

## MODEL EVALUATION WORKGROUP REPORT ON SALMON METHODOLOGY REVIEW

The Model Evaluation Workgroup (MEW) offers comments on the following Fishery Regulation Assessment Model- (FRAM) related topics as contained in the materials provided for the October Methodology Review Meeting. Because of the Federal government furlough, several members of the MEW were not able to attend the review and provide comments or questions at that time. In addition, the MEW is not attending the presentations of the selected topics at the November Scientific and Statistical Committee Meeting. Our comments include feedback from those that were able to attend the October meeting and by those who did not attend the October review but had reviewed the materials prior to the meeting.

Four topics were presented at the October Methodology Review with MEW as the lead:

1. Incorporate estimates of legal and sublegal Chinook fishery encounters from recent sampling information into FRAM
2. Modifications to FRAM algorithms for assessing sublegal and legal encounters if there are changes in minimum size limits
3. Develop a standardized methodology for calculating Age-2 Chinook forecasts
4. A progress report on the development of a new Chinook FRAM base period

The first three topics are relevant to FRAM modifications that would be considered for 2014 fishery modeling. The fourth topic refers to ongoing work which may be ready for review next year.

The following is a summary of comments for those topics in the Methodology Review that are FRAM-related.

We recommend that the incorporation of recent sampling information on sublegal and legal size Chinook encounters be included for 2014 FRAM modeling. The sublegal and legal size information that is currently in FRAM is outdated, poorly-documented, and shown to produce estimates that are different from recent observations. Recent-year data on sublegal and legal size encounters are now available for many fisheries. FRAM encounter rates should be modified to reflect these observations.

Regarding modification of FRAM algorithms for assessing sublegal and legal encounters if changes in size limits are proposed for modeling, the MEW recommends a limited use of this in 2014. The method for analyzing changes in size limits would only be used in fisheries where model-projected estimates of encounters can be gauged against estimates from relevant sampling data (e.g., sublegal to legal ratios, length frequency data).

We could not come to consensus for 2014 modeling regarding developing a standardized method for calculating Age-2 forecasts. Many regionally-developed annual stock forecasts do not include an Age-2 component, which is required for FRAM Chinook modeling. The use of “place-holder” model input for Age-2 abundance needs to be addressed. Although the method presented at the Review has merit and represents an improvement over status quo, we would like additional time to explore the effects of broad scale abundance changes on other modeling parameters, as well as investigate alternative methods for deriving model inputs for Age-2 abundance.

Refinement of methods for estimating sublegal and legal encounters, algorithms to assess changes in size limits, and rigorous methods for generating Age-2 abundance inputs will be further developed in the new Chinook FRAM base period project that began this last summer. The Methodology Review projects by the MEW were in part products of this FRAM base period development project and reflect our initial efforts towards overall improvement in fishery impact assessment in FRAM.

The new FRAM Chinook base period will migrate FRAM from a model that relies on 30+ year-old coded wire tag data to one that incorporates contemporary coded wire tags information (2007 – 2011 fishing years). We will also update stock and fishery parameters and revise outdated calibration methodologies.

One other model-related topic from the Methodology Review involves the coho stock and population units in the “Harvest Strategy Risk Assessment for Lower Columbia Natural Coho.” The stock units in FRAM for lower Columbia natural coho are different than the units described in the risk assessment where the populations are stratified into three geographic/population categories (Coast, Cascade, and Gorge Major Population Groups) without reference to run timing. The FRAM has three coho stock units: Oregon, Washington Early, and Washington Late. Fishery impacts from FRAM for Lower Columbia natural coho would need to be estimated in terms that are consistent with the units described in the harvest strategy risk assessment report. For preseason fishery assessment, a method to coordinate the fishery impact estimates in ocean and in-river models for lower Columbia natural coho would need to be developed by MEW and the Salmon Technical Team, along with state and tribal technical staff.

PFMC  
10/31/13