

## **PRCC Hatchery Subcommittee Meeting**

Thursday, August 18, 2016

Via Conference Call

Meeting Summary

### PRCC HSC Members

Bill Gale, USFWS  
Matt Cooper (alt), USFWS  
Peter Graf, GPUD (alt)  
Keely Murdoch, Yakama Nation  
Todd Pearson, GPUD  
Justin Yeager, NOAA

### Other Participants

Deanne Pavlik-Kunkel, GPUD  
Elizabeth McManus, Facilitator  
Andy Chinn, Facilitator

### Decisions

A. HSC members approved the July meeting summary as amended, pending WDFW approval.

### Actions

1. Ross Strategic will follow up with HSC member registration for GPUD's SharePoint site and troubleshoot SharePoint issues as needed.

### I. Updates and Meeting Summary Review

**A. July Conference Call Summary** – HSC members approved the July conference call summary as amended.

(Note: Please refer to the 8/17 HCP-HC meeting summary for joint HCP-HC and PRCC-HSC discussions (Appendix A).

### II. Permit Updates

**A. NOAA** – Permit update summary is below.

- Methow Spring Chinook Conservation and Methow Safety Net  The biological opinion will be sent to applicants August 19 for 2 week review
- The NEPA EA is under NMFS internal review  Methow Steelhead:
- Methow steelhead gene flow discussions occurred in July and are

- close to agreement; next meeting is September 1  Wenatchee Steelhead: ○ NMFS biological opinion signed July 20, 2016 ○ Waiting for USFWS biological opinion before issuing Section 10 permits  Wenatchee Spring Chinook:
    - Biological opinion completed 2013 and reinitiation completed 2015
  - Okanogan Tribal Resource Management Plan:
    - NMFS still on track to complete biological opinion by end of 2016
  - Okanogan Steelhead Conservation and Chief Joseph spring/summer Chinook:
    - Biological opinion being drafted ○ NEPA EA in NMFS internal review
- B. **USFWS** – For the Wenatchee biological opinion, the effects of steelhead and chinook in the upper Wenatchee will be circulated for red flag review during the week of 8/22. Karl Halupka has been working on the memo describing permit coverage for Methow spring Chinook and will be sent to internal USFWS management review during the week of 8/22. The intent of the memo is to describe coverage from existing/prior consultation with USFWS on bull trout.

### **III. Nason Acclimation Facility**

- A. **Intake Screen Replacement** – The in-water work window closed on August 7, with most work completed by July 31. The new screen, wiring, and piping are complete and work crews are re-stringing electrical wire and connecting to the power source. Next steps for construction will include installing the operating panel, hooking up water, and installing the equipment to operate and the portable backup intake screen.

### **IV. HSC Document Sharing**

- A. **HSC SharePoint Site** – HSC members reviewed the protocol for editing documents in SharePoint.
- B. **Next Steps**
  - Ross Strategic will follow up with HSC member registration for GPUD's SharePoint site and troubleshoot SharePoint issues as needed.

### **V. Upper Columbia Salmon Recovery Board**

- A. **UCSRB Request to Review Upcoming Report** – Greer Maier will participate in an upcoming HC meeting to respond to any comments on the draft UCSRB hatchery report. This will be a joint HSC/HC agenda item.

## **VI. Wrap Up and Next Steps**

### **A. Next Meeting: Thursday, September 22, 2016**

### **B. Potential September Meeting Agenda Items**

- 2016 NCAF spring Chinook acclimation facility status

### **Meeting Materials**

The following documents were provided to HSC members in advance of this meeting:

- August meeting agenda
- July White River rotary trap summary
- July Nason Creek rotary trap summary

## **Appendix A: Joint Item Discussion Summary from August 2016 HCP Hatchery Committee Meeting**

### **II. Joint HCP-HC/PRCC HSC**

#### *A. USFWS Bull Trout Consultation Update (Bill Gale)*

Bill Gale said the BiOp covering hatchery programs in the Wenatchee basin will be distributed to the applicants for review next week (August 22 to 26, 2016). He said the draft memorandum regarding the Methow spring Chinook salmon program consultation will undergo internal review next week.

#### *B. NMFS Consultation Update (Justin Yeager)*

Justin Yeager said the Wenatchee River Steelhead BiOp was signed on July 20, 2016, and distributed to the applicants. He said NMFS will issue related Section 10 permits. Regarding the Methow River steelhead consultation, Yeager said NMFS has been working with WDFW on gene flow guidelines, and NMFS and WDFW are meeting on September 14, 2016, to discuss these further. Yeager said NMFS is also working with WDFW to develop a Methow steelhead adult management plan. Keely Murdoch asked to whom the Wenatchee River Steelhead BiOp was distributed on July 20, 2016. Mike Tonseth said the BiOp was distributed to the permit holders. Murdoch asked when the YN reviewed the BiOp. Yeager said he is not sure, because the BiOp was undergoing quality assurance/quality control review and internal review for several months. Yeager said he will check when YN reviewed the BiOp and let Murdoch know the date. Murdoch said NMFS has been working with WDFW on the Methow steelhead management plan and asked if the Hatchery Committees will have the opportunity to review the plan. Tonseth said yes.

Regarding the Methow spring Chinook salmon BiOp, Yeager said NMFS will send the draft to the permit applicants soon for a 2-week review. Yeager said, as part of the National Environmental Policy Act process, the draft Environmental Assessment is currently undergoing internal review. Todd Pearson asked which documents have been distributed regarding the Methow spring Chinook salmon consultation. Tonseth said only the Draft Terms and Conditions have been distributed. Kirk Truscott asked if Yeager has an update on the Tribal Resource Management Plan (TRMP) program or on the Okanogan steelhead Hatchery Genetic Management Plan. Yeager said he does not have an update on either plan.

#### *C. Review Draft Hatchery M&E Plan Appendices 3, 5, and 6(All)*

### Appendix 3 – Proportionate Natural Influence (PNI) and Proportion of Hatchery-origin spawners (pHOS) Targets and Sliding Scales

Catherine Willard displayed the document, “Revised Hatchery M&E Appendix 3,” which Sarah Montgomery distributed to the Hatchery Committees on July 12, 2016. Tracy Hillman said Todd Pearsons provided edits to Section 13, “Priest Rapids Fall Chinook,” which the Hatchery Committees reviewed.

The Hatchery Committees approved the Revised Hatchery M&E Plan Appendix 3. (Note: Montgomery distributed the Final Hatchery M&E Plan Appendix 3 to the Hatchery Committees following the meeting on August 17, 2016 [Attachment B].)

### Appendix 5 – Stray Rate Objectives

Willard displayed the document, “Revised Hatchery M&E Plan Appendix 5,” which Montgomery distributed to the Hatchery Committees on July 19, 2016. Questions and comments were discussed, and edits were made to the document.

Hillman said this appendix now defines three types of stray rates: 1) management strays; 2) genetic out-of-population strays; and 3) genetic within-population strays. Pearsons asked if programs designed with the goal that fish stray, such as reintroduction programs, are considered management strays under this definition. Mike Tonseth said that in the upper Columbia River, all current hatchery programs intend that fish return to their release location. Hillman said reintroduction programs would be considered an exception to the management stray definition.

Keely Murdoch said the footnote regarding Wenatchee steelhead that are acclimated at the Chiwawa Acclimation Facility and truck-planted at various locations is confusing. She said the goal of truckplanting steelhead in Nason Creek is that they return to Nason Creek. She said the Hatchery Committees had discussed developing overwinter acclimation facilities in both Nason Creek and the Chiwawa River; however, the Chiwawa River facility (on Wenatchee River water) alone was chosen with truck planting and short-term acclimation in YN’s Rolfin’s Pond in Nason Creek. She said if data later indicated that Nason Creek-released steelhead do not return to Nason Creek, an overwinter acclimation facility in Nason Creek would be revisited. Hillman asked if steelhead released in Nason Creek are differentially marked. Willard responded that they are not differentiated by external marks; however, it is known where passive integrated transponder (PIT) tagged fish are released. Murdoch said PIT-tag data and other technology regarding where steelhead are escaping are becoming available and will help

determine if steelhead released in Nason Creek return to Nason Creek. She said, at the time acclimation facility decisions were made, those data were not available. Tonseth said before steelhead were acclimated in-basin at the Chiwawa Acclimation Facility, the stray rates were 70 to 80% for fish reared at Turtle Rock Island. Willard deleted the footnote.

Kirk Truscott suggested mentioning the Okanogan spring Chinook salmon 10(j) “non-essential experimental” program. He said that program would be considered an exception to the definition of management stray, because fish released into the Okanogan River are expected to colonize smaller tributaries instead of homing back to the mainstem. Bill Gale suggested adding the text “reintroduction programs may be excluded,” which Willard added.

Truscott asked what the difference is between management strays and genetic within-population strays. Hillman used the Chewuch and Methow rivers spawning aggregate as an example. He said there is no genetic difference between fish in the Chewuch and Methow rivers, but from a management perspective, we want Chewuch-released fish to return to the Chewuch River. From a genetics perspective, it does not matter if Chewuch-released fish spawn in the Methow River. However, from a management perspective, it does matter. Truscott said it would be beneficial to add that example to the definition and state the difference between Methow Composite MetComp fish straying to the Twisp River, versus MetComp fish released in the Chewuch River spawning in the Methow River. Tonseth said the definition references “spawning aggregates,” such as in Hillman’s example. Hillman suggested adding the phrase “discrete sub-populations” to make the definition more clear.

Justin Yeager asked if these definitions are from the 2007 Technical Recovery Team Report, and said the TRT update these reports occasionally. Hillman said that the Upper Columbia Spring Chinook and Steelhead Recovery Plan is based on the 2007 TRT report. Because the Hatchery M&E Plan cites the Recovery Plan, which cites the 2007 TRT report, we could cite both the Recovery Plan and TRT document. Yeager requested that the Hatchery Committees have until Friday August 26, 2016, to review Appendix 5. The Hatchery Committees will review revised Hatchery M&E Plan Appendix 5 and provide approval or further edits to Montgomery by Friday, August 26, 2016. (Note: Montgomery sent an email to the Hatchery Committees on August 17, 2016, notifying them Revised Hatchery M&E Plan Appendix 5 [Attachment C] is available for review, with approval or comments requested by August 26, 2016. Montgomery distributed a revised version with Hillman’s edits to the Hatchery Committees on August 22, 2016, and a revised version with Tonseth’s edits on August 22, 2016. Further edits to Appendix 5 will be discussed during the Hatchery Committees September 21, 2016, conference call.)

## Appendix 6 – Rearing Targets

Willard displayed the document, "Final Hatchery M&E Appendix 6," which Montgomery distributed to the Hatchery Committees on July 24, 2016 (Attachment D). Hillman recalled that Tom Kahler had sent an email to the Hatchery Committees regarding many of the condition factor (also known as K-factor) targets in the appendix being less than 1.0. Hillman suggested making the target less than or equal to 1.0. Tonseth said it would be very difficult to produce a hatchery fish with a condition factor less than 1.0. He asked if a low condition factor correlates with high survival. Todd Persons asked what the source of the condition factor targets is. Matt Cooper said facility managers reviewed the targets. Hillman said the condition factor targets are from Piper et al., 1982. (Piper, R., I. McElwain, L. Orme, J. McCaren, L. Fowler, and J. Leonard, 1982. Fish hatchery management. U.S. Department of the Interior Fish and Wildlife Service, Washington D.C.) Tonseth said the tables in Piper et al. are not particularly reflective of the body profile of fish produced in hatcheries in the upper Columbia River basin. Cooper said one facility manager who reviewed Appendix 6 said a reasonable condition factor could be one plus or minus 10%, which would be considered an "ideal" condition factor. Persons said setting an unreachable target may be unreasonable, and said there are two ways to think about targets: 1) the target is considered an ideal; and 2) the target is an attainable goal, and when it is not met, changes are instituted. Persons suggested connecting the condition factor target to survival. He said the condition factor target should be good for the fish, and should be achievable. Tonseth said the word "target" implies that it is a hard and fast rule, and that a program should not be considered a failure if it does not meet an unrealistic target. Yeager asked if these condition factor targets are new. Hillman said before the 5-Year Hatchery M&E Report was completed, the condition factor target for programs was less than 1.0, which is nearly impossible for a program to reach. Therefore, instead of using less than 1.0, the average condition factor for some programs was used to represent a realistic value. He said an alternative to using less than 1.0 or the average condition factor, would be to perform quantile regression on length-weight relationships and use the 90th percentile as a target range. Gale said, if there is a biological reason, like higher survival, for the target to be set at less than 1.0, then it would be a reasonable target. Yeager said it is unknown how condition factor at release and survival are related. Tonseth said condition factor is a function of length and weight, and for stream-type fish, relatively skinny (higher length to weight ratio) fish generally have higher survival. Gale said it would be difficult to assess an individual covariate such as condition factor and survival, and studying it would require many PIT tags and a large monitoring effort. He said Piper et al. provides generally accepted anecdotal goals. Tom Kahler said the Methow programs stopped using condition factor targets from Piper et al. in 2006. Hillman said there is a correlation between size (length) and survival, but he is unaware of a correlation between condition factor and survival in the upper Columbia River basin. Gale stated that circular tanks produce leaner hatchery fish compared to raceways, and Willard agreed. Persons emphasized that the Hatchery Committees and PRCC HSC do not want to set targets that would hurt a program. Persons

suggested using the language “suggestions to hatchery staff” instead of “target” for condition factors in the table in Appendix 6.

Hillman said in the 5-year Hatchery M&E Report, the length and weight targets do not match the condition factor targets. If the length and weight targets are set, the condition factor is greater than 1.0, because it is a function of the length and weight targets. He said, during preparation of the 5-year Hatchery M&E Report, they found it impossible to meet both the length and weight targets. You can meet one but not the other. Kahler said, for the Methow programs, it was also impossible to reach the length and weight target at the same time. Tonseth said the strongest known correlation is between length and survival, so the target for condition factor should be linked to the length target. Willard said although some of the hatchery programs are currently PIT-tagging in the spring, which is closer to the time of release, not all programs are currently PIT tagging in the spring and historically fish were PITtagged in the fall. It is not feasible to study the survival of fish at varying lengths unless they are PITtagged in the spring. Tonseth said PIT-tagging in the spring could be considered for future evaluations. Truscott said the fish are fed based on fish-per-pound targets, not on length targets. Hillman said the target could then be set based on weight, and length could be calculated from the length-weight relationship.

Hillman asked if the HETT should discuss condition factor targets. Parsons said, if the hatchery managers manage the fish based on weight (FPP), then the committees should set a weight target and report length and condition factor instead of having a target. Gale said managing solely for weight is insufficient, and a target for length at least should be included. Parsons said the point of these targets is to have a fish with good survival; in order to assess that, a survival target should be set and reported on in the 5-year Hatchery M&E Report. Gale asked what would be considered “good” survival, and Parsons replied that good survival could be determined relative to past survival and to other programs. Gale said NMFS has released a set of goals for fish length; therefore, the programs should have length targets. Kahler said, in the history of the Methow program, there has never been a condition factor less than 1.0. Hillman said the Chiwawa spring Chinook salmon program has never met its length target, but it has met its weight target. He said, based on the growth of the fish, the length and weight targets do not match. He said, if reasonable length and weight targets are set, a condition factor target is not needed. Right now, however, it appears the length target is not appropriate for some programs and should be adjusted.

Tonseth said the programs have length, weight, and condition factor targets because past permits have required the progeny to be released at similar length, weight, and condition factor to natural fish. He said it is an appropriate time to determine what size of fish optimizes survival and minimizes negative ecological interactions, and set that as the operational goal specific to each stock, program, and facility.

He said the Hatchery Committees should discuss this during the next 5-year M&E update to see if a correlation can be determined between survival and size of fish. Hillman suggested removing the condition factor column. Gale said it should be noted that the condition factor or fork length targets will be determined based on data from the pending 5-Year Hatchery M&E Report. Willard made that edit. Tonseth said there are some programs for which size and survival cannot be correlated currently. Gale said there are some data from the Winthrop program that could be used to inform management of the Methow programs, because Winthrop National Fish Hatchery (NFH) has been PIT-tagging many fish and studying the length, weight, and condition factor at the time of release.

The Hatchery Committees approved Appendix 6 as revised during the meeting. (Note: Montgomery distributed the Revised Final Appendix 6 to the Hatchery Committees on August 17, 2016.)

#### *D. Population Structure of Upper Columbia River Summer and Fall Chinook Salmon (All)*

Tracy Hillman said there has been a lot of discussion about upper Columbia River summer/fall Chinook salmon and straying. He said the monitoring program currently considers straying among subbasins (e.g., Wenatchee, Entiat, Chelan, Methow, and Okanogan) as “out-of-population strays.” However, there are data suggesting that upper Columbia River summer/fall Chinook salmon are one population, which would mean that any straying among subpopulations should be considered “within-population strays.” He said the Hatchery Committees will discuss today the current available information on population structure of upper Columbia River summer/fall Chinook salmon and stray rate targets.

Bill Gale suggested reviewing a document with population structure and management targets that was produced by a group of upper Columbia River co-managers after they met to discuss summer Chinook salmon. Mike Tonseth said those discussions took place in 2009 to 2011, and the document, “Genetic Structure of upper Columbia River Summer Chinook and Evaluation of the Effects of Supplementation Programs” was distributed to the Hatchery Committees by Sarah Montgomery on June 16, 2016. Hillman said the conclusions from the 2011 genetics report were there is no genetic difference between subbasins of summer/fall Chinook salmon in the upper Columbia River. He said, according to the 2011 report, the entire Columbia basin is one homogenized population, which may be a result of management. Todd Parsons said it is not known whether the homogenization is a result of management or not. Hillman stated that Chinook salmon tend to home, so there would likely be natural differences among subbasins; however, because summer/fall Chinook salmon also spawn in the mainstem Columbia River, there may be considerable gene flow among tributaries and the mainstem. Tonseth said, even though there is little differentiation between tributaries, WDFW still manages the Wenatchee, Okanogan, and Methow populations separately (but not the Entiat or Chelan rivers). Gale said the populations should be managed as primary populations using localized broodstock, and the

Entiat and Chelan rivers are identified as stabilizing populations. Gale asked if there are mainstem spawning areas for summer and fall Chinook salmon populations from different tributaries that overlap. Tonseth said there is natural-origin spawning in various areas of the mainstem Columbia River, and spawning between Rock Island Dam and Rocky Reach is unknown. Tonseth said he does not think the spawning areas allow for very much genetic overlap of populations. He said radio telemetry and coded wire tag results from the Methow and Okanogan basins show some years with a high degree of mixing. When mainstem Columbia River broodstock is used for the programs, there is likely to be little genetic differentiation, which has led to the continued homogenization of upper Columbia River summer/fall programs.

Hillman said there are two types of stray rates to discuss: 1) management strays; and 2) genetic strays. He said the Wenatchee program, using a genetic within-population stray rate target of 10%, nearly meets the target in most years. That program does not meet the genetic out-of-population stray rates. Gale said there is a higher proportion of hatchery-origin strays that spawn in the lower Entiat River than in the upper Entiat River, and these might be fish from Eastbank Fish Hatchery (FH). Gale said these three populations—Methow, Wenatchee, Okanogan—should be managed as primary populations with a 5% stray rate target instead of 10%. Tonseth suggested calling these populations “management strays” and using a 5% stray rate target because the programs are managed independently; genetically, they are not distinct, but they are managed in a way that treats them distinctly.

Pearsons asked when the next genetic sampling would take place. Tonseth said he will ask McLain Johnson about the timeline for genetic sampling.

Hillman summarized that Hatchery Committees representatives present think the upper Columbia River summer/fall Chinook salmon programs are managed as different populations despite being genetically homogenized; therefore, a management stray rate target of 5% should be used. Kirk Truscott said he wants to confer with Casey Baldwin (Colville Confederated Tribes) about the stray rate targets before agreeing to set a target. Truscott mentioned approximately 40% of the PIT-tagged, natural-origin fish that pass Wells Dam go to the Okanogan River. Tonseth said many of the fish also return to the Wenatchee River (they drop back over the dam). He said the previous Okanogan summer Chinook program broodstock collection at Wells Dam incorporated a lot of natural-origin fish from areas below Wells Dam.

#### *E. Update on Methow spring Chinook Broodstock Collection (All)*

Tracy Hillman said the HCP Coordinating Committees and Hatchery Committees discussed constraints for tangle-netting for Methow spring Chinook salmon broodstock in the Chewuch River and modifying

the trapping schedule at Wells Dam. Tom Kahler said the permit allows the Hatchery Committees to make adjustments to the trapping schedule for spring Chinook salmon, which is at the discretion of NMFS and therefore can be approved as part of the Coordinating Committees approval of the annual broodstock collection protocols. Mike Tonseth said he would provide an update on tangle-netting progress in the Chewuch River next week. He said there were some weather issues during field work. Todd Pearson asked if any more wild fish had been encountered at Wells Dam since Tonseth's last update on June 15, 2016. Tonseth said some genetic results were still pending (which came back as natural-origin) at the time of the tangle-netting request, so the tangle-netting target is lower than initially anticipated. Tonseth said there will be no issue of meeting the production obligation. Pearson said these numbers would likely result in a relatively high percent natural-origin broodstock (pNOB).

*F. Request from Upper Columbia Board to Review Hatchery Report (Hillman)*

Tracy Hillman said he received an email from Greer Maier requesting that the Hatchery Committees review the UCSRB's draft Hatchery Report. He said the Hatchery Report is a summary of the hatchery programs in the upper Columbia River basin and is part of an effort to integrate understanding of actions affecting salmon and steelhead (the 4 H's, which are harvest, hatcheries, hydropower, and habitat). Hillman asked the Hatchery Committees if they would like to review the report and invite Maier to a Hatchery Committees meeting to discuss the report. Keely Murdoch said she is on the committee that has been providing data for the report. She said she has not been asked to provide much input on the report itself and has not reviewed a draft yet, so she thinks the Hatchery Committees should definitely review a draft and discuss with Maier how she plans to incorporate comments and suggestions. Todd Pearson asked what the function of the report is and if it will include recommendations to hatchery programs. Mike Tonseth said it is mostly an update to the UCSRB on each of the 4 H's. Murdoch said the habitat report has already been finalized, and in looking at that report, she expects there will not be many recommendations due to the sensitivity of hatcheries; rather, it will be a status update with many data. Tom Kahler said the UCSRB wants a status update on the 4 H's because they are concerned that no matter how much habitat restoration work is completed, the other H's (i.e., hydropower, hatcheries, and harvest) may preclude recovery of listed species. Hillman said he will respond to Maier's request for the Hatchery Committees to review the Draft Hatchery Report, stating that the Hatchery Committees want to review the report and then invite Maier to discuss comments in person at an upcoming Hatchery Committees meeting.

*G. NOAA Salmon Population Summary Database (Tracy Hillman)*

Tracy Hillman said the NOAA Salmon Population Summary (SPS) database<sup>2</sup> contains population data for Columbia River salmon and steelhead populations. He said the database can be queried by recovery

domain, evolutionary significant unit (ESU), MPG, populations, years, and attributes, and those results can be exported into a spreadsheet. He said he and other contractors have been working with Bonneville Power Administration (BPA) on how to display and summarize data in the SPS database so users do not have to process a spreadsheet of the data each time they have a question. He said BPA and some of their contractors have developed a tool that processes data from the NOAA SPS database and presents them in easily interpreted formats. Hillman displayed the NOAA SPS Data Browser3. He said it can show features such as spawner abundance, proportion of natural-origin fish, age structure, and harvest. Justin Yeager said the tool is particularly useful because it is updated more frequently than every 5 years. Hillman said the upper Columbia River data series are some of the best in the basin. Todd Pearson said the most recent data included in the browser are from return year 2013. He asked how to export figures. Hillman said you can take a screenshot of the browser. Hillman demonstrated an example with Snake River fall Chinook salmon, and showed that even though the geometric mean of spawner abundance has increased above the minimum recovery threshold, the spatial structure and diversity of the population is still low, which is why they have not been delisted.