THE EFFECTS OF SALMON FISHERIES ON SOUTHERN RESIDENT KILLER WHALES

FINAL REPORT OF THE INDEPENDENT SCIENCE PANEL

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Prepared for

National Marine Fisheries Service
(NOAA Fisheries)
7600 Sand Point Way NE,
Seattle, WA, USA
98115-0070

Fisheries and Oceans Canada (DFO)
200 – 401 Burrard Street
Vancouver, BC, Canada
V6C 3S4

Prepared by

Independent Science Panel of the
Bilateral Scientific Workshop Process to
Evaluate the Effects of Salmon Fisheries on
Southern Resident Killer Whales

with

David Marmorek and Alexander Hall
ESSA Technologies Ltd.
2695 Granville Street, Suite 600
Vancouver, BC V6H 3H4

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EXECUTIVE SUMMARY

- *The final report will have an executive summary*

EXECUTIVE SUMMARY OF THE PRESENT DOCUMENT:

- *This document provides an annotated, DRAFT table of contents for the final report of the Science Panel*

***IMPORTANT NOTE**: structure and organization of this document will be subject to further revision*

- *This is a DRAFT of the final structure*
- *Following the second workshop, the panel may decide to modify the structure and organization based on new information and evolution in its thoughts as to how to best communicate its responses*
- *The panel may also modify this outline based on feedback from NOAA/DFO*

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1.0 INTRODUCTION

1.1 Context

- *Background on scientific issue*
    - *What are the important scientific issues?*
- *Management decisions that rely upon this information*
    - *ESA/BiOp decisions*
    - *Important things to note:*
        - *the panel is explicitly tasked with addressing the scientific issues*
        - *explicitly NOT tasked with addressing management issues*
        - *there will be no discussion of what management decisions should actuallybe made*
        - *this sub-section/paragraph(s) only intends to lay out what decisions are affected by this scientific knowledge*
        - *i.e. why is this an important issue from a management perspective?*

1.2 Workshop Process

- *Brief summary of process, workshops*
- *Reference to other proceeding documents from process*

1.3 The Role of the Independent Science Panel

- *Purpose and role of the science panel briefly described*
- *Predominantly from process description document*

1.4 Members of the Independent Science Panel

- *Selection criteria of science panel*
    - *i.e., expertise in specific areas, as described in process document*
- *list of panel members and affiliations*

1.5 Report Overview

- *What is the content of this report*
- *What is the structure*
    - *Part I*
    - *Part II*
    - *Appendices*

PART I: SCIENCE PANEL SYNTHESIS

- *The panel addressed the questions by topic, as posed by the steering committee*
    - *This is covered in Part II*
- *However, the Panel thought that in some cases the topics were similar (leading to repetitive responses) and in others the subdivision between topics were arbitrary/ambiguous (leading to fragmentation of useful ideas/responses)*
    - *Panel wanted to present its responses in a more holistic/integrated manner that addresses the overall question in the most efficient and useful manner*
    - *This is covered in Part I*

2.0 [INTEGRATED DISCUSSION OF OVERALL SUBJECT]

- *Exact title to be determined*

2.1 Approach used in 2010 Biological Opinion

- *Outline approach*
- *Include flow chart*
- *Reference reading list*
- *Discusses correlative vs. mechanistic approaches to examining overall issue*

2.2 Relationship between Chinook Abundance and Killer Whale Status, Trends, Recruitment, and Mortality

- *Integrated discussion of panel's thoughts/conclusions on entire subject of overall relationship*
    - *Collaboratively written by entire panel*
    - *Potentially 5-10 pages*
- *Mostly discussion of correlative approach*
- *Major conclusions of panel*

2.3 Mechanisms

- *Discussion of mechanistic approach*
- *Importance and value of studying mechanisms*
- *Limitations to mechanistic approach*

2.4 Conceptual and Data Gaps

- *Critical missing pieces*
- *Knowledge gaps, data gaps*

3.0 [RECOMMENDATIONS ON MOVING FORWARD]

- *Exact title to be determined*

- *Includes highest level recommendations*
    - *From each topic*
    - *From overall discussion or across topics*
- *May include recommendations on suggested ways to organize topics or interactions among topics*

3.1 Research and Monitoring Recommendations

- *Information and data that needs to be collected*
    - *Short-term*
    - *Long-term*

3.2 Analysis Recommendations

- *Further analyses that need to be done*
    - *Analyses with existing data*
        - *Improvements to existing analyses*
        - *Novel techniques*
    - *Analyses that should be repeated as new data becomes available*
    - *Analyses to be done with new data (described above)*

PART II: SCIENCE PANEL RESPONSES BY TOPIC

- Responses of science panel by topic, as defined at beginning of process
  - Topics in order of logic flow presented in reading list
- Answers questions that panel was specifically asked
  - Whereas Part I integrates thoughts, responses, comments, recommendations, etc. across topics (see brief discussion under Section 1.5)

4.0 STATUS OF KILLER WHALES

4.1 Context

- Brief description of what the topic is
- Likely taken from reading list, which provides short synopsis of each component

4.2 General Comments

- Overall response
  - Brief, key points

4.3 Key Questions and Responses

- Responses to each question asked by steering committee

4.4 Recommended Information and Analyses

- Recommendations for moving forward within this topic
  - Research & monitoring
  - Data & information
  - Analyses
- Prioritization (high, med, low)
- Highest priorities are brought up into Part I

5.0 FEEDING HABITS OF KILLER WHALES

5.1 Context

5.2 General Comments

5.3 Key Questions and Responses

5.4 Recommended Information and Analyses

6.0 FISHERIES THAT MAY AFFECT PREY AVAILABILITY

6.1 Context

6.2 General Comments

6.3 Key Questions and Responses

6.4 Recommended Information and Analyses

7.0 RELATIONSHIP BETWEEN CHINOOK ABUNDANCE AND KILLER WHALE POPULATION DYNAMICS

7.1 Context

7.2 General Comments

7.3 Key Questions and Responses

7.4 Recommended Information and Analyses

8.0 CHINOOK NEEDS OF SOUTHERN RESIDENT KILLER WHALES

8.1 Context

8.2 General Comments

8.3 Key Questions and Responses

8.4 Recommended Information and Analyses

9.0 CHINOOK ABUNDANCE AND FOOD ENERGY AVAILABLE TO KILLER WHALES

9.1 Context

9.2 General Comments

9.3 Key Questions and Responses

9.4 Recommended Information and Analyses

10.0 REDUCTION IN CHINOOK ABUNDANCE AND FOOD ENERGY FROM FISHERIES

10.1 Context

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11.0 Ratio of Chinook Food Energy Available Compared to Chinook Food Energy Needed by Southern Residents with (and without) Fishing

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12.0 Change in Killer Whale Population Growth Rates Annually, Abundance over Time and Species Survival and Recovery

12.1 Context

12.2 General Comments

12.3 Key Questions and Responses

12.4 Recommended Information and Analyses

APPENDICES?

- As necessary – if not beneficial, don't include!
    - Only items Science Panel think are useful for NOAA/DFO to have in report
- Potential items
    - NOAA/DFO questions & responses
    - Mapping of Workshop topics to Panel review topics
    - Recommendations from W1 to W2 (and W2 to W3)
    - Other