

Memorandum

To: Priest Rapids Coordinating Committee Hatchery Subcommittee Document Date: August 23, 2024

From: Tracy Hillman, PRCC Hatchery Subcommittee Facilitator

cc: Natasha Winnacott, Anchor QEA

Re: Minutes of the July 17, 2024, PRCC Hatchery Subcommittee Meetings

The Priest Rapids Coordinating Committee's Hatchery Subcommittee (PRCC HSC) meeting focusing on the White River (WR) Hatchery Program was held in person and virtually at the Douglas PUD Auditorium on Wednesday, July 17, 2024, from 1:35 p.m. to 3:45 p.m.

Attendees are listed in Attachment A to these meeting minutes.

The following Action Item Summary identifies tasks for PRCC HSC members related to the WR Hatchery Program only. (Action items related to other ongoing business are documented in Action Item Summary and Minutes of the July 17, 2024, joint Habitat Conservation Plan Hatchery Committees [HCP-HCs] and PRCC HSC meeting.)

Action Item Summary

PRCC Hatchery Subcommittee

Near-Term (to be completed by next meeting)

White River Hatchery Program

Data Sources and Document List for White River Expert Panel (Item I-A)

- Grant PUD staff will assemble existing data sources to answer the questions in Table 1 of the 2018 WR Memorandum (*Note: This item is ongoing*).
- All committee members will review Grant PUD's draft WR bibliography for the WR Expert Panel and identify required materials and supplemental materials for each sub-question (3.1 through 3.9) (*Note: This item is ongoing*).
- Mike Tonseth will inquire about data outputs and potential future uses of Mark Sorel's Wenatchee Spring Chinook Salmon life-cycle model (*Note: This item is ongoing*).
- Tonseth will inquire about availability of results from the Wenatchee Spring Chinook Salmon Relative Reproductive Success Study, specifically the following (*Note: This item is ongoing*):
 - Results available about the WR spawners
 - Results for both hatchery-origin and natural-origin fish from the WR and other tributaries

- Assemble reported results into a single document or an executive summary to support the WR Expert Review Panel
- Tim Taylor will advance the WR spring Chinook Salmon population viability analysis using existing monitoring and evaluation data. *(Note: This item is ongoing).*
- Mat Maxey will inquire with U.S. Fish and Wildlife Services (USFWS) Ecological Services staff about information to support conclusions regarding potential impacts and benefits to Bull Trout *(Note: This item is ongoing).*

Expert Panel Scope, Logistics, and Qualifications (Item II-B)

- Tracy Hillman will add a summary on habitat/population capacity to the summary that Keely Murdoch wrote regarding available information for limiting life stages and limiting factors in the WR *(Note: This item is ongoing).*
- Mike Tonseth will write a summary about the sideboards limiting the size of a WR Hatchery Program *(Note: This item is ongoing).*
- PRCC HSC members will write short biographies for potential WR Expert Panel members (including their area of expertise) and send them to Tracy Hillman for compilation by August 16, 2024.
- Todd Pearsons will write a memorandum describing the review process that will be used by Tracy Hillman when reaching out to potential panel members for review in the August 21, 2024, meeting.

Decision Summary

- None.

Agreements

- To avoid any bias in the selection process, the PRCC HSC representatives agreed not to exclude potential WR expert panelists based on the panelist's presumed position on hatcheries.
- The PRCC HSC representatives agreed to pause work on the WR Broodstock Feasibility Review in order to prioritize the work necessary to convene the WR Expert Panel.

Review Items

- None.

Finalized Documents

- None.

I. Welcome

A. Agenda, Approval of Past Minutes, Action Item Review

Tracy Hillman welcomed the PRCC HSC and reviewed the agenda. No revisions to the agenda were requested, and the PRCC HSC representatives approved the agenda. The revised meeting minutes from June 20, 2024, were reviewed and approved by members who attended that meeting.

Kirk Truscott was not present at today's meeting. Larissa Rohrbach will follow up with him over email to get his approval of the minutes.

Action items from the PRCC HSC June 20, 2024, meeting were reviewed. (*Note: Italicized text below corresponds to action items from the previous meeting.*)

Near-Term (to be completed by next meeting)

White River Hatchery Program

Data Sources and Document List for Expert Panel (Item I-A)

- *Grant PUD staff will assemble existing data sources to answer the questions in Table 1 of the 2018 WR Memorandum (Note: This item is ongoing).*
This item is ongoing.
- *Katy Shelby will contact Jeff Caisman to determine whether additional otolith samples could be collected from WR juvenile spring Chinook Salmon (Note: This item is ongoing).*
Shelby contacted Caisman, and he is collecting these otolith samples from the WR juvenile spring Chinook Salmon. This item is complete.
- *Mike Tonseth will inquire about data outputs and potential future uses of Mark Sorel's Wenatchee Spring Chinook Salmon life-cycle model (Note: This item is ongoing).*
Tonseth will meet with Sorel (Washington Department of Fish and Wildlife [WDFW]) in September 2024. This item is ongoing.
- *Tonseth will inquire about availability of results from the Wenatchee Spring Chinook Salmon Relative Reproductive Success Study, specifically: (Note: This item is ongoing).*
 - *Results available about the WR spawners*
 - *Results for both hatchery-origin and natural-origin fish from the WR and other tributaries*
 - *Assemble reported results into a single document or an executive summary to support the WR Expert Review Panel*Tonseth said he has a meeting with Mike Hughes (WDFW) next week and will update the PRCC HSC representatives during the August 21, 2024, meeting.
- *Rod O'Connor will assemble information about productivity of strays into the WR from the 10-Year Comprehensive Report (Note: This item is ongoing).*

O'Connor said that he updated the meta table and added this information to the bibliography. This item is complete.

- *O'Connor will assemble information about genetic differentiation of the WR from the 10-Year Comprehensive Report (Note: This item is ongoing).*

O'Connor assembled this information and added it to the bibliography. This item is complete.

- *Tim Taylor will advance the WR spring Chinook Salmon population viability analysis using existing monitoring and evaluation data. (Note: This item is ongoing).*

Taylor is still working on the analysis. This item is ongoing.

- *Mat Maxey will inquire with USFWS Ecological Services staff about information to support conclusions regarding potential impacts and benefits to Bull Trout (Note: This item is ongoing).*

This item is ongoing.

Expert Panel Scope, Logistics, Qualifications (Item II-B)

- *Tracy Hillman will add a summary on habitat capacity to the summary that Keely Murdoch wrote regarding available information for limiting life stages and limiting factors in the White River.* Hillman said he completed the analysis but has not added the information to Murdoch's summary. He walked the group through the spreadsheet he created to estimate spring Chinook Salmon smolt capacity within the WR. Simply, smolt capacity was estimated as the product of the area of intrinsic potential (IP) within the WR and the maximum density of smolts (smolts/IP). He used IP estimates generated by the Northwest Fisheries Science Center. IP is a measure of the potential for development of favorable spawning and rearing habitat based on underlying geomorphic and hydrological attributes (e.g., stream width, gradient, valley confinement, sediment, and temperature). IP is measured downstream from natural barriers. Smolt density estimates were generated from the Chiwawa River basin. Maximum smolt density within the Chiwawa River basin was estimated using stock-recruitment models and maximum smolt yield during a year in which the basin was over-escaped with adults. Stock-recruitment models estimate equilibrium smolt population size (population carrying capacity), while the maximum smolt yield measurement represents the maximum smolt population that the environment can sustain (habitat carrying capacity). The latter was also estimated by fitting stock-recruitment models to the upper 90% confidence limit of the smolts/spawner distribution. Given that the total stream area weighted by IP and temperature limited is 0.481 kilometer² (km²) in the Chiwawa River basin, this effort resulted in the following smolt densities for Chiwawa River spring Chinook Salmon.

Capacity type	Method	Smolt abundance	Smolt density (smolts/IP)
Population capacity	Smooth hockey stick	44,133	91,753
	Beverton-Holt	54,193	112,667
	Ricker	48,965	101,799
Habitat capacity	Ricker (90%)	89,425	185,915
	Beverton-Holt (90%)	64,516	134,129
	Maximum estimate	89,890	186,881

Multiplying these densities times the total stream area weighted by IP and temperature limited in the White River (0.248 km²) results in the following White River Spring Chinook Salmon smolt capacities.

Capacity type	Method	White River IP	Smolt density (smolts/IP)	White River smolt capacity
Population capacity	Smooth hockey stick	0.248	91,753	22,755
	Beverton-Holt	0.248	112,667	27,942
	Ricker	0.248	101,799	25,246
Habitat capacity	Ricker (90%)	0.248	185,915	46,107
	Beverton-Holt (90%)	0.248	134,129	33,264
	Maximum estimate	0.248	186,881	46,347

Thus, based on this simple exercise, smolt population capacity ranges from 22,755 to 27,942 smolts, and habitat capacity ranges from 33,264 to 46,347 smolts. This represents smolt production entirely within the WR basin. It does not include WR Chinook Salmon that smolt outside the WR. Hillman will add this information to the summary report prepared by Murdoch. Hillman said he will be interested in seeing how these estimates compare with those generated by the Habitat Assessment and Restoration Planning model.

Cory Kamphaus questioned where environmental conditions tie into this. Hillman said that IP captures some of the environmental conditions that affect spawning and rearing habitat. The fitting of stock-recruitment models to the data tends to average the variation in smolt yield, which is in part affected by environmental variation. Kamphaus said that he would like to know how rain-on-snow events affect IP. Hillman said IP does not capture temporal variation in environmental conditions. However, the effects of these events are captured to some degree in the stock-recruitment models. That is, for a given spawning escapement, there can be variation in the smolts produced due to variation in environmental conditions (e.g., ran-on-snow events).

The model basically averages smolt production across these variable conditions for a given escapement.

This item is ongoing.

- *Mike Tonseth will write a summary about the sideboards limiting the size of a WR Hatchery Program (Note: This item is ongoing).*

This item is ongoing.

- *PRCC HSC members will review the preliminary list of potential expert panel members against the working list of competencies and selection criteria (Note: this item is ongoing).*

This will be discussed during today's meeting. Hillman spoke with Craig Busack (National Oceanic and Atmospheric Administration [NOAA] Fisheries) and learned that he is retiring as a consultant to NOAA. Hillman asked Busack if he would be interested in being a member on the WR Expert Panel. Busack said he may be interested.

- *PRCC HSC members will write short bibliographies for potential WR Expert Panel members that they recommended.*

PRCC HSC members will continue to work on creating short bibliographies for WR Expert Panel members that they recommended, including what area of expertise individuals fall under, and send it to Tracy Hillman, who will then compile the list into a Word document.

II. PRCC HSC

A. White River Spring Chinook Salmon Hatchery Program: Ongoing Assignments

Representatives from Grant PUD sent out a draft Expert Panel Scope on July 22, 2024 (Attachment B). This document follows the same format that the Independent Scientific Advisory Board (ISAB) uses in selecting expert panels. Grant PUD would like to use this document as guidance when PRCC HSC members are identifying candidates for the WR Expert Panel. Grant PUD summarized that the schedule for the WR Expert Panel starts in early 2025 with an initial meeting that includes a 4-hour presentation. Panelists will then be given a required technical readings list. They would have a second meeting in mid-2025 to hear each panelist's findings and recommendations. To maintain independence and objectivity, the panelists would not have contact with each other or with the technical advisors. As the mediator, Tracy Hillman would answer any questions they may have. If Hillman is unable to answer a panelist's question, Hillman would consult with a technical advisor and communicate the information back to the panelist.

Grant PUD representatives voiced concerns with including individuals on the panel who work for the Columbia River Inter-Tribal Fish Commission (CRITFC). Grant PUD believes there is a strong association between CRITFC and some PRCC HSC representatives. Because CRITFC represents treaty tribes, and the Yakama Nation is a (YN) treaty tribe and a member of the PRCC HSC, there may be a

conflict of interest. Grant PUD therefore requested that individuals from CRITFC only be included as technical advisors and would not serve as a WR expert panelists. Grant PUD representatives invited PRCC HSC representatives to share their perspectives on this topic. Both WDFW and YN representatives did not agree that CRITFC had a “strong association” with YN, and both believe that individuals from CRITFC would be valuable to have on the WR Expert Panel. YN representatives said they mainly rely on individuals from CRITFC as a technical resource and that CRITFC does not represent the YN in all instances. WDFW representatives asked for clarification on what Grant PUD meant by “strong associations.” Grant PUD representatives referred to the ISAB process for selecting panelists and said that the PRCC HSC agreed that individuals who are currently receiving compensation from PRCC HSC parties cannot be a member on the WR Expert Panel. After considering feedback from WDFW and YN, Grant PUD agreed that they could support including members from CRITFC as technical advisors to the WR Expert Panel.

PRCC HSC representatives reviewed the list of potential WR expert panelists. PRCC HSC representatives agreed to invite individuals that have a range of views on hatchery programs to participate on the WR Expert Panel to avoid biasing the panel selection process. The list of names was updated for WR panel candidates (green highlight), potential candidates pending more information on their background (blue highlight), and technical advisors (yellow highlight). Technical advisors are defined as individuals that are currently employed by a PRCC HSC party and will provide support to WR Expert Panel members. Devayne Lewis and Hayley Nuetzal from CRITFC were highlighted in both green and yellow for further discussion as to whether CRITFC employees should be recommended for the WR Expert Panel during the August meeting.

- Mark Sorel (technical advisor)
- Jeff Jorgensen (technical advisor)
- Mike Ford (technical advisor)
- Erik Buhle (technical advisor)
- Dave Fast (retired)
- Rich Carmicheal
- William Smoker
- Craig Busack
- Marc Johnson (technical advisor)
- Tom Quinn (currently on ISAB)
- Robin Waples (retired)
- Andy Appleby
- Tom Cooney
- Tim Essington
- Kurt Fausch (retired)
- Peter Moyle (retired)
- Alec Maule
- Stan Gregory
- Steve Schroder
- Laurie Weitkamp (technical advisor)
- Jack Stanford
- Jack Williams
- Eric Laudenslager
- Paul Spruel
- Tim Copeland
- Ben Ditty
- Mark Chilcote
- Reg Reisenbeckler
- Barry Berejikian (NOAA; technical advisor)
- Chris Tatar (NOAA; technical advisor)
- Lance Campbell (WDFW; technical advisor)
- Garrett McKinney (WDFW; technical advisor)

- Todd Seamons (WDFW; technical advisor)
- Phil Sandstrom (WDFW; technical advisor)
- Devayne Lewis (CRITFC)
- Hayley Nuetzal (CRITFC)

Grant PUD offered the following additional individuals for consideration (Attachment C):

- David A. Venditti
- Peter A. Bisson
- Greg Ruggerone
- John R. McMillan
- Peter A. H. Westley
- Eric J. Loudenslager

PRCC HSC representatives will create a short biography for individuals that they added to the list of potential panel members, including the area of expertise they fall under, and will send it to Hillman by August 16, 2024. Hillman will compile the lists into a single Word document for further discussion during next month's meeting.

Todd Pearsons will draft a memorandum including the description of the activity and supporting documentation for reaching out to potential panelists for further review and discussion during the August meeting.

B. White River Spring Chinook Salmon Broodstock Feasibility Review – Agreement on Completeness

PRCC HSC representatives present agreed that Grant PUD representatives have done as much as they currently can and agreed to pause work on the WR Spring Chinook Salmon Broodstock Feasibility review. The focus is now on other WR Expert Panel-related tasks, with further work and discussion on the feasibility document expected in the future.

III. Administration

C. Next Meetings

The next meetings of the HCP-HCs and PRCC HSC will be held on August 21, September 18, and October 16, 2024. Meetings are in person and will be held at Douglas PUD.

IV. Attachments

- Attachment A List of Attendees
- Attachment B Draft White River Expert Panel Scope
- Attachment C Grant PUD White River Panel Candidate List

Attachment A
List of Meeting Attendees

Name	Organization
Natasha Winnacott	Anchor QEA
Larissa Rohrbach	Anchor QEA
Tracy Hillman	BioAnalysts, Inc.
Rod O'Connor‡	Grant PUD
Todd Pearsons‡°	Grant PUD
Tim Taylor	Grant PUD
Katy Shelby°	Washington Department of Fish and Wildlife
Mike Tonseth**	Washington Department of Fish and Wildlife
Matthew Maxey**°	U.S. Fish and Wildlife Service
Charles Frady°	U.S. Fish and Wildlife Service
Clifford (C.J.) Smith°	U.S. Fish and Wildlife Service
Kayla Hansch°	U.S. Fish and Wildlife Service
Brett Farman**°	National Marine Fisheries Service
Keely Murdoch**°	Yakama Nation
Cory Kamphaus‡	Yakama Nation

Notes:

* Denotes HCP-HCs member or alternate

‡ Denotes PRCC HSC member or alternate

° Joined remotely

Draft Scope, Qualifications, and Expectations for White River Independent Expert Science Panel

Scope

An independent expert science panel (hereafter panel) will provide a technical evaluation to assess the need to restart a White River spring Chinook hatchery supplementation program in the White River. More specifically, it will answer the following questions:

Would an adult based supplementation program increase the probability of meeting Viable Salmonid Population (VSP) criteria while keeping ecological and genetic impacts within acceptable limits?

a. How, if at all, would an adult-based supplementation program in the White River increase the probability of meeting VSP criteria while keeping ecological and genetic impacts within acceptable limits?

b. What is the optimal program size for meeting VSP criteria?

In addition, the panelists will answer (questions 2, 5, and 6) and/or consider answers provided to them and subsequently integrate answers to the following questions as they address the primary questions above:

3.1. What is the available capacity, limiting life-stage, and limiting factor in the White River? What is the trend?

3.2. How many additional natural-origin adults could reasonably be expected by operating an adult-based supplementation program for the White River spawning aggregate?

3.3. What is the relative reproductive success (RRS) of hatchery fish in the Wenatchee Basin?

3.4. Did the White River captive brood program or Chiwawa and Nason hatchery strays contribute to natural origin production?

3.5. Have supplementation programs in Chiwawa River and Nason Creek contribute to natural-origin abundance in the respective basins?

3.6. Is supplementation likely to improve N_e ?

3.7. How is genetic differentiation among wild fish changing over time?

3.8. What is the probability of persistence of the WR spawning aggregate without hatchery intervention?

3.9. What are the likely impacts to other spawning aggregates (e.g., Chiwawa, Nason, and Little Wenatchee) and non-target taxa of concern (e.g., bull trout, sockeye salmon) associated with a supplementation program that helps meet VSP criteria and within program specifications?

The intent of assembling the panel is to provide useful (e.g., actionable) technical answers that will inform decision makers whether to restart a hatchery program in the White River.

Approach and schedule

The panel will use a structured approach that includes both group and independent work. This approach will allow for independent evaluation that will help assess the level of scientific variation as well as leverage a consensus scientific opinion from the panel. To this end, expert panelists will: 1) attend a 4-hour panel orientation beginning in early 2025, 2) read technical documents provided to them (see reading list), 3) independently answer expert panelist questions and provide answers on provided form, and 4) participate in a final group conclusion session by the deadline of June 1, 2025. The facilitator of the process will be available to answer each panelist's technical and other questions, but each reviewer is expected to work independently of others up until the group conclusion session. In the event the facilitator is unable to answer a panelist's question, then the facilitator will contact an approved technical advisor(s) and the facilitator will communicate the answer back to the panelist. The panelists and technical advisors will not have direct contact in order to preserve the objectivity of the process. The facilitator will write up a final summary report that includes results from each panelist.

Qualifications *(text adapted or reproduced from NPPC ISAB)*

Each panelist will meet the following qualifications:

- 1) High achievement in a relevant scientific discipline to address questions about hatchery supplementation.
- 2) A strong record of scientific accomplishment documented by contribution to the peer-reviewed literature or other evidence of creative scientific accomplishment.
- 3) High standards of scientific integrity, independence, and objectivity.
- 4) Ability to forge creative solutions to complex problems.
- 5) Interest in and ability to work effectively in an interdisciplinary setting.

In order to produce the best scientific conclusion, it is important that each panelist is independent, objective, and free of conflict of interest. "Conflict of interest" means any financial or other interest which conflicts with the service of the individual because it 1) impairs the individual's objectivity or 2) could create an unfair competitive advantage for any person or organization. Panelists will not be employed by organizations with HSC representation or by those organizations who represent or have strong associations with organizations with HSC representation.

Each panelist will be asked to complete and submit a "Disclosure of Personal Involvements" form to the facilitator for review by the PRCC Hatchery subcommittee.

Disclosure information includes:

- Financial interests
- Research support

- Agency or group affiliations
- Public statements and positions
- Other circumstances or information

Disclosure information should identify any connection between the individual and programs or activities of the Grant PUD, regional fishery managers and Indian Tribes, Northwest energy interests or other users of the Columbia River.

Subject Expertise

1. Population dynamics/quantitative ecology
2. Life cycle modeling
3. Hatchery supplementation
4. Population genetics
5. Conservation biology (background in recovery plans)
6. Systems Ecology (e.g., understanding of species dynamics and interactions across their entire range)

Each technical advisor will be a technical expert in a discipline of relevance to the panel and may also be employed by organizations with representation on the Hatchery subcommittee.

Attachments

Disclosure of Personal Involvements form

Reading list and location of documents

Panelist science response form

Suggested Panelists for White River Independent Expert Panel

- Tim Copeland - IDFG. Highly published scientist and expert in salmonids, population dynamics, and supplementation. Co-author of the publication: Effects of hatchery supplementation on abundance and productivity of natural-origin Chinook salmon: two decades of evaluation and implications for conservation programs. Western Division AFS, vice president.
- **David A. Venditti** - IDFG. Author of many publications about salmon and lead author of the publications: Effects of hatchery supplementation on abundance and productivity of natural-origin Chinook salmon: two decades of evaluation and implications for conservation programs; Reproductive Behavior and Success of Captive-Reared Chinook Salmon Spawning under Natural Conditions.
- **Peter A. Bisson**, Ph.D., consultant. ISAB. Formerly Senior Scientist at the Olympia (Washington) Forestry Sciences Laboratory of the U.S. Forest Service's Pacific Northwest Research Station
- Eric J. Loudenslager, Ph.D., Consulting Fisheries Scientist and Adjunct Professor of Fisheries Biology, Humboldt State University, California, an expert in genetics and fish culture (former ISAB and ISRP Chair)
- Alec Maule, Ph.D., Consulting Fisheries Scientist, formerly head of the Ecology and Environmental Physiology Section, United States Geological Survey, Columbia River Research Laboratory (former ISAB chair)
- Steve Schroder, Ph.D., Fisheries Consultant and former Fisheries Research Scientist at the Washington Department of Fish and Wildlife (former ISRP chair)
- Stanley Gregory, Ph.D., Professor Emeritus of Fisheries at Oregon State University (former ISAB and ISRP Chair)
- Richard Williams, Ph.D., Affiliated Research Scientist, Center for Salmonid and Freshwater Species at Risk, University of Idaho, an expert in population and evolutionary genetics, ecology (former ISRP and ISAB chair)
- Kurt Fausch, Ph.D., Professor of Fisheries and Aquatic Sciences, Department of Fish, Wildlife, and Conservation Biology at Colorado State University
- **Greg Ruggerone**, Ph.D., Fisheries Scientist for Natural Resources Consultants (former ISAB and ISRP Chair)
- **John R. McMillan**, Trout Unlimited. Lead author of the 2023 review paper published in Fisheries Management and Ecology: A global synthesis of peer-reviewed research on the effects of hatchery salmonids on wild salmonids. Citation: McMillan, J.R., Morrison, B., Chambers, N., Ruggerone, G., Bernatchez, L., Stanford, J. et al. (2023) A global synthesis of peer-reviewed research on the effects of hatchery salmonids on wild salmonids. Fisheries Management and Ecology, 00, 1–18. Available from: <https://doi.org/10.1111/fme.12643>
- **Peter A. H. Westley**. Lowell A. Wakefield Chair in Fisheries and Ocean Sciences, Associate Professor, University of Alaska, Fairbanks. Fisheries Conservation, Fisheries Ecology. Highly published and an expert in straying.