

## Memorandum

---

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

Date: November 20, 2019

From: John Ferguson, HCP Coordinating Committees Chairman

cc: Kristi Geris

**Re: Final Minutes of the September 24, 2019 HCP Coordinating Committees Meeting**

---

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, September 24, 2019, from 10:00 a.m. to 12:00 p.m. Attendees are listed in Attachment A to these meeting minutes.

### Action Item Summary

- Chelan PUD 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 I-C).
- Chelan PUD will review with U.S. Fish and Wildlife Service (USFWS) the Colville Confederated Tribes' (CCT's) revisions to the Statement of Agreement (SOA) titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years*, and will confirm with USFWS approval of the SOA with these revisions (Item III-A). (*Jim Craig provided USFWS approval of the CCT's edits and revised SOA via email on September 26, 2019.*)
- Anchor QEA, LLC, will add a subyearling Chinook salmon check-in agenda item for Chelan PUD on HCP Coordinating Committees meetings occurring in February, May, August, and November, to continue to evaluate or monitor study design, tag technology, and life history information on a quarterly basis to better understand future survival study feasibility by 2022, per the SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years* (Item III-A). (*Note: Kristi Geris added this reoccurring item to HCP Coordinating Committees meeting agendas beginning in February 2020.*)
- Douglas PUD will revise the *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019*, as discussed (Item IV-A). (*Note: Tom Kahler provided a revised draft document to Kristi Geris following the HCP Coordinating Committees meeting on September 24, 2019, which Geris distributed to the HCP Coordinating Committees that same day.*)
- Wells HCP Coordinating Committee representatives will review the revised *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During*

April 2019 and will be prepared to discuss a path forward during the HCP Coordinating Committees meeting on October 22, 2019 (Item IV-A).

- Anchor QEA will coordinate with Denny Rohr (Priest Rapids Coordinating Committee [PRCC] Facilitator) and Grant PUD regarding rescheduling the HCP Coordinating Committees and PRCC's meetings in November and December 2019 to accommodate the holidays (Item V-C). (Note: Anchor QEA and Rohr coordinated rescheduled dates, as discussed.)
- The HCP Coordinating Committees meeting on October 22, 2019, will be held **in-person** at the Grant PUD Wenatchee office in Wenatchee, Washington (Item V-C).

## Decision Summary

- Rock Island and Rocky Reach HCP Coordinating Committees representatives present approved the SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years*, as revised (Item III-A). (Jim Craig provided USFWS approval of the revised SOA via email on September 26, 2019.)

## Agreements

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

## Review Items

- The *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.
- The *Northern Pikeminnow Predator Control Program, Rocky Reach and Rock Island Hydroelectric Projects, Draft Summary Report, 2018* was distributed to the HCP Coordinating Committees by Kristi Geris on September 10, 2019, and is available for a 30-day review with edits and comments due to Lance Keller by October 10, 2019. Chelan PUD will request approval of this report during the HCP Coordinating Committees meeting on November 19, 2019.
- A *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019* was distributed to the HCP Coordinating Committees by Tom Kahler during the HCP Coordinating Committees meeting on September 24, 2019, and a revised draft document was distributed to the HCP Coordinating Committees by Kristi Geris following the HCP Coordinating Committees meeting on September 24, 2019 (Item IV-A).

## Finalized Documents

- The final SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years* was distributed to the HCP Coordinating Committees by Kristi Geris on October 7, 2019 (Item III-A).
- The Final 2017 Douglas PUD Pikeminnow Removal Annual Report was distributed to the HCP Coordinating Committees by Kristi Geris on October 22, 2019, as approved by the Wells HCP Coordinating Committee after no disapprovals were received prior to the 60-day review deadline on March 28, 2019.

## I. 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:

- Tom Kahler added a 3-year performance review of the HCP Coordinating Committees Chair
- Lance Keller removed the *Rock Island and Rocky Reach 2019 Fish Spill Season Report*
- Ferguson added a Yakama Nation (YN) HCP Tributary Committees representation designation

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

The HCP Coordinating Committees reviewed the revised draft August 27, 2019 meeting minutes. John Ferguson said in the first revised draft minutes (distributed to the HCP Coordinating Committees by Kristi Geris on September 17, 2019), under the Subyearlings Studies discussion, Chelan PUD and Douglas PUD provided text clarifying the discussion about phase designations and at-dam passage survival studies. Ferguson said the text clarified that at-dam studies do lead to a phase designation (Phase III [Additional Juvenile Studies] or Phase II [Additional Tools]); however, at-dam studies do not lead to designation of Phase III (Standard Achieved) and thus a calculation for mitigation (i.e., do not lead to a calculated survival component for No Net Impact). Tom Kahler further explained that Douglas PUD did use at-dam passage calculations to get to Phase III (Additional Juvenile Studies) for subyearling Chinook salmon; however, the Wells Project will remain in this phase until a project-level survival study can be conducted. Kahler said if the HCP Coordinating Committees want to make at-dam studies a basis for hatchery compensation, this is not currently stipulated in the HCPs and would be a major change to the HCPs.

Geris said a second revised draft minutes were distributed on September 19, 2019, which included Chelan PUD responses to three outstanding comments, which are tracked in redline strikeout. The HCP Coordinating Committees reviewed these additional edits. Geris said all other comments and revisions received from members of the Committees were incorporated into the revised minutes.

The HCP Coordinating Committees members present approved the August 27, 2019 meeting minutes, as revised. The YN abstained, because a YN representative was not present during the August 27, 2019 meeting.

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

Action items from the HCP Coordinating Committees meeting on August 27, 2019, and follow-up discussions, were as follows. (*Note: Italicized text corresponds to agenda items from the meeting on August 27, 2019*):

- *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 I-C).*

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

- *Douglas PUD will review available passive integrated transponder (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 I-C).*

This will be discussed during today's meeting.

- *Kirk Truscott will submit CCT comments on the Wells Project Subyearling Chinook Life-History Study 2011-2013 Draft Final Report to Tom Kahler (Item I-C).*

Kahler said Truscott provided CCT comments on the draft report prior to the HCP Coordinating Committees meeting on September 24, 2019. Kahler said he will review and address these comments.

- *Lance Keller will update Keely Murdoch on subyearling discussions to date, including Chelan PUD's plan to request approval of a renewed SOA during the HCP Coordinating Committees meeting on September 24, 2019, that maintains subyearling Chinook salmon in Phase III (Additional Juvenile Studies) for the Rock Island and Rocky Reach projects for up to 3 years (Item III-B).*

Keller discussed this topic with Murdoch, as described in an email distributed to the HCP Coordinating Committees by Kristi Geris on September 3, 2019.

- *Lance Keller will distribute to the HCP Coordinating Committees a draft SOA, maintaining subyearling Chinook salmon in the Rock Island and Rocky Reach projects in Phase III (Additional Juvenile Studies) for up to 3 years, for vote during the HCP Coordinating Committees meeting on September 24, 2019 (Item III-B).*

Keller provided a draft SOA to Kristi Geris on September 19, 2019, which Geris distributed to the HCP Coordinating Committees that same day.

- *Lance Keller will distribute to the HCP Coordinating Committees results from the Rocky Reach Dam Turbine Unit C3 Chesterton seal tests once they become available (Item IV-A).*

Keller provided an update on the Chesterton seal tests to Kristi Geris on September 19, 2019, which Geris distributed to the HCP Coordinating Committees that same day. Keller said he will also discuss this during today's meeting.

- *Lance Keller will explain to Keely Murdoch Chelan PUD's request to begin the 2019/2020 annual ladder maintenance work period at Rocky Reach Dam on December 16, 2019, which is 2.5 weeks earlier than usual, to allow more time to complete required work, and request that Murdoch provide the YN's approval of the request to the Rocky Reach HCP Coordinating Committee via email (Item IV-D).*

Keller discussed this topic with Murdoch and the YN agreed to Chelan PUD's request, as described in an email distributed to the HCP Coordinating Committees by Kristi Geris on September 3, 2019.

## II. HCP Hatchery and Tributary Committees Update

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

Tracy Hillman updated the HCP Coordinating Committees on the following actions and discussions that occurred during the HCP Tributary Committees meeting on September 12, 2019:

- *Cottonwood Flats Connection Project Presentation:* Chelan County Natural Resources Department and their consultant (Natural Systems Design) provided an update on the status of the Cottonwood Flats Connection project on the Entiat River. This was a follow-up visit based on feedback provided to the sponsor from the Rocky Reach HCP Tributary Committee during the HCP Tributary Committees meeting on August 8, 2019. The Rocky Reach HCP Tributary Committee had supported the 240-cubic feet per second (cfs) connection (i.e., the floodplain will be activated when flows in the Entiat River are at 240 cfs or greater) but did not support the perennial alcove or the construction of a channel throughout the floodplain. Rather, the Rocky Reach HCP Tributary Committee recommended the construction of a short pilot channel to allow the river the opportunity to carve out a channel or channels on the floodplain. The sponsor and their consultant evaluated the recommendation from the Rocky Reach HCP Tributary Committee and determined it will create ponding on the floodplain and noted the uncertainty of flow paths forming on the floodplain. Given this information, the Rocky Reach HCP Tributary Committee recommended knocking down high points on the floodplain to help with flow-path development. In summary, the Rocky Reach HCP Tributary Committee recommended construction of the pilot channel and knocking down high points downgradient from the pilot channel to help with flow-path development. No channels other than the pilot channel will be constructed on the floodplain. The sponsor, their consultant, and the landowner (Chelan-Douglas Land Trust) agreed with this approach.

- *Evaluation of the Chair:* The HCP Tributary Committees conducted an evaluation of the HCP Tributary Committees Chair (Tracy Hillman). HCP Tributary Committees members indicated they were pleased with the Chair's performance and requested that Douglas PUD and Chelan PUD retain Hillman's services for another 3-year term. Hillman agreed to serve as the Chair for the Wells, Rocky Reach, and Rock Island HCP Tributary Committees for another 3 years.
- *Next Meeting:* The next meeting of the HCP Tributary Committees will be on October 10, 2019.

Hillman updated the HCP Coordinating Committees on the following actions and discussions that occurred during the HCP Hatchery Committees meeting on September 18, 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"*):

- *Relative Reproductive Success Timeline (joint):* Washington Department of Fish and Wildlife (WDFW) provided the HCP Hatchery Committees with a revised memorandum clarifying the extension of the Wenatchee Spring Chinook Salmon Relative Reproductive Success Study. Importantly, the last year of sampling DNA from natural-origin Chinook salmon at Tumwater Dam will be 2023. The Rocky Reach and Rock Island HCP Hatchery Committees approved the memorandum.
- *Broodstock Collection Protocols (joint):* WDFW prepared a Broodstock Collection Protocols Development SOA. The SOA provides a timeline for developing the Broodstock Collection Protocols. The Wells, Rocky Reach, and Rock Island HCP Hatchery Committees approved the SOA. In addition, and consistent with the SOA, the HCP Hatchery Committees began the process of updating the Broodstock Collection Protocols. The HCP Hatchery Committees are currently identifying important issues to cover in the Broodstock Collection Protocols and identifying who will lead the writeup of certain sections of the protocols.
- *Update Genetics Section of the Hatchery Monitoring and Evaluation (M&E) Plan (joint):* The HCP Hatchery Committees reviewed edits made to the genetics section of the Hatchery M&E Plan. Revisions were made to the M&E Plan based on recommendations provided by the Genetics Monitoring Panel. HCP Hatchery Committees members continue to edit the genetics section of the report and will review additional revisions to the report during the HCP Hatchery Committees meeting on October 16, 2019.
- *Alternative Broodstock Composition and Mating Strategies (joint):* Douglas PUD provided a presentation that reviewed hatchery broodstock and mating practices for conservation programs. The intent is to collect broodstock and implement mating strategies within the hatcheries that minimize negative genetic effects. Here, the focus is on whether to include jacks in broodstock and mating strategies. Douglas PUD will provide a paper to the HCP Hatchery Committees describing the different strategies and their consequences. The HCP

Hatchery Committees will continue to evaluate broodstock collection and mating strategies for conservation programs.

- *National Marine Fisheries Service (NMFS) Consultation (joint)*: NMFS has signed the steelhead and summer Chinook salmon permits. The permits are waiting to be signed by the permittees. John Ferguson asked about the duration of the permits and Tom Kahler replied, 10 years.
- *Expanded Wells Summer Chinook Production for the Southern Resident Killer Whale Population (Wells)*: WDFW prepared a proposal that will allow extra production of subyearling summer Chinook salmon at Wells Fish Hatchery. The extra production is intended to benefit the Southern Resident Killer Whale population. Prior to the HCP Hatchery Committees meeting on September 18, 2019, the Wells HCP Hatchery Committee reviewed and approved the proposal allowing extra production of summer Chinook salmon at Wells Fish Hatchery. Ferguson asked what the next steps are in this process and if funding is already available. Chad Jackson said funding is available and contracting is in place. He said the several orca programs are currently working through permitting with NMFS and making sure these efforts are not impacting priority mitigation programs. He said at Wells Fish Hatchery, the eggs have not yet been collected.
- *2019 Egg Treatment Study (Wells)*: Douglas PUD provided a study plan that will evaluate the effects of salt, hydrogen peroxide, and elemental copper in controlling saprolegnia infection of summer Chinook salmon eggs during incubation at Wells Fish Hatchery. The Wells HCP Hatchery Committee approved the pilot study, which will begin this fall 2019.
- *Draft 2020 Rock Island and Rocky Reach M&E Implementation Plan (Rock Island/Rocky Reach)*: Chelan PUD provided the Rock Island and Rocky Reach HCP Hatchery Committees with the Draft 2020 Rock Island and Rocky Reach M&E Implementation Plan, which was approved by both committees.
- *Next Meeting*: The next meeting of the HCP Hatchery Committees will be on October 16, 2019, which is when Hillman said he expects the HCP Hatchery Committees Chair evaluation results will be discussed.

### III. Chelan PUD

#### A. DECISION: Rock Island and Rocky Reach Subyearling Chinook Salmon SOA (Lance Keller)

Lance Keller said a draft SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years* was distributed to the HCP Coordinating Committees by Kristi Geris on September 19, 2019. Keller said the draft SOA is updated from the version approved in 2016, as discussed during the HCP Coordinating Committees meeting on August 27, 2019. He said this includes date changes, an addition to the Agreement Statement to

review study designs on a quarterly basis, and updating text in the Background to make it current. He recalled reviewing study designs on a quarterly basis was discussed under the former SOA; however, now this language is actually included in the SOA.

Kirk Truscott suggested the following edits (*note: edits are shown in underlined and strikeout text*):

Section	Proposed Text
Agreement Statement	The Rock Island and Rocky Reach HCP Coordinating Committees (CC) were presented data regarding the requirements of statistical survival models, tag technology, and life-history attributes for subyearling summer Chinook project survival studies in the Mid-Columbia, and agree that <u>valid</u> juvenile project survival measurements are not currently feasible.
Background	Current statistical survival models cannot calculate project survival as they are currently unable to address <del>active and non-active migrants</del> <u>variable juvenile migration characteristics</u> .
Background	These factors, in combination with <del>yet unknown proportions of migrant vs. non-migrant juvenile fish in</del> <u>variable juvenile migration characteristics within</u> the population remain impediments to project survival estimations for subyearling Chinook.

Rock Island and Rocky Reach HCP Coordinating Committees representatives present approved the SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years*, as revised. John Ferguson said Jim Craig provided USFWS approval of the draft SOA via email on September 19, 2019. Keller said he will review Truscott’s revisions to the SOA with Craig and will confirm USFWS still approves the SOA with these revisions. (*Craig provided USFWS approval of the CCT’s edits and revised SOA via email on September 26, 2019.*)

Ferguson asked about timing for the quarterly updates and suggested starting in February 2020 since the HCP Coordinating Committees just discussed this topic in detail. Keller also suggested including the month of November as one of the quarterly updates because this is when U.S. Army Corps of Engineers holds their annual Anadromous Fish Evaluation Program, which often presents on the latest technology and studies. Ferguson said Anchor QEA will add a subyearling Chinook salmon check-in agenda item for Chelan PUD on HCP Coordinating Committees meetings occurring in February, May, August, and November, to continue to evaluate or monitor study design, tag technology, and life history information on a quarterly basis to better understand future survival study feasibility by 2022, per the SOA titled *Maintain Rock Island and Rocky Reach Subyearling Chinook in Phase III (Additional Juvenile Studies) for up to Three Years*. (*Note: Geris added this reoccurring item to HCP Coordinating Committees meeting agendas beginning in February 2020.*)

The final SOA was distributed to the HCP Coordinating Committees by Geris on October 7, 2019.



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

Lance Keller said there are no new updates on Rocky Reach Dam Turbine Unit C1.

Keller said an update on the Rocky Reach Dam Turbine Unit C3 Chesterton seal tests was distributed to the HCP Coordinating Committees by Kristi Geris on September 19, 2019. Keller said Turbine Unit C3 was removed from service on August 26, 2019. He said the unit was dewatered to inspect the hub. He said two blade seals were found to have small oil leaks. He said upon draining the oil from the turbine hub, approximately 24 ounces of water was found. He said engineers indicated that these systems are designed to be able to function with a little water in the hub, and also noted that 24 ounces of water in the approximately 2,000 gallons of oil removed from the hub is a very small and acceptable amount of water to be found in the turbine hub. He recalled that crews also now have an improved ability to measure oil volumes when filling and draining the turbine hub, using what is called a "totalizer." He said another new set of trunnion seals, manufactured as a second option in the event that the initial set of Chesterton seals failed, were also installed in the two blades. He said these seals are similar to the Chesterton seals and are also equipped with an o-ring to wipe the seal surface. He said these additional seals were installed, mechanics conducted a pressure test, moved the blades back and forth, and no leakage was observed. He said crews returned Turbine Unit C3 to service on September 6, 2019, and periodic removal from service events are planned to conduct similar inspections.

John Ferguson asked if the successes in repairing Turbine Unit C3 will now be applied to the other units, or is Chelan PUD still researching other repair options? Keller said he is unsure of a definite plan. He said all of the engineering work on hydraulically locking the blades into place via a governor control is still on the shelf and he is unsure of that status. He said as of now, there has been good success with the two seal options, with the second design seemingly performing even better than the first.

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

Lance Keller said there are no new updates on Rock Island Dam Turbine Unit B4. He said work on the draft tube continues to move forward and Chelan PUD is still struggling with the delivery of needed replacement parts to the site.

# **IV. Douglas PUD**

## **A. Wells Dam Bypass Analysis of Probable Impacts of April 2019 Non-Compliance Events (Tom Kahler)**

Tom Kahler distributed hard copies of a *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019* (Attachment B), which Kristi Geris

distributed electronically to the HCP Coordinating Committees following their meeting on September 24, 2019.

Kahler noted that Appendix A (listed under Methods on page 1 of Attachment B) refers to the initial document provided to the HCP Coordinating Committees, which summarized Wells Dam bypass operations in April 2019 (titled, *Summary of Wells Dam Bypass Operations in April 2019*, distributed to the HCP Coordinating Committees by Geris on May 10, 2019).

Kahler said he developed a formula (Equation 1, Attachment B) to estimate the additional mortality that may have resulted from the Wells Dam bypass system not operating during a portion of April 2019. He said Equation 1 includes several parameters, which attempt to capture estimated passage timing for the different Plan Species spring emigrants, different non-compliance dates and times, and probable passage routes (Attachment B).

Kahler said Figures 1, 2, and 3 of Attachment B show coho salmon (Figure 1), steelhead (Figure 2), and yearling Chinook salmon (Figure 3) PIT-tag detections at the Rocky Reach Juvenile Fish Bypass System adjusted to represent Wells Dam passage dates based on estimated travel times (left y-axis). He said these figures also show the proportion of each day during which bypass operations were out of compliance (right y-axis and  $y_i$  in Equation 1). He said sockeye salmon and subyearling Chinook salmon passage dates at Wells Dam had no overlap with the bypass non-compliance dates. He noted for coho salmon, the earliest four migrants overlapped with dates when the bypass was out of compliance. He said because there are no time stamps for passage events at Wells Dam and these dates are back calculated based on travel time to Rocky Reach Dam, there is no way to confirm whether these fish passed Wells Dam during hours when the bypass was non-compliant. He said conservatively, the results assume these four fish passed during the hours when the bypass was not operating.

Kahler said fish are attracted to the face of Wells Dam by the discharge through turbine units since the bulk of the discharge through the dam is via operating turbines, and the idea of the bypass system is to have those fish that approach the dam pass via modified spillways located above turbine intakes. With 10 turbines at Wells Dam, Equation 1 assumes there is equal probability (0.1) a fish will encounter the dam at any one of these turbines. He said records are available showing which turbine units were operating during the non-compliance dates and times; however, parsing out passage routes and mortality rates gets complicated because we do not know what time a fish actually passed Wells Dam. To simplify the estimation of impacts, we assumed that a fish estimated to have passed Wells Dam on a date of non-compliant bypass operations could have passed at any time, and we multiplied the proportion of fish calculated to have passed on that date ( $x_i$  in Equation 1) by the proportion of that date during which bypass operations were non-compliant ( $y_i$  in Equation 1).

Kahler said the parameter  $P(b_i)$  in Equation 1 represents the probability of a fish encountering the dam at a non-compliant bypass unit. He said,  $P[t_i]$  in Equation 1 is the probability that the fish encountering the dam at a non-compliant bypass will pass via a turbine located below a bypass spillway. Andrew Gingerich added that a fish passing via a turbine route does not mean the fish dies. Kahler said this is correct; in fact, smolts survive turbine passage at high rates.

Kahler said Equation 1 sums all daily calculations of proportions of additional mortality for each date on which bypass operations were non-compliant to generate a total additional mortality as a proportion of detected emigrants (Estimated Additional Mortality, or  $A$  in Equation 1). Table 1 (Attachment B) shows those sums for each Plan Species. He said the Adjusted Survival Rate is the Estimated Additional Mortality subtracted from the measured survival value 0.9630. He said the Current Mitigation Rate is the rate established by the multi-year average of all of the survival studies for yearling spring migrants (or 7% for those Plan Species in Phase III [Additional Juvenile Studies]), and the Adjusted Mitigation Rate was calculated by adding the Estimated Additional Mortality to the Current Mitigation Rate. He said multiplying the Estimated Additional Mortality for each Plan Species by the total number of that species released or naturally produced above Wells Dam results in an estimate of the number of that species potentially affected by the non-compliant bypass operations (assuming that the distribution of emigration timing for the tagged fish used in the estimation represents the timing distribution for the run at-large). Gingerich noted a few errors in Table 1.

Keely Murdoch asked how the survival rate was calculated for estimating additional mortality resulting from increased turbine passage. Kahler said the baseline rate under normal bypass operations was determined via bypass studies that calculated an estimated weighted average bypass efficiency of 92% (or 0.92) for yearling spring migrants translating to a 0.08 probability of turbine passage. The estimate of additional mortality is calculated as the probability of turbine passage under non-compliant bypass operations minus the probability under normal bypass operations (0.08). That difference is multiplied by an average probability of turbine-passage mortality from studies at multiple projects, because we do not have a value specifically for Wells Dam. Murdoch asked if this calculation is based on immediate mortality or also includes latent mortality. Kahler said these data are based off of survival studies, which only consider immediate mortality within the study reaches.

Murdoch asked how these non-compliance dates compare to release dates for hatchery spring Chinook salmon (springers). She said in Figure 3, it is likely the increasing numbers represent hatchery springers and those passing earlier are wild-origin springers. She said she is interested in understanding how these non-compliance dates might have affected wild versus hatchery fish. Kahler said among the approximately 19,000 yearling Chinook salmon shown in Figure 3, he believes almost all fish were hatchery-origin; however, the migration timing of untagged fish is unknown.

Murdoch suggested acknowledging these estimates are for hatchery fish only and effects to wild fish cannot be assessed. *(Note: after the meeting Kahler provided a revised version of Attachment B that included estimated additional mortality [0.0016] for 71 wild spring Chinook salmon included within combined sample of yearling Chinook salmon.)*

Kirk Truscott said Equation 1 assumes equal probability for a fish to pass via any turbine, but he asked if Douglas PUD has data on what proportion of fish pass through different turbines based on fyke net data? Kahler said the fyke-netting effort did not sample every passage route at once as would have been necessary to determine horizontal distribution of fish passage. He said, however, if turbine discharge is what attracts fish to approach the dam at a particular location, and a turbine unit is not running, fish would be attracted to other passage options.

John Ferguson asked about next steps. Kahler asked whether the Wells HCP Coordinating Committee is satisfied with this approach or if there are other ideas to quantify Estimated Additional Mortality. Truscott said the CCT would like time to further review the document. Gingerich suggested adding language to the document to address Murdoch's comments about the scope being limited to PIT-tagged hatchery-origin fish. Chad Jackson also suggested correcting the errors in Table 1. Murdoch said it would also be helpful to parse out springers from summer Chinook salmon (summers) in Table 1. Gingerich said typically, yearling summers are released later. Murdoch agreed and said one could assume all late detections are summers. Kahler noted that summers have different travel times, which will affect the calculations. *(Note: During the meeting, Kahler provided Estimated Additional Mortality numbers parsed out for springers and summers [0.0019], springers only [0.0022], and summers only [0.00098]; however, he noted in a revised version of Attachment B that the estimated additional mortality for wild spring Chinook salmon [0.0016] was lower than the estimate for combined yearling Chinook salmon [0.0019].)*

Truscott noted in Figures 1, 2, and 3, no single day has more than 6% to 7% proportion of emigrants passing Wells Dam (left y-axis). He said with most hatchery releases occurring on or around April 15, these values seem low. He said he would expect a larger proportion on several of these days. Kahler said releases out of the Methow and Twisp rivers were late this year. Gingerich said historically during low-water years, releases out of the Twisp River were postponed in hopes of having more water and turbid conditions in the river when the fish are released to provide additional cover for out-migrating fish and reduce losses to predation. He said there was a drought in the Methow River this year and perhaps fish were held longer for this reason.

Kahler said Douglas PUD will revise the *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019*, as discussed. *(Note: Kahler provided a revised draft document to Geris following the HCP Coordinating Committees meeting on September 24, 2019, which Geris distributed to the HCP Coordinating Committees that same day.)*

Wells HCP Coordinating Committee representatives will review the revised *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019* and will be prepared to discuss a path forward during the HCP Coordinating Committees meeting on October 22, 2019.

## V. HCP Administration

### A. YN HCP Tributary Committees Representation Designation (John Ferguson)

John Ferguson said a YN HCP Tributary Committees Representation Designation letter was received on September 23, 2019 and was distributed to the HCP Coordinating Committees by Kristi Geris prior to the HCP Coordinating Committees meeting on September 24, 2019. Ferguson said the letter designates Brandon Rogers as the YN HCP Tributary Committees Representative (formerly Lee Carlson) and designates Hans Smith as the YN HCP Tributary Committees Alternate (formerly Rogers).

### B. 3-Year Performance Review of the HCP Coordinating Committees Chair (Tom Kahler)

Tom Kahler recalled there is an HCP requirement to review the performance of each HCP Committee Chair every 3 years. Kahler said initially, the HCP Committees conducted this review in person; however, in all subsequent years they have been satisfied conducting this review via email. Kahler said a poll was distributed via email inquiring about the performance of both the Chair and Anchor QEA services as a whole. Kahler said HCP Coordinating Committees representatives provided positive feedback and agreed to retain John Ferguson and Anchor QEA for another 3 years.

### C. Next Meetings (John Ferguson)

The next scheduled HCP Coordinating Committees meeting is on October 22, 2019, to be held **in person** at the Grant PUD Wenatchee office in Wenatchee, Washington.

John Ferguson suggested starting discussions about possibly rescheduling the HCP Coordinating Committees meetings in November and December 2019 to accommodate the holidays. The HCP Coordinating Committees discussed moving the dates, including possible conflicts with the HCP Hatchery Committees meetings and coordinating with the PRCC meetings. The following changes were suggested:

Regular Date/Time	Proposed Date/Time
HCP Coordinating Committees meeting on November 26, 2019, 10:00 a.m. to 2:00 p.m.	HCP Coordinating Committees meeting on November 19, 2019, 9:00 a.m. to 12:00 p.m.
PRCC meeting on November 27, 2019	PRCC meeting on November 19, 2019, 1:00 p.m. to 5:00 p.m.
HCP Coordinating Committees meeting on December 24, 2019, 10:00 a.m. to 2:00 p.m.	HCP Coordinating Committees meeting on December 17, 2019, 9:00 a.m. to 12:00 p.m.
PRCC meeting on December 25, 2019	PRCC meeting on December 17, 2019, 1:00 p.m. to NLT 5:00 p.m.

Ferguson also noted that the HCP Coordinating Committees meetings in November and December 2019 may be convened via conference call or canceled pending agenda items (to be determined). Kristi Geris said Anchor QEA will coordinate with Denny Rohr and Grant PUD regarding rescheduling the HCP Coordinating Committees and PRCC’s meetings in November and December 2019 to accommodate the holidays. *(Note: Geris contacted Rohr and based on discussions with the PRCC, the HCP Coordinating Committees meeting on November 19, 2019, was changed to 1:00 p.m. to 5:00 p.m. to be held at the Wanapum Dam Hydro Office Building, and the HCP Coordinating Committees meeting on December 17, 2019, remained from 9:00 a.m. to 12:00 p.m. to be held at the Grant PUD Wenatchee office.)*

## VI. List of Attachments

Attachment A List of Attendees

Attachment B *Draft Estimates of Additional Mortality Resulting from Non-Compliant Bypass Operations at Wells Dam During April 2019*

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

---

<b>Name</b>	<b>Organization</b>
John Ferguson	Anchor QEA, LLC
Kristi Geris	Anchor QEA, LLC
Tracy Hillman††	BioAnalysts
Lance Keller*	Chelan PUD
Tom Kahler*	Douglas PUD
Andrew Gingerich*	Douglas PUD
Scott Carlon*	National Marine Fisheries Service
Chad Jackson*	Washington Department of Fish and Wildlife
Patrick Verhey*†	Washington Department of Fish and Wildlife
Kirk Truscott*	Colville Confederated Tribes
Keely Murdoch*	Yakama Nation

Notes:

- \* Denotes HCP Coordinating Committees member or alternate
- † Joined by phone
- †† Joined by phone for the HCP Tributary and Hatchery Committees Update