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MEMORANDUM

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From: Ron Boyce, ODFW
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Howard Schaller, USFWS
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Date: April 26, 2006

Re: Comments on Framework report
April 17, 2006 draft circulated for workgroup review

In response to your request we reviewed the draft Framework report and offer the following comments for your consideration. Because the review period is less than a week our comments concentrate on the analysis of human caused mortality for spring/summer chinook. We have similar concerns regarding the other ESUs. These comments are not complete and additional review time would be required to address fall chinook and steelhead. We understand that the document is dynamic and incomplete at this point and will be developed further in the future. These comments are intended to assist in the development of the final report. Our overall conclusions are:

- The selection of inputs and ranges for the analysis results in a largely optimistic and a potential underestimate of the representation of human caused mortality attributable to the hydrosystem development and operation. The report could provide a balance by including alternatives that illustrate the potential range of impact.

- Pie charts are the most easy to understand consolidation of all of the data in each of the spreadsheets for each ESU. Pie chart representations of the allocation of human caused mortality should be added to the report for each ESU. The contrast for the two assumptions of delayed in-river mortality should be displayed in pie charts on the same page in the beginning section of the report by ESU. We believe this would be a good way to simply summarize the distribution of mortality by ESU. This will make the primary results of the report easily understood by the reader.

At the end of section 2.1 Methods-process, we believe we need to add the language associated with the effect of the assumptions concerning delayed mortality:
The framework report was designed to capture the range in the distribution of mortality across Hs due to key uncertainties. The level of delayed or latent mortality attributable to a fish's experience as it migrates through the hydrosystem as a juvenile can strongly influence the distribution of mortality across the Hs. Therefore, the assumptions concerning delayed mortality levels will affect the actions required to fill the survival Gaps need to avoid jeopardy. This draft report incorporates two hypotheses about the level of delayed mortality on in-river migrants attributable to the hydrosystem. The results of these two hypotheses needs to be clearly displayed in the report, preferably as side by side pie charts of mortality by Hs for each ESU.

Hydrosystem survival – The analysis includes two system direct hydrosystem survivals, a present day estimate of .87 for spring/summer chinook and a historical pre-dam estimate of .80 for direct survival. . The direct in-river survival assumptions were adopted from the 2004 Biological Opinion SIMPASS model runs. Using more recent expanded reach survival estimates and proportion transported, the recent average direct mortality appears to be closer to .86.
Development of the pre-dam migration survival – The historic or pre-dam survival estimate of in-river migrants is .80. This value was developed for and incorporated into the 2004 Biological Opinion from the Ferguson et al technical report, entitled Effects of the Federal Columbia River Power System on Salmonid Populations. Since there are no measures of pre-hydrosystem survival, all developed values will include uncertainty. Recognizing this factor, it would be beneficial to include an alternative method to display a range of potential estimates. Raymond (1979) estimated the survival of spring and summer chinook through the then free flowing Snake River from Whitebird on the Salmon River to Ice Harbor Dam. Survival through the free flowing 244 mile reach from the Salmon River to Ice Harbor Dam from1966 to 1968 averaged 89%. The Raymond estimates imply a historic survival rate of 0.91 through a free flowing river from Lewiston to Bonneville Dam locations. The framework reference currently included for historic pre-dam mortality is the most pessimistic. Further, extrapolating short reach survivals to longer reaches has limitations and does not include the dynamics of in-river migration related to flow conditions. The historic survival based on extrapolating Raymond's estimates may be preferable because it was based on a longer reach of free flowing river, and represented predominately wild yearling Chinook.

D values utilized in the calculation appear inconsistent and affect the allocation of mortality- The document refers to a Williams et al paper in which the mean D value for spring/summer chinook is 0.553 and ranges from 0.336-1.08 for the years 1994 through 2000. The CSS data on spring/summer chinook reports a geomean for D of 0.55 for the years 1994 through 2002. Excluding the extremely low flow year 2001, the CSS D values had a geomean of 0.47. The framework reports however utilize a D value of 0.59, which again results in an optimistic representation of hydrosystem impacts.

We were unable to document the estimates of juvenile fall chinook survival utilized in the report. In the PATH process two estimates of juvenile survival through the free flowing Snake River were utilized:

PATH Decision Analysis for Snake River fall Chinook (September 1999) used two hypotheses to represent juvenile survival through a free-flowing Snake River (EJUV1 = 0.67 and EJUV2 = 0.89). (Table 5.1-1; p. 108; Peters, Marmorek and Parnell 1999).

The higher estimate (EJUV2) was from NMFS survival estimates in 1998, 1997 and 1995 (Muir et al. 1998), computed by comparing survival rates from different points in the Snake River above the confluence of the Snake and Clearwater Rivers. The ratio of the survival rate from the upper release site (Pittsburg Landing) to that of the lower release site (Billy Creek) was used to derive the free-flowing Snake River estimate (p. 114).

The lower estimate (EJUV1) was based on the premise that release from Pittsburg Landing to Lower Granite Dam divided by the project survival through Lower Granite Pool and Dam.