

PRCC Hatchery Subcommittee Meeting

Thursday, February 20, 2014

Wenatchee, Washington

Meeting Summary

PRCC HSC Members

Bill Gale, USFWS

Keely Murdoch, Yakama Nation

Todd Pearsons, GPUD

Mike Tonseth, WDFW

Kirk Truscott, CCT (via phone)

Other Participants

Craig Busack, NMFS (via phone)

Peter Graf, GPUD

Shannon Lowry, GPUD

Casey Risley, USFWS (via phone)*

Elizabeth McManus, Facilitator (via phone)

Andy Chinn, Facilitator (via phone)

* Agenda item III only

Decisions

- A. Agreed to ABC and collection of 1,000 fish at the OLAFT for 2014 Priest Rapids Hatchery broodstock collection.
- B. Approved the January meeting summary as amended, pending final NMFS approval.

Actions

1. Ross Strategic will re-circulate the December meeting summary and request e-mail approval from the HSC.
2. WDFW will circulate a draft proposal for 2014 Nason Creek broodstock collection.
3. Ross Strategic will schedule an HSC conference call once a more specific date is available for circulation of the draft 2014 Nason Creek broodstock collection proposal.
4. GPUD will contact the Nez Perce tribe to determine if they have any interest in taking possession of remaining cryo-milt inventory.
5. GPUD will forward cryo-milt inventory details to NMFS.
6. USFWS will forward the detailed WR captive brood pathology report to NMFS.
7. GPUD will look into the possibility of the HSC touring the CAF in April.
8. GPUD will compile a list of questions related to rotary trapping and forward it to YN.
9. WDFW will add a placeholder in the draft broodstock collection memo for spawning males with many females at PRH and possible use of older age class fish during high escapement years; final text will depend on the outcome of internal WDFW discussions.

HSC Meeting Summary

I. Updates and Meeting Summary Review

- A. HCP-HC** – CPUD presented its draft 2014 broodstock collection plan using the Rocky Reach trap. The draft plan is out for review.

- B. Meeting Summary Review** – HSC members reviewed and approved the January 2014 meeting summary. The revised December meeting summary was not reviewed due to time constraints.
- C. Path Forward and Next Steps**
 - Ross Strategic will re-circulate the December meeting summary and request e-mail approval from the HSC.

II. Nason Creek Broodstock Collection

- A. Summary of HSC Interests** – YN is seeking a broodstock collection method that provides confidence that full mitigation will be met, as previous broodstock collection efforts based on parentage identification have sacrificed total numbers. YN is not convinced that genetic methods will work. NMFS, WDFW, and to some extent CCT and USFWS have stated they are uncomfortable with using broodstock collection methods that would appear to foreclose existing genetic diversity, regardless of the relative size of the diversity.
 - NMFS stated that its position on genetic diversity is unchanged since the biological opinion was issued. The Nason Creek program was designed to preserve as much diversity as possible with the acknowledgment that this would occasionally result in production shortfall, as occurred in 2013. NMFS also emphasized that the HSC should concentrate on producing a broodstock collection plan with a reasonable chance at achieving within-population diversity.
 - GPUD questioned the assertion that 2013 was an anomalous production year, given available data.
 - YN reminded HSC members that the genetic methods tested in 2013 did not work as intended, and the results from the retrospective analysis of tangle-netted Nason Creek fish were at best unclear. Fish captured via tangle net appeared to have a genetic composition representative of the entire upper Wenatchee basin, and the analyses do not present a compelling case to genetically isolate Nason Creek broodstock. Although the mitigation shortfall can be met with Chiwawa hatchery fish, YN is not interested in a default of Chiwawa fish as a safety net for the Nason Creek program, as they are not contributing to the purpose of the Nason conservation program. YN is reluctant to implement another genetic sorting method due to the negative effects on fish health from excessive handling.
 - GPUD asked whether the handling effects have been quantified in the reproductive success study. WDFW responded that this is the first year in which handling effects will be studied.
 - USFWS noted that based on the genetics discussions, collecting fish at Tumwater or Nason Creek will result in a mixture of different genotypes; the precise mixture will depend on the selection of a baseline against which to measure. Because hatchery escapement has been mostly unmanaged, Chiwawa fish have spawned in Nason Creek and any prior genetic differentiation is no longer present.

- NMFS stated that it would require “a few” generations to return to the natural level of genetic differentiation in Nason Creek.
- YN noted the selective advantage of genetic differences of fish in the Chiwawa and Nason. YN also discussed the trade-offs between biological effects of retaining separate spawning aggregates versus.. the benefits of local adaptation; YN added that (per information presented by Tracy Hillman and Andrew Murdoch at a recent M&E appendices meeting) many fish overwinter in the mainstem Wenatchee, which is a mix of tributary waters. These fish eat more, grow larger, and thus survive at equal or higher rates than fish overwintering in the tributaries. It is possible that these fish are contributing to higher adult returns than the tributary fish.
 - GPUD noted that fish with different life histories imprint at different life stages.
- WDFW commented on the theory that the stray rates associated with the Chiwawa program are related to high spawner density. Since most of the strays are males, controlling males might result in a drop in stray rates. There are currently no data to test this theory but data will be available in September of this year. Regarding out-of-basin straying, WDFW noted that Eastbank will always be a source of stray effects because of its location.

B. Path Forward and Next Steps

- WDFW will draft and circulate a proposal for 2014 Nason Creek broodstock collection.
- Ross Strategic will schedule an HSC conference call once a more specific date is available for circulation of the draft 2014 Nason Creek broodstock collection proposal.

III. White River Spring Chinook Issues

A. Disposition of Cryo-Preserved Milt – With the decision to euthanize the remaining White River captive brood, there is no longer need to retain cryo-preserved milt. GPUD requested NMFS guidance for next steps, given that the gametes are derived from ESA-listed fish.

- NMFS suggested that GPUD contact the Nez Perce tribe to determine if they are interested in taking possession of the samples for their gene bank (jointly operated by University of Idaho and Washington State University).

B. WR Captive Brood – Euthanization of the remaining White River captive brood was delayed by two weeks due to weather conditions. Euthanization of 55 adults (100% females) was carried out on 2/19 with a lethal dose of tricaine methanesulfonate (MS222). All fish exhibited signs of BKD infection; USFWS staff took kidney samples which are currently being processed. Fish mortality remained consistent through 2/19, with no decline.

C. Path Forward and Next Steps

- GPUD will contact the Nez Perce tribe to determine if they have any interest in

- taking possession of remaining cryo-milt inventory.
- GPUD will forward the cryo-milt inventory details to NMFS.
- USFWS will forward the detailed WR captive brood pathology report to NMFS.

IV. Facility updates

- A. Nason Facility Status** – The facility is 75 – 80% complete. The completion date has been delayed by one month (to 5/3) due to a well issue but the timetable still allows for fish to be on station by this fall. However, the facility will not be able to accommodate YN’s Coho testing. The recent severe winter weather did not affect the construction schedule.
- B. Release Timing** – GPUD’s approach to release timing from Carlton is to allow 30 days for acclimation following transfer, then pull the screen for volitional release. Fish culturists would then advise on when to begin lowering dam boards to encourage fish to exit, with the goal of complete fish exfiltration 30 days after volitional release begins. At the end of the acclimation period fish would be forced out of the tanks. The HSC agreed with the acclimation and release approach
- C. Fish Release Evaluation** – GPUD continues to consider an experiment to compare different fish release processes from the Carlton acclimation facility and welcomes any HSC suggestions.
 - USFWS asked whether the results of any such experiment would be worthwhile, given that 2014 acclimation will be dissimilar from succeeding years.
 - GPUD invited HSC members to visit the CAF at their convenience to determine if alternative release configurations of dam boards made sense and were worth investigating.
 - WDFW suggested randomly distributing PIT tags across tanks as a preliminary step toward a release evaluation.
- D. Path Forward and Next Steps**
 - GPUD will look into the possibility of the HSC touring the CAF in April.

V. Wenatchee Rotary Traps

- A. Rotary Trap Efficiency** – YN rotary trap staff provided a presentation covering 2013 efficiency trials, multi-year regressions, spring Chinook estimates, trap locations, and attempts to mitigate vandalism issues.
 - GPUD asked whether the efficiency relationships assumed stable channel morphology over time and whether efficiency models included releases with 0 recaptures.
 - YN has not observed significant change in channel morphology during the trapping years.
- B. Path Forward and Next Steps**
 - GPUD will compile a list of questions related to rotary trapping and forward it to YN.

VI. AFS Symposium

- A. Carrying Capacity** – GPUD presented initial thoughts on carrying capacity in advance of a series of full presentations during the upcoming AFS meeting in Vancouver. The presentations all concern Columbia River Chinook; in addition to Todd and Peter, Russell Langshaw will discuss Hanford Reach Chinook, and Greg Mackey will discuss Methow spring Chinook.
- CCT suggested consulting NW Power Planning Council’s website for information on estimates of salmon carrying capacity.
 - CCT noted potential effects of origin and composition in GPUD’s density dependence curves, and potential bias due to hatchery origin fish spawning locations.

VII. Priest Rapids Hatchery Broodstock Issues

- A. ABC and OLAF broodstock collection** – In 2013 there was a two week delay at the onset of collection due to ongoing construction at PRH and at the OLAF, in addition to warm-water days that prevented trap operations. For 2014, the areas for ABC will be expanded to increase the proportion of wild fish caught. The number of shuttle boats will also be increased, in order to keep the most productive anglers fishing. The preseason forecast is approximately 1.6 million upriver brights. HSC members agreed to ABC and collection of 1,000 fish at the OLAF.
- B. Alternative mating strategies and pNOB calculation**
- CCT asked: If collection results in more than 10 ml of milt from a given fish, and the source is a high probability of natural origin, should those fish be spawned with more than two females in order to increase pNOB?
 - WDFW noted that as an organization it is unwilling to agree to increase the spawning ratio beyond two females per male without further internal discussion.
 - GPUD noted that this is an issue of balancing genetic risks; there is high variation in reproductive success in natural populations. In many studies, larger and older males tend to produce more progeny, which implies that spawning programs could use more males as broodstock since this is more representative of what occurs naturally.
 - WDFW added that for years with higher escapement forecasts it may be lower risk to use larger male-to-female cross ratios for older age natural origin males.
- C. Path Forward and Next Steps**
- WDFW will add a placeholder in the draft broodstock collection memo for possible use of spawning males with more females to increase pNOB; final text will depend on the outcome of internal WDFW discussions.

VIII. Wrap Up and Next Steps

- A. Next Meeting:** Thursday, April 20, 2014
- B. Potential April Meeting Agenda Items**
- Nason Creek broodstock collection

- White River acclimation
- Carlton acclimation facility
- Wenatchee rotary traps

Meeting Materials

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

- February meeting agenda
- Coastal Conservation Association newsletter
- Final Priest Rapids Hatchery Annual Report
- PRH January M&E Update
- LWSNFH January WR Program Report