

MODEL EVALUATION WORKGROUP REPORT ON SALMON METHODOLOGY REVIEW

This past summer the Model Evaluation Workgroup (MEW) has made progress on two tasks:

- 1) Three reports of the Fishery Regulation Assessment Model (FRAM) documentation set have been updated with details relating to the addition of new Chinook stocks to the Chinook FRAM model.
- 2) A potential methodology for a FRAM sensitivity analysis was identified and three sets of analyses were completed as an exploratory use of this tool.

At the Salmon Methodology Review meeting in October, the MEW presented their FRAM sensitivity analysis work to the Salmon Subcommittee of the Scientific and Statistical Committee (SSC) and the Salmon Technical Team (STT) in a paper entitled “Three Tests of a Potential Method for Development of a FRAM Sensitivity Analysis.” This write-up is available as Agenda Item D.1.a, Attachment 1. A complete sensitivity analysis would consider model functions with a wide range of FRAM parameters in both the retention fishery and selective fishery modes. This type of effort has not yet been attempted. Our understanding of this sensitivity analysis methodology is still developing.

The three completed methodology tests included:

- 1) Examination of Chinook FRAM (retention fisheries) sensitivity to manipulations of release mortality rates for: legal size fish, sub-legal size fish, and for drop-off/drop-out.
- 2) A repeat of the above test but with a robust mark selective fishery replacement.
- 3) Using coho FRAM, a manipulation of only mark selective input parameters.

The results of these tests were encouraging. Expected FRAM model functions were confirmed and illustrated with the manipulations of the examined parameters. The model was shown to not be overly sensitive to input release mortality rates. This was important as in selective fisheries the mortality of wild fish is determined by these rates.

Additional questions were raised that can also be explored with this tool; for example, model function related to the form of catch input i.e., “quota” catch input versus a “fishery scalar” catch input. How the age structure of a Chinook stock influences that stock’s exploitation rate also needs to be better understood.

The MEW does not consider the FRAM sensitivity analysis task as being completed. Progress was made, but we would like to continue this effort with a comprehensive study design that includes input from the SSC, the STT, and others.

At the Methodology Review meeting the topic of exploitation rates in potential Chinook mark selective fisheries was discussed. The MEW will explore the development of exploitation rate thresholds for Chinook mark selective fisheries.

PFMC
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