



Grant County
PUBLIC UTILITY DISTRICT
Excellence in Service and Leadership

Fall Chinook Work Group

Tuesday, 6 August 2013

Grant PUD Headquarters Building

Ephrata, WA

Technical members

Paul Wagner, NMFS	Joe Skalicky/Don Anglin, USFWS
Jeff Fryer, CRITFC	Paul Ward/Bob Rose, YN
Holly Harwood, BPA	Brett Swift, American Rivers
Keith Truscott, CPUD	Tom Kahler, DPUD
Bill Tweit, WDFW	Paul Hoffarth, WDFW
Jim Bellatty, WDOE	John Clark, ADFG
Russell Langshaw, GCPUD	Todd Pearsons, GCPUD
Steve Hemstrom, CPUD	

Attendees: (*Denotes Technical member)

Russell Langshaw, GCPUD*	Tom Kahler, DCPUD* (phone)
John Clark, ADFG*	Paul Hoffarth, WDFW* (phone)
Dani Evenson, ADFW (phone)	Scott Bettin, BPA (phone)
Tracy Hillman, Facilitator	

Action Items:

1. The FCWG will provide Tracy Hillman with their comments on the draft Predation Report by Friday, 30 August. Tracy will compile the comments and send them to Blue Leaf by Tuesday, 3 September 2013.
2. Russell Langshaw will provide Paul Hoffarth and Stacy Remples with hourly flow data for Rock Island and Priest Rapids dams.
3. Russell Langshaw will conduct retrospective analysis on historical stranding and entrapment work and identify issues for discussion during the next FCWG meeting.
4. The Stranding and Entrapment Work Group will meet at Battelle on Tuesday, 20 August from 10:00 am to 4:00 pm.

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 July Meeting Minutes were reviewed and approved.
- IV. **Review of Action Items** - Action items identified during the July meeting were discussed.
 - Paul Hoffarth will contact Matt Mesa to see if the USGS predation study plan can be shared with the FCWG. **Complete. The Annual Reports can be found on the cbfish.org website: <http://www.cbfish.org/Project.mvc/Publications/2008-719-00/2012/Documents>**
 - Russell Langshaw will provide Paul Hoffarth and Stacy Remples with hourly flow data for Rock Island and Priest Rapids dams. **Ongoing.**
 - Russell Langshaw will conduct retrospective analysis on historical stranding and entrapment work and identify issues for discussion during the next FCWG meeting. **Ongoing.**
 - Tracy Hillman will help arrange a stranding/entrapment meeting with WDFW, Grant PUD, and Battelle. **Complete.**
- V. **Phase I Study Updates**
 - A. **Productivity Assessment** – The final productivity report is complete and has been posted to Box.net.
 - B. **Egg to Fry Survival** – The final egg-to-fry study report is complete and has been posted to Box.net.
 - C. **Dam Passage Fallback** – The final dam passage fallback report is complete and has been posted to Box.net.
 - D. **Hydrodynamic Model** – The final hydrodynamics model report (methods and a catalogue of what is available) is complete and has been posted to Box.net.
 - E. **Production Simulation Model** – Russell Langshaw indicated that there are no new updates on the production simulation model. He noted that Cedar Morton, a doctoral student at Simon Fraser University, is still seeking funding from B.C. Hydro to use on the Production Simulation Model. Cedar will model effects in Canada, while Battelle, with support from CRITFC, will model effects in the US.

Depending on funding, Cedar plans to meet with Grant PUD and Battelle in the near future.

VI. Phase II Study Plan

Predation Report – On 1 August, the FCWG received the draft predation report titled, “Synthesis of Predation Impacts on Subyearling Fall Chinook Salmon: A Review of Scientific Literature.” Although members of the FCWG did not have time to review the draft report in detail, some members provided their initial thoughts on the report. For example, Russell Langshaw thought that the report may have gone too far with the analyses, given the available data.

John Clark identified several issues or concerns. He noted that the report needs an appendix or compendium of the data used to estimate abundance and loss estimates. Information such as year of release, number of fish tagged, mean size, portion accounted for downriver, etc. should be included in the appendix. John also pointed out that the report puts too much reliance on modeling. While modeling can be informative, the major short-coming is lack of adequate information for model input. Abundance of predators is the primary driver for the model and information on predator abundance is sparse. Because the abundance input to the model is highest for northern pikeminnow, the output shows that pikeminnow exert the highest level of predation. However, the report shows that the relative abundance of pikeminnow across 12 sections averages about 25 fish, for smallmouth about 50 fish, and for walleyes about 5 fish. These data indicate that the abundance of smallmouth is about twice that of pikeminnow. Thus, it appears the data used in the model may be from areas outside the project area. John stated that if the primary data needed for the model do not exist, one should not populate the model with guesses. The report relies too much on modeling with inadequate data inputs to properly conclude that predation is only responsible for a small portion of the observed losses (5-21% of the loss).

John shared additional thoughts about the abundance estimates used in the model. He noted that abundance of northern pike minnows, smallmouth bass, and walleyes are defined on page 79 (Dani Evenson pointed out that white sturgeon should be included in the list of predators). For northern pikeminnow, the authors used estimates of harvest and harvest rate to estimate that about 100,000 pikeminnow are in the study area. The accuracy of the estimate is dependent upon the accuracy of the harvest rates listed in the reports. For walleye, the authors used relative abundance and estimated walleye abundance at about 20,000, because the ratio of walleyes to northern pikeminnow is about 1:5 based on sampling in the area. These data are shown graphically on page 53 in the draft report. However, for smallmouth bass, the authors appeared to rely on data outside the study area, and

the description for the estimate of about 18,000 smallmouth bass is unclear. John said that if they would have used the relative abundance approach that they used for walleye, the ratio of 25:40 (pikeminnow:bass) would have resulting in an abundance estimate of 175,000 smallmouth bass, roughly ten times the estimate used in the model. Members present agreed that an estimate of 18,000 smallmouth bass in the study area was low. Paul Hoffarth indicated that Fitts and Pearsons estimated that about 18,000 smallmouth bass migrate into the lower Yakima River. It is unlikely that all bass in the study area migrate into the Yakima River.

It was also noted that about 25 million juvenile fall Chinook disappear before reaching McNary Dam. It is unlikely that environmental factors (e.g., heat, chemicals, etc.) are the primary agents of mortality. If so, there should be millions of fish washing up on the shores. Given the absence of observations of large numbers of dead fish in the area, it seems reasonable to assume that predation plays an important role in the loss of juvenile Chinook. The conclusion that only 5-21% of the juvenile Chinook are consumed fails a test of reason and seems to hinge on a model with inadequate inputs. While environmental factors can and probably do affect these losses, they are probably not the end source of mortality.

Finally, it was noted that the report provides some information concerning predator control programs, but it did not discuss or identify potential actions that may have application to the study area, even though this was specifically requested by the FCWG.

Russell indicated that he would share these initial concerns with Blue Leaf. Members will provide their comments to Tracy Hillman by Friday, 30 August. Tracy will compile the comments and send them to Blue Leaf by Tuesday, 3 September.

VII. HRWG Activities

Stranding and Entrapment Retrospective Analysis – Russell Langshaw said that he has finished compiling and QA/QC the historic (2007) stranding and entrapment data set. Using the zero-inflated negative binomial distribution, he was able to develop a significant model that predicts fish entrapment using various environmental parameters. Because there were not enough data available to validate the model, he used randomization techniques. He also learned how to bootstrap the discharge time series. Russell's next steps are to model the 2011 data. Recall that Russell is doing this work to more accurately estimate the number of fish that die in entrapments and to reduce the level of uncertainty in the estimate.

Stranding and Entrapment Analysis and Reporting – Now that 2013 sampling has concluded, WDFW, Battelle, US Fish and Wildlife

Service, and GPUD will analyze the data and write the annual report. Russell Langshaw indicated that they will use the same analyses as last year. Battelle will estimate the number of fish stranded and calculate the number of entrapments formed. The US Fish and Wildlife Service will calculate the number of fish entrapped and estimate mortalities. WDFW and Grant PUD will write most of the report.

Tracy Hillman noted that the Stranding and Entrapment Work Group will meet on Tuesday, 20 August from 10:00 am to 4:00 pm at Battelle in Richland, WA. The purpose of the meeting is to discuss issues associated with field efforts (e.g., model updating and crews being sent to sites with few or no entrapments), data analysis tasks, QA/QC location and field data, MASS2 runs for entrapment histories and stranding loss estimates, entrapment event calculations, stranding analyses, and reporting roles and due dates.

Russell stated that the stranding and entrapment report is due to FERC on 15 January 2014.

Hanford Reach PIT-Tagging Project – Tracy Hillman reported that Jeff Fryer tagged about 178,426 wild juvenile fall Chinook with CWTs. He also tagged about 4,000 juvenile fall Chinook with PIT tags. An exact number of fish PIT tagged will be provided during the September meeting.

VIII. Next Meeting: Tuesday, 3 September 2013 at Grant PUD in Ephrata, WA.