



## Priest Rapids Fish Forum

### Conference Call

Wednesday, 6 September 2023

10:00 a.m. – 12:00 p.m.

### FINAL MINUTES

#### PRFF Members

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RD Nelle, USFWS  
Ralph Lampman, YN  
Nathan and Clayton Buck, Wanapum  
Jason McLellan, Bret Nine, CTCR  
Mike Clement, Chris Mott, Grant PUD  
Tracy Hillman, Chair

Patrick Verhey, Laura Heironimus, WDFW  
Breean Zimmerman, WDOE  
Aaron Jackson, Carl Merkle, CTUIR  
Marchelle Foster, BIA  
Tom Skiles, CRITFC/CTUIR

#### Meeting Attendees

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Jason McLellan, CTCR  
Mike Clement, Grant PUD  
Patrick Verhey, WDFW  
Ralph Lampman, YN  
Nathan Buck, Wanapum  
Tracy Hillman, Chair

Laura Heironimus, WDFW  
RD Nelle, USFWS  
Chris Mott, Grant PUD  
Nathan Patterson, YN  
Kyle Hatch, LGL

#### Action Items:

- Ralph Lampman will work with other members to develop a study plan to evaluate juvenile lamprey passage behavior and survival through hydro-projects in the Upper Columbia.

#### Decision Items:

- None.

#### I. Welcome and Introductions

Tracy Hillman welcomed everyone to the meeting and identified all attendees.

## II. Agenda Review

The PRFF reviewed and approved the September agenda with the following addition:

- Juvenile White Sturgeon Index Monitoring.
- Bull Trout Mortalities

## III. Approve August Meeting Notes

The PRFF reviewed and approved the 2 August 2023 meeting minutes.

## IV. Review Action Items

The PRFF reviewed the following action items from the August meeting:

- Jason McLellan will share the work of Angelina Dichiera, who studied the effects of high temperatures on White Sturgeon, with the PRFF. **Complete.**

## V. White Sturgeon

**White Sturgeon Hatching and Rearing** – Nate Patterson reported that the juvenile sturgeon on station at the Yakama Nation Sturgeon Hatchery are doing well. They are all on feed and were transferred into circular tanks on 7 August. He added that they average 111 fish per pound and mortality rates are low.

**Juvenile White Sturgeon Index Monitoring** – Mike Clement reminded the group that Grant PUD will conduct their annual juvenile White Sturgeon indexing this year. Golder (now WSP) and Blue Leaf will begin monitoring work next week. Sampling will be consistent with past years with the exception of the gear changes that were approved by the PRFF in July. As a reminder, in July, the PRFF approved the following methodology for conducting index monitoring:

- Deploy equal numbers of 4/0 and 12/0 hooks.
- Use 30 gangions per setline (reduced from 40/setline).
- Deploy gangions on 122-m-long, ¼-inch-diameter setlines.
- Maintain the same level of sampling effort of overnight sets (but reduce effort based on hook-hours).
- Sample within the 360 GRTS-selected sites (90 sites in Priest Rapids reservoir and 270 in Wanapum reservoir).

Mike indicated that sampling will occur over a three-week period. He hopes to have some preliminary results by the next meeting but more likely the November meeting.

**Other White Sturgeon Items** – No other White Sturgeon items were discussed.

## VI. Pacific Lamprey

**Grant PUD Trapping Efforts** – Mike Clement reported that they completed adult lamprey trapping at Priest Rapids Dam. They captured a total of 1,591 adult lamprey during the eight-week period. Based on dam counts, he indicated that they captured roughly 14% of the run just based on dam counts. Recent dam counts indicate that about 11,185 adult lamprey passed Priest Rapids Dam, 8,398 passed Wanapum Dam, 5,616 passed Rock Island Dam, 5,365 passed Rocky Reach Dam, and 614 passed Wells Dam. He added that just over 1,000 adult lamprey went to Douglas PUD. Of these fish, 50+ fish went to the CTCR. Mike said that Grant PUD released about 500 adult lamprey at Kirby-Billingsley Hydro Park, which is

located upstream from Rock Island Dam. Mike noted that Douglas PUD was able to transport only 200 adults per week. Because of large captures of adults over the third and fourth weeks of collection, some adults had to be released back into the fishway at Priest Rapids Dam because of transport limitations. Mike concluded by stating that adult lamprey trapping went very well this year.

Ralph Lampman asked who designed the adult lamprey trap being used at Wells Dam. Mike responded that he did not know. Mike added that Grant PUD gave representatives from Douglas PUD a tour of the traps Grant PUD uses and Douglas PUD may have used a similar design during earlier studies. Mike noted that the traps used by Grant PUD are modifications of traps used at McNary Dam. Mike said that the traps used by Douglas PUD do not have an orifice gate like those used by Grant PUD. RD Nelle asked whether the adult lamprey traps were modified Northern Pikeminnow traps. Mike responded that Chelan PUD originally modified the Northern Pikeminnow traps to capture adult lamprey. Unfortunately, those traps did not work well at Grant PUD facilities. Mike indicated that the traps they use have a funnel, which guides the fish into the trap. A constriction point at the end of the funnel prevents the fish from exiting the trap. Chris Mott provided pictures of the adult lamprey traps used by Grant PUD (see Attachment 1).

**Pacific Lamprey Subgroup Meeting with RRF Subgroup** – Tracy Hillman gave a brief overview of the Pacific Lamprey Subgroup meeting that occurred on Monday, 21 August. He said the meeting was well attended and the group evaluated the different models (ViPre = Virtual/Paired Release model and ViRDcT = Virtual Release/Dead-Fish Correction model) and their assumptions. As a reminder, the purpose of the meeting was to discuss models (and their assumptions) used to estimate juvenile survival and behavior and to discuss juvenile studies to be conducted in the upper Columbia in synchrony with the lower Columbia River studies. He said Ryan Harnish with the Pacific Northwest National Laboratory (PNNL) gave a presentation on Juvenile Pacific Lamprey Passage Behavior and Survival at Lower Granite Dam. This presentation set the stage for evaluating the different models and their assumptions. Tracy said there remained some questions regarding whether a few of the assumptions could be met. Those assumptions include:

- Assumption No. 3: Reach survival estimates  $S_1$ ,  $S_2$ , and  $S_3$  are unbiased (ViPre model)
- Assumption No. 6: The tagged fish are representative of the population of inference (ViPre and ViRDcT models)
- Assumption No. 8: Fish within a release have homogeneous survival and detection processes (ViPre and ViRDcT models)
- Assumption No. 9: There is no tag loss or failure (ViPre and ViRDcT models)

Tracy said the subgroup was unable to make a recommendation on which model should be used to evaluate juvenile lamprey survival in the Upper Columbia project areas. Several participants recommended the ViRDcT model, while others indicated that they need additional time to review the models. One participant indicated that the model used will depend on whether project-scale effects are needed, or dam-only effects are needed. Ultimately, the following issues need to be resolved:

- Are hatchery juveniles representative of wild juveniles?
- Are juvenile lamprey collected outside the project area suitable for survival studies within the project area?
- What level of precision is needed in juvenile survival estimates?

- How many juvenile fish need to be tagged to achieve the level of precision for survival estimates?
- Are survival estimates needed for the entire project area (i.e., reservoir and dam) or just the dam (concrete)?

Tracy said the draft meeting notes will be available soon. He asked Ralph, who requested the subgroup meeting, whether he had additional information to share with the PRFF. Ralph noted that members need to keep in mind that Pacific Lamprey, unlike salmonids, do not have well defined populations. Rather, their population structure is more homogenous than salmonids. In addition, he stated it is the responsibility of the PUDs to find the fish to be used in juvenile survival studies. Ralph believes there are adequate numbers of source fish to conduct the studies. Ralph added that it is important to take advantage of and complement the studies that will be conducted in the lower Columbia River during 2024-2025.

Ralph gave a presentation titled “Framework for the Upper Columbia River Juvenile Lamprey Acoustic Telemetry” (see Attachment 2). He began by outlining the basic framework for survival studies. He noted that based on studies in the Snake River, there is evidence that a juvenile passage study is possible. He added that all the PUDs can contribute to the region-wide effort, noting that 200-300 tagged fish released at each of the PUD facilities will contribute up to about 1,500 tags total throughout the system. He indicated that each of the PUDs are responsible to securing juvenile lamprey for the study and that sources of fish are available to do the studies. He said by working collaboratively, we can offset the risks and disadvantages associated with each PUD.

Ralph then showed a map of the upper Columbia River and identified potential sources of juvenile lamprey. He added that artificially propagated lamprey should be considered for use in survival studies. Ralph indicated that PNNL designed a juvenile lamprey trap that can be used to help collect source fish at each project. The trap is still under development but shows promise. Ralph ended by stating that there may be cost shares that can be used to help fund the studies. He asked if anyone had questions or comments.

Mike Clement acknowledged that tags now exist for juvenile lamprey survival studies but questioned whether all the assumptions of a suitable model can be met. In addition, Grant PUD would need a source of juvenile fish, and that source has yet to be identified. Mike also voiced some concerns with tag life and ping rates. He said that the battery life of tags (30 days) limits the study to a given project and it may not be feasible at this time to understand juvenile survival through the entire Columbia River. Mike also noted that placement of juvenile traps in the juvenile bypass or turbine intakes will be problematic.

Ralph indicated that juvenile traps could be placed in the raceways and/or bypass systems. He said that Chelan PUD collects juvenile lamprey in the Rocky Reach bypass but numbers vary from year to year. Because juvenile lamprey may be limiting for Grant PUD, Ralph indicated that collaboration is therefore essential for Grant PUD. Ralph indicated that fish tagged upstream from the Grant PUD facilities can contribute to studies in the Grant PUD project area. Ralph ended by stating that the tags currently have a battery life of 30 days, but researchers are working to increase the battery life to 40 days.

Ralph outlined the following next steps for a juvenile lamprey survival study:

- Discuss the subgroup results within each forum (i.e., RRF and ASWG).
- Identify the scope of the study (e.g., project-scale or dam-scale study).
- Identify the model to be used and the precision of the survival estimate.
- Make sure the assumptions of the model are met.

- Estimate the number and source of juvenile lamprey to use in the study.
- Identify the pulse rate of the acoustic tags.

Ralph indicated that he will work with others on developing a draft plan for conducting juvenile lamprey studies in the Upper Columbia.

**Other Pacific Lamprey Items** – No other Pacific Lamprey items were discussed.

## **VII. Bull Trout**

**Bull Trout Mortalities** – RD Nelle asked Mike Clement whether Grant PUD identified any dead Bull Trout at their projects this year. Mike said no.

## **VIII. Adjourn**

With no additional business to discuss, Tracy Hillman adjourned the meeting at 12:00 pm.

## **IX. Next Meeting**

The next meeting of the PRFF will be on 4 October 2023.

# Attachment 1

## Photographs of Adult Lamprey Traps used by Grant PUD











## Attachment 2

### Presentation by Ralph Lampman on Framework for the Upper Columbia River Juvenile Lamprey Acoustic Telemetry

# Framework for the Upper Columbia River Juvenile Lamprey Acoustic Telemetry

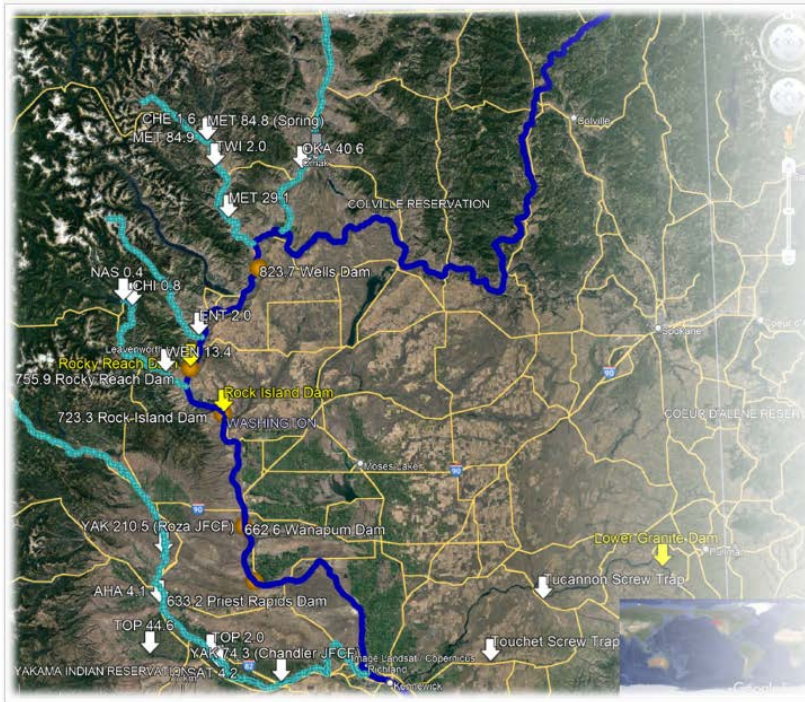
Ralph Lampman  
Yakama Nation Fisheries  
September 6, 2023

## Basic Framework

- With the ACOE/PNNL embarking on passage survival studies in the Snake River dams, there is overwhelming evidence that a passage study for the Upper Columbia River reach is possible (the subgroup meeting helped all of us get up to date).
- All PUDs contribute to make it a region-wide collaborative project.
- Even with 200-300 tags provided at each dam, it will contribute to a 1,000-1,500 tag study cumulatively for the region. The collaboration is key here to make this successful.
- It is each PUDs responsibility to secure source lamprey (using all means possible). Funding needs to be devoted to this task (fish will not fly from the sky).

## Basic Framework (continued)

- Certainly some region will have more sources of lamprey, while others have less. There are also uncertainties related to which source may provide the highest number of lamprey each year and when this may happen.
- By working collaboratively, we can offset the risks and disadvantages that each PUD holds (extra source fish either released for the target dam to help trickle downstream or shared with other target dams to minimize the risk of not having sufficient numbers of lamprey for the overall study).



### Overview Map:

- 5 dams (orange circles)
- Examples of source locations (white & yellow arrows; not comprehensive!)
- Artificially propagated lamprey should be considered as well

## PNNL Juvenile Trap (under development)

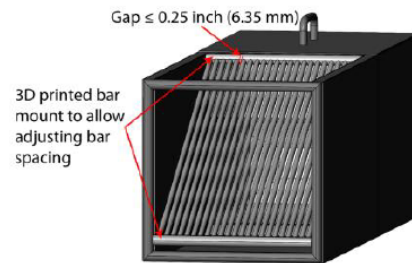
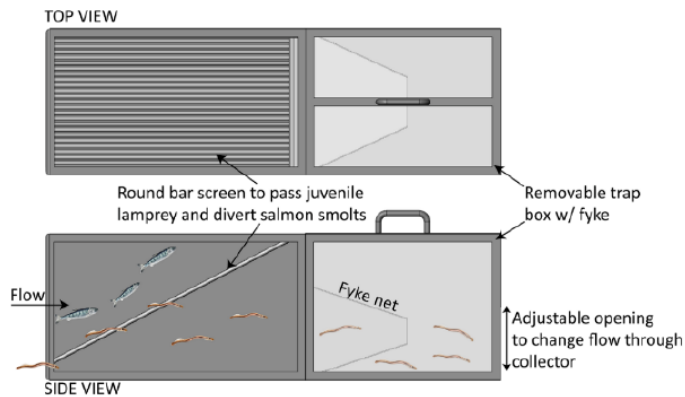


Figure 1. Conceptual image of the proposed lamprey collector.

## Funding Ideas?

- Steve?
- Others?

## Other Ideas/Input?