

PRCC Hatchery Subcommittee Meeting

Thursday, March 20, 2014

Wenatchee, Washington

Meeting Summary

PRCC HSC Members

Lynn Hatcher, NMFS

Keely Murdoch, Yakama Nation

Todd Pearsons, GPUD

Mike Tonseth, WDFW

Kirk Truscott, CCT

Other Participants

Peter Graf, GPUD

Shannon Lowry, GPUD

Alene Underwood, CPUD*

Elizabeth McManus, Facilitator

Andy Chinn, Facilitator

* For agenda item II only

Decisions

A. Approved the February meeting summary as amended, pending final USFWS and NMFS approval.

Actions

1. Ross Strategic will re-circulate meeting summaries with specific HSC members for approval.
2. Ross Strategic will draft an SOA that describes a timeline for decision-making on compositing as a long-term broodstocking strategy.
3. NMFS will follow up with GPUD on next steps for transferring possession of the White River cryomilt samples from GPUD to the Nez Perce tribe.
4. YN will forward the 2013 rotary trap report to the HSC when available.
5. GPUD will circulate final presentation materials in advance of the AFS symposium.
6. CCT will circulate its Chief Joseph hatchery program workshop report with the HSC.
7. GPUD will look into options for HSC document storage and access.
8. WDFW will circulate an e-mail to the HSC with additional detail on excess fall Chinook at Priest Rapids.
9. HSC members will forward any studies on elevation drop effects on adult Chinook and/or steelhead.

HSC Meeting Summary

I. Updates and Meeting Summary Review

- A. PRCC** – The PRCC has been meeting regularly to discuss the situation at Wanapum Dam and implications for broodstock and other research activities at the Priest Rapids trap.
- B. HCP-HC** – The HCP-HC discussed how to cooperate with the HSC on topics that affect both committees. The issue arose around Wenatchee spring Chinook broodstock collection, with WDFW's proposal for a temporary 2014 collection approach that would involve Chiwawa fish (and therefore will require input and approval from CPUD).

- GPUD noted that previous cross-committee issues have been accommodated through joint meetings, and suggested following a similar path for spring Chinook broodstock collection.
- C. Meeting Summary Review** – HSC members reviewed and approved the February 2014 meeting summary, pending USFWS and NMFS (alternate) approval.
- D. Path Forward and Next Steps**
 - Ross Strategic will re-circulate outstanding meeting summaries with specific HSC members for approval.

II. Nason Creek Broodstock Collection

- A. WDFW Proposal** – WDFW will circulate the draft broodstock protocols during the week of 3/24, with comments due back to WDFW by 4/10. The deadline for submitting the protocols to NOAA is 4/15. The draft broodstock protocols will not contain substantive changes for the Carlton summer Chinook program, Wenatchee summer Chinook program, or the Priest Rapids program; the primary changes will be for the Nason Creek spring Chinook program.
- B. Nason Creek Spring Chinook** – The JFPs met on 3/14 to discuss the YN SOA on Nason Creek spring Chinook broodstock collection (Attachment 1) and the three broodstock collection options developed by YN (Attachment 2). In various conversations between YN, WDFW, and NMFS it was not clear if composite broodstocking could be implemented in 2014 under current permits, or if such activity would require reconsultation. Subsequent internal NMFS discussion clarified that compositing would not be covered under existing permits (see discussion below). During the 3/14 call the JFPs also discussed contingency plans and there appeared to be the most support for backfilling GPUD production for one year, possibly at Chiwawa. However, during the 3/19 HCP-HC meeting, WDFW presented a separate backup strategy as discussed below.
 - WDFW elaborated that there must be some level of conservation program in Nason Creek for 2014 in order to benefit the tributary. To accomplish this, WDFW is proposing a PBT approach for 2014 to identify adults with at least one parent assigned to Nason Creek (i.e., tributary-based assignment). This would be similar to a genetic weir and would operate on the same principle as 2013 tangle netting. Since fish will already be handled at Tumwater this will eliminate the need to handle them again in the tributaries.
 - YN noted concerns with PBT as a viable long-term option to meet mitigation for the Nason Creek program. For 2014 it could work, as it would capitalize on the handling that is occurring for the reproductive success study, but unless there is a longer term commitment to a viable program memorialized in an SOA, YN does not want to agree to a PBT-based approach.
 - NMFS emphasized that, per discussions with permitting and legal staff, compositing cannot be permitting in 2014 because compositing effects were not analyzed in the biological opinion or Section 10 permits. This issue is also of enough significance

that a letter of finding would not suffice for 2014 (letters of finding have been used for previous issues not specifically described in permits). For 2014, NMFS supports collection at Tumwater and PBT analysis at Eastbank but cannot endorse YN's SOA as currently written. However, NMFS is internally considering its position on future compositing and will consult with the Northwest Fisheries Science Center while developing an internal policy document. Substantive discussions would occur in the fall to allow for an additional year of data accumulation. Initial discussions with NMFS geneticists indicate that the two approaches - genetic and PNI-based - are mutually exclusive and require a management decision. Given the geographic proximity of Nason Creek and Chiwawa and movement between the two spawning aggregates, NMFS geneticists concede that maintaining genetic distinction is probably not possible.

- CPUD noted that it does not support fully backfilling the Nason Creek program using the Chiwawa program, and regardless 2014 is not an option for this method due to lack of USFWS permit coverage.
- GPUD commented that with the completion of the Nason Creek facility, it will be difficult for GPUD management staff to support having the Nason facility empty and having to pay for use of another PUDs facility. Also, the PBT approach for assigning fish to tributaries is unproven and will require two weeks of holding at Eastbank followed by transport back to the river. 2013 tangle netting, on the other hand, had virtually zero incidental take and fish were retained for broodstock.

C. Path Forward and Next Steps

- Ross Strategic will draft an SOA that describes a timeline for decision-making on compositing as a long-term broodstocking strategy.

III. White River Updates

A. Transfer Update – White River fish were transferred to the temporary raceways on 3/18 and fish are scheduled for transfer to the Lake Wenatchee net pens on 3/26.

B. Cryomilt Status – GPUD contacted the Nez Perce tribe and the tribe is interested in taking possession of the remaining White River cryomilt samples for their genetic inventory program.

C. Path Forward and Next Steps

- NMFS will follow up with GPUD on next steps for transferring possession of the White River cryomilt samples from GPUD to the Nez Perce tribe.

IV. Carlton Update

A. Fish Transfer – The temperature differential at transfer was approximately 8 degrees and fish culturists were satisfied with the fish performance. Fish deliveries to Carlton will continue until the tanks reach capacity.

V. Wenatchee Rotary Traps

- A. GPUD Questions** – YN is developing a written response to most of GPUD’s questions (submitted to YN following the February HSC meeting); the other questions will be addressed in the 2013 rotary trap report, which will likely be available by the April meeting for presentation.
- B. Smolt Trap Workgroup** – YN suggested that the smolt trap workgroup discussions begin in June, since smolt trap operators are most busy in the spring.
- C. Path Forward and Next Steps**
 - YN will forward the 2013 rotary trap report to the HSC when available.

VI. AFS Symposium

- A. pHOS Effect on Productivity** – During the February HSC meeting, CCT suggested looking at the effects of the proportion of hatchery origin fish on productivity as part of GPUD’s presentation at the AFS symposium in Vancouver. GPUD performed an evaluation of hatchery effects using stock recruitment residuals and found high variation.
 - CCT noted that the Chiwawa stray rate could be exacerbated by rate of return; one year could have a predominant return of jacks and the next might be different. Also, the proportion of juvenile production in Nason Creek that moves out as fall migrants might have an effect on spawner recruitment.
 - WDFW suggested also looking at pHOS based on gender, since males tend to stray at the highest rates.
- B. Path Forward and Next Steps**
 - GPUD will circulate final presentation materials in advance of the AFS symposium.

VII. CCT Hatchery Program

- A. Workshop Summary** – CCT held a workshop during the week of 3/10, during which it presented data on pNOB, broodstock, and survival-to-date from the Chief Joseph hatchery program. In-hatchery survival data is not yet available for updating so CCT continues to use the Similkameen program as a surrogate. The workshop included 2013 harvest numbers, which showed 90% of hatchery origin fish collected via purse-seine were from Similkameen. However, this varied significantly from the snag fishery, where 20% of hatchery origin fish collected were from Similkameen. Both collection methods have their own merits regarding fish representation.
- B. Path Forward and Next Steps**
 - CCT will circulate its hatchery program workshop report with the HSC.

VIII. HSC Documents

- A. Access to HSC Materials** – HSC meeting minutes, agendas, and other documents (SOAs, etc.) were previously accessible via a document sharing website. This site is no longer maintained by GPUD.
- B. Path Forward and Next Steps**
 - GPUD will look into options for HSC document storage and access.

IX. Fall Chinook

- A. Priest Rapids Overage** – WDFW staff report 380,000 excess fall Chinook (sub-yearlings), offspring of volunteer trap adults. This number is still within the 110% allowed by permit but WDFW's preference is to not release them into Hanford Reach, and maintain production at 100%. If no other option is available, WDFW's proposal is to release the fish into Banks Lake. The fish are otolith marked but if they are used elsewhere they will require a supplemental mark.
- B. Path Forward and Next Steps**
 - WDFW will circulate an e-mail to the HSC with additional detail on excess fall Chinook at Priest Rapids.

X. Wanapum Dam

- A. Status Update** – GPUD is conducting investigative drilling of monolith 4 at Wanapum Dam to determine the angle of fracture. A board of consultants is meeting regularly and will deliver recommendations on expected repairs in late March. GPUD has developed a two stage approach to fish passage, the first stage being to modify the fish ladders for operability at low water levels. Materials for this phase will be installed by 4/15. The main concern with the modifications is the height of the drop from the ladder to the pool (approximately 9-13 feet). Another concern is lamprey adherence to the backside of the ramp. Designs for trap modifications to allow direct water-to-water transfer are in place and GPUD will order the necessary materials. In the event the ladder modifications do not function as intended, the contingency plan is to trap and haul fish at the OLAFT. GPUD has secured the minimum number of trucks and drivers needed for spring transfer and is also considering logistics for summer and fall migration. If the PRCC concurs that both ladders are working sufficiently, GPUD will suspend its trap and haul planning.
- B. Path Forward and Next Steps**
 - HSC members will forward any studies on elevation drop effects on adult Chinook and/or steelhead.

XI. Wrap Up and Next Steps

- A. Next Meeting:** Thursday, April 20, 2014
- B. Potential April Meeting Agenda Items**
 - 2013 Rotary Trap report
 - Nason Creek broodstock

Meeting Materials

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

- March meeting agenda
- Revised Nason Creek SOA
- Broodstock options

Attachment 1

SOA 2014–XX

Priest Rapids Coordinating Committee’s Hatchery Subcommittee

Statement of Agreement

Nason Creek Broodstock Collection SOA

Submitted to PRCC Hatchery Subcommittee:

Approved by PRCC:

Statement

The Priest Rapids Coordinating Committee Hatchery Subcommittee (PRCC HSC) agrees that the purpose of the Nason Creek spring Chinook supplementation program is to meet GCPUD’s recalculated Wenatchee Basin spring Chinook mitigation of 224,000 fish. Full broodstock collection is annually required to meet mitigation obligations. Previously tested genetic methods of broodstock collection have not been successful or feasible. For this reason and because the Nason Creek spawning aggregate is composed of genotypes found throughout the Wenatchee Basin (Warheit, 2013), a composite broodstock will be collected and spawned to meet Wenatchee Basin spring Chinook mitigation obligations. If an unavoidable delay in implementation of this SOA should occur due to permitting issues, GCPUD’s brood year 2014 spring Chinook obligation would be fulfilled in the Chiwawa River (pending agreement with CCPUD).

Background

As part of its obligation under the Priest Rapids Salmon and Steelhead Settlement Agreement, Grant PUD is required to produce 224,000 hatchery spring Chinook in the Wenatchee River. Due to the discontinuation of the White River Captive Broodstock Program, GCPUD’s full Wenatchee spring Chinook mitigation obligation will be met through the Nason Creek supplementation program which consists of both a conservation and safety net program.

In planning for the Nason Creek program, weir construction was explored as a way to collect broodstock. The proposed weir was not constructed due to concerns with excessive or duplicate handling of fish, public perception and impacts to non-target taxa. A genetic based approach was also considered. However in 2007, WDFW genetics concluded that it would not be possible to assign individual fish of unknown origin to the correct population with any certainty (Blankenship et al., 2007). In 2009, the co-managers finalized a Wenatchee Basin Spring Chinook Management Plan which proposes a broodstock collection approach using Parental Based Tagging (PBT) to identify fish by spawning aggregate. Because of uncertainty with the PBT approach, the Management Plan identified the use of a composite broodstock both as a contingency should the methodology be unsuccessful as well as in low run years to meet mitigation obligations. The Management Plan states that “it is the intent of the co-managers to collect broodstock in a manner that achieves mitigation program needs for each program component and contributes to an increased PNI”, the Plan further states that “NOR adults from

the Nason and Chiwawa programs may be pooled in a composite broodstock if necessary to meet program goals”.

A two year test of the PBT approach occurred in 2010 and 2011. Results of the test concluded the method was neither effective nor practicable for broodstock collection (Maitland and Warheit, 2012) and would result in excessive handling of spring Chinook. In 2012, genetic experts from NMFS, CRITFC, and WDFW collaborated on a project to use RAD sequencing techniques for SNP identification and genotyping. Due to the large number of SNP markers, this effort had the greatest potential to distinguish the spawning aggregates, but provided no further resolution (Narum pers. comm.). In 2013 rather than implement the composite contingency plan, a genetic based broodstock collection approach was tested. The genetic based approach failed to reliably identify spring Chinook of Nason Creek origin for inclusion in the broodstock. A retrospective analysis of spring Chinook captured in Nason Creek reflected a composite of genotypes from throughout the Wenatchee Basin (Warheit, 2013).

Because there is no feasible method of broodstock collection which would 1) allow separation of spawning aggregates, while 2) reliably meet program goals, and 3) minimizing handling and negative impacts to naturally spawning spring Chinook, a composite broodstock will be used for the Nason Creek spring Chinook hatchery program beginning with broodyear 2014. Broodstock for the conservation program will prioritize natural origin returns, while returning hatchery origin fish from the Chiwawa spring Chinook program may be used to ‘start’ the safety net component of the Nason Creek supplementation program.

Blankenship, S., J. Von Bargen, K. Warheit, and A. Murdoch. (2007). Assessing the Genetic Diversity of Natural Chiwawa River Spring Chinook Salmon and Evaluating the Effectiveness of its Hatchery Supplementation Program. Presentation to: The Wells, Rocky Reach, and Rock Island HCP Hatchery Committees, April 18 2007.

Maitland, T., and K. Warheit. (2012). 2010 and 2011 Parental-Based Tagging Project at Priest Rapids Dam. *Memo to:* Joe Miller, Chelan County PUD. January 24, 2012.

Nichols, K., M. Ford, S. Narum, and K. Warheit. 2012. RAD-seq and population genomics of Wenatchee River Chinook salmon. *Presentation to:* The Priest Rapids Coordinating Committee Hatchery Sub-Committee, September 2012.

Warheit, K. (2013). Population assignment of spring Chinook samples from Nason Creek, September 2013. Washington Department of Fish and Wildlife, Molecular Genetics Laboratory. December 17, 2013.

Attachment 2

Nason Creek and Chiwawa River Broodstock Collection

Options with consideration for development of within-basin genetic diversity

1. Nason Creek and Chiwawa River supplementation programs would both use a composite broodstock. The exact number of NORs needed to provide broodstock for both programs would be collected at Tumwater Dam (64 Nason Creek, 74 Chiwawa = 138 total). No genotyping of broodstock, no extra handling, and return of fish to the river would occur from Eastbank Hatchery. Overall this approach minimizes handling of naturally spawning spring Chinook. Genetic diversity could be allowed to naturally develop separately for tributaries above Lake Wenatchee (Little Wenatchee and White) and below Lake Wenatchee (Nason/ Chiwawa). Given the population size, a small number of fish from above the lake would be present in the Nason and Chiwawa broodstocks.
2. Nason Creek and Chiwawa River supplementation programs could both use a composite broodstock. The number of NORs needed to provide broodstock for both programs plus extra (up to 11%) would be collected at Tumwater Dam to allow for return of White River and Little Wenatchee genotyped fish to the river. Broodstock would be genotyped and any fish which are identified as being of Little Wenatchee and White River origin would be transported back to the upper Wenatchee and released to spawn naturally. A minimal number of fish of White River or Little Wenatchee origin will not type back to these spawning aggregates and would still be included in the composite broodstock. Genetic diversity would be allowed to naturally develop separately for tributaries above Lake Wenatchee (Little Wenatchee and White River) and below Lake Wenatchee (Nason/Chiwawa River).
3. Nason Creek supplementation program would use a composite broodstock of 64 NORs trapped at Tumwater Dam. Chiwawa River would use a broodstock of 74 NORs trapped at the Chiwawa Weir. If insufficient broodstock are collected at the Chiwawa Weir, returning hatchery fish (trapped at TWD) would be used as broodstock for the Chiwawa conservation program. Genetic diversity could develop separately for the Little Wenatchee, White Rivers, and Chiwawa River with a composite stock in Nason Creek. This method could result in double handling for some fish spawning in the Chiwawa River and additional bull trout handling.