



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: February 14, 2020

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

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

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, January 8, 2020, from 10:00 a.m. to 12:00 p.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. Steve Lewis will discuss internally with U.S. Fish and Wildlife Service (USFWS) the appropriate fish size threshold for identifying Bull Trout passing Wells Dam fish ladder count windows as subadults (Item VI-1).
2. Douglas PUD will coordinate with Washington Department of Fish and Wildlife (WDFW) regarding a tour of the Wells Dam Fish Hatchery this spring 2020 (Item VI-1).
3. Douglas PUD will distribute the Wells Dam fish salvage memorandum to the Aquatic SWG that Tom Kahler (Douglas PUD Wells Habitat Conservation Plan [HCP] Coordinating Committee Representative) provides annually to the Wells HCP Coordinating Committee (Item VII-2). *(Note: Andrew Gingerich provided fish salvage numbers to Kristi Geris on January 14, 2020, which Geris distributed to the Aquatic SWG that same day, and the fish salvage memorandum was distributed to the Aquatic SWG by Geris on January 17, 2020.)*
4. Douglas PUD will attempt to collect genetic samples from any juvenile and adult Pacific Lamprey encountered during the fish rescue conducted at Wells Dam associated with the 2019/2020 fishway maintenance outage (Item VII-2). *(Note: Genetic samples were collected per the Yakama Nation's (YN's) request, as distributed to the Aquatic SWG by Kristi Geris on January 14, 2020.)*
5. Douglas PUD will delete language from Section 4 of the juvenile Pacific Lamprey literature review that was copied from the *Pacific Lamprey Management Plan* about the current state of tag technology because this language is dated and not relevant to the document library (Item VII-9). *(Note: Chas Kyger deleted this language following the conference call on January 8, 2020, and the updated literature review is available for download from the Aquatic SWG Extranet Site.)*

6. The Aquatic SWG meeting on February 12, 2020, will be held by conference call (Item VII-1).

II. Summary of Decisions

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

III. Agreements

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

IV. Review Items

1. The draft *Wells Hydroelectric Project Total Dissolved Gas Abatement Plan 2019 Annual Report* was distributed to the Aquatic SWG by Kristi Geris on January 8, 2020, and is available for a 30-day review with edits and comments due to Andrew Gingerich by Monday, February 10, 2020. Douglas PUD will request approval of the report during the Aquatic SWG meeting on February 12, 2020 (Item VI-4).
2. The draft *2020 Aquatic Settlement Agreement and Workgroup Action Plan* was distributed to the Aquatic SWG by Kristi Geris on January 16, 2020, and is available for review. Douglas PUD will request approval of the plan during the Aquatic SWG meeting on February 12, 2020.
3. The draft *2020 Total Dissolved Gas Abatement Plan* (and appended *Wells Bypass Operating Plan*) was distributed to the Aquatic SWG by Kristi Geris on January 20, 2020, and is available for review. Douglas PUD will request approval of the plan during the Aquatic SWG meeting on February 12, 2020 (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 (Kristi Geris):

Kristi Geris welcomed the Aquatic SWG members (attendees are listed in Attachment A). Geris said John Ferguson is on the Chehalis Aquatic Species Restoration Plan Science Review Team and he had agreed to participate in an ecosystem resilience panel discussion that was initially planned for today, January 8, 2020, in the afternoon; however, the panel was ultimately scheduled at the same time as this Aquatic SWG conference call. Geris said she offered to facilitate the Aquatic SWG conference call to avoid rescheduling the call and so

that Ferguson could still participate in the ecosystem panel. Geris said Douglas PUD supported this arrangement.

Geris reviewed the agenda and asked for any additions or changes to the agenda.

- Ralph Lampman added a discussion on the Douglas PUD juvenile Pacific Lamprey literature review.
- Geris asked Lampman and Patrick Verhey if there was anything noteworthy to share from the Lamprey workshop they attended in December 2019, and Lampman said he could provide an overview of discussions.

The revised draft December 11, 2019 conference call minutes were reviewed. Geris said all edits and comments received from members of the Aquatic SWG were incorporated into the revised minutes. Aquatic SWG members present approved the December 11, 2019 conference call minutes, as revised. The YN and WDFW abstained, because representatives of theirs were not present during the December 11, 2019 conference call. *(Note: USFWS had not yet joined the conference call during approval of the revised draft December 11, 2019 conference call minutes; and therefore, is considered an abstention.)*

Action items from the Aquatic SWG conference call on December 11, 2019, are as follows (note: the following italicized item numbers correspond to agenda items from the December 11, 2019 conference call):

- *Steve Lewis will discuss internally with USFWS the appropriate fish size threshold for identifying Bull Trout passing Wells Dam fish ladder count windows as subadults (Item VI-1).*

This action item will be carried forward.

- *Douglas PUD will update the 2019 Pacific Lamprey Translocation PIT Tag Information System (PTAGIS) File and Detection Summary Tables to include table notes explaining the use and sequence of river kilometers (rkms) and color schemes for release and last detection sites (Item VI-3).*

Andrew Gingerich provided a fourth revised table to Kristi Geris on December 31, 2019, which Geris distributed to the Aquatic SWG that same day.

- *Douglas PUD will: 1) notify the Aquatic SWG of the 2019/2020 maintenance (ladder outage) schedule at Wells Dam once this information is available; 2) coordinate with the YN, WDFW, and USFWS regarding a tour of the Wells Dam fish ladders (preferably the east ladder) during the 2019/2020 maintenance outage at Wells Dam; and 3) coordinate with WDFW regarding a tour of the Wells Dam Fish Hatchery next spring 2020 (Item VI-5).*

The Wells Dam fish ladder items will be discussed during today's conference call and the hatchery tour item will be carried forward.

- *Douglas PUD will present a 2019 total dissolved gas (TDG) summary for the Wells Project during the Aquatic SWG conference call on January 8, 2020, and Washington State Department of Ecology (Ecology) will also provide a regulatory update on the TDG proposed rule change, including an update on the status of USFWS review on impacts to Bull Trout and National Marine Fisheries Service (NMFS) review on impacts to anadromous salmonids (Item VII-1).*

This will be discussed during today's conference call.

2. Wells Dam Fish Ladder Dewatering Schedule (Andrew Gingerich):

Andrew Gingerich said yesterday, on January 7, 2020, a fish salvage was conducted in the upper east fish ladder at Wells Dam. Gingerich said this included mostly Mountain Whitefish, some Steelhead, no Pacific Lamprey, and a few Chinook Salmon that were mostly hatchery residuals. He said the plan is to dewater the lower east fish ladder today, January 8, 2020, including the collection gallery. He noted that dewatering the upper and lower sections of the ladder is normally a 2-day process. He said part of this process involves bulkheading the fishway entrances to get a good seal and preventing water entry; however, this morning crews were having difficulty sealing the doors completely. He said work may get pushed to tomorrow, Thursday, and hydro-mechanic staff do not work on Fridays. He said the plan is for Aquatic SWG members to tour the east fish ladder on Monday, January 13, 2020. He said he plans to meet Ralph Lampman at Douglas PUD Headquarters in East Wenatchee, Washington, at 11:00 a.m. Gingerich said he and Lampman, and others if interested, will then meet Patrick Verhey at the overlook near Wells Dam shortly after 12:00 p.m. and drive over to the east fish ladder. Gingerich said the same protocols as usual are in place, where boots or waders, hard hats, and headlamps will be required. He said Douglas PUD has extra hard hats and head lamps. He said the mechanical crew can lower everyone down into the collection gallery at 12:30 p.m. to view the work completed in previous years. He said no new work has been completed so far because the maintenance crews will not have access to the area until tomorrow. He said during this outage, crews will continue filling gaps in the diffuser gratings up to Pool 19. He said the east fish ladder is the shorter outage this year, and after 2 weeks the dewatering equipment will be moved to the west fish ladder. He said the east fish ladder will be returned to service and the west fish ladder will be taken offline for about a month. He said if there is interest in viewing that fishway he can let folks know when it is taken offline.

Gingerich said Douglas PUD will distribute the Wells Dam fish salvage memorandum to the Aquatic SWG that Tom Kahler (Douglas PUD Wells HCP Coordinating Committee Representative) provides annually to the Wells HCP Coordinating Committee. *(Note: Gingerich provided fish salvage numbers to Kristi Geris on January 14, 2020, which Geris*

distributed to the Aquatic SWG that same day, and the fish salvage memorandum was distributed to the Aquatic SWG by Geris on January 17, 2020.)

Gingerich said Pacific Lamprey are only occasionally found in the corners of the collection gallery. Lampman asked if juvenile or adult Pacific Lamprey are found, can crews collect genetic samples? He said all that is needed is a 1-by-1-millimeter (mm) clip from the tail fin or a small glide along the tail. Gingerich asked if samples can be collected on paper envelopes. Lampman said Whatman® sheets are preferred and he can bring some to the tour. He said paper envelopes will also work. He added that depending on the size, the whole fish may need to be sacrificed, e.g., 1 to 2 centimeter in length. Gingerich said this might be the size range encountered and Douglas PUD does not have a scientific permit to take Pacific Lamprey. Lampman said the YN has a tribal scientific collection permit that includes the whole ceded land. Gingerich said Douglas PUD can also look into including take of Pacific Lamprey in subsequent permits. He also said Douglas PUD will attempt to collect genetic samples from any juvenile and adult Pacific Lamprey encountered during the fish rescue conducted at Wells Dam associated with the 2019/2020 fishway maintenance outage. *(Note: Genetic samples were collected per the YN's request, as distributed to the Aquatic SWG by Geris on January 14, 2020.)*

Lampman asked if there is a Plan B for touring the east fish ladder in case the tour on Monday, January 13, 2020, is canceled due to the weather. Gingerich said he can put in a request if needed and the tour will likely need to take place before January 16, 2020. He reminded the Aquatic SWG that the west fish ladder will have a longer outage. Lampman said he prefers touring the east fish ladder because he has already toured the west fish ladder. *(Note: As requested, Douglas PUD rescheduled a tour of the east fish ladder for Thursday, January 16, 2020; however, Aquatic SWG members ultimately suggested postponing the tour to next year due to scheduling conflicts.)*

3. PRESENTATION: 2019 Performance and Flow Year TDG Review (Andrew Gingerich):

Andrew Gingerich said a presentation titled, *Wells Hydroelectric Project Total Dissolved Gas 2019 Annual Report* (Attachment B), was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on January 8, 2020. Gingerich said Douglas PUD shares a similar presentation with the U.S. Army Corp of Engineers (USACE) as a part of an annual meeting, required under the USACE Biological Opinion (BiOp). He said Chelan and Grant PUDs also participate in this meeting. He said the USACE presents on data completeness and calibration and the PUDs focus more on compliance with water quality standards. He said this presentation includes both calibration and compliance.

Slide 2 of Attachment B

He said the Wells Project has four TDG monitoring stations, most of which are required by Douglas PUD's Clean Water Act Section 401 Water Quality Certification (401 certification). He said the Washburn Island station was installed downstream of Chief Joseph Dam because the USACE-monitored site located at Chief Joseph Dam was not obtaining a good reading of bulk flow. He said Douglas PUD was being asked why TDG values in the Wells Project were higher than what was recorded in the Chief Joseph Dam tailrace, and it was a function of where the sensor was located. He said these data are reported on Douglas PUD's website for the bypass season that runs from April to August when Wells Dam is spilling for fish passage. He also noted the 7-day, 10-year-frequency (7Q10) flow at Wells Dam is 246,000 cubic feet per second (246 kcfs) where state water quality standards are waived, and flood control and human safety are prioritized.

Slide 3 of Attachment B

Gingerich said this slide is a refresher on the TDG criteria; however, these values will change in 2020, including: 1) the way calculations are currently done will be slightly modified; and 2) there will be a second option for operators to choose, which includes a simplified set of TDG criteria removing the forebay standard and changing the 120% tailrace standard to a 125% and 126% standard. He said the second standard will be allowable during spring spill, which is characterized by Ecology as occurring from April to June.

Slide 4 of Attachment B

Gingerich reviewed the locations of the TDG stations throughout the Wells Project. He recalled that the Washburn Island station is not required by Douglas PUD's 401 certification but was installed for a better reading on bulk flow out of Chief Joseph Dam. He said TDG stations required by the 401 certification include one in the Wells Dam forebay on pier nose 6 and two stations in the Wells Dam tailrace, including one redundant back-up logger. He said each station aside from the redundant back-up logger are sending data to Wells Dam in real time and are posted to the Douglas PUD website.

Slide 5 of Attachment B

Gingerich said John Lemons of Columbia Basin Environmental travels to Wells Dam monthly to calibrate the TDG sensors in real time.

Slide 6 of Attachment B

Gingerich said to calculate TDG, Lemons uses a handheld device and Douglas PUD uses a barometer located at Wells Dam. Gingerich said the deviation between the handheld and the barometer is slight. He said TDG is a function of barometric pressure and it is difficult to

precisely match up the handheld to the barometer. He said there is typically a difference between the two measurements of 1 to 3 mm of mercury (mmHg).

Slide 7 of Attachment B

Gingerich said this slide shows the generic mechanics of a box plot.

Slide 8 of Attachment B

Gingerich said this slide shows a comparison of the barometer temperature readings before and after calibration. He noted that there is only a small change in temperature after calibration. He also described the station locations, as follows:

Monitoring Site	Location
WSBW	Washburn Island
WEL	Wells Dam forebay
WELW	Wells Dam tailrace

Slide 9 of Attachment B

Gingerich said this slide shows a comparison of the handheld temperature readings before and after calibration. He said, again, very little change. (*Note: WELW2 is the Wells Dam tailrace redundant back-up datalogger.*)

Slide 10 of Attachment B

Gingerich said this slide compares TDG saturation level by looking at barometer TDG readings pre- and post-calibration. He said this shows a small modification. He explained that barometric pressure is reported in mmHg and is used relative to a barometer reading to calculate TDG.

Slide 11 of Attachment B

Gingerich said the sensors are calibrated across a set of standards by applying different known pressures on the sensors to determine if the readings are accurate after calibration. He said these results are good, only varying about 1 to 2 mmHg across the slope.

Slide 12 of Attachment B

Gingerich said 2019 was a quiet year in terms of river flow, which was less than 80% of average. He said the green hash line represents average river flow. He recalled that in May 2018, average river flow passing Wells Dam broke the record flow since the commissioning of Wells Dam and was 178% of average. In comparison, river flow in 2019 was below average each month except November.

Slide 13 of Attachment B

Gingerich said this slide shows the average river flow in kcfs by month. He said the orange and green lines represent average river flows for two time periods but are similar. He said there is traditionally a freshet in May and June. He also noted the red line (2019) compared to the blue line (2018) and how different those flow years are.

Slide 14 of Attachment B

Gingerich said this slide shows the 120% and 125% standards during the fish bypass season and the 110% standard during the non-bypass season. He said the goal is for the blue diamonds (12C-High or 12 highest consecutive hourly readings in any one 24-hour period) to be below the horizontal lines. He said there was one minor 3-hour exceedance above the 110% standard during the non-bypass period (not shown on this slide); however, the Wells Project was 100% compliant with the 120% and 125% standards during the fish bypass season.

Slide 15 of Attachment B

Gingerich said this slide shows the minor 3-hour exceedance in the Rocky Reach Dam forebay on May 20, 2019. He said this is where the barometric calculations become important; when the readings are just barely missing the standard it is important the sensors are collecting good data. He noted that in 2020, this would not be a violation with the new standards. He said there will not be a Rocky Reach Dam forebay standard during this time of year if Douglas PUD chooses Option B (the second option referred to in Slide 3 of Attachment B).

Slide 16 of Attachment B

Gingerich said Douglas PUD is monitoring the snowpack and river flow this year. He said it feels dry around Wenatchee, with not much snowfall; however, the current forecast at Grand Coulee Dam is 104% of average. He said there is still much of the winter season remaining. He said this slide also shows the National Oceanic Atmospheric Administration (NOAA) 3-month forecast models for DJF (December 2019, January 2020, and February 2020) and JFM (January 2020, February 2020, and March 2020). He noted that the JFM forecast shifted to an equal chance of precipitation.

Slide 17 of Attachment B

Gingerich asked if there are any questions. The Aquatic SWG expressed no questions and thanked Gingerich for the presentation.

4. Draft Wells Hydroelectric Project Total Dissolved Gas Abatement Plan 2019 Annual Report (Andrew Gingerich):

Andrew Gingerich said the data in the presentation titled, *Wells Hydroelectric Project Total Dissolved Gas 2019 Annual Report* (Attachment B) are summarized in the draft *Wells Hydroelectric Project Total Dissolved Gas Abatement Plan 2019 Annual Report*. Gingerich said he hopes to distribute the draft report to the Aquatic SWG for a 30-day review this afternoon and the report is due to the Federal Energy Regulatory Commission (FERC) on February 28, 2020. He said Douglas PUD will request approval of the report during the Aquatic SWG meeting on February 12, 2020. He said this report is a document everyone has seen before and includes the data just presented.

The draft *Wells Hydroelectric Project Total Dissolved Gas Abatement Plan 2019 Annual Report* was distributed to the Aquatic SWG on January 8, 2020, and is available for a 30-day review with edits and comments due to Gingerich by Monday, February 10, 2020.

5. Ecology Rule Change Update (Breean Zimmerman and Andrew Gingerich):

Breean Zimmerman said Ecology recently completed a rule revision phase on December 30, 2019. She said Ecology submitted the rule package to the Environmental Protection Agency (EPA), which has 60 days to approve or 90 days to deny the package. She said if approved, the new rule will be in effect for the 2020 spill season. She said the new rule includes two options for TDG compliance. She said everyone gets Option A, or agencies can choose Option B. She described the options, as follows:

- Option A: TDG must not exceed an average of 115% in the forebay of the next downstream dam and must not exceed an average of 125% in the tailrace of each dam, where averages are calculated as an average of the 12 highest hourly readings in one calendar day.
- Option B: TDG must not exceed a tailrace standard of 125%, calculated as an average of the 12 highest hourly TDG measures in a calendar day; and TDG must not exceed 126%, calculated as an average of any two consecutive hourly TDG measurements.

Zimmerman said the two options were developed to provide more flexibility. She said there is additional work associated with Option B in the form of biological monitoring. She also introduced Bryson Finch (Ecology) who Zimmerman said was instrumental in drafting this new rule. She said Finch joined the call for this discussion in case Aquatic SWG members had questions for him.

Andrew Gingerich said a new TDG criteria for Douglas PUD (Attachment C) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on January 8, 2020. Gingerich clarified that Attachment C is not an Ecology document; rather, it is text copied

from the new rule with emphasis on certain items and highlighted changes for the purposes of internal discussion. He said the document was distributed in case this is helpful for Aquatic SWG members to review what changed from previous language.

Gingerich said Douglas PUD is interested in hearing what Ecology expects for the implementation plan for biological monitoring and how an agency applies for Option A or Option B. He said these questions might be better discussed offline and Douglas PUD can update the Aquatic SWG, as needed. Finch said he can chat with Gingerich offline, but briefly, the implementation plan is not expected to be set in stone and is intended to be more of a guidance document.

Steve Lewis asked if NOAA Fisheries is satisfied with the biological monitoring stipulated under the new rule. Finch said there was a revision in the rule language to address compliance with the Endangered Species Act (ESA). He said the old rule referenced the BiOp but now the first condition under Option B stipulates that the tailrace criteria must be in compliance with ESA consultation documents, so now the new rule and ESA consultation are inherently linked. Lewis asked if there is any expectation that NOAA will issue an addendum to the current BiOp to address this new TDG rule? Finch said he does not believe so because in 2019 the BiOp was sufficient in meeting the Flexible Spill Agreement that the Bonneville Power Administration and USACE signed onto. He said he does not know of any future addenda at this time. He said additionally, because the current BiOp has already been developed for this spill regime, EPA does not need to undergo ESA consultation for this rule submittal because it is already tied into what has been done. He said, however, future ESA consultation has the potential to change Option B.

6. 2020 Gas Abatement Plan and Bypass Operating Plan (Andrew Gingerich):

Andrew Gingerich said each year, Douglas PUD's 401 certification requires submittal of a Gas Abatement Plan (GAP) and an appended Bypass Operating Plan (BOP), and the BOP also needs to be vetted with the Wells HCP Coordinating Committee. Gingerich said the 2020 GAP/BOP will describe how Douglas PUD plans to operate the Wells Project effectively for salmonids during the 2020 bypass season and how Douglas PUD plans to manage the project to meet TDG criteria. He said typically, this document is consistent year-to-year; however, with the new TDG rule change, there are significant changes to the plan this year. He said he hopes to distribute the draft plan to the Aquatic SWG for a 30-day review by January 10, 2020. He said Douglas PUD will request approval of the plan during the Aquatic SWG meeting on February 12, 2020, and the final plan is due to FERC by February 28, 2020. *(Note: the draft 2020 Total Dissolved Gas Abatement Plan [and appended Wells Bypass Operating Plan] was distributed to the Aquatic SWG by Kristi Geris on January 20, 2020.)*

Steve Lewis asked if there will be any big changes in terms of operation of the Wells Dam bypass? Gingerich said the 2020 GAP/BOP was drafted with the assumption that EPA will approve the new TDG rule and the rule will be adopted in the Washington Administrative Code. He said most revisions apply to the April-to-June period and there are also minor revisions to the July-to-August period. He said the major changes will be how TDG compliance is calculated. He said in terms of project operations, he does not expect big changes in order to meet TDG standards; rather, he believes there will be more flexibility and maybe even better compliance with the standards.

Gingerich said there are also revisions to the biological monitoring section of the 2020 GAP/BOP. He said the new TDG rule includes resident fish under biological monitoring. He said this monitoring is not required until 2021; however, Douglas PUD included this in the 2020 GAP/BOP to begin gaining an understanding of where to locate resident fish to meet this requirement in 2021. He said Douglas PUD is not confident in collecting native resident fish at the Rocky Reach Juvenile Fish Bypass System because native resident fish are very infrequently encountered there. He said Douglas PUD needs to begin searching for a good place to collect these fish. He said the rule requires sampling anywhere between McNary Dam and the Chief Joseph Dam tailrace. He said Douglas PUD could sample fish at Rock Island Dam if it is effective, and Grant, Chelan, and Douglas PUDs can use the same data. He said sampling takes place weekly. He said there are also requirements to sample the Snake River and lower Columbia River; however, those requirements are not applicable to Douglas PUD. He said rationally, it makes most sense to sample as close to Wells Dam as possible.

7. Wells Fish Hatchery Brood Year 2019 White Sturgeon Rearing Update (Andrew Gingerich):

Andrew Gingerich said a Wells Fish Hatchery Brood Year 2019 White Sturgeon Rearing Update (Attachment D) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on January 8, 2020. Gingerich said fish are doing quite well and there has been only one mortality since the last meeting in December 2019. He said this was a fish that jumped out of the tank and was found over the weekend during routine cleaning and feeding. He said fish are now large enough that the lids on the tanks need to be kept closed. He said the good news is that as hoped and expected, losses are now basically eliminated. He said the acronym "RT" in Attachment D means round tanks, and column C shows the population in each tank. He said RT9 and RT10 are the smaller fish. He said column E shows average fish size in grams. He said fish are growing quite nicely and he noted the two tanks with 123-gram fish and that most tanks are above 100 grams per fish on average. He also noted the two tanks with smaller fish, notably that these tanks are only 3% and 8% of the total population on station. He said the mean weight of all fish is 92.5 grams

and the weighted mean is 101.4 grams. He recalled stating during the Aquatic SWG conference call on December 11, 2019, that the 60-gram average at that time would be about an 80- to 90-gram average by this meeting, and it turns out the average fish size now is slightly above that prediction. He said this prediction was based on a 40% growth rate, which was the lower end of growth rates in December 2019. He said hatchery staff are collecting great data on growth and what can be done in terms of fish size. He said Douglas PUD has been putting an emphasis on data collection. There are an estimated 575 fish currently on station at Wells Fish Hatchery for release around June 1, 2020. He said water temperatures for the larger fish are down to about ambient temperatures at 57.5°F and the smaller fish are on warmer water at about 59°F. He said column O in Attachment D shows the feed rates. He said the larger fish are being fed 2% of their body weight each day (i.e., 2% feed) and are still growing. He said eventually these fish will be taken down to 1.5% feed, which is basically a maintenance diet. He said the smaller fish are still receiving quite a bit of feed and he believes these fish are just slow growers. He said these fish are healthy, but just with slower growth rates even with warmer water and a lot of food based on their genetics. He said he is optimistic the program will meet the release target, including making up the shortfall of brood year 2018 fish.

Steve Lewis asked if there are any updates on the occurrence of autopolyploidy in the Wells Project? Gingerich said there has been no change since the last time the Aquatic SWG discussed this about 6 months ago (note: spontaneous autopolyploidy was discussed during the Aquatic SWG conference call on June 12 and July 10, 2019). He said Douglas PUD currently does not screen for autopolyploidy, but there are also no direct gamete fish on station at Wells Fish Hatchery. He recalled the assumption is, because these are wild fish brought back to Wells Fish Hatchery and repatriated in the Wells Project, the incidence of autopolyploidy would be low. He also recalled that over a decade ago, the Colville Confederated Tribes (CCT) had released fish in Lake Roosevelt from a conventional program using direct gamete-origin fish. He said males from these historical releases are now becoming reproductively mature, and Lake Roosevelt is also where Douglas PUD collects wild larvae for the Douglas PUD program. He said it is possible there is a slightly higher incidence of spontaneous autopolyploidy in wild-origin fish in this location because of the nature of the program when it started. He said having said that, without data, his guess is the ratio of spontaneous autopolyploidy in Lake Roosevelt wild-origin fish is quite low.

Jason McLellan said the CCT have not documented any spawning by hatchery-sired fish in the upper Columbia River to date. He said this does not mean it has not happened, but there is no record of it. He said the CCT did not monitor for autopolyploidy in Lake Roosevelt because autopolyploidy was not known to occur at the time the Lake Roosevelt program

started, and about the time the autopolyploidy issue was identified the program transitioned to wild-caught progeny. He said there is no documentation of whether the CCT released 12N fish (i.e., 12 copies of each chromosome, or irregular fish, or 10N fish, etc.¹) in Lake Roosevelt. He said it is probable this occurred but there is still no confirmation. He said lastly, the CCT have had a fairly substantial removal program in Lake Roosevelt to address family overrepresentation in hatchery fish. He said this effort targets the largest and oldest fish, which has effectively and substantially reduced the number of potential spawning hatchery fish. He said there still may be a chance there are 10N fish within the progeny reared at Wells Fish Hatchery; however, the likelihood is low.

Gingerich asked if the CCT have conducted a culture count or collected blood samples on any fish, wild or hatchery, in Lake Roosevelt? McLellan said not in Lake Roosevelt, but after the autopolyploidy issue was identified blood smears were collected by the Spokane Tribe of Indians and B.C. Hydro in the upper Columbia River and in Canada; however, the samples were never processed because subsequent research indicated the blood smear technique was not reliable. He said the Canadians did not switch to wild-caught progeny or the repatriation approach for a couple of years after the autopolyploidy issue was identified, but they screened fish during those years and when instances of 12N fish occurred those fish were culled.

Gingerich asked if the CCT, Spokane Tribe of Indians, or B.C. Hydro plan to screen wild fish during future monitoring and evaluation efforts for instances of autopolyploidy? McLellan said the CCT and others have a desire to do this; however, it has been difficult identifying funds to implement it. He said the CCT see value in at least getting a handle on baseline values for both direct gamete-origin hatchery fish and wild fish within the Lake Roosevelt and upper Columbia River populations. He said he also knows of a few instances where staff believed a wild-origin fish was a 12N fish. He said he cannot speak for the Spokane Tribe of Indians or B.C. Hydro; however, these entities and the CCT are generally quite coordinated and he has not heard of any plans to screen for autopolyploidy at this time.

Patrick Verhey said Chelan PUD and Grant PUD have expressed interest in acquiring a culture counter to test a sample of fish towards getting a handle on the rate of autopolyploidy in their respective projects. Verhey asked if Douglas PUD might be interested in coordinating with Chelan and Grant PUDs in obtaining a culture counter. Gingerich said he has had conversations with Lance Keller (Chelan PUD) on the topic of autopolyploidy; however, not about acquiring a culture counter. Gingerich said he is also a bit ignorant to the discussions that have occurred within the Chelan PUD and Grant PUD forums. He said the nature of

¹ White Sturgeon are normally evolutionary octoploids having 8 copies of each chromosome (8N).

conversations Douglas PUD has had with Chelan PUD has been about where Douglas PUD stands on the topic and how is Douglas PUD addressing and handling this potential issue. He said the response has been that Douglas PUD is under the assumption that the risk of autopolyploidy in the Wells Project is low because the Douglas PUD program uses wild-origin fish in a repatriation program. He said having said that, during the first year of the program approximately 2,600 of the 5,000 fish released (and 21,000 fish released to date) came from fish sired from lower Columbia River adults that were brought back to Marion Drain and spawned in a conventional broodstock program. He recalled that Donella Miller (YN) had surplus fish from this brood year that were screened, and the samples came back negative for autopolyploidy. Gingerich said like the CCT and others, Douglas PUD is curious from a biological perspective and it would be nice to prove the assumption that the risk of autopolyploidy in the Wells Project is low. He said, however, at this point Douglas PUD has not had discussions with Chelan PUD or Grant PUD about starting a laboratory and screening fish.

Verhey said the overall sentiment of the Lake Roosevelt co-managers is zero-tolerance for releasing autopolyploidy fish. He said there is a keen interest to verify that agencies are not intentionally releasing autopolyploidy fish for supplementation programs. He said the concern is that if autopolyploidy is identified, the respective forums will need to work through this while still meeting other regulatory requirements and obligations.

McLellan cautioned that care needs to be taken in the use of terminology when describing this situation. He clarified that all White Sturgeon are polyploids (or have multiple copies of chromosomes). He suggested specifically stating 12N, 10N, etc., for clarity in the meeting minutes.

Gingerich said Verhey and McLellan both had good comments. Gingerich said Douglas PUD will likely continue discussing this topic with Grant and Chelan PUDs because he understands this is a topic of interest in other forums. He reiterated that Douglas PUD is curious about this, as well, but suspects the issue affects the Wells Project differently; however, there are no data to confirm this.

8. Third Annual Lamprey Information Exchange (Ralph Lampman and Patrick Verhey):

Ralph Lampman said the first day of this meeting included presentations on ecological knowledge and regulatory management issues. Lampman said Ben Clemens (Statewide Lamprey Coordinator for the Oregon Department of Fish and Wildlife) discussed a new Oregon Lamprey Conservation Plan, Christina Wang (Fish Biologist for USFWS and Chair of the Lamprey Technical Workgroup) discussed the history of listings and current status of Pacific Lamprey, and Laurie Porter (Lamprey Project Lead for the Columbia River Inter-Tribal

Fish Commission) discussed a master plan for Pacific Lamprey that the tribes are developing. Lampman said a session on methodologies included an acoustic tag study at Willamette Falls and statolith chemistry research, each presented by speakers from Oregon State University. He said the statolith research uses eyes to determine aging and seemed promising. He said there was also a presentation of genetic results from a tribal Pacific Lamprey translocation program based on collecting fish at John Day Dam.

Lampman said the second day of this meeting covered other lamprey species, such as Arctic Lamprey from Alaska and other native resident species from Canada. He said there was also a contaminants session and passage improvements session. He said one presentation discussed Willamette Falls passage studies and improvements. He said Kinsey Frick (Fish Biologist for the NOAA Northwest Fisheries Science Center) provided a presentation on a wetted wall at Bonneville Dam. Lampman said he provided a presentation on a 4-inch smooth tube implemented at Prosser Dam. He said Joe Skalicky (Fish Biologist for USFWS) discussed improved passage at hatchery fish ladders and the use of infrared technology to monitor passage.

Patrick Verhey said this was a good summary and he has nothing to add. Kristi Geris asked if materials presented during this workshop are available online? Lampman said not yet but they will be eventually. *(Note: Lampman provided a detailed schedule for this workshop and hyperlinks to materials shared during the workshop to Geris on January 17, 2020, which Geris distributed to the Aquatic SWG that same day.)*

9. Juvenile Pacific Lamprey Literature Review (Ralph Lampman):

Ralph Lampman said he distributed YN comments on the Douglas PUD juvenile Pacific Lamprey literature review to the Aquatic SWG prior to the conference call on January 8, 2020. Lampman said he had comments under Section 4 Conclusions and Discussion. He said he felt parts of the synthesis are not quite up to date or need to be restated in a different way. He said he feels that tag technology is available, there is someone who can produce tags in high numbers, and studies have already been implemented using these tags. He said there is still room for improvement; however, he believes it is not quite accurate to say the technology is not there. He said he also believes juvenile fish source is worth discussing. He said he thinks it would be best to obtain fish from the project area or upstream of it; however, he suggested also considering other alternatives such as artificial propagated juveniles. He said the YN and USFWS have produced some artificially propagated fish, not in high numbers, but the effort is reaching a point where more can be produced. He said this is being tested now. He said another consideration is a downstream juvenile fish source and whether these fish could be used for a study at Wells Dam. He said in the Yakima River Basin, it took 5 years to

collect 745 adults and 6 years to collect 1,500 juveniles at the Toppenish screw trap. He said after 5 years of the Douglas PUD translocation program there is a good chance these same numbers will be collected at the Methow screw trap. He said, however, it is also good to discuss alternative options in case these numbers do not show up. He said next, there is text in the final paragraph of this section that is copied directly from the *Pacific Lamprey Management Plan*. He said he feels the tag technology and methodologies part of this statement has already been achieved and now the focus is on creating a sufficient source of macrophthalmia in or upstream of the project. He said lastly, he thinks an efficient approach to collecting data could be to coordinate an acoustic Pacific Lamprey study with an acoustic juvenile salmonid study, and suggested coordinating with Chelan and Grant PUDs, as well.

Chas Kyger said he agrees with Lampman that some of the text copied from the *Pacific Lamprey Management Plan* is outdated, notably regarding improvements in tag technology. Kyger proposed to delete this language. He said Lampman also made good points regarding coordination and Douglas PUD can develop a study plan that focuses on this in the future. Kyger said for this document, he proposes to keep the focus on the summary of literature. Lampman said the YN supports this approach. Kyger asked, for the administrative record, if the YN approves the juvenile Pacific Lamprey literature review with the revisions discussed. Lampman said the YN approves. (Note: Lampman also provided YN approval of the adult Pacific Lamprey literature review following the Aquatic SWG conference call on January 8, 2020, and both approvals were noted in the Aquatic SWG December 11, 2019 conference call minutes.)

Kyger reminded the Aquatic SWG that Douglas PUD has an action item to revisit this literature review each fall to keep it current. He said Douglas PUD will delete language from Section 4 of the juvenile Pacific Lamprey literature review that was copied from the *Pacific Lamprey Management Plan* about the current state of tag technology because this language is dated and not relevant to the document library. (Note: Kyger deleted this language following the conference call on January 8, 2020, and the updated literature review is available for download from the Aquatic SWG Extranet Site.)

Lampman asked when the next Douglas PUD juvenile salmonid study will be that will use acoustic tags. Kyger said he is unsure about an upcoming study that will use acoustic tags. He said Douglas PUD is conducting a survival study in 2020, but with PIT tags. He said Douglas PUD has several acoustic arrays in place for White Sturgeon monitoring, so regarding coordinating with other studies, he does not believe acoustic arrays would be the limiting factor. Lampman asked if the arrays are located in the Wells Dam tailrace and close to the forebay and Kyger said yes. Andrew Gingerich said there are three active acoustic

receivers in the Wells Dam tailrace and another 17 receivers from the Wells Dam forebay up to the Chief Joseph Dam tailrace. He said, however, White Sturgeon are carrying larger, more powerful tags so tag testing would be needed if the arrays were to be used for a Pacific Lamprey study. He said the Methow and Okanogan rivers are lacking acoustic receivers. He said the Well Project boundary is only 1 mile up the Methow River. He said he agrees with Kyger that depending on tag type he does not view the receivers as a limiting factor. Gingerich said the assumptions of the study, tag type, and other technical points of discussion would be more limiting than the cost of receivers. He said he believes Chelan PUD is planning an acoustic survival study, but this would be a question for Lance Keller or Steve Hemstrom (Chelan PUD). Lampman asked when Douglas PUD's PIT tag study is and Gingerich said April to May 2020. Lampman asked when the last acoustic study was for the Wells Project? Gingerich said there has never been an acoustic study for salmonids for the Wells Project. He said Douglas PUD has conducted a small acoustic study with Pacific Lamprey and implemented a long-term monitoring program for White Sturgeon based on acoustic and PIT tags.

Lampman said he would also like to continue talking about study fish for a future study, and he asked if there is a way to capture juveniles at Wells Dam. Kyger said there is not because there is no separator system at Wells Dam. Gingerich said there are no traveling screens either and the trash racks are large enough for a 5-gallon bucket to fit through. Kyger said screw traps seem to be the best if not only option. Gingerich said especially the case for collecting fish that are actively migrating. He said more concerning is whether the tagged fish will pass the project during the battery life of the tag. He added that there are some promising studies using the Pacific Northwest National Laboratory tag (Eel-Lamprey Acoustic Tag) at McNary Dam. Lampman said he believes that all the fish the YN tagged migrated from the middle reaches of the Yakima River down to McNary Dam over a 2- to 3-week period. He said collecting and tagging fish when fish are actively moving downstream during a time when river flow is high seems to be important.

VII. Administration

1. Upcoming Meetings (Kristi Geris):

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

Other upcoming meetings include March 11 and April 8, 2020 (TBD).

List of Attachments

- Attachment A List of Attendees
- Attachment B *Wells Hydroelectric Project Total Dissolved Gas 2019 Annual Report* presentation
- Attachment C New TDG Criteria for Douglas PUD
- Attachment D Wells Fish Hatchery Brood Year 2019 White Sturgeon Rearing Update

Attachment A – Attendees

Name	Role	Organization
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
Bryson Finch†	Technical Support	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
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation

Notes:

- † Joined for the Ecology Rule Change Update