

APPENDIX D: INCLUSION OF THE 2005 DATA POINT FOR THE SACRAMENTO INDEX FORECAST

Since 2008, the 2005 data point has been excluded when forecasting the Central Valley Index (CVI) and Sacramento Index (SI). In 2008, the justification for excluding the 2005 data point was that it had “considerable influence” on the linear predictor, and in particular, 2005 had a high degree of influence on the forecast when jack escapement was low (PFMC 2008). At the time, the linear predictor included a y-intercept parameter and there was concern that the model structure in conjunction with inclusion of the 2005 data point would lead to an unacceptably high CVI forecast at the very low 2008 jack escapement level. Later in the 2008 preseason management process, the SI was developed and a zero-intercept linear model was used to forecast the SI. The 2005 data point was excluded when performing the SI forecast in 2008, and for consistency, it was also excluded in 2009.

A closer examination of the SI forecast model suggests that, given the model structure, there is little reason to exclude the 2005 data point. The data point has little influence on the zero intercept, linear predictor ($\beta_{\text{with } 05} = 26.6$, $\beta_{\text{omit } 05} = 28.6$), and SI forecasts would be very similar, particularly at low jack escapement levels (Figure D-1). Based on the changes made in the predictor model structure since 2008, and the similarity between the current predictor with and without the 2005 data point, the STT has decided to use all data since 1990 for predicting the SI in 2010.

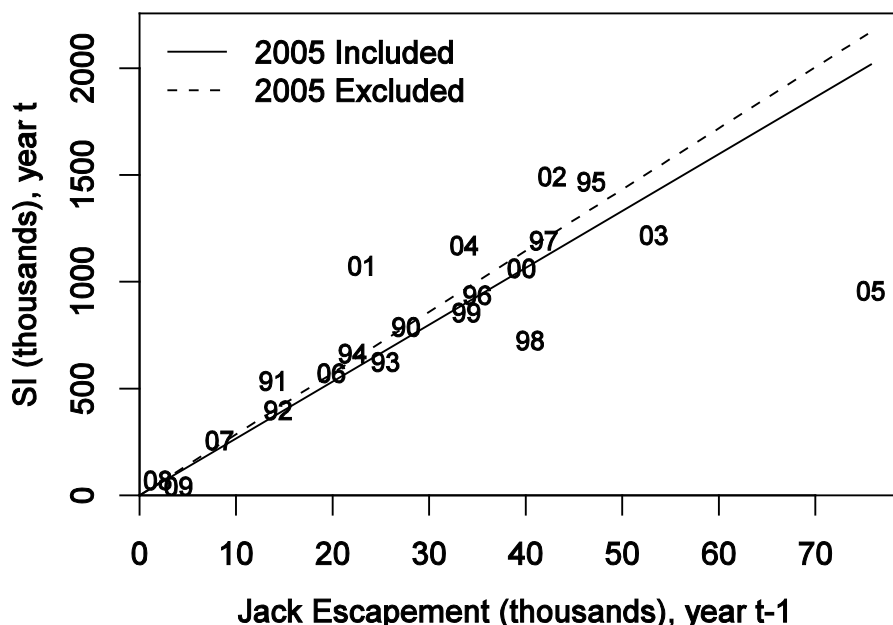


Figure D-1. The SI predictor with (solid line) and without (dashed line) the 2005 data point.

Reference

Pacific Fishery Management Council. 2008. *Preseason Report I: Stock Abundance Analysis for 2008 Ocean Salmon Fisheries*. (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384.