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MEMORANDUM

TO: Agnes Lut

FROM: Jerry McCann

DATE: October 15, 2008

RE: Questions from Agnes Lut: "If the 2001 data was removed, would the figures still show a statistically significant relationship? Would the relationships remain the same?"

There is no valid reason for removing the data from 2001 from the analysis that we conducted. The 2001 year occurred, and we collected juvenile salmonid survival and travel time information under the low flow, low spill conditions that existed that year. However, to show that 2001 data does not drive the relation that we have observed between spill and juvenile survival and travel time, we conducted the analysis you requested. We analyzed the bivariate relations between reach survival and environmental variables after removing the three data points from 2001 (Figures 1 and 2) and compared the resulting weighted regression models with the original models that contained the 2001 data. The weighted regression equations that resulted from the models without 2001 data were still highly significant and slopes of lines were quite similar to the original graphs. The original regression lines were included in the graphs for comparison (solid line). The newly estimated lines (dotted) were added to show the similarity between the original and new regression equations. Data points for 2001 were highlighted on the graph as hollow circles to show which data points were removed. This analysis shows that removing 2001 data from the analysis had very little impact on the estimates of the underlying relationships between survival and the environmental variables water transit time and average spill proportion in the reach Lower Granite Dam to McNary Dam.

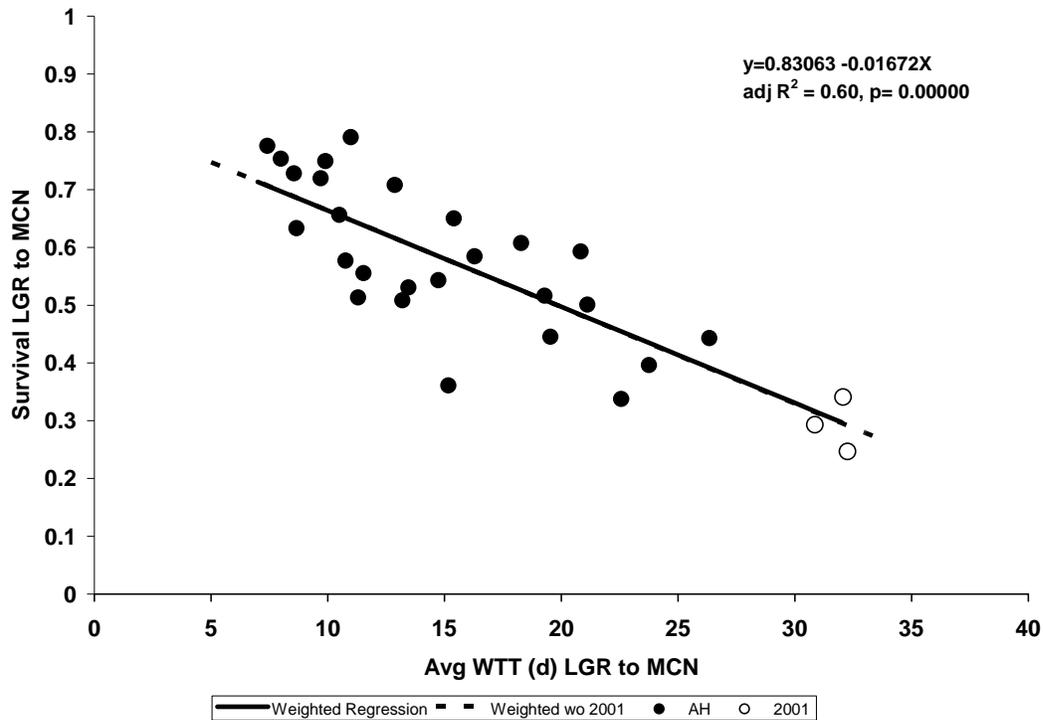


Figure 1. Relation between reach survival of hatchery origin subyearling Chinook and water transit time in the reach Lower Granite Dam to McNary Dam. The solid line indicates the original weighted regression line, and the dashed line represents the newly estimated line after removing 2001. White filled circles represent 2001 data points which were removed from the newly estimated weighted regression line.

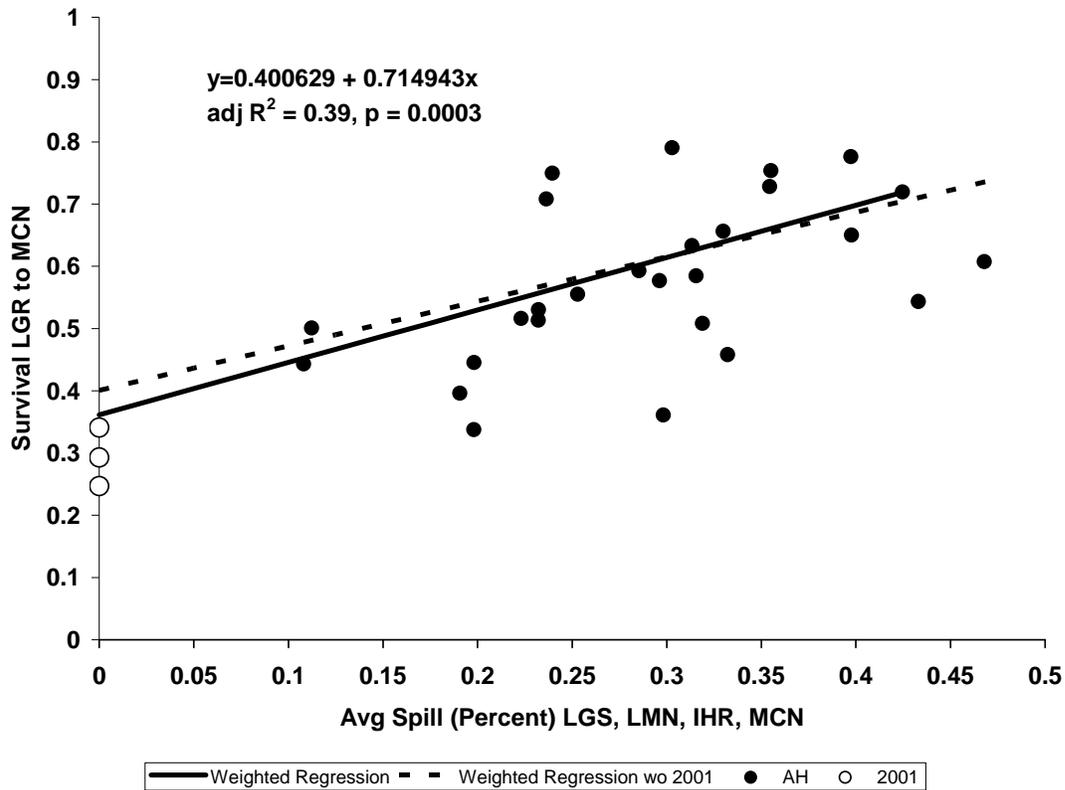


Figure 2. Relation between reach survival of hatchery origin subyearling Chinook and average spill proportion in the reach Lower Granite Dam to McNary Dam. The solid line indicates the original weighted regression line, and the dashed line represents the newly estimated line after removing 2001. White filled circles represent 2001 data points which were removed from the newly estimated weighted regression line.