



Grant County  
**PUBLIC UTILITY DISTRICT**  
*Excellence in Service and Leadership*

## Fall Chinook Work Group

Tuesday, 7 January 2014

Grant PUD Headquarters Building

Ephrata, WA

### Technical members

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Paul Wagner, NMFS

Jeff Fryer, CRITFC

Holly Harwood, BPA

Keith Truscott, CPUD

Bill Tweit, WDFW

Patrick McGuire, WDOE

Russell Langshaw, 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)

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Russell Langshaw, GCPUD\*

Todd Pearsons, GCPUD

John Clark, ADFG\* (Phone)

Jeff Fryer, CRITFC\* (Phone)

Tracy Hillman, Facilitator

Paul Wagner, NMFS\* (Phone)

Patrick McGuire, WDOE\* (Phone)

Paul Hoffarth, WDFW\* (Phone)

Tom Kahler, DPUD\* (Phone)

### Action Items:

1. Blue Leaf will provide the FCWG with the draft predation report by Friday, 17 January 2014.
2. Tracy Hillman will contact Blue Leaf and see if they can give a presentation to the FCWG in February on the results of their work on predation in the Hanford Reach and Lake Wallula.
3. Russell Langshaw will provide the FCWG with a draft study plan for assessing density dependence in the Hanford Reach by 4 February 2014.
4. Paul Hoffarth will prepare a final memo that describes egg retention of fall Chinook in the Hanford Reach through 2013.

5. **The 2013 draft Stranding and Entrapment Report is due to the FCWG no later than Friday, 13 December 2013.**
6. **Russell Langshaw will conduct retrospective analysis on historical stranding and entrapment work. The next update will be in February 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 December Meeting Minutes were reviewed and approved with edits.
- IV. **Review of Action Items** - Action items identified during the December meeting were discussed.
  - Blue Leaf will provide the FCWG with the draft predation report by Monday, 16 December 2013. **Ongoing. Should be available for review by 17 January.**
  - Tracy Hillman will contact Blue Leaf to let them know that the FCWG would like an appendix to the predation report describing the changes in assumptions and data used in the first and final drafts. **Complete.**
  - Russell Langshaw will make sure the FCWG is included on the Hatchery Committee distribution list. **Complete. Todd Pearsons will provide the annual hatchery monitoring and evaluation report to the FCWG.**
  - Russell Langshaw will provide the FCWG with a draft study plan for assessing density dependence in the Hanford Reach by 4 February 2014. **Ongoing.**
  - The 2013 draft Stranding and Entrapment Report is due to the FCWG no later than Friday, 13 December 2013. **Complete. Comments are due to Russell Langshaw by 8 January 2014.**
  - Russell Langshaw will conduct retrospective analysis on historical stranding and entrapment work and identify issues for discussion during the next FCWG meeting. **Ongoing. The next update will be February 2014.**
- V. **Phase I Study Updates**
  - A. **Production Simulation Model** – Russell Langshaw indicated that there are no new updates on the production simulation model. Cedar Morton will revisit funding opportunities in spring 2014. Cedar is also looking at PATH as a modeling tool.

## VI. Phase II Study Plan

**Predation Report** – Russell Langshaw reported that Blue Leaf has completed four of the five sections of the predation report. The fifth section is about 70% complete. They have been addressing comments from the FCWG and created an appendix that describes the changes in assumptions and data used in the first and final drafts. The report will be sent to the FCWG on or before 17 January 2014 for their review. The FCWG will have 30 days to review the draft report. The final report should be completed by the end of February 2014.

Tracy Hillman will contact Blue Leaf and see if they can give a presentation to the FCWG in February on the results of their work on predation in the Hanford Reach and Lake Wallula.

**Density Dependence** – Russell Langshaw said that he is still working on a study plan to address the density dependence that was identified in the productivity assessment. He is looking at relationships among abundance, growth, survival, and productivity. He is also trying to compile information on condition factors. Russell said that some of the studies in the lower Columbia River that provide information for his analyses may be ending. He will try to get data on condition factors from CRITFC. He also intends to use data from examination of otoliths that are collected as part of the hatchery monitoring and evaluation program.

Based on his examination of available data, Russell has been unable to find a relationship between egg retention and spawning escapement, and he found no evidence of density dependence in fish size, travel time, or migration timing. John Clark recommended that Russell compare Hanford Reach fall Chinook with Snake River fall Chinook. Russell indicated that he will do that and that he will provide the FCWG with a draft study plan in February 2014.

**Redd Superimposition** – Paul Hoffarth will provide a final memo to the FCWG that identifies the number of eggs retained by fall Chinook in the Hanford Reach through 2013. The final memo is due March 2014. This work will satisfy the egg-retention objective of Phase II studies. Egg retention work will continue in the future and the results will be reported in the annual Priest Rapids Hatchery Monitoring and Evaluation reports.

## VII. HRWG Activities

**Stranding and Entrapment Analysis and Reporting** – Tracy Hillman reported that comments on the 2013 stranding and entrapment draft report are due to Russell Langshaw by Wednesday, 8 January. As a brief summary, Russell noted that about 267,453 juvenile Chinook were entrapped in the Hanford Reach in 2013 (with a percentile-based, bias-corrected, 95% confidence interval bounds of 134,851 and

485,225). In addition, about 184,123 juvenile Chinook were stranded in the Hanford Reach in 2013 (with a percentile-based, bias-corrected, 95% confidence interval bounds of 79,149 and 488,088). Russell stated that the results indicate that conditions in the Hanford Reach in terms of flows, flow fluctuations, and temperatures were more favorable for avoiding stranding and entrapment during 2013. Estimates of juvenile fall Chinook that died as a result of stranding and entrapment in the Hanford Reach were significantly lower than the previous two years. Russell said that the Columbia River flows in the Hanford Reach were slightly above the long-term mean during the 2013 spring season, but were well below that in 2011 and 2012. Given the relationships between discharge, river fluctuations, dewatered area, entrapment creation, and estimates of stranding and entrapment, Russell thought that much of the reduction in the loss of fall Chinook could be attributed to flow conditions during 2013.

**Update on Protection Flows** – Russell Langshaw said that all temperature and flow data are displayed in the Fixed Site Monitoring – Monthly Summary files on the Grant PUD Water Quality Website (<http://www.gcpud.org/naturalResources/fishWaterWildlife/waterqualityMonitoring.html>). The temperature unit tracking spreadsheet is found under “Fixed Site Monitoring – Monthly Summary.” Russell said that hatching is predicted to occur in early December and emergence in mid to late March.

**Stranding and Entrapment Retrospective Analysis** – Russell Langshaw said that although he did not have time to work on the retrospective analysis in December, he did review some papers on hurdle models, which can be used to model entrapments. The hurdle model is a two part process. The first part models the presence/absence of Chinook within entrapment sites. This is usually accomplished with multiple logistics regression or discriminant analysis. If a pattern is found (successfully jumped the first hurdle), then the second part is to model the numbers of fish entrapped in sites with fish presence. This could be accomplished with regression techniques. The hurdle model may be a simpler and more easily explainable approach than the zero-inflated negative binomial distribution model. Russell will continue to explore the use of the hurdle model and see if it is appropriate. His next update will be in February.

**Hanford Reach Juvenile PIT Tagging** – Jeff Fryer shared with the group his interest to seek funds from the CTC to help with PIT tagging efforts in the Hanford Reach. Jeff would like the additional funds to help support a larger tagging crew and to increase the number of fish tagged. John Clark recommended that Jeff submit an LOA proposal to help augment the tagging program. Russell Langshaw said that Grant PUD is also committed to providing PIT tagging support. That could be

in the form of providing additional tags, holding tanks, or perhaps funding.

**Hanford Reach Escapement** – Paul Hoffarth said that in 2013, there was a record return of fall Chinook to the Priest Rapids Hatchery (41,636 fish) and Ringold Springs Hatchery (16,886 fish). Although calculating re-ascension and fallback at Priest Rapids Dam was complicated, Paul estimated an escapement of 174,841 fall Chinook to the Hanford Reach (157,848 adults and 17,356 jacks). Paul noted that about 27,630 Chinook were harvested in the Hanford Sport Harvest and 2,884 in the Yakima River Sport Harvest. Paul indicated that about 25,000 redds were counted during aerial surveys in the Reach. The average has been between 8,000 and 9,000 redds.

**VIII. Next Meeting:** Tuesday morning, 4 February 2014 at Grant PUD in Ephrata, WA.