

Memorandum

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

Date: March 29, 2018

From: John Ferguson, HCP Coordinating Committees Chairman

cc: Kristi Geris

Re: Final Minutes of the February 27, 2018 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, February 27, 2018, from 10:00 a.m. to 12:30 p.m. Attendees are listed in Attachment A to these meeting minutes.

Action Item Summary

- Kristi Geris will coordinate with Tracy Hillman (HCP Hatchery Committees Chairman) and will notify the HCP Coordinating Committees of the date the HCP Hatchery Committees plan to tour the new Wells Fish Hatchery (tentatively scheduled for spring 2018; Item I-C).
- Douglas PUD will further review run-timing data for wild and hatchery yearling Chinook salmon with regard to Wells Dam bypass operation dates and will report back to the HCP Coordinating Committees (Item I-C).
- Douglas PUD and the Wells HCP Coordinating Committee will complete the following action items associated with the Douglas PUD 2020 Verification Survival Study (Items I-C and III-C):
 - Keely Murdoch will provide smolt-to-adult return (SAR) data, based on coded wire tags (CWTs), for coho salmon released and recaptured at Wells Dam. *(Note: Murdoch provided these data during the meeting on February 27, 2018, which Kristi Geris distributed to the HCP Coordinating Committees that same day.)*
 - Tom Kahler will ask John Skalski (Columbia Basin Research) to calculate sample size ranges needed, based on SARs, to achieve precision standards for Wells summer Chinook salmon, Winthrop spring Chinook salmon, and Methow coho salmon; and Kahler will determine if these ranges result in capacity issues at Wells Fish Hatchery.
 - Tom Kahler will determine whether there are permitting issues for rearing study fish at Wells Fish Hatchery.
 - Tom Kahler will ask John Skalski about the feasibility of implementing a study design using both passive integrated transponder (PIT)-tagged summer Chinook salmon and acoustic-tagged spring Chinook salmon.
- Lance Keller will provide an email detailing the Tumwater Dam fishway outage scheduled for February 28, 2018, and the HCP Coordinating Committees will contact Keller with comments, if any, no later than end of day February 27, 2018 (Item IV-A). *(Note: Keller provided this email*

following the meeting on February 27, 2018, which Kristi Geris distributed to the HCP Coordinating Committees that same day.)

- Lance Keller will incorporate language into the Draft 2018 Rock Island and Rocky Reach Fish Spill Plan, documenting the conversion of notched spill gates 18 and 26 back to full gate operation during spring 2018 (Item IV-I). *(Note: Keller provided an updated spill plan following the meeting on February 27, 2018, which Kristi Geris distributed to the HCP Coordinating Committees that same day.)*
- The HCP Coordinating Committees meeting on March 27, 2018, will be held **in-person** at the Grant PUD Wenatchee Office in Wenatchee, Washington (Item V-A).

Decision Summary

- The Wells HCP Coordinating Committee representatives present approved the 2018 Wells HCP Action Plan (Item III-A).
- The Wells HCP Coordinating Committee representatives present approved the 2017 Wells Dam Post-Season Bypass Report (Item III-B).
- The Rock Island and Rocky Reach HCP Coordinating Committees representatives present approved the 2018 Rock Island and Rocky Reach HCP Action Plan (Item IV-B).
- The Rocky Reach HCP Coordinating Committee representatives present approved the 2017 Rocky Reach Juvenile Fish Bypass System Report (Item IV-C).
- The Rock Island HCP Coordinating Committee representatives present approved the 2017 Rock Island Smolt and Gas Bubble Trauma Evaluation Report (Item IV-D).
- The Rock Island HCP Coordinating Committee representatives present approved the 2018 Rock Island Bypass Monitoring Plan (Item IV-E).
- The Rocky Reach HCP Coordinating Committee representatives present approved Chelan PUD's proposed operating plan for the Rocky Reach Juvenile Fish Bypass System Surface Collector (RRJFBS SC) and Turbine Unit C2, during the Turbine Unit C1 outage in spring 2018 (Item IV-F).
- The Rocky Reach HCP Coordinating Committee representatives present approved the 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan (Item IV-G).
- The 2017 Wells HCP Annual Report was approved by the Wells HCP Coordinating Committee after no disapprovals were received following the 30-day review period, which ended on March 7, 2018.

Agreements

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

Review Items

- An updated Draft 2018 Rock Island and Rocky Reach Fish Spill Plan was distributed to the Rock Island and Rocky Reach HCP Coordinating Committees by Kristi Geris on February 27, 2018 (originally distributed on February 1, 2018). The draft document is available for a 30-day review period, with edits and comments due to Lance Keller by March 2, 2018 (Item IV-I).
- The Draft 2017 Wells HCP Annual Report was distributed to the Wells HCP Coordinating Committee by Kristi Geris on February 7, 2018. The draft report is available for a 30-day review period, with edits and comments due to Geris by March 7, 2018.
- The Draft 2017 Rock Island and Rocky Reach HCP Annual Reports were distributed to the Rock Island and Rocky Reach HCP Coordinating Committees by Kristi Geris on February 14, 2018. The draft reports are available for a 30-day review period, with edits and comments due to Geris by March 15, 2018.
- The Draft 2018 Broodstock Collection Protocols were distributed to the Wells HCP Coordinating Committee for review by Kristi Geris on March 12, 2018.

Finalized Documents

- The Final 2018 Wells Dam Gas Abatement Plan and Bypass Operating Plan, which was approved by the Wells HCP Coordinating Committee via email on February 2, 2018, was distributed to the HCP Coordinating Committees by Kristi Geris on March 7, 2018.
- The Final 2018 Wells HCP Action Plan was distributed to the HCP Coordinating Committees by Kristi Geris on March 13, 2018 (Item III-A).
- The Final 2017 Wells Dam Post-Season Bypass Report was distributed to the HCP Coordinating Committees by Kristi Geris on March 13, 2018 (Item III-B).
- The Final 2017 Wells HCP Annual Report was distributed to the HCP Coordinating Committees by Kristi Geris on March 23, 2018.

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 a Rocky Reach Dam Turbine Unit C1 Outage.
- Mike Tonseth added a Tumwater Dam Fishway Outage.

B. Meeting Minutes Approval (John Ferguson)

The HCP Coordinating Committees reviewed the revised draft January 23, 2018 meeting minutes. Kristi Geris said all comments and revisions received from members of the Committees were incorporated into the revised minutes. Keely Murdoch requested an edit under the HCP Tributary Committees Update, Operating Procedures bullet, clarifying that the Yakama Nation (YN) designated Brandon Rogers as the alternate on all three HCP Tributary Committees (Wells, Rocky Reach, and Rock Island), opposed to all three HCP Committees (Coordinating, Hatchery, and Tributary). Geris incorporated this edit as requested. HCP Coordinating Committees members present approved the January 23, 2018 meeting minutes, as revised.

C. Last Meeting Action Items (John Ferguson)

Action items from the HCP Coordinating Committees conference call on January 23, 2018, and follow-up discussions, were as follows. (*Note: italicized text corresponds to agenda items from the meeting on January 23, 2018*):

- *Kristi Geris will coordinate with Tracy Hillman (HCP Hatchery Committees Chairman) and will notify the HCP Coordinating Committees of the date the HCP Hatchery Committees plan to tour the new Wells Fish Hatchery (tentatively scheduled for spring 2018; Item I-C).*
This action item will be carried forward.
- *Douglas PUD will further review run-timing data for wild and hatchery yearling Chinook salmon with regard to Wells Dam bypass operation dates and will report back to the HCP Coordinating Committees (Item I-C).*
This action item will be carried forward.
- *Chelan PUD will request approval of the 2018 Rock Island and Rocky Reach HCP Action Plan during the HCP Coordinating Committees meeting on February 27, 2018 (Item III-A).*
This will be discussed during today's meeting.
- *Lance Keller will provide fish rescue numbers for Rock Island and Rocky Reach dams, to Kristi Geris for inclusion in the meeting minutes and distribution to the HCP Coordinating Committees (Item III-B).*
Keller provided these numbers following the meeting on January 23, 2018, which Geris distributed to the HCP Coordinating Committees on January 24, 2018.
- *Scott Carlon will verify who is currently the National Marine Fisheries Service (NMFS) point of contact for issuing Section 10 incidental take permits for steelhead (Item III-B).*
Carlon said the current point of contact is Brett Farman (NMFS HCP Hatchery Committees Representative). Carlon also indicated that Farman is located in Portland, Oregon.
- *John Ferguson will notify Tracy Hillman about HCP Coordinating Committees discussions regarding potential modifications to Section 10 incidental take permits to allow 12- to 18-inch steelhead collected in fish ladders during fish rescues associated with fishway winter*

maintenance outages to be sampled for coded wire tags (CWTs) and identified as to their source (Item III-B).

Ferguson discussed this with Hillman via email on January 26, 2018.

- *Douglas PUD will request approval of the 2018 Wells HCP Action Plan during the HCP Coordinating Committees meeting on February 27, 2018 (Item IV-A).*

This will be discussed during today's meeting.

- *The Wells HCP Coordinating Committee will submit a vote via email on the Draft 2018 Wells Dam Gas Abatement Plan and Bypass Operating Plan to Tom Kahler (and copy Kristi Geris) no later than February 12, 2018 (Item IV-D).*

The Wells HCP Coordinating Committee approved the plan prior to the deadline, as described under the Decision Summary.

- *Douglas PUD and the Wells HCP Coordinating Committee will complete the following action items associated with the Douglas PUD 2020 Verification Survival Study (Item IV-E):*

- *Keely Murdoch will provide smolt-to-adult return (SAR) data, based on CWTs, for coho salmon released and recaptured at Wells Dam.*

Murdoch said she has these data and will provide them to Kristi Geris. (Note: Murdoch provided these data [Attachment B] during the meeting on February 27, 2018, which Geris distributed to the HCP Coordinating Committees that same day.)

- *Tom Kahler will ask John Skalski (Columbia Basin Research) to calculate sample size ranges needed, based on SARs, to achieve precision standards for Wells summer Chinook salmon, Winthrop spring Chinook salmon, and Methow coho salmon; and Kahler will determine if these ranges result in capacity issues at Wells Fish Hatchery.*

Kahler said he has this request into Skalski and has a call scheduled for today (February 27, 2018) to further discuss the request. This action item will be carried forward.

- *Kirk Truscott will determine the feasibility of using Winthrop spring Chinook salmon from Chief Joseph Hatchery for the study, including transferring the fish to Wells Fish Hatchery for rearing.*

Truscott said this is not feasible from a permitting standpoint and it is counter to these fish achieving a high homing fidelity to the Okanogan River, which is the goal of the Chief Joseph Dam program.

- *Tom Kahler will determine whether there are permitting issues for rearing study fish at Wells Fish Hatchery.*

Kahler said he has not yet discussed this with NMFS. This action item will be carried forward.

- *The Wells HCP Coordinating Committee will continue discussing what potential biological risks exist associated with management of verification survival study fish when they return to spawn.*

John Ferguson said the Wells HCP Coordinating Committee will keep this in mind; however, the action item will be closed.

- *Kristi Geris will coordinate with Sarah Montgomery (HCP Hatchery Committees support staff) and Julene McGregor (Douglas PUD Information Systems Staff) to add Betsy Bamberger (Douglas PUD Fish Health and Evaluation Specialist) to select HCP Hatchery Committees email distribution lists and provide Bamberger with visitor access to the HCP Hatchery Committees extranet site, as approved by the HCP Coordinating Committees (Item IV-F).*

Geris contacted Montgomery and McGregor, as discussed, on January 24, 2018.

II. HCP Tributary and Hatchery Committees Update

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

Tracy Hillman reported that the HCP Tributary Committees did not meet in January 2018 and will next meet on March 6, 2018.

Hillman updated the HCP Coordinating Committees on the following actions and discussions that occurred during the HCP Hatchery Committees meeting on February 21, 2018:

- *DECISION: 2018 Wells HCP Action Plan:* The Wells HCP Hatchery Committee reviewed and approved the hatchery section of the action plan. John Ferguson asked if the tributary portion has been approved. Hillman said the Wells HCP Tributary Committee approved the tributary section of the action plan after no disapprovals were received by the review deadline on January 31, 2018.
- *Methow Steelhead Broodstock Collection Update:* Douglas PUD indicated broodstock collection for the Methow River Basin combined steelhead programs is going well. To date, angling efforts have collected about half of the program needs (63 steelhead).
- *Steelhead Broodstock Collection at Wells Hatchery Volunteer Channel:* Due to an unexpected outbreak of Columnaris in Wells Fish Hatchery brood year 2018 steelhead, additional broodstock may be trapped to serve as backup brood for programs that may fall short of program targets. Washington Department of Fish and Wildlife (WDFW) and Douglas PUD plan to collect steelhead at the Wells Fish Hatchery volunteer channel and hold the fish in ponds until the fish are needed as broodstock or treat them as required under normal adult management protocols. WDFW and the HCP Hatchery Committees will decide the fate of fish that are held but are not used for broodstock.

- *Draft 2018-2020 Steelhead Release Plan:* Chelan PUD shared a draft 2018-2020 Steelhead Release Plan with the HCP Hatchery Committees. The purpose of the plan is to evaluate steelhead survival to McNary Dam based on size-at-release and rearing vessel (raceway versus reuse circulars). The goal is to inform best hatchery management practices to optimize homing fidelity, minimize residualism, maximize out-migration survival, and minimize negative ecological interactions. The plan identifies a two-factor ANOVA design with three replicates (years). The HCP Hatchery Committees are reviewing the release plan, will provide Chelan PUD with comments by March 7, 2018, and will discuss release locations and hopefully approve the plan during the HCP Hatchery Committees meeting on March 12, 2018.
- *Lethal Removal of Steelhead from Fishways:* WDFW proposed to remove 12- to 18-inch hatchery *Oncorhynchus mykiss* that are collected during fishway outage salvage operations. All hatchery *O. mykiss* collected in the fishways would be examined for tags to determine their origin. Permits allow for the lethal removal of hatchery-origin steelhead at dams, traps, and weirs; and because of the hatchery origin, lethal removal falls under adult management. The HCP Hatchery Committees approved the lethal removal of all known hatchery-origin *O. mykiss* between 12 and 18 inches at Chelan PUD and Douglas PUD hydroelectric projects during fish rescues associated with fishway maintenance outages. Grant PUD also indicated concurrence but stated they would need to follow up with facility staff about the feasibility of implementing such actions. Ferguson asked if the HCP Coordinating Committees have any follow-up questions about this discussion. None were raised.
- *Broodstock Collection Protocols:* WDFW will distribute the draft Broodstock Collection Protocols for review later this week. The final protocols are due to NMFS on April 15, 2018.
- *National Marine Fisheries Service Consultation Update:* NMFS provided an update on the National Environmental Policy Act process and indicated Chuck Peven (Peven Consulting, Inc.) has been retained to write the Environmental Assessment for Methow River Basin steelhead and the unlisted programs (summer/fall Chinook salmon for Wells, Methow, Chelan Falls, Dryden, and Priest Rapids dams). NMFS will review the draft first, then the applicants, and then the draft will be available for public review and comment.
- *Timeline of Changes in Hatchery Programs:* The HCP Hatchery Committees are continuing to work on timelines of major hatchery program changes for spring and summer Chinook salmon, steelhead, and sockeye salmon. The timelines will inform statistical analyses for the 5-year statistical and 10-year comprehensive reports.
- *Independent Scientific Advisory Board Report:* The HCP Hatchery Committees briefly reviewed the recommendations within the Independent Scientific Advisory Board (ISAB) Upper Columbia Spring Chinook Salmon Report. The ISAB made several recommendations related to genetic diversity, coordination and oversight, and research, monitoring, and evaluation. The

HCP Hatchery Committees will study the ISAB recommendations and discuss them during future meetings.

- *Next meeting:* The next meeting of the HCP Hatchery Committees will be on March 12, 2018.

III. Douglas PUD

A. DECISION: 2018 Wells HCP Action Plan (Tom Kahler)

Tom Kahler said the Draft 2018 Wells HCP Action Plan was distributed to the Wells HCP Coordinating Committee by Kristi Geris on January 22, 2018. The draft plan was available for a 30-day review period, with edits and comments due to Kahler by February 21, 2018. Kahler said the Wells HCP Tributary and Hatchery Committees have approved their portions of the plan and asked if the Wells HCP Coordinating Committee has any questions or edits. None were expressed.

The Wells HCP Coordinating Committee representatives present approved the 2018 Wells HCP Action Plan. *(Note: the Final 2018 Wells HCP Action Plan was distributed to the HCP Coordinating Committees by Geris on March 13, 2018.)*

B. DECISION: 2017 Wells Dam Post-Season Bypass Report (Tom Kahler)

Tom Kahler said the Draft 2017 Wells Post-Season Bypass Report (including the appended Draft 2017 Wells Dam Passage Dates Analysis) was distributed to the Wells HCP Coordinating Committee by Kristi Geris on December 29, 2017. The draft report is available for a 60-day review period, with edits and comments due to Kahler by today, February 27, 2018. Kahler noted that the appendix has been reviewed and edited several times, but he said no comments have been received since the full document was distributed for review. John Ferguson said, considering the review period is not technically closed until close-of-business today, he asked if any Wells HCP Coordinating Committee representatives were not ready to vote at this time.

The Wells HCP Coordinating Committee representatives present approved the 2017 Wells Dam Post-Season Bypass Report. *(Note: the Final 2017 Wells Dam Post-Season Bypass Report was distributed to the HCP Coordinating Committees by Geris on March 13, 2018.)*

C. Wells Project 2020 Survival Verification Study – Study Species (Tom Kahler)

Tom Kahler said he anticipates having answers to the sample size questions for discussion during the HCP Coordinating Committees meeting on March 27, 2018.

Kahler requested clarification regarding the use of Winthrop spring Chinook salmon. He asked if the Colville Confederated Tribes (CCT) do not support using specifically Section 10(j) fish, or spring Chinook salmon in general? Kirk Truscott said taking spring Chinook salmon (springers) from the Methow Safety-Net Program and rearing the fish at Wells Fish Hatchery may result in fish homing

back to Wells Dam and not to the Methow River, where they may be needed as safety-net fish. Keely Murdoch recalled releasing fish at Wells Dam early in the YN's coho salmon program when those fish were a back-up source of brood at the time. She said fish that returned to Wells Dam could be trapped at the dam and fish hatchery, if necessary. Truscott said his concern is if all the fish end up in the volunteer channel, and also whether procedures are in place for moving those fish to the Methow River Basin to meet spawning escapement targets.

John Ferguson recalled discussing during the last HCP Coordinating Committees meeting on January 23, 2018, potentially using summer Chinook salmon (summers) in 2020 and while continuing to investigate using alternative species for study in 2030. Murdoch said ultimately, the Wells HCP Coordinating Committee did not make a final decision; rather, the Committee was tasked with homework to help inform a final decision. She said Douglas PUD made their preference clear for summers; however, the general consensus was for Douglas PUD to also consider other species.

Murdoch said, for clarification, Douglas PUD has not conducted survival studies using spring Chinook salmon. Kahler said that is correct, and clarified "yearling" Chinook salmon. Murdoch also noted that Douglas PUD does not want to use acoustic tags because the Wells HCP requires studying delayed mortality. She asked if Douglas PUD would consider conducting a side-by-side yearling Chinook salmon study using PIT and acoustic tags. She said within the PIT-tagged summers there would also be a small group of acoustic-tagged summers and acoustic-tagged spring Chinook salmon (springers). She said this would provide confidence that what is observed in summers is the same as springers. Kahler said Douglas PUD would rather just use PIT-tagged springers to get at this question. He requested clarification on the scope of the comparison study since conducting any side-by-side comparison using a "small group" of acoustic tags would mean taking an already fairly small sample size and making it smaller, which would compromise achieving precision targets. Murdoch said she is not suggesting a smaller sample size; rather, she is suggesting conducting a study similar to what Chelan PUD conducted using acoustic and PIT tags at the same time. Lance Keller recalled in 2004, Chelan PUD conducted a side-by-side comparison specifically for the sake of changing tag methodology. Murdoch said it seems studying springers is really complicated and might not be possible but indicated she is not comfortable accepting that springers may never be studied.

Ferguson asked about the locations of downstream PIT detections. Kahler said study fish are tracked from Rocky Reach Dam all the way down to the "trawl" (PIT tag trawl system in the lower Columbia River Estuary below Bonneville Dam, near river kilometer 75), and back upstream as adults. Truscott noted, if acoustic tags are used there is no need to measure all the way down to the trawl. He suggested conducting a PIT evaluation on summers, including 3,000 acoustic-tagged fish in this group; and acoustic-tagging 3,000 springers to evaluate instream survival to a specified location to

show these species are statistically surviving through reaches similarly. Kahler said survival to Bonneville Dam cannot be evaluated based on acoustic tags, which is what the Wells HCP requires. Murdoch said the PIT-tags will evaluate this, but there will also be the comparison to acoustic-tagged fish. Kahler said then, the studies will need to be comparable, meaning that the study would need to compare PIT-tagged summers to acoustic-tagged summers, and PIT-tagged springers to acoustic-tagged springers; if the within-stock comparisons show no difference, then among-stock tag comparison would be valid. Therefore, to conduct the requested comparison is really three full studies in one. He said, furthermore, PIT-tag studies use all downstream detections in the survival model, whereas acoustic-tag studies use only survival to arrays a short distance downstream, and thus the "survival" measured is not comparable other than for the reaches in common. Therefore, Douglas PUD would not be "verifying" previous studies. Kahler said he needs to discuss this with John Skalski to determine what sample sizes are needed to study springers. Kahler said if studying springers is feasible and is selected by the Wells HCP Coordinating Committee, Douglas PUD would study them directly with PIT tags rather than relying solely on acoustic tags or on a tag comparison study. He said if studying springers is not feasible, the Wells HCP Coordinating Committee needs to figure out how to address the lack of direct studies on springers. He said for discussion purposes, Grant and Chelan PUDs also have not studied springers. Keller said Chelan PUD uses run-of-the-river fish, regardless of origin, and also has experienced difficulties achieving adequate sample sizes.

Ferguson summarized there is a sample size question and study design question. He said if the desire is to study acoustic- and PIT-tagged summers and springers, releases need to be at the same time or the results are not comparable. Kahler said he will ask Skalski about the feasibility of implementing a study design using both PIT-tagged summer Chinook salmon and acoustic-tagged spring Chinook salmon.

Jim Craig asked about fish source. Kahler said either Winthrop National Fish Hatchery or Methow Safety-Net. He said this will be a question for NMFS. He asked, how many springers can be released upstream and downstream of Wells Dam, and what is the probability of springers returning to Wells Dam? He said it is difficult to speak to potential straying. He said trapping at Wells Dam will be ongoing during the time of year the study will be implemented, so there is a chance of pulling in the study fish. He said study fish will be clipped and PIT-tagged. Mike Tonseth said trap operators can selectively remove individuals and place them in the correct programs or surplus them. Keller said Douglas PUD could also do something similar to what Chelan PUD implemented using a database and sort-by-code operation without automation.

Tonseth recalled last month, WDFW's position in the long-term was to validate that results of studying yearling summer Chinook salmon truly represent and reflect yearling spring Chinook

salmon survival. He acknowledged this may not be feasible in 2020; however, there is a long-term desire to make sure these assumptions can be validated.

Kahler asked about coho salmon. Murdoch said SAR data, based on CWTs, for coho salmon released and recaptured at Wells Dam (Attachment B) were provided to Kristi Geris during today's meeting (February 27, 2018). *(Note: Geris distributed these data to the HCP Coordinating Committees following the meeting that same day.)*

Murdoch explained that Attachment B was calculated by considering all coho salmon collected at Wells Dam as a random sample and expanding those ratios to include the entire basin. She said returns to the hatchery were not included because these fish were biased to the hatchery. She reviewed Attachment B, noting that SARs for Wells Dam releases were slightly higher than returns to the basin. She said SARs may be higher depending on how many fish turned into the collection channel. She also said these data could suggest fish are residualizing; however, the data do not prove this. *(Note: the impetus for reviewing these data was to fact-check the statement, "Coho have a tendency to rear in reservoirs upstream of McNary Dam rather than exhibit obligatory migratory behavior," included in the Comparison Matrix of Potential Study Subjects for the Wells Project 2020 Survival Verification Study [Attachment B of the HCP Coordinating Committees January 23, 2018 meeting minutes].)*

Murdoch said she spoke with Cory Kamphaus (YN) and determined if the Wells HCP Coordinating Committee would like to study coho salmon, the YN can accommodate this request. Murdoch said further, the YN would make the collection of coho salmon for the study a priority even if this means falling short of program broodstock targets. She said collection of these fish would be covered under the YN's permits. She said if this path is chosen, the YN would collect and spawn the fish, and transfer eyed-eggs to Wells Fish Hatchery.

Kahler asked how these CWT data (Attachment B) compare to PIT-tag data. Murdoch said the CWT data are quite a bit lower because the CWT are returns to Wells Dam and the PIT-tag data are returns to Bonneville Dam (approximately 0.4%). She caveated that this is based on only 3 years of data. Craig also noted that coho salmon tend to migrate up other tributaries, so the estimate to Wells Dam will be a minimum. He said coho salmon survive very well. Murdoch agreed and said coho salmon also tend to move into Chelan Falls and stray into the Entiat River. Kahler said coho salmon are also detected at the Eastbank Fish Hatchery outfall. Keller said coho salmon have also been observed near Kirby Billingsley Hydro Park migrating up a small irrigation canal.

Ferguson said it seems coho salmon are more feasible than 1 month ago. Murdoch agreed and stated that coho salmon seem more feasible than springers; however, coho salmon are also less desirable because they are not listed. Kahler asked about an Okanogan River release if coho salmon

are used for the study. Murdoch said only on rare occasions are coho salmon observed migrating up the Okanogan River. Ferguson asked if releasing coho salmon at the mouth of the Okanogan River would be problematic. Truscott said he does not believe so. Murdoch said currently, there is no reintroduction program for coho salmon in the Okanogan River.

Tonseth suggested incorporating a stray evaluation into the methodology to help inform stray potential in future studies. Ferguson agreed this is a good idea.

Ferguson asked about timing issues with regard to selecting a species. Kahler said issues will only arise if additional broodstock need to be collected for the study (which only applies to springers). Ferguson summarized the discussion by saying the next step is for Douglas PUD to discuss sample sizes and study designs with Skalski.

IV. Chelan PUD

A. Tumwater Dam Fishway Outage (Mike Tonseth and Lance Keller)

Mike Tonseth said he spoke with Ian Adams (Chelan PUD Hatchery Maintenance and Operations Coordinator), who indicated the fishway at Tumwater Dam will be briefly shutdown tomorrow, February 28, 2018, to obtain measurements, and then will be watered back up the same day. Kirk Truscott asked if the fishway is gravity fed, and Lance Keller said it is. Truscott asked if there might be any fish present in the ladder, and Keely Murdoch asked particularly about bull trout. Jim Craig said this time of year is just ahead of the bull trout migration. Truscott asked about how much water will remain in the ladder in case steelhead, Pacific Lamprey, or other species are present in the ladder. Keller said he is unsure but guessed the fishway would be dewatered to an elevation equal with the tailrace elevation. John Ferguson noted that Pacific Lamprey can survive out of water for a short while, and Tonseth said the issue would be these fish being able to survive the freezing temperatures if out of water.

Keller said he will confirm details with Adams and will provide an email detailing the Tumwater Dam fishway outage scheduled for February 28, 2018. The HCP Coordinating Committees will contact Keller with comments, if any, no later than end of day February 27, 2018. *(Note: Keller provided this email following the meeting on February 27, 2018, which Kristi Geris distributed to the HCP Coordinating Committees that same day.)*

B. DECISION: 2018 Rock Island and Rocky Reach HCP Action Plan (Lance Keller)

The Draft 2018 Rock Island and Rocky Reach HCP Action Plan was distributed to the Rock Island and Rocky Reach HCP Coordinating Committees by Kristi Geris on January 22, 2018. The draft action plan was available for a 30-day review period, with edits and comments due to Lance Keller by February 21, 2018. Keller said no comments were received on the action plan. The Rock Island and

Rocky Reach HCP Coordinating Committees representatives present approved the 2018 Rock Island and Rocky Reach HCP Action Plan.

C. DECISION: 2017 Rocky Reach Juvenile Fish Bypass System Report (Lance Keller)

The Draft 2017 Rocky Reach Juvenile Fish Bypass System Report was distributed to the Rocky Reach HCP Coordinating Committee by Kristi Geris on January 22, 2018. The draft report was available for a 30-day review period, with edits and comments due to Lance Keller by February 21, 2018. Keller said no edits were received on the draft report. The Rocky Reach HCP Coordinating Committee representatives present approved the 2017 Rocky Reach Juvenile Fish Bypass System Report.

D. DECISION: 2017 Rock Island Smolt and Gas Bubble Trauma Evaluation Report (Lance Keller)

The Draft 2017 Rock Island Smolt and Gas Bubble Trauma Evaluation Report was distributed to the Rock Island HCP Coordinating Committee by Kristi Geris on January 22, 2018. The draft report was available for a 30-day review period, with edits and comments due to Lance Keller by February 21, 2018. Keller said comments were received from Jim Craig regarding percent descaling reported for juvenile fish examined. Keller said he provided a response to Craig, and Keller asked Craig if the question was adequately addressed. Craig said it was. He added that his question was not to imply descaling is an issue at Rock Island Dam and Keller's explanation of holding times and impacts of debris in the trap makes sense. The Rock Island HCP Coordinating Committee representatives present approved the 2017 Rock Island Smolt and Gas Bubble Trauma Evaluation Report.

E. DECISION: 2018 Rock Island Bypass Monitoring Plan (Lance Keller)

The Draft 2018 Rock Island Bypass Monitoring Plan was distributed to the Rock Island HCP Coordinating Committee by Kristi Geris on January 22, 2018. The draft plan was available for a 30-day review period, with edits and comments due to Lance Keller by February 21, 2018. Keller said comments were received from Jim Craig requesting to add language explaining the purpose of PIT-tagging juvenile fish. Keller said this language was added, as requested. The Rock Island HCP Coordinating Committee representatives present approved the 2018 Rock Island Bypass Monitoring Plan.

F. Rocky Reach Dam Turbine Unit C1 Outage (Lance Keller)

Lance Keller said Turbine Units C1 and C2 at Rocky Reach Dam are important to promote fish guidance into the juvenile fish bypass system and, because of this, are also the first units on and last off while loading the powerhouse. Keller said on January 14, 2018, the Washington State Department of Ecology was dispatched to the Rock Island reservoir to investigate a report of oil observed in the Columbia River. Keller said Rocky Reach Dam staff were notified on January 15, 2018, and began investigating the source of the oil. He said the only recent change in operation was returning Turbine

Unit C1 to service the week prior. He said the unit showed no loss of oil during maintenance and was returned to service on January 12, 2018. He said mechanics took Turbine Unit C1 offline on January 16, 2018, and discovered a loss of oil from the unit hub via the trunnion seals. Keller said Rocky Reach Dam mechanics are currently searching for a safe, reliable fix to bring the unit back into service as soon as possible. He said, however, it currently appears that Turbine Unit C1 will be offline when the juvenile bypass system begins operation on April 1, 2018, and could remain offline for a portion of the 2018 juvenile passage season. He said Rocky Reach Dam operators have been in a similar situation before (in 2014, from June through end-of-season), when Turbine Unit C1 was taken offline to repair a crack in the rotor.

Keller distributed hard copies of a proposed Operating Plan for the Rocky Reach Dam Surface Collector and Turbine Unit C2 during the Turbine Unit C1 Outage in Spring 2018 (Attachment C), which was distributed electronically to the HCP Coordinating Committees by Kristi Geris following the meeting on February 27, 2018. Keller said Chelan PUD is proposing to implement the same operations in spring 2018 as implemented in 2014 when Turbine Unit C1 was offline. He said key changes from current operations include: 1) using three additional RRJFBS SC pumps to increase attraction flow from 6,000 to 6,660 cubic feet per second (cfs) into the RRJFBS SC entrances (3,330 cfs on each side); and 2) increasing Turbine Unit C2 flow from its normal soft-limit set-point of 12,200 cfs (12.2 kcfs) to a soft-limit flow of 15.2 kcfs (see Nos. 1 and 4 in Attachment C).

Keller said Chelan PUD would like to append these modified operations for the RRJFBS SC and Turbine Unit C2 to the 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan, with the stipulation that Chelan PUD will keep the Rocky Reach HCP Coordinating Committee apprised of plans for the Turbine Unit C1 repairs. Keller acknowledged that this is a last-minute request and said additional time can be provided for discussion and consideration prior to voting on the 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan.

Jim Craig asked if there is any concern about the trunnion seals in other turbine units at Rocky Reach Dam. Keller said Turbine Unit C1 is a unique situation, one identified by the mechanics through a "blade droop" analysis.

Scott Carlon asked if fry have been observed at the RRJFBS. Keller said yes, and no impingement locations have been observed or were identified under the proposed altered operations in 2014. He said staff will continue collecting these data, which should be a good indicator if something is wrong with the altered operations.

Truscott asked if in 2014, were these same operations were implemented, notably Turbine Unit C2 flow increased to a soft-limit flow of 15.2 kcfs, and there were no issues with fish condition? Keller said this is correct. He added that Rocky Reach Dam operators consulted with the hydro

superintendent to confirm a soft-limit flow of 15.2 kcfs would not impact the differential or structural integrity of the intake screen deployed in Turbine Unit C2. John Ferguson also added that in 2014, these same operations were implemented from June through the end of the season, which means there were months of data. Truscott asked if there will be any changes to the blade angle when increasing unit flow from 12.2 kcfs to 15.2 kcfs? Keller said to his knowledge no, that the difference in blade angle under the different operations is minimal and unit efficiency is maintained.

The Rocky Reach HCP Coordinating Committee representatives present approved Chelan PUD's proposed operating plan for the RRJFBS SC and Turbine Unit C2, during the Turbine Unit C1 outage in spring 2018.

G. DECISION: 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan (Lance Keller)

The Draft 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan was distributed to the Rocky Reach HCP Coordinating Committee by Kristi Geris on January 22, 2018. The draft plan was available for a 30-day review period, with edits and comments due to Lance Keller by February 21, 2018. Keller said no comments were received on the draft plan. The Rocky Reach HCP Coordinating Committee representatives present approved the 2018 Rocky Reach Juvenile Fish Bypass System Operations Plan.

H. Rock Island and Rocky Reach Adult Fishway Maintenance Updates (Lance Keller)

Lance Keller reviewed maintenance updates at Rocky Reach Dam and Rock Island Dam, as follows:

Rock Island Dam

Keller said as of the last HCP Coordinating Committees meeting on January 23, 2018, the only remaining outage at Rock Island Dam was the middle fishway, which was returned to service on February 7, 2018. He said adult fish passage facilities at Rock Island Dam are now fully operational.

Rocky Reach Dam

Keller said as of today, February 27, 2018, Rocky Reach Dam adult passage facilities are fully watered up and operational. He said Chelan PUD appreciates the Rocky Reach HCP Coordinating Committee's approval of allowing additional time for contractors to complete needed work. Keller said all inspections went very well this year.

I. Rock Island Dam Spill Gate Change (Lance Keller)

Lance Keller recalled last May 2017, two notch gates were converted back to full gate operation at Rock Island Dam due to three automated spill gates being out of service. Keller said engineering staff are continuing to repair the three spill gates and an analysis has indicated the gates are also under-

powered. He said last year, Rock Island Dam engineers requested to convert notched spill gates 18 and 26 back to full gate operation while the three automated spill gates were out of service, to address concerns about overall spillway capacity and dam safety. Keller said 1 week ago, he received the same request from Rock Island Dam engineers to be implemented prior to the initiation of the 2018 spill season. Keller explained that if a large spill event suddenly occurs, the functioning automated gates will open, but the manual gates will need to be removed and stored on either side of the dam. He said having any automated spill gates out-of-service means a loss of important timely automated responsiveness. He said spill gates 18 and 26 will be in full gate operation only through the spring runoff period, and then will be returned back to notch gate operation. He said Rock Island Dam engineers estimated repairs to the three out-of-service automated spill gates should be completed by September or October 2018.

Kirk Truscott asked if spill gates 18 and 26 are the same notch gates that were converted back to full gate operation in 2017. Keller said this is correct and recalled these gates were selected in the best interest of fish passage and impacts to total dissolved gas. He said for reference, spill gates 18 and 26 are located between the middle fishway at Rock Island Dam and Powerhouse 2 (river left). He said route-specific data at Rock Island Dam indicate the preference for fish passage is via river right.

Truscott asked if converting spill gates 18 and 26 is the solution while the other spill gates are being repaired. Keller said this is correct and added that discovering the spill gates are also under-powered has made it more difficult to identify the best solution.

Truscott asked if Chelan PUD completes a facility evaluation report for Chelan PUD projects. He asked how many of these recent equipment failures were preventable? He said Chelan PUD already knew the automated spill gates were not in proper working order, the HCP Coordinating Committees conduct survival studies under normal operating conditions but the operations keep changing, and he said it is concerning that these failures are repetitive. He asked when Chelan PUD requests modifications to operations, what can the HCP Coordinating Committees do but approve them? He said from his standpoint, this is not what the HCP Coordinating Committees signed up for. Jim Craig asked how the HCP Coordinating Committees can get this message to the general managers. Keller said Chelan PUD fully understands Truscott's concerns. Keller assured the HCP Coordinating Committees that these concerns have been communicated internally. Keller said as a Fisheries Biologist, he has no input on where repairs fall on the priority list; however, it is the job of the Chelan PUD Fish and Wildlife Department to figure out how to best mitigate these situations to minimize and prevent impacts to natural resources. He said these are interim situations and operations will return to the normal operating configuration as soon as possible. Truscott acknowledged budgetary constraints, but still suggested actions could have been completed to avoid some of these issues. He also acknowledged the aging infrastructure and asked when Rock Island Dam was built. Keller said

Rock Island Dam was built in the 1920s and was in-service by 1933. He said Rock Island Dam was the first hydropower project to span the entire Columbia River.

Truscott asked if more spill routed through spill gates 18 and 26 means less spill through other gates. Keller said there will be no modifications to spill gates that affect fish passage. He said he will incorporate language into the Draft 2018 Rock Island and Rocky Reach Fish Spill Plan, documenting the conversion of notched spill gates 18 and 26 back to full gate operation during spring 2018. John Ferguson said the review timeline for this document will remain the same. *(Note: Keller provided an updated spill plan following the meeting on February 27, 2018, which Kristi Geris distributed to the HCP Coordinating Committees that same day.)*

J. ISAB Upper Columbia Spring Chinook Salmon Review (Lance Keller)

Lance Keller said an email with a link to the ISAB Review of Spring Chinook Salmon in the Upper Columbia River was distributed to the HCP Coordinating Committees by Kristi Geris on February 12, 2018. Keller said an article was subsequently published in the *Columbia Basin Bulletin* on February 16, 2018, which included data points that were interpreted improperly. He said what this article suggests is not correct. He said Chelan PUD has since spoke with Mike Tonseth, Andrew Murdoch (WDFW), and ISAB staff to discuss and attempt to correct this misinterpretation of data.

Keller explained that Murdoch provided a presentation to the ISAB with a slide showing migration timing based on PIT-tag data from the lower Wenatchee River Smolt Trap to the lower PIT-tag array in the Wenatchee River to demonstrate migration timing from the lower smolt trap to the Wenatchee and Columbia rivers confluence vicinity. Tonseth said the data were intended to describe entrance timing into the Columbia River and were not intended to describe potential impacts from spill or lack thereof at Rock Island Dam. Keller said spill data and Rock Island Dam references were also included on this presentation slide, which unfortunately led to the inadvertent misinterpretation of a travel time from the Wenatchee River to Rock Island Dam. He said, while the misinterpretation was not included in the ISAB report, the slide containing this information was included in the presentation package. He said Murdoch has since corrected this slide to be clearer; unfortunately, the *Columbia Basin Bulletin* already published the following:

"Added to all this is that spring fish live longer in their natal streams and so are constrained by those streams' limitations. Also, most spring juveniles migrate out of the tributaries and down the mainstem Columbia prior to the beginning of spill at mainstem dams. 'The fish don't have many options but to go through the powerhouse at PUD dams,' [Dr. Stan] Gregory [Oregon State University ecologist and an ISAB member] added."

Keller said according to acoustic tag survival results for juvenile yearling Chinook salmon, only 13.6% of downstream migrants at Rock Island Dam use the spillway as a passage route, and the remaining pass via Powerhouse 1 or 2. He said Dr. Gregory's statement is implying that if fish passage is poor then passage through the powerhouse is poor, which is incorrect.

Keller said Murdoch changed the presentation to remove the chance of misinterpretation. Tonseth said the ISAB presentation package was also updated to reflect these changes. Keller said Chelan PUD wanted to notify the HCP Coordinating Committees of this misinterpretation of data in case it comes up in other venues.

Tonseth said dam passage survival and Columbia River entrance timing are two different questions. He asked, once spring migrants enter the Columbia River, what are these fish doing? He asked, what influences are in play that may be contributing to lower adult returns (essentially, recovery of spring Chinook salmon)? He said this is unknown. Keller said he believes these questions are what spurred the misinterpretation.

Tom Kahler said he discussed with Dr. Gregory and Dr. Steve Schroder (ISAB member) that the original bypass dates were based on fyke-net data, which are real data on the actual timing of fish passage, but 15 to 30 years old. Kahler asked, has climate change shifted migration timing since the collection of these data? He said the ISAB report suggests spring and summer emigrant migration timing that does not match the publicly available data.

V. HCP Administration

A. Next Meetings (John Ferguson)

The next scheduled HCP Coordinating Committees meeting is on March 27, 2017, to be held in-person at the Grant PUD Wenatchee Office in Wenatchee, Washington.

The April 24 and May 22, 2018 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 SARs for Coho Salmon Released and Recaptured from Wells Fish Hatchery (based on CWTs)

Attachment C Operating Plan for the Rocky Reach Juvenile Fish Bypass System Surface Collector and Turbine Unit C2 during the Turbine Unit C1 Outage in Spring 2018

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
Mike Tonseth	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