FINAL

Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties **Date:** April 10, 2019

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

Re: Final Minutes of the March 13, 2019 Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, March 13, 2019, from 10:00 a.m. to 12:15 p.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. Douglas PUD will update the revised draft Wells Fish Hatchery Brood Year (BY) 2019 White Sturgeon Rearing Plan to include compliance with the fish health guidance outlined in the Washington Department of Fish and Wildlife (WDFW) White Sturgeon Fish Health Protocol,[1] and will provide the final revised draft to Kristi Geris for distribution to the Aquatic SWG (Item VI-2). *(Note: Andrew Gingerich updated the plan as discussed and provided a final plan on March 14, 2019, which Geris distributed to the Aquatic SWG that same day.)*
2. Douglas PUD will update the draft 2019 Aquatic Settlement Agreement Action Plan to address comments received from the Colville Confederated Tribes (CCT) and the Yakama Nation (YN), as discussed, and will provide the final revised draft to Kristi Geris for distribution to the Aquatic SWG (Item VI-3). *(Note: Andrew Gingerich updated the plan as discussed and provided a final plan on March 14, 2019, which Geris distributed to the Aquatic SWG that same day.)*
3. Chas Kyger will coordinate with the Wells Dam Mechanical Foreman to obtain clarification about the numbers and locations of Pacific Lamprey rescued during past annual winter maintenance fish salvages and will report back to the Aquatic SWG (Item VI-7).
4. The Aquatic SWG meeting on April 10, 2019, will be held by conference call (Item VII-2).

[1] In March 2014, WDFW, in coordination with the YN and the CCT, developed a standardized White Sturgeon Fish Health Protocol (to be implemented starting with 2014 White Sturgeon broodstock and larval collections). This protocol was reviewed by the Aquatic SWG, Chelan and Grant PUDs, the Spokane Tribe of Indians, and the Columbia River Inter-Tribal Fish Commission, and is intended to be a document open for discussion and modification as new information becomes available.

II. Summary of Decisions

1. Aquatic SWG members present approved the Wells Fish Hatchery BY2019 White Sturgeon Rearing Plan, as revised (Item VI-2).
2. Aquatic SWG members present approved the 2019 Aquatic Settlement Agreement Action Plan, as revised (Item VI-3).

III. Agreements

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

IV. Review Items

1. The draft *2018 Aquatic Settlement Agreement Annual Report* and appended *2018 White Sturgeon Management Plan Annual Report, 2018 Bull Trout Management Plan and Incidental Take Annual Report, 2018 Water Quality Management Plan Annual Report* (and appended *2018 Water Temperature Annual Report*), *2018 Pacific Lamprey Management Plan Annual Report, 2018 Aquatic Nuisance Species Management Plan Annual Report, and 2018 Resident Fish Management Plan Annual Report* were distributed to the Aquatic SWG by Kristi Geris on March 22, 2019, and are available for a 45-day review with edits and comments due to Geris on May 7, 2019; Douglas PUD will request approval of the report during the Aquatic SWG meeting on May 8, 2019 (Item VII-1).
2. A draft Northern Pike Monitoring and Response Plan was distributed to the Aquatic SWG by Kristi Geris on March 26, 2019. Douglas PUD will discuss the plan during the Aquatic SWG meeting on April 10, 2019 (Item VI-6).

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 are listed in Attachment A) and reviewed the agenda. Ferguson asked for any additions or changes to the agenda. Ralph Lampman said he has a request to add a data management task under the Pacific Lamprey Management Plan section of the draft 2019 Aquatic Settlement Agreement Action Plan, which he will describe further during the action plan agenda item.

The revised draft February 20, 2019 meeting minutes were reviewed. Kristi Geris said all comments and revisions received from members of the Aquatic SWG were incorporated into the revised minutes, which are ready for approval. Lampman requested two additional edits under the 2018 Pacific Lamprey Translocation Summary topic: 1) insert "approximately" before the numbers of fish the YN translocated during the spring and fall 2018; and 2) include "gravel" in the mix of preferred spawning habitat by Pacific Lamprey. Geris said she will incorporate these edits, as discussed. Aquatic SWG members present approved the February 20, 2019 meeting minutes, as revised. The Washington Department of Ecology (Ecology) abstained, because a representative of theirs was not present during the February 20, 2019 meeting.

Action items from the Aquatic SWG meeting on February 20, 2019, are as follows (note: the following italicized item numbers correspond to agenda items from the February 20, 2019 meeting):

- *Kristi Geris will begin forwarding the Wells Dam fish salvage memorandums to the Aquatic SWG each year that Tom Kahler (Douglas PUD Wells Habitat Conservation Plan Coordinating Committee Representative) provides annually to the Wells HCP Coordinating Committee (Item VII-5).*
  Geris forwarded the 2018/2019 salvage memorandums to the Aquatic SWG following the meeting on February 20, 2019.

2. DECISION: Wells Fish Hatchery BY2019 White Sturgeon Rearing Plan (Andrew Gingerich):

Andrew Gingerich said a draft Wells Fish Hatchery BY2019 White Sturgeon Rearing Plan was distributed to the Aquatic SWG by Kristi Geris on November 29, 2018. Gingerich recalled that comments were received from the CCT and WDFW. Additionally, he noted, Douglas PUD, Wells Fish Hatchery, and CCT staff met in-person to discuss and improve the plan. Gingerich said a revised draft plan was distributed to the Aquatic SWG by Geris on February 12, 2019. He said no additional comments have been received and recognizing this plan is a working document, Douglas PUD would like to request approval of the document as it stands now.

Patrick Verhey asked if additional language can be added to the Fish Health section of the plan about submitting fish health samples at the larval and pre-release stage. Gingerich said Douglas PUD does plan to continue these activities in accordance with the WDFW White Sturgeon Fish Health Protocol developed in 2014. He said he can update the revised draft Wells Fish Hatchery BY2019 White Sturgeon Rearing Plan to reference this protocol and will provide the final revised draft to Geris for distribution to the Aquatic SWG. *(Note: Gingerich*

updated the plan as discussed and provided a final plan on March 14, 2019, which Geris distributed to the Aquatic SWG that same day.)

Aquatic SWG members present approved the Wells Fish Hatchery BY2019 White Sturgeon Rearing Plan, as revised.

3. **DECISION: 2019 Aquatic Settlement Agreement Action Plan (Andrew Gingerich):** Andrew Gingerich said a draft 2019 Aquatic Settlement Agreement Action Plan was distributed to the Aquatic SWG by Kristi Geris on February 7, 2019.

   Gingerich said edits to the draft plan were received from the CCT, which were distributed to the Aquatic SWG by Geris prior to the conference call on March 13, 2019. He said under the White Sturgeon Management Plan section, edits included typo corrections and the addition of "BY," and he proposed to accept all edits. Chas Kyger said under the Aquatic Nuisance Species Management Plan section, edits included activities Douglas PUD plans to complete but were not specified in the action plan (e.g., install Northern Pike signs and include Northern Pike in aquatic nuisance species pamphlets). He said details under Northern Pike monitoring were left vague until the Northern Pike Monitoring and Response Plan is drafted. He said the action plan can be revised to incorporate CCT comments.

   Breean Zimmerman noted that the Water Quality Management Plan section primarily relates to the Clean Water Act Section 401 Water Quality Certification for Wells Dam; however, there is a subsection regarding a National Pollutant Discharge Elimination System (NPDES) permit and Zimmerman clarified that the NPDES and 401 Certification processes are separate permitting actions. Gingerich said this is a good clarification. He said he described the nature of this consultation process during the Aquatic SWG meeting on February 20, 2019; however, he did not make this distinction. Zimmerman said she will not be reviewing or writing the permits but will be a part of the process. She said she has no changes to the action plan; rather, she was just clarifying that the NPDES permit is separate from the 401 Certification.

   Ralph Lampman requested that a data management task be included under the Pacific Lamprey Management Plan translocation section. He said he believes it's vital to monitor the movements and fate of these translocated fish and then also suggested producing a summary of findings after the 2019 releases. He said Pacific Lamprey spawn in the spring/summer, so it makes sense to develop a summary in the fall/winter. Kyger said Douglas PUD can develop a detection summary or incorporate these data in the Pacific Lamprey Management Plan annual report.

   Aquatic SWG members present approved the 2019 Aquatic Settlement Agreement Action Plan, as revised.

Douglas PUD will update the draft 2019 Aquatic Settlement Agreement Action Plan to address comments received from the CCT and the YN, as discussed, and will provide the final revised draft to Geris for distribution to the Aquatic SWG. *(Note: Gingerich updated the plan as discussed and provided a final plan on March 14, 2019, which Geris distributed to the Aquatic SWG that same day.)*

4. PRESENTATION: 2018 White Sturgeon Monitoring and Evaluation (Andrew Gingerich):

Andrew Gingerich said a presentation titled, *2015-2018 White Sturgeon M&E* (Monitoring and Evaluation) *Summary*, (Attachment B) was distributed to the Aquatic SWG by Kristi Geris on March 12, 2019. Gingerich said this presentation focuses mostly on 2018, when M&E efforts were focused on targeting larger fish using adult gear to get at the natural reproduction potential in the Wells Reservoir. He said M&E efforts will get back to juvenile indexing in 2019. He said this presentation begins with juvenile indexing efforts and then moves to adult indexing. He said Dave Robichaud (LGL Limited) has been instrumental in data analysis and reporting. Gingerich said several of the graphs in this presentation are from the White Sturgeon M&E report Robichaud and Douglas PUD are developing, which should be available for Aquatic SWG review in a month or so. Gingerich said Tyson Jerald (Columbia Research Specialists, LLC) and his crew have put in a big effort and long hours in the 4-plus years working on Douglas PUD White Sturgeon M&E. Gingerich reviewed Attachment B, as follows:

Slide 2 of Attachment B

Gingerich said this is a brief summary showing numbers of fish released to date. He noted that three stocks of fish were released in the first year, and there were two different release locations until 2017 when releases switched to only one location. He said in Years 1 to 4, more than 20,400 White Sturgeon were released in the Wells Reservoir. He noted that in 2018 the program started releasing less fish but at a larger fish size.

Slide 3 of Attachment B

Gingerich said although 2018 releases were much smaller by count than previous years, they were 69% larger in fish size. He said 2015 releases were the smallest fish size; for comparison, 2018 fish were 188% larger than 2015 fish. He said the table shows average weights per year. He noted that 2015 fish weight averaged around 100 grams versus 281 grams in 2018, and he said less than 10% of the 2018 fish were below the 200-gram target. He said 2018 demonstrated the ability to get fish to size and he noted that last month during the tour of the Wells Fish Hatchery White Sturgeon facility, the Aquatic SWG saw there should be no issues getting fish currently on station to the 200-gram threshold.

Slide 4 of Attachment B

Gingerich said M&E efforts did not include juvenile indexing in 2018. He said adult indexing was conducted from 2016 to 2018, including two sessions in 2017. He said the difference between juvenile and adult indexing is adult indexing uses larger gear.

Slide 5 of Attachment B

Gingerich noted this is an older figure and because juvenile indexing was not conducted in 2018, the figure cannot yet be updated. He said, however, the available data are just starting to show something about survival after release. He noted the first two groups, which show the first year in the reservoir, ranges from slightly more than 20% to just under 40% survival. He said this changes in the second and third years in the reservoir. He said BY2013 fish released in 2014 (i.e., second year in reservoir, 3-year-old fish) show that survival in the reservoir from the second to third year of life is almost 100%, which was expected. He noted, however, the fairly wide confidence intervals on these data.

Slide 6 of Attachment B

Gingerich said quantitatively, survival in the Wells Reservoir can be evaluated through tag recovery on the cormorant rookery located at the confluence of the Okanogan and Columbia rivers. He said in 2014, crews recovered about 1% of the fish released, and in the next 2 years these numbers tripled. He said in 2018, earlier scans for BY2017 fish had lower recovery. He noted the different release locations and said the Washburn location is located closer to the cormorant rookery compared to Conklin Landing. He said he is not sure this influences the numbers but is something worth noting. He said the median fish size at release and median fish size on the rookery are almost identical, except in 2014. He said the discrepancy in 2014 may be because fish size measurements that were obtained 1 month before release, so the actual size at release may be larger than was measured. He said what these data indicate is that cormorants feed on all fish sizes available to them.

Jason McLellan asked if Douglas PUD has or would consider releasing hatchery fish from a boat over deeper water. He noted that release numbers are relatively low, and he believes based on White Sturgeon behavior toward light these fish will descend into deeper water quite quickly, which will also help them avoid predation. Gingerich said this would be easy to accommodate. He noted the Conklin Landing location is fast and drops off quickly; however, he is unsure if the data on this slide are robust enough to suggest one thing or another. He said if the Aquatic SWG prefers that Douglas PUD release hatchery fish from a boat mid-channel he believes this can be accommodated. McLellan clarified the CCT are not requesting this to occur; rather, he was just curious if it had been considered.

Slide 7 of Attachment B

Gingerich said M&E efforts started encountering wild fish, so crews started collecting fin ray samples. He said Matt Howell (CCT) and McLellan analyzed these samples. Gingerich noted that to date, there are 10-year acoustic tags in 8 wild adults and 10 wild subadults in the Wells Reservoir, so data are being collected on the movements of these fish.

Slide 8 of Attachment B

Gingerich said this graph shows the length distribution for 49 wild-origin White Sturgeon in the Wells Reservoir. He noted the gap between 120 and 170 centimeters (cm). He said M&E crews have handled only a small number of adults with relative numbers being wild-origin fish. He said growth rates appear to be quite variable, ranging from as little as 1 cm per year up to 20 cm per year. He said he believes this range is similar to other studies.

Patrick Verhey said crews distinguish wild-origin fish with scute marks, so the assumption that a fish is wild-origin is based on observation of a scute mark and the theory is a gap in fish lengths distinguishes wild-origin from stocked fish, correct? Gingerich said identifying a wild-origin fish is based on the presence or absence of a scute mark and passive integrated transponder (PIT)-tag. He said sometimes fish are encountered with a scute mark but no PIT-tag, and distinguishing hatchery versus wild requires both. He said regarding distinguishing origin by fish length, some years have been easy to tell apart because hatchery fish were typically larger; however, this is not so true anymore. He said now there is some overlap due to the variability in growth rates.

McLellan further clarified that wild fish are PIT-tagged and the second lateral scute is removed; therefore, it is not the presence of the scar rather it is the pattern of the scute. He said presence of a second lateral scute scar is an indication that the fish was unmarked at its original capture and presumably wild. Gingerich agreed and said a wild fish can be identified by: 1) no PIT-tag and no scute; or 2) a recaptured wild fish with a PIT-tag and "2L scute," which is what McLellan explained. Gingerich clarified that the graph on Slide 8 shows fish lengths of 49 wild-origin fish identified by no PIT-tag and no scute; although, some of these fish have been recaptured (but are only reported once in the slide summary). Laura Heironimus noted that this graph is cumulative and Gingerich confirmed this is correct.

Slide 9 of Attachment B

Gingerich said this table summarizes the number of wild fish tagged over the years. He noted that 2001 to 2002 represent Tyson Jerald's thesis work, and 2015 is when juvenile indexing started. He said these are newly tagged wild fish and include subadults and adults, totaling 61 fish and including the 12 fish under Jerald's work in 2001 and 2002.

John Ferguson asked if these fish were radio-tagged or PIT-tagged? Gingerich said most fish are PIT-tagged, but a couple are also acoustically tagged. He said year-over-year survival of wild fish appears to be close to 100%, but 3 years of variable detection probabilities makes estimation problematic so there is value in collecting additional data. He added there is no reason to expect that survival is not close to 100%; however, the variable detection data complicates the analysis.

Slide 10 of Attachment B
Gingerich said this table summarizes adult indexing efforts. He noted for BY2014, 62 fish were captured in 2016, 86 and 131 fish were captured in 2017, and 221 fish were captured in 2018. He said regardless of the BY, the data indicate as the fish age and grow they recruit to the gear better. He also noted that how these fish are encountered is likely to change as the fish grow.

Slide 11 of Attachment B
Gingerich said this slide speaks to the amount of effort put into adult sampling alone. He said sampling has been stratified throughout the entire Wells Reservoir based on Jerald's work and where it seems catch rates would be high based on water velocity, depth, and other factors.

Slide 12 of Attachment B
Gingerich said when it was apparent there was some recruitment, Douglas PUD decided to look for adults toward an eventual reproductive assessment. He said in 2017, a side scan sonar was conducted looking for aggregations of adults during times of spawning. He said the orange lines show the sample transects, and he noted the heavy monitoring in the Chief Joseph Dam tailrace, including beyond the boat restriction zone. He said no aggregations of White Sturgeon were located on this date.

Slide 13 of Attachment B
Gingerich said on June 22, 2017, aggregations of White Sturgeon were located at the mouth of the Okanogan River using side scan sonar. He said based on the shadows, these White Sturgeon were likely larger than 160 cm.

Slide 14 of Attachment B
Gingerich said it seemed there were few adult White Sturgeon in the Wells Reservoir; therefore, it made sense to acoustically tag more fish to identify where adults are spawning. He said in 2017, 6 adults were acoustically tagged and in 2018, 2 more were tagged, for a total of 8 wild adult White Sturgeon tagged with 10-year acoustic tags. He said the table summarizes the data to date.

McLellan asked if sex and maturity assessments were conducted on these fish during tagging to have a reasonable expectation the fish will spawn? Gingerich said this was not done

because: 1) the crew was not confident in their ability to properly conduct these assessments; and 2) conducting these assessments seemed invasive considering the warm water temperature. He said the crew wanted to minimize the time the fish were out of water.

Slide 15 of Attachment B

Gingerich said this map shows where acoustic receivers are or were located throughout the Wells Project and below Wells Dam. He said the red dots represent receiver locations that are now removed. He noted that there are a lot of receivers in the Wells Project because of Pacific Lamprey studies and receivers Chelan PUD has installed in the project area.

Slide 16 of Attachment B

Gingerich said this map shows existing receivers to date. He said there is one more receiver in the Okanogan River that is not shown here. He said Erlandsen to Foster Creek are key receivers to show adult movement during the reproductive period.

Slide 17 of Attachment B

Gingerich said the upper graph shows acoustically tagged subadult wild White Sturgeon movements from 2015 to 2018, and the lower graph shows adult-sized fish tagged in 2017. He noted that the red portion of the reservoir (lower reservoir) appears to be used by a couple of wild fish; however, only during the winter period. He said some number of fish were using the purple area (mouth of the Okanogan River) in April to early June. He said other than that, it seems fish are willing to use almost all sections of the reservoir. He noted the black line and said fish seem to linger in the Erlandsen vicinity, overwinter, and around mid-April about 4 to 5 fish entered the mouth and then exited the Okanogan River. He said these fish were then in the Chief Joseph Dam tailrace area around or before June 15.

Slide 18 of Attachment B

Gingerich said the data seem to indicate White Sturgeon are in the Okanogan River relative to discharge and water temperature. He said White Sturgeon seem to be in the Okanogan River when discharge and water temperature are increasing and remain in the river when water temperature is higher (up to 25°C).

Slide 19 of Attachment B

Gingerich said it is possible that the catch per unit effort (CPUE) might serve as a proxy for location; however, river flow may also influence gear efficiency. He noted that in 2017, the CPUE during adult sampling in the upper reservoir was five times greater during the second session when river flow was 60,000 cubic feet per second compared to the first session when river flow was 100,000 cubic feet per second. He said additionally, the CPUE in all areas

increased throughout summer and into fall. He said the difference could be behavioral or due to river flow.

Slide 20 of Attachment B

Gingerich said this slide focuses on where fish are spawning in the Wells Reservoir. He said there is a large dataset from Golder Associates on work performed near the Waneta section of the Columbia River upstream of the United States-Canadian border where the Columbia River meets the Pend Oreille River Basin. He said these data suggest fish are spawning in this reach right around the summer solstice. He said there is some variability in these data; however, it seems to be a good reference point. He said B.C. Hydro indicated peak spawning in the Waneta area occurs between June 13 and July 10. Gingerich said one theory could be to use these data as an index for when fish might be spawning in the Wells Reservoir. He said acoustic data for this time period indicate fish are all over the place; however, 5 or 6 fish were around the Bridgeport Washington area before nosing into the Foster Creek detection area.

Slides 21 and 22 of Attachment B

Gingerich said these slides show the detection history for 6 individual wild adult fish. He said 1 fish (Tag 303) lingered around the mouth of the Okanogan River in May, drifted downstream toward Brewster in early June, moved into the Chief Joseph Dam tailrace in mid- to late-July, and then was detected a few times near Foster Creek (in the immediate tailrace of Chief Joseph Dam) during August. He said this same pattern emerges with the other 5 fish, including being detected near the Foster Creek area around the time of spawning (as theorized in Slide 20 of Attachment B). Gingerich caveated the uncertainty of whether these fish actually intended to spawn in 2018.

Heironimus asked about the difference in water temperature between the Okanogan River and mainstem Columbia River during this time of year? Gingerich said the water temperature in the Okanogan River increases earlier and faster compared to the Columbia River. He said this may explain why fish nose into the Okanogan River around April and May when productivity is likely higher here than in the mainstem Columbia River. He said peak water temperatures in the Columbia River do not occur until about September and only reach 20°C to 21°C, whereas the Okanogan River can reach temperatures close to 25^{o}C. He said the water temperature in the Okanogan River also decreases quicker, while high temperatures in the Columbia River linger longer into October before decreasing. Heironimus said the data seem to indicate the June and July timeframe when river temperatures increase above 15°C is when fish are moving into the Chief Joseph Dam tailrace, and she is curious if this represents a spawning move. Gingerich said this is a good question and that he has not yet reviewed exact water temperatures in the Okanogan River when the bulk of the fish are moving. McLellan said it would also be interesting to compare river temperatures in the Chief Joseph

Dam tailrace relative to the Waneta spawning area. He clarified the real characteristic of spawning in the upper Columbia River is when water temperatures reach and sustain at or above 14°C, which is sometimes coincident with the summer solstice. He said Golder Associates seem to over-emphasize White Sturgeon spawning coinciding with the summer solstice; however, some years the river water temperatures increase later and after the solstice. Heironimus said 14°C is also the characteristic of White Sturgeon spawning in northern California, only these temperatures occur by March. She agreed water temperature and river flow are more indicative of spawning opposed to the summer solstice.

Slide 23 of Attachment B

Gingerich reviewed the bullets on this summary slide. He noted that improving detection in the Chief Joseph Dam tailrace is going to be challenging due to concerns about losing receivers in this location because of faster and channelized river flow through the area. He said mobile tracking may provide more resolution on fish movement and locations. He said more data are needed before deploying egg mats and 'd-rings.'

McLellan said he agrees it may be premature for egg mats; however, he disagrees more data are needed for plankton nets (d-rings). He said regardless, there is no way of knowing whether a fish intends to spawn, and he asked how many fish need to make these spawning moves before justifying putting forth an effort to catch early-life stage larvae? He said there are not many places in the Wells Project that can be described as potential White Sturgeon spawning habitat and the data already indicate the Chief Joseph Dam tailrace may be a good location. He suggested deploying plankton nets in the tailrace area to catch anything drifting downstream. He said with the dispersal behavior in that area, something is likely to encounter the gear. He said this should be fairly efficient and noted that M&E efforts have caught a fair number of wild juveniles in the last few years, which means there has to be spawning in the reservoir and there must be a fair number of drifting larvae to see results like this. He said most agencies throughout the basin are already conducting these types of efforts, except downstream of Priest Rapids Dam. Gingerich said he does not disagree with McLellan, but although unlikely, it may be possible juveniles are moving downstream from river sections above Chief Joseph Dam. Gingerich said no juveniles with a PIT-tag from Lake Roosevelt or Lake Rufus Woods have been caught in the Wells Reservoir; however, if fish are drifting this happens at a young age. He said another reason for pause is considering the effort the CCT put in below Rock Island Dam where there are supposedly more adults spawning compared to the Wells Reservoir and how few larvae were collected, he wonders if there are enough fish spawning in the Wells Reservoir to put out a signal. McLellan said based on early-life history in Lake Roosevelt, juveniles caught in the Wells Reservoir are not likely from Lake Roosevelt and are less likely from Lake Rufus Woods. McLellan said this gets

back to the objectives. He said if the objectives are to confirm spawning and potential for natural production, he would not dismiss the idea of using plankton nets. Gingerich agreed and said Douglas PUD is open to continuing these discussions. Heironimus also agreed with McLellan and said the telemetry data is a good data set, where river temperature and flow can be used to identify ideal timing for deploying the nets.

Ferguson asked about the exact objectives of sampling with plankton tows in the Chief Joseph Dam tailrace area. He asked if the purpose of this is to confirm natural reproduction and how does this relate to hatchery supplementation? Gingerich said these are good questions and said Section 4.2.3 of the White Sturgeon Management Plan indicates:

> *"In years where environmental conditions are appropriate, Douglas shall track sexually mature adult sturgeon that were captured and implanted with active tags…for the purpose of identifying potential spawning locations and determining natural reproduction. …Five surveys of natural reproduction using adult tracking and/or egg mat placement shall occur over the term of the new license. Several of these surveys are intended to be implemented during the latter part of the license in order to examine the natural reproductive potential of supplemented fish recruiting to sexually maturity"*

Gingerich said appropriate environmental conditions include factors such as river flow, temperature, and turbidity. He said Douglas PUD's approach was to collect as much acoustic data as possible before conducting the five surveys, and he clarified Douglas PUD is not proposing to postpone these surveys too long, recognizing this is an aging adult population. He said he does not disagree with McLellan and Heironimus; rather, Douglas PUD is trying to line up the effort appropriately.

Slide 24 of Attachment B
Gingerich acknowledged the parties who have helped with the Douglas PUD White Sturgeon M&E effort throughout the years.

The Aquatic SWG thanked Douglas PUD for putting together this comprehensive presentation.

5. 2019 Water and Snowpack Update and Forecast (Andrew Gingerich):

Andrew Gingerich said select slides from a presentation by Ryan Lucas (National Oceanic Atmospheric Administration) during a Snow and Water-Year Forecast webinar on March 7, 2019, were distributed to the Aquatic SWG by Kristi Geris on March 12, 2019. Gingerich said he will not review the slides and will provide a detailed update during the Aquatic SWG meeting on April 10, 2019; however, he wanted to distribute the slides because the webinar was very informative.

Gingerich said in summary, early winter (December 2018 and January 2019) was unseasonably warm across Washington State and the Columbia River Basin. He said in February 2019, below average temperatures were experienced basin-wide including a series of storm systems across the mid- to lower-Snake River Basin. He said these systems helped the Snake River Basin, which is currently at or above average in seasonal precipitation in most, if not all, of the Snake River Basin; however, these storms did not help the basins which feed runoff to the Wells Reservoir, which is at about 86% of average for runoff at Grand Coulee Dam. He said the forecast at The Dalles Dam is 80% to 85% of average and has not changed between February and March. He said the forecast for the Columbia River Basin is worse and expected to be a bit below average.

Gingerich said the last two slides have information for participating in future webinars. He said Lucas also makes this information available publicly.

6. Northern Pike Monitoring and Response Plan (Chas Kyger):

Chas Kyger said a draft Northern Pike Monitoring and Response Plan is currently under internal review and then will be available for Aquatic SGW review. Kyger said the plan follows a similar monitoring and suppression program as is being implemented by the CCT. He said Douglas PUD will monitor for the presence of Northern Pike, including collecting baseline data such as how many are present and where. He said should Northern Pike become established, suppression activities are described including when it is appropriate to implement these activities and methodology. He said a large portion of the plan outlines potential monitoring methods including a discussion of risks and benefits while being cognizant of Endangered Species Act species and minimizing impacts to these species. He said Douglas PUD hopes to have the plan finalized by May 2019 for full implementation in 2020. He said a few pilot efforts are planned for 2019.

John Ferguson asked if the plan is a Federal Energy Regulatory Commission-required submittal? Kyger said the timeline is driven by the Aquatic Nuisance Species Management Plan. Ferguson asked if environmental DNA (eDNA) sampling is currently being conducted. Kyger said yes, and this plan will supplement those ongoing efforts.

A draft Northern Pike Monitoring and Response Plan was distributed to the Aquatic SWG by Kristi Geris on March 26, 2019. Douglas PUD will discuss the plan during the Aquatic SWG meeting on April 10, 2019.

7. Wells Dam Collection Gallery Diffuser Grating Maintenance – Photographs (Chas Kyger):

Ralph Lampman requested this agenda item to be covered by Douglas PUD. Chas Kyger said the Wells Dam west fishway is still undergoing maintenance and he requested that photographs and a status update on the diffuser grating repairs be provided once completed, similar to what was provided for the east fishway. He said anything that is not addressed during this outage will be completed during the next winter outage.

Steve Lewis asked what plating was installed. Kyger said installation of plating is almost complete in the east fishway, which is now watered up and online. He said the Aquatic SWG toured the west fishway on February 20, 2019, and were able to view some of the plating installations. He said he believes the floor diffuser plating in the collection gallery is completed and unfinished plating in the fish ladders will be addressed during the next outage. He said he expects to receive photographs of the completed work. Lewis asked if plating was installed in specific places to avoid increasing the velocity through the area. Kyger said yes, just the gaps along the edges and areas around bolts were plated, which will not drastically affect or constrict flow.

John Ferguson said three photographs of the Wells Dam east fishway collection gallery diffuser grating were distributed to the Aquatic SWG by Kristi Geris on February 5, 2019, and one photograph of the Wells Dam west fishway collection gallery diffuser grating was distributed to the Aquatic SWG by Geris on February 21, 2019. Lampman asked if there are additional photographs from the east or west fishways to share. Kyger said there are no more from the east; however, there should be more from the west once the maintenance is complete. Ferguson asked if Douglas PUD plans to draft a summary of the repairs. Kyger said he plans to include language in the *2019 Pacific Lamprey Management Plan Annual Report*. Lampman suggested language on the actual measurements would be good to document. Kyger said he can include this.

Lampman said he appreciates the Wells Dam fish salvage reports, which were distributed to the Aquatic SWG by Geris on February 22, 2019. Lampman said he was told by maintenance crew members that Pacific Lamprey salvaged in the Wells Dam fish ladders vary year-to-year, and last year there were quite a few Pacific Lamprey, upwards of in the 100s. However, this is not reported in the salvage reports. Lampman said there may be some miscommunication here and he thinks there is value in having maintenance crew members attend an Aquatic SWG meeting to explain what they have encountered. Lampman further expressed the desire to receive feedback sooner than the following year's dewatered ladder tour. Lampman said a lot can be learned from this information about where adults are holding. He said he would like to

have an opportunity for the maintenance crew to share their observations. Lampman said the purpose of the meeting would not be to highlight discrepancies in the numbers; but rather, to learn more about the other observations and use this information to benefit Wells Dam Pacific Lamprey management. He asked that this process be open and inclusive of all input (in order to gather as much information as possible).

Kyger said he is unaware of any encounters of adult Pacific Lamprey during a fishway dewatering for at least a decade. He said he has also heard from crew members recalling numbers in the 100s; however, upon review of the data zero have been located. Kyger said he has also physically inspected the fishways himself and the only place adult Pacific Lamprey have been encountered is when bulkheads are installed for turbine unit maintenance. He said maintenance crews are instructed to notify Natural Resource staff anytime fish are encountered during inspections. Andrew Gingerich said there may be miscommunication about the location. He said Natural Resource staff are the first people in a dewatered ladder and at least in the last 8 years, no Pacific Lamprey have been encountered. He said maybe the maintenance crew was referring to the scroll case. Patrick Verhey said he has also heard mechanic crew members indicating encounters with adult Pacific Lamprey and suggested asking this question for clarification during future tours of dewatered ladders.

Lampman said Pacific Lamprey can hold underneath the picketed leads where they are not seen immediately, but perhaps the maintenance crews encountered them when conducting maintenance in these areas. Lampman asked where the scroll case is located. Ferguson explained in the bottom of a turbine, when a bulkhead is installed to conduct work on the rotor, sometimes fish get caught in the bottom of this area which is the scroll case. Gingerich said the Aquatic SWG can view what a scroll case looks like during a future tour and there are also good drawings of this at Wells Dam. Lampman asked if those numbers are reported? Gingerich said when White Sturgeon are encountered, these numbers are verbally communicated. Kyger said he will coordinate with the Wells Dam Mechanical Foreman to obtain clarification about the numbers and locations of Pacific Lamprey rescued during past annual winter maintenance fish salvages and will report back to the Aquatic SWG.

Lewis asked how Pacific Lamprey access a scroll case? Kyger explained during turbine unit maintenance, the upstream bulkhead is installed first and fish from the tailrace can swim unimpeded into the scroll case before the downstream bulkhead is installed. Gingerich said 3 or 4 Chelan PUD White Sturgeon have been detected in the Wells Reservoir but not in the Wells Dam fish ladders. He said there are two ways this can happen: 1) an angler catches the fish downstream of Wells Dam and releases the fish upstream of Wells Dam; or 2) the upstream bulkhead is installed and a fish accesses the scroll case from the tailrace before the

downstream bulkhead is installed. He said when dewatered, there is still 12 inches of highly oxygenated water in the scroll case, it is dark, and a fish can hold here with access to running water until the unit is watered up. Further, fresh river water is continually flowing into the scroll case during these outages. Once the upstream bulkhead is removed the fish can then swim into forebay. He said the fish is essentially locking itself through the project, which has been documented in past reports.

Lewis asked with the diffuser grating modifications, will there be follow up regarding the effectiveness of the repairs? Kyger said these repairs were groundwork identified by the YN to complete while the translocation program is underway, and when focus shifts back to at dam passage evaluations, this all can be incorporated into future studies.

VII. Administration

1. **2018 Aquatic Settlement Agreement Annual Report (John Ferguson):**
   John Ferguson reminded the Aquatic SWG that the draft *2018 Aquatic Settlement Agreement Annual Report* will be distributed for a 45-day review on March 22, 2019, and will be up for approval on the Aquatic SWG meeting on May 8, 2019.

   The *2018 White Sturgeon Management Plan Annual Report, 2018 Bull Trout Management Plan and Incidental Take Annual Report, 2018 Water Quality Management Plan Annual Report* (and appended *2018 Water Temperature Annual Report*), *2018 Pacific Lamprey Management Plan Annual Report, 2018 Aquatic Nuisance Species Management Plan Annual Report, and 2018 Resident Fish Management Plan Annual Report* will also be distributed for review as appended to the draft *2018 Aquatic Settlement Agreement Annual Report*.

   The draft report was distributed to the Aquatic SWG by Kristi Geris on March 22, 2019, as discussed.

2. **Upcoming Meetings (John Ferguson):**
   The Aquatic SWG meeting on April 10, 2019, will be held by conference call.

   Other upcoming meetings include May 8 and June 12, 2019 (TBD).

List of Attachments

Attachment A List of Attendees
Attachment B *2015-2018 White Sturgeon M&E Summary*

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	Technical Support	Douglas PUD
Dave Robichaud	Observer	LGL Limited
Steve Lewis	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
Breean Zimmerman	Aquatic SWG Technical Representative	Washington Department of Ecology
Patrick Verhey	Aquatic SWG Technical Representative	Washington Department of Fish and Wildlife
Laura Heironimus	Aquatic SWG Alternate Representative	Washington Department of Fish and Wildlife
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation