



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: November 14, 2018

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

Re: Final Minutes of the October 10, 2018 Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, October 10, 2018, from 10:00 to 11:15 a.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. Douglas PUD will draft a bullet list outlining husbandry practices, including feeding regimes, to implement during future White Sturgeon rearing at Wells Fish Hatchery (Item VI-3).
2. Chas Kyger will consult Wells Dam mechanical staff and Tom Kahler (Douglas PUD Habitat Conservation Plan [HCP] Coordinating Committee representative) about the required specifications for the diffuser grating spacing in the Wells Dam collection gallery (Item VI-5).
3. The Aquatic SWG meeting on November 14, 2018, will be held by **conference call** (Item VII-1).

II. Summary of Decisions

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

III. Agreements

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

IV. Review Items

1. A Douglas PUD Spill Prevention Control and Counter Measures (SPCC) Plan was distributed to the Aquatic SWG by Kristi Geris on October 3, 2018. This plan is available for a 30-day review with edits and comments due to Andrew Gingerich by Friday, November 2, 2018 (Item VI-4).

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. The following revisions were requested:

- Andrew Gingerich added the Douglas PUD SPCC Plan
- Ralph Lampman added a discussion on specifications for the diffuser grating spacing in the Wells Dam collection gallery

The revised draft September 12, 2018 conference call minutes were reviewed. Kristi Geris said all comments and revisions received from members of the Aquatic SWG were incorporated into the revised minutes. Aquatic SWG members present approved the September 12, 2018 conference call minutes, as revised. The Colville Confederated Tribes (CCT) abstained, because a technical representative of theirs was not present during the September 12, 2018 conference call.

Action items from the Aquatic SWG conference call on September 12, 2018, are as follows (note: the following italicized item numbers correspond to agenda items from the September 12, 2018 conference call):

- *Kristi Geris will redistribute the drawings of the Wells Dam fishway that were originally distributed on March 13, 2018, and discussed during the Aquatic SWG meeting on March 14, 2018 (Item VI-5).*

Geris redistributed the drawings following the Aquatic SWG conference call on September 12, 2018.

- *Ralph Lampman and Andrew Gingerich will provide passive integrated transponder (PIT)-tag files from Pacific Lamprey translocation efforts conducted by the Yakama Nation (YN; 2015 to 2018) and Douglas PUD (2018), respectively, to Kristi Geris for distribution to the Aquatic SWG (Item VI-6).*

Gingerich provided the PIT-tag file for Douglas PUD Pacific Lamprey translocation efforts in 2018 to Geris on September 19, 2018, which Geris distributed to the Aquatic SWG that same day. Lampman provided the YN data prior to the Aquatic SWG conference call on October 10, 2018, which Geris distributed that same day.

- *The Aquatic SWG will review the Environmental DNA (eDNA) Sampling Proposal for 2018 (a cost-share approach for implementing the eDNA sampling proposal in 2018, whereby Douglas PUD collects the samples and the YN funds sample processing) and provide edits*

and vote for approval via email to Kristi Geris by close-of-business Thursday, September 20, 2018 (Item VI-7).

Following further discussions between Douglas PUD and the YN, it was decided an Aquatic SWG vote was not required to implement this proposal; rather, Douglas PUD and the YN simply agreed to move forward with the proposed sampling.

- *Douglas PUD and the YN will further discuss eDNA sampling locations proposed in the eDNA Sampling Proposal for 2018 and will communicate these discussions and any revisions to the sampling proposal to the Aquatic SWG (Item VI-7).*

Douglas PUD and the YN further discussed the proposal and an updated proposal for implementation was distributed to the Aquatic SWG by Kristi Geris on September 20, 2018.

2. Pacific Lamprey eDNA (Chas Kyger):

Chas Kyger said Douglas PUD collected their eDNA samples, which will be sent to the laboratory this week. He said he is uncertain about how long it will take the laboratory to analyze the samples. Andrew Gingerich clarified that these samples were collected from the sites where Douglas PUD already collects eDNA samples for mussels and Northern Pike plus from the additional sites for Pacific Lamprey that were discussed and developed in coordination with the YN. Ralph Lampman asked what day Douglas PUD collected these samples. Kyger said the majority of samples were collected on Monday, October 8, 2018, and the remaining samples were collected on Tuesday, October 9, 2018.

Lampman said the YN also collected eDNA samples from Bonneville and McNary dams on Friday, October 5, 2018, and plans to collect samples from Rocky Reach Dam today, October 10, 2018. Lampman said this will complete the YN eDNA sample collection for 2018.

Steve Lewis asked Douglas PUD what level of detectability can be expected, notably for Northern Pike. Kyger said the CCT have been conducting these types of studies in Lake Roosevelt in areas where Northern Pike are abundant and have obtained strong signals; however, the signal weakens as abundance is reduced moving in a downstream direction. Kyger said the actual amount of eDNA needed for detection is unknown; however, collecting samples in areas where Northern Pike are known to exist will increase detectability. He noted that eDNA sampling is an early science. Lewis asked, if no presence/absence signal is obtained, does this mean more sample locations might be needed and if so, is this possible? Kyger said Douglas PUD implements other methods of monitoring (aside from eDNA sampling) under predator removal programs. He said Douglas PUD conducted Northern Pike monitoring throughout 2018 and will produce a plan with potential control options for Aquatic SWG review. He said this plan will hopefully be available for review this winter.

John Ferguson asked when eDNA sampling for Northern Pike started and were the results negative? Kyger said sampling started in March 2018 and involved collecting paired samples from 5 locations (1 sample on each side of the river or channel). He said two-thirds of these samples have been sent to the laboratory. He said the laboratory has a backlog to get to these samples processed, so Douglas PUD has not yet received the results; however, he hopes to obtain these results by December 2018 or January 2019. He said Douglas PUD just sent the remaining one-third of samples from the first batch of samples and will send the Pacific Lamprey batch this week. He said hopefully by early 2019, Douglas PUD will have the full suite of results.

**3. Brood Year 2018 Wells White Sturgeon Rearing at Wells Fish Hatchery
(Andrew Gingerich):**

Andrew Gingerich said a Fish Health Report (Attachment B) was distributed to the Aquatic SWG technical leads by Kristi Geris prior to the Aquatic SWG conference call on October 10, 2018. Gingerich recalled discussing during the Aquatic SWG meeting on September 12, 2018, struggling fish health in the brood year (BY) 2018 White Sturgeon at Wells Fish Hatchery. He said Attachment B includes detailed fish health and husbandry notes and documents the continued fish loss. He said currently fish on station are below the 325 fish program and about 100 to 150 fish remain. He said as of last week, losses are finally under control, but it has been a challenge. He said hatchery staff have been fighting issues such as Costiasis and inflated swim bladders. He said the cause of these issues is unclear, but Attachment B describes potential causes. He said hatchery staff took steps to address these potential causes, but it is hard to say for certain how useful each individual treatment has been because there was no control environment to show what was really valuable. He said fish are now on warmer water temperatures, which he believes is helping with digestion, metabolism, and feed conversion. He said hatchery staff are discussing how to avoid these issues in future years. He said, for example: 1) do not start fish in shallow troughs, but rather start them in combi rearing tanks; and 2) instead of keeping fish on colder water temperatures, start fish on warmer water temperatures which is closer to the natural regime in the wild. He added, however, the reason for keeping fish on colder water temperatures initially is to help with feed training and reduce growth of diseases, so there are trade-offs. He said in 2019 (BY2018), it will be the first year Douglas PUD will not make program. He said this puts Douglas PUD in a position to examine how to move forward in meeting the stocking target (325 [\pm 5%]) White Sturgeon greater than or equal to 200 grams per fish into the Wells Reservoir annually between 2018 and 2022, as stipulated by the Statement of Agreement [SOA], *Wells Reservoir White Sturgeon Supplementation 2018-2022*, approved by the Aquatic SWG on January 11, 2017). He said there are not 325 fish to plant in 2019, and the next question is how should Douglas PUD address this? He asked whether the approach could be

to plant more fish in 2020. He recalled the current SOA (*Wells Reservoir White Sturgeon Supplementation 2018-2022*) provides some language; however, Douglas PUD would like to further discuss this with the Aquatic SWG. John Ferguson agreed and suggested reoccurring agenda items for updates on White Sturgeon fish health and White Sturgeon stocking in future years.

Ralph Lampman asked for clarification about what water temperatures fish were reared on this year and what temperatures fish will be reared on next year. Gingerich clarified in previous years, when fish are delivered to Wells Fish Hatchery, fish are placed on ambient well water where by temperatures are close to in-river water temperatures (or maybe 1 to 2°F cooler than water temperatures the fish were collected from). He said the fish are moved into troughs with water at about 51 to 52°F. He said in the past, hatchery staff have waited 1 to 2 months before warming up the water temperature to make sure the fish are trained to accept feed. He said there is a water heater on site to allow for this. He said hatchery staff target raising the water temperature to 58°F after feed training. He said this decision to raise water temperatures is dictated by when losses during feed training decrease. He said Douglas PUD has consulted White Sturgeon experts for opinions on rearing. He said some hatcheries place fish on warm water right away mimicking warmer temperatures fish experience in the wild. He said this also helps fish growth. He said it seems White Sturgeon are most sensitive early on and once fish reach a certain point in growth, they are far more resilient.

Jason McLellan asked what temperature fish are starting off on. Gingerich said when fish arrive to the hatchery, they are placed on a water temperature as close to the river temperature as possible. He said soon after that, temperatures are increased toward 58°F. He said some hatcheries target 60°F. McLellan said the collection temperature this year was 15°C (59°F). He said optimal growth in a hatchery environment is 14 (57.2°F) to 16°C (60.8°F). He said moving toward higher temperatures than this may result in a higher growth rate; however, it may also result in Columnaris. McLellan suggested remaining in the range of 14 (57.2°F) to 16°C (60.8°F), and not going any higher than this, at least until fish are well on their way. Gingerich said in 2017, hatchery staff were observing quite a bit of growth just by marginal increases in feed rate at the same temperature. He said it is remarkable how much growth can be put on these fish in 1 week. McLellan agreed and said the Upper Columbia River Basin Program maintains a constant temperature of 58°F, pours the feed on the fish, and average fish size is more than 300 grams by early May. Gingerich said after the results of 2017, Douglas PUD does not have any doubt about meeting fish size targets. He said rather, this is more about using the best available knowledge and cultural practices that result in the best in-hatchery survival. McLellan asked if this was the first year fish were reared in troughs,

and Gingerich said this was the second year. McLellan asked why the switch was made from combi rearing tanks. Gingerich said the switch was partly for husbandry practices in terms of cleaning and logistics. He said troughs are shallower and easier to pull water down for feeding and scraping. He said hatchery staff also liked the way the troughs could be cleaned. He said, although, using the troughs required that hatchery staff transfer and handle fish one more time than is needed using the combi tanks. He said the shallow troughs at Wells Fish Hatchery do not have access to warmer water. He said although this approach was successful for BY2017 White Sturgeon, he is unsure Douglas PUD will choose this approach in future years. McLellan asked if there was a difference in feeding regimes—type, amount, or frequency. Gingerich said hatchery staff did not have access to perfect notes from previous years, so there was some experimentation with different feed types. He said he also believes some feed used in the past is no longer available. He said hatchery staff experimented with different ratios of krill versus starter feed. He added that he believes it is safe to say the feeding regime was different than last year.

Lampman asked if Douglas PUD thinks the different feeding regime affected survival? Gingerich said because this was not a controlled experiment, he is hesitant to say this with certainty. He said his sense is, when hatchery staff increased the concentration of krill to other feed types, fish did better; however, again, he caveated that he cannot say for sure because there were no replicates or control, i.e., not empirically evaluated.

McLellan asked if Douglas PUD tried Otohime larval feed. Gingerich said this was not used in early-rearing this year; rather, the krill mix with starter feed was used. McLellan asked if Douglas PUD tried Rangen, and Gingerich said maybe. McLellan said this loss is frustrating considering the effort put into collecting these fish. He said the one feed study that exists says Otohime is good for survival and it has also been used at other hatcheries with success; and then some chose not to use it because of cost. Gingerich said he shares McLellan's frustration and he does not believe this is a cost issue. He said in previous years, he received feedback that Otohime is not necessarily better. He said this may have been bad information, but this is partly what hatchery staff were basing decisions on during this year's efforts. He said, however, there is nothing preventing Douglas PUD from using Otohime in future years.

John Ferguson asked how the Aquatic SWG wants to discuss making up the shortfall from this year. He said it seems Douglas PUD is primarily focusing on improving culture practices. He asked how the Aquatic SWG will bring Douglas PUD's research and this shortfall into focus and when. He asked what the Aquatic SWG would like to see from Douglas PUD moving forward—such as updates at monthly calls or an action plan. McLellan said the CCT would like confidence there will be a structured approach in addressing this next year. He

said he is not suggesting an action plan, but perhaps a bullet list of what Douglas PUD intends to implement moving forward. He said, for example, if hatchery staff move fish from combi rearing tanks to troughs, do not do it with the whole lot; or if switching feed, do not do it with the whole lot. He said Wells Fish Hatchery has space to implement actions incrementally. He suggested not implementing wholesale changes without first confirming the success of these changes.

Gingerich said Douglas PUD will draft a bullet list outlining husbandry practices, including feeding regimes, to implement during future White Sturgeon rearing at Wells Fish Hatchery. He also said there is no incentive to missing their program target and he is similarly disappointed. He said Douglas PUD has a lot vested in this program, and frankly, he would like Wells Fish Hatchery to be a leader in White Sturgeon culture expertise. He said there is a lot of incentive for Douglas PUD to do well. He said this year was probably the least amount of fish ever brought back to the hatchery. He said with the low number of fish there was not much experimentation power available. He added that he understands these fish are limited because larval-origin White Sturgeon are in high demand. McLellan clarified he was not implying there should be a bunch of experimentation; rather, he was suggesting if there are ideas for changes, do not implement these wholesale changes without first testing the changes on a smaller group.

Ferguson suggested keeping a rearing update on the agenda to continue these discussions. Gingerich also reminded the Aquatic SWG that Douglas PUD will likely be under their program target for BY2018 releases in 2019. He said Douglas PUD will likely suggest making up this shortcoming with additional BY 2019 releases in 2020; however, this needs to be discussed and agreed upon within the Aquatic SWG, including formalizing this decision in one way or another.

Patrick Verhey asked what options are available to address being below program for BY2018 releases. He asked if surplus fish can be obtained from other programs to make program this year. Gingerich said he believes there are three options: 1) do nothing and plant less than 325 in 2019, ending up with less fish stocked than the current SOA stipulates; 2) determine if there are excess larval fish available from other facilities for planting, although it is very rare to see surplus larval fish; or 3) make-up 2019 loss with 2020 plants. Ferguson asked, if less than 50% fish are stocked in 2019, whether there is capacity at Wells Fish Hatchery to rear 150% fish in terms of fish size. Gingerich said he believes there is.

Lampman asked if Douglas PUD can use White Sturgeon reared at Marion Drain. Gingerich said the current SOA stipulates larval-origin fish, and Marion Drain fish are derived from a conventional broodstock and factorial cross not identified in the SOA. Ferguson further

clarified that in the past, both rearing types were stocked in the Wells reservoir and at one point the Aquatic SWG moved to larval-origin only.

4. Douglas PUD SPCC Plan (Andrew Gingerich):

Andrew Gingerich said this document is required by Douglas PUD's Federal Energy Regulatory Commission (FERC) License and Clean Water Act Section 401 Water Quality Certification and needs to be updated every 5 years or earlier. Gingerich said the Aquatic SWG, along with the Washington State Department of Ecology (Ecology), last reviewed and approved this document in 2012, and it was subsequently filed with FERC in early January 2013. Gingerich said Douglas PUD received a FERC order approving the document, and it is now the end of the 5-year period and it is time for another update. He said the Environmental Protection Agency provided recommendations based on a recent tour of Wells Dam and those updates along with updates to the point of contacts were incorporated into the updated plan. Gingerich said the plan identifies where and what oil products are used around the project. He said the document is designed to protect the Columbia River from discharges of oil products. He said Douglas PUD has a number of steps, measures, and equipment in place to prevent a discharge. He said secondly, if there is a spill the plan outlines the chain of command, how to mobilize, who to notify, and a general path forward.

The Douglas PUD SPCC Plan was distributed to the Aquatic SWG by Kristi Geris on October 3, 2018. Gingerich said the plan is available for a 30-day review, Douglas PUD will request approval of the plan during the Aquatic SWG meeting on November 14, 2018, and the plan will be filed with FERC before the end of 2018. John Ferguson said this means edits and comments are due to Gingerich by Friday, November 2, 2018. Gingerich said this is correct; this gives Douglas PUD time to address comments and distributed a revised draft for approval, if necessary.

5. Specifications for the Diffuser Grating Spacing in the Wells Dam Collection Gallery (Ralph Lampman and Chas Kyger):

Ralph Lampman said he is trying to understand the spacing requirements for the diffuser grating openings in the Wells Dam collection gallery. He said the Washington Department of Fish and Wildlife (WDFW) guidelines suggest a maximum of 1 inch for Coho Salmon and Steelhead, and 3/4 inch for Sockeye Salmon. Lampman said the diffuser grating spacings were difficult to locate in the engineering drawings that were shared (redistributed by Kristi Geris on September 12, 2018). Lampman said based on measurements collected during the tour of Wells Dam in January 2018, most vertical diffuser grating spacings were $\frac{3}{4}$ inch and the bottom spacings were 1 inch; however, there were a lot of larger spacings for various

reasons—some clearly 1.5 to 2 inches. Lampman said he believes these larger spacings need to be reduced to meet standards and also help prevent Pacific Lamprey from accessing dead-end zones.

Patrick Verhey recalled requesting that Douglas PUD provide updates on the specifications for the diffuser grating spacing in the Wells Dam collection gallery and whether there are plans to modify any grating spacings that are out of criteria. John Ferguson said this was discussed during the Aquatic SWG meeting on September 12, 2018 (Verhey was absent from this meeting). Ferguson recalled that Chas Kyger is coordinating with the Wells Dam maintenance crew regarding investigating the diffuser grating spacings during this next annual winter maintenance.

Verhey asked if Lampman is directing the spacing questions to WDFW or asking Douglas PUD. Lampman said these spacing requirements are also required by National Oceanic and Atmospheric Administration (NOAA) Fisheries. Ferguson clarified the most recent guidelines by NOAA (2011 guidelines) stipulate a maximum of 1-inch clear spacing and is not species-specific.

Lampman asked if it is reasonable to expect that all spacings greater than 1 inch can be repaired this winter. Kyger said whichever ladder is scheduled for the longer overhaul during the upcoming winter maintenance period should have adequate time to have all spacings fixed, if needed. He said he is unsure about the shorter ladder outage, which depends on workload. He said at the very least, a comprehensive inventory can be collected, crews can fix what they can, and the remaining spacings can be fixed another time.

Kyger said he will consult Wells Dam mechanical staff and Tom Kahler (Douglas PUD HCP Coordinating Committee representative) about the required specifications for the diffuser grating spacing in the Wells Dam collection gallery. Verhey agreed this will be helpful to know and suggested that Kahler attend a future Aquatic SWG meeting, if available. Verhey further suggested notifying the anadromous fish folks from the HCP groups that the Aquatic SWG is looking into this. Kyger said Douglas PUD will definitely coordinate with the HCPs, as necessary, such as prior to modifying the fishways.

Ferguson further clarified that the 2011 NOAA guidelines for 1-inch spacing are applicable to both vertical and horizontal spacings. He said the different spacings at Wells Dam may be due to orientation. He said the velocity criteria from the NOAA guidelines state that velocity should not exceed 1 foot per second for vertical diffusers and 0.5 foot per second for horizontal diffusers. Andrew Gingerich said he believes this is what the Wells Dam engineers were trying to balance in the design—maintain a specific head differential from the collection

gallery into the weirs, while not attracting salmonids to the diffuser gratings, and not allowing salmonids to access the gallery behind the diffuser gratings.

Steve Lewis asked about the process regarding repairs. Kyger recalled he already discussed with the mechanical crews the need to be staffed and equipped to implement repairs this winter. He said if a repair is needed, crews will implement the repair as they are identified. Kyger clarified if crews are repairing something to be compliant is one thing; however, if something is changing this is what requires HCP approval.

VII. Administration

1. Upcoming meetings (John Ferguson):

The Aquatic SWG meeting on November 14, 2018, will be held by conference call.

Other upcoming meetings include: December 12, 2018 (TBD), and January 9, 2019 (TBD).

List of Attachments

Attachment A List of Attendees

Attachment B White Sturgeon Fish Health Report

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