FINAL

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ANCHOR QEA

Memorandum

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

Date: May 28, 2019

From: John Ferguson, HCP Coordinating Committees Chairman

cc: Kristi Geris

Re: Final Minutes of the April 23, 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, April 23, 2019, from 10:00 a.m. to 12:00 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: 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 I-C).
- 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).
- Tom Kahler will distribute recent reports by the Columbia River Inter-Tribal Fish Commission (CRITFC) that summarize findings from their sockeye salmon monitoring efforts (Item I-C). *(Note: 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 Priest Rapids Coordinating Committee (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). *(Note: 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 Colville Confederated Tribes (CCT) have about CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019 (Item III-A).

- 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).
- 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).
- 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). *(Note: 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.)*
- The HCP Coordinating Committees meeting on May 28, 2019, will be held in-person at the Grant PUD Wenatchee office in Wenatchee, Washington (Item V-A).

Decision Summary

- There were no HCP Decision Items approved during today's meeting.

Agreements

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

Review Items

- 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 (Item III-A).

Finalized Documents

- There are no documents that have been recently finalized.

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:

- Lance Keller added: 1) Rock Island Dam 2019 Spring Spill; and 2) Subyearling Chinook Salmon Statement of Agreement (SOA)
- Ferguson added HCP Hatchery Committees and PRCC Hatchery Subcommittee Email Distribution Lists under the HCP Hatchery Committees Update

B. Meeting Minutes Approval (John Ferguson)

The HCP Coordinating Committees reviewed the revised draft March 26, 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 March 26, 2019 meeting minutes, as revised. The CCT and U.S. Fish and Wildlife Service (USFWS) abstained, because CCT and USFWS representatives were not present during the March 26, 2019 meeting.

C. Last Meeting Action Items (John Ferguson)

Action items from the HCP Coordinating Committees meeting on March 26, 2019, and follow-up discussions, were as follows. *(Note: italicized text corresponds to agenda items from the meeting on March 26, 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).*
  This action item will be carried forward.
- *Lance Keller will notify Jim Craig of what he determined about operating the weir box within the intake of Turbine Unit C1 to facilitate river flow through this area of the Intake Screen System with Turbine Unit C1 out of service during the 2019 bypass season (Item I-C).*
  Keller said he and Craig discussed this action item.
- *Lance Keller will inquire internally about the reasoning behind taking downstream-migrating Pacific lamprey at the RRJFBS and releasing these fish at an upstream location (Item I-C).*
  This action item will be carried forward.
- *Chelan PUD will provide a final timeline for repairing Rocky Reach Dam Turbine Unit C1 and Turbine Unit C3 hub seals to Kristi Geris for distribution to the HCP Coordinating Committees (Item III-E).*
  This will be discussed during today's meeting.
- *Tom Kahler will distribute recent reports by CRITFC that summarize findings from their sockeye salmon monitoring efforts (Item IV-A).*
  Kahler said past reports up to 2015 are available for download from CRITFC's website; however, more current reports were not available. He said he will contact Jeff Fryer to ask about more recent reports. This action item will be carried forward.

II. 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 April 17, 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"*):

- *Marking of 2018 Brood Chiwawa/Nason Conservation Program Spring Chinook Salmon (joint)*: Recall the Chiwawa spring Chinook salmon conservation program consists of juveniles from natural-origin spawners (wild-by-wild [WxW]) and hatchery-origin spawners (hatchery-by-hatchery [HxH]). During the HCP Hatchery Committee meeting on March 11, 2019, the Rock Island HCP Hatchery Committee discussed whether all fish within the Conservation Program should be marked the same or differentially based on the origin of their parents. Following the meeting, the Joint Fisheries Parties convened and identified a possible marking strategy. The Joint Fisheries Parties proposed a second mark/tag for HxH fish within the conservation programs. Thus, HxH spring Chinook salmon within the Chiwawa Conservation Program will receive a coded wire tag (CWT) in the snout and a blank wire tag in the caudal area. WxW spring Chinook salmon in the Chiwawa Conservation Program will only receive a CWT in the snout. All conservation fish will retain the adipose (ad) fin. Only safety net program fish will be ad-clipped. Safety net program fish will also receive a CWT in the snout. Unlike the Chiwawa Conservation Program, both WxW and HxH Nason Creek conservation fish will receive a double tag; WxW spring Chinook salmon will receive a CWT in the snout and a blank wire tag in the dorsal area, and HxH spring Chinook salmon will also receive a CWT in the snout and a blank wire tag in the caudal area. Thus, all release groups and crosses will be uniquely marked. The Rock Island HCP Hatchery Committee approved the marking strategy provided Grant PUD approves the strategy for the Nason Creek programs.
- *Broodstock Collection Protocols Timeline (joint)*: The 2019 Broodstock Collection Protocols are now complete, and the HCP Hatchery Committees and PRCC Hatchery Subcommittee are now planning for the next protocols, including beginning the process of updating the protocols in September. This will allow the Committees time to identify major program changes that require extensive review and approval by the Committees (e.g., through an SOA) versus issues that can simply be addressed within the protocols document. In addition, the Committees will identify members who can help develop different sections of the Broodstock Collection Protocols. Historically, the protocols have been written by Washington Department of Fish and Wildlife, and this will allow all Committees members to contribute, including the PUDs.

Additionally, an earlier start on the protocols should reduce the time needed to review and discuss protocol changes in the new year.

- *National Marine Fisheries Service (NMFS) Consultation Update (joint)*: NMFS recently requested public comment on the Draft Environmental Assessment for Upper Columbia River Steelhead and Summer/Fall Chinook Salmon Programs and their associated Hatchery and Genetics Management Plans. Comments on these documents are due to NMFS on May 2, 2019. Permits for the unlisted Chinook salmon programs are under review by General Council. Kirk Truscott asked if NMFS provided an update on the release of the steelhead permits. Hillman said they did not, and he thinks the last update provided was that NMFS was unsure about the release timing of the permits.
- *Joint Meetings of the HCP Hatchery Committees and PRCC Hatchery Subcommittee (joint)*: The HCP Hatchery Committees are reviewing their email distribution lists. Hillman said logistically, it would be easiest to distribute a single email to both the HCP Hatchery Committees and PRCC Hatchery Subcommittee, as opposed to separate emails to each respective committee, which would also reduce duplicative emails to members on multiple lists. He said some people on the PRCC Hatchery Subcommittee email lists are not currently on the HCP lists and vice versa. He said he believes it is important to develop two lists; one list to receive all materials (draft and final) and one list for final materials only. He suggested the HCP Hatchery Committees develop these lists for HCP Coordinating Committees review, including justification for why non-Committees members are included on the lists. He suggested that Grant PUD representatives are to be included on the all materials list. John Ferguson said he liked the idea of the HCP Hatchery Committees vetting the lists carefully and bringing the lists to the HCP Coordinating Committees for review. Ferguson said since this is a question about adding Grant PUD staff to HCP lists and there are no Grant PUD members on the HCP Coordinating Committees, he suggested that Hillman as Chair of the HCP Hatchery Committees bring this request forward for review. Truscott said the CCT approves of this approach or would also accept a memorandum from the HCP Hatchery Committees as a whole. Hillman noted that the HCP Hatchery Committees have not yet heard back from Grant PUD about whether Grant PUD wants PRCC Hatchery Subcommittee products distributed to the HCP distribution lists; therefore, it is still unclear if merging the lists will actually happen. Hillman said he will further discuss combining the committees' email distribution lists with the HCP Hatchery Committees and PRCC Hatchery Subcommittee and will report back to the HCP Coordinating Committees regarding the path forward. *(Note: 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.)*
- *Next Meeting*: The next meeting of the HCP Hatchery Committees will be on May 15, 2019.

Hillman updated the HCP Coordinating Committees on the following actions and discussions that occurred during the HCP Tributary Committees meeting on April 11, 2019:

- *Upper Kahler Stream and Floodplain Enhancement Project*: Recall this General Salmon Habitat Program proposal has been under discussion since 2018. The project is on Nason Creek. The Rock Island HCP Tributary Committee agreed to fund the four large wood structures associated with the project, which was submitted by the Yakama Nation (YN). During the HCP Tributary Committees meeting on March 14, 2019, the Rock Island HCP Tributary Committee indicated they would not fund any actions associated with filling the avulsion channel. The Rock Island HCP Tributary Committee asked the YN to provide a detailed budget for the construction of the four large wood structures within Nason Creek. On April 1, 2019, the YN provided a revised budget for the construction of the four wood structures within Nason Creek. After review, the Rock Island HCP Tributary Committee approved the budget for $149,000.
- *Evaluating Environmental Impacts of Tumwater Dam*: The HCP Tributary Committees received a General Salmon Habitat Program proposal from Cascade Columbia Fisheries Enhancement Group titled, "Evaluating Environmental Impacts of Tumwater Dam." The purpose of the project is to evaluate how Tumwater Dam affects water quality and habitat forming processes. Specifically, the project will: 1) quantify the difference between existing and historical habitat conditions within the vicinity of the dam and Lake Jolanda; 2) evaluate how water quality (e.g., temperature and dissolved oxygen) in Lake Jolanda may affect fish migration and behavior; 3) quantify and classify sediments stored behind Tumwater Dam; 4) test sediment behind Tumwater Dam for toxins or heavy metals; and 5) evaluate hydraulics and slope stability of Highway 2 and Lake Jolanda shorelines within a dam removal scenario. The total cost of the project is $279,600. The sponsor requested $139,800 from HCP Plan Species Account Funds. After careful review, the HCP Tributary Committees elected to not fund the assessment. Although the HCP Tributary Committees see value in better understanding entrance efficiency, thermal regimes, and sediments, the HCP Tributary Committees believe the cost of the proposed work is too expensive and noted that results from the work will not be compelling enough to lead to dam removal in the near future. Much of this work would need to be repeated in the future should dam removal ever be considered. Furthermore, the effects of Tumwater Dam on fish have not been identified as important data gaps by the Regional Technical Team, nor is Tumwater Canyon (middle Wenatchee) a priority area for restoration.
- *East Fork Mission Creek Floodplain Restoration*: In March 2019, the HCP Tributary Committees received a Small Project proposal from Chelan County Natural Resource Department (CCNRD) titled, "East Fork Mission Creek Floodplain Restoration Project." The purpose of this project is to develop permit-ready designs that will result in improved base flows in the Mission Creek watershed by reconnecting floodplain in a severely incised system and improve habitat for steelhead. CCNRD intends to accomplish this by removing an eroding road prism located

within the floodplain, adding in-stream wood, and addressing potential passage barriers. The project is located along a 2.8-mile stretch of East Fork Mission Creek in the upper Mission Creek watershed. The total cost of the design project is $96,169. CCNRD requested $74,669 from HCP Plan Species Account Funds. During the HCP Tributary Committees meeting on March 14, 2019, the HCP Tributary Committees were unable to make a funding decision because it was unknown whether the U.S. Forest Service (USFS) road is officially and permanently closed. On March 27, 2019, CCNRD informed the HCP Tributary Committees the road is not officially and permanently closed. Based on this information, the HCP Tributary Committees elected to not fund the project. The HCP Tributary Committees indicated they would reconsider the proposal if the road is officially and permanently closed, and an upland trail is constructed. Jim Craig asked if there is any desire by USFS to close this road. Hillman said his understanding is there is not because the road is used by recreational vehicles. He said, however, USFS is interested in building a new trail for recreational vehicle use upland of the existing road and proposed project area so USFS can remove the existing road. Craig asked if there is movement to build the trail. Hillman said yes, the project sponsor is currently seeking a cost share or separate funding to complete this work. He said once the new trail is built and the existing road is closed, the HCP Tributary Committees will reconsider funding this project.

- *Coordination with the U.S. Bureau of Reclamation on the Sugar Levee Project*: The U.S. Bureau of Reclamation (Reclamation) met with the HCP Tributary Committees to discuss a cooperative relationship between Reclamation and the HCP Tributary Committees on the Sugar Levee Project. The purpose of the project is to evaluate removal or breaching of the Sugar Levee, which is located near river mile 42.2 in the Middle Reach of the Methow River just upstream from the Town of Twisp. This project will reconnect side channels and more than 17 acres of floodplain habitat. This project was identified as a possible targeted project by the HCP Tributary Committees. Following the meeting with Reclamation, the HCP Tributary Committees agreed to work with Reclamation on developing the Sugar Levee Enhancement Project. Importantly, the relationship allows any party to exit the process at any time if the party sees the process going in the wrong direction. Ferguson asked what this partnership means? Hillman said this means HCP Tributary Committees members will be participating in meetings with Reclamation on behalf of the HCP Tributary Committees. He explained that Reclamation is identifying target project areas similar to what the HCP Tributary Committees are doing, and Sugar Levee is a common target between the two. He said Reclamation will take the lead on moving this project forward and at some point, Reclamation will not have the resources to move the project forward; therefore, Reclamation needs a funding partner. He said Reclamation distributed a request for proposals to design the project and develop alternatives for removing the levee, which is where the HCP Tributary Committees come in. He

said Reclamation also has technical services in Colorado to complete the modeling work at no cost to the HCP Tributary Committees. He said the HCP Tributary Committees indicated interest in being involved in every step of the process and the Committees can provide funding to help move the project forward; however, if the HCP Tributary Committees believe the process is headed in the wrong direction the Committees have the option to opt out. He said Reclamation is doing most of the planning and modeling, while the HCP Tributary Committees would help with the design and provide funding.

- *Review of the YN Draft SOA*: On February 25, 2019, the YN submitted a draft SOA to the HCP Tributary Committees for review. The purpose of the draft SOA is to provide a basis for decision-making in the HCP Tributary Committees. The YN asked members to review the draft SOA, edit it as necessary, and vote on it during the HCP Tributary Committees meeting on April 11, 2019. Because no edits were offered prior to or during the meeting on April 11, 2019, Hillman asked each member to vote on the existing SOA and provide their reasons for their yes or no vote. All members except the YN voted no on the SOA. The primary reason given for members' lack of support for the SOA was because members found no need for an SOA, especially given the recent and ongoing development of evaluation criteria. Some noted the SOA is too restrictive and others suggested the SOA does not address the underlying issue between the YN and the CCT. The CCT voted no because the CCT cannot support an SOA that removes their right to prevent the YN from owning property in the Upper Columbia River Basin. The YN are currently evaluating whether they will dispute the decision by the HCP Tributary Committees. Ferguson asked Tom Kahler and Keely Murdoch if Douglas PUD or the YN, respectively, have updates to add. Kahler and Murdoch said they have nothing further to add.
- *Review of Section 5 of the Policies and Procedures Document*: During the HCP Tributary Committees meeting on March 14, 2019, the HCP Tributary Committees directed Hillman to add the evaluation criteria into Section 5 of the Policies and Procedures for Funding Projects document. Hillman added the criteria to Section 5 and the HCP Tributary Committees reviewed and edited the criteria. After discussion, the HCP Tributary Committees approved the revisions to Section 5 of the Policies and Procedures document.
- *Next Meeting*: The next meeting of the HCP Tributary Committees will be on Wednesday, May 8, 2019 (rather than the typical second Thursday of the month) because the HCP Tributary Committees will be reviewing approximately 15 to 20 draft Salmon Recovery Funding Board and HCP Tributary Committees proposals. Hillman said the proposals will be evaluated as fundable or not fundable. He said for fundable proposals, the HCP Tributary Committees will ask sponsors to submit a final proposal to be evaluated in July 2019.

III. Douglas PUD

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

John Ferguson recalled 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. Ferguson also recalled that Kirk Truscott requested additional time before voting to address a few questions he had about the request.

Truscott said he has not yet addressed these questions. He said he knows a decision is needed by May 2019 and he hopes to be ready to vote before this time. Tom Kahler asked if there is anything Douglas PUD can do to help address these questions. Truscott said no; rather, he needs to coordinate with Jeff Fryer to obtain clarification on a few details. Truscott said the request does not specify what will be used to anesthetize the fish. Keely Murdoch said she believes Aqui-S will be used similar to last year. Truscott said he also has a preference on tag location (i.e., what part of the fish will be tagged). He said a portion of the sockeye salmon run is already receiving tags at Bonneville Dam. He said the less these fish are handled the better. He said CRITFC's request also indicates that sampling will be coordinated with brood collection, and he wants to verify this means trapping will be conducted concurrent with the other collection efforts.

Truscott said he will contact Fryer to obtain clarification on questions the CCT have about CRITFC's annual request to tag sockeye salmon at Wells Dam in 2019. Ferguson suggested that Truscott email the HCP Coordinating Committees with the responses to these questions once obtained and before the HCP Coordinating Committees meeting on May 28, 2019.

B. Wells Dam Bypass Operations Update (Tom Kahler)

Tom Kahler said an email about bypass operations at Wells Dam was distributed to the HCP Coordinating Committees by Kristi Geris on April 10, 2019.

Kahler said when bypass operations started at Wells Dam (on April 9, 2019 at 00:00 hours), Douglas PUD was in the process of recommissioning Turbine Unit 2, which had been offline for a unit overhaul; therefore, Spillway 2 remained offline. He said additionally, per the Wells Dam 2019 Bypass Operating Plan, a turbine cannot be operated without an adjacent bypass unit operating, which means while Spillway 2 is not in operation, Turbine Unit 1 also cannot be in operation. He said because the barriers for a bypass sit on top of the turbine intake bulkheads, recommissioning a turbine unit requires a labor-intensive process involving removing the bulkheads, installing the trash racks, and reinstalling the bypass barriers back on top of the trash racks. He said crews completed this process for Turbine Unit 2, the unit was reset to re-water, and commissioning of Spillway 2 was

initiated; but then a contractor removed a pipe and underestimated the pressure of the water inside, which ultimately flooded Turbine Units 1, 2, and 3. Kahler said, therefore, commissioning of Turbine Unit 2 was halted, and Turbine Unit 1 remained offline. He said Spillway 2 finally resumed operation on April 22, 2019, and Turbine Unit 1 is now also online. He said Spillway 4 was taken offline today, April 23, 2019 (because the rebuild of Turbine Unit 3 began). He said Turbine Units 3 and 4 will remain offline until the trash racks and bulkheads are swapped in the intakes of Turbine Unit 3 and the bypass barriers are reinstalled. He said then Turbine Unit 4 and Spillway 4 will resume operation, and Turbine Unit 3 will remain offline until completion of the rebuild.

Kirk Truscott asked how long Spillway 2 was offline. Kahler said the spillway was on and off over one weekend. Truscott noted that Spillway 2 is the bay with the PIT-tag array where the HCP Coordinating Committees are hoping to collect data on emigration timing of early yearling spring Chinook salmon. Kahler said yes, this was unfortunately a lost data opportunity. Truscott asked why this rebuild and recommissioning of Turbine Unit 2 was not scheduled to be complete prior to the fish passage season. He said these types of setbacks do not sit well with him in that it seems fish are an afterthought in scheduling. Kahler said the schedule was to have Turbine Unit 2 operational by the end of 2018, but things went wrong on the contractors' side that resulted in unexpected delays. He said this was a complete overhaul, which typically requires an 18-month schedule. Truscott said this is unfortunate and asked if there is any way to prevent this from happening in the future. He asked if this is a 20-year contract to rebuild the entire system, and Kahler replied yes.

Kahler said another challenge is that the Wells Project Chief Engineer, Ken Pflueger, who was on staff for over 30 years retired last fall. Kahler said Pflueger was a contractor/consultant working on projects associated with Wells Dam before joining Douglas PUD and was an excellent nexus between Natural Resource staff, contractors, and dam operations. Kahler said Pflueger was an advocate for natural resources, was great at anticipating conflicts between contracts and operations, and understood compliance with the Federal Energy Regulatory Commission and total dissolved gas requirements. Kahler said since Pflueger retired, the importance of his role in the seamless consideration of fish in project operations has become apparent, and Natural Resource staff are working to establish necessary coordination with dam operations regarding operations with potential to affect compliance with agreements. He added that every turbine unit is taken offline at least once every 2 years for biannual maintenance, in addition to any units removed from service for overhauling. He said so long as Natural Resource staff are involved in these conversations, they can have influence, which has been done in the past. Truscott noted that it is a big deal to have all spillways online as required by the Wells HCP. Kahler said at least four of five spillways have been in operation during this bypass season, which is consistent with Section 4.3 of the Wells HCP. He said Spillway 2 where the PIT-tag antenna is located is the only spillway that was not in operation. Truscott said this is what is frustrating; that the HCP Coordinating Committees discussed and

planned using this location to collect data on early emigrating yearling spring Chinook salmon and the data were missed. Kahler said some data were collected. He said fish can swim into this area in the forebay even though water is not flowing through the spillway or associated unit. He said he plans to develop event logs and asked when the CCT started releasing subyearlings. Truscott said April 15, 2019. Kahler said there were detections of Omak and Similkameen fish last week.

IV. Chelan PUD

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

Lance Keller said the disassembly of Turbine Unit C1 is progressing as planned. He said the runner and hub might be removed by now or mechanics are very close to doing so, which will allow access to the trunnion seals.

Keller said Rocky Reach Dam mechanical staff are still working with engineers to develop a solution for Turbine Unit C3. He said hydraulically locking the blades into place via governor control or manufacturing new trunnion seals are all still being considered. He recalled discussing during the last HCP Coordinating Committees meeting on March 26, 2019, that the engineered seals designed for Turbine Unit C1 were installed in Turbine Unit C3 and did not work, and Chelan PUD may try another contactor who has previously completed work and provided seals for units at Rock Island Dam. Keller said the path forward for Turbine Unit C3 will not affect the repair schedule for Turbine Unit C1.

Kirk Truscott said he reviewed the meeting minutes from the HCP Coordinating Committees meeting on March 26, 2019, and he reviewed the report by Drs. John Skalski and Richard Townsend (Columbia Basin Research) titled, "Projections of Joint Juvenile/Adult Survival Performance at Rocky Reach Dam under Alternative Juvenile Passage Distributions," (Attachment B), which was distributed to the HCP Coordinating Committees by Kristi Geris on April 5, 2019. Truscott asked about the rationale behind the three scenarios selected to assess survival. Keller said these scenarios were developed to help think about how decreased juvenile yearling Chinook salmon passage via Turbine Unit C3 and the bypass screens (Turbine Unit C1) might translate into changes in juvenile project survival estimates and ultimately the 91% combined juvenile/adult survival metric for Plan Species outlined in the Rocky Reach HCP. Truscott asked how the values 2.5%, 5.0%, and 7.5% were selected (the three scenarios modeled included rerouting 50% of the fish that passed via the bypass screens and 2.5%, 5.0%, or 7.5% of the fish that passed via the surface collector (SC) through the powerhouse and estimating project survival accordingly). Keller said these values were selected after internally discussing and judging the potential decrease in bypass passage routes and attraction flow in the cul-de-sac area with Turbine Units C1 and C3 offline while also considering the modified bypass operations to increase flow through the area, including the following:

Normal Operations (Turbine Units C1 and C3 online)	**Modified Operations (Turbine Units C1 and C3 offline)**
Individual Fish Passage Routes	
3 turbine routes (via Turbine Units C1, C2, and C3)	1 turbine route (via Turbine Unit C2)
2 bypass screen routes (via Turbine Units C1 and C2)	1 bypass screen route (via Turbine Unit C2)
2 bypass entrance routes (via two entrances to SC)	2 bypass entrance routes (via two entrances to SC)
Considerations	
7 passage routes total	4 passage routes total + 3 additional RRJFBS SC pumps to increase attraction flow from 6 to 6.66 kcfs into the RRJFBS SC entrances (3.33 kcfs on each side) + Increasing Turbine Unit C2 flow from its normal soft-limit set-point of 12.2 kcfs to a soft-limit flow of 15.2 kcfs

Keller said with these considerations, Chelan PUD wanted to know what decrease in survival could possibly result should bypass system fish collection decrease with Turbine Units C1 and C3 not operating. He said Skalski took nautical day and night passage proportions and route specific survivals and applied them to day and night dam survival and then project survival, and those were then multiplied by the specific annual observed adult survival to calculate the combined adult and juvenile survival. Keller said Skalski also included confidence intervals around these results.

Truscott said he is concerned about the attraction flow through the cul-de-sac area. He asked, for example, what if there is a 25%, 40%, or 85% reduction in attraction flow? He asked what can the HCP Coordinating Committees do, notably when turbine units are offline and there is no option to spill. He asked if there is a way to provide additional flow into this area. He also asked if there is a certain amount of flow Chelan PUD is trying to replace. Keller said with Turbine Units C1 and C3 offline and with the modified operations in place, attraction flow into the cul-de-sac area will essentially be reduced by approximately 10,000 cubic feet per second (10 kcfs) compared to normal operations. He added that it is convenient that this issue is occurring during a low flow year. Truscott said his concern is that 40% of fish pass Rocky Reach Dam via the cul-de-sac area and it is important to make sure these fish get there. He added that one could suggest having 30% less attraction flow might translate into 30% less fish passing there. John Ferguson pointed out flow into the bypass is now a much greater proportion of flow passing through Turbine Units C1 to C3 (i.e., bypass flow is competing with flow going into one unit not three). Truscott agreed but indicated his concern is whether fish are being attracted to the cul-de-sac area. Keller said Chelan PUD would take a closer look into attraction flow in the cul-de-sac area. Truscott said he will also contact 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.

Ferguson asked if Chelan PUD chooses to hydraulically lock the blades into place as the preferred path forward for Turbine Unit C3, what input is needed from the HCP Coordinating Committees. He asked if the HCP Coordinating Committees need to suggest a particular efficiency setting to maximize survival through the turbine unit. Keller said it is desirable to operate the unit near peak efficiency to avoid wear and tear. He said a unit will run rough until it reaches a setpoint. Jim Craig added that running a unit below peak efficiency will cause cavitation. Keller agreed and added that the way turbine units are designed, the more efficient a unit operates (less cavitation) the better that is for the unit and fish passing through the unit. Truscott said if Turbine Unit C3 comes off and on for load, this could result in operating the unit inefficiently as it ramps up from a dead stop. Keller said he believes if the Turbine Unit C3 blades are hydraulically locked at a fixed point, the unit will be turned on and operated for an extended period of time to reduce starts and stops. He said the unit would be given a hard setpoint based on the blade angle and efficiency curve, which are based on the forebay elevation, and the other turbine units would be adjusted as needed. He added that given the low snowpack estimates for 2019 to date, as well as the fact that Turbine Unit C3 is the next unit to sequentially operate behind Turbine Unit C2, if Turbine Unit C3 were to shut down due to decreased flows, Turbine Unit C2 would be the only operating unit in the Rocky Reach Dam powerhouse (Turbine Unit C2 is the first unit on and last unit off). He said at this point, he believes the most appropriate action item is to 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.

Tom Kahler asked when Turbine Unit C1 will be returned to service. Keller said August 2019, so the unit will be back online for the 2020 juvenile fish bypass season. Kahler summarized that Turbine Unit C1 will be back in operation in 2020 along with Turbine Unit C2, and Chelan PUD is unsure about Turbine Unit C3? Keller said this is currently correct.

B. Rock Island Dam 2019 Spring Spill (Lance Keller)

Lance Keller said an email notification that spring fish spill was initiated at Rock Island Dam on April 17, 2019, at 00:00 hours was distributed to the HCP Coordinating Committees by Kristi Geris on April 18, 2019. Keller said Chelan PUD monitored the daily index counts at the Rock Island Dam Juvenile Fish Bypass Trap and as of April 16, 2019, Program RealTime indicated all passage estimates for juvenile yearling Chinook salmon, sockeye salmon, and steelhead had remained below 1.0%. He said based on these data, Chelan PUD did not see a need to initiate spill before April 17, 2019, to meet the 95% spill coverage target for spring migrating HCP Plan Species at Rock Island Dam.

Keller said Rock Island Dam will transition from spring to summer spill when subyearlings detections begin at the dam.

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

Lance Keller said Rock Island Dam mechanics continue to work on the liner in Turbine Unit B4. Keller said the plan is to reuse or repair the liner currently installed in the unit. He said the return-to-service date for Turbine Unit B4 is still July 31, 2019.

D. Subyearling Chinook Salmon SOA (Lance Keller)

Lance Keller said Chelan PUD's current SOA maintaining Rock Island and Rocky Reach subyearling Chinook salmon in Phase III (Additional Juvenile Studies) for up to 3 years expires on September 29, 2019, and Keller said he believes Grant PUD may have a similar agreement in place.

Keller recalled in 2016, the HCP Coordinating Committees and PRCC convened a Subyearling Chinook Salmon Passage Survival Workshop in SeaTac, Washington. He said attendees included various agencies and speakers included Grant, Chelan, and Douglas PUDs, and Dr. John Skalski, among others. Keller said topics and presentations addressed the feasibility of conducting subyearling studies, including discussion on life history, tag technology, and statistical analyses. He said at that time, largely due to subyearlings having varying life history, lack of tag technology, and Skalski's findings, it was concluded that conducting subyearling studies in the Rock Island and Rocky Reach projects was not feasible. He said based on these findings, the Rock Island and Rocky Reach HCP Coordinating Committees approved the SOA maintaining Rock Island and Rocky Reach subyearling Chinook salmon in Phase III (Additional Juvenile Studies) on September 29, 2016.

Keller said to his knowledge, there are now tags available that are smaller in size, but the battery life is still comparable and remains an issue, and Skalski's calculation capability remains the same. Keller said Chelan PUD may propose another SOA maintaining Rock Island and Rocky Reach subyearling Chinook salmon in Phase III (Additional Juvenile Studies) for another 3 years, perhaps coupled with an updated presentation from Skalski.

Tom Kahler said there is still the fundamental problem of the inability to distinguish mortalities from non-migrants. Keller agreed and said a battery with a much longer lifespan than what is currently available is needed to conduct a project-scale study. Kahler said additionally, fish are not migrating, and the HCPs specify studying migrants. He said the hope was to identify migrants based on characteristics, but this has not yet been accomplished.

Kahler also noted that the long-awaited Douglas PUD subyearling report is currently being tech edited and should be available soon. He said the report evolved into something much more than

what Douglas PUD was presenting annually during the study, including more analyses. He said the report should be useful for everyone.

Jim Craig said it is beneficial to rehash the ability to study subyearlings every so often. Keller agreed and said there is language in Chelan PUD's current SOA to provide quarterly updates; however, after no changes happened during the first few quarters no further updates were provided or requested by the HCP Coordinating Committee. He said if there is another 3-year SOA, Chelan PUD will be sure to add subyearlings to the agenda each quarter.

John Ferguson suggested adding subyearling Chinook salmon to each agenda through September 2019 to continue this discussion and keep reviewing information as it becomes available. He said this information may include a new SOA from Chelan PUD, the Douglas PUD subyearling report, perhaps a presentation of the data, and possibly a presentation by Skalski. Ferguson said the meeting minutes will then document what the HCP Coordinating Committees discussed and reviewed. He said Chelan PUD can then take this documentation and perhaps include a bulleted list of activities in the background of an SOA and reference documents.

Kirk Truscott said besides the tagging effort conducted by Douglas PUD, there have been no additional studies. Truscott said the CCT are perplexed that subyearlings are being tagged at Gebbers Landing and there are no adults being detected at Bonneville Dam, but there are recaptures of juveniles at detection locations. He said this indicates the fish are moving. He said Douglas PUD conducted tagging efforts from 2011 to 2013 and the CCT have been conducting tagging efforts since 2014, and at some point, someone is going to ask why subyearling Chinook salmon have been maintained in Phase III for 12 years and no studies have been conducted. He said his question is, where are these fish going?

V. HCP Administration

A. Next Meetings (John Ferguson)

The next scheduled HCP Coordinating Committees meeting is on May 28, 2019, to be held in-person at the Grant PUD Wenatchee Office in Wenatchee, Washington.

HCP Coordinating Committees members who are also members on the PRCC noted that as the calendar falls in May 2019, the PRCC meeting is scheduled 1 week prior to the next HCP Coordinating Committees meeting instead of the day after. Kristi Geris said she will coordinate with Denny Rohr 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. *(Note: 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.)*

The June 25 and July 23, 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.

VI. List of Attachments

Attachment A List of Attendees

Attachment B Projections of Joint Juvenile/Adult Survival Performance at Rocky Reach Dam under Alternative Juvenile Passage Distributions

Attachment A
List of Attendees

Name	Organization
John Ferguson	Anchor QEA, LLC
Kristi Geris	Anchor QEA, LLC
Tracy Hillman††	BioAnalysts
Lance Keller*	Chelan PUD
Tom Kahler*	Douglas PUD
Scott Carlon*	National Marine Fisheries Service
Jim Craig*	U.S. Fish and Wildlife Service
Chad Jackson*†	Washington Department of Fish and Wildlife
Patrick Verhey*†	Washington Department of Fish and Wildlife
Keely Murdoch*	Yakama Nation
Kirk Truscott*	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