

## **COMMISSION OF INQUIRY INTO THE DECLINE OF SOCKEYE SALMON IN THE FRASER RIVER**

In the matter of Her Excellency the Governor General in Council, on the recommendation of the Prime Minister, directing that Commission do issue under Part 1 of the *Inquiries Act* and under the Great Seal of Canada appointing the Honourable Bruce Cohen as Commissioner to conduct an inquiry into the decline of the sockeye salmon in the Fraser River

### **RE-EXAMINATION QUESTIONS OF COMMISSION COUNSEL DIRECTED TO MR. KARL ENGLISH IN RELATION TO PROJECT 7**

**MAY 27, 2011**

- Question 1. No, the models describe in MacDonald et al. (2010) are predictive discrepancy models used to predict the discrepancy between the Mission escapement estimates and the number of sockeye that reach the spawning areas for the major sockeye stocks or run-timing groups. These are not pre-season run size forecast models.
- Question 2. These models are not stock-recruitment models.
- Question 3. Yes, it is primarily relevant to in season management and post season evaluations.
- Question 4. I was referring to the biological escapement goals for each CU, which would likely vary by cycle year for highly cyclic CUs, such as the summer-run Quesnel Lake and late-run Shuswap Lake stocks. Depending on the current status of these stocks and annual returns, annual escapement targets could be less than the ultimate escapement goal. For healthy stocks, the annual escapement target should be equal to or above the escapement goal.
- Question 5. My concept of defining escapement goals for each CU is similar to what was done in the 1987 rebuilding strategy with the notable exception that these escapement goals would vary by cycle year for highly cyclic stocks, and maximum harvest rates would likely still be defined to protect less abundant stocks in years when returns for the abundant stocks could support higher harvest rates (e.g. in excess of 60%).
- Question 6. The two indicator stocks for Late Shuswap sockeye are: Adams, which includes sockeye that spawn in the lower Adams River, Little River Main Arm and Adams Lake; and Shuswap, which includes sockeye that spawn in Lower and Middle Shuswap River, Salmon Arm, Seymour Arm and Anstey Arm). There are two indicator stocks (Scotch Creek and Seymour River) for the early summer run stocks that also rear in Shuswap Lake
- Question 7. No, as indicated above, there are both early summer and late-run stocks that rear in Shuswap Lake.

- Question 8. Yes, Early summer stocks that rear in Shuswap Lake should be taken into consideration when setting escapement goals for the spawning areas that produce the juvenile sockeye that rear in Shuswap Lake.
- Question 9. I was referring to a shift in the environmental regime. I did not make any comments regarding management regime shifts but it is tempting.
- Question 10. The opportunity to harvest summer-run stocks separate from Late-run stocks typically occurs in the Lower Fraser River not in the ocean. In years when Late-run stocks are much larger than summer-run stocks (e.g. 2002 cycle line), a significant portion of the return for late-run stocks delays off the mouth of the Fraser River for 3-6 weeks while summer-run stocks enter the river with little or no delay. In off-cycle years for Shuswap stocks (2000 and 2001 cycles) prior to 2009, summer-run stocks have been much larger than Late-run stocks and both run-timing groups have migrated through the lower Fraser River at similar times. Therefore, there was no location where the summer-run stocks could be harvested separately from late-run stocks in 2001. However, substantial numbers of summer-run sockeye could have been harvested in Fraser River fisheries in 2002 before August 27<sup>th</sup>, with little or no impact on the spawning escapement for Late-run stocks because 77% of the escapement of Late-run stocks past Mission after August 26<sup>th</sup> and the very few of the late-run sockeye that migrated through the lower Fraser River with summer-run sockeye prior to August 27 survived to spawn (see English et al 2005).
- Question 11. The paragraph appears to apply to much more than just Fraser sockeye. For example: "In 1998, the regional office reported that some First Nations on the north coast submitted either no catch data or data that were unusable."

## **NEW CITATIONS**

English, K. K., W. R. Koski, C. Sliwinski, A. Blakley, A. Cass, J.C. Woodey. 2005. Migration timing and in-river survival of Late-run Fraser River sockeye using radio-telemetry techniques. Trans. Amer. Fish. Soc. 134:1342-1365.