

FINAL REPORT OF THE OREGON COASTAL NATURAL COHO WORK GROUP

The Salmon Technical Team (STT) appreciates the work that went into the report of the Amendment 13 Review Committee.

Clarification of the technical basis for the Committee's recommendations: The report presents results from the Nickelson-Lawson Model and a simplified deterministic version of that model as the basis for proposing a new decision matrix containing limitations on allowable exploitation rates. The report is not clear as to the details underlying the various technical analyses presented. The STT, therefore, recommends a technical appendix describing the detail underlying the derivation of the proposed decision matrix be produced. The appendix should provide an explanation of modeling decision points and modeling details that support the proposed new decision matrix can be understood and followed. Additionally, the appendix should include derivation of the model parameters for the original decision matrix established by Amendment 13, as requested by the STT and Scientific and Statistical Committee (SSC) (Amendment 13 should be attached for reference since it is referenced extensively by the Committee's Report).

Potential confusion and misinterpretation of "extinction risk": There is some potential for confusion and misinterpretation regarding the "extinction risk" presented in the report. An extinction risk analysis was completed prior to Council adoption of Amendment 13. The "extinction risk" presented in this review should not be interpreted as a substitute for or an update of that analysis. The extinction probabilities shown in Figure 9 were contrived in an attempt to generate relationships between model-estimated spawners per mile and the risk of extinction four generations later. The relationship represents model results under the assumption of prolonged periods of constant, low marine survival rates; additionally, the definition of "extinction" differs significantly in the two analyses (.05 spawners per mile over four generations in the committee's review versus 50 spawners per basin over 100 years in the Amendment 13 Risk Assessment). The relationships depicted in figure 9 should not be interpreted as true risks of extinction under actual conditions. The original risk analysis examined the risk of extinction at 0% harvest rate and the harvest rates prescribed by the matrix in Amendment 13 with a minimum harvest rate of 13%. The committee did not complete an "extinction risk" analyses comparable to that provided for Amendment 13; however, the 8% maximum exploitation rate proposed by the Committee at critical parental escapements should produce extinction risks within the bounds depicted in the Amendment 13 assessment of extinction risk.

Modified decision matrix: The STT supports the addition of the critical parental spawner status and extremely low projected marine survival rates to provide additional guidance in responding to conservation concerns. However, the STT notes that the 8% exploitation rate limit allowed under critical parental stock status is somewhat arbitrary. This rate represents the lowest preseason rate anticipated by the regulations adopted by the Council in recent years; no significant modeling or biological thresholds can be attached to this rate. The STT is concerned that application of the 8% exploitation rate limit uniformly across all expectations of marine survival may not be appropriate or consistent with the objective of achieving full seeding of high quality habitat (defined at an assumed marine survival rate of 3%). Of particular concern is the application of the limit at medium and high marine survival rates. While there is increased uncertainty regarding compensatory effects at low spawning densities and some uncertainty regarding production response at critical parental escapement and medium to high marine survival levels, the STT notes that such events have occurred historically. The STT recommends that the committee reconstruct historical production to provide an indication of what production response might be expected under such conditions. The STT also wishes to note that a limitation of exploitation rates at 8% at medium and high survival rates will increase the contentiousness of allocation issues that come before the Council. At critically low parental escapement levels and low projected marine survivals, the STT concurs that an 8% exploitation rate would likely delay the attainment of the full seeding objective. At very low projections of marine survivals and critical parental spawning escapements, the STT concurs that there is no biological justification for harvest of the OCN stock.

Modeling capacities: The STT notes that application of the deterministic Nickelson-Lawson model to individual sub-aggregates produces inconsistent results. This simplified model overpredicts spawning escapement in the north and north-central sub-aggregates while underpredicting production in the south-central and southern sub-aggregates. This could be due to a variety of factors, including differences in marine survival rates or fishery impacts, two critical elements that are assumed invariant under Amendment 13. Currently, the STT does not have the capability to evaluate differences in fishery impacts between the sub-aggregates if they exist; marine survival differences between sub-aggregates would require revision of Amendment 13.

PFMC
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