

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

1. In questions in relation to your evidence on the usefulness of pre-season forecasting, Mr. Taylor took you to an article entitled: "Modeling the Influence of Environmental Factors on Spawning Migration Mortality for Sockeye Salmon Fisheries Management in the Fraser River, British Columbia" by MacDonald, Patterson, Hague and Guthrie (Exhibit 725).

He asked you whether you agreed with the statement: "Given large uncertainties in environmental effects on population productivity, rigorous model selection procedures are essential when evaluating empirical relationships and identifying predictive models." (Exhibit 725, p. 768 or CAN185935_0001).

On page 770 of Exhibit 725 (CAN185935_0003), the objectives of the study described in the article are set out as: "Our first objective was to identify a suite of biologically relevant and statistically significant candidate predictor variables that describe the relationship between sockeye salmon spawning migration mortality and Fraser River environmental factors. Our second objective was to develop two sets of MA models for each sockeye salmon run timing group: (1) descriptive models that explain the majority of the variation in escapement discrepancies and that are useful for simulation and postseason evaluation; and (2) predictive models subject to in-season forecasting and management constraints that can be used to provide timely forecasts of discrepancies for fishery management purposes."

QUESTION 1: Are the models described in this article models which are used in the pre-season forecasting process you reviewed in Project 7?

QUESTION 2: Are the models described in this article stock-recruitment models?

QUESTION 3: Is the work referred to in this article primarily, or wholly, relevant to in season management and post season evaluation?

2. Mr. Leadem and a number of other counsel asked you about escapement goals.

QUESTION 4: When you refer to escapement goals, are these long term goals for CUs, or are you referring to yearly escapement goals for individual CUs?

3. In approximately 1987, DFO began using an escapement policy known as the Rebuilding Strategy, under which DFO set long-term goals for indicator stocks and also interim goals that were used each year to try to work towards the long term goals. This was essentially a fixed escapement policy, with a view to maximise the long term yield from the stocks.

QUESTION 5: How does your concept of setting escapement using fixed escapement goals vary from the 1987 Rebuilding Strategy?

4. Mr. Harvey took you to Exhibit 399, p. 102 and reviewed with you the spawner recruit data for the Late Shuswap stock.

QUESTION 6: What are all the indicator stocks which rear in Lake Shuswap?

QUESTION 7: Does the stock recruit data for the Late Shuswap stock in isolation explain the interactions of all the relevant stocks in the Lake Shuswap rearing environment?

QUESTION 8: Do the other stocks in Lake Shuswap have an effect on the carrying capacity of Lake Shuswap and, if so, do such effects need to be taken into account in any analysis of the optimum level of escapement in any cycle line for stocks which rear in Lake Shuswap?

5. Mr. Harvey took you to page 137, Figure 27 in your report. In answer to his questions about the changes to the productivity of the stock in the late 1970s, you referred to a “regime shift”.

QUESTION 9: Were you referring to a shift in a management regime that occurred in that time frame, or shift in the environmental regime experienced by that stock?

6. Mr. Harvey asked you whether the 2001, 2002 large escapements of Summer-run sockeye could have been avoided if Summers were harvested before their arrival at the Fraser River.

QUESTION 10: You didn’t directly answer this question with Mr. Harvey. To clarify, could Summer-run sockeye have been harvested separately from Late-run stocks of concern, i.e. Cultus, before those co-migrating run timing groups arrived at the Fraser River?

7. Mr. Eidsvik took you to Exhibit 730, p. 20-18, para. 20.60 (the Auditor General Report 1999) and asked you questions about the catch data reported by First Nations.

QUESTION 11: Do you know if the comments at para. 20.60 relate to Fraser River sockeye alone, or whether those comments apply to a larger set of fish populations?