



Meeting Minutes

Fall Chinook Working Group

Tuesday, July 06, 2010
 9:00 – 3:00 pm

Battelle, Biological Sciences Facility
 Crick Room
 Richland, WA

Technical Members

Paul Wagner, NMFS	Joe Skalicky/Dan Diggs, USFWS
Robert Heinith, 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
Marcie Mangold, WDOE	John Clark, ADFG
Russell Langshaw, GCPUD	Todd Pearsons, GCPUD
Steve Hemstrom, CPUD	

ATTENDEES: (*Denotes Technical member)

Bob Rose, YN*	Marcie Mangold, WDOE* (via phone)
Joe Skalicky USFWS* (via phone)	John Clark, ADFG*
Paul Hoffarth, WDFW*	Geoff McMichael, Battelle
Russell Langshaw, GCPUD*	Todd Pearsons, GCPUD
Debbie Williams, GCPUD (via phone)	Eric Oldenburg, Battelle
Paul Wagner, NMFS* (via phone)	Tracy Hillman, Facilitator

Action Items:

1. Hillman will contact Morishima to confirm his participation on the expert panel.
2. Hillman will contact Dr. Arlene Tompkins and Dr. Richard Bailey to see if they can participate on the expert panel.
3. Hillman will contact Dr. David Hankin to see if he will agree to chair the panel.
4. Hanford Reach Study Plan Comments are due by 9 July.

5. **PATH methods will be reviewed by Battelle. They will conduct a sub-analysis of how different escapement numbers are estimated for stock-recruitment.**
6. **Clark will provide references for other salmon stocks to McMichael.**
7. **Hillman will contact expert panel members to let them know that their expertise is still needed.**
8. **Williams will post the final Environmental Variables file on the FCWG website.**
9. **Langshaw will send the HRF CPPA Annual Report to Williams for posting to the FCWG website.**
10. **When completed, McMichael will send the Annotated Bibliography on Hanford Reach studies to Williams for posting to the FCWG website.**
11. **Members will provide additional references (citation and pdf) for the annotated bibliography to McMichael by next week.**
12. **Langshaw will contact Mangold to discuss the completion date for the Flow Fluctuation report.**

Meeting Minutes

- I. **Welcome and Introductions** – Hillman welcomed attendees to the meeting. Members introduced themselves around the table and on the conference line.
- II. **Agenda Review** – No additions were made to the agenda.
- III. **Approval of Meeting Minutes**
 - June 01, 2010 – **Approved with edits provided during the meeting.**
- IV. **Review of Action Items** - Action items identified during the June meeting were reviewed and discussed. Comments are due on Action Item #5 by 9 July. Items #6 and #7 were not completed.
- V. **Study Plan Updates**
 - Packet for Expert Panel Participants** – Hillman reported that the expert panel currently consists of the following people: Dr. Howard Schaller, USFWS; Dr. Steve Haeseker, USFWS; Alex Werthheimer; Dr. Richard Hinrichsen, Hinrichsen Environmental Services; Dr. Charlie Petrosky, IDFG; Scott McPherson; Dr. Rishi Sharma, CRITFC; Dr. David Bernard, D.R. Bernard Consulting; Dr. David Hankin, Humboldt State University; Dr. Gary Morishima (**Hillman will contact Morishima to confirm**); Tom Cooney, NMFS; Dr. Robert Kope, NMFS; Dell Simmons; and Dr. Dennis Dauble. Dr. Arlene Tompkins and Dr. Richard Bailey, biologists with the Canadian Department of Fisheries

and Oceans and who participate on the Chinook Technical Committee, will be invited to participate on the expert panel. **Hillman will contact Tompkins and Bailey to see if they will participate on the expert panel.** Brian Riddell indicated that he cannot participate on the panel but would be interested in reviewing documents. **Hillman will contact Dr. David Hankin to see if he still intends to chair the panel.**

A two to three day workshop will be held in the fall (likely November). The Delphi process will be conducted independently so as not to influence other members. Clark suggested that the panel chair attend some of the FCWG meetings and that he (the chair) determine how best the Delphi process should be conducted by the expert panel. Rose noted that breaking the experts into groups of, say, five individuals would facilitate the estimation of reference conditions. Thus, there would be three groups, each with five experts.

Before the expert panel convenes, the experts will be asked to review the study plan and design for estimating Hanford Reach fall Chinook productivity. To aid the review, the FCWG decided that it would be best to identify specific questions for the experts to address. The following questions were identified during the meeting:

- Is the approach for estimating spawning escapement appropriate? Are the assumptions valid?
- Is the approach for estimating recruits appropriate? Are the assumptions valid?
- Is there a better approach for estimating spawning escapement and recruits?
- Is the list of environmental variables to be included in the residual analyses the most appropriate? Are there other variables that should be included in the analysis? Which variables associated with hydro operations are the most important to include in the analysis (please rank the variables from most important to least important)?
- Is the correlative approach (i.e., correlation between S-R residuals and environmental variables) the best method for estimating the potential effects of hydro operations on fall Chinook productivity? Are there better approaches?
- It is quite likely that many of the environmental variables will not be independent (i.e., the presence of collinearity). Are a

correlation coefficient of 0.8 and an eigenvalue of zero reasonable thresholds for concluding collinearity between environmental variables? If multicollinearity is a problem, how should it be addressed in the analysis? Would it be appropriate to convert correlated independent variables into meaningful indices? If so, how should that be done (e.g., by using Exploratory Factor Analysis)?

Hillman would like to send the following items to members of the expert panel as soon as possible:

- The productivity study plan and design that is being prepared by Battelle. This document will be reviewed by the experts based on the questions identified above. The study plan and draft design was sent to the FCWG for review on 16 June. **Comments are due by 9 July.** If comments are received by 9 July, Battelle can complete the document by the end of July. Hillman will then send it to the expert panel for review.

Clark explained that PATH (Plan for Analyzing and Testing Hypothesis) used a different approach in estimating escapement numbers. Their definition of jacks and mini-jacks for the Snake River was different than that traditionally used for the Columbia River. **PATH methods will be reviewed by Battelle. Battelle will conduct a sub-analysis of how different escapement numbers are estimated for stock-recruitment.**

Clark noted that citations on productivity in the bibliography document were incomplete. **Clark will provide additional citations for other stocks to McMichael.** The draft study plan will be complete by 1 August. **Hillman will notify expert panel members of the date to expect materials.**

- List of Environmental Variables to be correlated with the residuals. Environmental variables associated with hydro operations (high, moderate, and low) were identified. Hillman made edits to the draft document during the meeting. **Williams will post the final document on the FCWG website.**
- Clark's survival estimates. Posted to FCWG website.
- Meta analysis survival data. These will be provided as part of Battelle's productivity work around 1 August.
- WDFW 2009 annual report. Posted to FCWG website.
- Methods for estimating fry and parr abundance. Battelle will include this in their mark-recapture work by 1 August.

- CRITFC Letter of Agreement (LOA) report. Hoffarth will get this report from Jeff Fryer and send it to Williams for posting on the website.
- HRF CPPA Annual Report. **Langshaw will send to Williams for posting to the FCWG website.**
- Population simulation information. **Comments are due by 9 July.**
- Annotated Bibliography on Hanford Reach studies. Categories were added to the document during the meeting. **McMichael will send to Williams for posting to the FCWG website.** The annotated bibliography can be sent to the expert panel now. A summary of each paper should be complete by 1 September. Battelle will add a summary to each section. In addition, they will add an overall summary at the front of the document. **Members will provide additional references (citation and pdf) for the annotated bibliography to McMichael by next week.** The use of bibliography software such as Procite or Endnote was suggested by Langshaw.
- Parken report on coast-wide Chinook productivity. Posted to FCWG website.

A Environmental Variables to Include in Productivity Analysis

At the last meeting, FCWG members talked about using correlation and scatterplots to determine if environmental variables are collinear. Members assumed variables were collinear if they had a coefficient of determination (r^2) of 0.70. McMichael talked to Dr. Rebecca Buchanan, UW stats professor, who suggested a cutoff correlation coefficient value of 0.80 ($r^2 = 0.64$). Hillman will try to find citations for this value.

- B Review Study Plan and Draft Design Document** – Members discussed and reviewed the “Study Plan and Draft Designs to Determine Impacts on Fall Chinook in the Hanford Reach under the Hanford Reach Fall Chinook Protection Program.” Within the document, Battelle prepared “Draft Statements of Work” for five different Phase I studies. Those studies included Productivity Assessment (this study plan and design will be reviewed by the expert panel), Dam Passage Fall-Back, Production Simulation Model, Hydrodynamic Model Synthesis, and Egg-to-Fry Survival. Each draft statement of work included background information, objectives, tasks, and description of assumptions. The FCWG reviewed the draft statement of work for each of the five studies. Hillman recorded the suggested edits and comments in the document using track changes. Hillman will forward the document to Langshaw and McMichael.

Members can provide additional edits/comments on the draft statements of work. Those edits/comments are due on 9 July.

- VI. Flow Fluctuation Report – Langshaw will contact Mangold to discuss the completion date for the report.**
- VII. HRWG Activities**
 - A Updates on Operations** – Langshaw reported that the protection program finished on 9 June. He noted that operations and dispatch did a great job of meeting constraints.
 - B Hanford Reach Study Plan** – A mark-recapture method was tested to see if it could be used to determine sampling efficiencies for entrapments. The experiment, conducted by Hoffarth, McMichael, Pearsons, and Langshaw, suggested that the mark-recapture method worked well and should be incorporated into the study plan. The researchers used juvenile hatchery fish (Chelan PUD summer Chinook) from Ringold Hatchery in the mark-recapture study. Sampling within an entrapment found one natural-origin fry. Marked (ad-clipped) fish were placed in the entrapment and the entrapment was then seined to collect marked and unmarked fish. On the first pass 85% of the marked fish were recovered. Only two marked fish were recovered on the second pass. Methods for estimating sampling efficiencies for entrapments containing 500 or more fish will be further developed.
 - C Website Development** – No progress has been made on development of the website. Langshaw will meet with IT in an effort to have the site up and running before the next season of protection flows.
 - D Stranding and Entrapment** – Meeting will be held on 27 July 2010 in Ephrata, WA. Hoffarth will send protocol questions to attendees prior to the meeting for review.
- VIII. Next Meeting: Tuesday, 3 August 2010, in Ephrata, WA.**