FINAL

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ANCHOR QEA

Memorandum

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

Date: July 20, 2020

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

cc: Kristi Geris, Anchor QEA, LLC

Re: Final Minutes of the June 17, 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, June 17, 2020, from 10:00 a.m. to 11:45 a.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 Charlene Hurst 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 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 marking and tagging plans due to the impacts 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 salmon at Wells Dam for elemental signature analysis to discern Okanogan River spring Chinook from Methow River spring Chinook salmon (Item I-A). (*Note this item is ongoing.*)
- Todd Pearsons, along with representatives from Chelan PUD and Douglas PUD, will provide direction to Tracy Hillman on next steps for estimating carrying capacity (Item II-A).
- Mike Tonseth will check with Andrew Murdoch (Washington Department of Fish and Wildlife [WDFW]) on presenting pre-spawn mortality data to the HCP-HCs and PRCC HSC at an

upcoming meeting and will discuss with him the potential for using estimates of female pre-spawn mortality to calculate escapement goals (Item II-B).
- Mike Tonseth will ask Mike Hughes (WDFW) about visual assessments of males vs. females at Tumwater Dam (Item II-B).
- Keely Murdoch will provide an update on the operation of the Nason Creek and White River screw traps (Item II-C).

Joint RI/RR HCP-HC and PRCC HSC

- Catherine Willard will discuss the draft Statement of Agreement (SOA), *Regarding Chelan PUD's Okanagan Sockeye Obligation and Status of the Reintroduction Program,* with Kirk Truscott (Item IV-A).

Wells HCP-HC

- Greg Mackey will work with Charles Frady (WDFW) to update the run forecast for hatchery spring Chinook salmon escapement to the Winthrop National Fish Hatchery (NFH) and provide it to Bill Gale and Matt Cooper (Item III-A).

PRCC HSC

- None.

Decision Summary

- No decisions were approved during today's meeting.

Agreements

- No agreements were discussed during today's meeting.

Review Items

- The *Monitoring and Evaluation of the Chelan and Grant County PUDs Hatchery Programs Draft 2019 Annual Report* and appendices, which were provided by Tracy Hillman and were distributed to the HCP-HCs and PRCC HSC by Kristi Geris on June 16, 2020, are available for a 30-day review with edits and comments due to Hillman on July 16, 2020.
- The *Grant County PUD Hatchery Monitoring and Evaluation Implementation Plan for Spring and Summer Chinook in the Wenatchee Basin and Summer Chinook in the Methow Basin 2021*, which was provided by Todd Pearsons and was distributed to the PRCC HSC by Kristi Geris on July 8, 2020, is available for a 30-day review with edits and comments due to Pearsons on August 7, 2020.

Finalized Documents

- There are no documents that have been recently finalized.

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. Mike Tonseth removed the update on outplanting surplus Methow composite spring Chinook salmon. All representatives present approved the agenda with this change.

The HCP-HCs and PRCC HSC representatives reviewed the revised May 20, 2020 meeting minutes. Minor revisions were resolved in the meeting. The HCP-HCs and PRCC HSC approved the May 20, 2020 meeting minutes, as revised. WDFW abstained because Mike Tonseth was not present during the May 20, 2020 meeting.

Action items from the HCP-HCs and PRCC HSC meeting on May 20, 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

- *Mike Tonseth will coordinate with Andrew Murdoch (Washington Department of Fish and Wildlife [WDFW]) to present pre-spawn mortality modeling results for spring Chinook salmon at an upcoming HCP-HCs meeting (Item I-A).*
  Tonseth said this item is ongoing and will be discussed briefly today.
- *Brett Farman will discuss with Charlene Hurst 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 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).*

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 II-A).*
  Tonseth said this item is ongoing; he was able to get the data and is working to process it.
- *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 II-D).*
  This item will be discussed in today's meeting and will be ongoing.
- *Kirk Truscott will determine the number of scales that should be collected from spring Chinook salmon at Wells Dam for elemental signature analysis to discern Okanogan River spring Chinook salmon from Methow River spring Chinook salmon (Item II-A).*
  Tracy Hillman said this item is ongoing and Truscott is reviewing a draft plan for elemental signature analysis. Hillman said Truscott will likely provide an update on this topic to the committees in July or August.
- *Tracy Hillman will develop additional estimates of carrying capacity for Wenatchee River Basin spring Chinook salmon spawning aggregates, and Mike Tonseth will obtain recent pre-spawn mortality data from WDFW to incorporate into an updated Retrospective Analysis of Conservation Program Size (Item II-A).*
  Hillman said he completed his part of this action item. The second part of the item is redundant with the first action item (see above).

PRCC HSC

- None.

II. Joint HCP-HCs and PRCC HSC

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

Keely Murdoch said one piece of this discussion revolves around stock-recruitment analyses. She said Mike Tonseth and Mike Hughes (WDFW) provided data that allowed her to update the retrospective analysis with the latest 2 years of data. She said the analysis now provides an estimate of the number of natural-origin returns from Nason Creek at Tumwater Dam. She said the updated analysis has similar results as to what was discussed last month because it reports 10-year averages. She said at one end of the release sizes modeled, there are excess hatchery-origin fish in most years, and at the other end, there are probably not enough conservation program fish in most years. She said the retrospective analysis indicates there is a middle release where these concerns can be balanced. She said the most significant changes in incorporating the more recent data are the updated pre-spawn mortality rates and the updated stock-recruitment curve. She pointed out Figure 9.2 of the Wenatchee Spring Chinook Management Plan, which shows the Nason Creek spring

Chinook salmon spawner-recruitment relationship, and Table 6 of the same plan, which shows the interim Wenatchee basin escapement targets. She said the escapement goal in the Management Plan is incorrect because of a mathematical error. She said the escapement goal at the time (352 fish) was based off of this curve, but last month the committees discussed a goal of approximately 300 fish, which seems significantly different. She said, comparing this to the retrospective analysis, a value of 542 fish was used instead of 500, additionally indicating a mathematical error at some stage in the analysis. She said the retrospective analysis relates to the Nason Creek spring Chinook stock-recruitment model that Tracy Hillman has been working on.

Murdoch said the current stock-recruitment model identifies a spawner goal of around 300 adult Chinook or slightly lower. She said the stock-recruitment curve shows the relationship between spawners and yearling smolts produced in the Nason Creek watershed. However, she said approximately 80% of the fish emigrating from Nason Creek are subyearlings. She identified subyearlings as likely very important to adult production in Nason Creek. She suggested subyearling migrants should be incorporated in the model because they may contribute to adult production in Nason Creek. Murdoch said downstream rearing (fall migrants) contributed the most to adult production in the Idaho study (89.5% of production)[1], which means fall migrants are an important life history contribution. She said this high contribution may or may not be consistent in the upper Columbia River but should be considered. Additionally, she noted that Andrew Murdoch presented information at an American Fisheries Society conference regarding the normalization of overwinter survival, showing that the survival of fall migrants was higher than other life history strategies. Murdoch suggested running the model to capture the production of fall migrants in order to more fully show the relationship between the number of spawners and total number of emigrants, especially before adjusting targets for spawner escapement.

Todd Pearsons asked if the suggestion is to make a new model (and figure) using total emigrants as opposed to just yearling smolts in order to assess carrying capacity. Keely Murdoch replied yes, because the relationship between spawners and total emigrants is important in determining carrying capacity. She said this could be complicated, however, if adjustments for overwinter survival need to be incorporated. Hillman agreed and said the stock-recruitment relationships are based on yearling smolts produced in Nason Creek and in the Chiwawa River, but there are data showing large numbers of emigrants leave the tributaries in the fall especially in Nason Creek. He said to determine total smolt production, these fish or some of these fish would need to be incorporated in the model. Knowing the overwinter survival rate of fall migrants allows the model to be corrected for migrants that leave and survive to smolt. He said for the Chiwawa River, there are estimates of parr, fall subyearling migrants, and smolts. Modeling these data allows us to evaluate the number of spawners

[1] Copeland, T., D. A. Venditti, and B. R. Barnett. 2014. The importance of juvenile migration tactics to adult recruitment in stream-type Chinook salmon populations. Transactions of the American Fisheries Society 143:1460-1475, DOI: 10.1080/00028487.2014.949011

needed to maximize production. Focusing only on parr would likely provide the best estimate of the number of spawners needed to maximize production. For Nason Creek, parr data are not available, so it is more difficult to estimate maximum stock size. He said there may be a relationship between yearling production in the Chiwawa River and in Nason Creek, and a relationship between smolt and parr production in the Chiwawa River, which could inform a crosswalk model to estimate parr in Nason Creek. Alternatively, he said fall migrants could be added to the smolts produced within Nason Creek, and that sum could be modeled to estimate maximum stock size in Nason Creek. A better approach would be to apply an overwinter survival rate to the fall migrants, add those survivors to the yearling estimates, and then run the model to estimate maximum stock size in Nason Creek. He noted also that for Nason Creek, the Beverton-Holt curve only applies to fish produced within the basin and not those that leave.

Keely Murdoch said she would like to see these models updated. Historically, she said the thought was that fall migrants did not contribute significantly to productivity. She said the growing body of evidence shows that fall migrants may actually be a more successful life history strategy. She said especially in the Wenatchee basin, most tributaries are cold and at high elevations, so fish that stay within the tributaries may not be particularly successful compared to those that leave to warmer water in the mainstem Wenatchee River where there is likely more food. She said the dataset is not complete enough to answer all of these questions, but the data indicate that fall migrants are important components of spring Chinook salmon productivity in natal tributaries.

Pearsons said he thinks this issue and the model could become quite complicated, for example, if a correction for subyearling migrants is provided that does not account for density-dependence in Nason Creek, then carrying capacity will be overestimated. He asked whether the issue of fall-winter migrants could be bypassed by estimating capacity at the lower Wenatchee River screw trap. He said if capacity estimates for the whole basin area are available, tributary estimates could be checked by whether they add up to the total estimate for the Wenatchee basin. Hillman said not all Chinook-producing tributaries have smolt traps; therefore, it would be difficult to compare the sum of smolts produced in tributaries to the overall Wenatchee estimates. However, he said he can use the lower Wenatchee River trap to estimate total smolt production and then estimate number of smolts per intrinsic potential for the entire Wenatchee basin. This ratio would then be multiplied by the intrinsic potential within each tributary to determine carrying capacity in each tributary. He said there are many ways to run these analyses and update the models, so he would need additional input from the committees before moving forward.

Keely Murdoch said the committees can still move forward with the retrospective analysis in the meantime and use the existing agreed-upon escapement goal for Nason Creek while adjusting for the new pre-spawn mortality rate, but before the escapement goal is changed, the committees

should evaluate subyearling production. She said Andrew Murdoch may have passive integrated transponder (PIT)-tag data that additionally inform this evaluation, which she will follow up on. Hillman responded that the survival of PIT-tagged Chiwawa Chinook that remain in the Chiwawa versus those that migrate has been analyzed, but he is not sure whether that has been done for Nason Creek.

Pearsons said he would like to think about the next steps for this item before moving forward. He said there are implications for different ways of estimating carrying capacity that should be considered before deciding which analyses to complete. He said he will discuss this more with the Chelan PUD and Douglas PUD representatives and provide more direction to Hillman on next steps for this analysis.

B. Wenatchee Spring Chinook Salmon Pre-Spawn Survival Estimates

Mike Tonseth said he discussed the Wenatchee spring Chinook salmon pre-spawn survival estimates with Andrew Murdoch and has an update. He said WDFW staff have found there is a reasonably good pre-spawn mortality estimate for females in the Wenatchee basin, but males are more complicated. He said they found the pre-spawn mortality model (a sub-model of the life-cycle model) works best when applied in the Chiwawa River, and not as well in other tributaries to the Wenatchee River. He said staff are still working on this topic, especially trying to determine whether the issues are with the model or with the low sample size of carcass data that the model uses. Tonseth estimated the pre-spawn mortality estimates would be completed in fall 2020, and said with the field season underway, they are not currently making much progress on the model.

Tracy Hillman asked whether the good estimates of pre-spawn mortality for females applies to all spawning aggregates. Tonseth said so far, the model works well for females in the Chiwawa River and reasonably well for females in other tributaries, but more analysis is needed. He added that the model does not work well for males in spawning aggregates outside of the Chiwawa River.

Keely Murdoch said she wonders if there is a difference in the pre-spawn mortality rates between males and females, and noted that, in a previous analysis, a flat rate of 35% pre-spawn mortality had been applied for all tributaries. She said there was hesitation to commit to a higher estimate of pre-spawn mortality without evidence, but at the time, many thought the estimate to be low. Tonseth replied the previous analysis focused more on differences in pre-spawn mortality between hatchery and wild fish instead of between males and females. He pondered that knowing the pre-spawn mortality estimate of females may be more biologically meaningful because females dictate the number of eggs; though males will spawn with multiple females, the number of females may be more influential to the capacity estimate. He wondered about setting targets for the number of female hatchery-origin spawners in a tributary with a lower target for the number of hatchery-origin males in order to manipulate the PNI. He said this has been taken into consideration during spring

Chinook salmon adult management activities at Tumwater Dam, but was not incorporated in the Wenatchee Basin Spring Chinook Management Plan. Tonseth said using females as a metric to try to meet escapement targets may be a more appropriate management direction than the current strategy. He suggested maybe the model should be reworked to focus on female pre-spawn mortality, especially considering the issues with low sample size. Keely Murdoch asked whether Andrew Murdoch could present his findings to the committees in July. Tonseth said he will discuss this with Andrew Murdoch.

Hillman asked whether the model assumes one female per redd. If so, he said this would be a straightforward analysis, and changes to management strategies would depend on confidence in these pre-spawn mortality estimates for females in each spawning aggregate.

Pearsons asked how accurate are the visual sex determination methods used during adult management at Tumwater Dam? Tonseth replied that the methods are relatively good, but ultrasound would be needed for more certainty. He said he will ask Mike Hughes for more information on the accuracy of visual assessment methods. Pearsons said he likes the theory of manipulating PNI by allowing more female than male hatchery-origin spawners, but questions the implications for handling, anesthetizing, and passing fish upstream at Tumwater Dam. Tonseth said unclipped hatchery fish are already present at Tumwater Dam during adult management, so handling is already occurring. He said he does not know how much more sampling would be needed to implement this strategy, as fish would need to be anesthetized to use ultrasound. In addition, this would depend on adult management occurring. Catherine Willard added that fish are already anesthetized, and because of the relative reproductive success study, they are PIT-tagged. She said this could also change in the future and should be considered when thinking about management activities at Tumwater Dam.

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. Alf Haukenes (WDFW) reported no significant updates from WDFW. He said WDFW has opened up more activities but much in this region has not changed. He noted that steelhead surveys are still on hold; Mike Tonseth said even if the restrictions that apply to these surveys were lifted, the window of opportunity to complete these surveys is quickly passing. Tonseth added that WDFW has a return-to-work plan, but even if the agency moves into new phases of allowable activities, many staff are still restricted based on the counties they work or reside in. Hillman asked if drone operation is an allowable activity. Haukenes said WDFW was working with a graduate student who was doing drone surveys in 2019, and the agency is still working on this topic. He said WDFW has purchased another drone that Jeremy Cram (WDFW) may use for mapping and other activities, but he does not think this activity is underway currently. He said

he thinks the staff who performed summer Chinook salmon surveys via drone last year will do more work this summer. Hillman asked whether a drone could be used in the Wenatchee River to conduct steelhead surveys. He said not having these surveys in 2020 would be a relatively large data gap. Catherine Willard said Chelan PUD is working on a method to use PIT tags to determine number of spawners in the mainstem Wenatchee River. Tonseth added that drones would have limited utility in surveying the Wenatchee River because of the high water and propensity for steelhead to spawn in margins. He said steelhead surveys via helicopter have been attempted previously and these were unsuccessful even with the ability to hover and look for redds, so he is not certain that drones would be any more effective.

Brett Farman said the National Marine Fisheries Service does not have any updates. He said he will likely be teleworking until a vaccine is available.

Bill Gale said he has been busy navigating the COVID-19 guidance for USFWS. He said the Fish and Wildlife Conservation offices are returning to field work but are limited to day trips and not overnight travel. He said only activities that are considered low or negligible risk are being allowed through his office. He said USFWS is following a phased approach along with each county, and activities will increase as counties progress to future phases. He said redd surveys will likely be completed, and most of the in-hatchery monitoring work has been allowed to move forward under limited contact and increased distancing. He said other upcoming work includes eDNA sampling and trap-and-haul work for bull trout in the Yakima basin. These activities can largely be completed with minimal risk and will likely move forward unless counties move backwards in phases. He said the Yakima region especially is concerning and USFWS has staff in that area.

Keely Murdoch said there have been no new changes for the Yakama Nation. She said staff are still mostly working from home and field work or other essential duties can move forward if authorized with a social distancing plan. Todd Pearsons asked about the status of the Nason and White River screw traps. Keely Murdoch said when the traps were installed this year, it was anticipated that they could be checked with two people safely while using social distancing. However, the White River trap is not possible to check at high flows because a small boat is used to access the trap. This trap was pulled temporarily during high flows. She said the trap in the Nason River has been easier to keep running, and at certain high flows, the traps are taken out anyway. She estimated that the traps have likely been pulled in a more conservative or frequent manner this year due to social distancing, and she said she will check on the status of the traps.

Willard said Chelan PUD field staff continue with all activities using precautions. She said gonadosomatic index (GSI) sampling will be conducted at the Chiwawa Acclimation Facility next week for the third and final year. She said spring Chinook salmon surveys will move forward, and office staff continue to work from home when possible.

Greg Mackey reported no significant updates for Douglas PUD. He said facilities are still restricted to Douglas PUD staff and activities are moving forward following standard social distancing guidance.

Pearsons reported no significant updates for Grant PUD. He said pre-release sampling for fall Chinook salmon will likely be completed this week.

III. Wells HCP-HC

A. Methow Hatchery Spring Chinook Salmon Broodstock

Greg Mackey provided an update on the broodstock collection for spring Chinook salmon at the Methow Hatchery. He said early in the run and up to a few weeks ago, the run was small. He said staff have been trapping wild broodstock at Wells Dam, which need to be genotyped before they can be assigned to broodstock. He said it is difficult to acquire broodstock at Wells Dam even when runs are larger, so it was not looking like the full wild broodstock would be collected this year. He said Charles Frady (WDFW), who performs the stock assessment and provides updates on fish composition based on trapping and retaining, was concerned initially that Douglas PUD would exceed the 33% retention rate of the natural-origin return for broodstock. Mackey said he also performed run projection modeling and estimated that the whole allotment of broodstock could be collected while staying under the 33% retention rate. He said Frady also projected similar values using a different approach. Having done these analyses, Mackey said Douglas PUD decided to continue trapping aggressively to meet broodstock targets. He said as of the latest projections, the program is close to meeting the broodstock target at an extraction rate of around 28% of the natural-origin return. He said some hatchery fish will likely be used as broodstock, which is not uncommon, and there are 89 confirmed broodstock being held at Methow Hatchery (including both the Twisp and Met-Comp programs). There are additional fish being held at Wells Fish Hatchery that will likely add 10 to 15 to the broodstock after genetic testing. He added that some hatchery fish are starting to volunteer into the Methow Hatchery trap, and these are being retained. Some ad-clipped fish have been transferred to the Winthrop NFH as well. He said Winthrop NFH has also reported some ad-present fish, which may be transferred to Methow Hatchery; however, this may not be needed because they are also swimming into the volunteer trap at Methow Hatchery. He said he provides this update to the committee specifically because it was looking like the program may need Winthrop NFH to transfer Methow Hatchery-origin returning fish to Methow Hatchery to fulfill the conservation program, but now this is looking less likely, or would be few fish. He summarized that broodstock collection has overall gone well, a few hatchery fish may be used in the brood, and trapping will cease soon because the spring Chinook salmon run is decreasing and summer Chinook salmon are starting to arrive.

Matt Cooper asked what the forecast was for hatchery fish returning to the Methow Hatchery. Mackey said the projection for wild fish was a few hundred and he is not sure of the hatchery fish projection. Bill Gale asked if that projection could be completed. He said staff at Winthrop NFH estimated there are 500 to 550 spring Chinook salmon in the pond at Winthrop NFH, with a visual estimate of at least 5% (or around 25 fish) being ad-present, indicating they originate from Methow Hatchery. He said with the three-population PNI model in mind, it is beneficial to spawn as many Methow Hatchery-origin fish as possible at Winthrop NFH. He said a forecast of hatchery fish returning to Methow Hatchery would allow Winthrop NFH to keep as many Methow Hatchery-origin fish as possible, and perhaps even receive fish in excess of broodstock needs from Methow Hatchery. Gale said Winthrop NFH will be sorting these fish on Wednesday, June 24, so any updates before then would be helpful. Mackey said he will check with Frady on the expected returns of hatchery fish to Methow Hatchery and provide an update to Gale and Cooper.

IV. Joint Rock Island/Rocky Reach HCP-HCs and PRCC HSC

A. Draft SOAs Regarding Chelan and Grant PUDs' Okanagan Sockeye Salmon Obligation and Status of Reintroduction Program

Catherine Willard shared the draft, "SOA Regarding Chelan PUD's Okanagan Sockeye Obligation and Status of the Reintroduction Program," which was distributed by Kristi Geris on June 13, 2020. She said the Okanogan sockeye program is co-funded by Chelan and Grant PUDs. This SOA is written for the Rocky Reach and Rock Island HCP-HCs; a similar one will be drafted for the PRCC HSC.

Willard provided background on the Okanogan sockeye program. She said in 2010, the HCP-HCs and PRCC HSC agreed that Chelan and Grant PUDs will co-fund the Skaha Lake and Okanagan Lake Reintroduction Program, operated by the Okanagan Nation Alliance (ONA), in order to meet the Districts' mitigation goals. Under this agreement, she said Chelan PUD receives mitigation credit for naturally produced smolts at Skaha and Okanagan lakes and hatchery produced smolts from Penticton Hatchery. She said the term of the SOA ends with the release of the 2020 brood, so the committees should consider a new SOA. The draft SOA (1) requests approval that the reintroduction program has been successful. She said the success is supported by annual updates by the Okanagan Nation Alliance to the HCP-HCs and PRCC HSC on the reintroduction program; funding of the construction of the hatchery; annual funding of the hatchery operations which provided hatchery releases starting in 2015; and funding of the M&E program used to adaptively manage the reintroduction program. She said during this time, reintroduction has accounted for 21.3% of the production in the basin. The next piece of the SOA (2) requests agreement that the mitigation goal is to continue to establish natural production and significant new habitats; (3) that the Districts will fund and support the monitoring and evaluation program and the hatchery operations; and (4) the

HCP-HCs agree to support the District's funding and implementation of the Reintroduction Program, from 2020 through 2031 in order to meet the District's NNI sockeye obligation.

She said her plan today is to present the draft SOA to the committees for their review and answer any immediate questions. She requested comments and questions by July 1 so that it can be revised and distributed for approval at the July meeting.

Keely Murdoch said she will review the SOA internally and she asked a few initial questions. First, she asked if there is a way to quantify the goal around natural production and spawning and rearing. For context, she said most mitigation programs have a goal expressed in number of fish. Willard said Todd Pearsons may have more information, but sockeye production from a hatchery was an unknown quantity when the 2010 SOA was written. Murdoch said that would make sense in the beginning of a reintroduction program, especially because the hatchery was not yet built when the SOA was being negotiated. However, now that more is known about the number of fish and variability in production, she said she would think that the district could estimate what is produced and what proportion of it is being funded. She said the SOA does not make clear what portions of the program are being funded by the Districts. Willard clarified that between Chelan PUD and Grant PUD, the districts fund 100% of the hatchery operations plus the monitoring and evaluation program. She said they are reluctant to describe that in the SOA, but language regarding the extent of the funding may be appropriate in the background sections. Pearsons said one reason the funding arrangement is not described fully in the SOA is because it would be possible for ONA to decide to do something out of scope with the original program, in which case the Districts would not want to be obligated to fund the entire program. Pearsons added that the mitigation goal of this program has been to reintroduce sockeye salmon into historically occupied lakes. The big prize has been to open up blocked areas and to jump-start natural production in these areas. Natural production is occurring in Skaha Lake and the next phase is to get production in Okanagan Lake.

Willard asked for comments and edits back by July 1, 2020, so that she can revise the SOA for approval at the July meeting. She said she will also follow up with Kirk Truscott to inform him of this draft SOA and discussion.

V. PRCC HSC

A. Review Agenda, Announcements, Approve Past Meeting Minutes

The PRCC HSC representatives approved the May 20, 2020 meeting minutes as revised.

VI. Next Meetings

The next HCP-HCs and PRCC HSC meetings will be Wednesday, July 15, 2020; Wednesday, August 19, 2020; and Wednesday, September 16, 2020, held by conference call and web-share until further notice. Note that the July and August meetings will begin at 9 am.

VII. List of Attachments

Attachment A List of Attendees

Attachment A
List of Attendees

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

Notes:
* Denotes HCP-HCs member or alternate
‡ Denotes PRCC HSC member or alternate