

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON KLAMATH RIVER FALL CHINOOK OVERFISHING CONCERN

The Scientific and Statistical Committee (SSC) focused its review for this agenda item on Agenda Item E.1.a Attachment 3 (Alternative Rebuilding Plans for Klamath River Fall Chinook), the Salmon Technical Team (STT) Report (Agenda Item E.1.c), and Agenda Item E.1.c Supplemental STT Report 2. Mr. Chuck Tracy was present to report on the STT conference call that resulted in Supplemental STT Report 2.

There are two proposals for the criteria to end the overfishing concern (OC) and rebuild Klamath River fall Chinook (KRFC):

The original STT proposal - Consider the OC of KRFC ended when a natural spawning escapement of at least 35,000 adults is achieved in three out of four consecutive years, with a natural spawning escapement of 40,700 adult KRFC or more in at least one of those three years.

The proposal forwarded for public review by the Council - Consider the OC of KRFC ended when a natural spawning escapement of at least 35,000 adults is achieved in three out of four consecutive years, or when a natural spawning escapement of at least 40,700 adult KRFC is achieved in two consecutive years.

At the March Council meeting, the SSC recommended a more quantitative assessment of the recommendation for ending the KRFC OC proposed in “Assessment of factors affecting natural area shortfall of Klamath River fall Chinook salmon in 2004-2006” (Agenda Item D.3.b March 2008 Council meeting). The Stochastic Spawner-Recruit Model (SSRM) was suggested as a possible tool for evaluating the recommendation. Subsequently, the STT used the SSRM to evaluate the difference between their recommendation and the Council’s modified proposal, and reported the results in the STT Report (Item E.1.c). In its Supplemental Report 2, the STT concluded “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.” However, the STT expressed concern about “the plausibility of some of the SSRM results.” One particular concern, as reported by Mr. Tracy, was that tribal harvest share did not show the expected increase of several thousand fish under the higher escapement option.

The SSC also has concerns about the usefulness of the SSRM as a tool to quantitatively evaluate and compare the two proposals. Specifically, some of these concerns are:

- The model does not appear to capture the annual variability in marine survival that the KRFC stock has experienced. This variability is likely to affect the resiliency of the stock.
- The metrics produced by the model that were compared may not be the metrics that are best suited for comparing the projected long-term performances of the proposals.
- Experience with stochastic life-cycle models such as the SSRM has shown that they are relatively insensitive to changes in exploitation rates or escapement goals.

- The model structure and parameterization resulted in high resiliency of the stock to recover from depressed spawner levels. Even with no spawner floor the model predicts that escapements would exceed 35,000 over half the time in the next 5 years.

Given these concerns about interpreting the results of the SSRM output and its suitability for comparing these two proposals, the SSC recommends that the two proposals also be evaluated and compared based on underlying biological principles. STT describes the basic difference between the two proposals: “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.” (Agenda Item E.1.c Supplemental STT Report 2). The SSC agrees in principle that multiple successful spawning events are more indicative of recovery than a single event that provides two adequate escapements. In addition, spawning escapements of 35,000 or 40,700 should not be described as “strong” given that 35,000 is the escapement floor.

In order to evaluate the short-term population dynamics of stocks at low abundance, models need to be developed that allow for a more realistic evaluation of alternative management strategies that could be applied not only to KRFC, but to other salmon stocks as well.

PFMC
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