

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON
WORK GROUP REPORT ON CAUSES OF THE 2008 SALMON FAILURE

The Scientific and Statistical Committee (SSC) reviewed the pre-publication work group report “What caused the Sacramento River fall Chinook stock collapse?” The SSC also received a document Friday afternoon that was developed by Council staff, which suggested possible document review points for Council advisory bodies. The SSC review of the work group report considered the list of review points provided by Council staff, but did not focus its discussion on the list. The SSC suggests it is more appropriate for the report’s authors to consider the concerns detailed in the staff document and to address them in the next draft of the report, if feasible. Several members of the SSC participated in the development and writing of the work group report and recused themselves from the SSC review and critique of the document. They did provide clarification on items in the report on which SSC members had specific questions.

The organization of the report was helpful in understanding the process that the work group used for examining possible causes of the failure of the 2004 and 2005 brood years. However, because of the narrow focus of the report, i.e., concentrating on the response of only two brood years, the SSC is concerned that the report’s conclusions may not be robust. Many of the analyses summarized in the report might have been strengthened by examining a longer time series of data beyond those years adjacent to the two brood years in question. A more detailed examination of temporally expanded data sets would better define “unusual” conditions that may affect salmon survival at different life history stages.

Another SSC concern is that the data and details underpinning many of the analyses associated with the report are not presented in the report. It was difficult to critically evaluate many of the report’s conclusions because underlying analyses were not presented. For example:

- The drastic decline in breeding success of seabirds (Cassin’s auklets) was cited as evidence supporting the hypothesis that poor ocean conditions were a major contributing factor to the failure of the brood years. However, there was no seabird data presented in the document.
- The juvenile Chinook CPUE data from the Chipps Island sampling was offered as evidence that freshwater survival was not unusually poor for the two brood years. However, it was not clear whether adjustments to the raw CPUE data to account for inter-annual changes in juvenile catchability had been considered.

The SSC’s review of the report would have been facilitated if the details of many of the analyses had been presented.

The SSC generally supports the report’s conclusions that ocean conditions were an important factor contributing to the poor performance of the 2004 and 2005 brood years of Sacramento fall Chinook. As discussed in the report, there were poor returns of other west coast salmon stocks which supports the hypothesis that poor ocean environmental conditions in 2005 and 2006 contributed to the brood year failures. The report acknowledges other factors likely contributed to the failure, in particular, the long-term decline of conditions in the freshwater environment. However, the available data and analyses presented in the report do not allow full assessment of other factors which may have contributed to the failure. The SSC supports the report’s recommendation for a process to evaluate

the potential benefits of increased habitat quality and quantity, and modifications to hatchery practices to improve life history diversity of the Sacramento River Chinook stock.

The SSC notes that the time frame for preparation of this document and for Council review did not lend itself to a thorough analysis and review. From the SSC's perspective, an opportunity to interact with the workgroup at some stage earlier in the report's development would have been better and more productive. This initial review might have been done by the SSC's salmon subcommittee. An earlier opportunity to review the document would also have allowed a more thorough consideration of the Council staff's review points by the SSC.

Finally, the SSC has an overriding concern that the conclusions drawn from investigations of this type, which focus on a very narrow time period, will always be questionable, especially when they occur only in response to a negative event. Potential causes will likely always be found, but these will in many cases not reflect general properties unless a broader investigation in both time and area is conducted.

PFMC
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