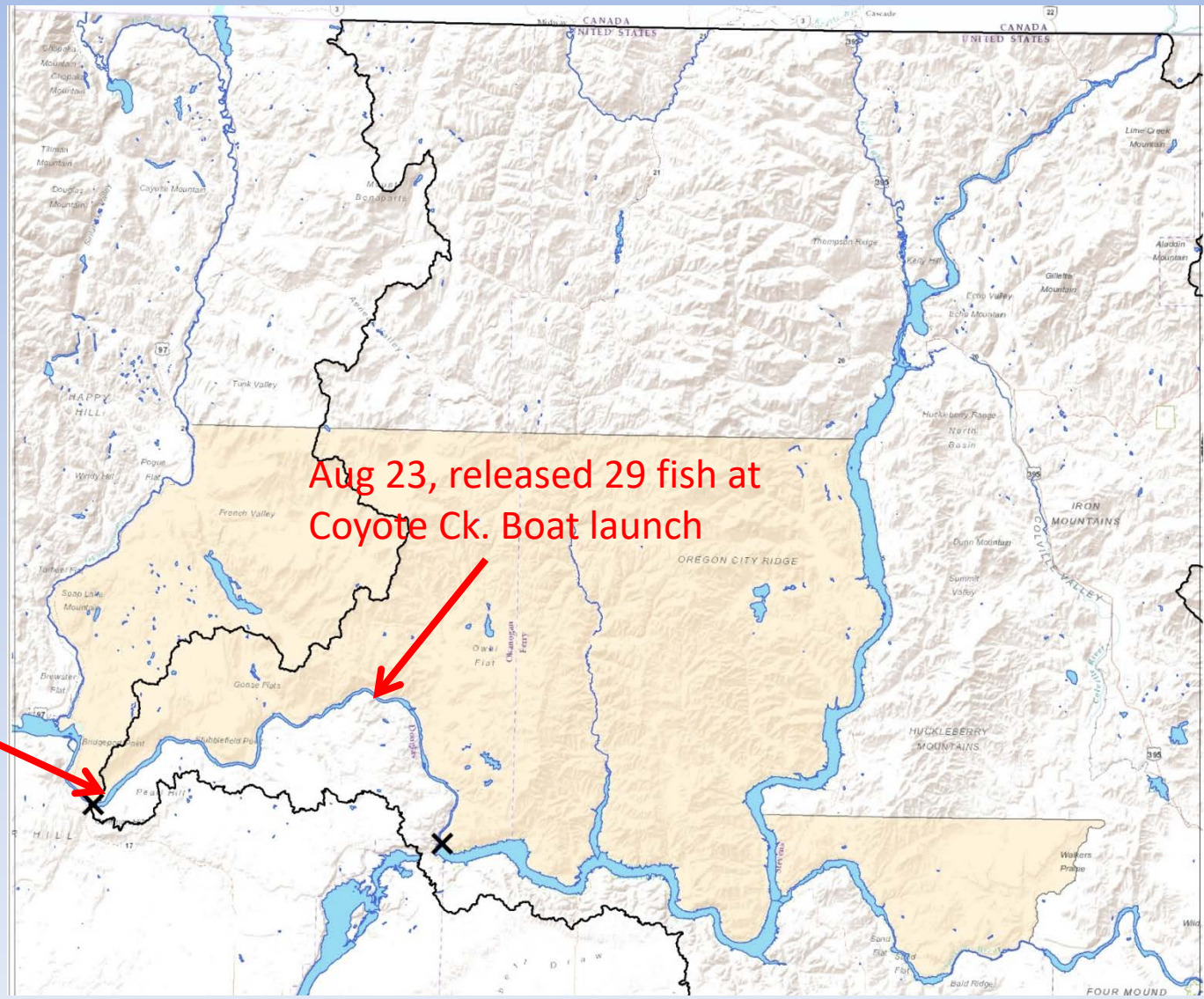
2019 adult summer Chinook release ceremonies



Aug 16-Sept 24; released 152 fish for acoustic, PIT and spawning evaluations

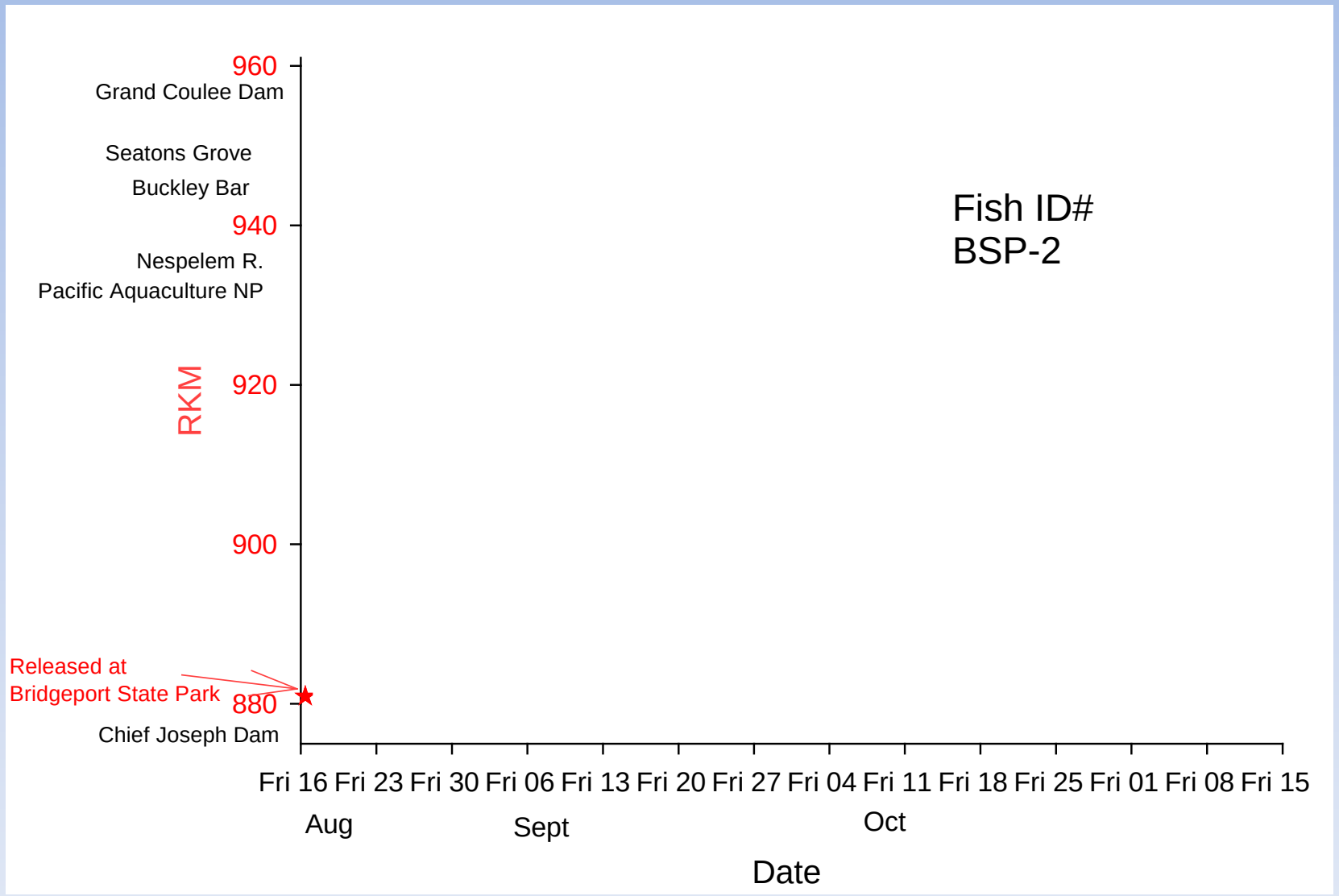
2019 Rufus Woods Tracking

- 59 acoustic tagged fish released at 2 locations

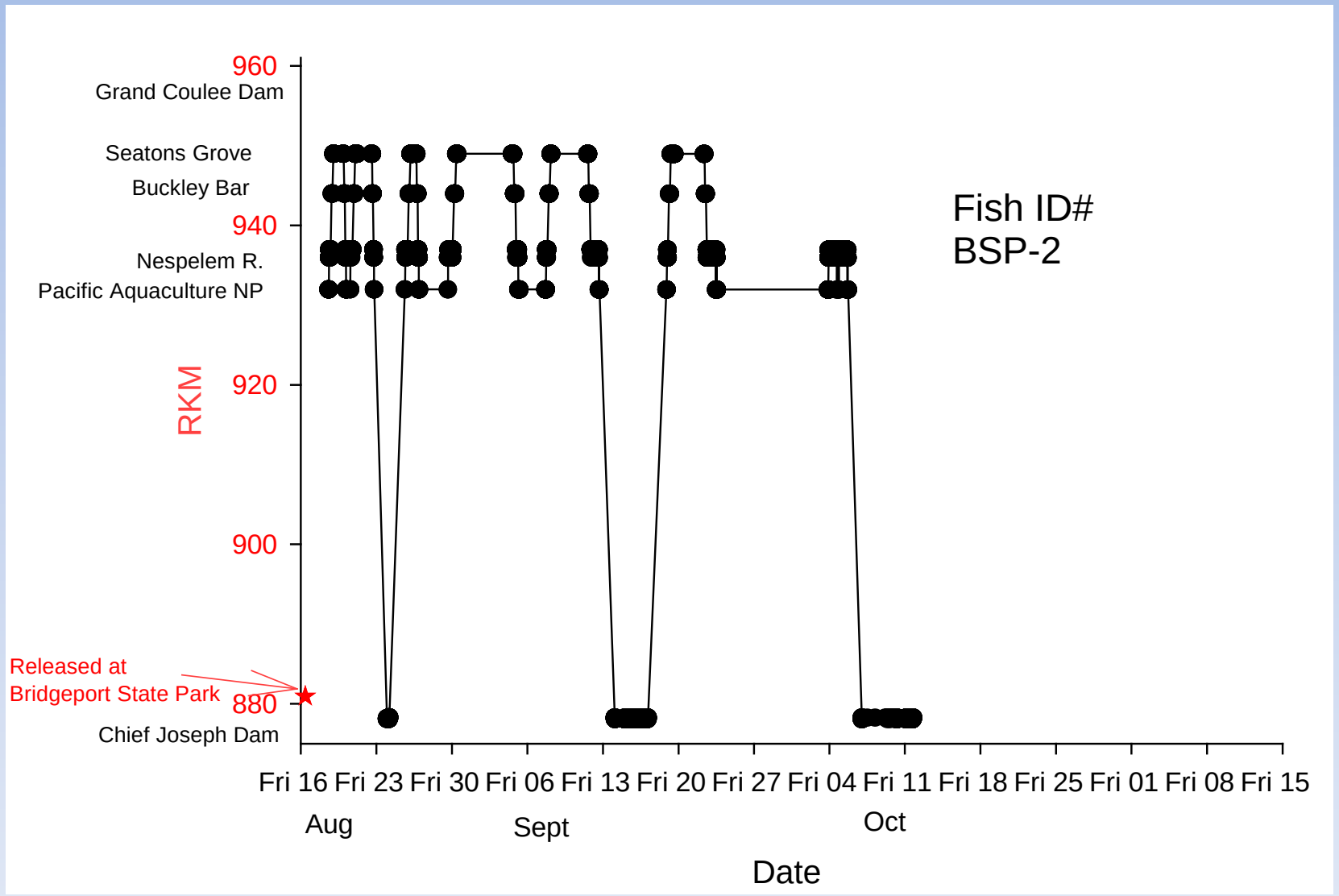



Legend
Receiver Locations
Landmarks
Dams
Okanogan R
Columbia River
Bridgeport
State Park
Chief Joseph Dam
1
2
3
Wells Dam
Columbia River/Rufus Woods Reservoir
Coyote Cr
Nespelem R
4
5
6
7
8
Buckley Bar
9
Seatons Grove
Grand Coulee Dam
Banks
Lake
N
W
E
S
0
3.5
7
14 Kilometers
Map Created by Shay Wolvert, CCT Fish and Wildlife 5/13/2020

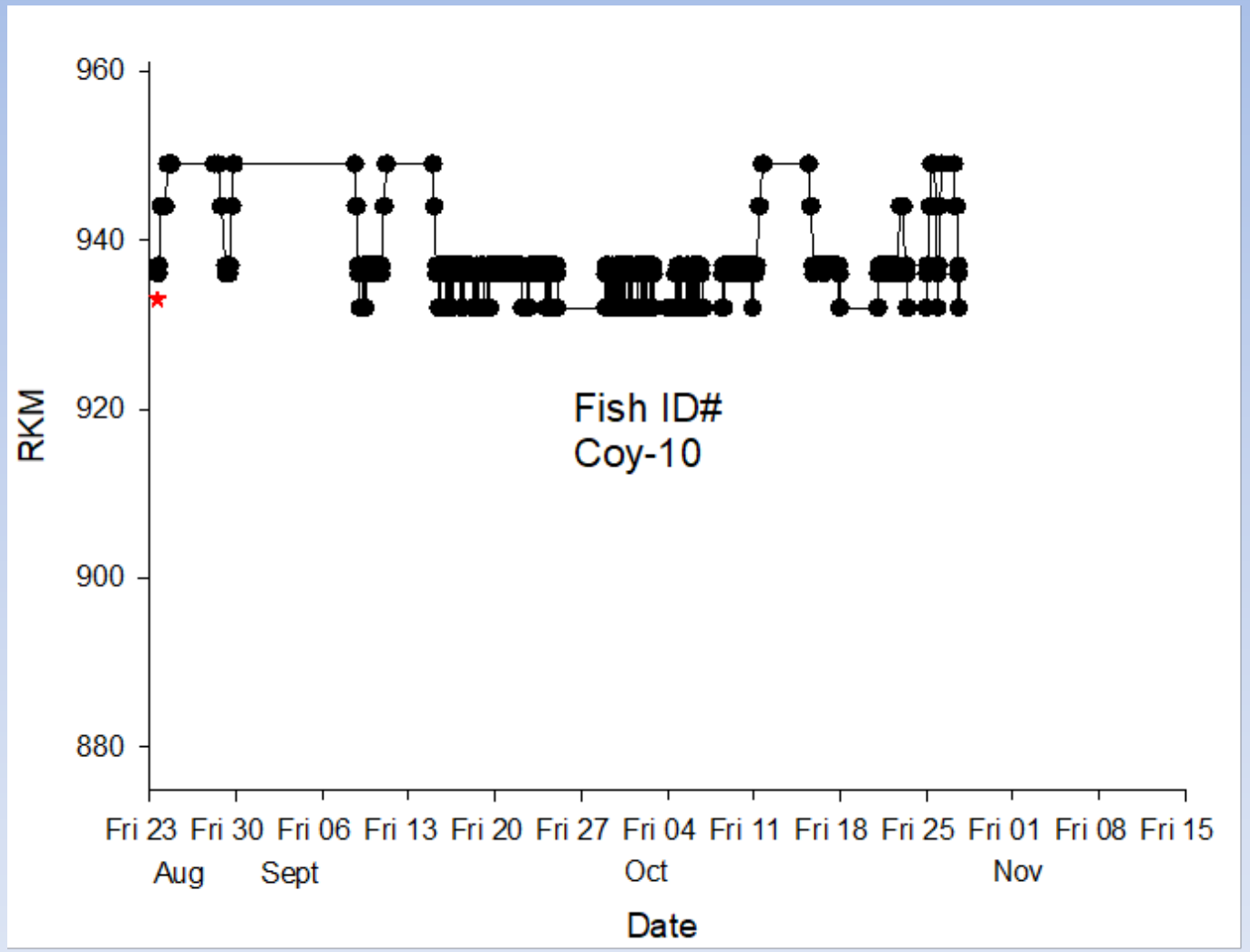
Individual Fish Tracks



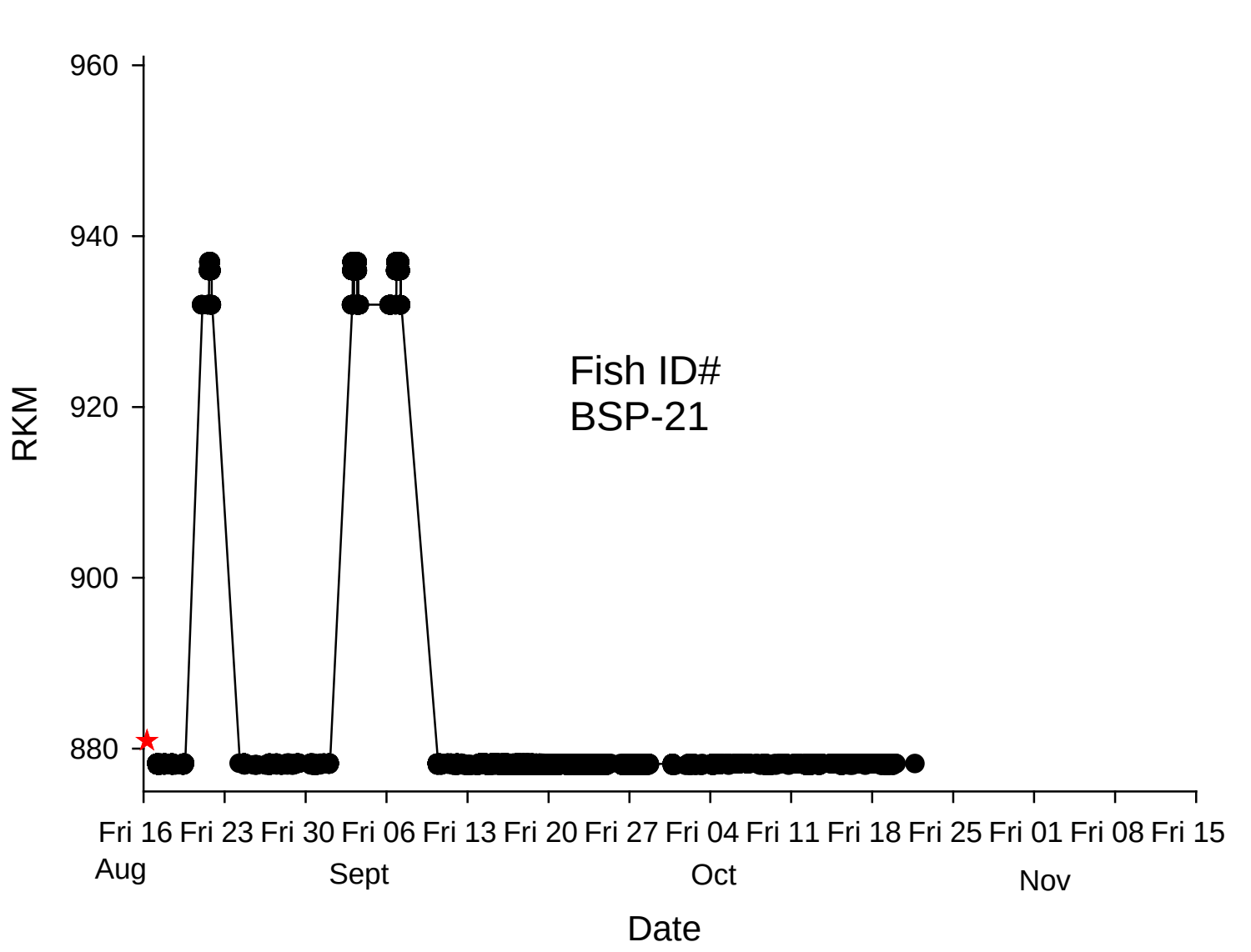
Individual Fish Tracks



Individual Fish Tracks



Individual Fish Tracks



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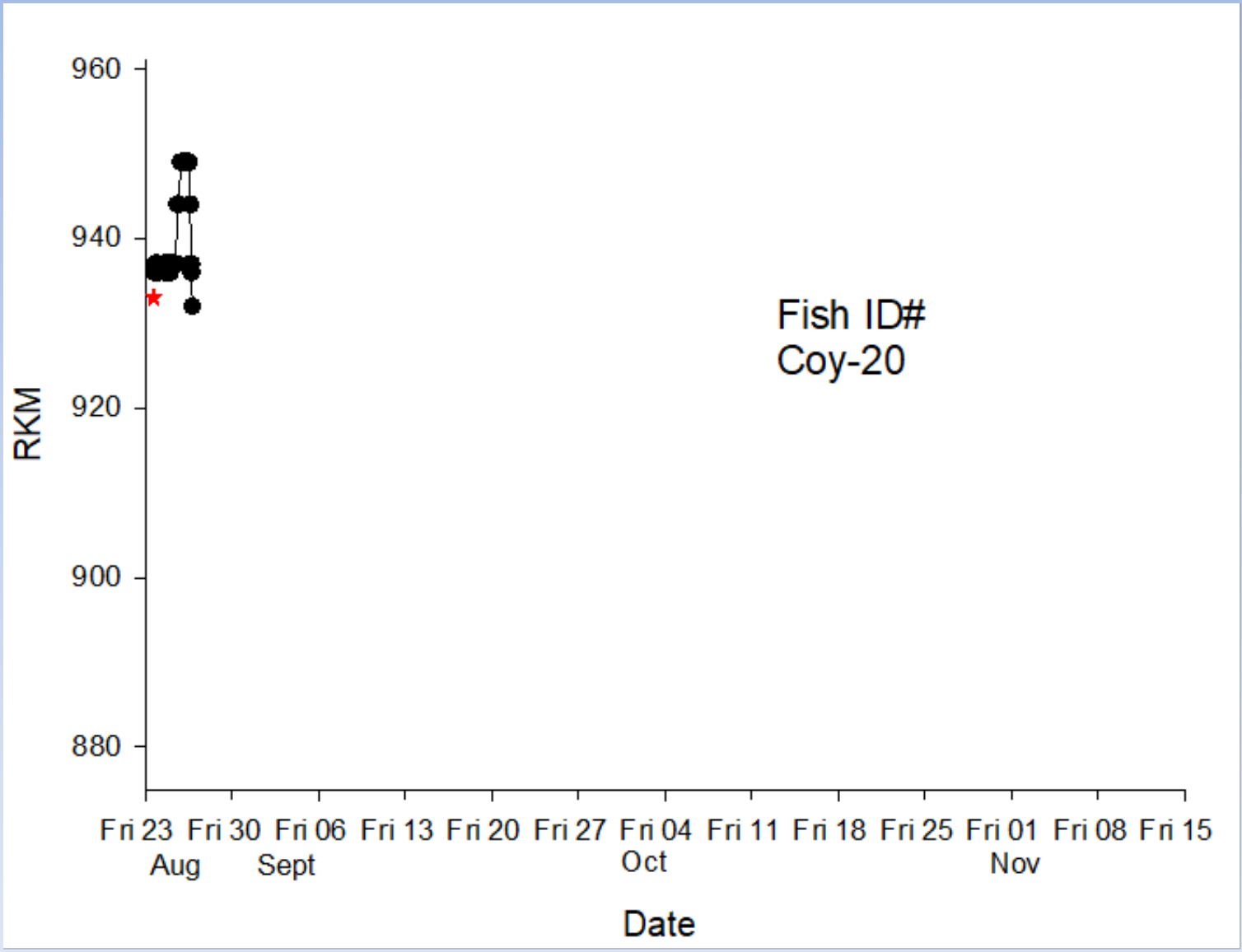
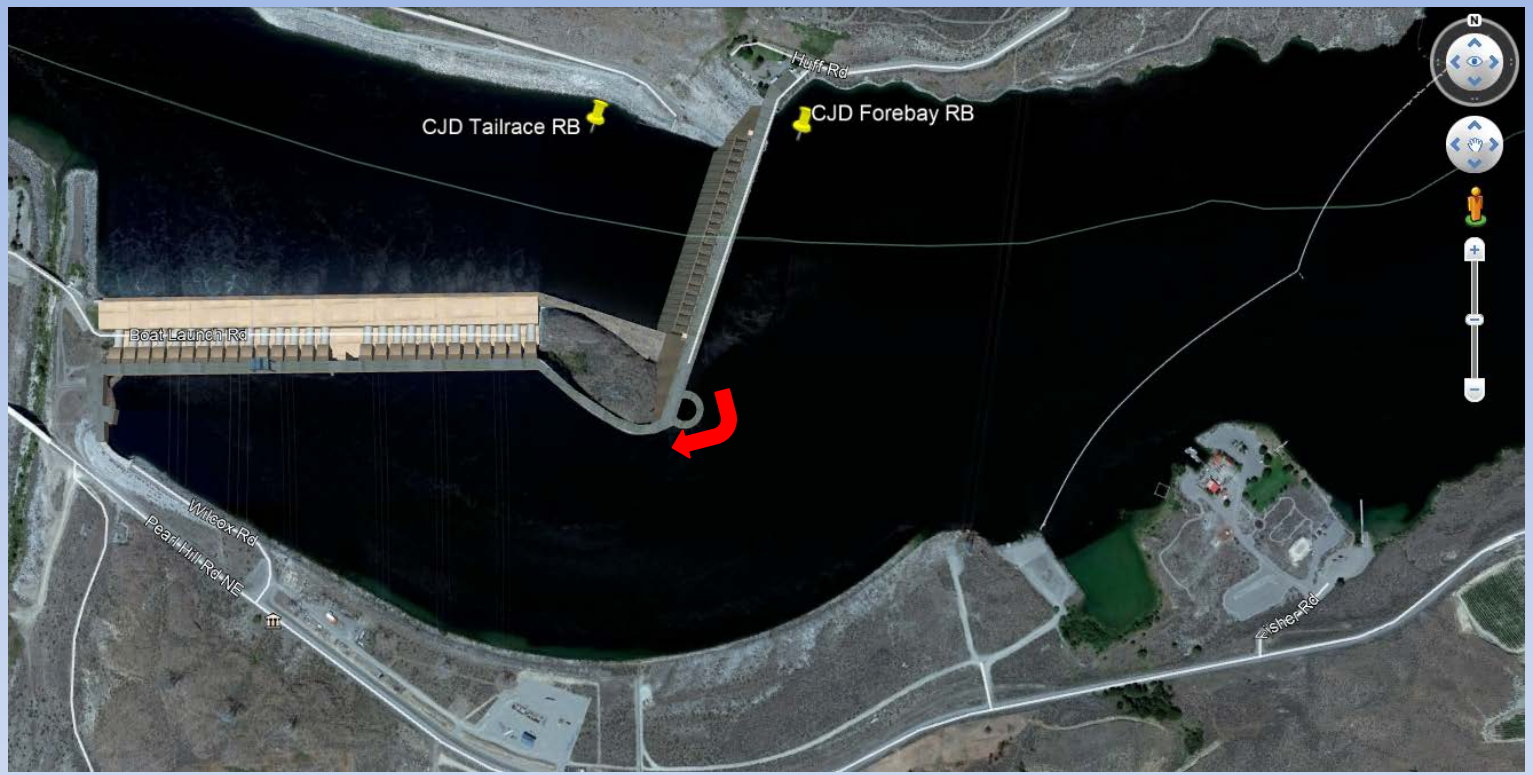


General Observations

- 92% of the fish had their first observation at an upstream receiver
- 73% of the fish had one or more detections at the furthest upstream and downstream locations
- On average, fish made 4.8 trips upstream of Seatons Grove and 2.3 trips downstream to CJD
- Only 2 fish (3.4%) were detected below CJD as of Mid-Oct *(very low initial fallback rate)*
- 76% of the fish survived and remained in the reservoir into the spawning period (Oct 1)
- There was no difference in survival to the spawn period for the 2 different release sites
- 73% of the fish had a final detection at CJD
- 3 PIT tags were observed on the Nespelem River array
- 1 PIT tag was observed at the Lower Okanogan array
- Comprehensive spawning surveys were not conducted, however, 6 redds were observed near CJD, one in the Nespelem River

Spawning near CJD



Initial Conclusions/Management Implications

- Both release sites were successful at providing fish for potential spawning and fisheries
- The benefits of hauling fish to an upstream release location (in Rufus Woods) probably don't outweigh the cost/effort
- Behavior near GCD was a blind spot and receivers should be placed there for future studies
- Spawning was not observed from boat surveys of Nespelem and Buckley bars, other methods (aerial drones or underwater video) should be explored

2020 adult summer Chinook releases

July 24
Northport

Aug 14
Sanpoil R.

Colville Reservation

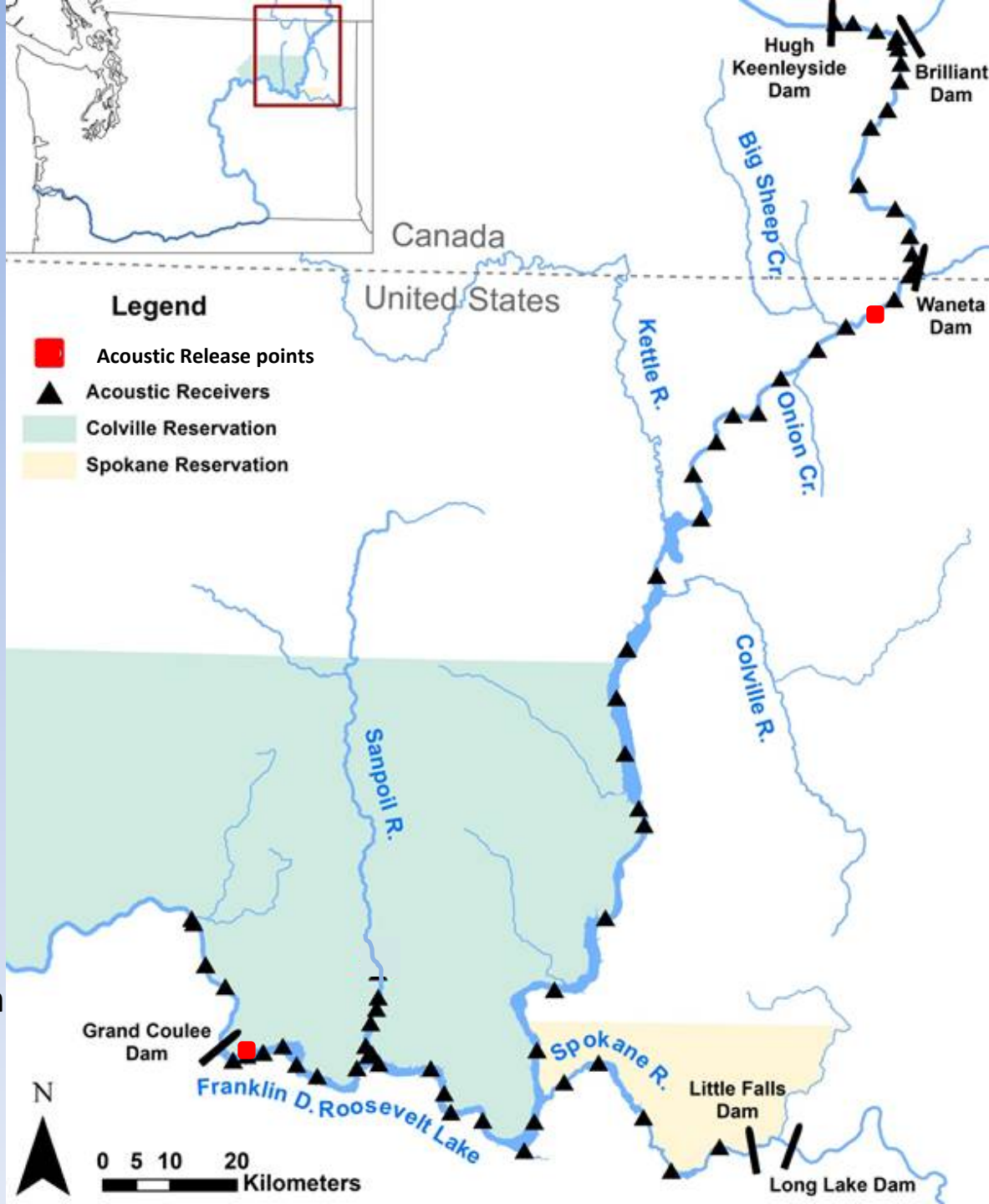
CJD

GCD

July 24
Near GCD

2020 Lake Roosevelt Acoustic Tracking Study

- Dozens of receivers
- Data not yet analyzed (we have tens of thousands of detections to sort out)
- Initial reports from Canada suggest ~20 fish were detected there
- Initial reports from DPUD suggest several detected downstream of Chief Joseph Dam



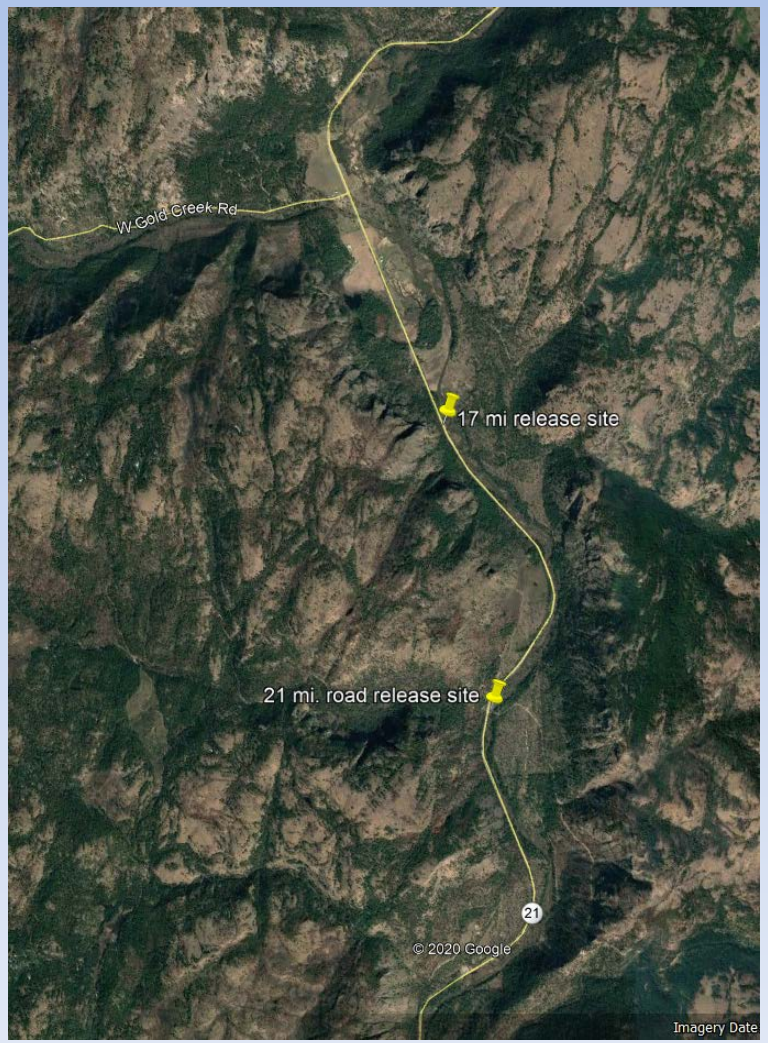
Sanpoil River Salmon Study, 2020

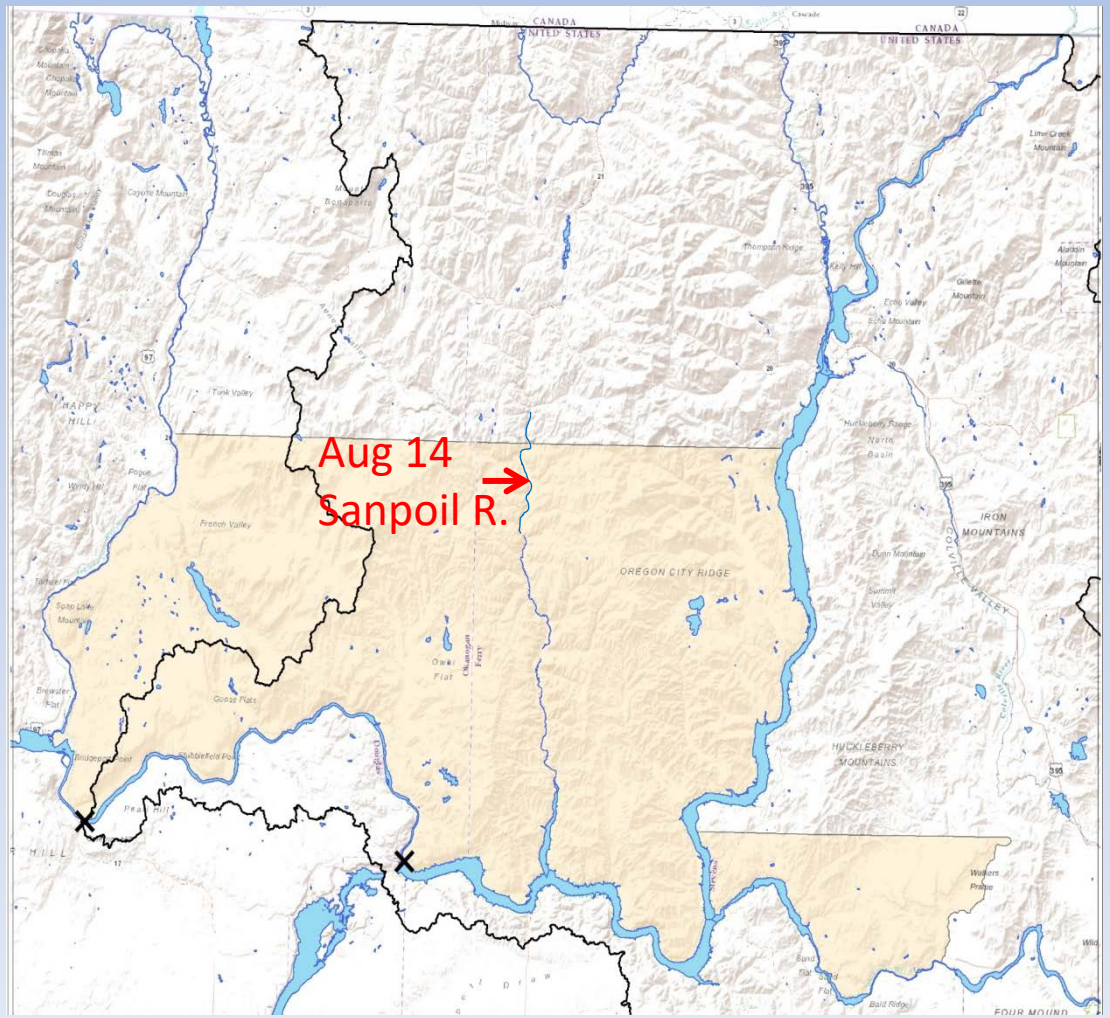
Sanpoil River Salmon Study, 2020

- Collected 100 adult summer Chinook salmon at Wells Fish Hatchery.
- Sampled for pathogens, genetics and PIT tagged

Sanpoil River Salmon Study, 2020

- Released 100 adult salmon in 2 holding pools in mid-August with PIT tags



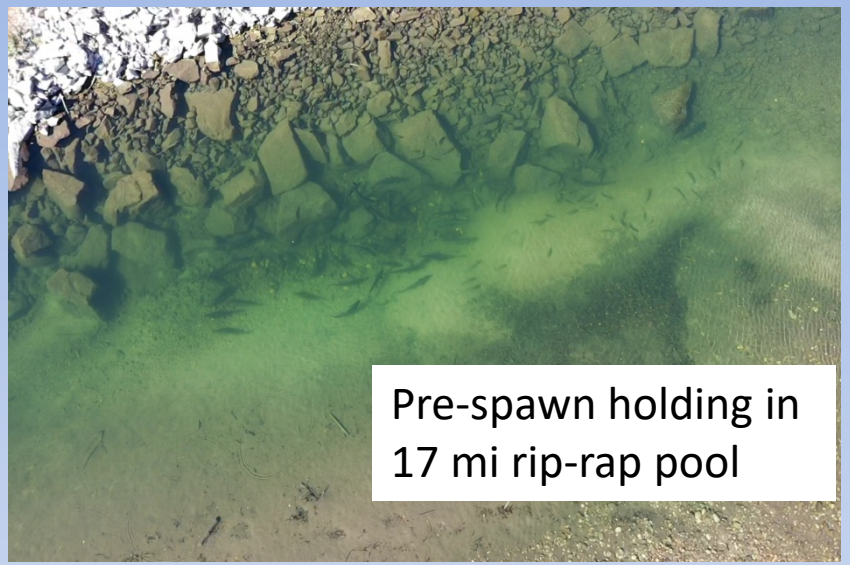


21 mi. bridge

17 mi riprap pool

Sanpoil River Salmon Study, 2020

Sanpoil River Salmon Study, 2020



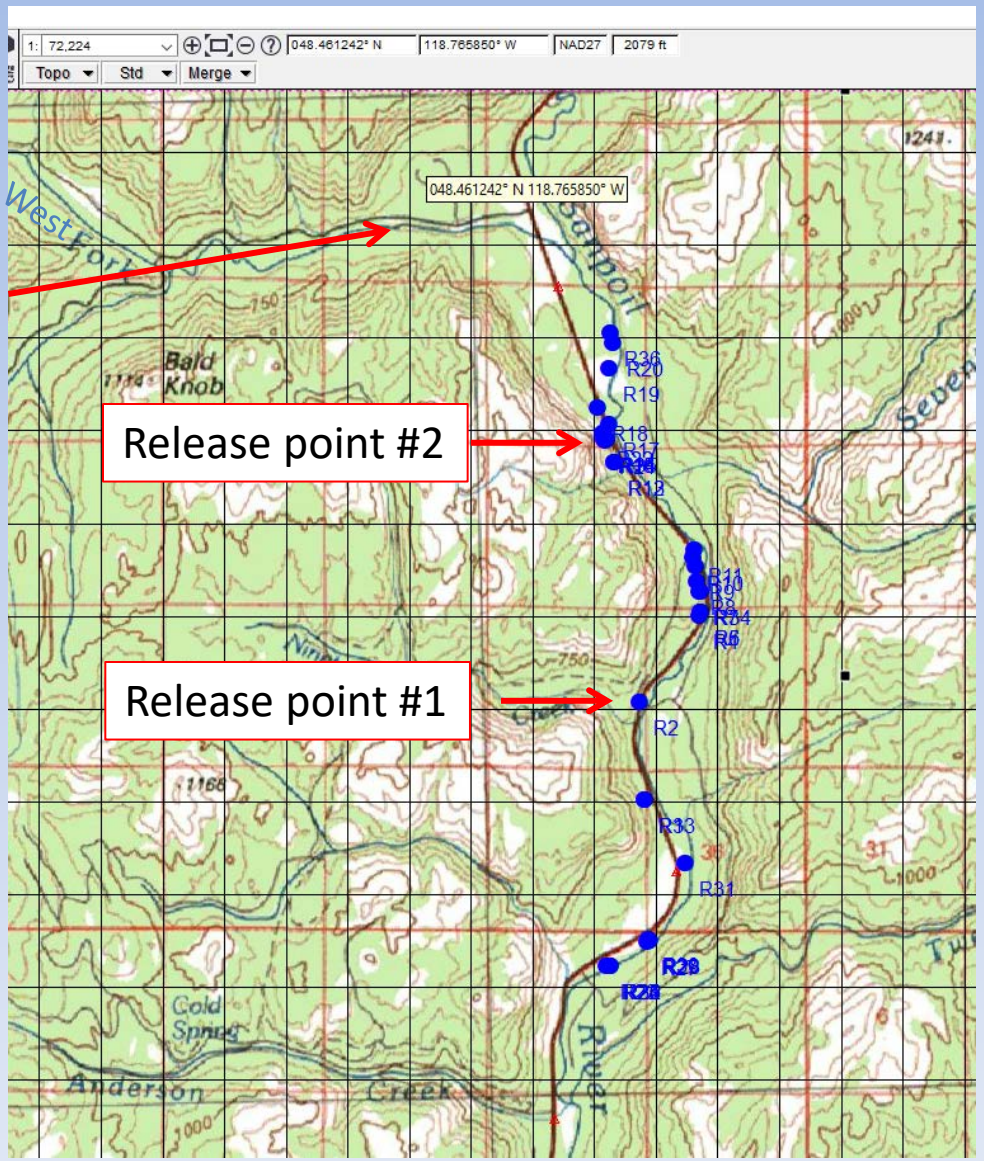
Sanpoil River Salmon Study, 2020

- Counted 36 redds (spawning nest) between Oct 8-22, in a 5 mile reach
- 3 fish detected in the West Fork (PIT)
- 3 fish detected at the weir, 38 mi. downstream in late October

<u>Future information from this work….</u>

If the spawning was successful we may catch some smolts in the rotary screw trap next spring.

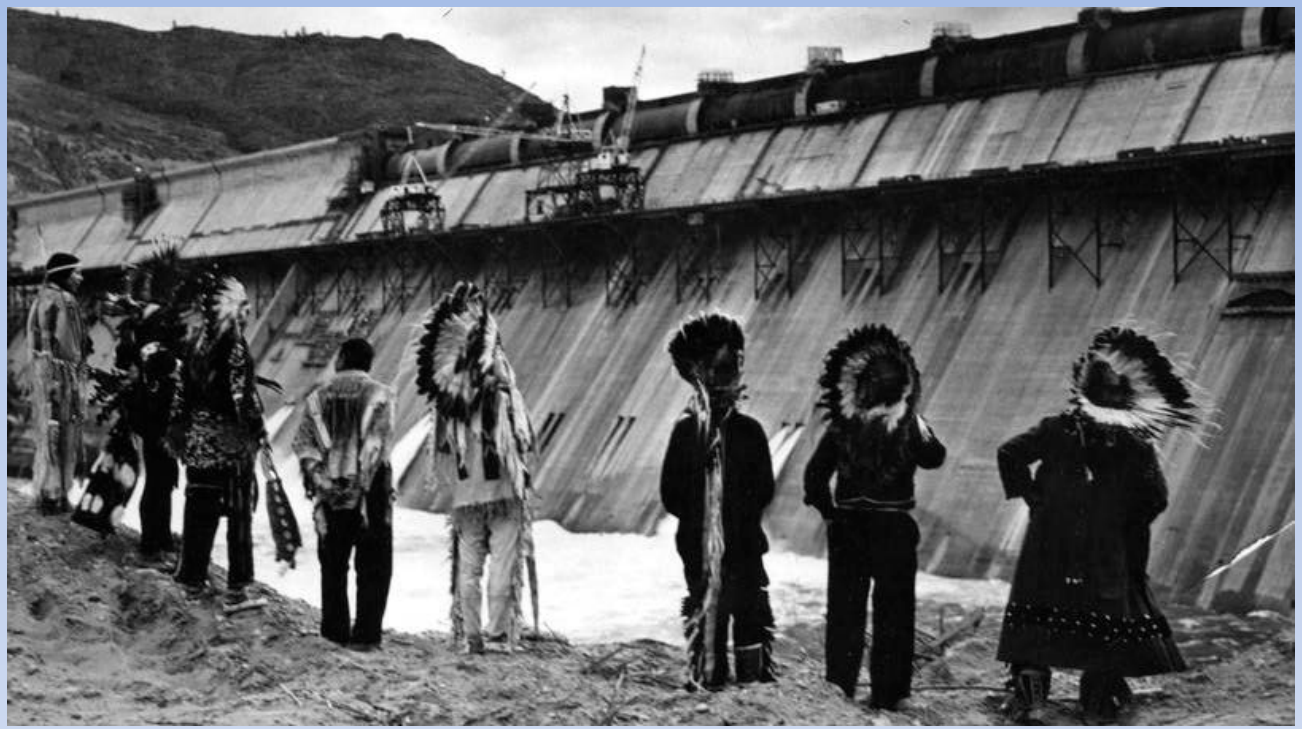
Genetic samples could be used to link offspring to their parents



- CTCR is committed to implementing the Phased approach, but values the ability to meet other objectives with cultural and educational releases.

- Other tribes have also conducted ceremonial releases in their traditional waters.

Thank you……Questions?



"Today, although we only released 30 fish, it's very sacred to us, it's very important to us, We have strong prayers today, because our ancestors, our elders at the Ceremony of Tears, they had strong prayers that one day we would see these fish return back to the river, back to our people." *Rodney Cawston, CTCR Tribal Business Council Chair*