

## Memorandum

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To: Wells, Rocky Reach, and Rock Island HCP  
Coordinating Committees

Date: June 25, 2019

From: John Ferguson, HCP Coordinating Committees Chairman

cc: Kristi Geris

**Re: Final Minutes of the May 28, 2019 HCP Coordinating Committees Meeting**

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The Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plan (HCP) Coordinating Committees met at the Grant PUD office in Wenatchee, Washington, on Tuesday, May 28, 2019, from 10:00 a.m. to 12:45 p.m. Attendees are listed in Attachment A to these meeting minutes.

### Action Item Summary

- Lance Keller will review subyearling Chinook salmon sampled at the Rocky Reach Juvenile Sampling Facility (RRJSF) during the summer spill season at Rocky Reach Dam, to determine the following: 1) whether the index samples collected represent overall passage trends based on passive integrated transponder (PIT)-tag detections in the bypass across the season, notably during high flow years such as that experienced in 2018; and 2) whether any adjustments are needed while also maintaining continuity with historical data in the Columbia River Data Access in Real Time database (DART; Item II-C).
- Kirk Truscott will contact Lance Keller to further discuss options to increase attraction flow through the cul-de-sac area in the Rocky Reach Dam forebay (near Turbine Units C1, C2, and C3) while Turbine Units C1 and C3 are offline for maintenance (Item II-C).
- Lance Keller will provide updates about the repair of Rocky Reach Dam Turbine Unit C1 and Turbine Unit C3 to the HCP Coordinating Committees as soon as additional information becomes available (Item II-C).
- Anchor QEA, LLC, will contact Jim Craig to obtain U.S. Fish and Wildlife Service (USFWS) approval of the updated HCP Hatchery Committees and Priest Rapids Coordinating Committee (PRCC) Hatchery Subcommittee email distribution lists (Item III-A). *(Note: Kristi Geris emailed Craig with this request following the meeting on May 28, 2019, and Craig provided USFWS approval of the lists via email on May 29, 2019, as distributed to the HCP Coordinating Committees by Geris that same day.)*
- The HCP Coordinating Committees will begin discussing the necessity and significance of the data behind the Columbia River Inter-Tribal Fish Commission's (CRITFC's) annual request to tag sockeye salmon at Wells Dam during the HCP Coordinating Committees meeting in December 2019 (Item IV-A). *(Note: Kristi Geris added this to the agenda for December 2019.)*

- Douglas PUD will review available PIT-tag detection data from April 9 to April 30, 2019, covering the span of Wells Dam bypass non-compliance events for Turbine Units 1 to 4 and Bypass Bays 2 and 4, to identify possible impacts to fish passage and survival through the Wells Project (Item IV-B).
- The HCP Coordinating Committees meeting on June 25, 2019, will be held in-person at the Grant PUD Wenatchee office in Wenatchee, Washington (Item VI-C).

## Decision Summary

- HCP Coordinating Committees representatives present approved the updated HCP Hatchery Committees and PRCC Hatchery Subcommittee email distribution lists, contingent on USFWS approval of the lists (Item III-A). *(Note: Jim Craig provided USFWS approval of the lists via email on May 29, 2019.)*
- Wells HCP Coordinating Committee representatives present approved CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019, with the caveat that approval of the tagging will be reviewed again if low flow and warm water migration conditions develop, potentially affecting adult sockeye salmon survival (Item IV-A). *(Note: Jim Craig provided USFWS approval of this request via email on May 23, 2019.)*

## Agreements

- There were no HCP Agreements discussed during today's meeting.

## Review Items

- The draft *Wells Project Subyearling Chinook Life-History Study 2011-2013 Draft Final Report* was distributed to the HCP Coordinating Committees by Kristi Geris on May 24, 2019, and is available for a 60-day review with edits and comments due to Tom Kahler by Tuesday, July 23, 2019 (Item I-A).

## Finalized Documents

- There are no documents that have been recently finalized.

## I. Joint HCP Coordinating Committees and PRCC

### A. PRESENTATION: Douglas PUD Subyearling Chinook Salmon Report (Tom Kahler)

Tom Kahler shared a presentation titled, "Post-emergence Behavior of Subyearling Summer/Fall Chinook in Wells Reservoir and Implications for the Measurement of Passage Survival through the

Wells Hydroelectric Project” (Attachment B), which was distributed to the HCP Coordinating Committees by Kristi Geris following the HCP Coordinating Committees meeting on May 28, 2019.

### Slide 2 of Attachment B

Kahler said this HCP Decision Flow Chart is copied from Section 14 of the Wells HCP. He said the chart indicates that if the combined adult and juvenile project survival cannot be measured for a species and a juvenile dam passage study cannot be conducted, then juvenile dam passage survival can be calculated, and the species can be designated in Phase III (Additional Juvenile Studies). He said this is what was done for subyearling Chinook salmon in 2005.<sup>1</sup>

Kahler recalled subyearling studies conducted by Billy Connor (USFWS) in the Snake River and other U.S. Army Corps of Engineer (USACE) subyearling studies, which prompted Douglas PUD to ask whether subyearlings in the Columbia River behave similarly as in the Snake River. Kahler said in 2009, the HCP Coordinating Committees and PRCC convened a “Subyearling Summit” and invited various guest speakers, including Connor and Eric Hockersmith (Northwest Fisheries Science Center), among others. Kahler said based on these discussions it appeared that subyearlings might be different in the upper Columbia River compared to the Snake River, so Douglas PUD decided to start studying subyearlings in the Wells Reservoir. He said PIT-tagged subyearlings were already being monitored at Rocky Reach Dam, but meaningful analysis was not possible because of the small number tagged individuals. Douglas PUD tagged additional subyearlings to add to this number.

### Slides 3 to 4 of Attachment B

Kahler said the photo on slide 3 shows a mixed school of subyearlings, stickleback, and other species. He said in this particular photo, no fish were greater than 60 millimeters (mm) in length. He said several of these schools were observed in the Wells Reservoir during spring, so Douglas PUD decided to attempt a tagging effort. He said summer/fall Chinook salmon spawn in the Okanogan and Methow rivers, and near Chief Joseph Dam, among other locations, and progeny of these spawners occupy Wells Reservoir temporarily.

### Slides 5 to 7 of Attachment B

Kahler said the photo on slide 5 shows a beach seining effort. He said Douglas PUD set net-pens in the river and contracted Biomark to conduct the PIT-tagging. He said a tagging station was set up on a barge that was towed to the different tagging locations. He said collected fish were placed in the net-pens overnight to empty their stomachs and were tagged into empty net-pens the next day, then released the following morning.

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<sup>1</sup> Per the Statement of Agreement (SOA) titled, “Wells HCP Coordinating Committee Summary Agreement Adult Fallback Studies,” as approved by the Wells HCP Coordinating Committee on February 22, 2005.

### Slides 8 to 10 of Attachment B

Kahler said crews attempted several seining locations in 2011. He said most of the shoreline immediately downstream of Washburn Island was too hard to seine due to high current velocity at this location near the thalweg of the river; however, the short stretch of shoreline closest to the levy was a productive location initially. He said other locations included at the mouth of the Okanogan River up to the Highway 97 bridge and Gebbers Landing, which is a high bluff with a sand and cobble beach, with little debris. He said all locations had bycatch except Gebbers Landing, and crews ended up abandoning all locations except Gebbers Landing.

Kirk Truscott asked about the species of bycatch encountered. Kahler said there were juvenile whitefish, suckers, stickleback, and pikeminnow, to name a few. Truscott asked if any steelhead were encountered. Kahler said not often, but sometimes a yearling, smolt, or triploid were encountered. He said most fish were juveniles. He said some juvenile kokanee were encountered, as well.

Kahler said crews also seined at the mouth of the Methow River; however, there was a lot of debris and high river flow. He said crews also tried downstream near Wells Dam, but never found a productive location. He said in 2012, at river left near Wells Dam, there was one location similar to Gebbers Landing in terms of beach characteristics. He said this location was productive; however, it was not as productive as Gebbers Landing. He said sampling this site resulted in a lot of tagged fish being recaptured.

### Slide 11 of Attachment B

Kahler said, in summary, fish were first detected at Rocky Reach Dam about 3 to 6 days after release. He said Douglas PUD seined through the second week in July; he noted that by the end of seining, subyearlings were difficult to collect. He said the total number tagged equaled nearly 51,000 fish over the 3-year effort. He said detections at RRJ (Rocky Reach Dam Juvenile Bypass System) were fairly consistent, with the most detections occurring in 2013. He said the percent detected at RRJ ranged from approximately 6% to 11% of total tagged fish per year. He also noted the high number of unique detections when including all detection sites combined.

Andrew Gingerich said Douglas PUD also conducted scoping efforts to determine when fish were available in the Wells Reservoir each year. He said this table just summarizes what was tagged. Kahler agreed and said the tagging threshold was 60 mm. He said the contractor tagged down to 58 mm, but did not tag many at that size. He said by 2013, Douglas PUD set the lower size-at-tagging threshold firmly at 60 mm. Kahler said, as Gingerich explained, crews conducted sampling to monitor how large the fish were and when the mean fish size reached 60 mm, Biomark would come out and start tagging.

Truscott asked how the unique detections for subyearlings compared to yearling Chinook salmon. Kahler said he has not examined that comparison; however, it would be easy to do by reviewing the Wells Project 2010 Survival Verification Study.

#### Slides 12 to 15 of Attachment B

Kahler said again, crews started seining long before tagging was initiated. He said when sufficient numbers of taggable-sized fish were available, the tagging effort would commence. He said in 2011, tagging commenced about the third week of June. He said in 2012, tagging started 1 week later compared to the previous year because fish were too small to tag. He said in 2013, tagging started earlier because the fish sizes were similar to 2011.

Kahler said in 2014, although the Colville Confederated Tribes (CCT) took over tagging efforts this year, Douglas PUD conducted another scoping effort to collect another year of data on early season fish size and availability.

#### Slides 16 to 17 of Attachment B

Kahler said crews were seeing swim-up fry in May. He noted that in 2012, crews were collecting fish less than 45 mm into the second week of July and fish less than 55 mm at the end of July. He questioned where these fish came from. Truscott said mainstem fish spawn in November and December, and he asked if there were more late small fish at Washburn Island compared to Gebbers Landing. Gingerich said fish collected at Washburn Island may be from mainstem spawners. He said these fish were not available as long as at the Gebbers location. He said 2 to 3 weeks into tagging the Washburn fish were no longer available. Kahler said perhaps these could be spring Chinook salmon that have been washed out from the upper watershed.

#### Slides 18 to 20 of Attachment B

Kahler said in 2011, detections at downstream projects peaked a few weeks after tagging commenced. He noted the multi-modal distribution of the detection pattern continuing downstream. He said once fish reached MCN (McNary Dam), the downstream migration rate increased dramatically. He noted that fish were being detected into November at downstream projects. He said 2012 data are similar, except that the multi-modality pattern at RRJ turned into a bimodal distribution at downstream projects. He said one fish was detected into the second week of December.

Peter Graf (Grant PUD) asked if Douglas PUD looked at whether study fish emigrated as yearlings. Kahler said at RRJ, there was only one yearling detected (tagged in 2011), and for downstream locations, there were 3 fish detected as yearling migrants. He added that this was surprising considering the persistent rate of reservoir-type juveniles identified by the scales of returning adults.

Truscott said it seems in the past 6 to 7 years, there has been a reduction of adults returning with reservoir-type scale patterns. Kahler agreed.

#### Slide 21 of Attachment B

Kahler said this slide summarizes travel rates in kilometers per day. He noted the lowest flow year was also the slowest rate.

#### Slides 22 to 27 of Attachment B

Kahler said in 2011, travel time and tagging length data appeared to show a break at fish tagged at 87 mm fork length, where fish less than 87 mm took longer to migrate and fish greater than 86 mm were faster. He said when these two size classes were compared, 2011 data showed that fish tagged at 87 mm or larger were five times faster in emigration compared to fish tagged at less than 87 mm. He said additionally, both size classes accelerated as they moved downstream from McNary Dam, but the larger fish showed greater acceleration. He said, however, 2012 data showed a similar pattern but not as pronounced; and 2013 data showed not much difference at all in emigration rate between the two size classes downstream from McNary Dam.

Graf asked if the larger fish were tagged later, and Gingerich said this was generally the case. Kahler said there is a general increase in size over time, but the increase was not as large as expected. He said the mean fish size at tagging increased from 70 to 80 mm over the tagging period in all 3 years.

#### Slide 28 of Attachment B

Kahler said when comparing detection rates by size class, the data indicate larger fish have a significantly higher chance of being detected compared to smaller fish.

#### Slides 29 to 36 of Attachment B

Kahler said travel times compared to tagging length were variable from 2011 to 2013. He said travel times for all years showed that fish showed a diversity of travel times to RRJ, with some fish emigrating rapidly (within 20 days), and others showing protracted residency (greater than 20 days). Those residing longer tended to comprise the smaller two-thirds of the size distribution, while those emigrating rapidly comprised the entire size range. This observed break between categories of travel time to RRJ varied by tagging week, ranging from 15 to 20 days, but in the dataset combining all weeks, the break was at 20 days.

#### Slides 37 to 38 of Attachment B

Kahler said during Week 1 of 2013 tagging, the distribution of fish sizes and travel times were similar at the upstream and downstream sites. He said by Week 3, there was an interesting shift of quite a few larger fish near the Wells Dam forebay exhibiting longer travel times.

### Slides 39 to 41 of Attachment B

Kahler said travel times, post-tagging, from release to RRJ were compared for fish with travel times less than or equal to 20 days versus greater than 20 days. He said a high proportion of fish tagged in Week 1 exhibited longer travel times, but the proportions of fish with short or long travel times shifted over the tagging period such that a greater proportion fish tagged in Week 3 exhibited short travel times. He said there were also a number of fish recaptured in Wells Reservoir before emigrating to RRJ; therefore, post-recapture travel times to RRJ for fish recaptured in Wells Reservoir were also reviewed. He said the proportions of recaptured fish with travel times of less than or equal to 20 or greater than 20 days matched that in the entire population of fish detected at RRJ. He said fish with residence times less than 7 days between tagging and recapture manifested almost the same proportion of individuals with travel times greater than 20 days as the population of fish detected at RRJ; however, fish with residence times greater than or equal to 7 days between tagging and recapture had very different post-release travel time proportions (skewed toward long travel times). He added that these data indicate that fast emigrants to RRJ are not fish that had already resided in Wells Reservoir for a week or more prior to emigration to RRJ.

### Slides 42 to 43 of Attachment B

Kahler said length at tagging of all tagged fish was compared to length at tagging of returning adults. He said the mean length at tagging of returning adults is significantly larger than that of all tagged fish, suggesting higher survival for larger fish. He said additionally, travel times from release to RRJ for all tagged fish were compared to travel times from release to RRJ for returning adults. He noted the bimodal distribution and said travel times between the two groups were not statistically different, suggesting there is no survival advantage to a lengthy residence time or rapid emigration. Graf summarized that returning adult fish are generally larger at tagging but not generally faster emigrants, and Kahler said this is correct.

### Slide 44 of Attachment B

Kahler said fish growth in mm per day was compared across 2011, 2012, and 2013. He noted that inaccurate measuring during the 2011 and 2012 effort was corrected in 2013. He said generally, post-tagging, growth rates were relatively low for the first few days, but gradually increased so that by two weeks post-tagging growth rates typically exceeded 0.8 mm per day. He said by 20 days post-tagging, growth rate generally exceeded 1 mm per day, which is similar to estimated growth rates of untagged fish. He said that the lack of any evidences of a relationship between length at tagging and growth rates, indicates that the low growth rate post-tagging seems to result from the tagging process rather than from tag burden. He explained that seined fish were held in a pen, tagged, held again for recovery (from anesthesia), and then released. He said it takes a few days for a fish to recover from the tagging process, since they can't freely feed during the threeday period.

### Slides 45 to 53 of Attachment B

Kahler reviewed passage timing and corresponding fork-length data from historical fyke-net efforts compared to recent beach-seine efforts. He noted on slide 48 that in early June there were quite a few fyke-net catches and he suspects these were entrained fry, notably because the timing was around the typical peak of the freshet. He also pointed out the larger subyearlings in the fyke-net catches and speculated that these may be active migrants and noted that fish of those lengths were not well represented in the beach-seine catches. He said on slide 49, in the second and third weeks of June, which is the timing when tagging efforts commenced in 2011 to 2013, the data start showing alignment of distributions between fyke-net and beach seining efforts, but the beach-seine catches underrepresent the larger fish caught in the fyke-nets.

John Ferguson noted, from slide 50 to 51, the shift to the right where it seems the fyke-net effort at Wells Dam was collecting fish that had been in the reservoir longer compared to the beach seining efforts. Kahler said these data could be interpreted a number of ways. He said the beach seining efforts are not sampling everything that passes Wells Dam. Truscott said there are also two different populations. He said the beach seining efforts are more heavily biased to Gebbers Landing, whereas those fish in the fyke-net catches might be influenced more from the Methow River. Kahler said in retrospect, it would have been beneficial to collect genetic samples. Kahler emphasized the important point that the beach-seining effort was unsuccessful in capturing the larger fraction of subyearlings in the reservoir as indicated by the fact that the length distribution of beach-seine catches encompassed approximately the smaller one-half of the length distribution of fyke-net catches.

Kahler noted, on slide 52, that the beach seining efforts struggled to find fish; and on slide 53, in the last weeks of fyke-netting in August, the sample size decreased significantly.

### Slides 54 to 55 of Attachment B

Kahler said the graphic on slide 54 compares the lengths of fish during Weeks 28 to 29, captured by night purse seining, mostly night fyke-netting, and day beach seining. He said the fyke-net and 1984 purse-seine data match, and though the 1983 purse-seine data align more closely with the beach-seine data, it still represents a population of larger fish than that represented in the beach-seine catches. He noted that the beach seining efforts were unable to collect larger fish compared to the other efforts, and also captured smaller fish not observed in the other efforts. He said slide 55 shows that neither daytime beach seining nor the capture of an offshore school by beach seining were able to catch fish within the size range of those captured by nighttime purse seining at approximately the same river mile. He noted that while the purse seining succeeded in obtaining large fish, it yielded very small numbers of catch during this time of the year (Week 27).



### Slide 56 of Attachment B

Kahler said this slide shows the progression in fork length at tagging of fish captured in fyke-nets compared to beach-seined fish. He noted that the mean fork length is smaller, and the progression rate is lower in beach-seined fish compared to fish captured in fyke-nets.

### Slides 57 to 59 of Attachment B

Kahler said these next slides show travel times by fish length at tagging for fish detected at WEJ (Wells Dam Bypass Bay Sample) and RRJ in 2017 and 2018. He said because WEJ was installed after the Douglas PUD tagging effort, these data are CCT-tagged fish. He said 30 of 32 fish were detected at WEJ within 20 days post-release. He said when proportional travel times are added to these data, the extrapolated travel times from WEJ to RRJ are mostly less than or equal to 20 days. He noted that all of the 7 fish captured at WEJ and RRJ were detected at WEJ within 10 days of release, and all but 2 spent most of their total travel time in the Rocky Reach Reservoir.

### Slide 60 of Attachment B

Kahler said this slide shows the time of day fish were detected at WEJ compared to fish detected at RRJ. He said while about 65% of fish detected at WEJ were during the dusk-to-dawn timeframe, the actual times differed compared to the group at large detected at RRJ. Ferguson asked if these data differed from the fyke-net data, and Kahler said yes but the fyke-net data were individual events and not continuous sampling.

### Slide 61 of Attachment B

Kahler said this slide was presented during the Subyearling Workshop held in 2016 and shows the estimated probability of mortal injury for certain sized fish carrying a certain sized tag when passing through a simulated turbine. He said according to this graph, a 60-mm Chinook salmon carrying a PIT-tag weighing approximately 0.1 gram would have just under a 20% probability of mortal injury at a given ratio of pressure change. He said the current Juvenile Salmon Acoustic Telemetry System (JSATS) tag weighs 0.22 gram, and in a 60-mm fish this tag burden would result in a 100% chance of mortality based on these studies. He said Pacific Northwest National Laboratory (PNNL) has recently developed a new ELAT (eel and lamprey acoustic tag) that is almost the same size and mass as a PIT-tag, only with a 20-day battery life. He said PNNL has reached a 35-day battery life in some ELATs; however, even if the ELAT battery life improves, there will still be sample size limitations.

### Slides 62 to 68 of Attachment B

Kahler reviewed the conclusions and acknowledgements.

## Discussion

Truscott thanked Douglas PUD for the effort in developing this presentation and report. He said it is interesting that fish passing Wells Dam (the fyke-net catches) are considerably larger than fish collected during beach seining efforts. Gingerich suggested resolving this question by taking fish detected at RRJ and applying a growth rate estimate based on what is known about growth in the Wells Reservoir. Kahler agreed, recalling that almost all 32 fish detected at WEJ were within 20 days of release, and within 15 days post-release fish growth was up to 0.8 to 1 mm per day. He said this curve can be applied to fish detected at RRJ to estimate fish size at Wells Dam.

Graf asked if there is a population of untagged fish sampled at RRJ and suggested perhaps comparing the run-at-large to PIT-tagged fish at RRJ to determine whether bias exists. Gingerich said he does not believe it is accurate to say the run-at-large is completely measured; for example, fry are only enumerated. Lance Keller agreed and said fry are enumerated and the species is recorded. He said for subyearlings exceeding the fry size threshold, a subsample of lengths and weights are collected each day until 100 fish of each species encountered are collected; therefore, not every fish is measured. He added that for recaptures, only lengths are recorded. Graf noted that the Entiat River produces a different fish. Gingerich also noted that the sample at RRJ is conducted during the morning hours and fish availability will be limited based on when subyearlings pass RRJ compared to when the sample is conducted. Keller said Chelan PUD conducted all-day sampling for 3 years and most of those fish were dominated by hatchery fish and subyearlings would show up after that initial hatchery pulse.

Ferguson noted the diverse behavior in the Wells and Rocky Reach reservoirs, but by the time fish reach MCN migration times are quick. He questioned how far upstream from MCN does this behavior start. Graf said Tom Desgroseillier (formerly USFWS, now WDFW) studied this with Entiat River fish and he found there was also a lot of diversity upstream of MCN before sorting out. Graf added that there were more than a few fish that overwintered near MCN.

Kahler said Dennis Dauble (PNL, retired) conducted night sampling at a location in the Hanford Reach and most subyearling Chinook salmon captured were in fast, deep water and near the bottom, and only a fraction were caught off the shoreline. *(Note: Kahler later clarified the sampling method was fyke-netting with nets set along a cross-section of the river at various depths. Kahler said Dauble's team also beach-seined in nearshore areas; however, Kahler is unsure whether these activities were conducted during nighttime hours.)*

Truscott recalled requirements in the HCPs to study active migrants; however, he said impacts of a project on a population may apply to more than just active migrants. He said it seems from a population management standpoint, it might not be the best decision to only study active migrants.

Kahler said prior to the development of the Mid-Columbia River dams, records indicate that subyearlings emigrated rapidly and did not have lengthy residence times upriver. He said once the dams and projects were developed, it created a different river and fish have adapted to a reservoir environment. He questioned whether this is a good or bad thing for fish populations. He said perhaps the reservoir environment is an overall better rearing strategy verses immediately emigrating out to the estuary and around those predators.

Ferguson said the draft *Wells Project Subyearling Chinook Life-History Study 2011-2013 Draft Final Report* was distributed to the HCP Coordinating Committees by Geris on May 24, 2019, and is available for a 60-day review with edits and comments due to Kahler by Tuesday, July 23, 2019. Kahler said he has already found a handful or typos that he will correct, including on page 38, Table 12, he said the sample sizes for less than 7 days and 7 or more days should be flipped.

## **B. Subyearling Chinook Salmon Studies (All)**

John Ferguson recalled discussing during the last HCP Coordinating Committees meeting on April 23, 2019, Chelan PUD's current Statement of Agreement (SOA) maintaining Rock Island and Rocky Reach subyearling Chinook salmon in Phase III (Additional Juvenile Studies) for up to 3 years, which expires on September 29, 2019. Ferguson asked if Chelan PUD has any updates on this. Lance Keller said no, that Chelan PUD would like to take more time to review Douglas PUD's report.

Keller said in Douglas PUD's study, the 2011 travel time and tagging length data showing a break at fish tagged at 87 mm fork length was promising. Andrew Gingerich agreed and recalled thinking the same thing until the additional years of data did not show the same pattern. Kirk Truscott noted that 2011 and 2012 were high water years, and suggested reviewing data for other high water years to determine if there may be an effect from high flow. He also noted the lack of large fish that are tagged. Tom Kahler recalled discussing, during the 2016 Subyearling Workshop, using a lampara net to collect larger fish. Kahler said Geoff McMichael (Mainstem Fish Research) attempted this but was unsuccessful at capturing the numbers of fish necessary for a study.

Gingerich said perhaps the fish collected during fyke-netting were feeding heavily in increasing water temperatures resulting in increased growth rates, and then these rapidly growing fish are what was collected during fyke-netting and are omitted from the beach-seining catches.

Truscott asked if Douglas PUD sacrificed any fish to determine how well the stomachs were evacuated. Kahler said no and asked if the CCT did. Truscott said no.

Truscott said he is curious about the 20,000 tagged subyearlings from the CCT tagging effort that have not returned as adults. Kahler said the CCT did take over tagging right when ocean conditions were going bad. Ferguson asked about the mean fish size at tagging. Truscott said fish were tagged

down to 60 mm. He said some fish have been detected at RRJ and MCN, so the fish are not dying right away. Ferguson said based on a recent study in the Yakima River Basin (Knudsen et al. 2009), delayed smolt-to adult survival suppression from PIT-tagging is about 30% to 40%.

## II. Welcome

### A. Review Agenda (John Ferguson)

John Ferguson welcomed the HCP Coordinating Committees and reviewed the agenda. Ferguson asked for any additions or changes to the agenda. The following revisions were requested:

- Lance Keller added a Rock Island Dam bypass incident
- Keely Murdoch added an introduction to the new Yakama Nation (YN) HCP Coordinating Committees Alternate Representative, Brandon Rogers

### B. Meeting Minutes Approval (John Ferguson)

The HCP Coordinating Committees reviewed the revised draft April 23, 2019 meeting minutes. Kristi Geris said all comments and revisions received from members of the Committees were incorporated into the revised minutes. HCP Coordinating Committees members present approved the April 23, 2019 meeting minutes, as revised. *(Note: Jim Craig provided USFWS approval of the minutes via email on May 23, 2019.)*

### C. Last Meeting Action Items (John Ferguson)

Action items from the HCP Coordinating Committees meeting on April 23, 2019, and follow-up discussions, were as follows. *(Note: italicized text corresponds to agenda items from the meeting on April 23, 2019):*

- *Lance Keller will review subyearling Chinook salmon sampled at the RRJSF during the summer spill season at Rocky Reach Dam, to determine: 1) whether the index samples collected represent overall passage trends based on PIT-tag detections in the bypass across the season, notably during high flow years such as that experienced in 2018; and 2) whether any adjustments are needed while also maintaining continuity with historical data in DART (Item I-C).*

Keller said a diel graph is undergoing internal review, which shows PIT-tagged subyearlings arriving at Rocky Reach Dam. He said the data indicate a large proportion of nighttime passage and a lower proportion of daylight passage. He recalled the question was about the timing of the sample period at the RRJSF, and he said Dr. John Skalski (Columbia Basin Research) indicated that so long as the index sample is conducted at the same time each year, the data are representative and comparable among years. This action item will be carried forward.

- *Lance Keller will inquire internally about the reasoning behind taking downstream-migrating Pacific lamprey at the Rocky Reach Juvenile Fish Bypass System (RRJFBS) and releasing these fish at an upstream location (Item I-C).*

Keller said he discussed this with Steve Hemstrom who indicated this was a decision made within the Rocky Reach Fish Forum (RRFF). Keller said the RRFF decided that a healthy adult Pacific lamprey encountered in a RRJFBS sample could be a fallback and should be returned upstream of the dam. He suggested moving this topic to the RRFF if it warrants further discussion. Kirk Truscott said there does not seem to be much Pacific lamprey in-ladder passage prior to spring emigration trapping, which is why he is skeptical about identifying these as fallbacks. Keller said crews closely assess whether the Pacific lamprey is healthy or spawned out, and only healthy Pacific lamprey are released upstream. Truscott asked about when Pacific lamprey are migrating through the fish ladders at Rocky Reach Dam, and Keller said these data can be reviewed and compared to the capture dates at the sampling facility. John Ferguson suggested taking this topic to the RRFF.

- *Tom Kahler will distribute recent reports by CRITFC that summarize findings from their sockeye salmon monitoring efforts (Item I-C).*

Kahler provided a CRITFC report covering 2016 and 2017 tagging efforts to Kristi Geris on May 20, 2019, which Geris distributed to the HCP Coordinating Committees that same day; the 2018 report will be available in late summer 2019.

- *Tracy Hillman will further discuss with the HCP Hatchery Committees and PRCC Hatchery Subcommittee about combining the committees' email distribution lists and will report back to the HCP Coordinating Committees regarding the path forward (Item II-A).*

Hillman provided updated HCP Hatchery Committees and PRCC Hatchery Subcommittee email distribution lists for HCP Coordinating Committees approval to Kristi Geris on May 20, 2019, which Geris distributed to the HCP Coordinating Committees that same day.

- *Kirk Truscott will contact Jeff Fryer (CRITFC) to obtain clarification on questions the CCT have about CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019 (Item III-A).*

Truscott said he spoke with Fryer and will further discuss this during today's meeting.

- *Kirk Truscott will contact Lance Keller to further discuss options to increase attraction flow through the cul-de-sac area in the Rocky Reach Dam forebay (near Turbine Units C1, C2, and C3) while Turbine Units C1 and C3 are offline for maintenance (Item IV-A).*

This action item will be carried forward.

- *Lance Keller will provide updates about the repair of Rocky Reach Dam Turbine Unit C1 and Turbine Unit C3 to the HCP Coordinating Committees as soon as additional information becomes available (Item IV-A).*

This action item will be discussed during today's meeting and will also be carried forward.

- *Kristi Geris will coordinate with Denny Rohr (PRCC Facilitator) regarding moving the PRCC meeting on May 22, 2019 to May 29, 2019, to dovetail with the HCP Coordinating Committees meeting on May 28, 2019 (Item V-A).*

Geris confirmed with Rohr via email on April 25, 2019, that the PRCC meeting on May 22, 2019, has been rescheduled to May 29, 2019.

### III. HCP Tributary and Hatchery Committees Update

#### A. HCP Tributary and Hatchery Committees Update (Tracy Hillman)

Tracy Hillman updated the HCP Coordinating Committees on the following actions and discussions that occurred during the HCP Hatchery Committees meeting on May 15, 2019 (*note: joint HCP Hatchery Committees/PRCC Hatchery Subcommittee items are noted by "joint," Wells HCP Hatchery Committee items are noted by "Wells," and Rock Island and Rocky Reach HCP Hatchery Committees items are noted by "Rock Island/Rocky Reach"*):

- *Streamlining HCP Hatchery Committees and PRCC Hatchery Subcommittee Meetings (joint):* The HCP Hatchery Committees reviewed, updated, and approved the meeting protocols. The protocols are a living document and can be updated anytime. Hillman said these protocols will likely be reviewed annually. The HCP Hatchery Committees also reviewed, updated, and approved two email distribution lists. A primary list includes individuals who will receive all communications, and a secondary list includes individuals who will receive only final products. The HCP Hatchery Committees are now requesting HCP Coordinating Committees approval of these two distribution lists. John Ferguson said these lists were distributed to the HCP Coordinating Committees by Kristi Geris on May 20, 2019, which is just short of the required 10 calendar days for decision items, per the HCPs. Ferguson said if the HCP Coordinating Committees representatives present are ready to vote now, Anchor QEA will contact Jim Craig to obtain USFWS approval of the email distribution lists via email. HCP Coordinating Committees representatives present approved the updated HCP Hatchery Committees and PRCC Hatchery Subcommittee email distribution lists, contingent on USFWS approval of the lists. (*Note: Geris emailed Craig following the meeting on May 28, 2019, and Craig provided USFWS approval of the lists via email on May 29, 2019, as distributed to the HCP Coordinating Committees by Geris that same day.*)
- *National Marine Fisheries Service (NMFS) Consultation Update (joint):* NMFS is completing the Finding of No Significant Impact for the Steelhead and Summer Chinook Salmon Environmental Assessments (EAs). NMFS received no major comments from the public on the Steelhead or Summer Chinook Salmon draft EAs. Permits for the programs are under review by General Council.
- *Next Meeting:* The next meeting of the HCP Hatchery Committees will be on June 19, 2019.

Hillman said the HCP Tributary Committees met on May 8, 2019; participated in site tours on May 9, May 13, and May 14, 2019; and held a conference call on May 21, 2019, to discuss observations from the site tours:

- *General Salmon Habitat Program (GSHP) Draft Proposals:* The HCP Tributary Committees received 18 GSHP draft proposals. These are cost-share proposals with the Salmon Recovery Funding Board. The HCP Tributary Committees identified 10 projects that did not warrant a full proposal, because the project did not have strong technical or biological merit or were not cost-effective (low benefits per cost). The HCP Tributary Committees solicited full proposals from seven projects, which are due on June 28, 2019. The proposed projects are in the Wenatchee, Entiat, and Methow rivers basins.
- *Napeequa Side Channel Connection Project:* One of the 18 GSHP applications reviewed was from Cascade Columbia Fisheries Enhancement Group and was titled, "Napeequa Side Channel Connection Project." The purpose of the project is to remove a culvert and associated fill to restore hydraulic connectivity to a side channel along the lower Napeequa River, a tributary to the White River. This action will improve juvenile steelhead and spring Chinook salmon survival and productivity by providing access to an important spring-fed side channel. The total cost of the project is \$58,290. After careful review of the proposal, the Rocky Reach HCP Tributary Committee elected to contribute \$49,399 to the project (the project has a cost share of \$8,891).
- *YN Initiation of Dispute Resolution:* Hillman said this item occurred after the HCP Tributary Committees meeting on May 8, 2019. On May 23, 2019, the YN submitted a letter to the HCP Tributary Committees Chairman indicating the YN are formally initiating the dispute resolution process as defined in Section 11 of the Anadromous Fish Agreement and HCPs. Hillman said, to be clear, the YN are not disputing the HCP Tributary Committees decision to not fund the Scaffold Camp #2 Acquisition Project; rather, the dispute is only about the HCP Tributary Committees' rejection of the YN's SOA titled, "Basis for Decision Making in HCP Tributary Committees." The HCP Tributary Committees have 20 days from the receipt of the dispute to review and discuss the dispute before elevating the dispute to the HCP Coordinating Committees. Hillman said the HCP Coordinating Committees will then have 20 days to resolve the dispute or elevate the dispute to the HCP Policy Committees, who will then have 30 days to resolve the dispute. Ferguson said he will coordinate with Hillman regarding scheduling to align the HCP Coordinating Committees review of the dispute during the regularly scheduled HCP Coordinating Committees meeting on June 25, 2019. Ferguson asked Hillman if the HCP Tributary Committees plan to convene to discuss the dispute prior to the next scheduled HCP Tributary Committees meeting? Hillman said when the HCP Tributary Committees voted on the SOA, members made it clear this dispute could not be resolved within the HCP Tributary Committees. He said he distributed to the HCP Tributary

Committees a packet of information for review. He said if these materials change minds about resolving the dispute, the HCP Tributary Committees will convene by conference call. Hillman said, however, at this point, he does not believe the outcome will change over another conference call. Ferguson suggested the HCP Coordinating Committees start thinking about this, including discussing the dispute with respective HCP Policy Committees representatives and perhaps review the meeting minutes to remind themselves of the discussions. Keely Murdoch said reviewing the HCP Coordinating Committees meeting minutes might be useful; however, the dispute is about an SOA and issue paper that the HCP Coordinating Committees did not receive. She said the HCP Coordinating Committees meeting minutes focus more on the Scaffold Camp #2 Acquisition Project, which is not what the dispute is about. Ferguson agreed and said the SOA and issue paper will be included in the package received from the HCP Tributary Committees.

- *Next Meeting:* The next meeting of the HCP Tributary Committees will be on July 16, 2019. Hillman said in June 2019, the HCP Tributary Committees will be attending GSHP proposal presentations and will not officially meet unless something arises with the dispute.

## IV. Douglas PUD

### A. DECISION: CRITFC's Annual Request to Tag Sockeye Salmon at Wells Dam in 2019 (Tom Kahler)

CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019 was distributed to the Wells HCP Coordinating Committee for review by Kristi Geris on February 20, 2019. There was an action item for Kirk Truscott to contact Jeff Fryer to obtain clarification on questions the CCT have about CRITFC's request. Tom Kahler asked Truscott if the CCT concerns were addressed by Fryer.

Truscott said he and Fryer discussed the significance of the data. Truscott said for 2019, the CCT will approve tagging; however, he said the HCP Coordinating Committees need to have a serious discussion about whether these data are still necessary. He asked, what management decisions are being made based on tagging sockeye salmon at Wells Dam? He said the CCT is conducting a qualitative assessment for almost all salmonid species except spring Chinook salmon and steelhead, and Fryer's reports are the only source of sockeye salmon data available, which has been useful. He asked, however, how many years of these data are actually needed? He said at this point, he believes handling these fish less is more important than the data.

John Ferguson asked when Truscott would like to start these discussions, and Truscott said in December 2019. The HCP Coordinating Committees will begin discussing the necessity and significance of the data behind CRITFC's annual request to tag sockeye salmon at Wells Dam during



the HCP Coordinating Committees meeting in December 2019. *(Note: Geris added this to the agenda for December 2019.)*

Kahler said Fryer has mentioned potentially tagging fewer sockeye salmon during future events, maybe around 300 fish as (opposed to 800 fish). Truscott added that it is unknown how this water year will shape up. He said with the warmer weather it may be wise to revisit approval of this request if there are issues with water temperature and river flow. Andrew Gingerich noted that the Okanogan River is already very low this year. He said if the CCT are concerned about adult escapement, the Okanogan River may be tough by the time sockeye salmon arrive.

Wells HCP Coordinating Committee representatives present approved CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019, with the caveat that approval of the tagging will be reviewed again if low flow and warm water migration conditions develop potentially affecting adult sockeye salmon survival. *(Note: Jim Craig provided USFWS approval of this request via email on May 23, 2019.)*

Ferguson suggested, if needed, the CCT request revisiting approval of tagging sockeye salmon at Wells Dam in 2019, during a future HCP Coordinating Committees meeting. Truscott agreed. *(Note: on May 29, 2019, Geris notified Fryer of the Wells HCP Coordinating Committee approval of CRITFC's request, including the caveat to revisit the approval pending river conditions.)*

## **B. Wells Dam Bypass Operations Update (Tom Kahler)**

Tom Kahler said a Summary of Wells Dam Bypass Operations in April 2019 was distributed to the HCP Coordinating Committees by Kristi Geris on May 10, 2019. Kahler said the summary explains Wells Dam bypass non-compliance events that occurred in April 2019. He said he has already discussed these events with each Wells HCP Coordinating Committee representative, and each representative said they planned to review the summary document. Kahler asked if there were questions about the summary or if the Wells HCP Coordinating Committee wants him to walk through what happened.

Kirk Truscott said what is most important is that there is follow-through to make sure the same thing does not happen again. He said Douglas PUD developed a good roadmap to minimize the chances of something like this reoccurring.

Keely Murdoch asked if there is any idea of how these non-compliance events affect fish passage survival? Kahler said it is unknown how many fish were present and what passage routes were used when these events occurred. He said he knows there were hatchery releases in the water around this time, including Winthrop, Methow, Chewuch, and Twisp river fish. Truscott suggested reviewing PIT-tag data for abnormally low values compared to past years. Murdoch cautioned there is high variability in these data. Truscott agreed but said it may be an exercise worth doing. Murdoch asked

if Truscott is suggesting calculating smolt-to-smolt survival to Rocky Reach Dam or McNary Dam, and Truscott said to McNary Dam would provide more data points. Truscott suggested reviewing the Annual Program Review reports. He said these reports are cumulative and are listed by release group. Kahler asked about the release dates for CCT hatchery fish. Truscott said fish were semi-volitionally released the week of April 15, 2019, and by April 18, 2019, most fish were forced out. Kahler said Douglas PUD will review available PIT-tag detection data from April 9 to April 30, 2019, covering the span of Wells Dam bypass non-compliance events for Turbine Units 1 to 4 and Bypass Bays 2 and 4, to identify possible impacts to fish passage and survival through the Wells Project.

## V. Chelan PUD

### A. Rocky Reach Dam Turbine Unit C1 and C3 Update (Lance Keller)

Lance Keller said the hub of Turbine Unit C1 is now completely disassembled and work is progressing. He said he has no measurable updates on Turbine Unit C3. He recalled last month describing the following: 1) installing in Turbine Unit C3 the engineered seals designed for Turbine Unit C1, without success; 2) specific engineered seals designed for Turbine Unit C3, which should have arrived last week; and 3) investigating hydraulically locking the blades into place via governor control.

Kirk Truscott asked how long does it take and what is involved to evaluate hydraulically locking the blades into place? Keller said this involves a modeling exercise, and Chelan PUD has contracted an external consulting firm from Italy who specializes in these types of repairs and modifications. He said a mechanical installation is needed to hold the blades in place and it is extremely important that the blade angle is accurate to not cause runaway. He said the only way to stop runaway blades is to place headgates in to stop the unit, which is very serious and is why this evaluation also includes a risk assessment.

### B. Rock Island Dam Powerhouse 1 Maintenance Update (Lance Keller)

Lance Keller said Rock Island Dam mechanics are progressing on Turbine Unit B4. He said work is completed on the discharge liner and the new stainless-steel portion of the liner will be installed next. He said as mechanics continue disassembly of Turbine Unit B4, components of the unit are being inspected for condition and expected lifespan. He said parts initially planned for re-use are now being identified as needing replacement, which has pushed back the estimated return-to-service date from July to November 2019. He said, for example, mechanics found structural issues in the wicket gate control that regulates the amount of water coming into the unit. He said this ring sits on top of the wickets gates and controls all gates. He said whether the unit undergoes an extensive repair or complete rebuild, the schedule will have to be moved out. He said at this time, he is unsure how Turbine Unit B4 will affect the remaining schedule.

Kirk Truscott asked if there is concern the other units might be in the same condition? Keller said Chelan PUD will definitely inspect the other units; however, mechanics do not have the ability to do this at this level until the unit is disassembled. Truscott asked if Chelan PUD plans to order additional parts now in case these same issues are discovered in the other units, opposed to losing 3 to 4 months per unit. Keller said he expects this will be the case, and he added that some time may be gained with the other units from learning efficiencies gained from the maintenance of Turbine Unit B4.

### **C. Rock Island Dam Bypass Incident (Lance Keller)**

Lance Keller said in late-April and early May 2019, Chelan PUD identified and resolved an issue at the Rock Island Dam bypass. He said in late April 2019, steelhead collected at the bypass dropped below 100 fish per day, yet there was a slight increase in the mortality rate. He said on April 20, 2019, the mortality rate was 1.3% (2 mortalities out of 109 fish collected that day). He said on April 25, 2019, the mortality rate was 5.8% (4 mortalities out of 69 fish collected that day). He said what was perplexing was these fish were not fresh mortalities and it was obvious these fish were not dying in the trap. He said additionally, all fish had descaling on one side of the body. He said crews inspected the gates that control river flow into the trap; however, no issues were identified. He said additional mortalities were discovered in the trap with the same characteristics as the others (i.e., not fresh and descaling on one side). He said crews then suspected an issue within the traveling water screen portion of the system. He said there was an increase in the time period when the screens in this system are sprayed and based on the descaling fish might be becoming impinged on the screens. He said crews isolated all flow from the traveling water screen system and there was a subsequent decrease in mortality rate to 1.09% on April 30, 2019.

Keller said on May 1, 2019, a fishway attendant identified another potential source of the fish mortalities in the R11 gate, which is one of the gates that controls river flow into the trap from the Powerhouse 2 portion of the system. He said a drain plug was removed from the gate during the adult fishway maintenance period and inadvertently was not reinstalled (this was overlooked during the first inspection of the gate). He said crews attempted to reinstall the plug, operated R11 to the highest capacity, and 30 minutes later there were additional mortalities with the same characteristics as the others. He said on May 1, 2019, crews took the juvenile bypass system offline for a brief 40-minute outage. He said the spill water level in R11 was decreased enough to physically see the plug hole, the plug was installed, and the system was returned to service. He said initially after testing, there were a few more mortalities, and on May 3, 2019, there were zero mortalities.

Keller said ultimately, the mortalities were attributed to the drain hole in R11. He said with the plug removed and at certain operational heights, the increased velocity through the area caused fish to slip through the hole or stack up against the hole resulting in mortalities. He said May 1, 2019, was

the highest mortality day with 13 mortalities out of 143 steelhead collected. He explained that the drain hole was installed to previously help dewater the area, but a larger dewater pump has since been installed so the drain hole is no longer needed. He said during the next outage crews will modify the drain hole to ensure the plug will not be removed, and the appropriate protocols will be updated to not remove the plug moving forward.

Kirk Truscott asked what proportion of emigrants arriving at Rock Island Dam are subject to the bypass? Keller said to the best of his knowledge it varies but maybe around 2.5% or less. He said the collection efficiency of that system is low.

## **VI. HCP Administration**

### **A. YN HCP Coordinating Committees Alternate Representative – Brandon Rogers (John Ferguson)**

John Ferguson said Bob Rose retired last Friday, May 24, 2019, and Brandon Rogers is Rose's replacement as the YN HCP Coordinating Committees Alternate Representative.

### **B. Douglas PUD Support Staff – Amber Nealy (John Ferguson)**

John Ferguson said Mary Mayo is retiring this Friday, May 31, 2019, and Amber Nealy will be replacing Mayo as Douglas PUD support staff. Tom Kahler said Nealy has been shadowing Mayo for a few weeks, which has been fortunate because Mayo does so much for Douglas PUD Natural Resources Department (NRD). Kahler said Mayo helps with all filings for the Federal Energy Regulatory Commission by the NRD, she conducts a lot of the technical editing for NRD documents, and she manages NRD postings to multiple websites, among other things. Kahler said he believes Nealy will do a good job.

### **C. Next Meetings (John Ferguson)**

The next scheduled HCP Coordinating Committees meeting is on June 25, 2019, to be held in-person at the Grant PUD Wenatchee Office in Wenatchee, Washington.

John Ferguson said Kristi Geris will be out-of-country June 15 to July 5, 2019, and Larissa Rohrbach (HCP Hatchery Committees support staff) will be managing emails and attending the HCP Coordinating Committees meeting on June 25, 2019. Ferguson said Geris will have Rohrbach's contact information in her out-of-office message as a reminder to distribute emails to Rohrbach during this time.

The July 23 and August 27, 2019 meetings will be held by conference call or in-person at the Grant PUD Wenatchee office in Wenatchee, Washington, as is yet to be determined.

## **VII. List of Attachments**

Attachment A List of Attendees

Attachment B Post-emergence Behavior of Subyearling Summer/Fall Chinook in Wells Reservoir and Implications for the Measurement of Passage Survival through the Wells Hydroelectric Project

**Attachment A**  
**List of Attendees**

Name	Organization
John Ferguson	Anchor QEA, LLC
Kristi Geris	Anchor QEA, LLC
Tracy Hillman <sup>††</sup>	BioAnalysts
Lance Keller <sup>*</sup>	Chelan PUD
Tom Kahler <sup>*</sup>	Douglas PUD
Andrew Gingerich <sup>*</sup>	Douglas PUD
Curt Dotson <sup>††</sup>	Grant PUD
Peter Graf <sup>††</sup>	Grant PUD
Tom Skiles <sup>††</sup>	Columbia River Inter-Tribal Fish Commission
Scott Carlon <sup>*†</sup>	National Marine Fisheries Service
Chad Jackson <sup>*†</sup>	Washington Department of Fish and Wildlife
Patrick Verhey <sup>*†</sup>	Washington Department of Fish and Wildlife
Keely Murdoch <sup>*</sup>	Yakama Nation
Kirk Truscott <sup>*</sup>	Colville Confederated Tribes

Notes:

- \* Denotes HCP Coordinating Committees member or alternate
- † Joined by phone
- †† Joined by phone for the HCP Tributary and Hatchery Committees Update
- ††† Joined by phone for the Douglas PUD Subyearling Chinook Salmon presentation