SALMON TECHNICAL TEAM REPORT ON KLAMATH RIVER FALL CHINOOK OVERFISHING CONCERN

The salmon fishery management plan (FMP) anticipates two possible causes of an Overfishing Concern being triggered by the failure, in three consecutive years, of a stock to meet its conservation objective: normal variation in stock abundance, or the beginning of a critical downward trend. The FMP anticipates the need for modifications to status quo harvest management (additional rebuilding measures) only in the latter case.

The criteria recommended by the Salmon Technical Team (STT) for ending the Overfishing Concern include attaining a minimum of 35,000 adult natural area spawners in three out of four consecutive years, with at least 40,700 spawners in at least one of those years. The rationale for the three out of four consecutive years portion of this recommendation was that even if a stock is entering a critical downward trend, the recruitment of a single strong year class could provide sufficient spawners to meet the 35,000 adult natural area spawner floor in two consecutive years. Such an event may not signify recovery of the stock, but could simply reflect random variability. Requiring that the escapement floor be met in three out of four consecutive years requires recruitment of at least two strong year classes, either from the low escapements that triggered the Overfishing Concern, or from the initial escapement that exceeds the floor.

The criteria proposed by the Council in March include meeting the 35,000 adult natural area spawner floor in three of four consecutive years **or** attaining a minimum of 40,700 adult natural area spawners in two consecutive years. The rationale presented by the Council for the latter criterion was that, given the age structure of Chinook salmon populations, two successive years of fully seeding the habitat should be sufficient to insure that recruitment of subsequent generations will be adequate. The primary difference between the STT-recommended and Council-proposed criteria is that the STT criteria requires that a minimum of two strong recruitments be demonstrated following the Overfishing Concern, whereas the Council criteria requires only two strong spawning events be demonstrated.

At the March Council meeting, the Scientific and Statistical Committee (SSC) suggested that the Stochastic Spawner-Recruit Model (SSRM) be used to evaluate the risks and benefits of proposed criteria for ending the Overfishing Concern. Using the SSRM, the STT analysis contrasts the criteria proposed by the STT and that proposed by the Council by simulating two scenarios: management during the Overfishing Concern under Amendment 15 with an escapement floor of 40,700 and management under Amendment 15 with an escapement floor of 35,000. The results of this analysis indicate that differences in outcomes between these two management regimes are small in terms of expected benefits to the fishery or risks to the population. These results in turn suggest that significant differences in the expected benefits and risks between the STT-recommended and the Council-proposed criteria for ending the Overfishing Concern are unlikely. The STT believes the two scenarios examined in the analysis were appropriate for characterizing the maximum expected differences between the STT-recommended and Council-proposed criteria, however the STT questions the plausibility of some of the SSRM results. In the time available to complete this analysis, the STT was not able to fully evaluate the SSRM model structure and its assumptions, and is therefore uncertain about the accuracy of the analysis results.