FINAL

720 Olive Way, Suite 1900
Seattle, Washington 98101
206.287.9130

ANCHOR QEA

Memorandum

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

Date: March 15, 2018

From: Tracy Hillman, HCP Hatchery Committees Chairman

cc: Sarah Montgomery, Anchor QEA, LLC

Re: Final Minutes of the February 21, 2018 HCP Hatchery Committees Meeting

The Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plan (HCP) Hatchery Committees meeting was held at the Grant PUD office in Wenatchee, Washington, on Wednesday, February 21, 2018, from 9:00 to 12:30 p.m. Attendees are listed in Attachment A to these meeting minutes.

Action Item Summary

- Andrew Murdoch (Washington Department of Fish and Wildlife [WDFW]) will write an overview of proposed expanded sampling at the off-ladder adult fish trap (OLAFT) at Priest Rapids Dam (Item I-A). *(Note: this item is ongoing.)*
- Mike Tonseth will coordinate with Todd Seamons (WDFW) to produce an outline or recommended approach for genetic monitoring (Item I-A). *(Note: this item is ongoing.)*
- Mike Tonseth will coordinate with Todd Seamons regarding reviewing the memo, "Alternatives for Methow Basin conservation steelhead programs" (Item I-A). *(Note: this item is ongoing.)*
- Mike Tonseth will send his revised version of the memo, "Alternatives for Methow Basin conservation steelhead programs" to Brett Farman (Item I-A).
- Brett Farman will coordinate with Craig Busack (National Marine Fisheries Service [NMFS]) regarding reviewing the memo, "Alternatives for Methow Basin conservation steelhead programs" (Item I-A). *(Note: this item is ongoing.)*
- Mike Tonseth will invite Andrew Murdoch to the March 12, 2018 Hatchery Committees meeting to discuss steelhead escapement methodology (Item I-A).
- Sarah Montgomery will reconfigure the Extranet site to sort permits and Biological Opinions (BiOps) by species and date and upload the related documents (Item I-A).
- Todd Pearsons will ascertain fish salvage activities at Priest Rapids and Wanapum dams, and report back to the Hatchery Committees for coordination purposes regarding lethal removal of 12- to 18-inch hatchery-origin *Oncorhynchus mykiss* (Item IV-A).
- Kirk Truscott will work with Casey Baldwin (Colville Confederated Tripes [CCT]) to summarize the CCT's current protocols for genetic sampling (Item IV-D).

- Tracy Hillman will distribute the Draft Hatchery Program Timelines for Hatchery Committees review (Item IV-E). *(Note: Hillman sent these to Montgomery who distributed them to the Hatchery Committees on February 21, 2018.)*
- Tom Kahler and Greg Mackey will provide historical program information to Tracy Hillman for incorporation in the Draft Hatchery Program Timelines (Item IV-E).
- Tracy Hillman will review aspects of the Independent Scientific Advisory Board's (ISAB)'s *Review of Spring Chinook Salmon in the Upper Columbia River* under Hatchery Committees' purview (Item IV-F).

Decision Summary

- The Wells Hatchery Committee approved the hatchery portion of the 2018 Wells HCP Action Plan, as follows: Douglas PUD, WDFW, U.S. Fish and Wildlife Service (USFWS), NMFS, Yakama Nation (YN) and CCT approved on February 21, 2018 (Item II-A).

Agreements

- The Hatchery Committees approved the lethal removal of all known hatchery-origin *O. mykiss* between 12 and 18 inches at Chelan PUD and Douglas PUD hydroelectric projects during fish rescues associated with fishway maintenance outages (Item IV-A). *(Note: This effort is part of adult management. Grant PUD [PRCC HSC] stated they would need to follow up with facility staff about feasibility.)*

Review Items

- Sarah Montgomery sent an email to the Rocky Reach and Rock Island Hatchery Committees on February 21, 2018, notifying them that the draft Chelan PUD 2018-2020 Steelhead Release Plan is available for review, with comments due to Catherine Willard by March 7, 2018.

Finalized Documents

- No documents have been recently finalized.

I. Welcome

A. Review Agenda, Review Last Meeting Action Items, and Approve the January 17, 2018 Meeting Minutes (Tracy Hillman)

Tracy Hillman welcomed the Hatchery Committees and asked for any additions or changes to the agenda. The following items were added:

- Kirk Truscott added an update on genetic sampling for HCP program species
- Hillman added a discussion about the ISAB's recent report
- Hillman also added an item for his revised timelines for HCP program species

The Hatchery Committees representatives reviewed the revised draft January 17, 2018 meeting minutes. Sarah Montgomery said there are some outstanding comments, which the Hatchery Committees reviewed and addressed. Hatchery Committees representatives present approved the draft January 17, 2018 meeting minutes as revised.

Action items from the Hatchery Committees meeting on January 17, 2018, and follow-up discussions were addressed *(note: italicized text below corresponds to agenda items from the meeting on January 17, 2018)*:

- *Andrew Murdoch (Washington Department of Fish and Wildlife [WDFW]) will write an overview of proposed expanded sampling at the off-ladder adult fish trap (OLAFT) at Priest Rapids Dam (Item I-A).*
  Mike Tonseth suggested inviting Andrew Murdoch to the March 12, 2018 Hatchery Committees meeting to discuss changes in methodology to estimate steelhead escapement, and then again to the April 18, 2018 Hatchery Committees meeting to discuss proposed expanded sampling at the OLAFT. He said changes in escapement methodology are based on sampling at the OLAFT. Hatchery Committees representatives present stated that this would be helpful, and Tonseth said he would invite Andrew Murdoch to the March 12, 2018 Hatchery Committees meeting.
- *Mike Tonseth will coordinate with Todd Seamons (WDFW) to produce an outline or recommended approach for genetic monitoring (Item I-A).*
  This item is ongoing. Tracy Hillman suggested Tonseth review the ISAB's comments regarding genetic monitoring.
- *Sarah Montgomery will distribute the approved Chelan PUD Coho Obligation Statement of Agreement (SOA) to the Hatchery Committees (Item II-A).*
  This item is complete. Montgomery distributed the SOA on January 22, 2018.
- *Tom Kahler will send Douglas PUD's 2018 Wells HCP Action Plan to the Hatchery Committees for review (Item IV-A).*

This item is complete. Sarah Montgomery distributed the plan on January 22, 2018.

- *The Methow Basin Steelhead Small Working Group will revise their memorandum, "Management alternatives for Methow Basin conservation steelhead programs," to incorporate backup broodstock collection locations for Twisp River steelhead and will distribute a revised version for review (Item IV-C).*
  This item is complete. Mike Tonseth said he made revisions to the memorandum after the Hatchery Committees January 17, 2018 meeting, and sent it to Todd Seamons for review (see following action item). Based on feedback from Seamons, Tonseth said the Methow Basin Steelhead Small Working Group can further revise the memorandum. Keely Murdoch said she thought the pilot study is currently planned and agreed-to for only one season. Tonseth agreed and said the purpose of the geneticists' review is to identify any long-term red flags in continuing the alternative, should it be agreed to for future years.
- *Mike Tonseth will coordinate with Todd Seamons (WDFW) regarding reviewing the memorandum, "Management alternatives for Methow Basin conservation steelhead programs," before the February 21, 2018 Hatchery Committees meeting (Item IV-C).*
  This item is ongoing. Tonseth sent the revised memorandum to Seamons, who is reviewing it.
- *Brett Farman will coordinate with Craig Busack (National Marine Fisheries Service [NMFS]) regarding reviewing the memorandum, "Management alternatives for Methow Basin conservation steelhead programs," before the February 21, 2018 Hatchery Committees meeting (Item IV-C).*
  This item is ongoing. Mike Tonseth will send the revised memorandum to Farman so that Busack can review it.
- *Mike Tonseth and Sarah Montgomery will compile permits and Biological Opinions (BiOps) applicable to HCP programs and post them to the Extranet site (Item VI-A).*
  This item is ongoing. Montgomery said she has been coordinating with Julene McGregor (Douglas PUD) to change the organization of the permitting section of the Extranet site. She asked for feedback on how the permits and BiOps should be organized and stated that McGregor is currently updating the site so that permits can be sorted by "active" or "expired." Suggestions included organizing that section of the site by species and by date. Montgomery said she would work with McGregor to make these changes to the site, then upload the applicable documents.
- *Hatchery Committees representatives will continue to provide historical information to Tracy Hillman for incorporation in program and species timelines, particularly regarding Wenatchee steelhead, Methow steelhead, and Methow summer Chinook salmon (Item VI-C).*
  This item is complete. Hillman said he received most but not all of the needed information, and this will be discussed today.

- *Sarah Montgomery will poll the Hatchery Committees and Priest Rapids Coordinating Committee (PRCC) Hatchery Sub-Committee to determine the March meeting date (Item VII-A).* This item is complete. The Hatchery Committees plan to meet on March 12, 2018.

II. Douglas PUD

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

Tom Kahler said the draft 2018 Wells HCP Action Plan (Attachment B) has been available for review and asked for any input. (Note: Sarah Montgomery distributed the draft 2018 Wells HCP Action Plan on January 22, 2018.) Tracy Hillman asked if review and approval of the broodstock collection protocols were added the plan. Kahler said yes. No further input was provided, and the Wells HCP Hatchery Committee approved the hatchery portion of the 2018 Wells HCP Action Plan as follows: Douglas PUD, WDFW, USFWS, NMFS, YN and CCT approved on February 21, 2018. Hillman said the action plan will be discussed in the Wells HCP Coordinating Committee.

B. Methow Steelhead Broodstock Collection Update (Tom Kahler)

Tom Kahler said Michael Humling (USFWS) sent an update via email to the representatives of the Wells HCP Hatchery Committee pertaining to broodstock collection for the Methow combined steelhead programs. (Note: Sarah Montgomery received the email and distributed the update to the full distribution list following the meeting on February 21, 2018.) Kahler summarized the update. He said so far, broodstock collection for the programs via angling is going well, though it is difficult to directly compare with prior years because similar broodstock collection efforts have never been initiated so early in the season (several weeks earlier than usual) nor as low in the river. In summary, collection is going better than previous years. Matt Cooper said the fishing crew has collected 63 steelhead to date, with the plan that approximately 90% of the NOR target will be sourced from this angling effort, and 10% of the NOR target will be sourced from the Twisp River Weir (collection at the weir will begin in the next few weeks). Mike Tonseth said just over 50% of the target number of Safety-Net broodstock have been collected so far via angling. Cooper said the USFWS is assuming the conservation programs will achieve 100% natural-origin broodstock.

C. Steelhead Broodstock Collection at Wells Hatchery Volunteer Channel (Tom Kahler)

Tom Kahler said due an unexpected outbreak of *Columnaris* in the 2018 brood of steelhead at Wells Fish Hatchery, additional broodstock may be trapped as needed in the Wells Fish Hatchery volunteer channel. He said some of the programs should have enough broodstock, but it would be helpful to have backup or "insurance" broodstock for other programs. Mike Tonseth said a group of backup broodstock steelhead were collected in 2017 for the same purpose, and females from that group have already been used. Additionally, many other females died from *Columnaris*, which is not

common in steelhead. Tonseth said even if spring collection efforts are completed as planned, there may be a shortfall in broodstock with no ability to satisfy the shortfall unless back-up fish are collected now. Kahler said the facility is not currently operating for surplussing fish, but could be opened immediately so that fish can be held in ponds. Tonseth said the volunteer trap can be operated for adult management, so the steelhead can be collected under adult management but held until a decision is required on their fate (broodstock versus lethal removal or transfer to nonanadromous waters). If needed for broodstock, Tonseth said the National Oceanic and Atmospheric Administration would have to provide input. Tonseth summarized that WDFW and Douglas PUD plan to collect steelhead at the Wells Fish Hatchery volunteer channel and hold them in ponds until deciding whether the fish are needed as broodstock or should be treated as adult management. Tonseth said once WDFW and Douglas PUD know if and how many steelhead are needed for broodstock from this effort, they will update the Hatchery Committees; WDFW will also decide what to do with any fish that are held but not used for broodstock. Questions and comments followed.

Catherine Willard reminded Tonseth and Kahler that Chelan PUD requested steelhead from the volunteer channel. Kirk Truscott asked if the fish held at Wells Fish Hatchery would be treated in the holding ponds. Tonseth said they would be treated with peroxide and salt. Truscott suggested that any disease treatments applied to the fish would influence what WDFW decides to do with these fish after they are held and not used for broodstock. Kahler asked Tonseth if this collection and holding plan is included in the draft 2018 Broodstock Collection Protocols. Tonseth said the protocols are specific about how many fish are retained for collection, but these fish would be initially considered adult management fish. If some of the adult management fish being held at the hatchery are needed for broodstock and are transferred from the adult management holding area, further discussion would be necessary.

III. Chelan PUD

A. Draft 2018-2020 Steelhead Release Plan (Catherine Willard)

Catherine Willard shared Chelan PUD's draft 2018-2020 Steelhead Release Plan, which Sarah Montgomery sent to the Hatchery Committees on February 21, 2018, before the meeting. (Note: an updated version for review [Attachment C] was distributed following the meeting on February 21, 2018.) Willard summarized the plan, and questions and comments followed.

Willard said current steelhead release plans include overwinter acclimation at the Chiwawa Acclimation Facility (AF). This may have resulted in tradeoffs between minimizing stray rates and maximizing survival. Overwinter acclimation at the Chiwawa AF has likely reduced stray rates; however, mean juvenile survival to McNary Dam is generally lower for fish that are overwinter

acclimated than previous releases that were not overwinter acclimated at Chiwawa AF (see the background section of Attachment C for further details). Willard said the body size of steelhead smolts affects their post-release survival. Fish released from Chiwawa AF are smaller on average due to colder water, and this smaller size is correlated with lower survival. She said NMFS issued Permit No. 18583 to Chelan PUD and WDFW in December 2017, including a special condition to minimize residualism and maximize downstream migration. She said confounding variables at Chiwawa AF make it difficult to evaluate survival to McNary Dam.

Willard summarized the 2018 to 2020 release strategy objectives as follows:

- Evaluate survival based on size at release to McNary Dam to inform best hatchery management practices for hatchery releases that optimize homing fidelity, minimize residualism, maximize out-migration survival, and minimize negative ecological interactions (NMFS Wenatchee River Steelhead Section 10 Permit No. 18583).
- Evaluate rearing vessel Raceway 2 (RCY 2) (traditional flow through raceway) and partial water reuse circular vessel (RAS 1 and RAS 3).
- Minimize confounding variables (i.e., rearing vessel, release timing, flow conditions, release strategy, release location) to evaluate size at release.
- Use data collected from the 2018 to 2020 Wenatchee River Steelhead release to assess applicable monitoring and evaluation (M&E) objectives (i.e., Objectives 4 and 6) for the Wenatchee River summer steelhead hatchery program (Hillman et al. 2017[1]).

She said passive integrated transponder (PIT) tagging and analysis for this program will focus on two comparisons: body size and vessel type. She reviewed the PIT-tagging numbers for each group and said John Skalski (Columbia Basin Research) provided a power analysis and sample size calculation to inform these numbers. The release plan is to truck-plant all PIT-tagged fish on the same day at the same location and Willard asked that the Hatchery Committees representatives consider where the fish should be released.

Tracy Hillman asked if large fish are being studied alongside the medium and small-size groups identified in the plan. Willard said, after further consideration there are not very many fish in the "large" size category, but large fish encountered will be PIT-tagged. Mike Tonseth said the size break between small and medium is a 140-millimeter (mm) fork length, and the groups have fish of mixed parental origin because there are not enough fish and tags to do a size comparison by parental origin alone.

[1] Hillman, T., T. Kahler, G. Mackey, A. Murdoch, K. Murdoch, T. Pearsons, M. Tonseth, and C. Willard, 2017. Monitoring and evaluation plan for PUD Hatchery Programs, 2017 update. Report to the HCP and PRCC Hatchery Committees, Wenatchee, WA.

Tonseth said one concern discussed during the January 17, 2018 Hatchery Committees meeting was where fish would be released in the basin. He said this plan would continue to release fish in the lower Wenatchee basin, but they would be direct-planted instead of spring-acclimated at Blackbird Pond. Kirk Truscott said there is potential for more residuals from this program comingling with wild cohorts if fish are planted above Tumwater Dam. Tonseth said if the fish are released in the Chiwawa River, they could be planted upstream from the PIT-tag antenna array and smolt trap for evaluation purposes. Tonseth said for post-release evaluation, electrofishing could be more easily completed in the Chiwawa River than in the upper Wenatchee River, for comparison. Truscott said because residuals could go anywhere in the Wenatchee basin, he suggests electrofishing and angling for residuals in more than just the river that the fish are released in. Willard said the literature suggests steelhead mainly residualize near their release location, but also up to 8 kilometers away. Tonseth said residuals hold in Tumwater Canyon, for instance.

Tonseth said the plan also incorporates non-lethal evaluation of early maturation, with a long-term plan to lethally measure early maturation. The non-lethal evaluation will help determine baseline conditions for the program to which future results can be compared.

Regarding Table 1 of the plan, Truscott said even if a difference in survival is found between medium and small fish, this plan would not determine whether that is related to parental origin or size (i.e., low survival for small hatchery-by-hatchery fish only would draw down the survival for the whole small size group). Hillman said the linear model used to evaluate these data will produce an interaction term between parental origin and size. Tonseth said a within-year evaluation of the influence of parental origin would be difficult to complete, but over the 3-year period, it could be analyzed. If there is an indication that parental origin is a factor in survival, the study design can be modified in future years (by adding or reassigning PIT tags) to better analyze that influence. Hillman said with 3 years of data, an analysis of variance can be completed, and if the effect of parental origin is large, it will likely be detected; however, if the effect of parental origin is small, it will likely not be detected because of small sample size. Willard said adding enough PIT tags to evaluate the effects of parental origin on survival is not feasible due to the time it would take to hold and tag that many fish.

Keely Murdoch said analyzing the effects of parental origin and size on survival might be more robust over multiple years anyway, because results may be different under a variety of conditions. Hillman agreed and said if there is a year effect, it can be evaluated using the data.

Hillman asked if there is a predefined cutoff for small versus medium, or if the cutoff will be a percentile of the fish sampled. Willard said the cutoff is 140 mm length at release, so the cutoff is back-calculated based on expected growth. Keely Murdoch asked if the Methow program has the same methodology, suggesting another potential comparison. Tonseth said the Methow program's

permit has not been issued by NMFS yet, but will include requirements for measuring and monitoring residualism. Tonseth said the Methow programs include Winthrop National Fish Hatchery's 2-year smolt conservation program, so there is an effect of being a 2-year smolt regardless of the size of the smolt. Hillman asked if NMFS directs how to measure residualism and survival and how to determine baseline conditions. Tonseth said no, the Hatchery Committees decide on the methodology as the permit itself does not state specific guidance.

Truscott asked if a difference in tag burden needs to be considered for the small compared to medium fish. Tonseth said the PIT-tagging protocols include a cutoff that fish less than 65 or 70 mm should not be tagged. Truscott suggested considering tag burden, and one way to normalize tag burden would be to put smaller tags in the smaller fish. Tom Kahler said because there are detection differences for tags of different sizes, using different tag sizes is not a feasible solution for normalizing tag burden in this study.

Willard said tagging for this plan will start soon, and Chelan PUD would like feedback on release location. Tonseth said the fish should not be released straight from the Chiwawa AF because the fish would overwhelm the PIT-tag array with detections. He said the fish should be released upstream of the array—far enough upstream that they would not pass in a shoal—and the smolt trap downstream of the array should be pulled during the release.

Hillman made slight revisions to the document based on input from the representatives present, and Montgomery said she will send the revised version out for review. Willard requested comments and revisions by March 7, 2018, and said the plan will be discussed again at the March 12, 2018 Hatchery Committees meeting.

IV. Joint HCP-HC/PRCC HSC

A. Lethal Removal of Steelhead and Section 10 Permits (Mike Tonseth)

Mike Tonseth said during the Coordinating Committee's January meeting, Chelan PUD presented results of fish salvage activities due to ladder dewatering. He said there was a substantial number of ad-clipped *O. mykiss* collected, varying in size. He said because hatchery-reared rainbow trout are not released in the Columbia River, other than in the Lake Roosevelt area, WDFW is concerned about hatchery steelhead remaining in the river. He added that the fish collected by Chelan PUD did not appear to be triploids (triploid trout are released in Rufus Woods Reservoir). Tonseth said WDFW proposes to lethally remove these 12- to 18-inch fish and examine their tags to determine origin. Tonseth said WDFW's permits allow for lethal removal of hatchery-origin steelhead at dams, traps, and weirs. He said because the fish are obviously of hatchery origin, this activity would fall under adult management. If removed, the fish would be measured and weighed, gender would be determined,

and they would be scanned for coded wire tags. Tags would be removed and read, and other basic information would be collected. Tonseth asked about fish salvage and dewatering activities at Priest Rapids and Wanapum dams. Pearsons said he would check and report back to the committees.

Tonseth said regarding recreational fishery collection of these fish, the 12- to 18-inch fish are too small to be collected by anglers. However, WDFW may add an element in the steelhead fishery in future years to lower the retention size to target these hatchery-origin fish. Keely Murdoch agreed that it would be good to know the origin of these hatchery fish, and no matter where they are coming from, it is beneficial to remove them. Tracy Hillman said he does not think there are many of these fish in the reservoirs, as Grant PUD collected only seven rainbow trout in a recent intensive sampling effort. Tonseth suggested that the fish may prefer ladders and gather there. Tom Kahler said that *O. mykiss* of the size that Chelan PUD reported are routinely encountered in the Wells fishways, but during the last dewatering of the Wells Dam east collection gallery, staff found 8 to 10 large cutthroat trout, and fewer *O. mykiss* than normally encountered. Tonseth said dewatering and fish salvage occurs annually, so while this would not be a regular collection effort, it is an opportunity to remove fish, recover tags, and determine their origin. When asked about Section 10 permit coverage for this activity, Tonseth said the activity falls under adult management, so no permit changes would be needed. An expansion or ability to retain or lethally remove these fish as part of a conservation fishery (something WDFW is pursuing) would be a separate consultation, though. Brett Farman agreed with Tonseth about permit coverage and said he would provide further input if he finds anything in current permits that would be inconsistent with allowing this activity. Tonseth said the final fate of these fish (e.g., placement in nonanadromous waters or donated to tribes or food banks) has not yet been determined and would be influenced by how the fish are handled. He also added that knowing the dewatering schedule for PUD facilities would be helpful so WDFW can assign staff and coordinate the removal effort.

The Hatchery Committees approved the lethal removal of all known hatchery-origin *O. mykiss* between 12 and 18 inches at Chelan PUD and Douglas PUD hydroelectric projects during fish rescues associated with fishway maintenance outages. Grant PUD (PRCC HSC) stated they would need to follow up with facility staff about feasibility.

B. 2018 Broodstock Collection Protocols (Mike Tonseth)

Mike Tonseth said the draft 2018 Broodstock Collection Protocols will be available for review soon, but the federal spring Chinook salmon forecast for Leavenworth and Winthrop national fish hatcheries and the spring Chinook salmon forecast for the Wenatchee basin are still pending. Todd Pearsons asked if the protocols are similar to 2017 excepting the high incidence of disease and need to collect additional broodstock. Tonseth said most programs will see very little change from 2017. Additional trapping is proposed at the Chiwawa Weir based on new bull trout information, and a lower

probability of meeting broodstock collection goals if the trapping schedule is not modified. Tonseth said he expects to distribute the draft protocols for review by March 2, 2018, depending on the federal forecast for spring Chinook salmon. Tonseth said the steelhead forecast is produced by the Technical Advisory Committee, and he expects it to be not very robust. He said summer Chinook salmon may have a more surprising forecast or run than other species in 2018. Tonseth summarized that the draft plan will be available for review soon and will be a discussion item at the Hatchery Committees March 12, 2018 meeting, with the final deadline of approving it by April 15, 2018. Tonseth suggested that during review, representatives need to check the marking appendix to be certain it reflects anticipated mark types. Pearsons asked if the first review period for the protocols is the first time that hatchery staff and managers see the contents of the protocols, as they might have major changes to incorporate like fecundity. Tonseth said data included in the protocols are sourced from M&E documentation associated with each program, so as long as numbers being reported as part of M&E are correct, the protocols should be accurate. Kirk Truscott asked if the methods for forecasting runs are the same between USFWS and WDFW. Tonseth said the estimates will be consistent with previous years, but he is not sure whether WDFW and USFWS use the same models in their forecasting. Truscott suggested reviewing the models prior to development of the protocols in 2019.

C. NMFS Consultation Update on National Environmental Policy Act Process (Emi Kondo)

Emi Kondo (NMFS) said she has updates regarding the National Environmental Policy Act (NEPA) process for NMFS consultations. She said NMFS retained Chuck Peven (Peven Consulting, Inc.) to write the Environmental Assessment (EA) for Methow steelhead and the unlisted programs (summer/fall Chinook salmon for Wells, Methow, Chelan Falls, Dryden, and Priest Rapids). She said the first draft will likely be available for internal review soon. After that, applicants will have a chance to review it, then it will be available for public comment. Kondo said during the EA process, NMFS generally reaches out to any tribes involved for informal discussion, and asked Kirk Truscott and Keely Murdoch whether she should coordinate with anyone other than them. Truscott and Murdoch said no, they will distribute the information internally as needed. Kondo said this general approach mirrors that for the Methow spring Chinook EA. After the NEPA process is complete, she said Section 10 permits can be issued.

D. Genetic Sampling for HCP Program Species (Kirk Truscott)

Tracy Hillman said Casey Baldwin emailed him asking about the genetic sampling and analysis plan for HCP program species, which was a topic of discussion in the Hatchery Committees in 2017. Baldwin asked about progress on the protocols for sample size, selection of subpopulations, and other items, to inform a baseline genetics evaluation for Okanogan steelhead. Mike Tonseth said he

has been coordinating with Todd Seamons to review the genetic sampling and analysis timeline and said he would check in with Seamons again. Hillman suggested Tonseth and Seamons also consider recommendations and questions from the ISAB in their report (see page 222, and executive summary).

Todd Pearsons said McLain Johnson (WDFW) compiled data and proposed a schedule, which the Hatchery Committees reviewed and discussed, but sample sizes and analysis intervals needed further input from geneticists. Pearsons said the 10-year comprehensive review is coming up, and it would be helpful to include the 2019 and 2020 genetic analyses in that report. Tonseth said the original genetic baselines for HCP program species are no longer relevant, so the timelines need to be reviewed to determine appropriate baselines. Pearsons said as long as all the programs are collecting the needed samples, the analyses and reporting can be flexible. Kirk Truscott said CCT are collecting samples from juveniles through M&E activities, but more exact methods would help determine how many need to be collected, at which life stage, and other specifics. Pearsons suggested the lead on this task for CCT could coordinate with Dave Duvall (Grant PUD) regarding collection methods.

E. Draft Hatchery Program Timelines (Tracy Hillman)

Tracy Hillman shared the most recent Draft Timelines for HCP Program Species. He summarized the status of each timeline as follows:

- Wenatchee spring Chinook salmon – complete but needs to be reviewed by the Hatchery Committees
- Methow spring Chinook salmon – needs more information from Douglas PUD and further review by the Hatchery Committees
- Entiat spring Chinook salmon – new, complete but needs to be reviewed by the Hatchery Committees
- Okanogan spring Chinook salmon – this program does not have a timeline as it is not under the purview of the Hatchery Committees
- Wenatchee summer steelhead – nearly complete
- Methow summer steelhead – needs more information from Douglas PUD
  - Mike Tonseth said this program was largely unchanged until steelhead were listed and then it changed significantly after recalculation and when the conservation program was added.
  - Tom Kahler said the USFWS' 2-year smolt program was also a significant change, as was the WNFH transition to local brood rather than relying on collection at Wells Hatchery.
- Entiat steelhead – Hillman said steelhead were released in the Entiat until about 1999. He asked if any other programs are putting steelhead in the Entiat River. Tonseth said no, therefore this timeline is complete.

- Wenatchee summer Chinook salmon – complete but needs to be reviewed by the Hatchery Committees
  - Hillman said this timeline was straightforward because it is not a listed population
- Methow summer Chinook salmon – needs more information from Chelan PUD
- Entiat summer Chinook salmon – complete but needs to be reviewed by the Hatchery Committees
- Wenatchee sockeye – complete, but needs to be reviewed by the Hatchery Committees
- Methow sockeye – complete
  - Hillman said there were very few releases of sockeye into the Methow River, but there are still annual returns.
- Entiat sockeye – complete
  - Hillman said there was one documented release of sockeye salmon into the Entiat River.
- Okanogan sockeye – more information from Douglas PUD and CCT is needed
  - Kahler said this program continued and overlapped in time with the development of the Okanagan Fish Water Management Tool.

Questions and comments followed Hillman's summary. Kahler said in 2015, which was an abnormal water year, there were many sockeye spawning in the Twisp River. He said these fish are likely strays from another area, but there may also be a local stock. Hillman said Fred Utter (University of Washington) did genetic work on sockeye in the Methow River in the 1990s and found there was a blend of Wenatchee and Okanogan genetics in the fish. Matt Cooper said many sockeye were reared in the area on local water sources, but transported for release to other areas, so they may be homing to a natal water source. Cooper said sockeye numbers in the Entiat and Twisp rivers are variable, but at least a few fish spawn there every year. Hillman added that sockeye spawn in the Methow River in a few areas every year.

Hillman said it is difficult to determine the precise year a statistical break should occur because many of the major decisions and changes to programs happened over multiple years.

Hillman said he will distribute the timelines for review and asked for further input, specifically from Douglas PUD.

F. Independent Scientific Advisory Board Report (Tracy Hillman)

Tracy Hillman said the ISAB completed the report, *Review of Spring Chinook Salmon in the Upper Columbia River*. Hillman said the executive summary includes several recommendations, one of which is to convene an oversight committee for all of the committees working on different pieces of spring Chinook salmon recovery. Tom Kahler said there is not one entity with oversight over

everything going on in the basin besides NMFS due to the various agreements such as HCPs, settlement agreements, harvest agreements, recovery plan, and permits.

Hillman said another recommendation is to develop an all-H research, monitoring, and evaluation plan. The report indicated that there is a lot of monitoring occurring in the basin, but each group has their own M&E plan with little coordination among groups.

Hillman said the report compares upper Columbia River spring Chinook salmon populations to Snake River spring/summer populations and to upper Columbia River summer Chinook salmon. He said there has been greater loss of genetic diversity in upper Columbia populations because of loss of populations upstream from Chief Joseph Dam and hatchery programs. He said the ISAB identified conserving genetic diversity as very important and suggests that supplementation programs focus on diversity. He said the ISAB specifically identified the loss of local adaptation of Chewuch River spring Chinook salmon. He said the overall report is supportive and provides recommendations to consider.

Hillman said the ISAB also reviewed the 2017 Hatchery M&E Plan and its appendices. Carl Schwarz (Simon Fraser University) specifically provided feedback on Appendix E. He said Schwarz recommends setting up hypotheses for equivalence testing, which would require the committees to determine in advance what effect size should be analyzed. Hillman said Schwarz also provided recommendations about Before-After-Control-Impact (BACI) designs and selecting reference populations based on biology rather than statistics. Hillman said Schwarz provided a mixed additive model for analyzing BACI data. Hillman will follow up with Schwarz and the Hatchery Committees about potential changes to analyses. Todd Pearsons said the statistical approach was used to determine reference populations, because it was not possible to identify whether or not populations were tracking similar biological factors. So, while statistics were used, the reference populations were still chosen based on biology—they were chosen based on which populations were responding to similar biological, geographical, and climatological factors. Hillman said Schwarz' linear model can also analyze the populations one-to-one, and as a composite. Another recommendation was to log-transform the data, because the data follow a multiplicative process. He said the ISAB reviewers had a different understanding of stray rates than the Hatchery Committees, who have generally adopted Technical Recovery Team guidelines.

Hillman suggested that he read through the report and start updating M&E Plan appendices and analyses as needed. Those requiring additional input might warrant reconvening the Hatchery Evaluation Technical Team, or further discussions by the Hatchery Committees.

Pearsons said Grant PUD also plans to do a thorough read of the report and its recommendations. He said different statisticians can have varying opinions about Bayesian statistics, and Grant PUD may

not support moving to Bayesian analyses right away. He asked for Hillman to wait on making edits or discussing this in much depth with Schwarz until Grant PUD has read the suggestions and compiled any specific questions. Hillman agreed and said he would not recommend moving to a Bayesian approach immediately, but it is something to consider.

Hillman said the ISAB also provided other recommendations and he encouraged Hatchery Committees members to review the ISAB report.

V. HCP Administration

A. Next Meetings

The next Hatchery Committees meetings are on March 12, 2018 (Grant PUD), April 18, 2018 (tentatively planned for Wells Fish Hatchery), and May 16, 2018 (Grant PUD).

VI. List of Attachments

Attachment A List of Attendees
Attachment B Draft 2018 Wells HCP Action Plan
Attachment C Draft 2018-2020 Steelhead Release Plan

Attachment A
List of Attendees

Name	Organization
Tracy Hillman	BioAnalysts, Inc.
Sarah Montgomery	Anchor QEA, LLC
Catherine Willard*	Chelan PUD
Tom Kahler*	Douglas PUD
Todd Pearsons‡	Grant PUD
Peter Graf‡	Grant PUD
Deanne Pavlik-Kunkel‡	Grant PUD
Mike Tonseth*	Washington Department of Fish and Wildlife
Alf Haukenes†	Washington Department of Fish and Wildlife
Matt Cooper*	U.S. Fish and Wildlife Service
Michael Humling†	U.S. Fish and Wildlife Service
Brett Farman*†	National Marine Fisheries Service
Emi Kondo†	National Marine Fisheries Service
Kirk Truscott*	Colville Confederated Tribes
Keely Murdoch*	Yakama Nation

Notes:
* Denotes Hatchery Committees member or alternate
† Joined by phone
‡ Joined for the joint HCP-HC/PRCC HSC discussion