



# Conference Call Minutes

## Aquatic Settlement Work Group

---

**To:** Aquatic SWG Parties

**Date:** May 12, 2021

**From:** John Ferguson, Chair (Anchor QEA, LLC)

**Re:** Final Minutes of the April 12, 2021, Aquatic SWG Conference Call

---

The Aquatic Settlement Work Group (SWG) met by conference call on Monday, April 12, 2021, from 1:00 p.m. to 4:00 p.m. Attendees are listed in Attachment A of these conference call minutes.

### I. Summary of Action Items

1. Aquatic SWG members will review the current White Sturgeon Statement of Agreement (SOA), *Wells Reservoir White Sturgeon Supplementation 2018-2022*<sup>1</sup>, and Section 4.3.1 of the *White Sturgeon Management Plan*, in preparation to continue discussing Wells Fish Hatchery White Sturgeon stocking considerations during the Aquatic SWG meeting on May 12, 2021 (Item VI-1).
2. Washington State Department of Ecology will verify internally that the proposed language in the revised draft *Statement of Agreement Regarding the Suspension of the Year-10 Bull Trout Passage and Survival Radio Telemetry Study at Wells Dam and the Twisp Weir* (Bull Trout SOA), as discussed during today's conference call, is consistent with the 401 Water Quality Certification for the Wells Project (Item VI-3).
3. Douglas PUD will request feedback from the Federal Energy Regulatory Commission (FERC) about the proposed language in the revised draft Bull Trout SOA, as discussed during today's conference call, and then will distribute a second revised SOA for Aquatic SWG review (Item VI-3). (Note: following discussions with FERC and internal reviews, Andrew Gingerich provided a final draft SOA for approval, which Kristi Geris distributed to the Aquatic SWG on May 4, 2021.)
4. The Yakama Nation (YN) will distribute additional information about the collection methods for bile acids sampling, as proposed in the summary document, *ASWG Project Proposal: Environmental DNA & Lamprey Bile Acids Monitoring to Assess the Impacts of Adult Translocation in the Upper Columbia Basin above Wells Dam* (eDNA & Bile Acids Monitoring Proposal) (Item VI-6). (Note: Ralph Lampman provided eDNA method documentation from

---

<sup>1</sup> As approved by the Aquatic SWG on January 11, 2017, and distributed on January 12, 2017.

*Cindy Baker [New Zealand] and bile acids method documentation from Nick Johnson [U.S. Geological Survey], which Kristi Geris distributed to the Aquatic SWG on May 4, 2021. Lampman also provided bile acids method documentation from Baker, which Geris distributed to the Aquatic SWG on May 12, 2021 [a corrected file was distributed later that same day].)*

5. Douglas PUD will research the latest generation of Dual Frequency Identification Sonar (DIDSON) technology, known as Adaptive Resolution Imaging Sonar (ARIS), as a possible study method for the upcoming adult Pacific Lamprey study in 2022 (Item VI-7).
6. Douglas PUD will begin discussing with Grant PUD about renewing an agreement to continue collecting Pacific Lamprey from Priest Rapids Dam for translocation above Wells Dam and for study fish in 2022 and beyond (Item VI-7).
7. Douglas PUD will develop a draft adult Pacific Lamprey study plan for implementation in 2022 for Aquatic SWG review that considers potential methodologies, release locations, and sample size requirements, discussed to date (Item VI-7).
8. Anchor QEA, LLC, will coordinate with Tracy Hillman (Rocky Reach Fish Forum [RRFF] and Priest Rapids Fish Forum [PRFF] Chairman) about annual Pacific Lamprey translocation coordination among the Aquatic SWG, Douglas PUD, Chelan PUD, Grant PUD, and the Joint Fisheries Parties (JFP), throughout each Pacific Lamprey passage season and as translocation efforts progress (Item VI-8). *(Note: John Ferguson contacted Hillman and provided a plan forward to Kristi Geris on April 14, 2021, which Geris distributed to the Aquatic SWG that same day.)*
9. Aquatic SWG members will provide edits and comments on the draft 2020 Aquatic Settlement Agreement (ASA) Annual Report and appended management plan annual reports to Kristi Geris by April 26, 2021 (Item VI-10).
10. The Aquatic SWG meeting on May 12, 2021, will be held by conference call (Item VII-1).

## II. Summary of Decisions

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

## III. Agreements

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

## IV. Review Items

1. The draft *Statement of Agreement to No Longer Require Year-10 Bull Trout Passage and Survival Study at Wells Dam and the Twisp Weir Using Radio Telemetry* was distributed to the

Aquatic SWG by Kristi Geris on March 10, 2021. A revised draft Bull Trout SOA was distributed on April 6, 2021, as discussed during today's conference call. A final draft Bull Trout SOA for approval was distributed on May 4, 2021 (Item VI-3).

2. An eDNA & Bile Acids Monitoring Proposal by the YN was distributed to the Aquatic SWG by Kristi Geris on March 10, 2021 (Item VI-6).
3. A draft 2022 Pacific Lamprey PIT-tag Study Outline was distributed to the Aquatic SWG by Kristi Geris on March 10, 2021. A draft adult Pacific Lamprey study plan for implementation in 2022 is expected soon (Item VI-7).
4. The draft 2020 ASA Annual Report and appended 2020 White Sturgeon Management Plan Annual Report, 2020 Bull Trout Management Plan and Incidental Take Annual Report, 2020 Water Quality Management Plan Annual Report (and appended 2020 Water Temperature Annual Report), 2020 Pacific Lamprey Management Plan Annual Report, 2020 Aquatic Nuisance Species Management Plan Annual Report, and 2020 Resident Fish Management Plan Annual Report were distributed to the Aquatic SWG by Kristi Geris on March 12, 2021, and are available for a 45-day review with edits and comments due to Geris by April 26, 2021. Douglas PUD will request approval of the report during the Aquatic SWG meeting on May 12, 2021 (Item VI-10).

## V. Documents Finalized

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

## VI. Summary of Discussions

### 1. Welcome, Review Agenda, Meeting Minutes Approval, and Review of Action Items (John Ferguson):

John Ferguson welcomed the Aquatic SWG members (attendees listed in Attachment A). Ferguson asked for any additions or changes to the agenda. The following revisions were requested:

- Steve Lewis added an update on U.S. Fish and Wildlife Service (USFWS) reorganization.
- Andrew Gingerich added a reminder about the upcoming review period deadline for the draft 2020 ASA Annual Report and appended management plan annual reports.

The revised draft March 10, 2021, conference call minutes were reviewed. Kristi Geris said edits and comments received from members of the Aquatic SWG were incorporated into the revised minutes. Geris said she also added distribution of the revised draft Bull Trout SOA under the Review Items. Aquatic SWG members present approved the March 10, 2021, conference call minutes, as revised.

Action items from the Aquatic SWG conference call on March 10, 2021, are as follows (Note: the following italicized item numbers correspond to agenda items from the March 10, 2021, meeting):

- *USFWS will provide comments to Douglas PUD on the draft Statement of Agreement to No Longer Require Year-10 Bull Trout Passage and Survival Study at Wells Dam and the Twisp Weir Using Radio Telemetry by Wednesday, March 24, 2021, and then Douglas PUD will distribute a revised draft SOA for Aquatic SWG review (Item VI-4).*  
USFWS, the Colville Confederated Tribes (CCT), Washington Department of Fish and Wildlife (WDFW), and the YN provided comments on the draft SOA on March 17, 2021, and a revised draft SOA was distributed on April 6, 2021. This will be further discussed during today's conference call.
- *Aquatic SWG members will review the eDNA & Bile Acids Monitoring Proposal by the YN for further discussion during the Aquatic SWG conference call on April 12, 2021 (Item VI-5).*  
This will be discussed during today's conference call.
- *Aquatic SWG members will review the draft 2022 Pacific Lamprey Passive Integrated Transponder (PIT) Tag Study Outline for further discussion during the Aquatic SWG conference call on April 12, 2021 (Item VI-6).*  
This will be discussed during today's conference call.
- *Aquatic SWG members will review the current White Sturgeon SOA, Wells Reservoir White Sturgeon Supplementation 2018-2022<sup>2</sup>, and Section 4.3.1 of the White Sturgeon Management Plan, in preparation to continue discussing Wells Fish Hatchery White Sturgeon stocking considerations during the Aquatic SWG meeting on May 12, 2021 (Item VI-8).*  
These documents were redistributed to the Aquatic SWG, for their reference, by Kristi Geris on March 15, 2021. This action item will be carried forward. Andrew Gingerich said Douglas PUD is interested in hearing more on the CCT's population model.

## **2. COVID-19 Updates (John Ferguson):**

John Ferguson asked if Aquatic SWG members had any new updates to share regarding impacts of coronavirus disease 2019 (COVID-19) on Aquatic SWG-related monitoring and evaluation (M&E) activities.

The Aquatic SWG had no new COVID-19 updates to announce.

## **3. Revised Draft Bull Trout SOA (Andrew Gingerich):**

The draft *Statement of Agreement to No Longer Require Year-10 Bull Trout Passage and Survival Study at Wells Dam and the Twisp Weir Using Radio Telemetry* was distributed to the

---

<sup>2</sup> As approved by the Aquatic SWG on January 11, 2017, and distributed on January 12, 2017.

Aquatic SWG by Kristi Geris on March 10, 2021. Andrew Gingerich thanked USFWS, the CCT, WDFW, and the YN for providing comments on the draft SOA. Based on these comments, a revised draft Bull Trout SOA was distributed on April 6, 2021. The CCT provided additional comments on the revised draft Bull Trout SOA on April 8, 2021, which Gingerich projected on WebEx.

Gingerich said, for Douglas PUD, the intent of this SOA is to clearly state that without a radio telemetry study there is no effective way to evaluate passage and survival in terms of how this is defined under Douglas PUD's FERC license and other governing documents. He believes this is well-defined under Nos. 1, 2, and 3 of the Statement, as follows.

### Statement Portion of the Revised Draft Bull Trout SOA (April 8, 2021, version)

The United States Fish and Wildlife Service (USFWS), with consensus support of the Aquatic Settlement Workgroup (Aquatic SWG), agrees that:

1. The abundance of local populations of Bull Trout in the vicinity of the ~~Wells Dam Project~~ and Twisp River Weir are low enough to warrant suspending the Year-10 Bull Trout Passage and Survival Study that requires the use of invasive radio telemetry techniques.

2. Previous studies at the ~~Wells Project and Twisp River Weir and Wells Dam~~ using radio telemetry techniques showed Bull Trout passage and survival standards (See USFWS 2012) ~~are~~ ~~were~~ being met (BioAnalysts, Inc. 2004; LGL and Douglas PUD, 2008; Robichaud and Gingerich, 2017).

~~3) In light of one and two above, the Aquatic SWG further agree t~~The use of radio telemetry techniques ~~and to determining determine~~ passage and survival values at these sites is deferred at least until the 2030 (License Year 20) required study.

~~4) In the interim In lieu of the radio telemetry study, the Douglas PUD will work with the Aquatic SWG to develop a study to monitor adult Bull Trout at Wells Dam and in the Twisp River using PIT tag technology.~~

~~5) The proposed alternative PIT tag study will not proceed without consensus agreement among the Aquatic SWG on the study objectives. Douglas PUD will work with the Aquatic SWG to develop a study plan to passively monitor PIT tagged adult Bull Trout in the Twisp River and at Wells Dam.~~

Gingerich said Douglas PUD is not sure Nos. 4 and 5 should be included in the Statement. This is not because Douglas PUD is necessarily opposed to a PIT-tag study; rather, No. 5 is redundant to language in the *Aquatic Settlement Agreement* and No. 4 may lead to additional information requests from FERC before approving this SOA. He explained that, by stating intentions to conduct a different study (No. 4), FERC may then require that a study plan and SOA be developed for the other study before approving this SOA. Because Nos. 1, 2, and 3 already address the intent of this SOA, Douglas PUD is proposing to move the language under Nos. 4 and 5 to the Background section of this SOA. Gingerich also noted that

Douglas PUD is supportive of the other edits provided by the CCT in this April 8, 2021 version.

Steve Lewis thanked Gingerich for his comments. Lewis said regarding No. 4, in the past, it seems the study plan and study report have served as the documentation, and he asked why Douglas PUD believes FERC will now require another SOA for this sub-assessment. Regarding No. 3, he suggested including a caveat that a radio telemetry study may be conducted earlier than 2030, should there be significant changes in the run-at-large or other conditions that allow some level of assessment to be conducted. Gingerich explained that the reasoning behind the language in No. 3 was to speak to the next 10-year requirement, and it was not his intent to dismiss the possibility of conducting a radio telemetry study earlier than 2030, should other license conditions allow. He agreed No. 3 can be reworded to reflect Lewis's comment. Regarding No. 4, he does not know how FERC will respond, but he does know how FERC has responded to sections in the FERC license regarding other "to be determined" studies when there is a requirement for FERC review and approval. Any time an action steps outside of a license requirement, there is uncertainty about what FERC will require. FERC may require a study plan or SOA, or FERC could say this is not a requirement of the license and it therefore requires a license amendment. This uncertainty causes concern for Douglas PUD, and if the Aquatic SWG really wants this language included in the Statement, Douglas PUD will need to first vet this internally; they may want to contact FERC, explain the situation, and ask what risks this language poses. Lewis agreed contacting FERC might be a good approach. He reminded the Aquatic SWG that USFWS will also be submitting a letter to FERC explaining their guidance regarding this study. Lastly, he also agreed with the other edits provided by the CCT in this April 8, 2021, version.

Jason McLellan clarified that the CCT do not necessarily support the language "in lieu of" and details about a "PIT-tag study" (Nos. 4 and 5) because it is not clear what this PIT-tag study is. Rather, Nos. 4 and 5 already existed in the SOA and his edits were intended to clarify the language. He does not want an SOA that binds Douglas PUD to develop a study plan when there has been no discussion on what is being measured or what the objectives of a yet-to-be-determined study might be. Gingerich said he understands this; Douglas PUD has the same concerns and, based on WDFW's comments, Patrick Verhey also has the same concerns. At the same time, Douglas PUD did not know where USFWS lands on this, so Nos. 4 and 5 were intended to preserve USFWS's comments. Another reason Douglas PUD does not want No. 4 in the Statement is if the Aquatic SWG cannot reach agreement on a PIT-tag study plan, there will need to be another SOA revising this one. Douglas PUD believes the Aquatic SWG needs to come to agreement about what this PIT-tag study is, and it needs to

be done outside of this SOA. McLellan said or it needs to be known exactly what this PIT-tag study is for it to be included in this SOA.

Verhey said WDFW has a fair amount of flexibility with removing No. 5 from the Statement. He agreed the language "in lieu of" may not be appropriate because a PIT-tag study cannot evaluate survival rates, but he believes having an assurance that the Aquatic SWG will discuss a PIT-tag study and the merits of such a study is adequate. John Ferguson asked if moving No. 4 to the Background section will suffice for WDFW. Verhey said he thinks this would be appropriate.

Breean Zimmerman said she understands Douglas PUD's concerns with Nos. 4 and 5. She needs to verify internally with Washington State Department of Ecology that the proposed language is consistent with the 401 Water Quality Certification for the Wells Project.

Ralph Lampman said the YN has no further comments.

Ferguson said a key consideration here is the licensee's discomfort with FERC's potential reaction to this SOA. No. 3 is definitive, but the language can be clarified that if conditions change in the interim, as judged by the Aquatic SWG, an evaluation may take place, as suggested by USFWS. Gingerich noted that this is already required under Section 4.2.1 of the *Bull Trout Management Plan*. The first paragraph is specific to the radio telemetry requirements in Years 5 and 10, and every 10 years thereafter. The second paragraph says:

*If the adult bull trout counts at Wells Dam increases more than two times the existing 5-year average or if there is a significant change in the operation of the fish ladders or hydrocombine, then the Aquatic SWG will determine whether additional years of take monitoring are needed...*

Gingerich said this second paragraph addresses Lewis's comments about a caveat statement, and he suggested inserting "as required in the first paragraph of Section 4.2.1. of the *Bull Trout Management Plan*" in No. 3 to clarify the SOA language is speaking to the 10-year requirement. Lewis said this addresses his comment. Verhey agreed.

Gingerich asked if USFWS can support moving language about a PIT-tag study to the Background section and just keep Nos. 1, 2, and 3 in the Statement section. Lewis said he thinks so, and agreed it is hard to gauge how FERC will respond to a change in a license requirement based on the Statement section of the SOA. Gingerich said he will also be sure to remove "in lieu of" language from the SOA. Again, Douglas PUD is not opposed to a PIT tag study, but he is not sure about the technical merits of such a study, which need to be discussed with the Aquatic SWG and unanimously approved. These along with the objectives

of the study need to be discussed. Lewis said the technical merits of a PIT tag study are already known. He noted this same thing has already been approved for implementation in the Rocky Reach Project, so while he understands Douglas PUD's concerns about how FERC will respond, he thinks everything will be fine as long as the USFWS letter or this SOA explains to FERC the reasoning behind this request (i.e., the USFWS tries to anticipate conditions when license articles are developed but sometimes conditions change, etc.). Further, he thinks more data can be collected with PIT-tag detections (versus radio telemetry) and using a less intrusive method. Gingerich said he does not disagree there is less tag burden with a PIT tag versus radio telemetry.

Lewis suggested striking the term "invasive" in No. 1. USFWS has nothing against the radio telemetry technique; rather, their guidance is more a reflection of the status of the local population.

The Aquatic SWG discussed further wordsmithing of Nos. 1, 2, and 3.

RD Nelle (USFWS) noted that the Bull Trout population in the Methow River Basin tends to fluctuate in 10-year cycles, and the current population is somewhat at the low end of this cycle. This means the local population may be in an ideal condition to study in 5 years, and in 10 years the condition of the population may be down again. Ferguson said this is a good point. Gingerich agreed there seems to be periodicity in the local Bull Trout population. In the more recent 10-year cycles, there has only been a couple fish difference in the averages. He said Nelle had suggested that redd counts be reviewed annually to track this cycle, but he would rather continue to review fish counts at Wells Dam. Douglas PUD already annually reviews fish counts at the dam and has done so for years, resulting in a consistent, long-term dataset. Redd count data are inconsistent because staff conducting the surveys (i.e., varied levels of experience identifying Bull Trout redds), local environmental conditions, and the amount of funding available each year to conduct redd surveys can vary. He agrees there is value in reviewing data on an annual basis and he suggests doing this via count window data.

Ferguson asked, is the plan for Douglas PUD to revise the SOA, as discussed today, and distribute the second revised draft SOA for Aquatic SWG review? Gingerich said he first needs to vet the additional edits internally with Douglas PUD, and then he can distribute a second revised draft SOA. Lewis suggested that Douglas PUD first contact FERC before rejecting or accepting any edits. Gingerich said he can do this but caveated that, when he has had conversations with FERC in the past, they can speak to the process but not so much on how they might react to a request (i.e., he is not sure how specific of a response he will receive). Douglas PUD will request feedback from FERC about the proposed language in the



revised draft Bull Trout SOA, as discussed during today's conference call, and will subsequently distribute a second revised SOA for Aquatic SWG review. *(Note: following discussions with FERC and internal reviews, Gingerich provided a final draft SOA for approval, which Geris distributed to the Aquatic SWG on May 4, 2021.)*

**4. Wells Fish Hatchery White Sturgeon Rearing Update (Andrew Gingerich):**

Andrew Gingerich said the rearing is going well, fish are growing nicely, and feed rates have been reduced dramatically; now ranging from 1% to 1.5% of body weight. Fish are converting well on the warmer water temperatures (about 62°F). There have been no mortalities in several months. Currently, there are 335 fish on station for a 325-fish program. The tank with the smallest fish has an average fish size of 667 grams per fish. A total of 678 fish, to date, have been surplused to the CCT Resident Fish Hatchery. In May 2021, the fish on station will be released. Fish have already been scute-marked and PIT-tagged. Fish will be re-interrogated prior to release to verify PIT tag retention. If the tag was shed, the fish will be retagged. Weight and length measurements will be collected 1 to 2 days prior to release to allow fish to recover before release. Fish will be released near Bridgeport, Washington. Douglas PUD is in early conversations with Bridgeport High School regarding public outreach in 2021. Recall last year, this was canceled due to COVID-19.

**5. U.S. Fish and Wildlife Service Reorganization (Steve Lewis):**

Steve Lewis said USFWS Ecological Services is being divided into ecological zones, consisting of three zones in Eastern Washington and three zones in Western Washington. This reorganization is to improve personnel expertise for different species consultations for hydropower, wind, and power. As this transition progresses, there will likely be different participants within the relicensing forums in the Mid-Columbia. Lewis's current positions in these forums will continue until at least the end of May or April 2021. He will keep the forums updated as dates solidify.

John Ferguson asked, will someone be replacing Lewis in this forum and will it be RD Nelle? Lewis said Nelle will probably remain in these forums as the technical expert for Bull Trout and Pacific Lamprey. Lewis's intent is to bring the new USFWS Aquatic SWG Technical Representative up to speed and gradually have this person participate in monthly meetings. This will not be a hard transition and there will be an opportunity to train the new representative.

**6. eDNA & Bile Acids Monitoring Proposal by the Yakama Nation (Ralph Lampman):**

An eDNA & Bile Acids Monitoring Proposal by the YN was distributed to the Aquatic SWG by Ralph Lampman on March 10, 2021, and was discussed during the Aquatic SWG conference call that same day.

Lampman said that today he hoped to continue this conversation. He noted that he sent an email containing early results from an eDNA versus bile acid study in New Zealand to Kristi Geris during today's Aquatic SWG conference call, which Geris projected on WebEx (and distributed to the Aquatic SWG later that day). Lampman said the two graphs in the email showed some similarities, but with no statistical significance. He hopes the YN's proposal can be funded, and he thinks this is a good time to conduct this type of study because it goes hand-in-hand with planning for an adult Pacific Lamprey passage study. John Ferguson asked what the y-axis (i.e., *PS [ng/sampler]*) represents in these two graphs, and Lampman said this is the bile acid concentration, or the concentration of petromyzonol sulfate.

Andrew Gingerich asked if Lampman has thought about different river flows, the dynamic nature of rivers, and sample periods, and how these affect concentrations across a river system. He said these are his technical questions and concerns, apart from Douglas PUD's key concerns about the proposal's relatedness to the *Pacific Lamprey Management Plan*. Lampman said these are the reasons the study is planned for September, during the lowest flow period, which is consistent with the 2018 study. The goal is to reduce the number of confounding factors. There is also interest in collecting samples during the spring, which would occur during higher flows. Samples would be collected at the same time at each location but there would not be the same discharge at each site. Therefore, the concentration will be multiplied by the discharge to calculate overall abundance of eDNA and bile acids. This method is being used by other researchers. The goal is to conduct sampling in 2021 and 2022 to compare to the 2018 results.

Gingerich asked about the costs for bile acids versus eDNA sampling, and he recalled Lampman mentioning one is more affordable compared to the other. Lampman said just the analysis portion of bile acids sampling is about three times more expensive. Gingerich asked what the bile acids show that eDNA cannot. Lampman said eDNA is not life stage specific and bile acid is more specific to larvae. Adults are attracted to both larvae and adult pheromones, so eDNA is not a bad surrogate.

Steve Lewis asked about the reasoning behind choosing to sample the specific stream in the New Zealand study (as shown in the email). Lampman said researchers are conducting a similar study across the globe looking at eDNA versus bile acids, and he is not sure about the reasoning behind each sample location.

Gingerich asked about the preservation technique for bile acids and asked if a specific filter or pump system is needed similar to eDNA sampling. Lampman said he thinks bile acids sample collection is similar to eDNA sample collection, with a slightly different preservation

method. He has exchanged emails about this but has not yet received additional details. He knows that all equipment needed for sample collection will be supplied. Gingerich said he would like to know more about the physical collection methods for bile acids sampling. Lampman said he will distribute this information once he has it. *(Note: Lampman provided eDNA method documentation from Cindy Baker [New Zealand] and bile acids method documentation from Nick Johnson [U.S. Geological Survey], which Geris distributed to the Aquatic SWG on May 4, 2021. Lampman also provided bile acids method documentation from Baker, which Geris distributed to the Aquatic SWG on May 12, 2021 [a corrected file was distributed later that same day].)*

Lampman said a decision on the YN's proposal is needed soon. Ferguson said he believes Chas Kyger already articulated Douglas PUD's position on the proposal during the last Aquatic SWG conference call on March 10, 2021. Ferguson asked, is the YN hoping for a different response and when is the deadline for an answer? Lampman said the earlier the better, because the later it gets the more difficult it is to find funding. Kyger said this proposal is an interesting idea, but as he previously mentioned, it is out of the scope of the *Pacific Lamprey Management Plan*. He is interested to hear answers to Gingerich's questions, and Douglas PUD would like to participate in the collection of samples, if possible. Gingerich agreed and said he would like to continue this conversation and think about how Douglas PUD can help.

#### **7. Pacific Lamprey Study Plan Development (Chas Kyger):**

A draft 2022 Pacific Lamprey PIT-tag Study Outline was distributed to the Aquatic SWG by Kristi Geris on March 10, 2021, and was discussed during the Aquatic SWG conference call that same day.

Chas Kyger said Douglas PUD wanted to provide this opportunity to continue these discussions. There is still plenty of time, but he needs to coordinate with Grant PUD soon about a new agreement to continue trapping Pacific Lamprey at Priest Rapids Dam. John Ferguson recalled Jason McLellan's comments about increasing the number of release groups and reducing the statistical power of the test. Kyger said dividing release groups also depends on how many fish are available for the study. He suggested that, if members do not have reservations about proceeding with a PIT-based study in 2022, he can produce a draft study plan for review. However, he first wants to be certain that all members are on the same page about this before proceeding.

Patrick Verhey said WDFW is interested in the fishway entrances at Wells Dam. He recalled that the last DIDSON study was inconclusive due to a low sample size, and he asked if it is possible to conduct another DIDSON study to look at entrance behavior. Kyger said the

technology has advanced since the last study and he can research whether this is a possible method. Ferguson said the DIDSON technology is now called ARIS. Kyger said the only other option for the observing fish behavior at the fishway entrances is to use a PIT array, but the entrance is such a large area that PIT detection is not the best option. He also recalled observing a Pacific Lamprey free swimming through the area during the last DIDSON study, which would further complicate basing the behavior on PIT detections. Ralph Lampman asked if this fish might have been on the wall mid-water. Kyger said the DIDSON photographs were only two-dimensional but based on the shadow it looked like it was free swimming. That said, the sample size was only seven fish that year and the fish observed using the DIDSON may not be indicative of how most fish pass this area. Ferguson said it is surprising that a Pacific Lamprey would be free swimming through this area, which typically has water velocities of 6 to 8 feet per second. Lampman said it depends on the individual fish. It would not be surprising that some Pacific Lamprey can swim in the mid-water column, but the fish would not do this again and again; they would eventually find an easier way to migrate.

McLellan requested a brief overview of these discussions to date. Kyger said considering that Pacific Lamprey numbers are still low, rather than conducting a radio telemetry study in 2022, it has been suggested that Douglas PUD continue translocation for a few more years and in the meantime conduct a passage evaluation using PIT-tag detections and possibly DIDSON (or ARIS) imaging at the entrance to the fishway. RD Nelle asked, how will the Aquatic SWG know when enough translocation has taken place to conduct an adult Pacific Lamprey approach, passage, and enumeration study? Kyger recalled a few meetings ago, discussing whether it is worth conducting an acoustic telemetry or radio telemetry study in 2022 after 4 years of translocation, or continuing with translocation based on results from other programs that indicated it would require more than 4 years before populations show an increase in adult returns. Conducting an evaluation using PIT tags is an attempt to find middle ground by continuing to translocate fish to build the population up and still collect some data on adult passage. Ferguson agreed and recalled other translocation efforts (e.g., by the YN and the Confederated Tribes of the Umatilla Indian Reservation) took 7 to 10 years to see a response in returning adults.

Lampman said he thinks it is a good approach to continue translocation and get a coarse look at fish behavior through PIT-tag detection. Regarding DIDSON technology, the YN fully supports the need to look at the entrance, but a sample size of only 50 fish may not be enough. It may make more sense to evaluate the entrance using radio telemetry and mostly downstream releases. Kyger said if the Aquatic SWG wants to look at the entrance using DIDSON, the downstream release group can be larger.

McLellan said if the consensus is that pheromones are a major driver, he still does not understand the opposition against holding fish in the upper fishway (ladder) in the near term while waiting for translocation efforts to take effect. Ferguson recalled that Lampman indicated this would take too many fish. McLellan said, Lampman did say that, but has it been measured? In the past 3 years, about 1,100 fish have been translocated upstream of Wells Dam throughout the basin. Why not place a concentration of pheromones in the upper fishway directly in the flow path Pacific Lamprey are migrating in? This would likely send a stronger signal compared to 1,100 fish distributed all over the basin miles upstream. McLellan said Lampman might be right, but considering that Douglas PUD is spending all this time and money on studies, using caged fish to produce a pheromone seems like a worthwhile test. Lampman thinks there is risk in putting a lot of fish on one place because it could result in mortalities, which could send signals that repel fish trying to ascend the ladder. Holding Pacific Lamprey in cages is also logistically difficult to do. If this could be done, then it is just another variable to consider when studying passage at the dam. He cautioned to think through all these details, how to make it work, and how to evaluate it.

Steve Lewis asked if the refuge boxes that were used in the fish ladders at Bonneville Dam could be used to distribute pheromones within the fish ladders. Lampman explained that these refuge boxes were intended to provide migrating adult Pacific Lamprey a place to hold and rest before continuing through the fishways. At Bonneville Dam, managers found that a lot of fish use these boxes and that these boxes did not improve passage and turned out to be a fish salvage nightmare.

Ferguson suggested, one possible way to maximize the pheromone concentration and the chance of detecting a change in adult passage behavior is to release fish downstream and upstream of one fish ladder only, rather than both ladders. He read that the YN is experimenting with Pacific Lamprey hatchery production. He asked, would it be possible to use juveniles from the hatchery and hold the fish in the upper ladder to stimulate olfactory cues instead of using adults from Priest Rapids Dam? Lampman said the YN does have hatchery fish of different age classes, including a lot of larvae, and releases will begin this summer. But again, there are logistical issues associated with holding these fish: the fish need to be in fine sediment, they do not need a lot of food, but if confined, this limits food availability. It is difficult to hold larvae in one place in the long term because the screens clog up. In the hatchery, staff clean screens every day and it is a major task. He likes the idea of using adults as an attractant and releasing all adults in one fish ladder. Ferguson said from a statistical standpoint, reducing the number of treatments will increase the ability to detect a difference, so consider moving away from evaluating the east versus west ladders and focus

on encouraging fish to move into and up a ladder by putting as many fish into one treatment as possible.

McLellan recalled early salmonid olfactory research using phenyl ethyl alcohol and morpholine drips where hatchery fish were exposed to these at post-hatch and at smoltification. He asked if it would be possible to collect hatchery water—that would presumably have high concentrations of pheromone—transport it in a tanker truck, and set up a drip system at the top of the fish ladder. This might be more logistically feasible. He is not trying to complicate things; rather, if the thought is that the primary driver is pheromones, why not look at ways to get pheromones up there.

Andrew Gingerich said McLellan's comments are appreciated and this topic has been discussed before. Another thought about using fish is that it might send off stress cues. The comments about a drip system reminds him of Sea Lamprey studies where a synthetic pheromone drip was used effectively to try to attract and remove the fish. As he remembers the research findings, it took time to attract fish but was successful. He is not sure about effluent water, but this is definitely a novel idea. This would also be an easier sell because it is directly related to the *Pacific Lamprey Management Plan*. McLellan clarified he is not proposing using synthetic pheromones; rather, he is proposing implementing a drip system, and he thought hatchery water might be the easiest source of pheromones.

Lampman said there would be a volume issue. In a small creek this might work, but not in something the size of the Upper Columbia River. He thinks this is an impossible thing to do with any success. Ferguson said McLellan is suggesting a drip system into the ladder and flow down a fish ladder itself (not the flow being pumped out to attract fish at entrances) is in the range of 30 to 50 cubic feet per second (cfs). Gingerich agreed and said flow in the Wells fish ladders is around 40 to 50 cfs. McLellan agreed this method was initially conducted in smaller creeks, but now this is used throughout the entire Great Lakes region, in Lake Roosevelt, and in other large water systems. Lampman said there have only been slight changes in behavior. He thinks there are too many other variables for this to work on Pacific Lamprey.

Nelle agreed it is a good idea to put pheromones directly in the fishway where the dilution is less, considering only a few hundred fish are released each year in the entire Columbia River (i.e., translocated upstream of Wells Dam).

Verhey said WDFW is open to the idea. If fish are used, he suggested considering a risk analysis regarding fish mortalities deterring adults from wanting to enter the fishway. The drip system seems like a doable thing to try and see if it works.

Kyger said Douglas PUD is open to trying new things, maybe with no expectation for miraculous results.

Lampman suggested placing pheromones within one fish ladder and then monitoring tagged fish released downstream to see which approach the fish take. Then one month later, do the same in the other ladder. Kyger agreed doing alternating treatments is a good way to test if there is a change in response.

Douglas PUD will begin discussing renewing an agreement to continue collecting Pacific Lamprey from Priest Rapids Dam for translocation above Wells Dam in 2022 and beyond with Grant PUD. Douglas PUD will also develop a draft adult Pacific Lamprey study plan for implementation in 2022 for Aquatic SWG review that considers potential methodologies, release locations, and sample size requirements, discussed to date.

#### **8. Aquatic SWG Pacific Lamprey Translocation Coordination with the JFP (John Ferguson and Chas Kyger):**

John Ferguson recalled last fall 2020, Steve Lewis mentioned there needs to be more coordination between Grant PUD, Chelan PUD, and Douglas PUD regarding the destination of translocated fish. Chelan PUD was concerned that too many fish were being translocated upstream of Wells Dam, that otherwise would have been destined for the Entiat River. Lewis agreed with this recollection. In talking with Chelan PUD, they were a bit surprised at the lack of coordination and all parties want input into where individuals are translocated. There needs to be more of a playbook for future release years. He suggested, for example, reviewing redd counts to determine if fish should be reallocated to different locations. There just needs to be a better laid plan.

Ralph Lampman said he thinks the RRF, and maybe also the PRFF, have a check-in about halfway through the migration to discuss what to do next. The thought was to have this check-in meeting across all three forums to discuss these plans together. Lewis asked, what time of year would this be? Lampman said, typically the migration peaks in early July at Bonneville Dam, and it takes about 1 month after the peak at Bonneville Dam for fish to reach Priest Rapids Dam, so early August would be about the halfway point. Collection should take place 2 weeks before and 2 weeks after this halfway point to collect the maximum number of fish.

RD Nelle said the issue is that it seems Grant PUD is getting better at collecting fish, and with the lower run sizes the proportion of the run captured is higher. Currently, the proportion of the run being translocated upstream of Wells Dam is about 30%. This proportion is not going to the Entiat River. The question is, what number of fish do stakeholders think is okay to

translocate above Wells Dam? Historically, it was about 10%. For example, should the proportion be 20% and for how long? Ten years?

Lampman said maybe fish are being undercounted at the count windows. Nelle said he does not think this is the case at Wanapum and Priest Rapids dams. Lampman said he thinks he has seen this trend.

Ferguson asked, who will attend this check-in meeting and who will coordinate it? At the end of the day, is this not a JFP and tribal discussion? Lewis said he thinks the PUDs, JFP, and tribal entities need to all discuss the data together to reach agreement on where the fish are ending up and where the fish need to go. This needs to be a collective effort.

Nelle said for Chelan PUD, the original intent was to translocate fish upstream of Rock Island Dam to increase passage rates. Chelan PUD has no issues with translocating fish above Wells Dam; rather, the proportions just need to make sense.

Lampman noted that the YN also translocate fish to the Wenatchee River Basin to help increase this population, notably above Tumwater Dam.

Ferguson asked if any fish are being translocated to the Entiat River. Lampman said no, there is no dam in the Entiat River. The population there is well-distributed based on surveys and seems to be a stable, healthy population, relatively speaking.

Chas Kyger said Douglas PUD looks to the JFP and tribal entities for guidance. Douglas PUD advocates to get as many fish as possible but also understands the concerns around artificially placing fish where they may not naturally go.

Ferguson asked about a path forward and if the Aquatic SWG wants him to discuss this with Tracy Hillman. Lewis said he has discussed this with Hillman periodically after RRFF and PRFF meetings but agreed it might be a good approach for Ferguson to contact Hillman. Lewis said he also discussed this with Mike Clement (Grant PUD), but he did not have much to say about what to do with the fish beyond their obligation to deliver them to Hydro Park above Rock Island Dam.

Andrew Gingerich said Douglas PUD is open to meet with Grant PUD, Chelan PUD, and the JFP. There have always been unknowns and risks. He understands Clement's reaction because, as a non-manager, the PUDs do not have much of a say about where these fish go. To note, he recalled Lampman mentioning a while ago that the number of fish being translocated above Wells Dam compared to entire run is small.



Ferguson asked about the conversion rates from Bonneville Dam to Priest Rapids Dam, notably if counts at Bonneville Dam provide a good idea of what might show up at Priest Rapids Dam, or if this varies. Lampman said conversion rates are not constant. It seems the higher the count at Bonneville Dam, the higher the count at Priest Rapids Dam. However, in lower count years, conversion rates drop off sharply moving upstream. Ferguson asked, does Pacific Lamprey abundance follow salmonid patterns such that indicators of ocean conditions can be used to inform annual abundance trends in Pacific Lamprey? Lampman said Columbia River Inter-Tribal Fish Commission looked at this, but he does not think there was anything solid to help predict numbers at this point. He guessed there might be predictions based on temperature.

Lampman suggested, in addition to a midterm check-in in early August, convening a joint meeting in early July when counts at Bonneville Dam are near the peak. At this time, there should be a good idea of what the run looks like to discuss allocation for that year.

Anchor QEA will coordinate with Hillman about annual Pacific Lamprey translocation coordination among the Aquatic SWG, Douglas PUD, Chelan PUD, Grant PUD, and the JFP, throughout each Pacific Lamprey passage season and as translocation efforts progress. *(Note: Ferguson contacted Hillman and provided a plan forward to Kristi Geris on April 14, 2021, which Geris distributed to the Aquatic SWG that same day.)*

#### **9. Pacific Lamprey Information Exchange Webinar (Ralph Lampman):**

Ralph Lampman said the fourth Pacific Lamprey Information Exchange Webinar<sup>3</sup> has not yet happened because this Aquatic SWG meeting was rescheduled to an earlier date.

#### **10. 2020 ASA Annual Report – Review Deadline (Andrew Gingerich):**

Andrew Gingerich reminded the Aquatic SWG that the review deadline for the draft 2020 ASA Annual Report and appended management plan annual reports is April 26, 2021. He encouraged members to please submit comments on time, which helps with the Aquatic SWG approval process and meeting the FERC deadline.

Aquatic SWG members will provide edits and comments on the draft 2020 ASA Annual Report and appended management plan annual reports to Kristi Geris by April 26, 2021.

---

<sup>3</sup> Pacific Lamprey Conservation Initiative's Lamprey Technical Workgroup 4th Annual Lamprey Information Exchange Monthly Webinar Series, which will convene on the second Tuesday of each month from January to June 2021.

## **VII. Administration**

### **1. Upcoming Meetings (John Ferguson):**

The Aquatic SWG meeting on May 12, 2021, will be held by conference call.

Other upcoming meetings include June 9 and July 14, 2021 (TBD).

### **List of Attachments**

Attachment A List of Attendees

**Attachment A - Attendees**

<b>Name</b>	<b>Role</b>	<b>Organization</b>
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
Steve Lewis	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
RD Nelle	Aquatic SWG Technical Support	U.S. Fish and Wildlife Service
Breean Zimmerman	Aquatic SWG Technical Representative	Washington State Department of Ecology
Patrick Verhey	Aquatic SWG Technical Representative	Washington Department of Fish and Wildlife
Laura Heironimus	Aquatic SWG Technical Alternate	Washington Department of Fish and Wildlife
Monica Blanchard	Aquatic SWG Technical Support	Washington Department of Fish and Wildlife
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes