FINAL

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ANCHOR QEA

Memorandum

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

Date: March 30, 2017

From: John Ferguson, HCP Coordinating Committees Chairman

cc: Kristi Geris

Re: Final Minutes of the February 28, 2017, HCP Coordinating Committees Meeting

The Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plans (HCPs) Coordinating Committees met at the Grant PUD Office in Wenatchee, Washington, on Tuesday February 28, 2017, from 10:00 a.m. to 1:00 p.m. Attendees are listed in Attachment A to these meeting minutes.

Action Item Summary

- Alene Underwood (Chelan PUD Fish and Wildlife Program Manager) will provide Chelan PUD's comments on the Federal Columbia River Power System (FCRPS) National Environmental Policy Act (NEPA) Scoping Process to Kristi Geris for distribution to the Coordinating Committees (Item I-C).
- Tom Kahler will provide fish passage count data for winter months at Wells Dam for review regarding timing of winter maintenance at Wells Dam to Kristi Geris for distribution to the Coordinating Committees (Item I-C).
- John Ferguson will request from Michelle Rub (National Marine Fisheries Service [NMFS]) an estimation of survival of adult spring/summer Chinook salmon from the Columbia River estuary to Bonneville Dam in 2016 (Item I-C). *(Note: Rub indicated she does not yet have a final estimate for 2016, as distributed to the Coordinating Committees by Kristi Geris on March 13, 2017.)*
- Lance Keller will discuss internally proposals regarding the Rock Island and Rocky Reach Coho Salmon Phase Designation and report back to the Coordinating Committees with a recommended path forward that will be discussed during the meeting on March 28, 2017 (Item III-A).
- Lance Keller will inquire internally about the basis for the fish spill patterns implemented at Rock Island and Rocky Reach dams, as well as how these patterns are evaluated for efficacy (Item III-C).
- Tom Kahler will finalize the 2015 Douglas PUD Pikeminnow Program Annual Report and provide the final report to Kristi Geris for distribution to the Coordinating Committees (Item IV-A). *(Note: Kahler provided the final report to Geris prior to the meeting on March 28, 2017, which Geris distributed to the Coordinating Committees that same day.)*

- **The Coordinating Committees meeting on March 28, 2017, will be held in-person at the Grant PUD office in Wenatchee, Washington (Item V-A).**

Decision Summary

- The Wells HCP Coordinating Committee approved the 2016 Wells HCP Annual Report after no disapprovals were received prior to the 30-day review deadline.

Agreements

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

Review Items

- Kristi Geris sent an email to the Coordinating Committees on February 8, 2017, notifying them the Draft 2016 Wells HCP Annual Report is available for a 30-day review with edits and comments due to Geris by Friday, March 10, 2017.
- Kristi Geris sent an email to the Coordinating Committees on February 16, 2017, notifying them the Draft 2016 Rock Island and Rocky Reach HCP Annual Reports are available for a 30-day review with edits and comments due to Geris by Monday, March 20, 2017.
- Kristi Geris sent an email to the Coordinating Committees on February 17, 2017, notifying them the Draft 2016 Rocky Reach Juvenile Fish Bypass System (RRJFBS) Report is available for a 30-day review, with edits and comments due to Lance Keller by Monday, March 20, 2017.
- Kristi Geris sent an email to the Coordinating Committees on February 22, 2017, notifying them the Draft 2017 Rock Island and Rocky Reach Fish Spill Plan is available for a 30-day review with edits and comments due to Lance Keller by Friday, March 24, 2017 (Item III-C).
- Kristi Geris sent an email to the Coordinating Committees on February 23, 2017, notifying them the Draft 2017 Wells HCP Action Plan is available for review. Douglas PUD will request approval of the plan during the Coordinating Committees meeting on March 28, 2017.
- Kristi Geris sent an email to the Coordinating Committees on March 1, 2017, notifying them the Draft Rocky Reach Total Dissolved Gas Alternative Analysis Report is available for review with edits and comments due to Marcie Clement (Chelan PUD) by April 1, 2017.
- Kristi Geris sent an email to the Coordinating Committees on March 3, 2017, notifying them the Draft 2017 Broodstock Collection Protocols are available for an expedited review. Douglas PUD will request approval of the protocols during the Coordinating Committees meeting on March 28, 2017.

Finalized Documents

- Kristi Geris sent an email to the Coordinating Committees on March 24, 2017, notifying them that the 2016 Wells HCP Annual Report was finalized following a 30-day review period, which ended on March 10, 2017. Comments received on the draft report were incorporated into the final report.
- The Final 2015 Douglas PUD Pikeminnow Program Annual Report was distributed to the Coordinating Committees by Kristi Geris on March 28, 2017.

I. Welcome

A. Review Agenda (John Ferguson)

John Ferguson welcomed the Coordinating Committees and reviewed the agenda. Ferguson asked for any additions or changes to the agenda. Tom Kahler added an update on the 2015 Douglas PUD Pikeminnow Program Annual Report.

B. Meeting Minutes Approval (John Ferguson)

The Coordinating Committees reviewed the revised draft January 24, 2017, meeting minutes. Kristi Geris said a second revised draft was distributed to the Coordinating Committees on February 22, 2017, which included corrections to document and review item dates. Geris said she also added the Draft 2017 Wells HCP Action Plan under the review items, which will be a decision item for Douglas PUD during the Coordinating Committees meeting on March 28, 2017. Geris said all comments and revisions received from members of the Committees were incorporated into the revised minutes. Coordinating Committees members present approved the January 24, 2017, meeting minutes, as revised. The Washington Department of Wildlife (WDFW) abstained, because a WDFW representative was not present during the January 24, 2017, meeting.

C. Last Meeting Action Items (John Ferguson)

Action items from the Coordinating Committees meeting on January 24, 2017, and follow-up discussions, were as follows. *(Note: italicized text corresponds to agenda items from the meeting on January 24, 2017):*

- *Alene Underwood will provide Chelan PUD's comments on the FCRPS NEPA Scoping Process to Kristi Geris for distribution to the Coordinating Committees (Item II-B).*
  This action item will be carried forward.
- *Lance Keller will revise the draft Statement of Agreement (SOA), "Acknowledgement of Rock Island Powerhouse 1 Units B1-B4 Consultation," as discussed, and will provide the revised draft SOA to Kristi Geris for distribution to the Coordinating Committees (Item II-C).*

The revised draft SOA was distributed following the meeting on January 24, 2017, and was available for a 10-day review with vote via email due to Keller by Friday, February 3, 2017 (the SOA was approved, as reflected in the Coordinating Committees meeting minutes from January 24, 2017).

- *Lance Keller will revise the Draft 2017 Rock Island and Rocky Reach HCP Action Plan, as discussed, and will provide the revised draft plan to Kristi Geris for distribution to the Coordinating Committees (Item II-D).*
  The revised draft plan was distributed following the meeting on January 24, 2017, and is available for review with edits and comments due to Keller by Wednesday, February 22, 2017.
- *Lance Keller will provide fish rescue numbers from the 2016/2017 Rock Island and Rocky Reach dams adult fish ladder maintenance periods to Kristi Geris for distribution to the Coordinating Committees (Item II-E).*
  Keller provided fish rescue numbers to Geris on February 16, 2017, which Geris distributed to the Coordinating Committees on February 17, 2017.
- *Lance Keller will notify the Rocky Reach HCP Coordinating Committee when the Rocky Reach Dam adult fish ladder is brought back online from the 2016/2017 Rocky Reach Dam adult fish ladder maintenance period (Item II-E).*
  Keller provided notification that the Rocky Reach Dam adult fishway was returned to service on February 14, 2017, which was distributed to the Coordinating Committees by Kristi Geris that same day.
- *Tom Kahler will provide fish passage count data for winter months at Wells Dam for review regarding timing of winter maintenance at Wells Dam to Kristi Geris for distribution to the Coordinating Committees (Item III-A).*
  This action item will be carried forward.
- *Tom Kahler will notify the Wells HCP Coordinating Committee when the Wells Dam west fishway is brought back online from the 2016/2017 Wells Dam fishway maintenance period (Item III-A).*
  Kahler provided this notification to Kristi Geris on February 21, 2017, which Geris distributed to the Coordinating Committees that same day.
- *Tracy Hillman (HCP Tributary Committees Chairman) will provide U.S. Fish and Wildlife Service's (USFWS's) presentation on the Silver Side-Channel Rehabilitation Project to Kristi Geris for distribution to the Coordinating Committees (Item IV-A).*
  The presentation was posted to the Coordinating Committees HCP Extranet Site (file was too large to email), and the Coordinating Committees were notified by Geris following the meeting on January 24, 2017.
- *John Ferguson will follow up with Michelle Rub regarding possibly presenting an update on her presentation, "Estimation of Survival and Run Timing of Adult Spring/Summer Chinook from the*

Columbia River Estuary to Bonneville Dam," to the Coordinating Committees during a future meeting (Item V-E).

Ferguson said he contacted Rub and she indicated she recently provided a comprehensive presentation on her work to the Priest Rapids Coordinating Committee (PRCC) and suggested providing another presentation after more data are collected in 2017. Tom Kahler noted that he and Lance Keller did not attend the presentation to the PRCC and would be interested in obtaining the 2016 estimation of survival of adult spring/summer Chinook salmon from the Columbia River estuary to Bonneville Dam. Ferguson said he will request this from Rub. *(Note: Rub indicated she does not yet have a final estimate for 2016, as distributed to the Coordinating Committees by Kristi Geris on March 13, 2017.)*

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 February 2017 and plan to meet next on March 9, 2017.

Hillman updated the Coordinating Committees on the following actions and discussions that occurred during the HCP Hatchery Committees meeting on February 15, 2017:

- *DECISION: Draft 2017 Rock Island and Rocky Reach HCP Action Plan*: The HCP Hatchery Committees received the Draft 2017 Rock Island and Rocky Reach HCP Action Plan in January 2017 and in February 2017, the Rock Island and Rocky Reach HCP Hatchery Committees approved the hatchery portion of the plan. The HCP Tributary Committees will review the tributary portion in March 2017. Hillman added that the HCP Tributary Committees will also review the tributary portion of the Draft 2017 Wells HCP Action Plan in March 2017.
- *Egg-to-Fry Survival Study in the Twisp River*: In January 2017, the HCP Hatchery Committees approved the use of surplus Twisp River steelhead for a pilot study on egg-to-fry survival. Douglas PUD in consultation with the lead on the study, Phil Roni (Cramer Fish Sciences), has now decided to switch the focus of the study to spring Chinook salmon (instead of steelhead). Jeff Korth asked what the driver was to change the study. Tom Kahler explained that in the Upper Columbia River basin, spring Chinook salmon are the only endangered species. He said with regard to lifecycle, Douglas PUD has data for spring Chinook salmon at all life stages but egg-to-fry and fry-to-parr. He said, therefore, obtaining a complete dataset for spring Chinook salmon is more urgent than for steelhead.
- *USFWS Bull Trout Consultation Update*: USFWS is in the process of finalizing the draft Biological Opinion covering hatchery programs in the Wenatchee basin. However, the process is on hold because Chelan PUD and WDFW have not yet provided comments.

- *NMFS Consultation Update*: NMFS has signed the permits for Methow spring Chinook salmon, which will then be sent to the permittees for signature. Kahler said Douglas PUD received and signed the permits. Korth said WDFW received the permits, which are now in Olympia, Washington, for signature. Hillman said comments were also received on the Colville Confederated Tribes (CCT) Tribal Resources Management Plan (TRMP). Casey Baldwin said the CCT received the comments and are incorporating some edits into the TRMP. He said the CCT are expecting authorization within days.
- *Draft 2017 Broodstock Collection Protocols:* Typically, in February of each year, WDFW provides draft broodstock collection protocols to the HCP Hatchery Committees for review and approval (per the SOA, *Annual Broodstock Collection Protocols*, approved by the HCP Hatchery and Coordinating Committees on September 17 and October 28, 2014, respectively). This year, however, WDFW did not yet have the spring Chinook salmon forecast and could not finish the draft protocols for review during the month of February. WDFW has the forecast now, and the protocols will be provided to the HCP Hatchery Committees before the HCP Hatchery Committees meeting on March 13, 2017. The protocols will also require review and approval by the Wells HCP Coordinating Committee.
- *Spring Chinook Salmon Outplanting in the Chewuch River*: The HCP Hatchery Committees developed a draft plan for outplanting surplus MetComp fish in the Chewuch River, with the goal of determining whether these fish stay in the Chewuch River. The fish will be planted at two locations, including near the Chewuch campground (upstream from the uppermost Chewuch River passive integrated transponder [PIT] array), and then downstream by the Memorial Bridge (upstream from the lower Chewuch River PIT array). The fish will be monitored for movement and will be evaluated for potential spawning success (female carcasses will be examined for egg retention). A final plan is expected to be approved during the HCP Hatchery Committees meeting on March 13, 2017.
- *Hatchery Monitoring and Evaluation Report Scheduling*: The HCP Hatchery Committees have been discussing the timing of hatchery monitoring and evaluation (M&E) reporting in the future (including annual reporting), creating an updated 5-year statistical report (to replace the 5-year report currently specified in the Hatchery M&E Plan), and continuing the 10-year program review report. The HCP Hatchery Committees discussed including more statistics in the annual report to help inform development of the Hatchery M&E Plan, and then the 5-year statistical report can be more about comparing supplemented and un-supplemented populations. The HCP Hatchery Committees also discussed synchronizing the 5-year statistical report with the 10-year program review report. Currently, the 5-year statistical report is scheduled to be completed in 2018, and the 10-year program review report is scheduled for 2020 (2-year gap). The HCP Hatchery Committees decided to align the two reports to avoid the need of developing additional statistical analyses. A final reporting schedule is expected to

be approved during the HCP Hatchery Committees meeting on March 13, 2017. Kahler asked if a 5-year statistical report and 10-year program review report will be prepared when the deadlines align. Hillman said the 10-year program review report includes the information in the 5-year statistical report; therefore, only the 10-year program review report will be written in overlapping years.

- *Expanded Sampling at the Off-ladder Fish Trap*: The HCP Hatchery Committees discussed a proposal by WDFW to expand sampling at the off-ladder fish trap (OLAFT) with the purpose of increasing monitoring to include evaluation of spring Chinook salmon. The proposal includes PIT-tagging spring Chinook salmon and operating the OLAFT earlier (instead of trapping from July to mid-November, start trapping in mid-April through November). This schedule captures the spring Chinook salmon run-at-large, which improves estimates of abundance and escapement, and informs proportion of hatchery-origin spawners and proportionate natural influence. WDFW wants to verify the HCP Hatchery Committees support for this proposal before moving forward. If approved, this plan may result in less trapping at Tumwater and Wells dams. The HCP Hatchery Committees requested WDFW prepare a white paper outlining the proposal. Kahler asked when WDFW would like to implement this plan, and Korth said this spring 2017. Hillman added that the 2017 Broodstock Collection Protocols were drafted to include flexibly in case the plan with the OLAFT is approved.
- *Stray Rate Targets*: Todd Pearsons (Grant PUD) provided a presentation on stray rates to the HCP Hatchery Committees in January 2017, and the HCP Hatchery Committees requested Pearson provide a white paper. The HCP Hatchery Committees reviewed and discussed the white paper; however, the Committees were unable to reach resolution on stray rate targets. Three stray rate targets were discussed. Two targets are related to the recipient stock, which are linked to extinction risk and are included in the Recovery Plan; therefore, the HCP Hatchery Committees will not change those. The other target stipulates a 5% brood-year stray rate (i.e., among the brood year released, 95% need to return to the natal stream). There seems to be no scientific justification for the 5% value. The Hatchery M&E Plan indicates if empirical data suggest a different stray rate, then the target can be re-evaluated. Ford et al. (2015)[1] addressed this and indicated that stray rates can range from 1 to 100% depending on what spawning aggregate is considered. The HCP Hatchery Committees are now considering setting a management goal for a brood-year stray rate.

[1] Ford, M.J., A. Murdoch, and M. Hughes, 2015. Using parentage analysis to estimate rates of straying and homing in Chinook salmon (*Oncorhynchus tshawytscha*). *Molecular Ecology* 24:1109-1121. Doi: 10.1111/mec.13091.

- *Next Steps*: The next meeting of the HCP Hatchery Committees will be on Monday, March 13, 2017.

III. Chelan PUD

A. DECISION: Rock Island and Rocky Reach Coho Salmon Phase Designation (Lance Keller, Steve Hemstrom, and Catherine Willard)

Lance Keller said the draft SOA, "Designation of Rock Island and Rocky Reach Juvenile Coho in Phase III (Standard Achieved)," (Attachment B), and the report by John Skalski (Skalski Statistical Services) and Rich Townsend (Columbia Basin Research), "Comparison of Juvenile Survival of Chinook Salmon, Sockeye Salmon, Steelhead, and Coho Salmon through the Chelan PUD Projects, 2010–2016," (Attachment C), were distributed to the Coordinating Committees by Kristi Geris on February 15, 2017. Keller said Skalski's and Townsend's report (Attachment C) summarizes those data included in the draft SOA (Attachment B). Keller said the draft SOA background section reviews the history of previous SOAs and summarizes a comparison of data illustrating that juvenile spring Chinook and coho salmon survive similarly through the hydrosystem, which translates into a ratio that is applied to Rock Island and Rocky Reach juvenile spring Chinook salmon survival rates to generate values for juvenile coho salmon. He said the last page of the draft SOA includes the math of the conversion (or adjustment) for the Rock Island and Rocky Reach Projects. He read the draft SOA agreement statement and noted the last sentence is key; the data presented indicate yearling Chinook salmon are a good surrogate for juvenile coho salmon, resulting in 93% survival for coho salmon at Rock Island and Rocky Reach projects.

John Ferguson said projected coho salmon survival through the Rocky Reach Project was calculated to be 92.94% with a standard error of 0.0081, and the Rock Island Project was calculated to be 93.98% with a standard error of 0.0233. Keller said that is correct. Jeff Korth asked if 93% is the standard, and Keller said yes, it is. Keller told Korth (who was unable to attend the last meeting), that during the last Coordinating Committees meeting on January 24, 2017, Steve Hemstrom thoroughly explained the analyses included in the draft SOA. Keller said these analyses are similar to the Grant PUD data, i.e., same approach and utilizing PIT-tag data. Korth asked how this designation aligns with the next 10-year check-in. Keller said this would put coho salmon on the same track as the other Plan species, with a check-in for the Rock Island HCP in 2020 and for the Rocky Reach HCP in 2021.

Bob Rose said the Yakama Nation (YN) are uncomfortable with the way the draft SOA is stated. Casey Baldwin said after Hemstrom's presentation last month, the CCT are comfortable with the draft SOA. Jim Craig said USFWS is also comfortable with the draft SOA. He added that this SOA has been

discussed for several months now. Ferguson agreed with Craig, noting the several iterations of reports Skalski and Townsend updated.

Keller said approving this SOA in the Coordinating Committees allows Chelan PUD to move forward with developing a hatchery compensation plan with the HCP Hatchery Committees, given the 93% value. Rose said he understands the application of this SOA with regard to moving forward with developing a hatchery compensation plan. He said he believes the data included in the SOA can still be used for that purpose; however, using these data for re-designation is the issue. He said 92.94% is not 93%. He said the way the SOA is stated sets an element of permanency. Ferguson said he is not certain phase designation can be separated from the hatchery compensation process. Keller said Chelan PUD understands that mean coho salmon survival at the Rocky Reach Project is below 93% by 0.06%; however, the mean at the Rock Island Project is almost a full percentage point above 93%. He recalled that the SOA, "Regarding District's Coho Obligation" (approved by the Rock Island and Rocky Reach HCP Coordinating Committees on June 26, 2007), states:

> "Juvenile coho [salmon] survival studies will not be performed unless there is compelling[2] information that demonstrates hydro project operations have an impact of greater than 7% mortality on coho [salmon]."

Keller said Chelan PUD believes these data can be used to provide comfort that this is not the case. He said compelling evidence is not leaning toward a large effect on juvenile coho salmon. Ferguson also noted there are multiple years of data behind these values. Korth said he typically does not view the mean to be the most important factor; rather, he becomes concerned when the standard errors are out of bounds. Ferguson agreed.

Rose said he believes the Coordinating Committees can disassociate the phase designation aspect of this SOA from what the HCP Hatchery Committees need to move forward with developing a hatchery compensation plan. He added that he does not want to hold up the HCP Hatchery Committees; however, the YN wants to further discuss the phase designation. Ferguson asked what this changes. Keller said he views the designation, Phase III (Standard Achieved), as tied to the 93% value. He said, if the Coordinating Committees provide the HCP Hatchery Committees with 92.94% survival for juvenile coho salmon, this is not really Phase III (Standard Achieved). He said, however, using the

[2] "Compelling" evidence could relate to information collected as part of the hatchery monitoring and evaluation program. For example, smolt-to-adult survivals for coho [salmon] that are significantly lower than other species in the same geographical area may be compelling evidence that coho [salmon] are experiencing differential mortality rates at project passage. In all cases, the evidence should be empirical and related to Project survival.

values from the analysis and considering the standard errors better demonstrates how 93% survival for coho salmon at Rock Island and Rocky Reach projects is reasonable. He added that the analyses show how close to 93% the Rocky Reach Project is, and there is room to spare in the Rock Island Project.

Rose said Keller is making a fundamental assumption that survival through the Rock Island and Rocky Reach projects can be combined. Rose said with the way the HCPs are written, he does not believe Chelan PUD has the ability to do this. Keller asked if Rose is suggesting separate SOAs for each Project. Rose said he is noting that the Rocky Reach and Rock Island projects are different Projects, and it seems Chelan PUD is proposing a relationship similar to the Grant PUD Priest Rapids and Wanapum projects, under the Grant PUD Salmon and Steelhead Settlement Agreement. Keller said Chelan PUD understands Rock Island and Rocky Reach are two different HCPs, and the reason Chelan PUD is proposing one SOA is consistent with the 2007 SOA. Keller said he understands Rose's point, and Keller said his intention is simply to look at the picture as a whole. Rose said he is struggling with that notion, and setting these precedents is bothersome.

Baldwin asked about the downside of continuing in Phase III (Standard Achieved – Interim Value) for juvenile coho salmon for the Rocky Reach Project. Keller said the goal of the Rocky Reach HCP is to achieve Phase III (Standard Achieved). He said Chelan PUD would like to use Skalski's and Townsend's analyses to show the goal has been achieved. He said data were reviewed for the natural juvenile coho salmon run through the Juvenile Bypass System at the Rocky Reach Project, and most likely, a study would not be feasible due to low sample size. He said Skalski's and Townsend's analyses are the best-available data for moving forward. He said achieving Phase III (Standard Achieved) would align coho salmon with the other Plan species with regard to the 10-year check-in.

Rose said there is a difference between best-available data and sufficient data. He said just because these are the data in-hand, does not mean it is enough. Ferguson said Chelan PUD is just saying this is a good dataset. He said 93% at both Projects falls well within the confidence intervals. He reiterated that it is not the mean that counts, it is how tight the dataset is. He said, in this case, the dataset is awfully tight.

Hemstrom said Chelan PUD would approach coho salmon in the same manner as the other Plan species if there was the ability to; however, there is not. He said the Projects could be split into two SOAs; however, the data would be the same as presented in the single SOA. He said Chelan PUD strives to meet the goals established in the HCPs and is attempting to do so with the data that are available. He asked Rose if he had suggestions about what to do alternatively.

Rose said he is interested in being explicit to the HCPs. He said, in this case, there probably should be two SOAs, which is more appropriate with regard to the separate HCPs. He said Section 5.2.2 of the Rocky Reach HCP states:

> "If Juvenile Project Survival for each Plan Species is measured to be greater than or equal to 93%, then the District will proceed to Phase III (Standard Achieved)."

Rose said the HCP does not say 92%, plus or minus some value. He said he wants to avoid setting this precedence, which could turn into a slippery slope. He said there is no clear rationale to do something different than what was agreed to in the HCPs. Korth said he understands Rose's point; however, he noted that this circumstance is not nearly as egregious as what has occurred in other committees. Ferguson noted that the HCP also does not specify mean, average, or otherwise, and he would hope that the HCP Coordinating Committees would not be affected by the actions of other committees. He said 93% could be an absolute level or fall within the 95% confidence interval. He said the Coordinating Committees could interpret this in several ways. Baldwin added that the HCP could be interpreted as both the mean and standard error need to be above 93%, which may never be achieved. He said he is not proposing this; however, if the HCP does not say 'mean,' it could be interpreted this way. Ferguson said, if Chelan PUD writes an SOA that states the Rock Island Project meets the standard, but the Rocky Reach Project does not, given the data, it seems the error is larger around 93.98%, which means there is more uncertainty around the Rock Island Project than the Rocky Reach Project. Rose said this is the problem; twisting the language around. He said he disagrees with these interpretations. He said, if these details were intended when writing the HCPs, they would have been written this way. He said he does not believe the Coordinating Committees have this leeway to go with these interpretations.

Rose said the YN are not yet ready to vote on this draft SOA. He suggested instead, two SOAs, providing the HCP Hatchery Committees with 92.94% to move forward with hatchery compensation planning and continuing to discuss coho salmon phase designation for the Rocky Reach Project during the Coordinating Committees meeting on March 28, 2017. Ferguson asked if the proposed Rock Island Project SOA would indicate Phase III (Standard Achieved), and Rose said this is correct. Rose added, he is only uncomfortable with the proposed Phase III (Standard Achieved) designation for the Rocky Reach Project. Keller questioned if Chelan PUD writes two different SOAs, should the Rock Island Project SOA indicate 93.98% instead of only 93%. Craig asked if this would reduce the coho salmon compensation for that Project, and Keller said yes, it would. Keller also questioned, if discussions are coming down to these numbers (small percentages), should Chelan PUD include the numbers from Skalski's and Townsend's report.

Scott Carlon said he is comfortable with Chelan PUD producing two SOAs. Rose asked Carlon what he thinks about only one SOA. Carlon replied that two SOAs is the cleanest approach for purposes of explaining this in layman terms.

Korth said, next year, 2017 data can be added and the analyses can be recalculated. Keller questioned then, what the duration of the Rocky Reach Project SOA would be. He said Chelan PUD is essentially building a hatchery compensation program based on the SOA and its duration. He asked if the analyses are recalculated, is the hatchery compensation only good for 1 year. Korth asked what does the HCP state regarding adding other data. Tom Kahler said the Wells HCP stipulates anytime a survival study is conducted, that value is included in a multi-year-average value and hatchery compensation is based on that new value for subsequent brood years. Keller said he believes the Rocky Reach and Rock Island HCPs stipulate the same.

Keller said one option would be to draft a 10-year SOA using the interim value stated in the 2007 SOA, and have the HCP Hatchery Committees develop a hatchery program based on that value. Ferguson said this option would avoid a hatchery compensation that fluctuates up and down. Keller agreed, noting that a fluctuating compensation would affect a lot of moving parts, including planning and permitting.

Ferguson asked how much work is involved to operate under an annual number if mitigation for the Rocky Reach Project is adjusted each year with new PIT-tag data. Catherine Willard (Chelan PUD HCP Hatchery Committees Alternate Representative) said this is something that would be applied to future years. She said whatever is determined for 2017 would be applied to brood year 2019. She said there is no way to adapt the program that quickly. She said, in terms of percentages, 93% versus 93.98%, converted to number of smolts, for mitigation the difference is not very large. Korth added that the hatchery permits incorporate a level of flexibility that would accommodate the types of adjustments being discussed.

Hemstrom said the Rock Island and Rocky Reach projects have operated under the 2007 SOA, which assumed 93% survival and compensated 7% for coho salmon for both Projects. He said if Chelan PUD drafts two separate SOAs, with Rock Island establishing Phase III (Standard Achieved) and Rocky Reach not quite at 93%, he asked if compensation would continue at 7% for the Rocky Reach Project. Willard said this is correct. Ferguson asked about the duration of the SOA for the Rocky Reach Project. Korth suggested assigning an appropriate duration that avoids an annual check-in. Ferguson suggested drafting a 5-year SOA. He added that if Chelan PUD continues recalculating the data each year and the Rocky Reach Project achieves 93% survival for coho salmon, Chelan PUD can draft a new SOA. Rose said he does not recall the Coordinating Committees ever discussing this topic in the past because there was no need to. He said, however, he is also uncomfortable with the notion of just considering the average each year, and when the average

finally reaches 93%, this is considered acceptable. He suggested instead establishing a block of time. He said he does not believe phase designation should be considered on an annual basis. Korth asked Rose what block of time would he be comfortable with. Rose said 5 years may be sufficient. He also suggested aligning the SOA with the next check-in for the Rocky Reach Project (2021).

Keller said because this draft SOA has evolved into something completely different, he will want to discuss internally the proposals regarding the Rock Island and Rocky Reach Coho Salmon Phase Designation and report back to the Coordinating Committees with a recommended path forward that will be discussed during the meeting on March 28, 2017.

Ferguson recalled the driver behind finalizing these decisions is that the hatchery compensation for the Rock Island and Rocky Reach projects is expiring soon, and Keller said this is correct.

Hemstrom noted there was a lot of discussion about what dataset to use. He said, initially, Skalski was not planning to use all the years included in the final analysis. Hemstrom said Chelan PUD asked Skalski to use them all in order to achieve the best-possible dataset. He questioned what data to use now. He asked if the analyses should continue to incorporate all years to represent multiple hydrosystem passage years. He said whatever is decided will make a difference in the results. He said Skalski initially suggested using only 2 years of data in which acoustic tag survival studies occurred (2010 and 2011). Hemstrom said had Chelan PUD agreed to this, the standards would have been met for both Projects a while ago. He said, however, Chelan PUD wanted to take a closer look and use all the available information. Baldwin said this is important to know. He said the more years added to the analyses, the more certainty. He said this brings up another point. He said although there are tight standard errors on the acoustic data, the standard errors are not as tight for PIT-tag estimates. He said the data appear tight; however, in reality, there is more uncertainty with PIT-tag data. He said he appreciates Chelan PUD using the full dataset.

B. Rock Island and Rocky Reach Adult Ladder Maintenance Update (Lance Keller)

Lance Keller said the right bank adult fishway at Rock Island Dam was returned to service on February 2, 2017, and the adult fishway at Rocky Reach Dam was watered up and back in operation on February 14, 2017, which was distributed to the Coordinating Committees by Kristi Geris that same day. He said, as of February 27, 2017, the left bank adult fishway at Rock Island Dam was back in operation. He summarized that all fishways at Rock Island and Rocky Reach dams are now operational.

C. Draft 2017 Fish Spill Plan (Lance Keller)

Lance Keller said Kristi Geris sent an email to the Coordinating Committees on February 22, 2017, notifying them the Draft 2017 Rock Island and Rocky Reach Fish Spill Plan is available for a 30-day review with edits and comments due to Keller by Friday, March 24, 2017.

Keller said he received a question from Bob Rose regarding the shape of spill at the Projects and how these came to be. Rose said he also does not recall if monitoring is conducted to verify the spill shapes are still relevant. Keller said he spoke with Steve Hemstrom who said the spill shapes are based on historical hydroacoustic data and there is no real method available for doublechecking those data, outside of conducting another hydroacoustic study.

Keller said, at Rock Island Dam, a diel shape is implemented for summer and spring spill, as outlined in the fish spill plan. He said, at Rocky Reach Dam, summer spill shifts from a 9% spill during the first hour, to 6%, back to 9%, then to 12%, and back to 9% (daily shape), and, in total, spill averages out to be 9%. He said the volume spilled varies based on the flow estimate for each day, and the shape is applied to that (also outlined in the fish spill plan).

Rose asked if the spill pattern is germane throughout the course of a season, or from 1 year to the next. He asked if there is a way to monitor that the best spill pattern is being implemented for smolts. He said the fish spill plan states:

> Spill-shaping attempts to optimize spill water volume to maximize spill passage effectiveness for smolts.

Rose asked how to verify this is occurring. Keller said he will ask Thad Mosey (Chelan PUD Fish Biologist and Spill Coordinator) about the basis for the fish spill patterns implemented at Rock Island and Rocky Reach dams, as well as how these patterns are evaluated for efficacy.

D. Chelan PUD Documents for Review (Lance Keller)

Lance Keller said Kristi Geris sent an email to the Coordinating Committees on January 23, 2017, notifying them the Draft 2016 Rock Island Smolt Monitoring Program and Gas Bubble Trauma Report was available for a 30-day review, with edits and comments due to Keller by Wednesday, February 22, 2017. Geris also sent an email to the Coordinating Committees on February 17, 2017, notifying them the Draft 2016 RRJFBS Report is available for a 30-day review, with edits and comments due to Keller by Monday, March 20, 2017.

Keller said USFWS provided comments on the Draft 2016 Rock Island Smolt Monitoring Program and Gas Bubble Trauma Report on February 14, 2017, and on the Draft 2016 RRJFBS Report on February 21, 2017, as distributed to the Coordinating Committees those same days. Keller said some comments were regarding number discrepancies, which he explained was due to version-control issues. He said another comment was regarding the 53% mortality rate documented for juvenile salmonids on April 1, 2016, at Rock Island Dam. He explained that the new RO4 gate was set open too far, which resulted in a number of deaths due to impingement at the traveling water screens. He also noted that the mortalities on April 1, 2016, accounted for 20% of the observed mortalities for

the year. He said the gate was adjusted that same day, and fishway attendants now regularly monitor the settings on the gate to avoid the same issue in the future. Keller said USFWS also provided comments regarding differences in species compositions at both dams, which Keller explained is due to different sampling methodologies (active sampling versus 24 hour gatewell collections). Keller said analyses conducted by Scott Hopkins (Chelan PUD) also indicate that in 2015 at the Rocky Reach Juvenile Sampling Facility there were zero collections under 1 minute, whereas, in 2016, there were 24 collections under 1 minute. He said if there were not so many sockeye salmon causing short index collections, other species may have been collected. He said, during spring 2015, there were also more sample minutes. He said, lastly, the Rock Island Dam gatewell collection system has an unknown collection efficiency, versus collection efficiency being very good at Rocky Reach Dam, confirmed by acoustic survival studies.

Keller said the CCT also provided comments on both draft reports on February 15, 2017, as distributed to the Coordinating Committees that same day. Keller said, in the Draft 2016 RRJFBS Report, there was confusion about condition sampling. He said as formerly written, it appeared only the first 100 fish were sampled for condition; however, the language was revised to clarify that condition sampling was performed on all fish sampled.

IV. Douglas PUD

A. 2015 Douglas PUD Pikeminnow Program Annual Report (Tom Kahler)

Tom Kahler said Kristi Geris sent an email to the Coordinating Committees on December 15, 2016, notifying them the Draft 2015 Douglas PUD Pikeminnow Program Annual Report is available for a 60-day review period, with edits and comments due to Kahler by Monday, February 13, 2017. Kahler said comments were received from USFWS, which will be incorporated into the final draft. Kahler said he will have the 2015 Douglas PUD Pikeminnow Program Annual Report finalized and provide the final report to Geris for distribution to the Coordinating Committees.

V. HCP Administration

A. Next Meetings

The next scheduled Coordinating Committees meeting is on March 28, 2017, to be held in-person at the Grant PUD Wenatchee Office in Wenatchee, Washington.

The April 25 and May 23, 2017, 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. NMFS

A. PRESENTATION: The "Blob" (Brian Burke)

Brian Burke (NMFS) shared a presentation titled, "Recent Oceanographic and Biological Observations" (Attachment D), which was distributed to the Coordinating Committees by Kristi Geris on March 1, 2017. This presentation is an update on Burke's "Blob" presentation, which was presented to the Coordinating Committees in October 2015.

This presentation provided an overview of recent oceanographic and biological observations including, supporting field sampling and data sources, large-scale oceanographic patterns (the "Blob" and El Niño), the resulting ecology, and models. NMFS scientists annually collect migration data for juvenile salmon. The data indicate that outmigration timing for juvenile salmon affects survival. In 2016, yearling Chinook, sockeye, and coho salmon, and steelhead outmigrated earlier than typical, which can affect adult return rates. Also, in recent years, the abundance of sea lions below Bonneville Dam and in the lower Columbia River is also peaking earlier, which can affect predation levels on spring migrating adults returning to the Columbia River, and especially the early migrating stocks from the Upper Columbia River and Snake River. In 2013, a warming of sea surface temperatures in the offshore northern Pacific Ocean, or the "Blob," was observed. The primary driver of the "Blob" is related to a ridge of high pressure forming, which happens periodically; however, what typically occurs is nowhere near the magnitude that was recently experienced. This is because of the simultaneous occurrence of warm water in the Gulf of Alaska and along the coast (the "Blob") and warm water coming up onto the shelf from the south as a result of an El Niño event. Certain biological responses to this warming are becoming evident, such as the sudden radical shift in jellyfish and copepod species composition and total krill abundance along the offshore eastern Pacific Ocean. In 2015 and 2016, shifts in ichthyoplankton composition were also observed. Anchovies and sardines were found in the northern transect more than usual, which was also an indication that they spawned earlier. The basin-scale and regional physical indices and regional biological indices suggest mostly poor conditions for salmon occurred in 2015 and 2016. Although data suggest bad conditions for salmon, these new food sources (sardines and anchovies) may be helpful. Overall, Burke indicated modeling based on the biological and physical metrics sampled suggests there will be a substantial decrease in spring and fall Chinook salmon returns to the Columbia River in 2017.

VII. List of Attachments

Attachment A List of Attendees

Attachment B Designation of Rock Island and Rocky Reach Juvenile Coho in Phase III (Standard Achieved) SOA

Attachment C Comparison of Juvenile Survival of Chinook Salmon, Sockeye Salmon, Steelhead, and Coho Salmon through the Chelan PUD Projects, 2010–2016

Attachment D Recent Oceanographic and Biological Observations Presentation

Attachment A
List of Attendees

Name	Organization
John Ferguson	Anchor QEA, LLC
Kristi Geris	Anchor QEA, LLC
Tracy Hillman[1,3]	BioAnalysts
Lance Keller*	Chelan PUD
Steve Hemstrom*[2]	Chelan PUD
Catherine Willard†[2]	Chelan PUD
Tom Kahler*	Douglas PUD
Scott Carlon*	National Marine Fisheries Service
Brian Burke†[3]	National Marine Fisheries Service
Jim Craig*	U.S. Fish and Wildlife Service
Jeff Korth*	Washington Department of Fish and Wildlife
Casey Baldwin*	Colville Confederated Tribes
Bob Rose*†	Yakama Nation

Notes:
* Denotes Coordinating Committees member or alternate
† Joined by phone
[1] Joined for the HCP Tributary and Hatchery Committees Update
[2] Joined for select Chelan PUD items
[3] Joined for the NMFS presentation