



Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties

Date: April 19, 2017

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

Re: Final Minutes of the March 8, 2017, Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met by conference call on Wednesday, March 8, 2017, 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. Anchor QEA will distribute a summary outlining Aquatic Settlement Agreement (ASA) documents available for review (Item VI-3). *(Note: Kristi Geris distributed this summary to the Aquatic SWG on March 16, 2017.)*
2. Anchor QEA will contact Tracy Hillman (Rocky Reach Fish Forum [RRFF] Facilitator) and Chelan PUD to gauge interest in co-sponsoring the upcoming Pacific Lamprey Regional Workshop (Item VI-6). *(Note: John Ferguson began these discussions with Hillman on March 9, 2017.)*
3. A Pacific Lamprey Subgroup of the Aquatic SWG will convene on April 12, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington, to further discuss: 1) the 2016 Pacific Lamprey Study Update; 2) the Pacific Lamprey Study Alternative Actions document; 3) historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam and Wells Project operation and flow data; and 4) the U.S. Fish and Wildlife Service (USFWS) proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis (Item VI-6).
4. A Pacific Lamprey Regional Workshop will be held on April 13, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington, following the monthly Aquatic SWG meeting (Item VI-6).
5. Douglas PUD will inquire with Grant PUD regarding when the acoustic tags implanted in 2016 Grant PUD Pacific lamprey study fish will come back online from sleep mode (Item VI-6).
6. Douglas PUD will verify the expected battery life for the acoustic tags implanted in 2016 Douglas PUD Pacific lamprey study fish (Item VI-6).

7. Douglas PUD will conduct mobile tracking efforts in the Rocky Reach Reservoir prior to the expected expiration of battery life for the acoustic tags implanted in 2016 by Douglas PUD and Grant PUD Pacific lamprey study fish (Item VI-6).
8. Bob Rose will ask Ralph Lampman (Yakama Nation [YN]) if Lampman is available to attend the Pacific Lamprey Regional Workshop on April 13, 2017 (Item VI-6).
9. **The Aquatic SWG meeting on April 13, 2017, will be held in-person at 9:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington (Item VII-1).**

II. Summary of Decisions

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

III. Agreements

1. Aquatic SWG members present agreed to reschedule the Aquatic SWG meeting on April 12, 2017, at 10:00 a.m., to April 13, 2017, at 9:00 a.m., to accommodate a Pacific Lamprey Subgroup meeting and Pacific Lamprey Regional Workshop (Item VI-6).

IV. Review Items

1. Kristi Geris sent an email to the Aquatic SWG on February 21, 2017, notifying them that the Draft 2017 Aquatic Settlement Agreement Action Plan is available for review. Douglas PUD will request approval of the plan during the Aquatic SWG meeting on April 13, 2017 (Item VI-2).
2. Kristi Geris sent an email to the Aquatic SWG on March 1, 2017, notifying them that the draft report, *Evaluations of White Sturgeon Supplementation and Management in the Wells Reservoir, 2016*, is available for a 60-day review with edits and comments due to Andrew Gingerich by Monday, May 1, 2017.
3. Kristi Geris sent an email to the Aquatic SWG on March 21, 2017, notifying them that the following documents are available for a 45-day review period: Draft 2016 ASA Annual Report, Draft 2016 Aquatic Nuisance Species Management Plan Annual Report, Draft 2016 Bull Trout Management Plan Annual Report, Draft 2016 Pacific Lamprey Management Plan Annual Report, Draft 2016 Resident Fish Management Plan Annual Report, Draft 2016 Water Quality Management Plan Annual Report, Draft 2016 Water Temperature Annual Report, and Draft 2016 White Sturgeon Management Plan Annual Report. Edits and comments are due to Geris and Douglas PUD by Friday, May 5, 2017 (Item VI-3).

V. Documents Finalized

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

VI. Summary of Discussion

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 other changes to the agenda. Andrew Gingerich added a Wells Project water forecast update.

The revised draft February 8, 2017, conference call minutes were reviewed. Kristi Geris said she added under the review items the draft report, *Evaluations of White Sturgeon Supplementation and Management in the Wells Reservoir, 2016*, which is available for a 60-day review with edits and comments due to Gingerich by Monday, May 1, 2017. Geris said all other comments and revisions received from members of the Aquatic SWG were incorporated into the revised minutes, and there are no outstanding edits or questions to discuss. Aquatic SWG members present approved the February 8, 2017, conference call minutes, as revised.

Action items from the last Aquatic SWG conference call on February 8, 2017, are as follows (note: the following italicized item numbers correspond to agenda items from the February 8, 2017, conference call):

- *Douglas PUD will provide historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam, as well as Wells Project operation and flow data, to Kristi Geris for distribution to the Aquatic SWG (Item VI-5).*
Andrew Gingerich provided these data to Geris on March 7, 2017, which Geris distributed to the Aquatic SWG on March 8, 2017. This will be further discussed during today's conference call.
- *Douglas PUD will provide a brief document (2 to 3 pages) outlining merits of all reasonable alternatives for studies of Pacific lamprey in 2017, in the context of a broader plan for meeting Pacific Lamprey Management Plan requirements, to Kristi Geris for distribution to the Aquatic SWG for discussion at the Aquatic SWG meeting on March 8, 2017 (Item VI-5).*
Chas Kyger provided this document to Geris on February 28, 2017, which Geris distributed to the Aquatic SWG that same day. This will be further discussed during today's conference call.
- *Douglas PUD, in coordination with Dave Robichaud (LGL Limited), will provide a summary document (5 to 10 pages) highlighting results and findings to date from the 2016 Pacific*

Lamprey Study, including fish movement, spatial distribution, size metrics versus distance traveled, and detection efficiency for receivers and different detection zones, for discussion at the Aquatic SWG meeting on March 8, 2017 (Item VI-5).

Chas Kyger provided this document to Kristi Geris on February 28, 2017, which Geris distributed to the Aquatic SWG that same day. This will be further discussed during today's conference call.

- *USFWS will provide a proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis, for further discussion at a future Aquatic SWG meeting (Item VI-5).*

Steve Lewis provided a draft proposal to Kristi Geris on March 2, 2017, which Geris distributed to the Aquatic SWG that same day. This will be further discussed during today's conference call.

2. Draft 2017 Aquatic Settlement Agreement Action Plan (Andrew Gingerich):

Andrew Gingerich said Kristi Geris sent an email to the Aquatic SWG on February 21, 2017, notifying them that the Draft 2017 ASA Action Plan is available for review. Gingerich said each year, this plan is developed and distributed for review and approval; however, the plan is not a FERC requirement. He said the plan helps with planning and contracting for the year. Douglas PUD will request approval of the plan during the Aquatic SWG meeting on April 13, 2017.

3. Draft 2016 Aquatic Nuisance Species Management Plan Annual Report and Draft 2016 Water Temperature Annual Report (Andrew Gingerich):

Andrew Gingerich said Kristi Geris sent an email to the Aquatic SWG on February 21, 2017, notifying them that the Draft 2016 Aquatic Nuisance Species Management Plan Annual Report and Draft 2016 Water Temperature Annual Report are available for a 30-day review period, with comments due to Douglas PUD by Wednesday, March 22, 2017. Gingerich said historically, these reports were due to FERC by April 1 and 30, respectively. He recalled the letter to FERC requesting permission from FERC to combine ASA and Water Quality Certification reporting deadlines into one submittal, as requested and approved by the Aquatic SWG. He said the FERC Order approving this request (Attachment B) was distributed to the Aquatic SWG by Geris on February 27, 2017. He said, therefore, there is additional time to review these reports, if needed. He said these reports, along with the other aquatic resource management plan annual reports, will be appended to the 2016 ASA Annual Report, which will be available for review prior to the May 31 deadline to FERC. Geris noted that the Draft 2016 ASA Annual Report and appendices will be distributed for a 45-day review period on March 21, 2017.

Patrick Verhey said, with several documents available for review and more upcoming, it would be helpful to have a summary outlining these deadlines. John Ferguson said Anchor QEA will develop and provide a summary, as requested. *(Note: Geris distributed this summary to the Aquatic SWG on March 16, 2017.)*

4. Brood Year 2016 Wells Hatchery White Sturgeon Rearing Update (Andrew Gingerich):

Andrew Gingerich said as of March 1, 2017, approximately 6,700 larval-origin white sturgeon were on station at Wells Hatchery. He said mortalities were low throughout February 2017. He also said the average fish size was under target, at about 41 grams per fish. He said the most ideal fish size was achieved in the first year of stocking, at almost 199 grams per fish. He said in other years, fish were stocked at about 165 grams per fish. He said he encouraged hatchery staff to increase the water temperature to implement a more aggressive feeding regime, which will help increase fish size. He said he is encouraged by the number of fish on station that the stocking target of 5,000 fish will be met in June 2017. He said lastly, Douglas PUD has a plan in place with co-managers for the expected 1,700 surplus fish.

5. Wells Project Water Forecast Update (Andrew Gingerich):

Andrew Gingerich said about this time each year, Douglas PUD provides an update regarding the Wells Project in terms of snowpack. He said information varies depending on the data source. He noted that certain areas of the Columbia and Snake River drainages do not directly affect the Wells Project and he wants to be sure this is clear.

Gingerich said the weblinks https://www.wcc.nrcs.usda.gov/webmap_beta/index.html and <http://bcrfc.env.gov.bc.ca/bulletins/watersupply/SnowIndexMap.htm> were distributed to the Aquatic SWG by Kristi Geris on March 1, 2017. Gingerich said the first link is a map showing the snow water equivalent throughout the Pacific Northwest. He said the Snake River basin appears to have plenty of snowpack, noting that various estimates for Lower Snake River projects suggest 120% freshet flows and flow throughout the water year. He said north of Wenatchee, Washington, the snowpack values are more average. He said the second link includes the Columbia River in British Columbia, Canada. He said the Wells Project is highly affected by this area. He said projections indicate average conditions are to be expected. He said forecasts at Grand Coulee suggest 105% freshet flows. He said if the forecast holds that indicates more snow pack is expected to be gained in March, this would result in greater than 105% freshet flows.

Gingerich said in terms of water quality, one element to be cautious of is that the Snake and Columbia River dam operators do not operate independently. He said on occasion, the U.S. Army Corp of Engineers and the Bonneville Power Administration make requests between

operators to change load and spill between the two rivers. For example, he said if the Snake River experiences a high runoff, operators may request that Columbia River projects reduce generation and spill more to shift generation load to the Snake River projects and reduce gas levels in the Snake River. He said last week, high total dissolved gas (TDG) was experienced in areas along the Snake River. He said many Snake River projects do not have a fish passage TDG adjustment from the Washington State Department of Ecology (Ecology) prior to the beginning of the fish passage season, and last week, TDG was greater than the 110% standard. He said the Clearwater River downstream of Dworshak Dam was in the 120% range.

John Ferguson asked Breean Zimmerman if Ecology is following these hydro operations discussions and if the Aquatic SWG would be interested in similar updates during future meetings. Zimmerman said she appreciates the information and she has not been following these discussions for the Snake River. She said Ecology would appreciate similar updates during future Aquatic SWG meetings and would also be open to holding discussions outside of the forum, if needed. Gingerich said Douglas PUD can continue providing updates to the Aquatic SWG and Ecology. He noted he is not directly involved in these hydro discussions; however, he will try to keep everyone as updated as possible. He added that he can coordinate with other Douglas PUD staff, as well, as needed. Patrick Verhey agreed with the sentiments expressed, noting that it will be interesting to hear what coordination takes place between projects. Ferguson said Douglas PUD will continue providing water forecast updates through spring 2017.

6. Pacific Lamprey:

John Ferguson said there are a number of Pacific lamprey topics to cover today, including: 1) a potential Pacific Lamprey Regional Coordination Workshop; 2) the 2016 Pacific Lamprey Study Update compiled by Douglas PUD and Dave Robichaud; 3) the Pacific Lamprey Study Alternative Actions document; 4) historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam; 5) the USFWS proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis; and 6) a discussion of next steps.

Pacific Lamprey Regional Coordination Workshop (John Ferguson):

Ferguson said an email from Tracy Hillman regarding a Pacific Lamprey Regional Coordination Workshop (Attachment C) was distributed to the Aquatic SWG by Kristi Geris on March 3, 2017. Ferguson reviewed the email, noting that the workshop would convene the Aquatic SWG, RRF, and Priest Rapids Fish Forum, with the goal of discussing hypotheses, a path forward, and steps and tasks needed to make forward progress on the topic of Pacific lamprey.

Ferguson asked if the Aquatic SWG is interested in sponsoring this workshop and if anyone disagrees with the need for such a workshop. Bob Rose said the YN strongly support a regional workshop. Rose also suggested that Chelan PUD take an active role as co-lead because many of the questions being discussed pertain to the Rocky Reach Project. Andrew Gingerich said Douglas PUD is supportive of a regional workshop with Grant and Chelan PUDs. Gingerich also agreed with Rose's suggestion about Chelan PUD co-leading and noted the breadth of this topic, which is deserving of critical thinking. Gingerich said he believes there is value in sitting down in the same room together to review the data, with the intent to decide what to do in 2017 and discuss long-term goals, plans, and hypotheses. Anchor QEA will contact Hillman and Chelan PUD to gauge interest in co-sponsoring an upcoming Pacific Lamprey Regional Workshop. *(Note: Ferguson began these discussions with Hillman on March 9, 2017.)*

Gingerich also suggested convening a smaller subgroup of the Aquatic SWG prior to the workshop to discuss information to date and a path forward. The Aquatic SWG discussed availability and scheduling to convene: 1) a subgroup of the Aquatic SWG to discuss Pacific lamprey information received to date prior to convening a Pacific Lamprey Regional Coordination Workshop; 2) the regularly scheduled Aquatic SWG monthly meeting; and 3) a Pacific Lamprey Regional Coordination Workshop.

Aquatic SWG members present agreed to reschedule the Aquatic SWG meeting on April 12, 2017, at 10:00 a.m., to April 13, 2017, at 9:00 a.m., to accommodate a Pacific Lamprey Subgroup meeting and Pacific Lamprey Regional Workshop.

A Pacific Lamprey Subgroup of the Aquatic SWG will convene on April 12, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington, to further discuss: 1) the 2016 Pacific Lamprey Study Update; 2) the Pacific Lamprey Study Alternative Actions document; 3) historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam and Wells Project operation and flow data; and 4) the USFWS proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis.

A Pacific Lamprey Regional Workshop will be held on April 13, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington, following the monthly Aquatic SWG meeting.

2016 Pacific Lamprey Study Update (Dave Robichaud):

Ferguson said per Douglas PUD's action item from the Aquatic SWG conference call on February 8, 2017, a 2016 Pacific Lamprey Study Update (Attachment D) was distributed to the Aquatic SWG by Geris on February 28, 2017.

Robichaud said the 2016 Pacific Lamprey Study Update is an abbreviated version of what the final report will eventually look like. He said the update includes a brief introduction summarizing the history and goal of the study. He said size distribution of the study fish is included for reference. He said a figure depicting the location of receivers is also included and the results section summarizes detection efficiencies of the receivers, which were generally high. He said details about tracking histories are also included and are split into three release groups of tagged fish (Douglas PUD fish, Grant PUD fish, and Chelan PUD fish). He said of the Douglas PUD study fish (released above Rocky Reach Dam), 5 of 51 released fish were detected at the gateway array (located 5 kilometers downstream of Wells Dam). He said study fish detected at the gateway array have potential to interact with the dam and are considered in more detail later in the report. He said of the Grant PUD study fish, 33 of 100 released fish were detected at Rocky Reach Dam and 5 of 33 were detected at the gateway array. He said Chelan PUD released 211 study fish and 1 study fish was detected at Wells Dam (Pool 19 and Pool 67). He said the fish entered the right fish ladder, was detected a couple of times, and was later detected in the Chewuch River. Robichaud said the results demonstrate a gradual drop-off in the number of test fish detected (i.e., moving upstream longitudinally through the Rocky Reach reservoir). He said as fish migrated upstream, detections decreased at each receiver. He added, however, there was no significant, precipitous decline at any one location. He said if the assumption is fish are driven to approach Wells Dam, the data indicate this may not be true.

Ferguson asked if Figure 4 and Table 3 are the same data sets. Robichaud said they are and explained that Table 3 is a fish-by-fish description of what is shown graphically in Figure 4. He also noted that of the Douglas PUD study fish, 1 of 5 fish detected at the gateway array was not detected in the Wells Dam tailrace at all, and the other 4 of 5 fish were only detected on the outside-entrance antennas (no detections on the inside-entrance antennas). He said similar data for Grant PUD are provided in Table 5. He said of the Grant PUD study fish, 1 of 5 fish detected at the gateway array was not detected in the Wells Dam tailrace at all, 2 of 5 fish were not detected approaching a fishway entrance, 1 of 5 fish was detected on the outside-entrance antennas, and 1 of 5 fish was detected on the inside-entrance antennas. Robichaud said in summary, barely any fish released were detected on the outside-fishway arrays and fewer were detected on the inside arrays. He said there is no way of measuring detection efficiency of the inside arrays because there were no detections upstream of that location.

Ferguson asked about the individual detection history plots in Appendix A. Robichaud said the interesting point about these plots is that they show a repeated message. He said fish are moving upstream in a fairly directed (not meandering) pattern. He said once the upstream movement stops, fish rarely drop back downstream (which is evidence of meandering). He said, rather, fish stop and are not detected again (disappear). He said the next step is to obtain the next batch of downloads and determine whether the data show anything different.

Pacific Lamprey Study Alternative Actions (Andrew Gingerich):

Ferguson said per Douglas PUD's action item from the Aquatic SWG conference call on February 8, 2017, a Pacific Lamprey Study Alternative Actions document (Attachment E) was distributed to the Aquatic SWG by Geris on February 28, 2017.

Gingerich thanked Robichaud and Chas Kyger for drafting the 2016 Pacific Lamprey Study Update and Pacific Lamprey Study Alternative Actions document. Gingerich recalled the Aquatic SWG in-person meeting on January 11, 2017, when the Aquatic SWG discussed several hypotheses in terms of what is happening to Pacific lamprey as they approach Wells Dam. He said based on these discussions, the Aquatic SWG prioritized, in no particular order, three hypotheses for study in 2017: 1) lack of juvenile and adult pheromones; 2) poor hydraulic conditions at fishway entrances; and 3) reservoir mortality, fate in reservoir, and mainstem spawning. He said the Pacific Lamprey Study Alternative Actions document reviews and prioritizes each of these three hypotheses based on the nexus with the Wells Project, what current information is known about the topic, and potential actions under each hypothesis.

Rose said in reviewing the Pacific Lamprey Study Alternative Actions document, it seems an obvious action would be mobile tracking. He asked if tags are still active in the study fish, and if so, suggested conducting mobile track this spring while tags are still active. Gingerich agreed this is a viable action; however, he noted that Douglas PUD sacrificed tag life for more power to achieve good detection efficiency. He said Grant PUD tags are less powerful, go into sleep mode, and then come back online. He said he is unsure about when the Grant PUD tags come back online after being programmed to go to sleep during winter. He noted that Douglas PUD fish were also passive integrated transponder (PIT)-tagged, and can be detected that way, as well. He said given the available data, he is also uncertain how to discern between a shed tag, mortality, spawning within river, sturgeon predation, or other event.

Gingerich said Douglas PUD will inquire with Grant PUD regarding when the acoustic tags implanted in 2016 Grant PUD Pacific lamprey study fish will come back online from sleep

mode and will also verify the expected battery life for the acoustic tags implanted in 2016 Douglas PUD Pacific lamprey study fish. Robichaud noted that 246 days is the expected tag life for acoustic tags implanted in Douglas PUD study fish and the fish were tagged on August 20, 2016. Jason McLellan said based on this information, the Douglas PUD tags should still be active, and the Colville Confederated Tribes' (CCT's) experience with Vemco is that often times Vemco tags last longer than expected (if they are not turned off). McLellan said it would be inexpensive to drift the area with a Vemco Model VR2W receiver to try and pick up tag signals. Gingerich said Douglas PUD will conduct mobile tracking efforts in the Rocky Reach Reservoir prior to the expected expiration of battery life for the acoustic tags implanted in 2016 by Douglas PUD and Grant PUD Pacific lamprey study fish. Gingerich noted one caveat that conducting mobile tracking while Douglas PUD tags are still active may mean conducting tracking while Grant PUD tags are still in sleep mode. He said Douglas PUD will look further into this and can possibly get an extension on mobile tracking equipment currently on loan from the Columbia River Inter-Tribal Fish Commission, if needed. Ferguson also clarified this mobile tracking effort is just observational in nature and not necessarily a designed study. McLellan said the value is that this effort will inform future study plan development (e.g., if fish are accumulated in one area this can help inform how to study them).

Historical Pacific Lamprey Conversion Rates from the Count Window at Rocky Reach Dam to Wells Dam (Andrew Gingerich):

Gingerich said historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam and Wells Project operation and flow data (Attachment F), were distributed to the Aquatic SWG by Geris prior to the conference call on March 8, 2017. He said from 2000 to 2005, counts at Rocky Reach Dam were fairly well-correlated with Wells Dam, ranging around 20 to 50% conversion rates at the count windows. He said then there is a precipitous decline around 2005 to 2006 and then further decline in subsequent years. He said three events are highlighted on page 2 of Attachment F that have been discussed previously in Aquatic SWG meetings. He said in 2006, either during or directly after the peak Pacific lamprey migration occurred, the Chewuch River fire (Tripod fire) could have negatively affected pheromones. He said in 2007, Douglas PUD installed a baffle in Weir 1 of the east fish ladder, resulting in faster fish migration through the area (based on studies conducted); and in 2008, a baffle was installed in the other fish ladder. He said those are the only major structural changes implemented near the time of the precipitous decline. He said the figure on page 3 of Attachment F depicts total river flow out of Wells Dam over the same 16-year period, overlaid with percent window counts at Wells Dam relative to the counts at Rocky Reach Dam. He said there is no statistical correlation; rather, just a visual representation. He said river flow has been similar throughout the entire 16-year period.

Ferguson asked if anything happened in 2006, in terms of a major unit outage or altered operations within the Project. Gingerich said based on discussions with staff personnel, no one recalls anything.

USFWS Proposal for Planting Pacific Lamprey within the Wells Dam Fishway, as a Means to Test a Pheromone Hypothesis (John Ferguson):

Ferguson said a proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis (Attachment G), was distributed to the Aquatic SWG by Geris on March 2, 2017. Ferguson said USFWS proposed two things: 1) using a collection device from the Wanapum Dam repair effort to collect and hold adult Pacific lamprey in a Wells Dam fish ladder to produce attraction pheromones; and 2) in addition to logistical support, financial support be provided by Douglas PUD for a Pacific lamprey transportation effort upstream of Wells Dam.

Patrick Verhey said the Washington Department of Fish and Wildlife (WDFW) provided comments on the USFWS proposal (Attachment H), which were distributed to the Aquatic SWG on March 7, 2017. Verhey said Ralph Lampman then provided a helpful response to WDFW comments (Attachment I), as distributed to the Aquatic SWG that same day. Verhey said WDFW commented that using adults may not be the most effective source of pheromones and suggested considering using juveniles in addition to adults. Verhey said Lampman seemed to agree with WDFW comments and provided additional information about other pheromone cues. Ferguson agreed Lampman's comments were helpful and highlighted the complexity of this topic. Rose said he will ask Lampman about his availability to attend the Pacific Lamprey Regional Workshop on April 13, 2017. Ferguson also noted the possible benefit of learning more about Pacific lamprey passage behavior based on results of sea lamprey research in the Great Lakes region.

Verhey asked if Douglas PUD is planning on conducting another fishway passage study in 2017 or if the USFWS proposal is just a precursor to this discussion. Ferguson said this has not yet been determined. He said if the Aquatic SWG is thinking about suggesting a 2017 field study, in terms of timing, the Aquatic SWG ought to be thinking about providing guidance to Douglas PUD by the next Aquatic SWG meeting on April 13, 2017.

Next steps (John Ferguson):

Ferguson said there are a number of options for implementation in 2017, including evaluating multiple hypotheses at once, opposed to one topic at a time. He said the Aquatic SWG has not yet settled on a 2017 Pacific Lamprey Study; however, the Aquatic SWG needs to be thinking along these lines. He said additional mobile tracking for 2016 study fish was discussed. He said there may be a full report developed by Robichaud on results of 2016

study fish, including observations of spring migrating fish to capture the full scope of migration behavior. Ferguson said there is now also a Pacific Lamprey Subgroup of the Aquatic SWG and a Pacific Lamprey Regional Workshop convening in early-April 2017, where data collected to date and key hypotheses will be further discussed. He said translocation is being discussed. He questioned if the Rocky Reach Reservoir is a good place for those fish to end or whether translocating fish from the Rocky Reach Dam to locations upstream of Wells Dam is a better management prescription due to the Rocky Reach Reservoir being a population productivity "sink." Rose agreed the topic of translocating fish directly from Rocky Reach Dam should be considered. Verhey said WDFW would like to see Pacific lamprey utilized to their historical range. Ferguson also questioned what the fate and resolution on these fish are and noted that mobile tracking will help get at these questions.

Ferguson said, to answer Verhey's question, another full-blown tagging study is not yet proposed. Verhey noted that he believes Grant PUD did not budget for trapping Pacific lamprey in 2017. Gingerich said this is not an issue; that Douglas PUD will fund the collection of study fish at Grant PUD facilities, if necessary.

VII. Next Meetings

1. Upcoming meetings (John Ferguson):

A Pacific Lamprey Subgroup of the Aquatic SWG will convene on April 12, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington.

The Aquatic SWG meeting on April 13, 2017, will be held in-person at 9:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington.

A Pacific Lamprey Regional Workshop will be held on April 13, 2017, at 10:00 a.m. at Douglas PUD Headquarters in East Wenatchee, Washington, following the monthly Aquatic SWG meeting.

Upcoming meetings are as follows: May 10, 2017 (TBD); June 14, 2017 (TBD); and July 12, 2017 (TBD).

List of Attachments

Attachment A List of Attendees

Attachment B FERC Order approving consolidation of select ASA reporting requirements

Attachment C Pacific Lamprey Regional Coordination Workshop email

Attachment D 2016 Pacific Lamprey Study Update

Attachment E Pacific Lamprey Study Alternative Actions document

- Attachment F Historical Pacific lamprey conversion rates from the count window at Rocky Reach Dam to Wells Dam and Wells Project operation and flow data
- Attachment G USFWS proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis
- Attachment H USFWS proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis – WDFW comments
- Attachment I USFWS proposal for planting Pacific lamprey within the Wells Dam fishway, as a means to test a pheromone hypothesis – YN response to WDFW comments

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
Dave Robichaud	Observer	LGL Limited
Breean Zimmerman	Aquatic SWG Technical Representative	Washington State Department of Ecology
Patrick Verhey	Aquatic SWG Technical Representative	Washington Department of Fish and Wildlife
Chad Jackson	Aquatic SWG Technical Representative	Washington Department of Fish and Wildlife
Bob Rose	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Colville Confederated Tribes