

Memorandum

To: Wells, Rocky Reach, and Rock Island HCP Hatchery Committees, and Priest Rapids Coordinating Committee Hatchery Subcommittee Date: January 12, 2021

From: Tracy Hillman, HCP Hatchery Committees Chairman and PRCC Hatchery Subcommittee Facilitator

cc: Sarah Montgomery, Anchor QEA, LLC

Re: Final Minutes of the November 18, 2020, HCP Hatchery Committees and PRCC Hatchery Subcommittee Meetings

The Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plan Hatchery Committees (HCP-HCs) and Priest Rapids Coordinating Committee Hatchery Subcommittee (PRCC HSC) meetings were held by conference call and web-share on Wednesday, November 18, 2020, from 9:00 a.m. to 12:15 p.m. Attendees are listed in Attachment A to these meeting minutes.

Action Item Summary

Joint HCP-HCs and PRCC HSC

- Brett Farman will discuss with NOAA staff and Mike Tonseth the potential use of a multi-population model for estimating proportionate natural influence (PNI) for the Nason and Chiwawa spring Chinook salmon programs (Item I-A). *(Note this item is ongoing.)*
- Greg Mackey will work with Mike Tonseth to test a modeling approach and prepare a white paper on the method for determining a range for the number of females to be collected for a given broodstock in the upcoming year (Item I-A). *(Note this item is ongoing.)*
- Greg Mackey will prepare a plan for alternative mating strategies based on findings described in his previously distributed literature review (Item I-A). *(Note this item is ongoing.)*
- Mike Tonseth will distribute the analysis showing feasibility of the Methow Spring Chinook Outplanting plan based on historic run-size data (Item I-A). *(Note this item is ongoing.)*
- All parties will provide updates on changes to monitoring and evaluation plans due to the impacts of COVID-19 on operations as updates become available (Item I-A). *(Note this item is ongoing.)*
- Kirk Truscott will determine the number of scales that should be collected from spring Chinook at Wells Dam for elemental signature analysis to discern Okanogan River spring Chinook from Methow River spring Chinook (Item I-A). *(Note this item is ongoing.)*
- Andrew Murdoch (WDFW) will present pre-spawn mortality data during the February 2021 HCP-HC and PRCC HSC meeting (Item I-A). *(Note this item is ongoing.)*

- Kirk Truscott will work with CCT staff to develop a model that addresses the probability of encountering natural-origin Okanogan spring Chinook at Wells Dam (Item I-A). (*Note this item is ongoing.*)
- Keely Murdoch and Mike Tonseth will update the retrospective analysis for Wenatchee spring Chinook salmon using estimates of female pre-spawn mortality (Item I-A). (*Note this item is ongoing.*)
- Brett Farman will provide a listing of NOAA points-of-contact for programs and permits related to the HCP-HCs and PRCC HSC, and update the HCP-HCs and PRCC HSC on who is covering Allyson Purcell's duties while she is on leave (Item I-A). (*Note this item is ongoing.*)
- HCP Hatchery Committees and PRCC HSC Representatives will consider desired outputs of Mark Sorel's (University of Washington) model (Item II-A).
- Mike Tonseth will check on the WDFW policy for releasing unmarked surplus fish (Item II-B).
- Catherine Willard will check on previous guidance or agreements about which entity pays the costs for ad-clipping surplus fish (Item II-B).
- HCP Hatchery Committees and PRCC HSC Representatives will consider Mike Tonseth's discussion points for Appendix G of the Broodstock Collection Protocols, which will be included in the meeting minutes (Item II-B).
- Greg Mackey, Mike Tonseth, and Brett Farman will review conditions regarding surplus in the NMFS permit for the Wells HCP programs for discussion in December 2020 (Item II-B).

PRCC HSC

- Mike Tonseth will review prior assessments of groundwater and surface water connectivity in the Methow sub-basin and provide any relevant information to the PRCC HSC (Item IV-A).
- Todd Pearsons will send his presentation from the meeting about the Carlton Acclimation Facility and the water chemistry report he referenced to the PRCC HSC (Item IV-A). (*Note: Sarah Montgomery distributed these items to the PRCC HSC via email on November 23, 2020.*)

Decision Summary

- The Wells HCP Hatchery Committee approved Douglas PUD's *Wells 2021 Hatchery M&E Implementation Plan* during the meeting on November 18, 2020.
- The Wells HCP Hatchery Committee approved Douglas PUD's Wells Complex 2021 M&E Plan via email on December 10, 2020. The Rocky Reach HCP Hatchery Committee and the PRCC HSC approved the portions of the plan pertaining to Chelan PUD and Grant PUD programs.

Agreements

- The PRCC HSC agreed that Grant PUD can implement a fish health recommendation for brood year 2020 fish reared at Carlton Acclimation Facility as follows: rear fish on 100%

groundwater until February 1, transition completely to surface water by March 1 (25% per week), and rear fish on 100% surface water from March 1 until release; Grant PUD will provide updates on the performance of these fish.

Review Items

- There are not items currently available for review.

Finalized Documents

- Douglas PUD's *Final 2021 Wells Complex M&E Implementation Plan* was distributed via email by Sarah Montgomery on December 11, 2020.
- Douglas PUD's final report, *Monitoring and Evaluation of the Wells Hatchery and Methow Hatchery Programs – 2019 Annual Report* was distributed via email by Sarah Montgomery on December 11, 2020.

I. Welcome

A. Review Agenda, Announcements, Approve Past Meeting Minutes, Review Last Meeting Action Items

Tracy Hillman welcomed the HCP-HCs and PRCC HSC to the meeting and read the list of attendees signed into the meeting. The meeting was held via conference call and web-share because of travel and group meeting restrictions resulting from the COVID-19 pandemic. Hillman reviewed the agenda and asked for any additions or changes to the agenda. There were no changes and all representatives present approved the agenda.

The HCP-HCs and PRCC HSC representatives reviewed the revised September 16, 2020, meeting minutes and the revised October 21, 2020 meeting minutes. Minor revisions were resolved in the meeting. The HCP-HCs and PRCC HSC approved the September 16, 2020, and October 21, 2020, meeting minutes, as revised.

Action items from the HCP-HCs and PRCC HSC meeting on October 21, 2020, were reviewed, and follow-up discussions were addressed (*note that italicized text below corresponds to action items from the previous meeting*):

Joint HCP-HCs and PRCC HSC

- *Brett Farman will discuss with NOAA staff and Mike Tonseth the potential use of a multi-population model for estimating proportionate natural influence (PNI) for the Nason and Chiwawa spring Chinook salmon programs (Item I-A).*

Farman said this item is ongoing.

- *Greg Mackey will work with Mike Tonseth to test a modeling approach and prepare a white paper on the method for determining a range for the number of females to be collected for a given broodstock in the upcoming year (Item I-A).*
Mackey said he has been working on this and will talk with Tonseth soon.
- *Greg Mackey will prepare a plan for alternative mating strategies based on findings described in his previously distributed literature review (Item I-A).*
Mackey said this item is ongoing.
- *Mike Tonseth will distribute the analysis showing feasibility of the Methow Spring Chinook Outplanting plan based on historic run-size data (Item I-A).*
Tonseth said this item is ongoing.
- *All parties will provide updates on changes to marking and tagging plans due to the impacts of COVID-19 on operations as updates become available (Item I-A).*
This item is ongoing.
- *Kirk Truscott will determine the number of scales that should be collected from spring Chinook at Wells Dam for elemental signature analysis to discern Okanogan River spring Chinook from Methow River spring Chinook (Item I-A).*
Truscott said this item is ongoing.
- *Mike Tonseth will check with Andrew Murdoch (WDFW) on presenting pre-spawn mortality data to the HCP-HCs and PRCC HSC at an upcoming meeting (tentatively planned for February 2021; Item I-A).*
Tonseth said this item is complete and will be discussed in February.
- *Kirk Truscott will work with CCT staff to develop a model that addresses the probability of encountering natural-origin Okanogan spring Chinook at Wells Dam (Item I-A).*
Truscott said this item is ongoing. He and Casey Baldwin have been discussing model concepts and are reviewing available data.
- *Keely Murdoch and Mike Tonseth will update the retrospective analysis for Wenatchee spring Chinook salmon using estimates of female pre-spawn mortality (Item II-A).*
Murdoch said she and Tonseth have discussed this analysis and this item is ongoing.
- *Tracy Hillman will review the HCP-HCs and PRCC HSC's previous discussions and agreements about using geometric means to calculate broodstock needs and provide a summary to the committees (Item II-C).*
Tonseth provided this information, which was distributed to the committees on October 22, 2020.
- *Todd Pearsons will provide an update on the Angler Broodstock Collection (ABC) Fishery at the November 18, 2020 meeting (Item II-C).*
This item will be discussed today.

- *Greg Mackey will provide a final draft of Douglas PUD's 2019 Wells Complex M&E Annual Report, for Wells HCP-HC review (Item III-B).*

This item is complete. Hillman said this was distributed on October 23, 2020, and Mackey is working to continue addressing comments. This will be discussed today. Gale said USFWS is helping to work through comments.

- *Sarah Montgomery will add Emi Melton to the HCP-HCs and PRCC HSC distribution lists and coordinate access to Extranet and SharePoint (Item V-A).*

Hillman said this item is complete.

- *Brett Farman will provide a listing of NOAA points-of-contact for programs and permits related to the HCP-HCs and PRCC HSC, and update the HCP-HCs and PRCC HSC on who is covering Allyson Purcell's duties while she is on leave (Item V-A).*

Farman said this is ongoing. He said in the interim, he can be the contact person for any questions. Pearsons asked who is acting in Allyson Purcell's position while she is on leave. Farman said he will also provide this information, and it was added to the action item.

PRCC HSC

- *Todd Pearsons will provide a summary of growth and temperature profiles for the Carlton Acclimation Facility to the PRCC HSC (Item IV-A).*

Pearsons said he will provide an update on this today.

- *Todd Pearsons will check on the operational feasibility of using different water sources (groundwater vs. surface water) in different recirculating aquaculture systems (circular rearing vessels) at Carlton Acclimation Facility (Item IV-A).*

Pearsons said he will provide an update on this today.

- *Todd Pearsons will include maturation monitoring in pre-release sampling (Item IV-A).*

Pearsons said he will provide an update on this today.

- *Todd Pearsons and Deanne Pavlik-Kunkel will review prior assessments of groundwater and surface water connectivity for the Carlton Acclimation Facility and provide to the PRCC HSC (Item IV-A).*

Pearsons said he will provide an update on this today.

- *Mike Tonseth will review prior assessments of groundwater and surface water connectivity in the Methow sub-basin and provide any relevant information to the PRCC HSC (Item IV-A).*

Tonseth said this item is ongoing.

II. Joint HCP-HCs and PRCC HSC

A. Updated Retrospective Analysis of Wenatchee Spring Chinook Salmon Conservation Program Size

Keely Murdoch said she does not have an update on this topic. She said she and Mike Tonseth are working to incorporate pre-spawn mortality estimates into the model.

Todd Pearsons said he contacted Mark Sorel (University of Washington) to determine when would be a good time for him to meet with the committees and discuss his model. Pearsons said they decided that the January meeting would be a good time for this discussion, and Pearsons asked the committees to be prepared to provide input to Sorel about inputs and outputs of the model that would be useful for management purposes. Pearsons said Sorel's model focuses on aspects of the program such as supplementation and density dependence, so it may help inform decisions about program size for hatcheries.

B. Broodstock Collection Protocols

Tracy Hillman shared the revised document, *Topics for HCP-HC and PRCC HSC Discussion in 2020*, and reviewed the topics in the document.

Regarding Chiwawa spring Chinook marking, Catherine Willard said she is working to draft revisions to this section of the protocols and will be ready to discuss this topic in January 2021.

Regarding the options for differentiating natural-origin spring Chinook salmon from other natural-origin Chinook salmon during broodstock collection, Truscott said he is continuing to work on this item.

Regarding options for outplanting surplus Methow Composite spring Chinook salmon adults, Mike Tonseth said this item will probably be drafted and ready for discussion in December 2020 or January 2021.

Regarding Wenatchee spring Chinook pre-spawn survival estimates, Tonseth said this item will be discussed in February 2021.

Regarding the sizing of upper Columbia River conservation programs, see Item II-A, above. Tonseth added that this will likely also involve discussions with Mark Sorel.

Regarding requests for HCP adults or juveniles for HCP-specific research or other requests (surplus to HCP broodstock needs), Greg Mackey said Douglas PUD has no requests. Representatives present did not have additional input on other requests that would occur in 2021.

Regarding authorship of sections needing to be revised, Mackey said he rewrote the section for steelhead in the Methow basin. He said he kept the section that describes the logical flow of broodstock collection, but he shortened the section overall and eliminated repetition.

Regarding consistent declaration of surplus, Tonseth said he is working on the draft language for this section, which addresses excess adults at the Wells Dam volunteer trap. He said the committees should also discuss updating or adding language about how notifications of surplus declaration are provided to the committees. He said, for example, there was a recent notification about a surplus in the Okanogan steelhead program. He said Appendix G of the Broodstock Collection Protocols provides the instructions for what should be included in a notification. From his perspective as a committees' representative and a co-manager, he suggested adding more information, as follows:

- Brood year/stock-program/age class (egg/juvenile/adult).
- Target release number/number currently on hand/number being retained for the program (needs to be accurate count – not estimate).
- Number identified as surplus (after tagging there should be an accurate count so round numbers like 12K should not be provided – unless that is the true count).
- Target destination of surplus.
- Confirmation that surplus has been adipose clipped and approximate size at transfer.
- Summary of conversations with other program operators that surplus is not needed for other programs.
- Explanation as to why the surplus occurred (could be as simple as better -than-expected in-hatchery survival, higher fecundities, etc.).

He suggested that the committees review this list and discuss whether anything should be added to it or removed. Then, he said Appendix G can be updated.

Todd Pearsons asked for Mackey's input about whether fish that are going to be released in non-anadromous waters should be adipose-clipped. Mackey said Douglas PUD has been marking enough of their steelhead program to ensure that the mitigation target is met, and additional fish above the target are not marked and are kept separate from the marked fish. He said Douglas PUD is prepared to provide information on how many fish are marked and how, and their approximate size, but would prefer to avoid unnecessary marking of fish that are not part of the mitigation program.

Tonseth said he thinks there is a WDFW policy that any juvenile surplus anadromous fish should have an external mark no matter what water body it is released into, and he said he will check on this policy and report back to the committees. Mackey said Douglas PUD has not incorporated that policy into their program, but he is interested in hearing more about it.

Pearsons said this may be a gray area but it seems like once the fish are determined to be surplus, they are the responsibility of the co-managers. Tonseth agreed and said once the fish are surplus, the co-managers are responsible for determining how the fish are used, but not for accommodating the marking needs of the fish. Pearsons said that may be a difference in interpretation, and suggested further conversations may be helpful to determine whether surplus fish should be marked. Tonseth said his interpretation is that the surplus is the result of program implementation. If protocols have been followed and a surplus exists, rearing and marking of the fish is still the responsibility of the PUDs. Mackey said he does not believe the trout program fish are marked when released to non-anadromous waters. Tonseth said even though this surplus is treated as trout, the fish are still steelhead and would be considered steelhead under WDFW policy. Matt Cooper said from the USFWS perspective, juvenile steelhead are marked with an adipose-fin clip when released into non-anadromous waters.

Willard said Alene Underwood (Chelan PUD) made her aware of an internal Chelan PUD policy that if there is an excess of fish for surplus, and the co-managers want the fish ad-clipped, Chelan PUD does not cover the cost of the clipping of any production over 110%. She said she will look into this policy and provide more information about it.

Tonseth said he will continue working on Appendix G. He asked for input from the committees over the next month for things to add to the list and on the best way to be consistent across programs.

Kirk Truscott said the projected release number would be a good addition to Tonseth's list. This would help the recipients of the notification evaluate whether enough fish are being retained to meet the target release number. He also suggested that representatives consider the language in Appendix G, which currently states that up to 100% of production should be marked.

Brett Farman said a more detailed discussion on this is needed. He said, within the permits, 110% is listed as a buffer but it should never be interpreted as the program target. Truscott agreed and said 110% is not the target release number; however, with variability in survival from year to year, it makes sense to mark 110% of the program if the fish are available, knowing that there will be some mortality between final marking and the release period. Tonseth agreed with Truscott. He said when the Broodstock Collection Protocols are developed, they are structured to achieve 100% of the production goal, and the permits allow for release of up to 110% of the target to allow for annual variation in fecundities and survival. He said the program managers have periodic check-ins during rearing where there are opportunities to cull the program back down to 110%. Mackey said it would not be within the intent of the permit to knowingly mark 110% of the program, because they should not be purposely targeting a release in excess of the program target. He said the fish are marked in accordance with the mitigation target. Tonseth said the co-managers should have a say in whether the extra 10% are released as part of the program or put into a landlocked lake. Mackey said what

does not make sense to him is that the program managers have means to control the overage, but it sounds like Tonseth is saying they should not.

Hillman summarized the discussion and noted that Farman may need to provide more guidance from NMFS on this topic. He said the target release is 100% of the mitigation goal, and Truscott is saying that if there are additional fish, those additional fish up to 110% of the program should be marked. Truscott added that the biological metrics that set the stage for broodstock collection and protocols should be reviewed if there is a consistent overage in any program. Farman said there is significant gray area to this topic and there are many constraints to how fish are released into anadromous and non-anadromous waters. He said NMFS is concerned with calculations of juvenile mortality, fecundity estimates, and other biological metrics that will allow the managers to more closely hit the 100% target. He said if the program releases are consistently high, reinitiating consultation may be necessary to adjust program targets. Tonseth asked if NMFS' position is to manage a program back to 100% at various life stages (such as eyed egg and at marking), or to manage a program to 110%. Farman said estimates of mortality between marking and release should be incorporated too, but the end release should be at or below 110%. He said there is no clear trigger to reinitiate consultation, but it is important to make sure the analysis adequately covers what the program is doing.

Tonseth said the committees should continue to discuss this item. He said he interprets some of his past discussions with NMFS differently. Truscott said the committees should also consider the status of the most recent returns from the steelhead program. He said if production is going to be limited to 100%, but there is allowable excess of up to 110%, the full picture including survival should be taken into account. Pearsons said it would be helpful to have clear guidance from NMFS on this topic. Bill Gale said he is not sure this topic is as complicated as it may seem. He said when NMFS did the effects analysis for the permits, they analyzed the worst-case scenario for effects (i.e., 110% release). So, he said releasing 110% is within the considered action. Farman agreed but said that the language in the permits and BiOp suggests that 110% should be a rare occurrence, not annual. He said some flexibility is needed, but consistent overproduction is an issue for the effects analysis. Gale said this conversation also pertains to US v OR. He said he would not be comfortable agreeing to guidance from NMFS in one program that could be in conflict with conversations occurring for other programs. Farman agreed, and indicated that a broad policy from NMFS on exact interpretation is unlikely since the program specifics and history are important for each individual situation.

Hillman summarized that Farman's understanding of NMFS' guidance to date is that the goal is to meet the release target plus or minus 10%. Farman agreed but said the 10% below the target is less of an issue for ESA impacts, but a regular 10% overage could be an issue. Hillman said the next part of the guidance pertains to how many of those fish should be marked, which is a separate discussion.

Gale added that as long as the program is within 10% of the production target, the program goal is met. From an ESA impacts perspective, whether the program is over or under ideally balances out over the long term.

Mackey said his main question is whether the operator should knowingly take an action that would result in more fish being released than the target as stated in the ESA permit, or should the operator always target the release number if they have the ability to do so. Tonseth said this comes down to a difference of opinion in interpreting the permit, and the committees should continue to discuss it.

There were no further updates on topics related to the broodstock collection protocols, including Chiwawa broodstock collection and document production. The topic related to a contingency plan for the ABC Fishery is discussed under Section VI-B.

C. Effect of COVID-19 Pandemic on Monitoring and Evaluation Activities

Tracy Hillman asked each committee member to provide an update on impacts of the COVID-19 pandemic on monitoring and evaluation activities.

Brett Farman reported no changes from NOAA related to COVID-19.

Keely Murdoch reported no changes from YN.

Kirk Truscott said he has no updates related to COVID-19.

Bill Gale said he has no updates.

Mike Tonseth reported that there have been some minor modifications to WDFW's COVID-19 policies related to reducing working group sizes (now groups should be less than 5, even if working outside). He said staff are to avoid agency facilities unless required. Katy Shelby agreed with Tonseth and added that staff are now going back to single occupancy in vehicles as much as possible.

Catherine Willard reported that Chelan PUD ended steelhead PIT-tagging at the OLAF a week early, on October 23, 2020, due to COVID-19 concerns.

Greg Mackey said Douglas PUD has no changes to report since the previous meeting.

Todd Pearsons said Grant PUD has no changes to report related to COVID-19.

III. Joint RI/RR HCP-HCs and PRCC HSC

A. Distribution of Information for the Skaha and Okanagan Reintroduction Program, Comprehensive Program Review

Catherine Willard said she provided a library of documents related to the Skaha and Okanagan Reintroduction Program to Sarah Montgomery for uploading to the SharePoint sites. Willard said these documents will be provided to the committees to review and if anyone would like more information, to please contact her. She said during the January or February committees meeting, Ryan Benson (Okanagan Nation Alliance) will provide the 2020 annual review and will be available for answering questions about the documents and the program in general.

IV. RI/RR HCP-HC

A. Blackbird Pond Update

Catherine Willard said Blackbird Pond was first constructed in 2001 by the Icicle Chapter of Trout Unlimited (TU) to provide children's fishing opportunities. Later, it was not used due to low oxygen levels. She said TU approached Chelan PUD to improve the pond and provide acclimation for steelhead. Historically, Willard said steelhead were reared at Turtle Rock Island, then truck-planted into the Wenatchee River. In order to final acclimate up to 50,000 steelhead at Blackbird Pond and improve homing rates, Chelan PUD funded the improvements including intake structures and volitional release capabilities. She said steelhead were acclimated at Blackbird Pond for the first time in 2010. Annually since 2010, up to 50,000 hatchery-by-wild or hatchery-by-hatchery steelhead were transferred from Turtle Rock to Blackbird Pond, which WDFW operated. She said the goal was to get fish to Blackbird Pond in early March, but the transfer sometimes happened in April due to river conditions. Willard said after July 1, fish remaining in the pond were assumed to be residual, and cutthroat trout were also stocked to provide a fishery.

Willard said the Chiwawa Acclimation Facility was constructed and steelhead were overwinter acclimated starting in 2012. During that time, she said the RI/RR HCP Hatchery Committees decided that final acclimation should still occur at Blackbird Pond. Approximately 25,000 hatchery-by-hatchery steelhead were acclimated at Blackbird Pond beginning in 2012. Willard said no steelhead were transferred into Blackbird Pond from 2018 to 2020 to minimize variables involved in evaluation of the steelhead program. During 2018-2020, Chelan PUD continued to place infrastructure in the pond during high water to allow for the children's fishery with cutthroat trout. She said considering the evaluation of the program has concluded and steelhead are now being acclimated at the Chiwawa Acclimation Facility, she wanted to provide an update to the committees about the status of Blackbird Pond.

Willard said the original purpose of Blackbird Pond was to provide acclimation in the Wenatchee River. Now that fish are acclimated at Chiwawa AF, Blackbird Pond is not needed. She said the pond requires costly improvements to the intake and riverbank armoring is also needed. She said the intake backwash is needed to keep the intake clean. With turbid and high water, it can be difficult to get a crane to the intake screen to clean it. She said the intake screen not being cleaned almost resulted in loss or early released fish (which is a concern for ESA-listed steelhead). She said Chelan PUD evaluated the costs of performing these upgrades and the biological data from the pond. She said juvenile outmigration was compared for fish released in the upper Wenatchee River to fish released from Blackbird Pond. She said survival was higher for fish released in the upper Wenatchee in most years but was not statistically different. She said earlier transfer to Blackbird Pond also resulted in lower survival (likely due to predation). She said for these reasons, Chelan PUD determined that there was a high cost to make Blackbird Pond safe to final acclimate steelhead compared to the biological benefit. She said Chelan PUD has surplus the infrastructure at Blackbird Pond to the City of Leavenworth, who plans to maintain the pond. Trout Unlimited plans to operate the pond when fish are present for a fishery. She said there is no need to perform the costly improvements if the pond is only being used for the children's fishery for cutthroat trout in the summer.

Kirk Truscott asked if the juvenile survival comparisons were of fish from the same parental origin. Willard said no, the fish released from Blackbird Pond were hatchery-by-hatchery fish and the fish released from the upper Wenatchee River were a mix of wild-by-wild and wild-by-hatchery. Truscott asked if they were of similar size and growth regimes. He said the survival estimates may not be comparable. Willard said the growth regimes were similar, but the fish were not of the same origin. She said the closest comparison possible was chosen for the analysis. Truscott said one initial reason Blackbird Pond was chosen as an acclimation site was to limit potential negative ecological interactions (such as those resulting from residualized hatchery fish). He said he would be reluctant to make decisions that would be counter to the objective of limiting post-release negative ecological interactions. Willard said the raceway at Chiwawa AF is mixed with HxH and WxW, so both are released in the upper basin. She said there are other options for minimizing ecological interactions, like screening fish. She said one option is to release fish that do not volitionally move from one raceway to another farther down in the mainstem Wenatchee River. She agreed that Blackbird Pond was beneficial for minimizing ecological interactions and said that there are other ways to do that currently without investing in costly updates to Blackbird Pond, especially given the evidence that Blackbird Pond may not be as effective at acclimating fish as Chiwawa AF. She said with the use of Chiwawa AF, the steelhead that would be acclimated at Blackbird Pond even if it were updated would not be a big proportion of the program.

Bill Gale asked if the survival estimates used in the analysis were measured from emigration from the pond to McNary Dam or from stocking at the pond to McNary Dam. Willard said the estimates were from the time fish were stocked. Gale suggested that the survival estimate from Blackbird Pond could be lower due to predation at the pond than due to actual in-river survival differences. Willard agreed that survival in Blackbird Pond is lower than the other sites, but her point was to demonstrate the overall lower survival from Blackbird Pond compared to truck plants in the upper Wenatchee basin. Gale said the comparison does not account for mortality during rearing for the fish that are released from the truck plants. Tonseth agreed that comparing differential survival between Blackbird Pond at truck plants in the upper Wenatchee basin is difficult. He said fish that were released using truck plants in the upper basin were just a small group of fish, about 50,000, out of the 180,000-release group. He said within-hatchery rearing data are therefore difficult to add to this dataset. He added that at Blackbird Pond, it is difficult to get fish to emigrate from the pond due to the way the pond responds to the river elevation (there is backflow into the pond through the discharge end). He said these emigration issues results in fewer PIT-tag detections for juvenile steelhead leaving Blackbird Pond. He said there may not be a clear way to compare the survival between these two groups; however, Blackbird Pond is not an ideal location and emigration has not been to desired levels. He said now that in-basin acclimation exists with the Chiwawa AF, which has been upgraded to accommodate 100% of the program, Blackbird Pond is not the best option for acclimating steelhead. Tonseth asked if Chelan PUD is retaining ownership of the infrastructure. Willard said Chelan PUD sold the infrastructure to the City of Leavenworth who also owns the property, so Chelan PUD has no ownership whatsoever of Blackbird Pond.

V. Wells HCP-HC

B. Approve 2021 Hatchery M&E Implementation Plan

Greg Mackey said Douglas PUD's Draft 2021 Hatchery M&E Implementation Plan was available for review with comments due on November 16, 2020. He received no comments or edits on the plan. The Wells HCP Hatchery Committees approved the plan as follows: NMFS, YN, CCT, USFWS, WDFW, and Douglas PUD voted yes during the meeting.

C. Update on Revisions to 2019 Wells Complex M&E Annual Report

Greg Mackey said Douglas PUD has been working with USFWS and WDFW staff to resolve comments on the 2019 Wells Complex M&E Annual Report. He said he and Bill Gale have been reviewing the updates provided by Charlie Snow and Michael Humling, which mostly include calculations for tables and similar content. He said Douglas PUD will provide a final version for approval by the committees when the revisions are complete.

VI. PRCC HSC

A. Carlton Fish Health/Culture Recommendation

Todd Pearsons shared a revised version of the Carlton Fish Health Recommendation presentation that he shared with the PRCC HSC during the September 16, 2020, meeting (Attachment B). He reviewed the mortality data at Carlton Acclimation Facility (Slide 2) and summarized that the mortality at Carlton AF is associated with surface water. He said during the previous discussion, PRCC HSC members noted concerns about precocial maturation related to water temperatures, growth rates, and size at release. Questions also included whether tanks at Carlton AF could be isolated, the connectivity of surface and groundwater, and the timing of the switch between water sources.

To address concerns about water temperatures, Pearsons showed data for groundwater and surface water temperatures at Carlton AF since 2016. He said groundwater is warmer than surface water in the winter, but it is still relatively cold especially in comparison to Eastbank Hatchery, where these fish used to be reared in the spring. Carlton AF is generally in the 40s and below 45 degrees Fahrenheit in February.

To address concerns about growth profiles, Pearsons showed data comparing the growth patterns from different years, with 2019-2020 representing a year when fish were reared longer on groundwater. He said the fish have a similar growth profile when reared on groundwater and were released relatively small (16 fish per pound) and within the target range.

To address concerns about precocious maturation, Pearsons shared data from visual assessments of precocity and milt presence in 2020. He said there is no evidence that precocious maturation was a problem.

To address the question about connectivity between surface water and groundwater, Pearsons said he will distribute an analysis that was conducted at Carlton AF, which shows the constituents of the groundwater and surface water.

Regarding questions about straying, Pearsons showed data for donor straying from the Methow River. He said these data show that more straying occurs when fish are overwinter acclimated. While this comes as a surprise, he emphasized that the results are not statistically significant. He surmised that instances of disease and chemical treatments may reduce the ability of fish to imprint and home. He said it is possible that water chemistry changes or being sick could affect a fish's ability to imprint and to home. Kirk Truscott asked which fish the homing data are from. Pearsons said the data are from the spring acclimation of Carlton AF fish, with three years of data (2010, 2011, 2014), and the years of overwinter acclimation at Carlton AF (2015 to 2017). Bill Gale asked how Pearsons defined "stray" for this analysis. Pearsons said strays are those fish who have PIT-tag detections in other

subbasins, such as the Okanogan, Entiat, and Wenatchee. Gale said this does not mean that the fish spawn in those other subbasins, and Pearsons agreed. Pearsons said he believes the analysis removed any fish that were detected in-basin after their out-of-basin detections, but this does not confirm their spawning location. Gale said it would be interesting to compare CWT recovery data in the Entiat River compared to the Carlton AF program.

Regarding questions about the flexibility to have different tanks with different water sources at the same time at Carlton AF, Pearsons said the original water right was focused on surface water. Later, due to drought conditions, the water right was amended so that the water source for the facility could be toggled between surface and groundwater. However, the surface water intake pumps are either on or off, so running both at the same time could cause an issue with exceeding the water right. Kirk Truscott thanked Pearsons for looking into this question.

Regarding the choice between February 1 and January 1 as the date for switching to surface water, Pearsons said one of the main reasons to use February 1 is to delay the introduction of surface water as long as possible without affecting the fish's ability to imprint. One goal is to reduce bacterial kidney disease. He said there are also issues with drug clearance timing. Betsy Bamberger added that the less time fish are exposed to surface water, the fewer disease problems, and specifically gill disease problems, they are likely to have. She said the preferred chemicals to treat gill disease, such as Diquat, has a 30-day hold time, so it is difficult to treat the fish and hold them for 30 days towards the end of the rearing period. She said while other chemicals without a 30-day hold time could be used, Diquat is the most effective.

Kirk Truscott asked how the growth rate in 2019 to 2020 compares to previous years. Pearsons said the 2018 to 2019 growth rate was similar when fish were also on groundwater. Truscott noted that the size at release remains approximately the same throughout the years shown by Pearsons, but when they are on groundwater they arrive as smaller fish so they have to grow more to reach the same target. He said conducting GSI monitoring provides him more comfort with proceeding with the rearing plan because his concerns about growth rate are tied to concerns about precocity.

Tonseth asked Pearsons how the tanks are filled with surface water incrementally (25%) by week. Pearsons said the issue with turning the pumps on and off is more related to the duration they are on. A one-month transitional period can be reasonably accommodated within the water right, but extending the transitional period longer makes it harder to be consistent with the water right.

Deanne Pavlik-Kunkel noted that the groundwater at the facility is more easily manipulated than the surface water. She said running some of the ponds on groundwater and others on surface water is not possible given the constraints of the facility and the water right.

Hillman asked if the PRCC HSC should vote on this recommendation. Pearsons said he is not sure whether a vote is needed to implement a fish health recommendation. Hillman said he thinks it would be appropriate to document concurrence with the proposed action.

Pearsons summarized that the recommendation is listed in the presentation and would also include pre-release morphological sampling.

The PRCC HSC agreed to implement the fish health recommendation for brood year 2020-2021. Brett Farman voted yes and noted that it would be preferable to transition to surface water earlier. He said it will be important to revisit the decision to check-in on how the fish perform. He suggested monitoring growth rates and survival to McNary Dam. Kirk Truscott, Keely Murdoch, Bill Gale, and Todd Pearsons voted yes. Mike Tonseth voted yes and also noted that an annual check on fish performance will be important.

Mike Tonseth asked if the recommendation would change any proposed size targets when the fish are transferred from Eastbank FH. Pearsons said no, the current size requests will be maintained.

Hillman asked if the M&E Plan needs to be updated with the morphological sampling. Pearsons said the pre-release sampling is already included, so the meeting notes will suffice for documenting the additional need for GSI sampling.

B. ABC Fishery Update

Todd Pearsons said the Angler Broodstock Collection Fishery was very successful, with 1,175 fall Chinook collected (648 males). He said even with the reduced number of anglers due to COVID-19, over 1,000 fish were collected, which means the PNI goal will be met.

Mike Tonseth asked what was the relative quality of the fish? Pearsons said he has not heard about any quality issues with the fish. He said spawning is ongoing, and he has not heard of any mortality issues yet. He said Steve Richards would have more information if Tonseth has more questions.

Pearsons said due to the successful fishery, he will not be adding a tiered approach to broodstock collection to the 2021 Broodstock Collection Protocols, and this item can be removed from the tracking list.

C. Review Agenda, Announcements, Approve Past Meeting Minutes

The PRCC HSC representatives approved the September 16, 2020, and October 21, 2020, meeting minutes, as revised.

VII. Administrative Items

A. Chelan PUD Alternate Designation

Tracy Hillman said he received a letter from Chelan PUD designating Scott Hopkins as the new alternate for Chelan PUD on the HCP Hatchery Committees (Attachment C). Montgomery said she is coordinating with Hopkins on email and Extranet/SharePoint access.

VIII. Next Meetings

The next HCP-HCs and PRCC HSC meetings will be Wednesday, December 16, 2020; Wednesday January 20, 2021; and Wednesday February 17, 2021, held by conference call and web-share until further notice.

IX. List of Attachments

- Attachment A List of Attendees
- Attachment B Carlton Acclimation Facility Rearing Plan
- Attachment C Chelan PUD Committee Designation Letter

Attachment A
List of Attendees

Name	Organization
Sarah Montgomery	Anchor QEA, LLC
Tracy Hillman	BioAnalysts, Inc.
Catherine Willard*	Chelan PUD
Scott Hopkins*	Chelan PUD
Kirk Truscott*‡	Colville Confederated Tribes
Greg Mackey*	Douglas PUD
Tom Kahler*	Douglas PUD
Deanne Pavlik-Kunkel	Grant PUD
Todd Pearsons‡	Grant PUD
Peter Graf‡	Grant PUD
Brett Farman**	National Marine Fisheries Service
Bill Gale*‡	U.S. Fish and Wildlife Service
Mike Tonseth**	Washington Department of Fish and Wildlife
Katy Shelby	Washington Department of Fish and Wildlife
Keely Murdoch*‡	Yakama Nation

Notes:

* Denotes HCP-HCs member or alternate

‡ Denotes PRCC HSC member or alternate