



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: January 13, 2021

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

Re: Final Minutes of the December 9, 2020, Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, December 9, 2020, from 10:00 a.m. to 12:30 p.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. Douglas PUD will provide a presentation summarizing the 2013 and 2016–2017 Pacific Lamprey studies conducted in the Wells Project, during a future Aquatic SWG meeting (Item VI-1).
2. Aquatic SWG members will review the draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, and be prepared to vote to approve the plan during the Aquatic SWG conference call on January 13, 2021 (Item VI-3).
3. The Aquatic SWG meeting on January 13, 2021, will be held by conference call (Item VII-2).

II. Summary of Decisions

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

III. Agreements

1. Aquatic SWG members present agreed that Douglas PUD proceed with ordering 60 radio tags of the same tag type proposed in the draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, and move forward with maintenance on the radio telemetry receivers, with the expectation of finalizing the study plan during the Aquatic SWG conference call on January 13, 2021 (Item VI-3).

IV. Review Items

1. The draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, was distributed to the Aquatic SWG for review by Kristi Geris on December 3, 2020, and

Douglas PUD will request approval of the plan during the Aquatic SWG conference call on January 13, 2021 (Item VI-3).

2. The draft plan, *2021 Total Dissolved Gas Abatement Plan* and appended *Wells Bypass Operating Plan (2021 GAP/BOP)*, was distributed to the Aquatic SWG by Kristi Geris on January 8, 2021, and is available for a 30-day review with edits and comments due to Andrew Gingerich by February 8, 2021.
3. The draft report, *2020 Annual Report Total Dissolved Gas Abatement Plan (2020 TDG/GAP Annual Report)*, was distributed to the Aquatic SWG by Kristi Geris on January 12, 2021, and is available for review with edits and comments due to Andrew Gingerich by February 8, 2021.

V. Documents Finalized

1. The Juvenile and Adult Pacific Lamprey Literature Reviews and Document Libraries have been updated and uploaded to the Aquatic SWG Extranet Site (Item VI-4).

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:

- Andrew Gingerich added: 1) Wells Dam fishway dewatering; and 2) Wells Fish Hatchery (FH) White Sturgeon mobile tracking data update
- Ralph Lampman added: 1) Pacific Lamprey Conservation Initiative update; and 2) Juvenile Pacific Lamprey Planning Workshop
- Kristi Geris added: 2020 Aquatic Settlement Agreement (ASA) Annual Report Review Schedule

The revised draft November 13, 2020, 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 December 2, 2020. Geris said Ralph Lampman provided edits from the Yakama Nation (YN) following distribution of the revised minutes that same day. Geris projected the revised minutes on the WebEx and discussed the YN edits and outstanding comments. Geris said she added distribution of the draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, under *Summary of Action Items* and *Review Items*. Aquatic SWG members also reviewed, discussed,

and edited several statements under *2018–2020 Pacific Lamprey Translocation Detection Table*. Aquatic SWG members present approved the November 13, 2020, conference call minutes, as revised. The Washington State Department of Ecology (Ecology) abstained, because a representative of theirs was not present during the November 13, 2020, conference call.

Action items from the Aquatic SWG conference call on November 13, 2020, are as follows (Note: the following italicized item numbers correspond to agenda items from the November 13, 2020, meeting):

- *Douglas PUD will develop a list summarizing the new documents that were recently added to the juvenile and adult Pacific Lamprey literature reviews and document libraries for discussion during the Aquatic SWG conference call on December 9, 2020 (Item VI-1).*
This will be discussed during today's conference call.
- *The YN will verify weight and length thresholds the YN has established for tagging juvenile (macrophthalmia) and larval (ammocoete) Pacific Lamprey using 8- and 10-millimeter (mm) passive integrated transponder (PIT) tags (Item VI-1).*
Ralph Lampman provided information on tagging thresholds to Kristi Geris following the Aquatic SWG conference call on November 13, 2020, which Geris distributed to the Aquatic SWG that same day.
- *Douglas PUD will provide a presentation summarizing the 2013 and 2016–2017 Pacific Lamprey studies conducted in the Wells Project, during a future Aquatic SWG meeting (Item VI-1).*
This action item will be carried forward.
- *Douglas PUD will distribute a draft 2020–2021 Bull Trout Radio Telemetry Study Plan for review, and Aquatic SWG members will review the plan, provide comments, and be prepared to vote to approve the draft plan during the Aquatic SWG conference call on December 9, 2020 (Item VI-4).*
The draft plan was distributed to the Aquatic SWG by Kristi Geris on December 3, 2020. This will be further discussed during today's conference call.

2. COVID-19 Updates (John Ferguson):

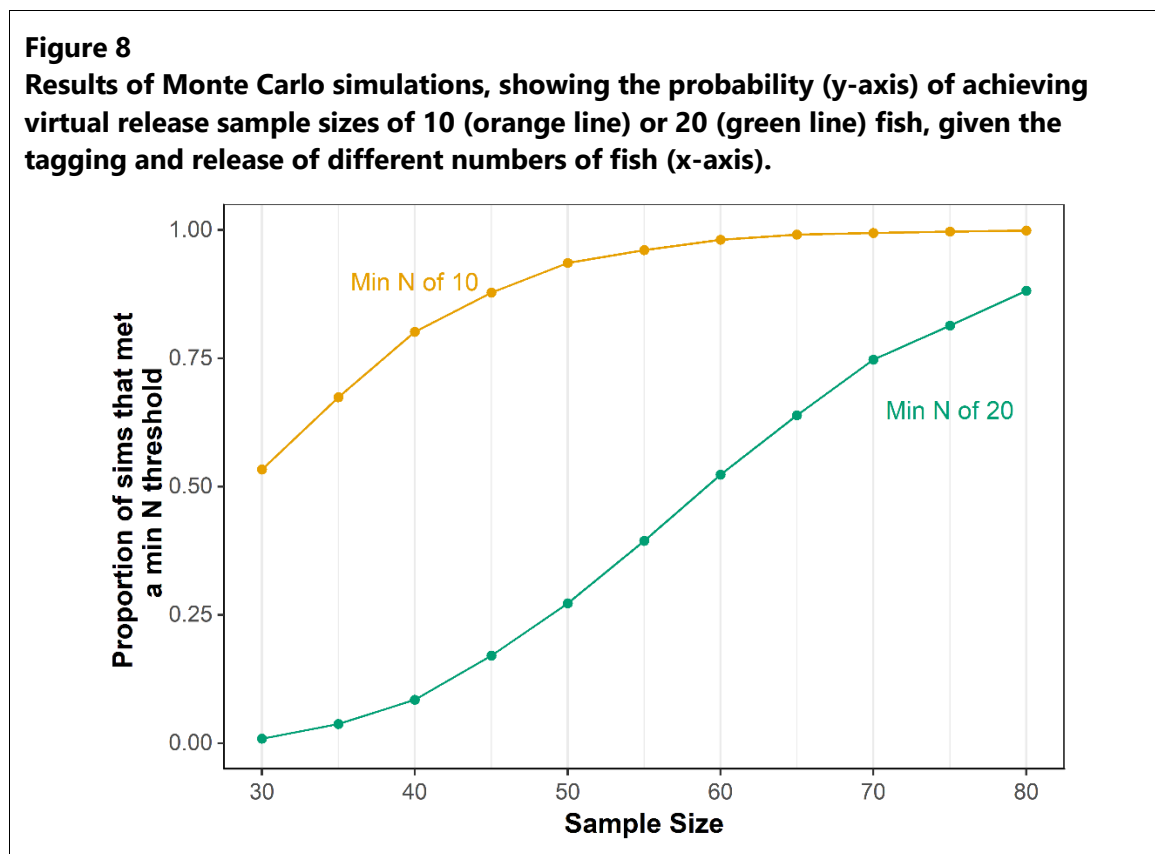
John Ferguson asked if Aquatic SWG members had any new updates to share regarding impacts of COVID-19 on Aquatic SWG-related monitoring and evaluation (M&E) activities.

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

3. 2020–2021 Bull Trout Radio Telemetry Study Plan (Andrew Gingerich):

Andrew Gingerich said the draft study plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, was distributed to the Aquatic SWG for review by Kristi Geris on December 3, 2020.

Gingerich said he had hoped to distribute the draft study plan earlier; however, during internal review policy staff had comments on the statistics of the plan, which lead to Gingerich and Dave Robichaud (LGL Limited) reviewing the proposed sample size. Gingerich said he and Robichaud reviewed data from the 2016–2017 study and developed Figure 8 in Section 3.5.2 of the draft study plan based on these data, as shown on page 4 of these minutes.



Gingerich said Figure 8 demonstrates that a sample size of 30 fish would be problematic in achieving the four scenarios (i.e., the four 'standard achievement' tests [passage at Wells Dam, passage at Twisp Weir, survival at Wells Dam, and survival at Twisp Weir]). He said the proposed 60 fish presents a high probability of getting 10 downstream and upstream detections at Wells Dam and Twisp Weir; however, a sample size of 10 fish is not a robust

sample size and if there is only one mortality the study would not meet the standards. He said Douglas PUD is not proposing this, but a sample size of 80 fish provides good confidence of getting a minimum of 20 detections for the four scenarios (green line in Figure 8). He said two considerations about a sample size of 80 fish include: 1) the feasibility of collecting 80 Bull Trout within the tagging window, based on collecting 60 fish for the 2016–2017 study being a challenge; and 2) the effect of physically handling 80 Bull Trout in the basin on increased incidental take. He said it seems, given these two considerations together, it makes sense to stick with a 60-fish sample size, but a 60-fish sample size still leaves Douglas PUD in a precarious position in terms of meeting the standards.

Gingerich said the last paragraph in Section 3.5.2 of the draft study plan describes another approach to addressing sample size, which is to pool data from the 2021–2022 study with data from the 2016–2017 study and conduct the passage and survival analysis on the combined dataset. He said while the 2021–2022 study is a check-in study, the ultimate objective is to evaluate passage and survival as a function of the 40-year Federal Energy Regulatory Commission (FERC) license, and pooling the data from the two studies would boost sample size. He said additionally, the 2016–2017 study did not evaluate upstream passage in the same spring/summer period of the tagging year (2016); rather, the evaluation started during the fall following tagging. Therefore, any tagger and tagging effects likely would not have an impact on the data. He said there is language in this section of the draft study plan indicating that if there is poor survival on the spawning grounds resulting in a low sample size in 2022 (i.e., spring upstream migration), Douglas PUD may include upstream migration data from the tagging year (2021). He said in the event this occurs the data would not be “cherry picked” and the analysis would either include all data or none of the data; he reiterated these data would only be included if sample size is really low.

Gingerich said he wanted to call out Section 3.5.2 (including Figure 8) to the Aquatic SWG because this section is the only significant deviation from the 2016–2017 study plan.

Steve Lewis said he recalls a good analysis as far as achieving survival standards for the 2016–2017 study, and he asked why is there now a need to combine two studies. Gingerich said he asked the same question to Robichaud, who indicated, in short, “we got lucky” with sample size. Gingerich said there was a 50/50 chance of getting enough interactions, and the study happened to land on the good side of that probability in the 2016–2017 study.

Jason McLellan said Section 3.5.2 also indicates possibly pooling data from 2004 and 2008, and he asked if this is true. Gingerich said yes, similar to pooling 2016–2017 data, pooling 2004 and 2008 data would boost the sample size further. He said this can be discussed more with Robichaud before combining these data, but he is unsure there is a reason to exclude

these data. Lewis asked if Figure 8 includes 2004 and 2008 data, and Gingerich said Figure 8 only includes Monte Carlo simulations using 2016–2017 data.

McLellan asked if project operations and the physical structure of the passage facilities have been consistent enough among the studies to justify pooling the data? Gingerich said between about 2008 to 2016, there have been small modifications in the way the bypass functions. He recalled that Douglas PUD operated under an original gas abatement plan, and then there was a revised gas abatement plan that has more or less held true since about 2013 or 2014. He said the revised plan stipulated that under certain high-flow scenarios, load and spill were pushed through Bypass Bay 6; however, there were no real changes to project operations. He said, therefore, high-flow bypass operations might have differed between the 2008 and 2016–2017 timeframes.

McLellan asked about physical modifications (e.g., for Pacific Lamprey passage). He asked if operations like modified flow levels through the fish ladders might affect Bull Trout passage and is there an expectation that fish behavior during these different operations is similar, so the data can justifiably be pooled? Gingerich said in terms of the fish ladders, there have only been minor modifications. He said the side entrances were shut down and PIT-tag arrays were added to Pool 19. He said he does not expect that these modifications would have an effect on Bull Trout passage; however, he cannot say that with complete certainty. He said there were also minor additions around the count windows to prevent Pacific Lamprey from bypassing the windows, and gaps were closed in the collection gallery. He said these modifications likely have no impact on Bull Trout passage. He said in terms of head differentials, there have been no permanent changes that would affect Bull Trout. He said Bull Trout passage counts ebb and flow annually, but there is nothing significant in the pattern that would suggest not to pool the data.

Lewis said changes to the spill playbook and modified head differentials for Pacific Lamprey change how those areas of the project were operated. He said he understands the intent of pooling the data; however, he does not believe this can be done in a reasonable manner given the differences.

John Ferguson said maybe the 2004 and 2008 data are far enough back to affect the comparability of the data; however, the 2016–2017 data may be similar enough to pool with the 2021–2022 data. Lewis asked what Robichaud said about the earlier data. Gingerich said Robichaud was objective, just provided the statistics, and gave no input on the management decision aspects of the question. Gingerich explained that he asked Robichaud to paint a worst-case scenario, which included tagging a low number of fish, some fish choosing not to migrate downstream from the spawning grounds (which was observed in the 2016–2017

study), and some fish not choosing to migrate upstream in the spring. Gingerich said statistically for this scenario, it is conceivable that detections could be in the single digits. He said this is where the concern about sample size came from. He said Douglas PUD is just looking for tools to boost sample size to speak more intelligently about passage at Wells Dam.

Lewis noted that the sample size topic needs to include the number of fish tagged at Wells Dam, but also how many of the tagged fish then interact with Wells Dam. Gingerich recalled that in the 2016–2017 study, approximately 35% of the 46 tagged fish had subsequent interactions with Wells Dam, and he said these were included in the simulations (Figure 8). He agreed with Lewis that subsequent detections also result in a more robust dataset. Lewis said at this juncture, U.S. Fish and Wildlife Service (USFWS) does not support tagging more fish because this opens the door for more mortalities. Gingerich said this is where Douglas PUD would go next: if the Aquatic SWG is not supportive of pooling past years' data, Douglas PUD would propose to procure more tags and try to tag 80 fish.

McLellan said, regarding the statistical results, in the event there is a small sample size and the data are pooled, the results would be heavily weighted to the 2016–2017 study results because the standards were already achieved based on those data. He said the 2021–2022 study would need to have a substantial change in rates for anything to be detected. He said considering this, he questioned whether the 2021–2022 study would actually be estimating the current rates if the 2021–2022 and 2016–2017 data were pooled. Gingerich said in theory, yes, this is a potential vulnerability.

McLellan said Section 3.5.2 of the draft plan indicates plans to pool data, and the next section, Section 3.5.3, indicates if the sample size is not achieved in 2021, then Douglas PUD will attempt to tag additional fish in 2022. He asked how this relates to pooling the data. Gingerich said Douglas PUD's preference is to pool data because: 1) additional labor is required to tag more fish; and 2) the 2016–2017 data indicated that every time a fish migrated to the spawning ground the sample size decreased. He said Douglas PUD prefers to get the most out of the data on-hand without tagging more fish.

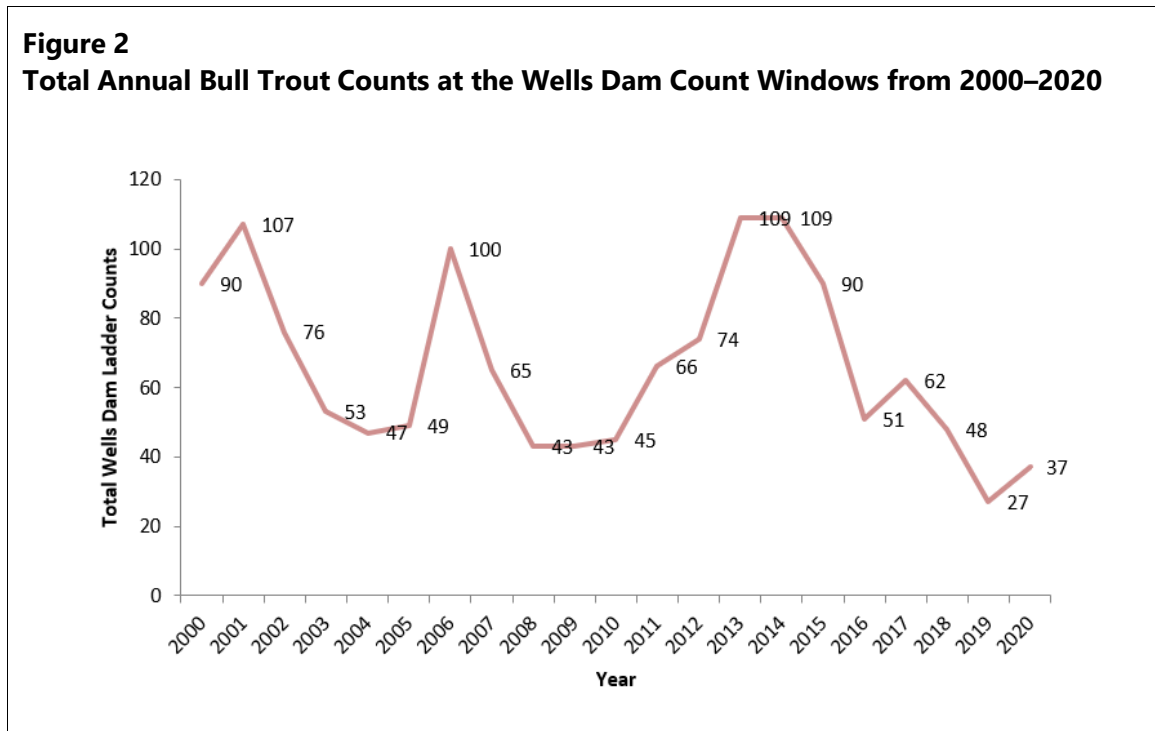
Gingerich encouraged Aquatic SWG members to review the data from the past studies. He noted that the Twisp Weir was not a study point in the older studies. He also noted that the 2008 dataset includes 3 years of tagging fish (2005 to 2008), which was necessary to achieve a reasonable sample size. He said these past reports clearly show high passage success at Wells Dam and survival estimates that were essentially perfect. He said the proposal to pool data is not Douglas PUD trying to sweep something under the rug; rather, it is just a preference to not handle more fish and not put more tags out in a second year. He said if the

Aquatic SWG is not comfortable with this, then the study plan needs to go back to the drawing board to come up with something else.

Lewis suggested for now, stick with 60 tags. He said even if there are not a lot of data in the first year, there will still be fish in the water, so if an additional year of tagging is needed it may not involve as large of an effort. Ferguson asked Lewis why a second year of tagging would be different than the first. Lewis said that because some proportion of fish tagged during the first year will already be contributing to a 60-fish sample size, he does not believe Douglas PUD would need to tag the full sample size of 60 fish in the second year.

Ferguson said it seems the question is where does the Aquatic SWG want to place the risk? Is it with: 1) pooling the data with previous study data; 2) potentially re-running the test in 2023–2024; or 3) increasing the sample size now for 2021 to 80 fish? He said Lewis already indicated USFWS does not support the third option, so it seems like pooling the data, at least to include the 2016–2017 study data, is the option with the least risk of not meeting the study requirements.

Ferguson noted Figure 2 in the draft plan (as shown below) and said fish counts are generally lower in recent years.



Gingerich agreed and said there are similar trends at Rocky Reach and Rock Island dams in the same years. He said, however, he is cautiously optimistic these numbers are on the way up.

McLellan said he thinks either: 1) the sample size will be achieved and there will be some level of confidence in the estimated rates; 2) the Aquatic SWG will have to accept that pooled data will be heavily influenced by 2016–2017 data; or 3) the Aquatic SWG will need to support tagging more fish in 2023.

Lewis asked if delaying a decision until the Aquatic SWG conference call on January 13, 2021, will delay placing a tag order too long. Gingerich said there may be a way to separate approval of the study plan from moving forward with a tag order. He said he did not believe a 1-week review of the study plan would be adequate, and he wanted to have this discussion because he knew the contention would be about sample size. He said it would be helpful to have an approved study plan by the meeting in January 2021; but in the meantime, Douglas PUD would like to place a tag order and schedule maintenance of the radio receivers. He said if the Aquatic SWG decides there is a need for 80 tags, he believes Douglas PUD can order an additional 20 tags a little later and use those tags later in the tagging effort.

Aquatic SWG members present agreed that Douglas PUD proceed with ordering 60 radio tags of the same tag type proposed in the draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, and move forward with maintenance on the radio telemetry receivers, with the expectation of finalizing the study plan during the Aquatic SWG conference call on January 13, 2021.

Ferguson asked if Aquatic SWG members need any other additional information from Douglas PUD to be prepared to vote to approve the study plan in January 2021. Lewis said Douglas PUD provided a good explanation already, and USFWS will continue reviewing the study plan and may provide additional comments.

Patrick Verhey asked if it is possible to have a 'Plan A' and 'Plan B,' where Plan A is an increase in number of tags to boost statistics without pooling data and Plan B is pooling data. Gingerich said Douglas PUD could support this approach. Lewis said USFWS would need to discuss this internally, and at this time, USFWS just approves procuring 60 tags. Ferguson asked if WDFW is asking Douglas PUD to rewrite the study plan so there is a Plan A and Plan B. Verhey said no, this is just for discussion purposes only. He said he has the same concerns that have been expressed. He said it seems that if the data are not pooled, the 2021 study will require additional tagged fish to achieve the desired statistical rigor; or the data will need to be pooled to determine if there is a need to conduct a second study in

2023–2024. Ferguson asked whether it is possible to obtain and tag 80 fish? Verhey clarified that there either needs to be a way to increase the number of tagged fish, maybe not to 80 fish but some number, and evaluate the results to determine if there are sufficient data to calculate survival under the *Bull Trout Management Plan*; or the data need to be pooled and analyzed to determine the next steps. Gingerich said these are good comments and he thinks there is something logical here that Douglas PUD could support.

McLellan said there is an aspect of the decisions that has to do with estimating the impacts of various sample sizes for the current period (2021–2022 study) on the overall results, if data are pooled. He asked, how much change under various sample sizes is needed to show a difference, if data are pooled? He said he is not opposed to pooling data; however, he wants to be sure it is justifiable. Ferguson asked how much below the standard would the 2021–2022 study need to be, such that the pooled data would be below the standard for survival and passage success. He said if the 2016–2017 study was just barely above the standards, there would not be much room to work with. Gingerich recalled for the 2016–2017 study that passage success was just over 90% standard (92.5%) at the Twisp Weir and 91.3% of the interactions with Wells Dam resulted in a passage event. At both locations, survival was 100% for fish that passed the weir or interacted with the dam during the study.

Ralph Lampman agreed with the two options Verhey described, and he said a third option would be to continue collecting, tagging, and releasing more fish in 2022. Gingerich said this is correct. RD Nelle (USFWS) said he also agrees with Lampman. Nelle referred to Figure 2 in the draft study plan (as shown on page 8 of these minutes), and he said if there is another peak in numbers this might be a good opportunity to spread collection over a couple of years to achieve a better study without pooling the results with previous years' data.

Nelle said lastly, he is assuming the proposed frequency for the 2021–2022 study is the same as what was used for the 2016–2017 study. Gingerich said this is correct.

Ferguson summarized that Aquatic SWG members will review the draft plan, *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir*, and be prepared to vote to approve the draft plan during the Aquatic SWG conference call on January 13, 2021.

(Note: In summary, the various options discussed in Item VI-3 include the following: 1) statistical rigor is achieved in the 2021–2022 study with the proposed sample size of 60 fish; 2) pool the data from 2004, 2008, 2016–2017, and 2021–2022 studies to achieve the required statistical rigor; 3) pool the data from 2016–2017 and 2021–2022 studies to achieve the required statistical rigor; 4) increase the target sample size from 60 fish to up to a total of 80

fish for release in 2021, and if deemed necessary to achieve statistical rigor, conduct additional releases in spring 2023; and 5) if necessary, rerun the test in 2023–2024.)

4. Juvenile and Adult Pacific Lamprey Literature Reviews and Document Libraries (Chas Kyger):

Chas Kyger said the action item for Douglas PUD to develop a list summarizing the new documents that were recently added to the juvenile and adult Pacific Lamprey literature reviews and document libraries is complete. Kyger said the list assigns numbers to the documents so a user can filter by the numbers. He said the new documents are numbers 69 to 77. He asked that Aquatic SWG members review the list and new documents, and Douglas PUD can further discuss these at a future meeting, if needed.

5. Wells Dam Fishway Dewatering (Andrew Gingerich):

Andrew Gingerich said the west fish ladder at Wells Dam will be taken offline for winter maintenance the week of December 28, 2020, and will be offline through the following week. He said the west ladder will be the short outage this maintenance period. He said the longer outage will be on the east fish ladder, which will remain offline for one month. He said the exact dates tend to move around somewhat depending on other activities at the project. *(Note: winter maintenance ultimately began January 5, 2021, with dewatering of the upper section of the west fish ladder, and on January 6, 2021 with dewatering of the collection gallery of the west fish ladder.)*

Gingerich said maintenance activities scheduled for the west ladder include installing and servicing radio telemetry antennas for the upcoming Bull Trout study. He recalled that typically, Douglas PUD invites Aquatic SWG members to Wells Dam to tour the dewatered fish ladders; however, given the current COVID-19 restrictions and District policy about not allowing people onsite, this tour will be postponed until next year. Gingerich said he also spoke with Steve Nieuwenhuis (Wells Dam Mechanical Foreman) and Nieuwenhuis plans to continue closing diffuser grating gaps in Pools 1 to 19 in both fish ladders this year. Gingerich said Nieuwenhuis committed to continuing this work but cannot promise to finish the work during the upcoming maintenance outage. Gingerich said he plans to stay in close contact with Nieuwenhuis regarding progress. He also clarified this work includes closing the gaps where the diffuser grating meets the concrete.

Ralph Lampman asked, regarding closing the diffuser grating gaps, which of the two fish ladders is more complete. Gingerich said he believes the collection galleries and Pool 54 are complete in both ladders. Chas Kyger said this is correct.

6. Wells FH Brood Year 2020 White Sturgeon Rearing and Surplus Update

(Andrew Gingerich):

Andrew Gingerich said a Wells FH Brood Year (BY) 2020 White Sturgeon Rearing and Surplus Update (Attachment B) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on December 9, 2020. Gingerich said rearing has gone quite well. He said one tank was added to keep densities low in all the tanks. He said there was one fish mortality during the past month due to a fish jumping out of the tank. He said lids are now on the tanks, which is the earliest in the season lids have needed to be placed on the tanks. He said this is great news in terms of fish growth. He said hatchery staff record fish per pound measurements on Mondays, and also estimate what fish per pound measurements will be later in the week to determine the amount of feed to give the fish. He explained that because the fish grow so rapidly, if feed is based on fish size at the beginning of the week the fish will not receive enough feed by the second half of the week. He said dialing in on feed rates and low densities have both contributed to impressive growth.

Gingerich noted the smaller table to the right in Attachment B (columns AG to AJ). He said this shows for each tank the actual fish size in grams on November 12, 2020, and the projected fish size 1 month later with 40% body weight gain. He said these numbers are not perfect across the board because fish are constantly graded and sorted, but instead of a 40% growth rate, there was a 93% growth rate. He said currently, the average fish size on station is 161 grams. He said this is only December and there is still half the rearing cycle to go. He said it looks like there will be an overall survival of 59% in the facility for BY2020 fish if everything holds.

Gingerich said there have been no fish surplused since the last update, and these growth values are real numbers and not an artifact of shipping off fish. He recalled previous plans to surplus another batch of fish to the CCT Resident Fish Hatchery; however, the current White Sturgeon Statement of Agreement¹ allows for release of 325 ($\pm 5\%$) White Sturgeon, so Douglas PUD is planning to maybe stock 350 fish.

Gingerich said he planned to discuss this further with Jason McLellan, but in January 2021, Douglas PUD plans to begin tagging and scute-marking BY2020 fish, including recording fish lengths and weights. He said fish lengths and weights will also be recorded at release. He said regardless of whether another 25 fish will be surplused, Douglas PUD is proposing to PIT-tag and scute-mark these fish, as well, because then hatchery staff can continue grading and sorting without holding one population back to tag.

¹ Final Statement of Agreement, *Wells Reservoir White Sturgeon Supplementation 2018–2022*, approved by the Aquatic SWG on January 11, 2017, and distributed on January 12, 2017.

McLellan said Wells FH staff have done a great job, and he would support PIT-tagging and scute-marking the additional 25 fish regardless of whether the fish are surplus or not. Gingerich asked if surplus fish receive the same scute mark, and McLellan said yes. John Ferguson asked if Douglas PUD would like to obtain Aquatic SWG approval for PIT-tagging and scute-marking the additional fish. Gingerich said this is not necessary because these fish are not needed to make a program.

7. Wells FH White Sturgeon Mobile Tracking Data Update (Andrew Gingerich):

Andrew Gingerich said he received figures late last night from Dave Robichaud, titled *Long-Term Movement of Wild-Origin White Sturgeon in Wells Reservoir* (Attachment C) and Wells Reservoir acoustic-tagged White Sturgeon distribution figures (Attachment D), which were distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on December 9, 2020.

Gingerich said Attachment C is acoustic tag data for the 18 fish carrying V16 tags in the Wells Reservoir. He said the patterns are pretty well replicated for these fish. He recalled that there was no formal M&E efforts this year, but Douglas PUD continues to passively monitor these fish. He said the first batch of plots in Attachment C are the small (or subadult) fish tagged from 2016 to 2018. He reviewed the color-coding of the detection sites as shown in the legends in Attachment C, and he recalled that a KML file (or 'Keyhole Markup Language' file) showing Douglas PUD's current Vemco VR2W 69kHz acoustic receiver array locations was distributed to the Aquatic SWG by Geris on November 16, 2020. Gingerich noted the first plot on page 2 of Attachment C, and said he is unsure if this fish is still alive. He said the fish may be foraging in this area (nicknamed the "bathtub" area) and Douglas PUD plans to continue monitoring this tag. He said the second batch of plots are the large (or adult) fish, starting on page 4 of Attachment C. He said the parenthetical length shown under the tag ID is the fish size at tagging. He said these fish also exhibit pretty repeatable behaviors and these plots are starting to show a picture of how fish are using the habitat in the Wells Reservoir.

Gingerich said Attachment D is distribution figures for wild-origin White Sturgeon in the Wells Reservoir. He said the first figure on page 1 of Attachment D shows distribution of the eight acoustically tagged adults during summer 2019. He noted that four of eight adults were detected in the vicinity of the Okanogan River around May 8, 2019, and then six of eight adults were detected in the Foster Creek Delta just before July 8, 2019. He said the second figure on page 1 of Attachment D shows distribution of the same fish during summer 2020, and he noted that there was not as much use in the Foster Creek area, but there were many detections in the Bridgeport area. He said the first figure on page 2 of

Attachment D shows distribution of these same eight adults from August 2017 to August 2020. He noted that May 2018 was a record-setting water year (in terms of river flow) in the Okanogan River and the data show that fish also keyed into this location during this time. He said the last three figures in Attachment D show the same plots for subadults, and he encouraged Aquatic SWG members to review the figures, which may be useful for subsequent discussions on White Sturgeon M&E.

Laura Heironimus asked if Douglas PUD uses these tracking data during M&E efforts to try to capture fish. Gingerich said thus far, Douglas PUD has tried to be as random as possible when capturing fish. He said if an effort were to try to target adults-only, it may be possible to start targeting fish at those locations. He said, however, it is pretty reasonable to think the majority of remaining adults are in the Chief Joseph Dam tailrace during a certain time of year, yet when Douglas PUD has fished up there, it has been difficult to catch adults. He said this could be due to high river flow in the area, but he is not sure. Heironimus said she is not suggesting changing this approach; rather, she was just curious.

Gingerich also recalled as reported in the last White Sturgeon M&E report², the results of the 2019 M&E effort that used mark-recapture data and the Cormack-Jolly-Seber (CJS) model to estimate survival and abundance were not consistent with the acoustic telemetry data, which suggest most adults within the Wells Reservoir are alive and well. Jason McLellan said managers in the Upper Columbia River are starting to discuss that maybe the wrong models for estimating survival are being used. He said there are various multistate models that may be better. He said the Upper Columbia River now has a lot of telemetry data, and about 10,000 recaptures (from traditional mark-recapture studies), and managers are starting to realize results from the CJS models do not seem accurate.

McLellan said regarding targeting capturing more adults, he suggested conducting these efforts when fish are overwintering around Erlandsen (i.e., Bridgeport Bar/Wells Wildlife Area across from the confluence of the Okanogan and Columbia rivers) and the upper reservoir. He said sampling conditions are better here compared to the faster water in the Chief Joseph Dam tailrace. Gingerich asked about catch rates in these areas during winter months. He said not that it is not worth a try, but this area is actually quite large. McLellan said there are similar areas in Lake Roosevelt and catch rates can be incredibly high. He said, however, he is not sure if fish exhibit the same behaviors in the Wells Reservoir.

John Ferguson said he can distribute a couple of publications by Toby Kock et al. (U.S. Geological Survey), which discuss 6 years of juvenile steelhead telemetry data in the Cowlitz

² Final report, *White Sturgeon Supplementation and Management Plan Implementation in the Wells Reservoir, 2019*, approved by the Aquatic SWG on May 13, 2020, and distributed on May 27, 2020.

River, Washington (2016³) and responses of adult Spring Chinook Salmon to a trap-and-haul reintroduction program (2018⁴), both of which used multistate models.

Ralph Lampman noted the *Wells Tailrace* detection site shown in the figure legends in Attachment D, and he asked if this means White Sturgeon pass downstream of Wells Dam and then migrate back upstream. Gingerich clarified that there have been no detections at the *Wells Tailrace* detection site; however, the site is included in the legend to show there is monitoring here. He further clarified that these figures in Attachment D only show fish tagged in the Wells Reservoir, and there have been fish tagged in the Wells FH hatchery that have been detected downstream of Wells Dam.

Gingerich noted the last figure on page 3 of Attachment D shows that subadults may be spending more time in the upper reservoir as fish get older (i.e., more yellow in 2020 compared to earlier years when fish were smaller). Lampman asked if the assumption is that fish are spawning in the upper reservoir and near Foster Creek (that enters the Columbia River just downstream from Chief Joseph Dam), and the Okanogan River is a holding area? Gingerich said this is a reasonable hypothesis that has been discussed within this forum; however, currently there are no data to confirm it.

8. Total Dissolved Gas Abatement Plan Report and 2020 Data Review (Andrew Gingerich):

Andrew Gingerich said the presentation, *2020 TDG & Water Quality* (Attachment E), was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on December 9, 2020. Gingerich reviewed the slides, as follows:

Slide 1 of Attachment E

Gingerich said it is the time of year when Douglas PUD shares water quality data, recognizing that in the first part of January Douglas PUD will also provide a draft report for review that will be filed with FERC on February 28. He said Attachment E includes water quality data as of November 30, 2020, and does not yet include data from December 2020.

³ Kock, T.J., R.W. Perry, C. Gleizes, W. Dammers, and T.L. Liedtke, 2016. *Angler Harvest, Hatchery Return, and Tributary Stray Rates of Recycled Adult Summer Steelhead *Oncorhynchus Mykiss* in the Cowlitz River, Washington*. Wiley Online Library. March 23, 2016. Available at: \\fuji\anchor\Projects\Douglas PUD\Aquatic SWG\All files\Anchor\2020_12_09 Anchor OEA - Kock et al. 2016.pdf. Distributed on December 9, 2020.

⁴ Kock, Tobias J., Russell W. Perry, Adam C. Pope, John D. Serl, Mike Kohn, and Theresa L. Liedtke, 2018. "Responses of Hatchery- and Natural-Origin Adult Spring Chinook Salmon to a Trap-and-Haul Reintroduction Program." *North American Journal of Fisheries Management* 38:1004–1016, 2018. DOI: 10.1002/nafm.10199. Available at: \\fuji\anchor\Projects\Douglas PUD\Aquatic SWG\All files\Anchor\2020_12_09 Anchor OEA - Kock et al. 2018.pdf. Distributed on December 9, 2020.

Slide 2 of Attachment E

Gingerich recalled that total dissolved gas (TDG) standards were a little different this year. He said normally, there has been a requirement to not exceed 110% at Wells Dam from January to March and from September to December. He said, however, in late 2019, Ecology passed a rule establishing the new TDG standards that are described in No. 2 and No. 3 on slide 2.

Slide 3 of Attachment E

Gingerich said this slide shows what the standards look like through the calendar year (horizontal lines), as well as the hourly TDG values in the Wells Dam tailrace in 2020 (blue dots).

Slide 4 of Attachment E

Gingerich said this slide shows how the project performed in terms of compliance. He said in most of these instances, TDG barely exceeded the standards. He said additionally but not shown here, in early December there were 2 days when Wells Dam operated as a 6-unit plant and barely exceeded the standards.

Slide 5 of Attachment E

Gingerich said this slide shows the revised standards. He said for the 125% calculation in the tailrace, there were 5 days of exceedances. He said, likewise, for the 126% calculation, there were 5 days, although slightly different days, of exceedances. He said this translates into a compliance value of just over 94% for the revised standards.

Slide 6 of Attachment E

Gingerich said this slide shows one 125% hourly exceedance on July 2, 2020, and a few instances of non-compliance with the 120% 12C-High rolling average (12 highest consecutive hourly readings within the same calendar day) in the Wells Dam tailrace. He noted the green star and said this was not a violation of the 12C-High standard because of the updated 12C-High calculation under the new TDG rule⁵.

Slide 7 of Attachment E

Gingerich said the 115% 12-C High standard in the Rocky Reach Dam forebay is the most difficult standard to meet because there is not much degassing between the Wells Dam tailrace and Rocky Reach Dam forebay. He said there were 10 non-compliant days equaling a compliance value of 84%.

⁵ The previous 12C-High standard was calculated using the 12 highest consecutive hourly readings in any one 24-hour period, whereas the updated 12C-High standard uses the 12 highest consecutive hourly readings in a 24-hour period within the same calendar day.

Slide 8 of Attachment E

Gingerich said this slide shows a summary of compliance with all standards. He reiterated that compliance with the 110% standard is preliminary because these data only include through November 2020. He summarized that there was good compliance with all standards, with a little more difficulty in meeting the 115% standard.

Discussion

Gingerich said he chose not to share gas bubble trauma monitoring data in this update; however, will include these data in the report that will be distributed for Aquatic SWG review in January 2021. He noted that these data for 2020 were uneventful.

Breean Zimmerman thanked Gingerich for the presentation and asked if the exceedances in 2020 were all due to unit outages. Gingerich said this seems to be the theme; however, he has not yet reviewed each exceedance in terms of unit availability. He noted that 110% standard exceedances are usually not due to unit outages; rather, these are typically due to high river flow. He said there are long-term unit rebuilds ongoing at Wells Dam. He said normally, Wells Dam is a 10-unit project; however, currently, there is always one unit out of service, which means a loss of about 20,000 cubic feet per second.

9. Chelan River Use Attainability Analysis Proposal Received by Washington State Department of Ecology (Breean Zimmerman):

Breean Zimmerman shared the document, *Chelan River Use Attainability Analysis (UAA) Proposal Overview* (Attachment F), which was distributed to the Aquatic SWG by Kristi Geris following the Aquatic SWG conference call on December 9, 2020.

Page 1 of Attachment F

Zimmerman said Ecology received this proposal from Chelan PUD and has started reaching out to tribes and stakeholders to make everyone aware of what this is. She said a UAA is used to remove a designated use for a waterbody if that use is non-existent or not attainable. She explained that when surface water quality standards were established, these standards were set as defaults for all water bodies. She said a UAA is a tool used to reflect the current aquatic life use in a waterbody and is the basis for this proposal.

Page 2 of Attachment F

Zimmerman said this is Lake Chelan and the Chelan River, which is a 4-mile river that connects the lake to the Columbia River.

Page 3 of Attachment F

Zimmerman said Chelan River has four distinct reaches. She said Reach 1 is the longest reach, at about 2.5 miles in length, has a generally low gradient, and a low ability to sustain riparian

vegetation. She said Reach 2 is about 0.75-mile in length and narrow. She said Reach 3 is often referred to as the gorge because it is steep and confined and has waterfalls that prevent upstream fish passage. She said there is a natural barrier between Reach 4 and Reach 3. She said Reach 4 is essentially the habitat channel, has high river flow, and is 0.5-mile long from the habitat to the Lake Chelan Hydroelectric Project tailrace.

Page 4 of Attachment F

Zimmerman said a 401 Water Quality Certification⁶ for the Lake Chelan Hydroelectric Project was issued in 2006 as part of Chelan PUD's FERC relicensing. She said the certification included a requirement to conduct a decade of studies and adaptive management to determine what biological objectives can be achieved and what highest attainable aquatic use can be achieved. She said it is also well-known that water temperature in the Chelan River can be challenging. She said, therefore, the 401 Water Quality Certification was written to include a UAA to address the findings from these studies and to be used as a tool to reflect historical and current conditions.

Page 5 of Attachment F

Zimmerman said this page shows the current aquatic life use (state standards) and the proposed aquatic life use (UAA proposal). She said this was submitted last December (2019) and Ecology responded to the proposal in February 2020. She said Ecology is now in the assessment phase and next will go through the rule-making phase, which is similar to the TDG rule-making process.

Page 6 of Attachment F

Zimmerman said this page shows the UAA Washington Administrative Code.

Page 7 of Attachment F

Zimmerman said Ecology announced receipt of the proposal in October 2020. She said next, there will be a number of public hearings and opportunities for public comment before Ecology proposes language for a new rule in spring 2021. She said that the adoption of a new rule is subject to how the process goes but is tentatively scheduled for fall 2021.

Zimmerman said if the proposal goes through, this will be a change to Washington State water quality standards for Chelan River. She said one reason Ecology really wanted to share this proposal is because this is the first UAA Ecology has ever processed. She clarified that Ecology has received other UAA proposals; however, this is the only one Ecology has chosen to initiate the rule-making process for.

⁶ Clean Water Act Section 401 Water Quality Certification

Page 8 of Attachment F

Zimmerman said this is a photograph of Reach 4 of the Chelan River.

Discussion

John Ferguson asked if the ultimate outcome is to change water temperature limits or criterion for each reach during certain times of the year. Zimmerman said yes, this is the ultimate outcome. She said the limiting factor is temperature, and really, is Lake Chelan. She said the lake has is a shallow outlet that releases water to Chelan River, and whatever is released sets the temperature in the river.

Andrew Gingerich said he has read about this UAA and is curious to follow how it pans out. He said this tool may be easier to use once it has been applied. Zimmerman said once Ecology's process is complete, the Environmental Protection Agency needs to provide approval of the final rule. She said Ecology has a blog and additional information on the standards that she can distribute. *(Note: Zimmerman provided this additional information following the Aquatic SWG conference call on December 9, 2020, which Geris distributed that same day.)*

10. Pacific Lamprey Conservation Initiative Update (Ralph Lampman):

Ralph Lampman said during a Policy Committee⁷ meeting on December 8, 2020, it was reported that a proposal submitted for Bonneville Power Administration funding (channeled through the Pacific Lamprey Conservation Initiative), which included eDNA and bioassay monitoring throughout the Columbia River Regional Management Unit, was not selected as one of the finalists to implement in 2021. Lampman said he (as well as partners) will continue seeking funding from other sources in time to implement the sampling that is proposed to begin in October 2021.

11. Juvenile Pacific Lamprey Planning Workshop (Ralph Lampman):

Ralph Lampman said a Juvenile Pacific Lamprey Planning Workshop is scheduled for January 19 to 21, 2021, and will include both morning and afternoon sessions. Lampman said some Aquatic SWG members may have already received an invitation to attend. He said this will be a good opportunity to discuss acoustic telemetry as a study methodology, as well as other topics related to juvenile monitoring.

John Ferguson asked if there is a flyer or official announcement that can be distributed. Lampman said this workshop is by invitation only because the organizers did not want the event to be too large.

⁷ Pacific Lamprey Conservation Agreement Policy Committee

VII. Administration

1. 2020 Aquatic Settlement Agreement Annual Report Review Schedule (Kristi Geris):

Kristi Geris said as this year is coming to a close, she wanted to remind the Aquatic SWG of the upcoming draft 2020 ASA Annual Report, six appended management plan annual reports, and the Water Temperature Annual Report (as appended to the Water Quality Management Plan Annual Report) that will be distributed for a 45-day review by the Aquatic SWG on Friday, March 12, 2021. Geris said comments will be due Monday, April 26, 2020, and the final draft reports will be distributed one week in advance of the Aquatic SWG meeting on May 12, 2021, when Douglas PUD plans to request approval of the full document.

2. Upcoming Meetings (John Ferguson):

The Aquatic SWG meeting on January 13, 2021, will be held by conference call.

Other upcoming meetings include February 10, 2021, and March 10, 2021 (TBD).

List of Attachments

Attachment A List of Attendees

Attachment B Wells FH BY2020 White Sturgeon Rearing and Surplus Update

Attachment C *Long-Term Movement of Wild-Origin White Sturgeon in Wells Reservoir*

Attachment D Wells Reservoir acoustic-tagged White Sturgeon distribution figures

Attachment E *2020 TDG & Water Quality*

Attachment F *Chelan River Use Attainability Analysis (UAA) Proposal Overview*

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
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
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes