

SALMON AMENDMENT COMMITTEE REPORT ON  
FISHERY MANAGEMENT PLAN AMENDMENT 15 (*DE MINIMIS* FISHERIES)

Most of the Salmon Amendment Committee's (SAC) editorial and analytical recommendations are included in the draft Environmental Assessment (EA). In the following, additional input is provided for the Council's consideration.

**Hindcast Analysis.** The hindcast analysis is instructive with regard to implementation procedure and implementation frequency based on historical estimates, but is not recommended for projecting the probability of natural spawning escapements in future years. There are two main reasons for this: 1) the approach does not evaluate the effect of *de minimis* fishing seasons on recruitment (future ocean abundance levels) and 2) it is based on pre-season projections of natural spawning escapement, which were generally higher than post-season estimates. Both of these shortcomings generally result in lower natural spawning stock abundance projections than actually occurred.

Historical, post-season averages for biological and economic criteria are included in Tables 4-24 (page 68) and ES-1 (page vi) for comparison with analytical results. These should be viewed with caution because past methodologies and management decisions have, in some years, resulted in natural spawning escapements below fishery management plan (FMP) objectives.

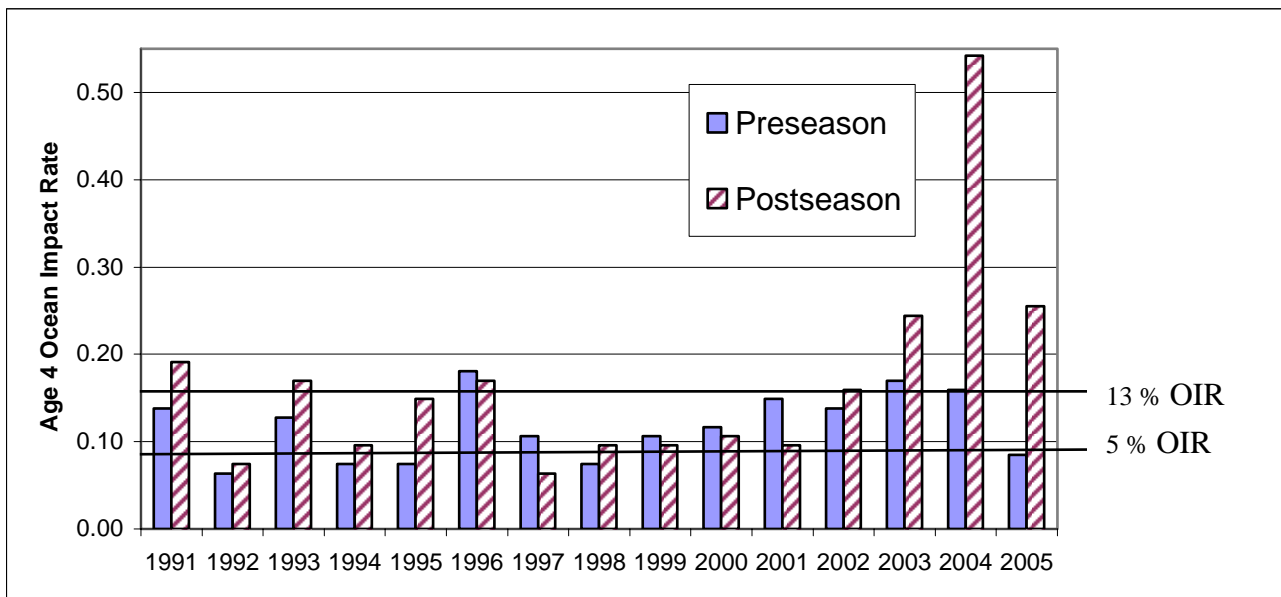
**SSRM.** The SSRM and model changes made in response to Council family recommendations at the September meeting are described in Appendix G. Also, analyses of river fishery impacts are now included in the model outputs and described in the EA.

SSRM results are consistent with SAC expectations for relative impacts of the alternatives, but data are not available to validate the magnitude of the impacts. Explanation or qualification of certain key model results are provided below.

1. Long-term tribal and river sport fishery catches decline by less than 1% under the fixed cap alternatives (Table 4-13, page 54). There are two main explanations for this: 1) stock recruitment (ocean abundance) declines in response to *de minimis* fisheries and 2) river fishery quotas are constrained by pre-season abundance predictions, which do not provide for harvest of additional fish when stock abundance is higher than predicted (which brings the catch averages downward). Ocean fisheries are managed based on harvest rates (time and area management) and are better able to catch the additional fish when the stock is underestimated.
2. The river sport fishery allocation of the non-tribal share is high (27%) compared to recent policy for the fishery of 15% (calculated from Table 4-13, page 54). The CCC ESA consultation standard limits ocean fishery impacts in high production years. In the SSRM, the extra spawners are transferred to the river sport fishery with a corresponding downward adjustment in the tribal allocation (to meet 50/50 sharing). The one exception is that the river sport catch is capped at 20,000 fish, the highest ever recorded for the fishery. The SSRM assumes that any sport fish over 20,000 go into escapement.
3. Long-term troll fishery economic impacts are low compared to recent historical economic impacts (Table 4-13, page 54). The 2006 KOHM results in lower troll fishery effort estimates than occurred in previous years. It is relevant to note that the model adjustments made in 2006 reduce the allowable harvest opportunity about 66% compared to 2005.

4. The mid-Klamath sub-stock analysis shows probabilities of a natural spawning run of less than 720 adults in either the Shasta, Scott, or Salmon rivers in any one year. This (720 spawners) is the projected effective population size threshold discussed in Appendix D. The SSRM does not project the effects of genetic impact of such events on future stock productivity.
5. The SSRM assumes no infrastructure impact of the alternatives. Port and fisherman dependence on salmon fishing are analyzed in Appendix I. Severe restrictions on ocean harvests, particularly if sustained over several years, may result in loss of fishery infrastructure (e.g., fuel, bait, ice, processing capacity). Such losses will vary among ports, depending on the extent of port reliance on salmon and non-salmon fishing opportunities. Data and multi-species models are not available to validate this assumption.
6. The KRFC productivity coefficient is assumed to be the same as that computed for the 1979-2000 broods. Sensitivity analysis of change in stock productivity shows that probabilities of meeting biological criteria are highly sensitive to the stock productivity parameter (Figure G-15, page 142). It would be highly speculative to project a change (either temporary or long-term) in stock productivity based upon available information.

**Historical Context of Alternatives.** The SAC has graphed the implementation ranges for the alternatives for comparison with annual pre- and post-season estimates of age-4 ocean impact rates since 1991. This provides context for comparing the alternatives relative to historical ocean fishery management expectations and outcomes. It shows that the 5% Cap Alternative represents impact levels lower than any of the rates projected pre-season or estimated post-season since 1991, but that the 13% Cap Alternative is intermediate to the rates projected pre-season or estimated post-season for the same years.



**EA v EIS.** Some of the SAC members believe that it may be necessary to continue analysis of the amendment through an EIS. Those concerns increase in proportion to the adopted *de minimis* fishing rate. Principal concerns based on review of applicable NEPA review criteria include: tribal fishery needs (cultural impacts); genetic risks and affect on stock productivity associated with low run sizes; adequacy of time allowed for technical analysis and public review; cumulative effects relative to on-going or impending environmental projects or actions (analysis is underway but not complete); community and

state economic impacts, ocean salmon fishery infrastructure impacts in particular; and possible conflict with existing laws (e.g. CVPIA goals for Trinity River natural spawners).

**Clarification of Previous De minimis Fishery Recommendation.** The KRTAT (page 13 of EA) previously addressed the question of *de minimis* fisheries. The study showed no adverse effects on future yield of *de minimis* fisheries up to a 20% spawner reduction rate (SRR). However, the report noted that fishing at very low stock sizes could reduce smaller substocks disproportionately, possibly extirpating some or reducing the long-term yield. The KRTAT recommended that if a *de minimis* fishery was established, that a small SRR such as 10% should be adopted. SRR can be approximated in terms of age-4 ocean impact rate (OIR) as follows: 10% SRR = 4% age-4 OIR; 15% SRR = 6% age-4 OIR; and 20% SRR = 8% age-4 OIR. This was not done in the EA and may be useful for further Council deliberations.

**Considerations for Reduced Impacts in De minimis Fishing Years.** The Council's 5%, 10% and 13% Cap Alternatives are maximum age-4 ocean impact rates, which could be less in some years. The SAC offers the following criteria that might be used to reduce impact rates:

1. Critically low natural spawner abundance.
2. A series of low spawner abundance in recent years.
3. Status of co-mingled stocks.
4. El Nino or other adverse environmental conditions.
5. ESA considerations.
6. Other considerations as appropriate.

**Considerations for Decision Process.** The SAC offers the following considerations for the final decision process.

1. Impacts of the fixed cap alternatives relative to the Status Quo Alternative should be emphasized over absolute value comparisons.
2. Long-term economic impact analyses show increasing fishery benefits with the fixed cap alternatives for ocean fisheries, but not for river fisheries.
3. Economic impacts are not comparable between economic criteria (different metrics are used).
4. Analyses are incomplete for genetic and ocean fishery infrastructure impacts, both of which are important considerations in low abundance years and are not mutually compatible.
5. The definition of "*de minimis*," provided in the EA as footnote 1, page 1 is: *De minimis* is Latin for "of minimum importance" or "trifling." Essentially it refers to something or a difference that is so little, small, minuscule, or tiny that effects need not be considered.

#### **SAC Conclusions and Recommendations:**

1. The SAC concludes that the biological and economic analyses are sufficient to evaluate the alternatives at this meeting.
2. The SAC identified that of the biological criteria evaluated, the risk of substocks dropping below a genetic threshold of 720 spawners is among the most important. However, analysis is insufficient to quantify the effects on long term productivity of substocks dropping below this threshold
3. Another important criterion for use in evaluating the alternatives is the possible loss of ocean salmon fishery infrastructure. Data and multi-species models are not available to evaluate the loss of salmon fishery infrastructure on the long-term viability of the commercial salmon fishing industry.

4. The SAC supports the adoption of a *de minimis* fishery alternative over the Status Quo Alternative provided the preferred alternative includes a mechanism or guidelines that provide for a precautionary approach at low stock size to help protect the long-term productivity of the stock. This could include the KFMC sliding scale recommendation or something analogous.
5. The SAC supports inclusion with the preferred alternative of the criteria listed in the section on Considerations for Reduced Impacts in *de minimis* Fishing Years.
6. Complexity in the final decision may affect the regulatory schedule, but adoption of a preferred alternative would likely facilitate the emergency regulation process if needed for 2007. The SAC believes it is more important to create a reasonable and defensible alternative than to meet a regulatory schedule aimed at document certification and regulation implementation by May 1, 2007.

PFMC  
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