



# Conference Call Minutes

## Aquatic Settlement Work Group

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**To:** Aquatic SWG Parties

**Date:** August 15, 2020

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

**Re:** Final Minutes of the July 8, 2020 Aquatic SWG Conference Call

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The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, July 8, 2020, from 10:00 a.m. to 11:50 a.m. Attendees are listed in Attachment A of these conference call minutes.

### I. Summary of Action Items

1. U.S. Fish and Wildlife Service (USFWS) and Washington State Department of Ecology (Ecology) will provide Douglas PUD with additional contacts to include on the *Aquatic Nuisance Species Management Plan Contact List* for notification of any newly discovered aquatic nuisance species in the Wells Project (Item VI-3). *(Note: the Yakama Nation [YN] also provided an additional contact to include on the list, following the Aquatic SWG conference call on July 8, 2020. Steve Lewis provided the additional USFWS contact on July 14, 2020.)*
2. Douglas PUD, the Colville Confederated Tribes (CCT), Washington Department of Fish and Wildlife (WDFW), and other interested parties will convene outside of the Aquatic SWG to discuss the use of genetics with Dr. Andrea Schreier (University of California, Davis) to meet requirements in the *White Sturgeon Management Plan* and develop a draft Statement of Agreement (SOA) for a White Sturgeon Adult Reproductive Assessment (Item VI-5).
3. Douglas PUD, the CCT, WDFW, and other interested parties will convene outside of the Aquatic SWG to develop a list of topics—regarding spontaneous autopolyploidy in White Sturgeon supplementation programs—to discuss with the Aquatic SWG, and the Aquatic SWG will continue discussing the Rocky Reach Fish Forum (RRFF) and Priest Rapids Fish Forum (PRFF) document, *Guidance for Evaluating Spontaneous Autopolyploidy in White Sturgeon Supplementation Programs*, during future Aquatic SWG meetings (Item VI-7).
4. Douglas PUD will distribute photographs of fish exhibiting mild expression of gas bubble trauma (GBT) that were taken during the pilot effort to collect and monitor resident fish for GBT (Item VI-8). *(Note: Andrew Gingerich provided a photograph to Kristi Geris on August 4, 2020, which Geris distributed to the Aquatic SWG that same day.)*
5. The Aquatic SWG meeting on August 12, 2020 will be held by conference call (Item VII-1).

## II. Summary of Decisions

1. Aquatic SWG members present approved the *Aquatic Nuisance Species Management Plan Contact List*, with forthcoming additions from USFWS and Ecology, and acknowledging this is a living document subject to updates (Item VI-3). (Note: the YN also provided an additional contact to include on the list, following the Aquatic SWG conference call on July 8, 2020.)

## III. Agreements

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

## IV. Review Items

1. There are no items that are currently available for review.

## V. Documents Finalized

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

## VI. Summary of Discussions

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

John Ferguson welcomed the Aquatic SWG members (attendees listed in Attachment A). Ferguson asked for any additions or changes to the agenda. No additions or changes were requested.

The revised draft June 10, 2020 conference call minutes were reviewed. Kristi Geris said there was one outstanding comment to address under the agenda item, *Review of the White Sturgeon Spontaneous Autopolyploidy Guidance Document*. Laura Heironimus clarified that when determining whether to stock fish sent to the Columbia Basin Hatchery, there was no way to test only maternal groups because the fish had been mixed during rearing (not spawning). Geris made this correction and said all other edits and comments received from members of the Aquatic SWG were incorporated into the revised minutes. Aquatic SWG members present approved the June 10, 2020 conference call minutes, as revised.

Action items from the Aquatic SWG conference call on June 10, 2020, are as follows (note: the following italicized item numbers correspond to agenda items from the June 10, 2020 meeting):

- *Douglas PUD will redistribute the Wells Dam Fish Passage System Overview document that was developed by Jacobs Engineering (Item VI-1).*

- Andrew Gingerich provided this document to Kristi Geris during the Aquatic SWG conference call on June 10, 2020, which Geris distributed to the Aquatic SWG that same day.
- *Anchor QEA, LLC (Anchor QEA) will redistribute the Wells Dam Collection Gallery design plans (13 total) that were last distributed to the Aquatic SWG on September 12, 2018 (Item VI-1).*  
Kristi Geris redistributed these plans to the Aquatic SWG after the conference call on June 10, 2020.
  - *The YN will contact Tracy Hillman (RRFF and PRFF Chairman) to arrange a discussion with the RRFF and PRFF to verify support for Douglas PUD to take Pacific Lamprey collected by Grant PUD for release at Kirby Billingsley Hydro Park in Wenatchee, Washington, and transport and release the fish farther upstream above Wells Dam as part of the Douglas PUD Pacific Lamprey Translocation Program (Item VI-3).*  
Ralph Lampman contacted Hillman on June 11, 2020, and Hillman said he would add this to the next RRFF and PRFF meeting agendas, as requested.
  - *Douglas PUD will notify the Aquatic SWG when the final release data for Wells Fish Hatchery brood year 2019 White Sturgeon, released in the Wells Reservoir on May 28, 2020, are uploaded to the Passive Integrated Transponder (PIT) Tag Information System (PTAGIS; Item VI-5).*  
Andrew Gingerich provided this notification to Kristi Geris on June 23, 2020, which Geris distributed to the Aquatic SWG that same day.
  - *The Aquatic SWG will review the RRFF and PRFF document—Guidance for Evaluating Spontaneous Autopolyploidy in White Sturgeon Supplementation Programs—for further discussion during the Aquatic SWG conference call on July 8, 2020 (Item VI-6).*  
This will be discussed during today's conference call and will also be carried forward.  
*WDFW will provide the latest approved version of the RRFF and PRFF document—Guidance for Evaluating Spontaneous Autopolyploidy in White Sturgeon Supplementation Programs—to Kristi Geris for distribution to the Aquatic SWG (Item VI-6).*  
Patrick Verhey provided this document to John Ferguson on June 16, 2020, which Geris distributed to the Aquatic SWG that same day.
  - *Douglas PUD, the CCT, WDFW, and other interested parties will convene outside of the Aquatic SWG to develop a list of topics to address regarding spontaneous autopolyploidy in White Sturgeon supplementation programs, for discussion during the Aquatic SWG conference call on July 8, 2020 (Item VI-6).*  
This will be discussed during today's conference call and will also be carried forward.
  - *Douglas PUD, the CCT, WDFW, and other interested parties will convene outside of the Aquatic SWG to develop a draft SOA for a White Sturgeon Adult Reproductive Assessment (Item VI-8).*  
This will be discussed during today's conference call and will also be carried forward.

- *Douglas PUD will report results from the pilot effort to collect and monitor resident fish for GBT during the Aquatic SWG conference call on July 8, 2020 (Item VI 10).*

This will be discussed during today's conference call.

- *Anchor QEA will distribute to the Aquatic SWG historical resident fish GBT survey reports (Item VI-10).*

Kristi Geris distributed these reports to the Aquatic SWG on June 11, 2020.

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

John Ferguson asked if Aquatic SWG members had any updates to share regarding impacts of COVID-19 on Aquatic SWG-related or monitoring and evaluation activities.

Andrew Gingerich recalled that the CCT were uncertain about their ability to conduct larval collection due to COVID-19; however, some restrictions were relaxed and the CCT were able to conduct a full effort. Additionally, he said that Douglas PUD is providing three staff to work with the CCT night crew to meet obligations for the Douglas PUD program.

Laura Heironimus said WDFW developed COVID-19 safety protocols for field sampling for a variety of projects. She said if any field projects are struggling to develop protocols, WDFW can share theirs as a guidance document.

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

## **3. Aquatic Nuisance Species Management Plan Contact List (Chas Kyger):**

An *Aquatic Nuisance Species Management Plan Contact List* for newly discovered aquatic nuisance species was distributed to the Aquatic SWG by Kristi Geris on June 10, 2020 and an updated list was distributed to the Aquatic SWG by Geris prior to the Aquatic SWG conference call on July 8, 2020. Chas Kyger said he has only received two additional names from WDFW (which were added to the updated list). He asked if Aquatic SWG members had any other additions or if members were ready to approve the current list a couple of days early of the 30-day review deadline (July 10, 2020), realizing new names can be added later as roles change.

Steve Lewis asked about the purpose of this list, and Kyger recalled that contacts on this list will be notified in the event of detecting a new aquatic nuisance species in the Wells Project. Kyger further clarified that Aquatic SWG members will be notified immediately, and this list includes additional stakeholders who might find this information relevant. Lewis said he would like to add Kevin Aitkin (USFWS Invasive Species lead for the Washington Fish and Wildlife Office) to the list. Lewis said Aitkin works in the Lacy, Washington office and can help develop remedial actions if new aquatic species are detected. Breean Zimmerman said she would also like to add Jenifer Parsons to the list. Zimmerman said Parsons works with aquatic

nuisance species under the Ecology Shorelands and Environmental Assistance Program. USFWS and Ecology will provide Douglas PUD with additional contacts to include on the *Aquatic Nuisance Species Management Plan Contact List* for notification of any newly discovered aquatic nuisance species in the Wells Project. (Note: the YN also provided an additional contact to include on the list, following the Aquatic SWG conference call on July 8, 2020. Lewis provided the additional USFWS contact on July 14, 2020.)

Aquatic SWG members present approved the *Aquatic Nuisance Species Management Plan Contact List*, with forthcoming additions from USFWS and Ecology, and acknowledging this is a living document subject to updates.

John Ferguson asked if Douglas PUD would like for Anchor QEA to add a reminder to routinely review this list. Kyger said Douglas PUD plans to revisit this list each year as an appendix to the *Aquatic Nuisance Species Management Plan* annual report.

#### **4. 2020 Pacific Lamprey Translocation (Chas Kyger):**

Chas Kyger said he spoke with Mike Clement (Grant PUD) and Douglas PUD is scheduled to collect the first batch of Pacific Lamprey for translocation above Wells Dam on July 23, 2020. Kyger said trapping for this first batch will begin the Monday, July 20, 2020. He recalled that Grant PUD Fish and Wildlife staff now work 10-hours per day, 4 days per week; therefore, instead of trapping for 3 weeks, trapping for the Douglas PUD program will span 4 weeks to achieve the same level of effort as in past years. He said Douglas PUD will collect fish on the next three Thursdays after July 23, 2020. He said if there are large numbers and the holding facility reaches capacity (200 fish), Douglas PUD will arrange for additional pickups.

John Ferguson asked what the run is looking like. Kyger said he has not looked this week, but it has been increasing in the lower river over the past week. Andrew Gingerich asked Ralph Lampman what he thinks in terms of counts at Bonneville Dam. Lampman said there was a big surge a couple of weeks ago. Ferguson said the Columbia River DART (Data Access in Real Time) website only shows 4,742 Pacific Lamprey over Bonneville Dam, which is well below the 10-year average. He said DART shows 217 fish at Priest Rapids Dam, so it appears that fish are just starting to arrive. Lampman said the data show the peak migration might have passed Bonneville Dam around June 27, 2020, and it typically takes about one month for the peak to arrive at Priest Rapids Dam. He said he tried pushing for an early start, especially because the trapping effort is now two weeks longer. Ferguson said the data show there is a mini peak occurring right now at Bonneville Dam, and it also seems like fish are passing McNary Dam without being counted. Andrew Gingerich agreed that historically, Pacific Lamprey counts at McNary Dam have been low; however, the higher counts at Priest Rapids Dam might also be reflective of fish that overwintered upstream of McNary Dam. He

said, regarding counts at Bonneville Dam, unless there is an increase, it might be difficult to trap a lot of fish at Priest Rapids Dam. Lampman agreed this year might not be a high number year; however, he also noted that there are other passage routes that Pacific Lamprey might access and not be counted, so the overall numbers might be higher than what it seems.

#### **5. White Sturgeon Adult Reproductive Assessment (Andrew Gingerich):**

Andrew Gingerich said a response email from Dr. Andrea Schreier was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on July 8, 2020. Gingerich recalled about 1 month ago, he and Jason McLellan discussed, outside of the Aquatic SWG, the idea of using genetics to meet the requirements in the *White Sturgeon Management Plan* to determine if successful spawning is occurring in the Wells Project. Gingerich also recalled that he had not yet been able to reach Laura Heironimus, but he and McLellan discussed possibly using genetics to determine the potential for natural reproduction in the Wells Reservoir, as opposed to using egg mats or D-rings for larval collection. Gingerich said all options are still on the table; however, the concern is that there may be a limited number of adults in the Wells Reservoir. He said Douglas PUD suspects spawning is taking place and he recalled capturing wild fish aged to spawning years 2011 and 2012; however, he asked if these fish washed down from an upstream location or if these fish recruit from the Wells Project. Gingerich said he sent an email to Schreier about possibly using genetics. In summary, Schreier said there is a way to use genetics but it is limited due to the low genetic differentiation between White Sturgeon in the Upper and Mid-Columbia River. Gingerich said Schreier suggested performing a parentage analysis, but it requires having a good census of all adults in the reservoir. Gingerich said he has not yet responded to Schreier because he first wanted to discuss this with McLellan, Heironimus, and the Aquatic SWG. Gingerich said unfortunately, Douglas PUD does not know the extent of the White Sturgeon population in the Wells Reservoir, and therefore, does not know how useful this strategy would be due to the requirement of having a good census.

Heironimus thanked Gingerich for reaching out to Schreier. Heironimus said she also thought it might be challenging to understand how many adults are in the Wells Reservoir, and she has questions for Schreier about how to estimate the number of adults present. Heironimus said she has conducted some reproductive assessment work in California using larvae, and there may be other avenues to explore using genetic analyses to evaluate the number of wild fish and where these fish spawn. She agreed touching base with Schreier and McLellan is a good path forward.

Gingerich said his instinct is that there are not many adults in the Wells Pool, although another possibility is that Douglas PUD has not been successful at catching these fish. He said Douglas PUD has put in a lot of effort into capturing adults in the Wells Pool. Heironimus said it may be a combination of both. She said WDFW monitoring and evaluation efforts in the Bonneville Pool are still capturing fish that have not been PIT-tagged and that are old in age.

John Ferguson asked when McLellan will be done with (larval) night collection and if completion of the night collection will be before the next Aquatic SWG meeting on August 12, 2020. Gingerich said completion depends on how spawning spreads out. He said as long as crews are collecting free embryos, the effort will likely continue. Additionally, he said that because larval collection often occurs through the end of July and he does not believe sampling has ever lasted into August, it will likely be a good time to convene a call in early August with McLellan, Schreier, Heironimus, and any other interested parties.

Gingerich suggested carrying forward the action item for Douglas PUD, the CCT, WDFW, and other interested parties to convene outside of the Aquatic SWG to discuss the use of genetics with Schreier to meet requirements in the *White Sturgeon Management Plan* and to develop a draft SOA for a White Sturgeon Adult Reproductive Assessment.

Steve Lewis asked Heironimus, based on her work in California, if she thinks the presence of larvae is a good indicator of recruitment. Heironimus said this depends on what is agreed upon as the definition of recruitment. She said if larvae are present, this means that spawning was successful, but does this mean recruitment has occurred? She asked, or is recruitment defined as being when larvae recruit to the population, or reach the age of 1 year or the age of sexual maturity? She said if the path forward is evaluating larval survival, this is all part of the discussion. She said if the path forward is collecting wild fish and looking at parentage or relatedness, then the discussion is about how to evaluate the size of the wild population and how much of it is from natural recruitment versus from fish entering the population by drifting down from upstream locations. Lewis said this all makes sense.

#### **6. Wells Fish Hatchery Brood Year 2020 White Sturgeon CCT Larval Collection Update (Andrew Gingerich):**

Andrew Gingerich said based on monitoring of adult spawning in B.C., the CCT were planning to start collection around the evening of July 6, 2020. He said based on spawning and egg mat collection, the peak might occur this weekend and Douglas PUD offered staff to help with this collection effort including working Friday (July 10, 2020) and Saturday (July 11, 2020) night and Sunday (July 12, 2020) morning. He said if collection goes well, he hopes to

bring back all brood year 2020 White Sturgeon larvae for rearing at Wells Fish Hatchery to meet stocking targets in 2021.

Steve Lewis asked if the CCT are resampling historical sites or sampling new locations. Gingerich said Jason McLellan will need to confirm, but he believes most sampling is being conducted at index sites. Gingerich said the CCT installed mooring locations for larval collection gear in early spring. He said over the years, the CCT have dialed into these sites which are largely by China Bend near the U.S./Canada border. He said spawning takes place farther upstream, likely by two different populations. *(Note: Gingerich later clarified that this is one population of adult White Sturgeon that likely spawn in two different locations upstream of where the CCT collect larvae. The first is near the confluence of the Pend Oreille River and Columbia River and the second is made up of spawners just below Hugh L. Keenleyside Dam.)*

#### **7. Spontaneous Autopolyploidy Guidance Document (ALL):**

The RRFF and PRFF draft document, *Guidance for Evaluating Spontaneous Autopolyploidy in White Sturgeon Supplementation Programs*, was distributed to the Aquatic SWG by Kristi Geris on May 13, 2020. Patrick Verhey provided the latest approved version of this document, dated June 3, 2020, to John Ferguson on June 16, 2020, which Geris distributed to the Aquatic SWG that same day.

Ferguson said Andrew Gingerich provided comments on the May 13, 2020 draft document prior to the Aquatic SWG conference call on July 8, 2020, which Geris distributed to the Aquatic SWG. Gingerich said the document looked great and he thanked WDFW for helping put it together. He said he had not yet shared this document with Douglas PUD policy staff; however, for the purpose of this discussion he developed a few questions. He said first, he is curious about the need to screen all fish. He asked about screening a subset of fish and if these fish come back negative, maybe then set confidence intervals on the likelihood the remaining fish that were not screened are also negative for spontaneous autopolyploidy. He said, for example, if 5% or more test positive, this warrants additional testing. He recalled Jason McLellan saying that since the maternal groups are unknown there is a need to test all fish. Gingerich said he is unsure about this. He said screening a subset of fish instead of an entire population is done for other fish health analyses. He said second, it is worth noting that with spontaneous autopolyploidy, it seems managers are not necessarily concerned with first generation polyploids; rather, it is subsequent generations that may have reduced fitness. He said this is important to highlight because although there may be limited risk to these programs in the short term, the real concern is in the long term with the offspring. He said there may be an opportunity to buy time to determine how to assess risk since fish do not enter the reservoir and spawn right away. He said third, certain information, although



limited, suggests there is some spontaneous autopolyploidy occurring in the wild. He said it looks like a low amount and knowing this, his question is whether the Aquatic SWG can accept any amount of spontaneous autopolyploidy in the Wells Program. He said, for example, assuming there is less than 5% spontaneous autopolyploidy occurring in wild fish, can the Aquatic SWG accept any amount in the Wells Program? He said these are his main comments and lastly, he suggested screening fish after PIT tagging and using a sort-by-code application.

Laura Heironimus said these are great comments and a lot of this has been discussed in the other fish forums. She said regarding allowing any level of spontaneous autopolyploidy, this came up at the beginning of these discussions. She said the forums discussed whether it was possible to do optimization to determine how many fish should be tested and what is the tolerance. She said essentially, the determination was that managers do not have a good handle on what rate of spontaneous autopolyploidy is naturally occurring. She said additionally, in hatchery programs, fish are brought in, fed, and provided optimal conditions, therein optimizing chance of survival, potentially accidentally increasing the likelihood of survival of spontaneous autopolyploidy fish in the wild population, and potentially exacerbating the issue. She said because managers do not really know all the facts about how spontaneous autopolyploidy might affect future generations of fish, the RRF and PRFF agreed to a policy of zero tolerance for stocking spontaneous autopolyploidy fish.

She said, however, this document is adaptive and as more information becomes available, these numbers may change. She said this is a cautious approach. She said the available information suggests that 12N fish (i.e., 12 copies of each chromosome or irregular fish, or 10N fish<sup>1</sup>) are similar to 8N fish. She said 8N and 12N fish have equal pairs of chromosomes and could create a 10N fish, which might not be a problem; however, if a 10N fish spawns with an 8N or 12N fish, what happens then? She asked if 10N and 12N fish have a competitive advantage and if these fish could be sterile. She asked if these fish might compete with non-sterile fish on the spawning grounds and lower overall reproductive capacity. She said these fish could then migrate and affect the reproductive capacity in the entire population. She said yes, there may be a lower concern with 12N fish now, but there is a concern over any future effect 12N fish can have on the population. Heironimus suggested inviting Shawn Young (Fish and Wildlife Staff for the Kootenai Tribe of Idaho) to present on this topic and how the Kootenai Tribe handles spontaneous autopolyploidy. She said it is a slightly different situation, but Young has a good handle on this topic. Heironimus said lastly, she agrees with Gingerich's suggestion of sorting by PIT tags. Heironimus said she spoke with other managers who do the same thing (i.e., sample the fish, then either PIT-tag or cull).

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<sup>1</sup> White Sturgeon are normally evolutionary octoploids having eight copies of each chromosome (8N).

She said otherwise there is no way to track which fish went with which test results. She said Dr. Andrea Schreier provided a response regarding sample sizes, which she can distribute.

Gingerich asked if the rationale is that there is not enough information on the prevalence of spontaneous autopolyploidy in the wild, and managers are not okay with accepting any risk, then for fish the PUDs have already stocked in the Columbia River for which there is no information, what is the guidance for screening those fish and the subsequent disposition of those fish if they come back positive for spontaneous autopolyploidy? He said the natural place to go with this argument might be to target fish for removal. Heironimus said she believes this is a question many programs are grappling with. She said she knows some programs are starting to inventory fish and collect blood samples, and believes the next step following that is to remove fish, but this has not yet happened.

Ferguson asked about the stocking targets for the PRFF and RRFF. Heironimus said the PRFF last met on July 1, 2020 and, at that time, there were about 3,000 fish on station at Marion Drain, and 670 of these fish were from a family that tested negative for 12N and were planned for tagging and stocking. She said testing conducted earlier in the year showed low levels of spontaneous autopolyploidy in the other families. She said there were delays on further testing and Grant PUD was unable to conduct additional broodstock collection. She said the remaining fish were not culled and will be raised to stock as age 1 fish next year. She said these fish will be tested again before stocking. She said Grant PUD is targeting stocking 2,500 fish in 2021. Verhey said his notes from the RRFF meeting on June 11, 2020, indicate that Chelan PUD is targeting stocking 2,000 fish in 2021.

Gingerich said he needs to discuss this topic with Shane Bickford (Douglas PUD Policy Representative). Gingerich said thankfully, Douglas PUD relies on a larval program and he guesses the risk of spontaneous autopolyploidy is much lower compared to conventional brood stock crossing programs. He said if the Aquatic SWG chooses to go down a path of removing fish, it is likely that less Douglas PUD's fish will need to be removed (compared to a conventional broodstock program). He said there is a certain level of frustration about removing a bunch of fish that were also required to be stocked by the Joint Fisheries Parties to meet program goals, and he believes there will be some level of concern from policy staff. He said this is a new topic and will take a bit of time to digest the information and work through the issues.

Douglas PUD, the CCT, WDFW, and other interested parties will convene outside of the Aquatic SWG to develop a list of topics—regarding spontaneous autopolyploidy in White Sturgeon supplementation programs—to discuss with the Aquatic SWG, and the Aquatic SWG will continue discussing the RRFF and PRFF document, *Guidance for Evaluating*

*Spontaneous Autopolyploidy in White Sturgeon Supplementation Programs*, during future Aquatic SWG meetings.

#### **8. Water Year and Total Dissolved Gas Update (Andrew Gingerich):**

Andrew Gingerich shared the presentation, *Wells Dam Flow and TDG Update* (Attachment B), which was distributed to the Aquatic SWG by Kristi Geris following the Aquatic SWG conference call on July 8, 2020.

##### Slide 2 of Attachment B

Gingerich said slide 2 shows a view of what operators see in the control room. He said this morning, forebay total dissolved gas (TDG) was 111.32% and tailwater TDG was 113.94%. He said spill volume was 26.9 kcfs (26,900 cubic feet per second), including bypass spill. He said incoming river flow including side flow was about 160 kcfs, which is down quite a bit from last week. He said Wells Dam has 10 units, but this morning was only operating 8 units.

##### Slide 3 of Attachment B

Gingerich said slide 3 shows river flow in 2020. He noted the rapid increase in the first part of May through June. He said peak river flow was over 250 kcfs, which is above the 7-day, 10-year-frequency (7Q10) flow at Wells Dam (flood flow or 246 kcfs). He said in mid-June, there appeared to be a downward trend in river flow, there were 9 units operating at that time, and on June 22, 2020, a decision was made to take another unit offline for testing. He said after the decision to go to 8 units, there was a secondary peak of river flow, averaging 220 to 230 kcfs. He said there is only about 160 kcfs capacity through 8 units and the rest must be spilled, which is not ideal.

##### Slide 4 of Attachment B

Gingerich said the top graph on slide 4 is the same graph as on slide 3, and the bottom graph is spill at Wells Dam. He said the Bypass Operating Plan requires bypass barriers to be removed when flow is sustained above 200 kcfs. He said bypass barriers were removed on May 28 and reinstalled on June 16, 2020. He said during the second peak, barriers were removed on June 26 and reinstalled on July 6, 2020.

##### Slide 5 of Attachment B

Gingerich said on slide 5, each color shows the load specific to each unit. He said Douglas PUD forces generation for all units available during the peak freshet to manage TDG (i.e., Douglas PUD contracts with power purchasers include minimum generation requirements that stipulate the power purchasers are required to take the electricity). He said if this does not happen, operators need to spill more. He said prior to June 22, 2020, Wells Dam was

operating 9 units, and when operation went down to 8 units, this took another 20 kcfs away from generation that had to be spilled.

Slide 6 of Attachment B

Gingerich said slide 6 shows a snapshot of similar data. He said this morning, Wells Dam was operating 8 units with 644 megawatts of generation, which is right about 75 megawatts per unit, fully loaded. He said Douglas PUD often forces generation to minimize TDG production.

Slide 7 of Attachment B

Gingerich said there were a few events that exceeded 125% TDG in the Wells Dam tailrace, which required GBT monitoring. He said Chelan PUD and WDFW conduct four 30-minute samples per day at the Rocky Reach Juvenile Fish Bypass System (RRJFBS), and Douglas PUD conducted GBT monitoring alongside these samples. He said on June 8, 2020, crews sampled 25 juvenile salmonids during one 30-minute sample and no GBT expression was observed. He said sampling was conducted on June 25 and June 28, 2020 associated with the second flow peak. He said this time of year there are few fish coming through the sampler and most fish are subyearling Chinook salmon. He said crews sampled 14 and 16 fish on these days, respectively, almost all were hatchery or wild subyearlings, and again, no GBT expression was observed. He noted that crews had to conduct two 30-minute samples just to collect 14 and 16 fish. He said on average, there were 7 to 8 fish coming through the sampler during each sample period that were salmonids. He said GBT expression is not typically observed when TDG is around 125% to 126%; however, this is somewhat species specific. He said there typically needs to be a prolonged exposure to TDG and TDG needs to reach 127% to 128% to start observing mild symptoms of GBT in these fish.

Slide 8 of Attachment B

Gingerich recalled there is a new requirement, which is a part of the Ecology TDG adjustment, to conduct resident fish sampling starting in 2021. He said Douglas PUD drafted a plan to conduct a pilot effort, and Chas Kyger has been testing and refining boat-based electroshocking techniques and is feeling optimistic about obtaining samples below Wells Dam. Gingerich said starting next year, the requirement is to conduct weekly sampling, which can also be done in concert with Grant and Chelan PUDs. He said the required weekly sampling can be conducted anywhere between the Chief Joseph Dam tailrace down to the McNary Dam forebay. He said two pilot efforts were conducted. He said during the week of June 22, 2020, a total of 85 fish were sampled and 0 showed signs of GBT. He said fish sampled included resident fish collected in the immediate Wells Dam tailrace, about 1 mile downstream of the dam. He said during the week of June 29, 2020, a total of 40 fish were sampled and 4 showed mild symptoms of GBT (i.e., one fin with less than 5% cover). He reviewed the species encountered, as shown on slide 8. He said he believes the requirement

is to sample 100 fish weekly and Douglas PUD is now confident this can be accomplished. He said, however, there is a specific richness required of the samples that Douglas PUD may further discuss with Ecology closer to next year. He said the results from this pilot effort will also be included in the Gas Abatement Plan annual report.

#### Discussion

Steve Lewis asked if Gingerich believes sampling fish at the RRJFBS provides an accurate reading of the incidence of GBT expression in fish based on TDG levels in the Wells Dam tailrace. Gingerich said he thinks this location provides a reasonable reading because TDG degassing between Wells Dam and Rocky Reach Dam is limited to about 1%. He said the timing question is more difficult to answer. He asked if there is one hourly TDG value above 125% in the Wells Dam tailrace and sampling at the RRJFBS takes place on the next day, can one be certain the fish sampled at the RRJFBS experienced the exceedance condition in the Wells Dam tailrace? He said the answer is no. He said if there is a prolonged exceedance, there is higher confidence a fish sampled at the RRJFBS was exposed to these conditions. Therefore, it is the brief exceedances that are difficult to interpret. He said one could also argue that beach seining be conducted, and it would likely be easy to obtain a good sample size in May and June using this technique. He said sometimes there is a higher incidence of GBT expression observed at Rock Island Dam and he believes this has something to do with how the sample fish are held in shallower water and not allowed to move into deeper depths.

Breean Zimmerman asked about the differences between the June 22 and June 29 pilot efforts. For example, were different species sampled or was one TDG event longer than the other? Gingerich said he did not review the length of time TDG levels exceeded 125%. He said in terms of different species, he generally believes the same species were sampled. He added that he has photographs of the fish exhibiting mild expression of GBT that were taken during this pilot effort and he can distribute these to the Aquatic SWG. *(Note: Gingerich provided a photograph to Geris on August 4, 2020, which Geris distributed to the Aquatic SWG that same day.)*

Zimmerman asked if these high river flow events were due to snowmelt or rainfall. Gingerich said he believes it was probably a bad call by Douglas PUD to take a unit out of service in June. He said early in the bypass season, the snowpack forecast was about 104% of average, but then slowly increased up to about 114% of average. He said looking at the data, operators saw a peak and thought flows were trending down even though some Natural Resource staff thought differently because of the high level of snowpack in Canada. He said the decision was made to remove the unit anyway when taking it out of service should have been delayed. He said he thinks not seeing that second peak in flow was the responsibility of Douglas PUD. He said late June and the first part of July is traditionally peak flow. He said in

his opinion, there are typically lower flows into August and September, and this would be the ideal time to conduct maintenance activities. He said having as many units online as possible during the bypass season should be the goal.

Lewis asked if Douglas PUD has consulted USFWS regarding electroshocking, the best locations to minimize incidental catch, and how to sample in the most effective manner. Gingerich said that no Bull Trout were encountered during the pilot effort this year, and he is also encouraged with how sampled fish recovered from the electroshocking. Kyger said he plans to do more work with the conductivity meter, including building a power table to standardize the amount of power to apply over a range of conductivities. He said this is a bit of a trial and error process to understand how much power to apply based on fish recovery time. Lewis suggested discussing this further before starting the required sampling next year.

John Ferguson asked if Douglas PUD is planning to conduct more pilot studies in 2020. Gingerich said he does not believe so. He said if additional efforts were conducted, it would be to test the system; however, if the system is working, he would advocate to not test more because why electroshock fish when the system seems to be working okay. He said Douglas PUD will provide a more detailed report of these data in the Gas Abatement Plan annual report. He said in terms of providing more data during the Aquatic SWG meeting on August 12, 2020, the only change he foresees is if another spill event occurs before the meeting that requires more testing.

## **VII. Administration**

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

The Aquatic SWG meeting on August 12, 2020, will be held by conference call.

Other upcoming meetings include September 9 and October 14, 2020 (conference call).

## **List of Attachments**

Attachment A List of Attendees

Attachment B *Wells Dam Flow and TDG Update*

**Attachment A – Attendees**

<b>Name</b>	<b>Role</b>	<b>Organization</b>
John Ferguson	Aquatic SWG Chairman	Anchor QEA, LLC
Kristi Geris	Administration/Technical Support	Anchor QEA, LLC
Andrew Gingerich	Aquatic SWG Technical Representative	Douglas PUD
Chas Kyger	Technical Support	Douglas PUD
Steve Lewis	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
RD Nelle	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 Alternate Representative	Washington Department of Fish and Wildlife
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation