

MODEL EVALUATION WORKGROUP REPORT  
ON SALMON METHODOLOGY REVIEW

The Model Evaluation Workgroup (MEW) is not attending the November Council Meeting, but offers the following comments on the topics presented for review at the Salmon Methodology Review Meeting. There were three presentations regarding potential conservation objectives: Willapa Bay coho (Robert Kope, STT/NMFS), Grays Harbor Chinook (QDNR and WDFW), and Southern Oregon Coastal Chinook (Todd Confer and Matt Falcy, ODFW). For all of these stocks, the MEW commends the effort of the authors to pull together the necessary data and produce reasonable stock/recruit relationships. We will not comment upon Conservation Objectives but note that the exploitation rates in Council area fisheries for Willapa Bay coho and Grays Harbor Chinook are minor (<5 percent). The Southern Oregon Coastal Chinook represented by Rogue River has an ocean distribution that is indistinguishable from Klamath River stock

The MEW reviewed and has comments for the three presentations on FRAM modeling methodology. Two presentations compared Coded Wire Tag (CWT) based estimates of specific fishery impacts upon specific Chinook stocks against corresponding FRAM based estimates, and provided adjustments for FRAM modeling. These adjustments are meant to be short term, and in the cases presented will not be needed when the new Chinook base period is implemented (planned for 2016). The other presentation was of a methodology to generate model input of Age 2 Chinook abundance, based upon forecast of Age 3 cohort, potentially applicable to all FRAM stocks.

- 1) An Evaluation of the Effectiveness of the Cape Flattery Control Zone Closure at Reducing Non-treaty Troll Fishery Impacts on Puget Sound Chinook. Presented by Pete McHugh (WDFW)
- 2) Standardized Method to Calculate Chinook Age 2 FRAM Recruit Scalars, Based Upon the Age 3 Forecast. Presented by Andy Rankis (MEW/NWIFC)
- 3) A Method for Utilizing Recent Coded Wire Tag Recovery Data to Adjust FRAM Base Period Exploitation Rates. Presented by Galen Johnson (MEW/SSC/NWIFC)

1). Due to the Cape Flattery Control Zone closure the structure of the Area 4 (Neah Bay) troll fishery has changed since the Chinook base period was created. This closure has excluded the non-treaty fleet from nearly half of Area 4 since 1999. The presented CWT analysis supports reduced non-treaty troll impacts for three Puget Sound Chinook stocks, corresponding to a point estimate adjustment factor of 0.56 (a 44 percent reduction in impact). During the 2014 preseason process an adjustment factor of 0.75, informed by a preliminary analysis of CWT data, was applied to three Puget Sound fall fingerling FRAM stocks (Hood Canal, Deep South Sound, and Mid-Puget Sound). Given the amount of uncertainty in the data, the MEW supports WDFW's risk-averse proposal to keep the adjustment at 0.75 for each of the three Chinook stocks in the FRAM fishery strata for this area (non-treaty Area 3 and 4).

2). FRAM Chinook modeling results are highly sensitive to age specific ocean recruit inputs, by age and stock. Obtaining reliable and FRAM compatible estimates of age 2 ocean recruits has been especially difficult. Previously, model inputs for age 2 have been developed ad-hoc using inconsistent methods in preseason model runs. Thus, a method was developed to generate model input for age 2 ocean abundance from the stock's age 3 ocean abundance that provides a consistent

method across all stocks and years for preseason model runs. This methodology can be applied to individual stocks or to all Chinook FRAM stocks. The MEW believes the application of this method to all stocks is preferable to partial implementation and recommends doing so for the 2015 preseason modeling.

3). The methodology for utilizing recent CWT recovery data to adjust FRAM Chinook base period exploitation rates profiled two examples from Puget Sound net fisheries directed on mature returns of local stocks. An examination of South Puget Sound stock impacts in the Hood Canal net fishery using CWT recoveries indicated that FRAM is overestimating the impacts to this non-local stock in this fishery. The other example identified an overestimate of FRAM catch of Hood Canal stock in the net fishery in south Puget Sound compared to CWT catch. The FRAM overestimates of South Puget Sound stock impacts are substantial. The methodology report stated: “It is not the goal of this methodology description to provide guidelines on what FRAM estimates would be considered problematic and, thus, candidates for the method but to provide a tool when managers deem it necessary to do so”. The presented methodology uses recent year CWT recoveries to adjust FRAM’s stock/age/fishery/time step-specific base period exploitation rates (BPER). The MEW agrees that the method provides a tool for adjusting FRAM estimates of stock impacts in terminal fisheries using CWT recoveries.

The MEW would also like to comment on two of the progress update reports presented at the Methodology Review meeting. 1) Work on the new FRAM Chinook base period is progressing. Testing has commenced, data gaps still need to be addressed, but the MEW anticipates a product will be ready for review at the 2015 Salmon Methodology Review Meeting. 2) A new Lower Columbia Natural Coho (LCRN) matrix for annual harvest guideline is being finalized. The potential configurations of the modified matrix are not expected to require any change to either FRAM modeling or to the calculations of total exploitation rate for the LCRN aggregate.

PFMC  
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