



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: April 13, 2021

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

Re: Final Minutes of the March 10, 2021, Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, March 10, 2021, from 10:00 a.m. to 1:00 p.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. U.S. Fish and Wildlife Service (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 Statement of Agreement (SOA) for Aquatic SWG review (Item VI-4). (Note: USFWS, the Colville Confederated Tribes [CCT], Washington Department of Fish and Wildlife [WDFW], and the Yakama Nation [YN] provided comments on the draft SOA on March 17, 2021.)
2. Aquatic SWG members will review 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* for further discussion during the Aquatic SWG conference call on April 14, 2021 (Item VI-5).
3. 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 14, 2021 (Item VI-6).
4. Aquatic SWG members will review the current White Sturgeon SOA, *Wells Reservoir White Sturgeon Supplementation 2018-2022*¹, 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). (Note: these documents were redistributed to the Aquatic SWG, for their reference, by Kristi Geris on March 15, 2021.)

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

5. The Aquatic SWG meeting on April 14, 2021, will be held by conference call (Item VII-2).
(Note: this meeting was rescheduled to April 12, 2021, from 1:00 p.m. to 4:00 p.m., to be held by conference call.)

II. Summary of Decisions

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

III. Agreements

1. Per USFWS guidance, the Aquatic SWG members present agreed to the following: 1) Douglas PUD will conduct a Bull Trout PIT tag-only study in 2021, instead of implementing the Aquatic SWG-approved study plan *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir* (2021–2022 Bull Trout Radio Telemetry Study Plan); 2) members will further develop 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* for Aquatic SWG approval; and 3) members will develop a study plan for the Bull Trout PIT tag-only study for implementation in 2021 at a later date (Item VI-4).

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 *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* was distributed on April 6, 2021 (Item VI-4).
2. 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* was distributed to the Aquatic SWG by Kristi Geris on March 10, 2021, and will be further discussed during the Aquatic SWG conference call on April 14, 2021 (Item VI-5).
3. A draft 2022 Pacific Lamprey PIT Tag Study Outline was distributed to the Aquatic SWG by Kristi Geris on March 10, 2021, and will be further discussed during the Aquatic SWG conference call on April 14, 2021 (Item VI-6).
4. The draft 2020 Aquatic Settlement Agreement (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 VII-1).

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:

- Patrick Verhey added the WDFW briefing, *Sturgeon Pathogen Surveys*.
- John Ferguson added the 2020 ASA Annual Report.

The revised draft February 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, which were distributed to the Aquatic SWG on March 2, 2021. Geris and Ralph Lampman then distributed a second revised minutes, which included comments from the YN, on March 3, 2021. Geris said she noted completion of an action item and added a review item to the second revised minutes. Aquatic SWG members present approved the February 10, 2021, conference call minutes, as revised.

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

- *Douglas PUD will distribute the dimensions (width and thickness) of the metal plating installed to minimize gaps throughout the Wells Dam fishways (Item VI-7).*
Chas Kyger provided these dimensions on February 22, 2021, which Kristi Geris distributed to the Aquatic SWG that same day.
- *Aquatic SWG members will review the presentation titled Summary of Douglas PUD Adult Lamprey Passage Studies 2007–2020 in preparation to further discuss next steps during the Aquatic SWG conference call on March 10, 2021 (Item VI-9).*
This will be discussed during today's conference call.

2. WDFW briefing, *Sturgeon Pathogen Surveys* (Patrick Verhey and Jed Varney)

Patrick Verhey said the WDFW briefing, *Sturgeon Pathogen Surveys*, was distributed to the Aquatic SWG by Kristi Geris on March 8, 2021. Verhey introduced Jed Varney, Senior Veterinarian for the WDFW Fish Health Unit, who joined the call today to provide additional information on White Sturgeon pathogen sampling.

Varney said there have been a lot of questions regarding testing White Sturgeon for disease, and he recalled a co-manager's disease policy², or fish health protocol, that was developed by John Kerwin (former WDFW Fish Health Supervisor, retired). This protocol is a watershed approach risk assessment that was developed for salmonids but can also be applied to all fish species. When he works with non-salmonids, he typically applies concepts of this policy. Per this protocol, for transfers between watersheds, fish are tested to prevent the transfer of diseases and to inform the status of diseases in specific watersheds throughout the state. For transfers within watersheds, there are no restrictions or requirements to test fish, but testing might occur for survey purposes, disease diagnoses, or research.

Varney said this briefing addresses White Sturgeon iridovirus (WSIV). New research out of Canada found that what was thought to be WSIV is now being categorized as nucleocytoplasmic large DNA viruses (NCLDV). Canadian researchers have developed and are using a quantitative polymerase chain reaction (qPCR) test to screen for NCLDV and would like the qPCR test to be used in Washington State; however, the use of this qPCR test has not been approved or validated among the wild population in the state. Histopathology was formerly used to screen for WSIV; however, although this test can accurately diagnose a positive case, it cannot accurately diagnose a negative case (i.e., the specificity of this test is well below 50%, which means there are many false negatives). If there are no approved and accurate tests available to screen for NCLDV and WSIV, testing cannot be required.

Varney then questioned whether testing for NCLDV or WSIV is even needed. He asked, how prevalent are NCLDV and WSIV in wild White Sturgeon in the Columbia River? To his knowledge, adults can carry NCLDV and WSIV, but there are no morbidity data for these. He also asked if mortality in juveniles being reared in a hatchery is a real problem requiring testing, when it is easy to avoid NCLDV and WSIV by not stressing the fish. Available literature shows that White Sturgeon can also carry infectious hematopoietic necrosis virus (IHNV), but again, this is only expressed when the fish are in a stressful environment.

Varney said WDFW would be interested in learning more about the prevalence of NCLDV and WSIV in wild White Sturgeon by obtaining samples collected during regional White

² *Salmonid Disease Control Policy of the Fisheries Co-Managers of Washington State* (revised July 2006)

Sturgeon monitoring and evaluation (M&E) efforts and archiving them until tests are available. WDFW can supply the vials for samples and fin clips would also be gladly accepted. These samples will be archived until testing becomes available (note: the Canadian researchers indicated they may be able to run the qPCR tests for WDFW). In Canada, testing for NCLDV in both wild and hatchery environments have found that 24% of fish will test positive for NCLDV. Varney questioned whether 24% or less in hatchery fish is a problem. He suggested that if results are 24% or more, this might be amplifying the virus and testing might be necessary. Varney also noted that he has not been able to locate data on prevalence of IHNV in White Sturgeon in the Pacific Northwest; however, the literature indicates the data are available.

Jason McLellan said the CCT have nine fin tissues archived that were collected from wild adult White Sturgeon in Lake Roosevelt during stock assessment efforts conducted in September 2020. McLellan added that he will contact Varney to get these samples to him. Varney suggested that McLellan email him for sample containers, and he can look into running IHNV and NCLDV tests on the samples.

Andrew Gingerich recalled that Douglas PUD has historically used histopathology to test for WSIV; however, as Varney just explained, this is not a perfect method. Gingerich said the question then becomes whether there is a need to test for something that might be endemic to the population. Douglas PUD is still committed to stocking asymptomatic fish, and Dr. Betsy Bamberger (Douglas PUD Fish Health and Evaluation Specialist) performs other examinations like skin scrapes and gill exams prior to fish transfers and repatriation. Like the CCT, Douglas PUD can also collect fin clips, only these will be from repatriated fish, or wild progeny. He clarified that these fish were collected as larvae, or progeny of wild adults, reared for 11 months at Wells Fish Hatchery, and stocked back out in the Wells Reservoir. Varney said WDFW would be interested in obtaining these samples. John Ferguson asked how many fin clips are needed, and Varney asked how many fish are reared by Douglas PUD. Gingerich said there are about 335 fish on station that will be released in May 2021. Varney said 60 fin clips would be acceptable. Gingerich asked how much tissue is needed. Varney said qPCR tests only need a couple of millimeters, which is less than what is needed for histopathology. He also noted that histopathology is still a good diagnostic test, but if White Sturgeon are sick, fish health specialists know what the clinical signs are even without histopathology. It is good that Bamberger performs pre-release exams and WDFW does this as well. His recommendation is to not release sick fish and to test fish when tests are available, including providing WDFW with samples and fin clips to archive.

3. 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 M&E activities.

Jason McLellan said the CCT are reopening offices on April 5, 2021. The CCT were provided with a lot of vaccines and are in the process of vaccinating all tribal employees who are interested in receiving a vaccination.

Steve Lewis said USFWS will continue teleworking into the foreseeable future.

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

4. 2021–2022 Bull Trout Radio Telemetry Study Plan (Andrew Gingerich):

Andrew Gingerich said Steve Lewis contacted him on February 17, 2021, after the Aquatic SWG had already approved the study plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir* (2021–2022 Bull Trout Radio Telemetry Study Plan).

Following an additional internal discussion within USFWS and between Lewis and John Crandall (Methow Salmon Recovery Foundation), USFWS is recommending not to conduct a Bull Trout radio telemetry study in 2021–2022. Gingerich recalled that Douglas PUD has these requirements to conduct a Bull Trout passage and survival study using radio telemetry in Year-10 of Douglas PUD's Federal Energy Regulatory Commission (FERC) license, per the *Bull Trout Management Plan* as required by the FERC license and 401 Water Quality Certification, and per the USFWS Section 18 Fishway Prescription and terms and conditions of the Biological Opinion for the relicensing of the Wells Project. However, USFWS's concern about potential effects on Bull Trout undergoing surgeries (to insert a radio tag) limits Douglas PUD's ability to conduct the Aquatic SWG approved 2021–2022 Bull Trout Radio Telemetry Study Plan. Douglas PUD can support USFWS's recommendation, provided there is consensus from the Aquatic SWG and USFWS that Douglas PUD cannot conduct a Bull Trout passage and survival study, as required, and that the Aquatic SWG will revisit conducting such a study in Year-20 of Douglas PUD's FERC license. Gingerich noted, Douglas PUD must meet license requirements. If this cannot be done, there needs to be a clear consultation record to show FERC why this is the case. Offline exchanges on this topic included suggestions to draft a letter to FERC. Douglas PUD also believes it is important to have an Aquatic SWG approved SOA summarizing this discussion. In the past, FERC has been supportive of changes in license requirements, provided there is unanimous support within the Aquatic SWG. An email from Lewis titled "Upcoming Wells 2021–2022 Bull Trout Study" (Attachment B), explaining USFWS's recommendation, was distributed to the Aquatic SWG by Kristi Geris on March 2, 2021. 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 Geris prior to the Aquatic SWG conference call on March 10, 2021.

Gingerich said today, Douglas PUD hopes to at least have unification from the Aquatic SWG to not conduct a Bull Trout radio telemetry study because Douglas PUD needs to cancel the tag order with Lotek by close-of-business. Douglas PUD has already invested a lot of energy, time, and costs in preparing for this radio telemetry study, and it would be helpful to at least recoup the cost of the tags.

John Ferguson summarized that today, Douglas PUD is requesting unanimous consent from the Aquatic SWG to conduct a PIT tag-only study in 2021, as recommended by USFWS. Moving forward, Douglas PUD and the Aquatic SWG need to build an administrative record and finalize an SOA to submit to FERC.

Lewis explained that USFWS develops these regulatory documents thinking from a long-term perspective, but sometimes conditions change during these intervals of interim studies. Douglas PUD has been successful in meeting requirements and standards for previous Bull Trout radio telemetry studies leading up to this check-in. At this time, considering the status of the Bull Trout recovery and conditions at the local population level, and based on input from USFWS policy staff and other experts, USFWS is recommending to not conduct more surgical activities on Bull Trout, but rather to defer the radio telemetry component of the study and monitor interactions with Wells Dam using only PIT-tagged fish. Lewis agreed there is value in documenting these discussions in the administrative record and said he is working with Douglas PUD to draft a letter to FERC from USFWS, with the Aquatic SWG Parties copied. He believes his email (Attachment B) is straightforward and explains the pathways USFWS wants to take for this check-in to assess the level of impact or no impact on Bull Trout at this juncture. He also agrees an SOA could be a good approach but believes the current draft SOA needs rewording in the first couple of paragraphs. He also questioned whether an SOA is needed or if this decision can just be documented in the meeting minutes.

Ferguson asked if USFWS is recommending an alternative sample size for a PIT tag-only study or is it still 60 fish. Lewis said USFWS is recommending no more than 60 fish.

Ralph Lampman asked if USFWS's recommendation is to waive the passage and survival study required in Year-10 of Douglas PUD's FERC license until Year-20 of the license. Lewis said the recommendation is not to waive the study but to change the methodology of the study, which will not provide data on survival but will inform passage. Then, in 10 years' time, re-evaluate whether the run-of-the-river Bull Trout numbers have improved enough to conduct a radio telemetry study. Gingerich said, while Douglas PUD supports conducting a

PIT tag-only study to provide anecdotal information, he cautioned about implying this is still the same study because the new methodology (only PIT-tagging fish) cannot meet the objectives of the license requirement to accurately assess passage and survival. Douglas PUD wants to be clear that a PIT tag-only study is a separate scope with different objectives. The draft SOA clearly describes what type of study is required by the governing documents and what type of study USFWS is recommending, and this recommendation is not the same study as required by the governing documents. Lampman asked if this recommendation applies to Bull Trout studies in other fish forums, and Lewis said USFWS had this same discussion with Chelan PUD.

Lampman asked about the life span of Bull Trout after tagging. RD Nelle (USFWS) said this depends on how old the fish is at tagging, but Bull Trout typically have a lifespan of about 10 years. Lewis said Chelan PUD had detected a PIT-tagged fish that was upwards of 15 years old. Nelle said this is the upper end of the spectrum. The expectation is that a fish will live from 5 to 7 years post-tagging, but 15 years is not unheard of.

Lampman asked if it would be possible to use money saved from not using radio tags to increase the number of PIT-tag arrays within Wells Dam and other places, which could also help with monitoring for adult Pacific Lamprey. Gingerich said Bull Trout and Pacific Lamprey are two different species with different life histories. Monitoring for Bull Trout is more about downstream migrations through the spillways or turbines, and the water velocity through the turbine intakes and spillway is so high it would be difficult to install PIT arrays in these locations. Monitoring for Pacific Lamprey is more about upstream migrations through the collection gallery entrance. This area is quite large, with low expectations for detection efficiency. Lampman said additional PIT arrays can also be beneficial in tributary locations.

Patrick Verhey thanked Lampman for the questions and said he had those same questions, as well. Verhey asked, in general, what sort of information can be expected to be gained from a PIT tag study, and would this information be applicable to assumptions about survival? That is, is it even worthwhile conducting a PIT-tag study? Lewis said a PIT-tag study can provide broad information from an overall project perspective by tracking a fish from Point A to Point B. The time scale is a little more extended compared to a radio tag study, but a PIT-tag study can show whether a fish traveled farther upstream or downstream of a location. Verhey said, so, a PIT tag study is more about presence or absence and whether Bull Trout pass Wells Dam or the Twisp Weir, but there is no survival information. Lewis said if there are no red flags with the PIT-tag data coupled with past radio telemetry data, USFWS can roughly conclude Douglas PUD is likely upholding the performance standard. Verhey said he

supposes some data are better than none, and WDFW generally defers to USFWS for decisions regarding Bull Trout.

Lampman said he has not yet discussed this topic with the YN Bull Trout specialist; however, the YN also defers to USFWS on Bull Trout topics.

Breean Zimmerman said Washington State Department of Ecology (Ecology) also defers to USFWS, so long as the proposed approach is consistent with the *Bull Trout Management Plan* and associated 401 Water Quality Certification. Zimmerman said this seems to be the case, per Section 3.0 of the *Bull Trout Management Plan*, which indicates the following:

As new information becomes available, implementation of each activity may be adjusted through consultation with the Aquatic SWG.

Jason McLellan said this seems to be a unilateral decision by USFWS, so he is unsure if it would matter if a Party objected and it leads the CCT to question the need for an SOA or whether a letter from USFWS is appropriate enough. Lastly, if the study shifts to a PIT-only study and the objective is no longer to estimate survival and passage, the CCT needs to see a new study design with objectives and methods that demonstrate what this new study is trying to achieve.

Gingerich said Douglas PUD views an SOA to be absolutely essential, per Section 11.6 of the ASA:

The Aquatic SWG will be used as the primary forum for consultation and coordination among the Parties in connection with conducting studies and implementing the measures set forth in this Agreement...

Gingerich said Douglas PUD recognizes that various agencies have lead roles or obligations to a species, or to water quality in the case of Ecology. Likewise, USFWS is the lead on Bull Trout recovery. However, at the end of the day, the Aquatic SWG operates under unanimous consent. Gingerich said McLellan has a valid point about a new study plan, and Verhey had questions about what can and cannot be done with a PIT tag study; however, these conversations can take place after the Aquatic SWG agrees to forego a radio telemetry study in lieu of a PIT tag-only study in 2021, as recommended by USFWS. Verhey said it is difficult to agree to a PIT tag-only study before understanding what will be learned from such a study, but he understands the situation.

Aquatic SWG members present agreed to the following: 1) Douglas PUD will conduct a Bull Trout PIT tag-only study in 2021, per USFWS guidance, instead of implementing the

Aquatic SWG-approved 2021–2022 Bull Trout Radio Telemetry Study Plan; 2) members will further develop 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* for Aquatic SWG approval; and 3) members will develop a study plan for the Bull Trout PIT tag-only study for implementation in 2021 at a later date.

Gingerich said Douglas PUD will contact Lotek today to cancel the radio tag order, which means there is no going back on this decision.

Lewis said, as currently written, the draft SOA gives the impression that Douglas PUD is not conducting the Bull Trout study altogether, which is not the intent of USFWS's recommendation. The draft SOA also implies that passage standards are great based on past data, which may not be accurate and is the purpose for collecting PIT tag data to assist in this assessment. The Aquatic SWG needs to be careful about what is submitted to FERC.

Gingerich said Douglas PUD can further review the language in the draft SOA, but it seems USFWS is saying that tagging and handling of fish is more important than incidental take at the project. Lewis said USFWS's recommendation is a reflection of both tagging and handling of fish and impacts to local populations (e.g., the recent large fish kill due to freezing temperatures in the tributaries). Bull Trout are resilient, but locally, the population is on a downward trend. Lewis said 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.

Douglas PUD will then distribute a revised draft SOA for Aquatic SWG review. (Note: USFWS, the CCT, WDFW, and the YN provided comments on the draft SOA on March 17, 2021.)

A 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* was distributed to the Aquatic SWG by Geris on April 6, 2021.

5. Pacific Lamprey Conservation Initiative Upper Columbia Proposal eDNA and Bile Acids Sampling (Ralph Lampman):

Ralph Lampman said 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*, was distributed to the Aquatic SWG by Lampman prior to the Aquatic SWG conference call on March 10, 2021. This proposal is largely the same as the last proposal submitted for Bonneville Power Administration funding (channeled through the Pacific Lamprey Conservation Initiative), except for one change. Columbia River Inter-Tribal Fish Commission (CRITFC) has agreed to fund the environmental DNA (eDNA) portion of the proposal and a contract is already in place with Kellie Carim (U.S. Forest Service Rocky

Mountain Research Station) to analyze these data. This reduces the funds needed from partners in half. Samples of eDNA will be collected using the same methods as in 2018. Lampman recalled that these results showed good detections, with the highest levels of eDNA observed at Bonneville Dam, and that levels gradually decreased up to Rock Island Dam, and no eDNA was detected at Wells Dam. He hopes that collecting eDNA samples will show whether there has been a change in pheromone levels after years of translocation. The other part of this proposal is to monitor for bile acids. Cindy Baker (National Institute of Water and Atmospheric Research Ltd., New Zealand) and colleagues, in coordination with Michigan State University, have devised a device to measure bile acids real time. Lampman said there are pros and cons with both the eDNA and bile acids methods, and this proposal will be an opportunity to compare the two.

John Ferguson asked if this proposal is for information only or whether the YN is requesting the needed funding amount of \$14,400 from Douglas PUD, with support from the Aquatic SWG? Lampman said the request is for Douglas PUD to fund \$14,400. Ferguson asked about a timeline for a decision. Lampman said the sooner the better to help move forward with planning. The first sampling event is proposed for September 2021, and while he has a list of proposed sample sites, he wants to finalize this list based on input from all partners. He also needs to finalize the estimates for New Zealand and Michigan State University, which may need adjusting based on funding. He suggested discussing the proposal today and voting to approve it next month.

Patrick Verhey asked if the objective of an eDNA and bile acids analysis study is to evaluate the success of translocating fish above Wells Dam. Lampman said yes, this is an underlying goal; to determine if adult translocation has had an impact in terms of a visible change in eDNA concentrations in the mainstem Columbia River and tributaries, especially at Wells Dam. Another goal is to determine the relatedness between eDNA and bile acid concentrations. Baker is conducting a long-term instream monitoring study of eDNA and bile acid concentrations and so far, the patterns are similar.

Chas Kyger said Douglas PUD can help with sample collection for eDNA, and he asked if bile acid collection is also done by collecting water samples. Lampman said yes, it is similar to eDNA. Kyger said Douglas PUD can collect water samples in the Wells Project to support sample collection and provide the labor to collect the samples, as this falls within the regional coordination component of the *Pacific Lamprey Management Plan*. However, he is unsure about providing funding for a project with a large scope outside the *Pacific Lamprey Management Plan*.

Lampman said most of the sample locations are in the Upper Columbia River above Wells Dam—Bonneville, McNary, and Rocky Reach dams are just for reference. The lower sample locations can be separated from the proposal if this means Douglas PUD could cover the eDNA and bile acids costs in the Upper Columbia River. Kyger said he is skeptical that Douglas PUD policy staff will agree to fund part of a study that does not meet specific requirements in the *Pacific Lamprey Management Plan*. Agreeing to translocation already pushed the boundaries, and he is unsure about how much support this will receive.

Andrew Gingerich asked, what is the intent of this sampling? To determine if translocation is working? There are already a couple of metrics to evaluate this: 1) increased counts at Wells Dam; and 2) screw trap data for juveniles. As Kyger mentioned, it is difficult to obtain approval when the activity is outside of the specific objectives contained within the *Pacific Lamprey Management Plan*. Not unlike the Bull Trout discussion, Douglas PUD is committed to requirements outlined in the governing documents. Again, as Kyger explained, Douglas PUD can support sample collection and labor as part of regional coordination. With the Bull Trout study at the Twisp Weir, broodstock collection for Chinook Salmon is already taking place, so when Bull Trout are encountered it is easy for staff to PIT-tag the fish because staff are already there. Having said that, this proposal was just distributed, so Douglas PUD will review the proposal for further discussion next month.

RD Nelle asked, if the goal is to measure pheromones and this can be accomplished using bile acids, then why is the eDNA sampling also needed? Ferguson agreed and said bile acids get at olfactory sensitivity while eDNA drives on presence or absence. Lampman said eDNA costs less than bile acid analyses, which is the reason why only a subset of samples will be part of the bile acid analyses. He thinks it is interesting that eDNA and bile acids patterns seem related in New Zealand streams. Again, CRITFC will be funding the eDNA portion of the study, so the ask is for the bile acids portion. Bile acids get back to attraction at the dam and could provide hard evidence of what is in the water. He agreed fish counts and screw trap data can be reviewed, but this does not show what adults are sensing at the dam.

Steve Lewis asked about the rationale for selection of sample sites. Lampman said in 2018, he wanted the key location to be Wells Dam but also wanted to put this location in context with other locations in the mainstem Columbia River where Pacific Lamprey presence is greater. He wanted to look at Bonneville Dam—the lower-most dam—McNary Dam, and Rocky Reach Dam—the first dam below Wells Dam—and he wanted to look above Wells Dam. Initially, he provided a proposal with upstream sample locations, but ultimately, these locations were modified to align with locations where Douglas PUD was already collecting samples.

Lampman said translocation is a relatively new action that the Aquatic SWG agreed was needed to help Pacific Lamprey approach Wells Dam. This effort has been ongoing for 3 years, and now the Aquatic SWG needs to determine the next course of action. Radio telemetry is fairly expensive and acoustic telemetry could be as well. Rather than spend money on a study when it is unknown whether this is the right time to do so, maybe it is wiser to put a little money toward better understanding the situation to make a more informed decision. This proposal could be viewed as a cost-saving measure.

Ferguson said this makes sense, but Douglas PUD might have a scope issue. The question is whether Douglas PUD is even allowed to do this. Lewis said, in his opinion, this proposal is a good course of action, and he thinks there is a valid link to the *Pacific Lamprey Management Plan*. The Aquatic SWG needs to think creatively, and gathering these types of data can direct the next course of action.

Aquatic SWG members will review 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*, for further discussion during the Aquatic SWG conference call on April 14, 2021.

6. Pacific Lamprey Study Plan Development (Chas Kyger):

Chas Kyger said a draft 2022 Pacific Lamprey PIT Tag Study Outline (Attachment C) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on March 10, 2021. This was a brainstorming exercise to support initial discussions and includes a multiple release site design, the tracking of PIT-tagged fish, and rough estimates of sample sizes. The release sites are broken into three zones: 1) the downstream approach group will evaluate fish entering the fishways; 2) the within fishways group will evaluate the modifications within the fishways and areas where problems have been identified during past studies; and 3) the upstream control group will evaluate upstream migration and approach to the tributaries. Rates for fish released upstream from Wells Dam could be compared to rates for fish released downstream and within the fishway to possibly tease out effects of the dam. Study fish will be collected at Priest Rapids Dam and will be divided into thirds for each release location. Details about the release locations need more discussion. In the past, within fishway releases occurred at Pool 40 above the fish trap station, but different or additional release locations might be feasible.

John Ferguson said it seems this outline generally reflects the discussions the Aquatic SWG had during the December 2020 to February 2021 meetings, particularly ideas from the YN.

Steve Lewis asked with this conceptual study design, is there a way to avoid the conundrum observed during past studies where downstream releases are not detected at the dam?

Kyger said this study design would recheck this assumption. If approach rates increase for the downstream release group, perhaps this means translocation is starting to have an effect. He noted that one of the proposed downstream release locations, Daroga Park, is where fish overwintered in the past. Andrew Gingerich also noted that the first detection point to evaluate approach to Wells Dam is located in Pool 19. He thinks a key comparison to watch will be the within fishway releases compared to the upstream control group.

Jason McLellan said there are three treatments (downstream, within fishways, and upstream), and sample sizes are split between two release locations within each treatment. Given this, he questioned what effects this has on the statistical analyses and the ability to detect changes with any power. Also, for the within fishway treatments, sample sizes between the two release locations are not equal. Kyger agreed this is a good point and said nothing has been decided on whether these treatments will actually be split. The key question is how many study fish will be available, which will help dictate whether to split these locations or combine them to bolster statistical power. He noted that Douglas PUD also has not yet run the numbers on PIT tag detections and probabilities to know what sample sizes are needed to have statistical power, so this will need to be done.

McLellan asked, thinking about Ralph Lampman's study using bile acids, what about holding larval Pacific Lamprey in pens upstream of the fishways when adults are most likely expected to ascend? Kyger said this is an interesting idea that the Aquatic SWG has discussed in the past, including considering using synthetic Sea Lamprey pheromones. Ferguson said placing the larvae or synthetic pheromones in one fish ladder and not the other could serve as treatment and control groups. Kyger agreed and said these could be switched back and forth. Lampman said he enjoys entertaining these ideas but cautioned that hundreds-to-thousands of larvae would be needed to create a high enough concentration of bile acids to be detected in a large river. Additionally, the Great Lakes studies experienced difficulties with using synthetic chemicals to affect behavior. That is, the application of synthetic pheromones has not been successful, in either adults and larvae. These results would be different if the study area was a 4-inch pipe using several adults at the end of the pipe, but when the study area is big water or big dams, these methods are difficult to manage or control.

Lampman said he thinks this outline is a great start. He understands what McLellan is saying about splitting releases and statistical power, and this can be a challenge when the objectives are to understand fish behavior in multiple areas of the fish ladder. He suggested determining a minimum number for each release location and, as more fish are collected,

maybe release additional study fish at different locations. Kyger agreed this type of phased approach might be useful. Lampman asked if there is a reason for releasing more fish in the east fishway. Gingerich said the N=30/N=20 (or 60/40) split is based on what seems to be favoritism by Pacific Lamprey for the east fish ladder, based on fish counts and past studies. Douglas PUD is not married to this split, but it seems to be a natural preference to pass through the east fishway, so it made sense to do a similar split with the study fish releases. Ferguson said a power analysis and decision tree will help sort these details (i.e., if x-number of fish are collected, these are the objectives that will be addressed).

Lampman noted that typically, all fish collected at Priest Rapids Dam are translocated upstream of Wells Dam; however, now a portion of these fish will be released downstream of the dam and within the fish ladders. Ferguson agreed this will need to be further discussed within the Aquatic SWG, as well as with the Joint Fisheries Parties regarding translocating too many fish above Wells Dam, per comments from Lewis in past Aquatic SWG meetings. Lampman said the YN can contribute part of the YN allocation to help increase sample size for the Douglas PUD study, and he suggested also looking into different fish sources and analyzing these separately. Lewis asked if Douglas PUD has ever coordinated with Chelan PUD to trap Pacific Lamprey at Rocky Reach Dam. Kyger said this has not been explored in recent years because, similar to Wells Dam, there have not been sufficient numbers at Rocky Reach Dam to do so. Ideally, Douglas PUD would prefer that study fish are collected at Wells Dam, but fish numbers have not been high enough.

Patrick Verhey said yesterday, during the Pacific Lamprey Information Exchange Webinar, Lampman presented information on translocation efforts in the Yakima River Basin. Verhey recalled a lag-time of about 7 years from when fish were outplanted to when there was a response in returning adults. Lampman clarified that his talking points yesterday were mainly regarding juveniles, but adults are about the same. He recalled during the initial years, only 15 fish were translocated, but this was doubled in the following year. Returning adults started showing up near the Chandler Diversion (Yakima, Washington) after 4 years, but the big increase in numbers occurred after about 7 years (if the initial years with low release numbers are included). Verhey asked about the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) translocation efforts, and Lampman said for the CTUIR it took about 10 years to see a response in returning adults. Verhey said what he is getting at is the timing of this study, and he asked if 2022 is the right time to conduct this study or is it too early to expect a change in returning adults? Kyger said this is a good point, that 2022 was only selected based on the end of the current translocation SOA³. If the Aquatic SWG feels it is

³ Aquatic SWG SOA To translocate adult Pacific Lamprey from Priest Rapids Dam to areas within or upstream of the Wells Project and postpone passage evaluations, approved June 13, 2018.

more appropriate to wait, this can be an option. Lampman said a hybrid model could be implemented where the majority of fish are released above Wells Dam and a small portion of fish are released within the fish ladder, just to see what happens.

Aquatic SWG members will review the draft 2022 Pacific Lamprey PIT Tag Study Outline for further discussion during the Aquatic SWG conference call on April 14, 2021.

7. Pacific Lamprey Information Exchange Webinar (Ralph Lampman):

Ralph Lampman said the third Pacific Lamprey Information Exchange Webinar⁴ covered juvenile life stage migration and passage. Lampman said that he and Tyler Beals (YN) presented an overview of juvenile Pacific Lamprey biology and ecology, including identification and translocation. Greg Kovalchuk (Pacific States Marine Fisheries Commission) discussed juvenile Pacific Lamprey passage and condition at John Day Dam, including an interesting discussion about fish injury by birds, along with photographs of avian predation marks and well-documented life stages and colorations. Mary Moser (National Marine Fisheries Service) and Aaron Jackson (CTUIR) presented on a PIT-tagging and screw trap collection effort in the Lower Umatilla River, where irrigation diversions are outfitted with PIT-tag arrays and larvae are being PIT-tagged to gather more information on outmigrating juveniles. Marty Liedtke (U.S. Geological Survey) is conducting acoustic telemetry studies of juvenile Pacific Lamprey movements in the Yakima River, and she shared a synopsis of what has been learned in the past 3 years. Maggie David (Portland General Electric [PGE]) provided a presentation about juveniles collected from PGE's River Mill Dam, including a description of the fish collection devices and translocation numbers. Lampman said a recording of the webinar will be available online.

8. Wells Fish Hatchery White Sturgeon Stocking Considerations (Andrew Gingerich):

Andrew Gingerich recalled that the current White Sturgeon SOA, *Wells Reservoir White Sturgeon Supplementation 2018-2022*¹, stipulates stocking 325 fish annually from 2018 to 2022, so brood year 2021 fish collected, reared, and released in May 2022 will be the last year of this SOA. At this point, Section 4.3.1 of the *White Sturgeon Management Plan* becomes very adaptive:

The number and frequency of yearlings released in Phase II of the white sturgeon supplementation program will range from 0 to 5,000 fish. Stocking rates shall be based on the results of the Phase I Monitoring and Evaluation Program and determination of carrying capacity and shall be consistent with

⁴ 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.

the goal and objectives of the WSMP. The Phase II stocking rates can also be adjusted as determined by the Aquatic SWG.

Gingerich said Douglas PUD is conducting M&E this year and will draft a report that will hopefully produce an improved estimate of survival. He recalled running through a modeling exercise that led to the current SOA, and said there needs to be some discussion in the coming months to determine what this process looks like and whether to continue, increase, or decrease fish numbers to supplement.

Jason McLellan said the CCT, with funding support from stakeholders in British Columbia, developed a model using stock assessment data to facilitate population projections, including evaluating stocking and harvest objectives and projecting the impacts of these activities for the Upper Columbia. This model is similar to the model that was used to develop the current White Sturgeon SOA but is far more robust, building in variability and simulation, and it incorporates a more user-friendly interface. Chelan PUD has requested the model script from the CCT so it can be updated for the Chelan PUD program. As such, McLellan submitted a request to the Colville Business Council for permission to share the model script with Chelan PUD because. McLellan's request also included Grant and Douglas PUDs in anticipation of upcoming stocking SOA discussions. If there is interest in using the model by the Aquatic SWG, permission has been granted to share this model. The script needs to be modified for each reservoir population.

John Ferguson asked if the CCT have already developed the model for Chelan and Grant PUDs. McLellan said Chelan PUD has the model and Blue Leaf Environmental, Inc./LGL is helping develop and update the model; however, he is unsure about the status of the model and Grant PUD.

Gingerich thanked McLellan for this offer and suggestion. Gingerich said at this point, Douglas PUD has no other suggestions, so if the Aquatic SWG is supportive of this idea he believes Douglas PUD would be too. He added that he hopes to have better data by the end of summer/fall 2021 (after M&E) to use in populating the model.

Ferguson suggested revisiting this topic in a couple of months. Aquatic SWG members will review the current White Sturgeon SOA, *Wells Reservoir White Sturgeon Supplementation 2018-2022¹*, 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. *(Note: these documents were redistributed to the Aquatic SWG, for their reference, by Kristi Geris on March 15, 2021.)*

9. 2018/2019 Northern Pikeminnow Annual Reports (Chas Kyger):

Chas Kyger said the draft 2018 Northern Pikeminnow Annual Report and draft 2019 Northern Pikeminnow Annual Report were distributed to the Aquatic SWG by Kristi Geris on February 17, 2021. Kyger said Aquatic SWG approval is not needed for these reports⁵; rather, the reports were distributed to the Aquatic SWG as a nexus to the *Resident Fish Management Plan*.

VII. Administration**1. 2020 Aquatic Settlement Agreement Annual Report (John Ferguson):**

John Ferguson said the draft 2020 ASA Annual Report and appended resources management plan annual reports will be distributed to the Aquatic SWG for a 45-day review this Friday, March 12, 2021. Comments will be due to Anchor QEA by Monday, April 26, 2021. Final draft reports will be distributed to the Aquatic SWG on Wednesday, May 5, 2021, which is 1 week before Douglas PUD will request formal approval of the documents during the Aquatic SWG meeting on May 12, 2021. The final approved documents are due to FERC by Monday, May 31, 2021.

(Note: 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.)

2. Upcoming Meetings (John Ferguson):

The Aquatic SWG meeting on April 14, 2021, will be held by conference call. *(Note: this meeting was rescheduled to April 12, 2021, from 1:00 p.m. to 4:00 p.m., to be held by conference call.)*

Other upcoming meetings include May 12 and June 9, 2021 (TBD).

⁵ These reports are a requirement under the Wells Habitat Conservation Plan (HCP) and are reviewed and approved within the Wells HCP Coordinating Committee.

List of Attachments

Attachment A List of Attendees

Attachment B Steve Lewis Email: "Upcoming Wells 2021–2022 Bull Trout Study"

Attachment C Draft 2022 Pacific Lamprey PIT Tag Study Outline

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
Steve Lewis	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
RD Nelle	Aquatic SWG Technical Support	U.S. Fish and Wildlife Service
Breann 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
Jed Varney*	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

Note:

* Joined conference call for the WDFW briefing, *Sturgeon Pathogen Surveys*, discussion.

