

FILE MEMORANDUM

FROM: Trevor Conder, Fish Biologist, NOAA Fisheries

TO: FPOM and Ritchie Graves, FCRPS Branch Chief, NOAA Fisheries

SUBJECT: Standardized recording of pinniped-caused injury rates at FCRPS fish traps

In 2009, ESA listed adult Snake River spring/summer Chinook salmon and steelhead hydro-system survival rates were substantially lower than adult performance standards defined in the 2008 FCRPS BiOp. This discrepancy could be related to the effects of pinniped-caused injuries on spring Chinook occurring in the lower Columbia River. I recently used fish injury data collected at the Bonneville Dam fish trap (BON) and Lower Granite Dam fish trap (LGR) from 2000-2010 to analyze the degree that frequency and severity of pinniped-caused injuries influence conversion rates for adult spring/summer Chinook.

From the data provided, I found a significantly higher average rate of any pinniped-caused injury reported at BON (32.1% vs. 24.8%). However, the average rate of major pinniped-caused injury (i.e. flesh wounds) that are most likely to impact survival, were significantly higher at LGR (8.6% vs. 6.9%). Additionally, data from these sites do not follow similar trends over the ten year time frame, and appear to be inversely related (Fig. 1).

Since pinnipeds are excluded from migrating upstream of Bonneville Dam, it is difficult to provide a biological explanation why a higher proportion of fish with major pinniped-caused injuries were recorded at LGR. Without standardization, differences in injury observation and recording methods at these sites can potentially mask biological impacts that pinnipeds are having on these ESU's. Since this injury data is important for informing fisheries management decisions, I propose that a standardized injury recording requirement be advised by FPOM.

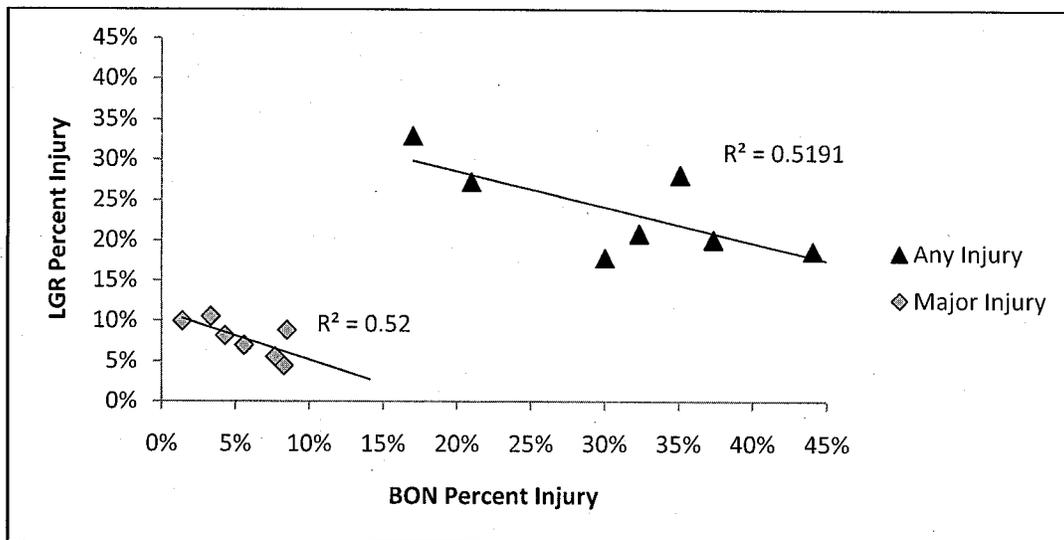


Figure 1. Relationship between percent of pinniped-caused injuries on spring/summer Chinook observed at Bonneville and Lower Granite fish traps 2000-2010.