



Grant County
PUBLIC UTILITY DISTRICT
Excellence in Service and Leadership

Fall Chinook Work Group

Tuesday, 4 November 2014

Grant PUD (USBOR Building)

Ephrata, WA

Technical members

Paul Wagner, NMFS
Jeff Fryer, CRITFC
Holly Harwood, BPA
Keith Truscott, CPUD
Bill Tweit, WDFW
Patrick McGuire, WDOE
Peter Graf, GCPUD
Steve Hemstrom, CPUD

Joe Skalicky/Don Anglin, USFWS
Paul Ward/Bob Rose, YN
Brett Swift, American Rivers
Tom Kahler, DPUD
Paul Hoffarth, WDFW
John Clark, ADFG
Todd Pearsons, GCPUD

Attendees: (*Denotes Technical member)

Peter Graf, GCPUD*
Paul Hoffarth, WDFW* (Phone)
Tom Kahler, DPUD* (Phone)
Todd Pearsons, GCPUD
Tracy Hillman, Facilitator

Russell Langshaw, Ecosystem Insights
Jeff Fryer, CRITFC* (Phone)
Ryan Harnish, Battelle (Phone)
Geoff McMichael, Mainstem Fish Res (Phone)

Action Items:

1. **Grant PUD will complete the draft Final Report and Implementation Feasibility Study/Implementation Feasibility Plan and distribute it to the FCWG by Wednesday, 12 November 2014.**
2. **The FCWG will review the 2013-14 Hanford Reach Fall Chinook Protection Program Draft Report and send their comments to Peter Graf by Friday, 28 November.**
3. **The FCWG will review the Draft 2013-2014 Priest Rapids Hatchery M&E Report and send their comments to Todd Pearsons by Friday, 21 November 2014.**

Meeting Minutes

- I. **Welcome and Introductions** – Tracy Hillman welcomed attendees to the meeting. Attendees introduced themselves.
- II. **Agenda Review** – The agenda was reviewed and approved.
- III. **Approval of Meeting Minutes**
 - The October Meeting Minutes were reviewed and approved.
- IV. **Review of Action Items** - Action items identified during the October meeting were discussed.
 - Grant PUD will begin drafting the Final Report and Implementation Feasibility Study/Implementation Feasibility Plan. **Ongoing. The draft report will be available for review in November.**
 - Grant PUD will provide the FCWG with the 2013-14 Hanford Reach Fall Chinook Protection Program Draft Report by Friday, 10 October 2014. Complete. **The draft report was sent to the FCWG on 31 October 2014.**
- V. **Update on Wanapum Dam Issues**

Peter Graf provided a brief update on the current status of Wanapum Dam issues (see Attachment 1). Peter noted that later this month, Grant PUD mechanics will remove the Fishway Exit Passage Systems from the Wanapum Dam adult fishways. The intent is to remove the systems in the dry before the anticipated pool raise, which is planned for later this year. Peter also noted that Grant PUD continues to splash divers every other day to clean the intake screens on the pumps.

Peter described the status of the drilling for the installation of the tendons in the monolith piers. The engineers first drill 4-inch diameter holes, then enlarge them to 10 inches, and finally to 16 inches. So far they have completed the drilling of 34 of the 35 required 4-inch holes. Fifteen of the 35 16-inch holes have been drilled. Peter also noted that 10 of the 35 tendons have been installed and grouted. Peter then described briefly the six-step process for installing and tensioning the tendons.

Peter described the proposed pool refill plan. As of early November, Grant PUD has completed 13 of the 15 tendon holes and sheathing required for the intermediate pool raise of 558-562 feet. Peter noted that the pool will be refilled at a maximum rate of three feet per day. Data will be collected and analyzed as the pool refills. Refilling to the intermediate level will likely take two to three weeks. After all 35 tendons have been installed, the pool will be raised to its normal elevation. This will likely occur by late April or early May.

VI. Final Report and Implementation Feasibility Study/Implementation Feasibility Plan

Russell Langshaw and Peter Graf indicated that the draft Final Report is nearly completed. Russell walked the group through the layout of the report and described briefly some of the findings in the report. The latter was accomplished by showing some of the figures in the draft report. Below is an outline of the information shared by Russell.

1.0 Introduction

- Study requirements

- Study area and background

2.0 Conceptual framework for the study plan

3.0 Flow conditions in the Hanford Reach

- Hydrodynamic model synthesis for Hanford Reach habitat and hydrologic evaluations

- Changes to the hydrograph

- Evaluation of Grant PUD's contribution to flow fluctuations in the Hanford Reach

4.0 Productivity Assessment and related studies

- Expert Panel review of the productivity assessment

- Productivity assessment – Investigating the effects of Priest Rapids flows on productivity of Upriver Bright Chinook salmon and determine the optimum maximum sustainable yield of natural spawned fall Chinook salmon

- Evaluation of fall Chinook salmon fallback at Priest Rapids Dam

- Evaluation of Hanford Reach fall Chinook salmon life cycle productivity and population dynamics using a production simulation model (aka HierARCHY)

5.0 Annotated bibliography and recent studies by each life-stage

- Annotated bibliography

- Spawning Period

 - Hydrograph

 - Spawning habitat availability

 - Feasibility of spawning habitat enhancement in the tailrace of Wanapum Dam

 - Evaluate and quantify the effects of redd superimposition

 - The effect of different flow regimes on movement and behavior of fall Chinook salmon

Effects of minimum flow regimes on fall Chinook spawning at Vernita Bar 1978–82

Incubation – Pre- and Post-Hatch periods under the HRF CPPA

Investigation of egg-to-fry survival rates and the effects of flow variation on hatching success

Feasibility of quantifying eggs in fall Chinook salmon redds

Pilot study for using cylindrical egg tubes to investigate egg-to-fry survival

Evaluation of egg-to-fry survival study methodologies

Photographic index of fall Chinook salmon embryonic development

Emergence and Rearing Periods

Stranding and entrapment

HRF CPPA Stranding and entrapment monitoring

Data mining for stranding and entrapment

Predation

Predation synthesis report

Juvenile acoustic-telemetry studies

Density dependence

Spawning

Rearing in the Hanford Reach

Outside the Hanford Reach

6.0 Synthesis of mechanisms for high productivity

Spawning

Incubation

Fry/parr

Smolt-Adult

Summary

7.0 Adaptive management and the HRF CPPA

Current mitigation

Adaptive management process

Current and future monitoring funded by Grant PUD

HRF CPPA annual monitoring and reporting

Monitoring and evaluation of productivity and the Priest Rapids Hatchery Program

Studies related to population dynamics and harvest management

8.0 Conclusions

Section C.6.c of the HRF CPPA

Section 6.3(4) of the 401 Certification

Section 6.3(5) of the 401 Certification

Section 6.3(6)(a-f) of the 401 Certification

Section 6.3(7)(a) of the 401 Certification

Article 405 of the PRP License

Sections 6.3(7)(b-c) of the 401 Certification

Members had no comments or concerns with the layout of the report or with the information presented by Russell. Pete Graf indicated that the report is currently going through final touches on formatting and editing. The draft report should be available for review by Wednesday, 12 November. This will start the 90-day review period. Members asked if a link could be added that would direct readers to the technical reports. Peter indicated that he will try to make that happen. Finally, Peter described the timeline for the completion of the final report:

- November—Fall Chinook monitoring and evaluation plan and draft final report and IFS/IFP to FCWG (begin 90-day review).
- December-January—Targeted discussion on report topics.
- February—Comments on the draft final report are due.
- March—Report revisions and responses to comments.
- April—Final report and IFS/IFP due to Ecology and FERC.

VII. HRWG Activities

2014 Protection Program Implementation – Peter Graf said that protection flows started on 15 October with reverse load factoring. He also reported that they conducted their first redd survey on Vernita Bar on 19 October. The purpose of the survey was to find five redds within each survey zone. They found no redds during the 19 October survey. They conducted a second redd survey on 26 October and located five redds below the 50 kcfs level, so initiation of spawning in that zone was determined to have occurred on 22 October. A third redd survey was conducted on 2 November and five redds were observed above the 50 kcfs level. Thus, initiation of spawning in that zone was determined to have occurred on 29 October. Crews will conduct another redd survey on 23 November to determine the critical flow elevation.

Hanford Reach Annual Report – Tracy Hillman indicated that the FCWG/HRWG should have received the 2013-14 Hanford Reach Fall Chinook Protection Program Draft Report on 31 October. Peter described the elements of the draft report. Below is an outline of the information Peter shared with the group.

- 1.0 Background
- 2.0 Hanford Reach Fall Chinook Protection Program
- 3.0 Hanford Reach Up River Bright Fish Population
 - 2008-2017 United States v. Oregon Management Agreement
 - Hanford Reach Escapement Estimates
 - Fall Chinook Salmon Egg Production Estimate
- 4.0 2012-13 Monitoring and Operations under the HRF CPPA
 - Vernita Barr Redd Surveys
 - Implementation Timing and Operations
- 5.0 Discharge and Daily Fluctuations in the Hanford Reach
 - Critical Elevation and Discharge Minimums
 - Assessment of Flow Fluctuations and Targets
- 6.0 Summary

Comments on the draft report are due to Peter Graf by Friday, 28 November.

Hatchery Operations – Tracy Hillman reported that the FCWG/HRWG should have received the Draft 2013-2014 Priest Rapids Hatchery M&E Report on 22 October 2014. Todd Pearsons walked the group through the draft M&E report. Below is an outline of the information that Todd reviewed with the group.

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Project Coordination
- 4.0 Life History – Hanford Reach Fall Chinook Salmon
- 5.0 Annual Releases, Tagging and Marking
- 6.0 Project Coordination
- 7.0 Sample Size Considerations
- 8.0 Evaluation of Bias
- 9.0 Current Operation of Priest Rapids Hatchery
- 10.0 Origin of Adult Returns to Priest Rapids Hatchery
 - Origin Based on Hatchery Marks
 - Origin Based on Coded-Wire Tag Recoveries
- 11.0 Broodstock Collection and Sampling

- Origin of Broodstock based on CWT versus all Hatchery Marks
- Broodstock Age Composition
- Length by Age Class of Broodstock
- Gender Ratios
- Fecundity
- 12.0 Hatchery Rearing
 - Number of eggs taken
 - Number of acclimation days
 - Number released
 - Fish Size and Condition at Release
 - Survival Estimates
 - Juvenile PIT Tag Detections at the Priest Rapids Hatchery Array
- 13.0 Adult Fish Pathogen Monitoring
- 14.0 Juvenile Fish Health Inspections
- 15.0 Redd Surveys
 - Hanford Reach Aerial Redd Counts
 - Redd Distribution
 - Spawn Timing
 - Escapement
 - Hatchery Discharge Channel Redd Counts
- 16.0 Carcass Surveys
 - Hanford Reach Carcass Survey: Section 1 – 5
 - Numbers Sampled: Sections 1 – 5
 - Proportion of Escapement Sampled: Section 1 – 5
 - Carcass Distribution and Origin
 - Priest Rapids Dam Pool Carcass Survey: Section 6
 - Number sampled: Section 6
 - Proportion of Escapement Sampled: Section 6
 - Carcass Origin: Section 6
 - Hatchery Discharge Channel: Sections 7 and 8 Carcass Survey
 - Number sampled: Sections 7 and 8
 - Proportion of Escapement Sampled: Sections 7 and 8
 - Carcass Distribution and Origin: Sections 7 and 8
 - Carcass Bias Assessment

- 17.0 Life History Monitoring
 - Migration Timing
 - Age at Maturity
 - Size at Maturity
 - Spawn Success
- 18.0 Contribution to Fisheries
- 19.0 Straying
- 20.0 Genetics
- 21.0 Proportion of Natural Influence
 - Estimates of pNOB
 - Estimates of pHOS
 - Estimates of PNI
 - Alternative pNOB and PNI
- 22.0 Natural and Hatchery Replacement Rates
- 23.0 Smolt-to-Adult Survivals
- 24.0 ESA/HCP Compliance
 - Broodstock Collection
 - Hatchery Rearing and Release
 - Hatchery Effluent Monitoring
 - Ecological Risk Assessment

Todd asked that the FCWG send their comments to him no later than Friday, 21 November 2014.

Paul Hoffarth said that 17 boats fished for untagged fall Chinook from the Hanford Reach on 24, 25, and 26 October. Using hook-and-line, they were able to collect 305 fall Chinook. Three fish died after capture resulting in a total of 302 untagged Chinook for the hatchery program. The goal was to collect 500 untagged fish.

CRITFC and Battelle Presentations – Tracy Hillman reported that next month CRITFC and Battelle will present updates and findings on their respective tagging studies conducted in 2014. Both Ryan Harnish and Jeff Fryer indicated that they would have their presentations ready by the next FCWG meeting.

VIII. 2014 Return-Year Studies and Funding Opportunities


High-Escapement, Density-Dependence Studies – Geoff McMichael indicated that he is putting the finishing touches on his proposal to assess spawning density and emergence of fall Chinook in the Hanford Reach. This proposal will be evaluated through the Northern Fund Process. Geoff also reported that he conducted snorkel surveys in the Reach on 29 October and 2 November. The purpose was to use

standardized snorkel surveys and photographs to evaluate egg loss due to redd superimposition. Geoff said that he found no eggs on the substrate, primarily because spawning was just starting. His next survey will be on 8 or 9 November.

- IX. Next Meeting:** Tuesday morning, 2 December 2014 at Grant PUD in Ephrata, WA.


Attachment 1

Presentation by Peter Graf on Wanapum Dam Issues



**PRCC-HCP
Briefing**

November 3, 2014



In preparation for an anticipated pool raise during 4th Quarter 2014, Grant PUD will remove the Wanapum Fishway Exit Passage System from the Wanapum Left Bank Fishway on November 17th, 2014.

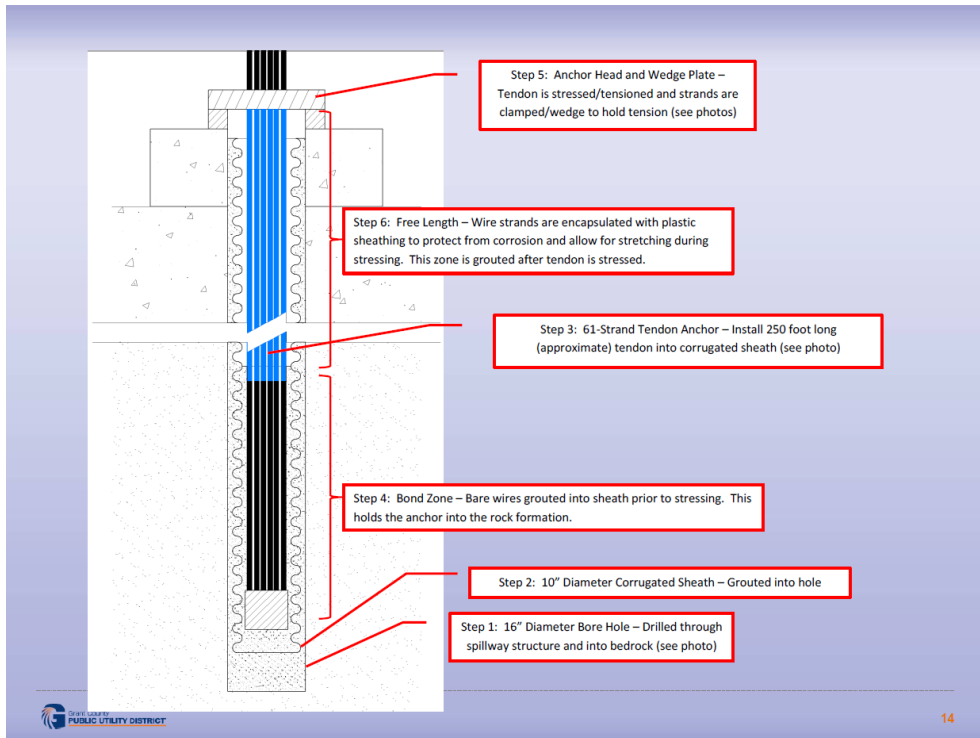


Construction status

- 34 of 35 required - 4" pilot holes completed;
- 15 of 35 - 16" full sized holes completed (6 in progress);
- 10 of 35 - 10" sheaths installed and grouted;
- 11 of 35 tendon installation and tensioning in progress;



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Refill Plan

- As of 11/3/2014, Grant PUD has completed 13 of the 15 tendon holes required for the pool raise (562') to the full diameter and the full depth.
- Grant PUD has completed 13 of the 15 sheaths required for the pool raise (562').
- Key elements of the plan
 - Refill elevation 558'-562'
 - Total refill maximum of 3' over a 24 hour period
 - Data collection and analysis collected along the way
 - Likely, 2 to 3 weeks to reach 561.5'