



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: October 11, 2023

From: John Ferguson, Chair, Anchor QEA, LLC

Re: Final Minutes of the September 13, 2023, Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, September 13, 2023, from 10:00 a.m. to 11:30 a.m. Attendees are listed in Attachment A of these conference call minutes.

Summary of Action Items

1. Douglas PUD will compile the past 5 to 10 years of data (whatever is available) for Pacific Lamprey collected at the rotary screw traps (RSTs) in the Methow and Okanogan rivers, including numbers collected and life stage (Item II-C). *(Note: Douglas PUD compiled these data, which were distributed to the Aquatic SWG by Kristi Geris on October 9, 2023.)*
2. The Yakama Nation (YN) will distribute the document titled "Framework and Implementation Plan for the Upper Columbia Juvenile Pacific Lamprey Passage Acoustic Telemetry Study" that was shared on WebEx during today's conference call, and the Aquatic SWG will come prepared to discuss the questions within this document during next month's Aquatic SWG conference call on October 11, 2023 (Item II-C). *(Note: Ralph Lampman provided this document, which Geris distributed to the Aquatic SWG on September 16, 2023. Douglas PUD provided responses to this document, which were distributed on October 9, 2023.)*
3. Douglas PUD will distribute a draft Statement of Agreement (SOA) for addressing Section 4.4 of the White Sturgeon Management Plan (WSMP), *Evaluation and Implementation of Adult Passage Measures (Objective 5)*, including actions and a timeline for completion, for Aquatic SWG review and consideration (Item II-E). *(Note: this SOA was distributed to the Aquatic SWG by Geris on October 9, 2023.)*
4. The Aquatic SWG meeting on October 11, 2023, will be held by conference call (Item III-A).

Summary of Decisions

1. There were no decision items approved during today's conference call.

Agreements

1. There were no agreements discussed during today's conference call.

Review Items

1. A document titled "Framework and Implementation Plan for the Upper Columbia Juvenile Pacific Lamprey Passage Acoustic Telemetry Study" was distributed to the Aquatic SWG by Kristi Geris on September 16, 2023. Douglas PUD provided responses to this document, which were distributed on October 9, 2023 (Item II-C).

Documents Finalized

1. There are no documents that have been recently finalized.

I. Welcome

A. Review Agenda (John Ferguson)

John Ferguson welcomed the Aquatic SWG members (Attachment A) and reviewed the agenda. Ferguson asked for any additions or changes to the agenda. No additions or changes were requested.

RD Nelle asked whether there were any Bull Trout updates. Chas Kyger said that there are no new updates since the last update. Douglas PUD still plans to draft a report for Aquatic SWG review in time to finalize by the end of 2023.

B. Meeting Minutes Approval (John Ferguson)

The revised draft August 9, 2023, conference call minutes were reviewed. Kristi Geris said that the only edits received were from Douglas PUD and those were minor clarifying edits and were incorporated into the revised minutes. Breean Zimmerman provided Washington State Department of Ecology approval of the revised minutes via email before the Aquatic SWG conference call on September 13, 2023. The Aquatic SWG members present approved the August 9, 2023, conference call minutes, as revised. The YN and the Confederated Tribes of the Colville Reservation (CTCR) abstained because representatives did not participate in the August 9, 2023, conference call.

C. Review of Action Items (John Ferguson)

Action items from the Aquatic SWG conference call on August 9, 2023, are as follows (*Note: The following italicized item numbers correspond to agenda items from the August 9, 2023, meeting*):

1. *Douglas PUD will develop a draft work plan for addressing Section 4.4 of the WSMP, "Evaluation and Implementation of Adult Passage Measures (Objective 5)," including actions and a timeline for completion, for Aquatic SWG review and consideration (Item II-C).*

This will be discussed during today's conference call.

II. Summary of Discussions

A. Adult Pacific Lamprey Translocation Update (Mariah Mayfield)

A Pacific Lamprey Update (Attachment B) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 13, 2023. Mariah Mayfield said Slides 1 to 2 of Attachment B summarize Douglas PUD's adult Pacific Lamprey translocation effort this year. In total, 1,007 Pacific Lamprey received passive integrated transponder (PIT) tags and were translocated upstream of Wells Dam. There was a fairly large range in average lengths and weights. Of those translocated this year, 956 fish were released at Starr Boat Launch just above Wells Dam, and 51 fish were picked up by the CTCR to translocate farther upstream into the Similkameen River. Of note, among the 383 fish detected in the Methow River Basin, 101 fish were detected in the Chewuch River, 2 fish were detected in the lower Twisp River, and 1 fish was detected in Libby Creek. Among the 98 fish detected in the Okanogan River Basin, 1 fish was detected at Zosel Dam. Weekly updates were distributed throughout the season. Only one mortality occurred during transportation, as reported in August 2023. All other Pacific Lamprey appeared to handle transport, tagging, and release well.

John Ferguson said that currently, the Columbia River Data Access in Real Time database (Program Real Time, or DART) shows 629 Pacific Lamprey counted at Wells Dam, which is a good year. Mayfield agreed.

Ralph Lampman asked about the rest of the detections in the Methow River Basin (Slide 2). Mayfield explained that those detected in a tributary in the Methow River Basin are bulleted on Slide 2; the rest are somewhere in the Methow but have not been detected in a tributary. This applies to the Okanogan River Basin, as well. Lampman asked where Zosel Dam is located and whether it has fish passage. John Rohrback said that yes, Zosel Dam has fish passage, and it is located where Osoyoos Lake feeds into the Okanogan River, south of the U.S./Canada border. Lampman said that this fish likely went upstream then. Andrew Gingerich agreed that this fish might now be in Canada.

B. Adult Pacific Lamprey Trapping at Wells Dam (Mariah Mayfield)

Mariah Mayfield said that Slide 3 of Attachment B shows the results to date for the lamprey trap testing being performed within the Wells Dam east fish ladder. Recall, that this is pilot testing to see whether these traps can collect Pacific Lamprey migrating through the fishways. To date, this has not been too successful. There has been only 1 day where tapping was successful (August 29, 2023), when a total of 4 fish were collected. There were 17 fish counted through the fishway that day. In the future, traps can be operated in both the east and west fish ladders.

Ralph Lampman said that a key difference between the traps at Priest Rapids Dam and Wells Dam is that Grant PUD closes the orifices (at the bottom of the weir) during nighttime hours, which forces all

fish to pass over the weir (and into the traps). This might explain the lower numbers. Mayfield said that another difference is that Wells Dam has different screening/metal plates on the cone opening of the trap compared to Priest Rapids Dam, and Douglas PUD might consider changing the perforation to create a more laminar surface. Lampman said that he is interested in seeing more details about the trapping operations at Wells Dam, and Mayfield that said she will share more photos of the traps. *(Note: Mayfield provided additional photos of the traps on September 15, 2023, that Geris distributed to the Aquatic SWG that same day.)*

John Ferguson asked whether, following this pilot effort, Douglas PUD feels confident about collecting adequate fish for a study. Mayfield said yes, with the caveat that this was a really big return year. In a lower return year, there might be a lower trapping rate. Ferguson said that this also depends on the sample size needed.

Lampman asked how many nights the traps were operated. Rohrback said that the traps have been operating for 3 weeks, not counting the weekends or Labor Day, so a total of 14 trapping nights. Mayfield noted that trapping did not start until August 28, 2023, because Douglas PUD needed to obtain permission from the Wells Habitat Conservation Plan (HCP) Coordinating Committee regarding impacts to salmonid passage. August was a big month for counts (Slide 3), and the traps probably would have collected more fish if they were in operation earlier. Also of note, there has been no bycatch to date. Lampman asked whether trapping operations are still ongoing. Mayfield said yes. This year, trapping partly relied on calling in favors from the dam operators. If this is done in the future, arrangements will likely be in place to conduct more trapping, depending on how many fish are needed.

Ferguson asked whether trapping only occurred in the east fish ladder and whether there were two traps at one weir. Mayfield said that this is correct. Each trap covers approximately 30% to 40% of the flow going over the weir next to each wall of the fishway. If a fish passes straight up the middle of the flow over a weir, it might avoid the trap. Rohrback added that each overflow weir has a trap in it that is flush to the fishway wall and covers a portion of the overflow weir. There is nothing installed to block the orifices at the base of the weirs and configured such that the openings are flush to the floor. In the past, perforated plates have been installed on the floor of the fishway to prevent Pacific Lamprey from attaching and passing through the orifices, and these plates can be installed in future years. This year, these were not in place because this was a last-minute, opportunistic pilot study conducted to take advantage of the large run.

C. Juvenile Pacific Lamprey Downstream Passage Study (Ralph Lampman)

Ralph Lampman said that last month, the Rocky Reach Fish Forum (RRFF) convened a Pacific Lamprey Subgroup meeting with a goal of looking at the different models used to measure juvenile Pacific Lamprey survival to determine which is best for a study in the Upper Columbia River.

Lampman believes that, while there are pros and cons for each, it seems the Virtual Release/Dead-Fish Correction (ViRDcT) model is the best option (compared to the Virtual/Paired Release [ViPRe] model) because there are fewer assumptions to satisfy, and Pacific Northwest National Laboratory (PNNL) and the U.S. Army Corps of Engineers seem to prefer this model, given that the study design requires fewer fish for the same precision. The RRF has not yet reached agreement on which model to use.

Lampman shared on WebEx a document titled “Framework and Implementation Plan for the Upper Columbia Juvenile Pacific Lamprey Passage Acoustic Telemetry Study” (Attachment C). He also shared this document with the RRF during their last meeting. As bulleted on Page 1 of Attachment C, this framework suggests a collaborative approach, where all three PUDs contribute 200 to 300 tags at each dam, resulting in a 1,000- to 1,500-tag study. This design may also benefit from fish coming from upstream and downstream. As presented during the RRF Pacific Lamprey Subgroup meeting, recent results from the Snake River show that a survival study can be accomplished using the latest tags by PNNL. Soon, these tags will become commercialized and available through other vendors. As outlined in the respective Pacific Lamprey Management Plans (PLMPs), each PUD is responsible for securing study fish. If there are limitations, the PUDs need to explore how to collect enough fish. Some regions have more fish than others, which is why a collaborative effort is important.

Note: Pages 2 to 4 of Attachment C were added after the meeting and were not presented during the Aquatic SWG conference call on September 13, 2023.

Page 5 of Attachment C shows a map of the five Upper Columbia River dams (yellow arrows) and potential sources of fish (white arrows). To note, the Methow River Basin has quite a few potential source locations. The Entiat and Wenatchee river basins also have sources.

Page 6 of Attachment C shows a juvenile trap design being developed by PNNL and the Columbia River Inter-Tribal Fish Commission. This trap can be deployed in a bypass system or raceway to collect juvenile Pacific Lamprey but will allow other fish, like salmonids, to bypass the trap. PNNL is currently testing and fine-tuning this design. Lampman believes this type of thing can be used to enhance numbers of fish collected at each dam.

Pages 7 to 12 of Attachment C outline key questions raised during the RRF Pacific Lamprey Subgroup meeting that need to be resolved.

Question No. 1: What is the project scope? What is the focus—reservoir and dam, or just at dam (immediate area above and below dam, including the dam)? Lampman recalled that initially, the focus was on just dam passage survival. Reservoir survival is good to know, but to be practical and logistically feasible, it might be best to study this piecemeal, with the focus first on dam passage

survival. The collaborative approach will help attain reservoir survival for downstream dams. For Wells Dam, a separate upstream release would be needed to address reservoir survival.

Question No. 2: Which survival model should be used—the ViRDCt model or the ViPre model? There seemed to be advantages for using the ViRDCt model, including fewer assumptions to meet and fewer fish needed for the same degree of precision. A list of assumptions for the ViRDCt model is shown on Page 8 of Attachment C.

Question No. 3: What is the acceptable precision level? Lampman reviewed a table showing the confidence intervals for different precision levels (Page 10 of Attachment C). For the Snake River study, the goal was to achieve a standard error (SE) of 0.050. Ultimately, a SE of 0.030 was achieved. That is, with the ViRDCt model, a study can achieve a 0.030 precision level using approximately 300 tagged fish, but this includes meeting certain assumptions (see the Ryan Harnish [PNNL] quote on Page 11 of Attachment C). Lampman said that the PLMPs do not stipulate a standard for juvenile and adult Pacific Lamprey passage rates, unlike salmonids, for which the HCPs establish clear survival rate thresholds. He believes precision levels can be relaxed for Pacific Lamprey because the goal now is to get a big-picture idea about where the low survival areas are located. After this, the focus can move towards how to increase survival.

Question No. 4: Which source of lamprey should be used? Lampman reviewed just a few options, as outlined on Page 12 of Attachment C. He said that lamprey are different than salmonids in that, genetically, lamprey are fairly homologous and can more easily adapt to different conditions and watersheds. That said, he suggested prioritizing and reducing sources where possible. If different sources are used, these can be analyzed separately to see any differences.

John Ferguson asked Lampman to remind him, is the impetus for scheduling this work next year to coincide with the study in the Lower Columbia River planned for 2024 to 2025? Lampman said that yes, a study is planned for McNary and John Day dams in 2024 and for The Dalles and Bonneville dams in 2025. If the studies can be conducted together, this will provide additional data. However, it is more important that the PUDs to collaborate and synchronize a study in the Upper Columbia River.

Ferguson said that there were a few things to note, per Section 4.2.4 of Douglas PUD's PLMP. Regarding at-dam survival versus reservoir survival, the wording says "project," and the Aquatic SWG needs to determine what this entails. Regarding one or more years of study, the PLMP calls for a 1-year study. Regarding no specified precision level for Pacific Lamprey, the PLMP says, "If statistically valid study results indicate that Project operations have a significant negative impact on the Pacific Lamprey population above the Wells Dam, Douglas PUD, in consultation with the Aquatic SWG, shall..." This is the language of the PLMP to keep in mind.

Mariah Mayfield said that, regarding acquiring juvenile Pacific Lamprey from above the Wells Project, last year the Methow River RST collected 125 macrophthalmia, and this year, only 11 fish large enough to tag were collected. At this point, there is no upstream source of fish to confidently rely upon for a study. Regarding coordination with other dams, the current tag technology only has a 30--day tag life. In terms of looking at project impacts, the technology is not there yet.

Lampman said that, regarding tag life, a YN study found that study fish migrated quickly when river flow was high. As long as the study uses actively migrating fish, he believes 30 days will be enough time to look at the reach from Wells Dam to Wanapum Dam. It just depends on the conditions. Regarding RSTs, it would be helpful if each PUD could provide data from past years for Pacific Lamprey collected at RSTs upstream of their respective dams. Mayfield said that Douglas PUD can compile the past 5 to 10 years of data (whatever is available) for Pacific Lamprey collected at the RSTs in the Methow and Okanogan rivers, including numbers collected and life stage.

Chas Kyger agreed that numbers collected at RSTs vary year to year. That said, Douglas PUD plans to continue tagging juvenile Pacific Lamprey encountered at the Methow River RST, including recording life stage. Mayfield said that the Washington Department of Fish and Wildlife (WDFW) operators at the Methow River RST said a large component of the Pacific Lamprey run arrives when there is a lot of debris, and the trap is pulled for safety reasons. John Rohrbach also noted that the primary purpose of the Methow River RST is to monitor the salmonid programs in the Methow River. Mayfield agreed and said that RST operations cannot be modified just to collect more juvenile Pacific Lamprey. Andrew Gingerich suggested that the next steps include Lampman sharing Attachment C, so Aquatic SWG members can discuss this internally, and bring back questions more formally.

Laura Heironimus said that WDFW appreciates the work put into this by Lampman. She is hearing a lot of reasons why this might be challenging to pull off, but getting a study like this off the ground will improve what is currently known about juvenile Pacific Lamprey survival, which is nothing. WDFW supports collecting study fish from RSTs.

RD Nelle cautioned about relying on RSTs, and he agreed with Mayfield that this can be hit or miss. When the U.S. Fish and Wildlife Service operated the Methow River RST, most Pacific Lamprey were collected during periods of higher discharge and higher turbidity, when operators expected the trap to shut down at any moment. If this study is implemented, he suggested having other methods in place to supplement collection of study fish at RSTs, as Lampman outlined in Attachment C. Lampman agreed regarding considering multiple methods but also does not want to exclude use of RSTs, which he believes is currently one of the best methods. Study fish can also be acquired from fish salvages at the dams. The YN can use Pacific Lamprey salvaged from irrigation canals to rear juveniles in hatchery.

Lampman said that, if the target is a 0.030 precision level, this requires 300 fish per dam. If 50 fish trickle down from upstream, this is now only 250 fish per dam. Based on the Snake River study, this seems doable. Approximately 50% of the study fish were detected at the mouth of the Snake River from Lower Granite Dam (passing four dams). He expects a similar percentage to trickle down in the Upper Columbia River. Wells Dam will still need 300 fish if the study looks at reservoir survival (another upstream release). The total would be 1,300 tags, which is in line with the number of tags that PNNL produced. Once a commercial vendor is available, it should be easy to get these tags.

Lampman asked whether Douglas PUD's PLMP stipulates that a year a study must occur. Mayfield said that no, at the time the PLMP was written, it was unknown when the technology would be available, so the date was left open. Lampman said that he believes that a minimum of a 1-year study needs to occur because there is no way to learn everything in just 1 year. Ferguson said that this is up for discussion. Lampman said that he would like to establish a timeline to answer the questions in Attachment C. Ferguson suggested that the YN distribute the document titled "Framework for the Upper Columbia Juvenile Pacific Lamprey Passage Acoustic Telemetry Study" that was shared on WebEx during today's conference call, and the Aquatic SWG will come prepared to discuss the questions within this document during next month's Aquatic SWG conference call on October 11, 2023. *(Note: Lampman provided this document, which Kristi Geris distributed to the Aquatic SWG on September 16, 2023. Douglas PUD provided responses to this document, which were distributed on October 9, 2023.)*

D. Brood Year 2023 Wells White Sturgeon Rearing Update (Chas Kyger)

A brood year (BY) 2023 White Sturgeon Rearing Update (Attachment D) was distributed to the Aquatic SWG by Kristi Geris on September 12, 2023. Chas Kyger said that last month was a bad month for survival in the hatchery. A couple tanks of small fish failed to grow resulting in sustained mortality throughout the month. This week, it appears mortalities have leveled off in 8 of 10 tanks, with 0 to 1 mortalities occurring per tank. These fish are reaching the size where mortality typically stops. Two tanks continue to have losses. Douglas PUD's in-house fish veterinarian (Betsy Bamberger) has not been able to determine the cause of the mortalities. Samples have been sent to a lab, but the results are not yet available. If the mortality continues, stocking numbers might come in under goal for the Chelan PUD program.

Ralph Lampman asked whether this only impacts the Chelan PUD program. Kyger said that the Interlocal Agreement with Chelan PUD prioritizes Douglas PUD's 325-fish program over Chelan PUD's 2,250-fish program. Currently, there are approximately 3,000 fish on-station, and mortalities are ongoing, which may impact reaching the Chelan PUD program target.

Jason McLellan said that Chelan PUD's stocking target for BY 2023 has been reduced to 2,000 fish based on a SOA approved during the last RRFF meeting. Kyger said that this will provide a little wiggle room in case mortalities continue in the two small tanks.

McLellan said that additionally, Sherman Creek Hatchery is projecting to have surplus fish, so there is the potential that these fish might be available to make up for any shortfalls. Kyger said that this is good to know. He has also been in touch with Lance Keller (Chelan PUD) and plans to keep him updated on numbers. McLellan said that Sherman Creek Hatchery plans to revisit surplus discussions in mid- to late-October 2023. Laura Heironimus also noted that the Chelan PUD SOA stipulates that surplus fish from Sherman Creek Hatchery would be acceptable to make up any shortfalls to program.

E. Section 4.4: White Sturgeon Adult Passage (Andrew Gingerich)

Andrew Gingerich recalled that last month, after a good discussion, Douglas PUD was left with an action item to develop a draft outline. A draft SOA is being reviewed by Douglas PUD's general management. Everything discussed by the Aquatic SWG is included in the draft SOA (conducting a literature review, review of existing PIT and acoustic data, and an effort to possibly look at allelic diversity in the Wells Project). He hopes to distribute the draft SOA for Aquatic SWG review in the next couple of weeks. Gingerich said Jason McLellan was not on the call last month, but this SOA reflects discussions he has previously had with McLellan, as well as discussions from last meeting.

Douglas PUD will distribute a draft SOA for addressing Section 4.4 of the WSMP, "Evaluation and Implementation of Adult Passage Measures (Objective 5)," including actions and a timeline for completion, for Aquatic SWG review and consideration.

III. Administration

A. Upcoming Meetings (John Ferguson)

The Aquatic SWG meeting on October 11, 2023, will be held by conference call.

Other upcoming meetings include November 8 and December 13, 2023 (conference call).

List of Attachments

- Attachment A List of Attendees
- Attachment B Pacific Lamprey Update
- Attachment C Framework and Implementation Plan for the Upper Columbia Juvenile Pacific
Lamprey Passage Acoustic Telemetry Study
- Attachment D BY 2023 White Sturgeon Rearing Update

Attachment A – Attendees

Name	Role	Organization
John Ferguson	Aquatic SWG Chairman	Anchor QEA, LLC
Kristi Geris	Administration/Technical Support	Anchor QEA, LLC
Andrew Gingerich	Aquatic SWG Technical Representative	Douglas PUD
Chas Kyger	Aquatic SWG Technical Alternate	Douglas PUD
John Rohrback	Aquatic SWG Technical Support	Douglas PUD
Mariah Mayfield	Aquatic SWG Technical Support	Douglas PUD
RD Nelle	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
Laura Heironimus	Aquatic SWG Technical Alternate	Washington Department of Fish and Wildlife
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Confederated Tribes of the Colville Reservation