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1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
206.287.9130

ANCHOR QEA

Memorandum

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

Document Date: September 18, 2024

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

cc: Natasha Winnacott and Larissa Rohrbach, Anchor QEA

Re: Minutes of the August 21, 2024, 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's Hatchery Subcommittee (PRCC HSC) meetings were held in person at the Douglas PUD Auditorium with members attending virtually as well on Wednesday, August 21, 2024, from 10:00 a.m. to 5:00 p.m. Attendees are listed in Attachment A to these meeting minutes.

Action Item Summary

Long-Term

Joint HCP Hatchery Committees and PRCC Hatchery Subcommittee

- Keely Murdoch and Mike Tonseth will obtain estimates of pre-spawn mortality (PSM) from Andrew Murdoch to update the retrospective analysis for Wenatchee spring Chinook Salmon (Item I-A). *(Note: This item is ongoing.)*
- Members of the HCP-HCs and PRCC HSC will provide feedback to the Washington Department of Fish and Wildlife (WDFW)-revised version of questions on recalculation for Policy Committees (Item I-A). *(Note: This item is ongoing.)*
- K. Murdoch will assemble a group to review the Wenatchee Spring Chinook Salmon sliding-scale proportionate natural influence (PNI) targets using more recent escapement data (Item I-A). *(Note: This item is ongoing.)*

Near-Term (to be completed by next meeting)

Joint HCP Hatchery Committees and PRCC Hatchery Subcommittee

- The HCP-HCs and PRCC HSC members will revise language around Monitoring and Evaluation (M&E) Plan objectives according to the agreed-to recommendations in the 10-Year Comprehensive Report (Item II-A).

- Keely Murdoch will edit Objective 1 in the M&E Plan to include the number of adults removed for management purposes (Item II-A). *(Note: This item is ongoing.)*
- Mike Tonseth will reach out to individuals who can answer committee members' technical questions regarding mark-recapture models (Item II-A). *(Note: This item is ongoing.)*

Decision Summary

- None.

Agreements

- The HCP-HCs and PRCC HSC completed their review and came to agreement on a draft list of recommended changes to monitoring and management activities to include in the Committees' 10-Year Comprehensive Summary Report.

Review Items

- Updated 10-Year Comprehensive Report recommendations were distributed on August 9, 2024, for review prior to the next meeting.

Finalized Documents

- None

I. Welcome

A.

Agenda, Approval of Past Minutes, Action Item Review

Tracy Hillman welcomed the HCP-HCs and PRCC HSC and reviewed the agenda. Mike Tonseth asked to provide an update on Wenatchee River and Chelan Falls summer Chinook Salmon broodstock collections. HCP-HC and PRCC HSC representatives approved the agenda with these additions.

The revised meeting minutes from July 17, 2024, were reviewed and approved by parties that attended. Kirk Truscott abstained because he was not present at that meeting.

Action items from the HCP-HCs and PRCC HSC July 17, 2024, meeting were reviewed. *(Note: Italicized text below corresponds to action items from the previous meeting.)*

Long-Term

Joint HCP Hatchery Committees and PRCC Hatchery Subcommittee

- *Keely Murdoch and Tonseth will obtain estimates of PSM from Andrew Murdoch to update the retrospective analysis for Wenatchee spring Chinook Salmon (Item I-A). (Note: This item is ongoing.)*
  Tonseth said that he talked with Mike Hughes (WDFW), and they are still working on the carcass recovery bias portion of the modeling. This item is ongoing.
- *Members of the HCP-HCs and PRCC HSC will provide feedback to the WDFW-revised version of questions on recalculation for Policy Committees (Item I-A). (Note: This item is ongoing.)*
  This item is ongoing.
- *K. Murdoch will assemble a group to review the Wenatchee Spring Chinook Salmon sliding-scale PNI targets using more recent escapement data (Item I-A). (Note: This item is ongoing.)*
  K. Murdoch said that she and Cory Kamphaus will meet in early September to discuss this, and they will extend the invitation to the rest of the Committees.

Near-Term (to be completed by next meeting)

Joint HCP Hatchery Committees and PRCC Hatchery Subcommittee

- *The HCP-HCs and PRCC HSC members will refine language for recommendations from the 10-Year Comprehensive summary report discussed during today's meeting (Item II-A).*
  This will be discussed during today's meeting.
- *K. Murdoch will edit Objective 1 in the M&E Plan to include the number of adults removed for management purposes (Item II-A). (Note: This item is ongoing.)*
  This item is ongoing.
- *Tonseth will reach out to individuals who can answer committee members' technical questions regarding mark-recapture models (Item II-A).*
  This item is ongoing.
- *Tonseth will invite Thomas Buehrens to give a presentation to the HCP-HCs and PRCC HSC committees about Integrated Population Models (Item II-A).*
  Tonseth said that Buehrens will give a talk during the September meeting. This item is complete.

II. Joint HCP-HCs and PRCC HSC

A. 10-Year Comprehensive Summary Report – Remaining Management and Monitoring Recommendations

HCP-HC and PRCC HSC representatives continued to work through their recommendations for changes to management and monitoring, which Tracy Hillman compiled and organized by hatchery program in an appendix to the 10-Year Comprehensive Summary Report. Recommendations are summarized by objective to reduce redundancy.

The HCP-HC and PRCC HSC representatives categorized recommendations that they all agreed with, those they did not agree with, and those they were uncertain about and therefore require further discussion in the future.

Objective 3.0: Determine if the hatchery adult-to-adult survival (i.e., hatchery replacement rate, HRR) is greater than the natural adult-to-adult survival (i.e., natural replacement rate, NRR) and the target hatchery survival rate.

Recommendation No. 1: Estimate the apparent survival of hatchery releases from release to the Columbia River, survival to mainstem dams with detection capabilities, survival of adults to Bonneville, and survival of adults to the spawning grounds (Washington Department of Fish and Wildlife [WDFW]).

- John Rohrback asked how residualism would be accounted for in survival estimates. He gave the Methow River as an example and said if salmon were released there, the first detection is at Rocky Reach Dam. Mike Tonseth said this recommendation is to better understand where fish are dying and determine whether it is occurring in a particular reservoir or throughout the whole system. Rod O'Connor asked whether Tonseth had concerns about a specific program or whether this was contemplating a future situation. Rohrback said that this is based on passive integrated transponder (PIT)-tag monitoring for juveniles, so he finds this redundant. Tonseth disagreed because the current monitoring does not identify potential bottlenecks in survival. Tonseth said this additional recommendation is focused on replacement rates of fish from hatchery programs (hatchery replacement rate [HRR]). This is not to estimate post-release mortality; this will help to better understand limiting life-stage factors. If hatchery programs are not meeting the program requirements, then managers need to know why. Hillman said that this is the type of information used in an integrated population model. Matt Maxey said the work is already being done to detect juveniles, but this specific recommendation would be finding where juvenile mortality occurs in space and time. Tom Kahler asked, if they found a problem, for instance releases in the Columbia River, what could be done about it? Regarding precocity, when wild fish are used in broodstock, it may produce more precocious males (than hatchery-origin parents), and they currently have wild-by-wild programs that are going to produce more precocious males. Tonseth

said that once they have identified where and when juvenile mortality is occurring, this will initiate a deeper conversation within the Committees to determine whether it will continue occurring, and if so, the Committees will need to find a solution. Keely Murdoch agreed that it is beneficial to know where in the life cycle a problem is occurring. K. Murdoch said if precocious males are such a big problem that it is negatively affecting the number of adults, then maybe a wild-by-wild hatchery program is not needed. Hillman said that if it is something they can identify and manage within a hatchery program, then they can address it. Otherwise, they have identified an issue that will need to be addressed through other means. Tonseth said there are things they can do in the hatchery to minimize mortality, but that may not be something that managers want to do (e.g., change the genetics so fish all leave and come back at the same time, which reduces mortality due to safety in numbers). Tonseth said that even if they cannot make a change, at least they can describe what is going on. Including post-release mortality data will allow them to work on ways to improve the hatchery program; they should not wait until they are not achieving HRR to inquire about how to improve programs. Kirk Truscott said that if these data can be used to make hatchery programs better, they should do that. Cory Kamphaus agreed that this is a proactive approach and having this information would be useful.

- Hillman reworded this recommendation. All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Objective 4.0: Determine whether the proportion of hatchery-origin spawners (pHOS or PNI) meets the terms and conditions of the permits.

Recommendation No. 1: Delete this objective. It does not need to be included as an M&E objective because this is a permit requirement (term and condition of the permit). Include PNI evaluation in ESA sections of the annual report (WDFW).

- Catherine Willard asked why WDFW recommends eliminating this objective. Tonseth said anything that is a management requirement should not be an M&E objective because they are required to report it anyway. Hillman said that the previous approach has been to include in the M&E Plan anything that is a permit or management requirement. That is, the plan needs to address how the permit or management requirement will be measured and evaluated. Willard agreed that proportion of hatchery-origin spawners (pHOS) and PNI are important metrics to measure, and they should be described in the M&E Plan. Tonseth said that the management target is not determined by this committee. Hillman said they need to make sure the data are collected and analyzed so they can be compared to the permit or management targets. Willard said that in addition to it being a management requirement, it is a permit requirement and informative regarding managing hatchery influence, and she would like for it to relate back to permit requirements.

- Hillman reworded Objective 4.0. All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 2: Discuss methods to achieve PNI target, revise target, and methods to estimate PNI (e.g., multiple population model first for ESA-listed populations) (Chelan PUD [CPUD]/Grant PUD [GPUD]).

- Tonseth said that there is a desire from the National Oceanic and Atmospheric Administration (NOAA) to move toward multi-population PNI models. With regards to targets, Tonseth said those are management issues. K. Murdoch described the process of developing the management plan, stating that initially, the Yakama Nation (YN) worked with WDFW, then NOAA Fisheries, and then brought it to the Committees for their review. Tonseth suggested PNI should be monitored for all the endangered species act (ESA) programs. Larissa Rohrbach reminded the Committees there are thorough notes on Craig Busack's presentation as an example for how the multi-population PNI model could be used for Wenatchee spring Chinook Salmon (presented on August 18, 2021); however, a lack of information on PSM was holding them back from having confidence in the PNI estimates. The hope was that they would have better PSM estimates to move forward on both using the multi-population PNI model and revising the sliding scale for managing PNI. K. Murdoch said it seems like this is syncing up with the Hatchery Genetic Management Plan (HGMP) and permit development, which are the processes where adaptive management of PNI will be addressed. Todd Pearsons recollected that they were also struggling with the level of specificity around metrics they would apply in the model and at what scale (e.g., the whole Wenatchee population or spawning aggregates). Pearsons said in terms of methods used to report on PNI, there may be information in the permit; however, the general idea is to be more specific in the M&E Plan with the best approach moving forward. Hillman said that the way PNI was calculated in the annual reports is not consistent with the method identified in the permit. Brett Farman said he supports calculating it as it has been done. Hillman suggested that K. Murdoch identify the appropriate PNI targets, share those with the Committees, and let the Committees decide which PNI model to use. Tonseth said that it would be beneficial to talk about this when they talk about the HGMP.
- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 3: Need to be able to measure and understand the partial pHOS of the safety-net programs (YN & DPUD).

- Rohrback suggested refining the multi-population PNI to show which fish are part of the safety-net programs. Tonseth asked whether this should be a monitoring contribution of the safety-net programs to understand what contribution they are making to Okanogan summer Chinook Salmon. K. Murdoch said there was plenty of discussion around which fish should be

included in the Okanogan program. When looking at pHOS for the whole basin, the PUD comprehensive report indicated that the program was failing, but they were able to decipher which program was contributing and at what levels. K. Murdoch said that it is helpful to be able to understand what partial pHOS is for individual programs. Rohrback said that the Methow Safety Net and Columbia Safety Net (CSN) steelhead cannot be differentiated by mark to infer the stray rate of CSN fish into the Methow River. PIT tags implanted in juvenile fish are the best tool to estimate the partial pHOS of these programs in the Methow River, and the number of PIT-tagged returning adults is small. K. Murdoch said currently, 5,000 per release group are PIT tagged.

- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Objective 5.0: Determine if the migration timing, spawn timing, and spawning distribution of both the hatchery component is similar to the natural component of the target population or is meeting program-specific objectives.

Recommendation No. 1: Assess the median migration timing of hatchery- and natural-origin smolts for analytical purposes.

- Tonseth said that (with multiple PIT-tag detection points), they can start to compartmentalize juvenile movement in the Wenatchee River. Rohrback said in the Okanogan River, the hatchery fish are released as a large wave of fish, so changing this into releasing fish in smaller waves may not be a good use of resources; it would be difficult to find something to target and measure regarding juvenile outmigration. O'Connor said that if their bigger goal is to have hatchery returns that are larger than natural returns, then having distributed releases that match the natural population is not in line with that goal. Tonseth said that it is not about having HRR higher than natural replacement rate; one could look at that and say that the hatchery programs have succeeded, when in fact the hatchery program could be improved to make it even better. Rohrback asked whether the goal of this objective is to have natural returns that are the same as hatchery returns. Kamphaus said that the YN Coho Salmon program does a full volitional release, which allows the fish to determine when they want to move through the system, which in turn increases survival. Rohrback said it would be better to talk about this on a case-by-case basis rather than writing it into the M&E Plan. Kamphaus said this is a good opportunity to see where this could be possible in some programs. Willard agreed it is good to evaluate where it makes sense to do volitional releases, but she also agreed with Rohrback that releasing juveniles over a longer period of time may not be best for the hatchery fish.
- Maxey questioned whether this recommendation is in the right place, because it is about monitoring juveniles, but the objective is referring to adult spawners. Tonseth said this recommendation is geared toward determining whether the timing of juvenile releases is having

an effect on adults. K. Murdoch said that if this is an analytical exercise and not a requirement that migration timing be the same, then she thinks there is good value in this. Truscott said he agrees with this as an analytical piece, but he is not okay with it being a targeted objective, because there should not be pressure to make them the same, and he does not believe that they should be the same. Tonseth said this is an analytical recommendation and not a goal. It is to look at the performance of hatchery program and evaluate whether the intent of the overall program is being met. He said they want to make sure that the objectives allow for hatchery and wild fish to comingle. Rohrback asked how comfortable they are in knowing the median outmigration date for natural-origin fish. Rohrback said that juvenile data are tricky to obtain and work with. Tonseth said it depends on the population. Truscott said that the trap on the Chiwawa River is very efficient. Tonseth said there may be no correlation in the data, but they will not know unless they look. Willard asked whether they are trying to compare outmigration between natural- and hatchery-origin fish. Tonseth said that it is not a comparison; rather, it is looking at whether the timing of outmigration corresponds to survival in adults. Hillman reworded the recommendation to capture the discussion. Truscott asked whether it should include the migration rate because it could be just as important in determining adult returns as migration timing. Hillman said migration rate is already being reported; the only thing they are not reporting is timing.

- HCP-HC and PRCC HSC representatives present did not fully agree with this recommendation and agreed that it warrants further discussion in the future.

Recommendation No. 2: Spawning distribution objectives should be species/program specific since different data and methods may be needed for different species.

For Wenatchee steelhead we should be relying on PIT tags and our extensive network of instream arrays to understand hatchery and wild spawning distributions of steelhead (YN).

For safety-net steelhead, we should be relying on PIT tags and our extensive network of instream arrays to understand where these fish are spawning and if the intended two-zone management is working (YN).

- K. Murdoch said the current spawning objective is written with spring Chinook Salmon in mind (i.e., it is based on carcass distribution). K. Murdoch said it is not feasible to conduct steelhead carcass surveys, but we still need to determine, for example, whether steelhead released in Nason Creek are going back to Nason Creek. This information can be obtained from PIT tags and PIT-tag arrays. Willard said for the Wenatchee River, steelhead spawn escapement by hatchery or natural origin to the various Wenatchee tributaries is reported. K. Murdoch replied that is not the spawner distribution; the goal is to better understand where hatchery fish are returning compared to wild fish. K. Murdoch said the request is to look at infrastructure available and make

sure programs are looking at spawning distribution for steelhead specifically. Rohrback said that for the Twisp River, there is an array, but not a large enough number of returning PIT tags to calculate this, and they do not have information on carcasses. He said this objective does not apply to non-conservation programs. Rohrback said this evaluation is difficult because populations are tagged at different rates. Tonseth said on the Methow River, they have two zones of management, so it would be beneficial to know where hatchery fish are spawning because this could affect whether they need the two-zone management here. K. Murdoch reiterated that she wants to have further discussion around what they can do to answer these questions.

- All HCP-HC and PRCC HSC representatives present agreed with these recommendations.

Recommendation No. 3: Negative results of this objective must be evaluated in concert with all the other objectives (DPUD).

- Rohrback shared a summary of spawning distribution of spring Chinook Salmon in the Chewuch River, the Methow River, and the Twisp River (from the PUDs' spring Chinook Salmon Hatchery Comprehensive Report; Attachment B). Looking at the results from the Twisp River, Rohrback said that because there is a statistically significant difference in the spawn distribution of hatchery and wild fish within streams, they did not meet their target. However, the data revealed approximately similar spawn distributions, and he thought that the results ought to have been classified as having met the goal. Rohrback believes that there is a disconnect between the objective and what is actually going on in the system. He believes they have a goal that cannot be reached. K. Murdoch said that she is willing to have a conversation about this, but her concern is that if they change to a coarser scale, they could potentially loose useful information. From an analytical standpoint, it is easier to collect fine-scale data and lump them together versus collecting coarse-scale data and then wanting to parse them out. She wants to have the ability to flag things that could be significantly different, then as a committee decide whether it is a problem that they want to do something about. Rohrback said that he is not advocating for changing the way that they currently collect, analyze, and report data. He said the issue is with the target; it is a shame to conclude that they failed to reach their objective when the data are showing that Methow spring Chinook Salmon have a relatively equal spawning distribution across tributaries, and the way to evaluate whether they met the objective could be less stringent. Tonseth said that it is not appropriate to change the way they evaluate something just because they do not like the outcome. If it is statistically significant, it is up to the Committees to determine whether it is significant biologically. Tonseth wants to keep the target because it gives them a benchmark to evaluate the program. K. Murdoch said that she is open to exploring other options, but she agrees with Tonseth that they are not trying to make it so they never fail. Hillman said that it is a question of spatial scale, and he agrees with Rohrback that if it

is statistically different, it is characterized as failing to meet the objective. This is why a comment box was included in the 10-Year Comprehensive Review, so the Committees could evaluate the differences biologically. Tonseth said that he agrees that in certain circumstances the pass/fail does not paint the full picture. Tonseth said the analyses that they are conducted are intended to flag problems, but a statistical significance is not always meaningful. K. Murdoch agreed; she does not like saying they have failed when the biological data show otherwise. She likes adding language that puts less emphasis on the statistical results and states that that is used as a screening tool. Pearsons said if they add more and more data to the Twisp River dataset, they will always see a significant difference, but the biological relationship is telling a different story. Tonseth said additional biological data can be incorporated into this. Rohrback said that he agrees with leaving the decision of whether the results are biologically significant or not to the Committee, despite them being statistically significant. Tonseth said that this would be a more holistic approach to determine the success of the program because they are not using the statistical analysis outcome to determine pass or fail. Pearsons said that he thinks they have done this in the 10-Year Comprehensive Review, where the top metrics were productivity metrics, and other metrics were not supposed to be interpreted as the drivers but rather were there to help describe what was observed in the productivity. Pearsons said that it is important to make it clear that they would be interpreting a statistically significant result in the context of the program as a whole.

- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 4: Include pHOS at the reach scale for analytical purposes, not for PNI analysis (CPUD).

- K. Murdoch said this recommendation makes her uncomfortable because she has seen several different analyses that say they exceed PNI in reaches, but they do not have specific PNI targets for reaches. She requested further discussion regarding this recommendation. Kahler said looking at pHOS at the reach level shows that natural-origin and hatchery-origin spawners overlap really well in some areas but not in others. It is more diagnostic than simply reporting they did not meet a PNI target. Hillman agreed as long as it is for analytical reasons and reminded the group that this is another way to evaluate spawning distribution, which is consistent with this objective. He pointed out that this is under the spawning distribution objective, not the PNI objective, and therefore it should not be used to evaluate PNI at the reach scale.
- HCP-HC and PRCC HSC representatives present did not fully agree with this recommendation and agreed that it warrants further discussion in the future.

Recommendation No. 5: On a program-by-program basis, revise the objective and analyses for spring Chinook Salmon spawning distribution to acknowledge and manage the tradeoffs between natural-origin fish distribution, pHOS objectives, manage risk, and practical challenges (GPUD).

- O'Connor said for spring Chinook Salmon, it is important to consider refuge areas. Tonseth recalled conversations about the idea of the upper Methow River being a wild fish refuge. K. Murdoch said she thinks the idea of refuge is theoretical, and the flip side of a refuge is high densities of hatchery spawners in one area. Her understanding is that from what they have seen in the Chiwawa River, hatchery fish spawn mainly lower in the system, and evidence suggests that fish that spawn lower in the system have lower reproductive success. This implies they would have more success in the Chiwawa River if they moved upstream. Truscott agreed with K. Murdoch and said hatchery and wild females of the same age spawning in the same habitat did not have differences in productivity. He said his concern with designated refuges is they could create genetic bottlenecks due to low population sizes. Pearsons said that his interpretation of the term "refuge" was to acknowledge that it is not necessarily a bad thing that natural-origin and hatchery-origin spawners do not have the same distribution. Farman said it might be a function of including a magnitude; there is always a degree of risk when hatchery and wild fish are spawning together. K. Murdoch said she is not comfortable with agreeing to change the objective but said that she is comfortable discussing this on a program-by-program basis. Tonseth agreed and suggested there be more conversations around this recommendation in the future.
- HCP-HC and PRCC HSC representatives present did not fully agree with this recommendation and agreed that it warrants further discussion in the future.

Objective 6.0: Determine if stray rate of hatchery fish is below the acceptable levels to maintain genetic variation among stocks.

Recommendation No. 1: Questions and Targets should be identified and consistent with M&E plan. In the comprehensive report summary "donor stray rate" is evaluated. But in M&E plan, the monitoring question is "brood year stray rate." Why the difference and what is "donor stray rate"? Need to define terms. (WDFW).

- Pearsons said there appears to be different terminology for different stray rates. He suggested redefining it to be more aligned with terms used in the peer-reviewed literature.
- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 2: Add the following question: Q6.4.1: What percentage do aggregate (cumulative) hatchery strays from spring Chinook Salmon programs make up within the Methow and Wenatchee populations? (WDFW).

- Willard said that this is related to confusing stray terminology. Hillman said this question gets at the total number of hatchery fish within an area. It is not limited to evaluating a single hatchery program. For recovery purposes, NOAA Fisheries looks at the cumulative number of hatchery strays from all the different programs spawning within an area. Pearsons noted that they did look at it by program and cumulatively and suggested rewording this recommendation to focus on cumulative hatchery strays and removing 5% because it will be either 5% or 10%. If they are over that cumulative amount, then it is the manager's job to figure out the contribution of the strays to a population. Hillman said that WDFW is referring to independent populations and the 5% is the identified target in the recovery plan. Rohrback said that he would prefer not to include this recommendation. Farman acknowledged managers only have control over fish that are in their program; he does not suggest removing the whole recommendation because NOAA Fisheries still wants to know the aggregate stray rate and program-specific stray rates. Hillman said that in the annual report, the cumulative or aggregate stray rate is not reported—only stray rates for each program are reported. He said that WDFW is asking to include calculation of the cumulative stray rate in the M&E Plan so it will be reported in annual report. Tonseth said that it would be useful to standardize reporting of the cumulative number of hatchery strays. Rohrback said they do report that. Willard said they are also reporting that, but what the recommendation is asking to report is the makeup of all strays, and this includes other programs (i.e., Lookingglass Hatchery), that the PUD programs should not be held responsible for. Farman said he wants to see those aggregate numbers; however, he is not suggesting they absolutely need to be in the annual report and could be in a cumulative stray rate report to share information on where strays originate from in the basins where the HCP-HC and PRCC HSC parties do spawning grounds surveys. He said NOAA Fisheries wants to be able to go to specific basins and ask for adjustments made to the program to limit strays; he does not want to have a void in the data, even if it is not the responsibility of the Committee to manage strays from other programs. Hillman summarized that Willard and Rohrback agree that it would be beneficial to have that information, but why should the PUDs have to do that when they are only responsible for their specific program's contribution? The PUDs are not responsible for tracking fish from other hatchery programs. Willard said that Chelan PUD will do it in the Wenatchee River. Rohrback said Douglas PUD will do it in the Methow River. Maxey said U.S. Fish and Wildlife Service (USFWS) will do it in the Entiat River. Rohrback said that he does not want this to become their obligated responsibility, because he does not think it is appropriate for them to be responsible for monitoring. K. Murdoch said that if a problem is identified in the Entiat River, maybe it should be

included but not reported everywhere. Hillman said the annual reports can include the Entiat and will pull the information from the USFWS reports.

- HCP-HC and PRCC HSC representatives present did not fully agree with this recommendation and agreed that it warrants further discussion in the future.

Recommendation No. 3: Measure the extent that CSN steelhead are spawning in the Methow and Okanogan rivers vs staying in the Columbia River or returning to Wells Fish hatchery. (YN)

- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 4: Intra-basin stray rate target should not apply for the Methow and Chewuch rivers for this program (Methow-Chewuch spring Chinook) because it is a composite broodstock; however, we will continue to measure the stray rates (CPUD & DPUD).

- Tonseth said there might be specific language in the permits that require these measurements. Rohrback said that Douglas PUD does not want a target associated with Methow-Chewuch straying. K. Murdoch asked, at what point is the stray rate so high that it is counteracting our goal there? Rohrback said Douglas PUD will still report on the stray rates but will not include a target. If at some point it is identified as an issue, then they can have a discussion in the Committee.
- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Objective 7.0: Determine if genetic diversity, population structure, and effective population size have changed in natural spawning populations as a result of the hatchery program.

- No recommendations.

Objective 8.0: Determine if hatchery programs have caused changes in phenotypic characteristics of natural populations.

- No recommendations.
- Tonseth said that WDFW is talking to Andrew Murdoch, Mike Hughes, and Katy Shelby about the potential to use the relative reproductive success studies to determine whether hatchery programs are having a negative effect on effective population size for specific populations. Tonseth said that this would be more focused on smaller programs. They do not have the specific language or questions dialed in, and this may not be completed by the time that the Committees finalize this 10-Year Comprehensive Report.

Objective 9.0: Determine if hatchery fish were released at the programmed size and number.

Recommendation No. 1: Determine the appropriate size at release target that minimizes residualism and maximizes juvenile out-migration survival, while optimizing SAR (CPUD).

- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Recommendation No. 2: Identify K-factor targets for Appendix 5 of the M&E Plan (CPUD).

- Willard said the current M&E Plan says they will do this, but they never have. Hillman said they have calculated the condition factor (K) for both wild and hatchery fish, but there are no targets. Tonseth said they started the conversation when talking about size at release of Douglas PUD steelhead.
- All HCP-HC and PRCC HSC representatives present agreed with this recommendation.

Objective 10.0: Determine if appropriate harvest rates have been applied to conservation, safety-net, and segregated harvest programs to meet the HCP/SSSA goal of providing harvest opportunities while also contributing to population management and minimizing risk to natural populations.

- No recommendations.

The HCP-HCs and PRCC HSC completed their review and came to agreement on a draft list of recommended changes to monitoring and management activities to include in the Committees' 10-Year Comprehensive Summary Report. Moving forward, the HCP-HCs and PRCC HSC members will refine the M&E Plan according to these recommendations. Next month, members will resolve the yellow-highlighted recommendations and go back and review the General Comments.

B.

HGMP Updates

C. O'Connor has begun to review the HGMP and will bring details to the September meeting. All other HCP-HC and PRCC HSC members are still working on their review.

Update: Okanagan Sockeye Transport

Willard said Okanogan Nation Alliance (ONA) submitted an application to the Canadian Food Inspection Agency (CFIA), the agency that issues the import permit. At end of June, CFIA provided direction to coordinate with the United States Department of Agriculture (USDA) to import the Sockeye Salmon. Chelan PUD worked with Megan Finley (WDFW), and they obtained approval from USDA on August 5, 2024. Trucks were made available at Wells Dam, and Finley was required to inspect every fish that was loaded on the truck. This was done late in the run, so they set a goal of capturing a minimum of 25 fish but were only able to trap 4 fish. They were likely 3 weeks too late. If they had collected enough fish, Finley would have filled out paperwork, submitted it to the USDA, and the USDA would have approved it and sent it back to be brought with the transport trucks to the

border crossing. K. Murdoch asked how long the permits are good for. Willard said they will have to reapply annually as the permits are only good for 1 year, but because they went through everything this year, it should be easier to apply. Willard said they will pilot transportation of Sockeye Salmon into Canada next year.

Chelan Falls and Wenatchee Summer Chinook Salmon Broodstock

D. Tonseth said the Wenatchee River summer Chinook Salmon return has been low this year, and because of warm water temperatures, trapping success has been low. As a result, they only have half the broodstock they need. They will continue to trap all the way up to spawning, but they will likely fall short of the program requirements. Tonseth said that they have been retaining both natural and hatchery-origin fish. Hillman asked what the program size is and how short they will be. Tonseth said they are short by 50%. Truscott asked what the target for hatchery-origin fish is. Tonseth said that there is no target, and they are keeping everything they catch.

Tonseth said that for the Chelan Falls summer Chinook Salmon program, per the broodstock collection protocols, by August 15, if they anticipate a shortfall, they will use an alternate source (from Wells Dam). By August 15, they only had two fish. The program goal is 354 fish. They are continuing to trap at Chelan Falls, but it looks like they will get everything they need from the Wells Dam volunteer trap. Willard said they will continue to trap at the Chelan Falls trap.

III. Administration

A.

Next Meetings

The next meetings of the HCP-HCs and PRCC HSC will be held on September 18 and 19, 2024; October 16, 2024; and November 20, 2024. Meetings are in person and will be held at a location to be determined.

IV. Attachments

Attachment A List of Attendees
Attachment B Spawning Distribution of Spring Chinook in the Chewuch River

Attachment A
List of Meeting Attendees

Name	Organization
Natasha Winnacott	Anchor QEA
Larissa Rohrbach[o]	Anchor QEA
Tracy Hillman	BioAnalysts, Inc.
Ross Renick	Chelan PUD
Catherine Willard*	Chelan PUD
Tom Kahler*	Douglas PUD
John Rohrback*	Douglas PUD
Brandon Kilmer[o]	Douglas PUD
Rod O'Connor‡	Grant PUD
Todd Pearsons‡[o]	Grant PUD
Tim Taylor[o]	Grant PUD
Mike Tonseth*‡[o]	Washington Department of Fish and Wildlife
Matthew Maxey*‡	U.S. Fish and Wildlife Service
Brett Farman*‡[o]	National Marine Fisheries Service
Keely Murdoch*‡[o]	Yakama Nation
Cory Kamphaus*‡	Yakama Nation
Kirk Truscott*‡	Confederated Tribes of the Colville Reservation

Notes:
* Denotes HCP-HCs member or alternate
‡ Denotes PRCC HSC member or alternate
[o] Joined remotely

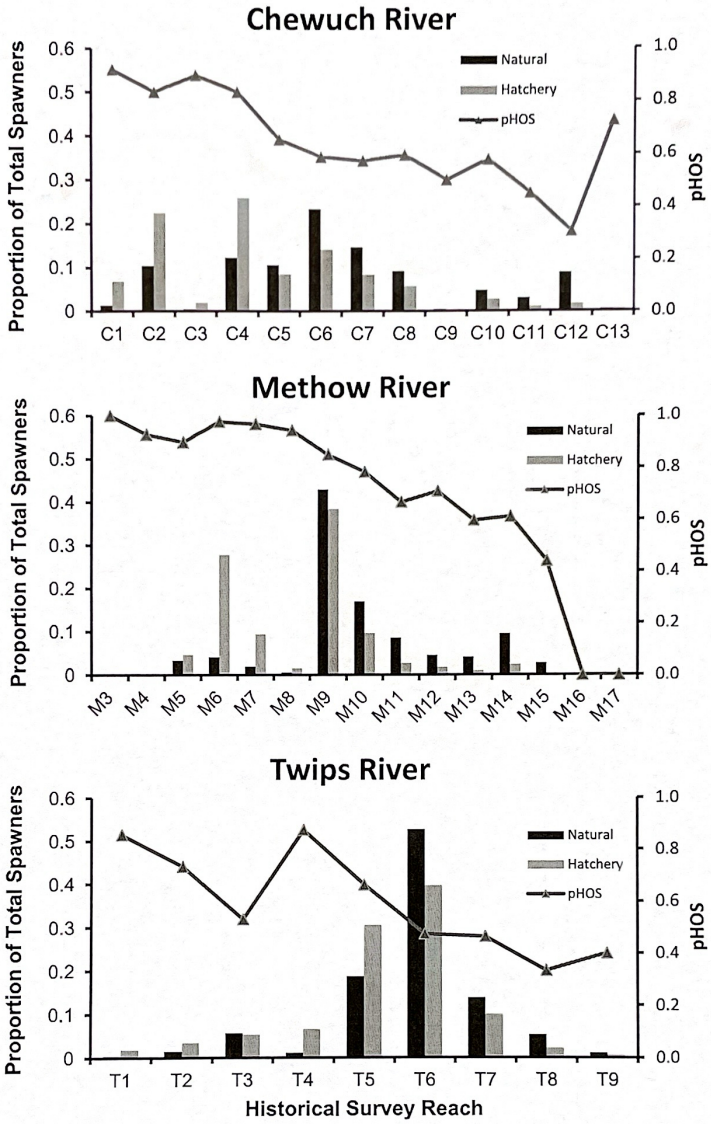

Figure 17. Proportion of hatchery- and natural-origin spring Chinook Salmon spawners within a stream that were observed within each historical reach on the Chewuch River (top), the Methow River (middle), and the Twisp River (bottom) during the period 1996-2018. Here, the proportion of natural-origin or hatchery-origin spawners across historical reaches sum to "1.00." The line represents the proportion of hatchery-origin spawners within each historical reach.