FINAL

Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties **Date:** October 9, 2019

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

Re: Final Minutes of the September 11, 2019 Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, September 11, 2019, from 10:00 a.m. to 11:15 a.m. Attendees are listed in Attachment A of these conference call minutes.

I. Summary of Action Items

1. Andrew Gingerich will edit the Aquatic SWG revised draft August 14, 2019 conference call minutes, Washington State Department of Ecology (Ecology) Total Dissolved Gas (TDG) Proposed Rule Change discussion, as discussed, and will provide the edits to Breean Zimmerman for review and approval, prior to sending to Kristi Geris for finalizing and distribution to the Aquatic SWG (Item VI-1). *(Note: Zimmerman provided revised text to Geris on September 13, 2019, which Geris incorporated into the final August 14, 2019 conference call minutes and distributed to the Aquatic SWG that same day. Zimmerman provided additional clarification to Geris on September 19, 2019, which Geris incorporated into a revised final August 14, 2019 conference call minutes and distributed to the Aquatic SWG that same day.)*
2. Steve Lewis will discuss internally with U.S. Fish and Wildlife Service the appropriate fish size threshold for identifying Bull Trout passing Wells Dam fish ladder count windows as subadults (Item VI-1).
3. Douglas PUD will upload passive integrated transponder (PIT)-tag data from the Douglas PUD 2019 Pacific Lamprey translocation effort to the PIT Tag Information System (PTAGIS) and will provide a list of the tag file names and notification of the upload to the Aquatic SWG once the data are available (Item VI-2). *(Note: Andrew Gingerich uploaded these data to PTAGIS and provided a list of tag file names to Kristi Geris on September 27, 2019, which Geris distributed to the Aquatic SWG that same day.)*
4. The Aquatic SWG meeting on October 9, 2019, 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. 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 are listed in Attachment A) and reviewed the agenda. Ferguson asked for any additions or changes to the agenda. Andrew Gingerich added a brood year (BY) 2019 Wells Fish Hatchery White Sturgeon update to the 2019 White Sturgeon monitoring and evaluation (M&E) update.

   The revised draft August 14, 2019 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. Geris said there is one outstanding comment under the Ecology TDG Proposed Rule Change discussion. Geris said as currently written, the minutes indicate that Breean Zimmerman said Option 1 of the new rule changes how the consecutive rolling average of hourly TDG values is calculated where the average of the highest two hours daily would apply. Geris said the outstanding comment suggests further clarifying that this new rule indicates the rolling average will now only apply to TDG values within the same calendar day that ends at midnight. Gingerich explained that currently, the 12C-High standard is calculated using the 12 highest consecutive hourly readings regardless of the 24-hour period. He said this means if one exceedance event spans over the course of two calendar days, this counts as two violations. He said the new rule changes the 12C-High calculation such that there will not be two violations if one event occurs over the midnight hour. Zimmerman agreed with Gingerich's clarification. Ferguson suggested that Gingerich edit the text for clarity and Zimmerman said Ecology would like to review the edits prior to finalizing. Gingerich said he will edit the Aquatic SWG revised draft August 14, 2019 conference call

minutes, as discussed, and will provide the edits to Zimmerman for review and approval, prior to sending to Geris for finalizing and distribution to the Aquatic SWG. Aquatic SWG members present approved the August 14, 2019 conference call minutes, as revised, contingent on incorporating the further edits, as discussed. *(Note: Zimmerman provided revised text to Geris on September 13, 2019, which Geris incorporated into the final August 14, 2019 conference call minutes and distributed to the Aquatic SWG that same day. Zimmerman provided additional clarification to Geris on September 19, 2019, which Geris incorporated into a revised final August 14, 2019 conference call minutes and distributed to the Aquatic SWG that same day.)*

Action items from the Aquatic SWG conference call on August 14, 2019, are as follows (note: the following italicized item numbers correspond to agenda items from the August 14, 2019 conference call):

- *Steve Lewis will discuss internally with U.S. Fish and Wildlife Service 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 review juvenile Pacific lamprey data collected at screw traps located upstream of Wells Dam, including: 1) how the data were recorded, which will also be redefined if needed; and 2) trends in the data, if any (Item VI-1).*
  This will be discussed during today's conference call.
- *Breean Zimmerman will distribute a link to the Ecology TDG proposed rule change, which is available for public comment, and related public meetings (Item VI-5).*
  Zimmerman provided the link to John Ferguson following the conference call on August 14, 2019, which Kristi Geris distributed to the Aquatic SWG that same day.

2. 2019 Pacific Lamprey Translocation Effort Summary (Chas Kyger):

A 2019 Pacific Lamprey translocation effort summary table (Attachment B, page 1) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 11, 2019.

Chas Kyger said a total of 150 adult Pacific Lamprey were translocated to three release locations upstream of Wells Dam, including 102 fish at Starr Boat Launch, 22 fish at Salmon Creek, and 26 fish at Omak Creek. He said the 48 fish released in Salmon and Omak creeks were tagged and measured by Douglas PUD and transported to the release locations by the Colville Confederated Tribes (CCT). Kyger said Douglas PUD hoped to obtain additional fish from Grant PUD for translocation this year; however, the run has already declined, and it is unlikely additional fish will be available.

Ralph Lampman asked if PIT-tag data from this year's effort are available on PITAGIS. Andrew Gingerich said he just needs to obtain release location information from John Rohrbach (CCT), and then Gingerich will upload the data to PTAGIS and will provide a list of the tag file names and notification of the upload to the Aquatic SWG once the data are available. *(Note: Gingerich uploaded these data to PTAGIS and provided a list of tag file names to Geris on September 27, 2019, which Geris distributed to the Aquatic SWG that same day.)*

3. Juvenile Pacific Lamprey Screw Trap Data Summary (Chas Kyger):

Pacific Lamprey screw trap data (Attachment B, pages 2 to 4) were distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 11, 2019.

Chas Kyger said Andrew Gingerich obtained a summary of screw trap data for 2004 to 2018 from the Columbia River Data Access in Real Time (DART) website (Attachment B, Figure 1, page 2). Kyger cautioned when reviewing these data, to be cognizant that trapping efforts vary year-to-year based on river conditions. He said, for example, the trapping effort is lower for years with high river flow or heavy ice accumulation. He said nevertheless, this is a good dataset to review for trends. He said the data show the amount of juvenile and larval fish moving out of the system, overlaid with adult counts at Wells Dam.

John Ferguson asked if the data are not adjusted for lag time, for example, the data show how many adults passed Wells Dam in a certain year compared to how many juveniles were collected that same year. Kyger said this is correct and he recalled an email from Ralph Lampman indicating these data suggest a 5-year cycle (distributed to the Aquatic SWG prior to the conference call on September 11, 2019). Lampman added that if the fish overwinter, this might mean a 4-year cycle.

Lampman asked about obtaining these data from DART. Kyger said he believes the Methow River screw trap data are collected at the McFarland Creek bridge. Gingerich said once on the DART website (http://www.cbr.washington.edu/dart/), under "Salmonid Passage," select "Trap Collected Counts." He said to select an output format, the year, "Methow River Trap [2004]," "Pacific Lamprey Ammocoete," and select "Submit Query." He said this provides an output, and different data can be pasted together in a spreadsheet. *(Note: Gingerich provided the direct link to the query page [http://www.cbr.washington.edu/dart/query/trap_graph_text] following the Aquatic SWG conference call on September 11, 2019, which Geris distributed to the Aquatic SWG that same day.)*

Lampman asked if the outputs include the dates the trap was active. Kyger said he believes there is a code that indicates whether the trap was operational or not. Gingerich asked Lampman to contact him if he is interested in chatting more on how to use this database.

Kyger said Figure 2 (Attachment B, page 4) shows the seasonal distribution for juvenile and larval Pacific Lamprey counted at the Methow River screw trap. He said this shows what one might expect to see for the spring outmigration. Gingerich noted that Table 1 (Attachment B, page 3) is the table form of Figure 1 (Attachment B, page 2). He said Figure 2 does not show specific yearly data; rather, it shows counts separated by the time of year. Lampman noted the spike in July, and Kyger said this may reflect a high river flow event (e.g., storm event) but he is unsure whether this is correct. Kyger also noted that there were one or two fish counted that are on the tail ends of this dataset and are not shown in the figure. Gingerich noted the gap in May and questioned whether these data truly show a bimodal distribution or if this gap is an artifact of high river flow when the trap was not operational. Kyger agreed and said it would be interesting to review these data alongside trap activity. Lampman said Pacific Lamprey often migrate from late April to late May when river flow is high.

Patrick Verhey recalled the impetus for reviewing these data was to determine where there might be study fish available to conduct survival studies. Gingerich agreed and said the *Pacific Lamprey Management Plan* includes language about conducting a juvenile survival study with one of the criteria being that an adequate number of study fish upstream of Wells Dam could be collected. He said to get at this question, Douglas PUD reviewed these Methow River screw trap data, which seem to indicate in some years there are fish available, and if translocation is successful, screw trap counts should increase even more assuming Pacific Lamprey spawn in the Methow River Basin.

Verhey said for this dataset, the most juveniles counted occurred in 2010 at 1,096 fish. He said this seems to be only a fraction of the number of fish needed for a paired-release survival study. Gingerich said acoustic data require less fish compared to PIT-tag data because the detection efficiency is higher. He said so long as the biological metrics are feasible, an acoustic study can be conducted with less fish than a conventional PIT-tag paired release study. Lampman agreed and said only 1,000 Chinook Salmon were used in the latest Pacific Northwest National Laboratory acoustic study.

Lampman said early results from the Nez Perce translocation efforts in the Snake River show that translocated adults are producing just as many or a little more fish than wild adults do per capita in terms of juvenile Pacific Lamprey production, based on genetic sampling at the John Day Dam juvenile monitoring facility and screen impingement mortality sampling at Lower Granite Dam. He said the Yakama Nation (YN) is trying to determine at what age juvenile Pacific Lamprey emigrate to the ocean; however, it seems fish emigrate anywhere between 3 and 9 years old with no clear peak in ages. He said available genetic data from the Columbia River Inter-Tribal Fish Commission indicate that the majority of adults spend about

5 to 6 years in the ocean. Gingerich asked how the YN is aging juvenile Pacific Lamprey and are the fish actively or passively migrating down tributaries at 3 to 9 years old? He said he asks because with an acoustic tag, he wonders about the confidence that these fish will interact with the dam and continue moving downstream while the tag life is still functioning. Lampman said during translocation, the YN collects genetic samples from the adults and when juveniles are later encountered (e.g., at Lower Granite Dam or in screw traps), data are collected to assign the juvenile to an adult and determine at what age the adult spawned. He said juvenile Pacific Lamprey have a finite time to reach saltwater, so they appear to migrate actively, but he is unsure whether larvae are actively or passively migrating (maybe a combination of both). He said the YN's acoustic data in the Yakima River indicate Pacific Lamprey are moving when river flow increases. He said that as long as juveniles are tagged and released during high river flow (which is typically when they are captured), the fish should continue moving. He said fish also seemed to move more rapidly in the mainstem compared to the tributaries. He said, for example, fish collected in the Yakima River were released in tributaries with decreased river flow and the fish did not move for a while until river flow increased. He said more data are needed but this seems to be the trend so far.

4. **2019 Wells Dam Bypass and Total Dissolved Gas Review (Andrew Gingerich):** Andrew Gingerich said 2019 TDG performance figures (Attachment B, pages 5 to 6) were distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 11, 2019.

   Gingerich said the 2019 Wells Dam bypass season operated from April to August 2019, and officially ended on August 19, 2019. He said 2019 was a good year in terms of TDG compliance and was aided by lower than average river flow. He said Figure 3 (Attachment B, page 5) shows hourly TDG values in the Wells Dam tailrace through the 2019 bypass season. He said there were no TDG violations of the 120% and 125% standards. He said there may be one violation in early spring, but he suspects this is actually a calibration error and plans to double-check these values. He said in the Rocky Reach Dam forebay, there were two violations of the 115% 12C-High standard on May 20 and 21, 2019, as shown in Figure 4 (Attachment B, page 6). He said this was one TDG event spanning over the midnight hour, which resulted in two violations.

   Gingerich said these preliminary data will be verified with Chelan PUD and included in a final report available for Aquatic SWG review in January 2020, with approval and submittal to the Federal Energy Regulatory Commission by February 29, 2020.

5. White Sturgeon (Andrew Gingerich):

BY2019 Wells Fish Hatchery White Sturgeon Update

Andrew Gingerich said a BY2019 Wells Fish Hatchery White Sturgeon update (Attachment B, page 7) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 11, 2019.

Gingerich said at Wells Fish Hatchery, there are currently 7 tanks of BY2019 White Sturgeon on station. He said densities are low, which seems to be working well. He said fish are growing rapidly, which is good news. He said Table 2 (Attachment B, page 7) shows fish size per tank in fish per pound and in average fish size by grams. He reviewed the notes under Table 2. He said Douglas PUD received two batches of fish from the CCT as a result of their fishing effort, totaling 2,052 fish. He said the program is currently at 52% survival, which is down 10% since the last Aquatic SWG meeting. He said fish loss is contained to the smallest fish and hatchery staff are working hard to sort and grade these fish to maximize survival. He said a couple tanks with the smallest fish continue to have fish loss, whereas the three tanks with the larger fish have had no recent mortalities. He said these larger fish are out of the shallow inserts and into the deep Combi tanks, which are equipped with a flush screen on the floor to keep the tanks clean. He said he feels encouraged by this year's program as a whole and how things are going with husbandry and the learning process. He said hatchery staff are starting to hypothesize about being "out of the woods" with regard to fish size and survival. He said over the years, staff have learned that it seems fish are delicate in the early stages but at a certain size the fish turn over and do much better. He said staff believe the fish are reaching this threshold, which seems to be around an average fish size of 4 grams. He said this size is also when fish are moved out of the shallow inserts and to the deeper Combi tanks. He said the fish currently in the deeper tanks are being fed 10% to 20% body weight per day and putting on 50% mass per week. He said among the 27 mortalities, 24 fish came from the two tanks with the smallest fish. He said these fish stayed skinny and then started displaying a horseshoe shape. He said even if these fish lived, it is unlikely they would have converted. He said currently, there are 1,066 fish on station, which are all getting close to the "bulletproof" fish size. He said he expects to be close to zero losses by the Aquatic SWG meeting on October 9, 2019, which would put the program at the highest survival at Wells Fish Hatchery, to date.

Gingerich said considering this, it may be a good time to start talking about surplus fish. He said Douglas PUD will plant 551 fish in May or June 2020, which includes 325 fish[1] plus the shortfall in the BY2018 program. He said this leaves about 400 to 500 extra fish on station. He

[1] As stipulated by the Statement of Agreement, *Wells Reservoir White Sturgeon Supplementation 2018-2022*, approved by the Aquatic SWG on January 11, 2017.

said he is unsure how other programs are doing to date, but Douglas PUD will gladly coordinate with Canada, the CCT, Washington Department of Fish and Wildlife (WDFW), or other entities who might be interested in receiving additional fish. He clarified he is not suggesting getting rid of fish just yet; rather, he wants to start these discussions in the event there are surplus fish. He said lastly, Table 3 (Attachment B, page 7) shows projected fish growth. He said if fish remain on the current temperatures and feeding regimes, fish would be at program fish size by December 2019; therefore, hatchery staff are already decreasing the water temperatures on the biggest fish. He said, for example, the largest fish started on 61°F water that has been decreased to 58°F. He said the feed ration has also been reduced from 20% body weight to 10% body weight per day. He said feed can be reduced to 2% body weight and still result in fish growth. He said projecting fish growth is a little bit of a science and a little bit of an art. He said Table 3 projects fish size if fish are growing at 25% body weight every 2 weeks and shows when fish might reach the program size threshold. He said Tank 7 contains the smallest fish and hatchery staff will continue adjusting the water temperature and feed rate to keep growth up in these fish. He said in summary, it seems likely all fish will reach the 200-gram threshold or larger and the program target may be reached before the end of May 2020.

Jason McLellan said regarding the fate of surplus fish, the CCT coordinate via agreements with the Co-managers. He said he does not believe the CCT have ever asked Douglas PUD to euthanize surplus fish from the Wells Program, and the original agreement between the Lake Roosevelt Co-managers (WDFW, Spokane Tribe of Indians, and the CCT) to allow use of wild-caught larvae from Lake Roosevelt for the Wells Program was that any surplus from the Wells Program would be returned to Lake Roosevelt, if needed. He said this year, Mitch Combs (WDFW, Sherman Creek Fish Hatchery) has surplus fish for a research objective and these surplus fish will be released earlier than the regular program fish. McLellan suggested that Douglas PUD coordinate with WDFW in case there is a need to backfill the Sherman Creek Program with surplus fish from the Wells Program. Gingerich said Douglas PUD has no objections to McLellan's comments, but Douglas PUD currently does not have an agreement with any other agency to provide fish and there is cost associated to raising surplus fish, including staff hours, feed, etc.

Laura Heironimus asked whether Wells Fish Hatchery has the ability to hold surplus fish and for how long? Gingerich said Wells Fish Hatchery has the capacity to hold surplus fish, but once targets are met under the *Aquatic Settlement Agreement*, thought needs to be taken about what it takes to keep these fish on station when the fish are not needed to meet program.

McLellan clarified his comments were that the Co-managers will decide where the surplus fish will go, and Douglas PUD decides how long they can hold them. He said if there is sensitivity associated to the cost of holding fish, it would be helpful to know sooner rather than later when Douglas PUD would need to offload fish from the facility. He said this has implications on how the Lake Roosevelt Co-managers handle the use of surplus fish from the Sherman Creek Program to address the research questions. Gingerich said historically, once a program reaches zero losses over 30 days, there will be no further losses to the program. He said he is optimistic the Wells Program will reach this point within the next 30 days. He said at this point, he cannot provide an exact date as to when surplus fish will need to be offloaded, but it seems this date will come sooner rather than later. He said once the program goal is met, he knows hatchery staff will welcome a reduction in fish on station because there are other obligations at the hatchery. He said Douglas PUD welcomes additional discussion on this over the next weeks as opposed to waiting for the next regular Aquatic SWG meeting and encourages having these discussions with Co-managers. McLellan agreed.

2019 White Sturgeon M&E Update

Andrew Gingerich said a 2019 in-season White Sturgeon M&E update (Attachment B, pages 8 to 10) was distributed to the Aquatic SWG by Kristi Geris prior to the Aquatic SWG conference call on September 11, 2019.

Gingerich recalled during the last Aquatic SWG conference call on August 14, 2019, he provided an update at the midway point of adult indexing. He said this effort is now complete, which resulted in capturing 267 fish over 4 weeks. He said crews were fishing 12 lines (or 480 hooks) per day, using 14- (14/0), 16- (16/0), 18- (18/0), and 20-aught (20/0) hooks. He said of these hooks, 2.8% of the hooks captured fish, all of which were wild sub-adults and most (99%) were 5- to 6-year-old Wells Program hatchery fish. He noted that the fishing lines were swamped by smaller hatchery fish. He said of the 276 fish, 12 fish were captured twice resulting in 255 unique fish being caught. He said a couple of wild, unmarked sub-adults were captured and DNA and fin ray clips were collected from those fish. He said lastly, the program had its first ever mortality on a line. He said in past years, all fish caught were released in good condition. He said the mortality in 2019 appeared to have been dead on the line for some time. He said crews followed standard practice and set the lines in the afternoon and picked the lines the next morning. He said the mortality was a small 6-year-old with a left scute mark. He said the average fish size of a 6-year-old is greater than 80 centimeters (cm) and this fish was in the 40-cm range. He said the left scute mark indicates this was a direct gamete-origin fish, sired from adults collected in the lower Columbia River and the eggs hatched out at Wells Fish Hatchery. He said the fish had a full

stomach containing well-digested fish matter, small mollusks, and smaller native crayfish. He said although short in length, the fish appeared to be in relatively good condition aside from what looked like embolisms around the heart area. He said the hook entered the fish through the mouth and exited on the ventral side on the breast, through the hard tissue (Attachment B, page 9, bottom photograph). He said there were no obvious signs of internal bleeding.

Ralph Lampman asked if there appeared to be any evidence of larval Pacific Lamprey in the stomach of the mortality and Gingerich said there was not.

Jason McLellan said the CCT run a similar hook configuration in Lake Roosevelt for standard stock assessments and fish captured are of similar size as reported for this Wells Program and are also regularly dominated by hatchery versus wild fish. He said he does not agree that the lines were swamped because it seems only a small percentage of hooks had fish on them (2.8%) compared to other efforts. Gingerich said he expected to catch more hatchery fish over the years. McLellan agreed and said, however, the lines are nowhere near saturation. Laura Heironimus agreed and said it is not uncommon with these sizes of hooks to catch large wild fish on every other hook. McLellan said having a lot of hatchery fish on the line is not a reason for the lack of wild fish on the line. He said it seems the larger, older wild fish are less susceptible to gear in general and he believes this is what is happening. Gingerich agreed and said he knows these fish are in the reservoir based on acoustic data. McLellan said this size gear is ideal for 70- to 150-cm-size fish and as fish size increases, catch rate drops off.

Gingerich said crews are now in the beginning of the second session of juvenile White Sturgeon M&E (Attachment B, page 10). He said the first lines were set on Sunday, September 8, 2019, and pulled on Monday, September 9, 2019. He said this effort will end on October 4, 2019, totaling 4 weeks, and is basically an identical effort as was conducted earlier this year. He said the biggest difference is that smaller hooks will be used. He said the first 2 days of the effort resulted in capturing 65 fish, which is a strong start. He said it is not uncommon to do well this time of year because when water temperatures are peaking there tends to be heavy fish movement. He said acoustic data also indicate the fish are actively moving around this time of year. He said of the 960 hooks that were set, 6.8% captured fish. He said even in areas where it seems there would be marginal catch, fish are recruiting to the gear. He said complete results for the second session will be available in October 2019, and results for the entire 2019 M&E effort will be provided in a report in early 2020. He recalled that juvenile indexing was not conducted in 2018 and noted that juvenile indexing is also not planned for 2020, per the schedule. He said in early 2020, it may be beneficial to review the

White Sturgeon Management Plan and start discussing plans for subsequent monitoring efforts. He said future White Sturgeon efforts will largely shift the focus to adult reproductive assessment work, involving acoustically tagging fish to identify where and when successful spawning events are occurring.

McLellan asked if this 2019 juvenile session is the fourth year of juvenile indexing and Gingerich said this is correct. McLellan asked if Dave Robichaud (LGL Limited) plans to include the hatchery fish captured during the adult effort in the survival modeling. Gingerich said these data have not been included in the past because historically, there have not been as many hatchery fish recruiting to adult gear. He said he believes this is something that can be included this year now that larger numbers of hatchery fish are recruiting to adult gear. McLellan said he believes these data will be helpful to compare recruitment to different gear.

VII. Administration

1. **Upcoming Meetings (John Ferguson):**
   The Aquatic SWG meeting on October 9, 2019, will be held by conference call.

   Other upcoming meetings include November 13 and December 11, 2019 (TBD).

List of Attachments

Attachment A List of Attendees

Attachment B 2019 Pacific Lamprey Translocation Summary Table, Pacific Lamprey Screw Trap Data, 2019 TDG Performance Figures, Brood Year 2019 Wells White Sturgeon Update, 2019 In-Season White Sturgeon M&E Update

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
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 Technical Alternate	Washington Department of Fish and Wildlife
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes