The Effects of Salmon Fisheries on Southern Resident Killer Whales

Independent Science Panel _ Draft Report

Agency Summary of Highest Priority Comments

September 18, 2012

Washington Department of Fish and Wildlife

John Long, Scott Pearson, John Pierce, Laurie Peterson,
Angelika Hagen-Breaux, Kyle Adicks, Ken Warheit,
Steve Jeffries, Shannon Knapp, Pat Pattillo

2.2 <u>The Conclusions of the Panel</u>

<u>Status of Southern Resident Killer Whales</u>

Interactions with Pinnipeds

- **Scott Pearson** – Tomorrow 11:00am

5.0 <u>Fisheries and Prey Availability</u>

Stock Composition, and, Size & Age "Selectivity"

- **Ken Warheit** – Tomorrow 8:15am

2.2 The Conclusions of the Panel

Reducing harvest would increase availability

- ✓ Agree with panel- *"…**skeptical that reduced Chinook harvesting would have a large impact on the abundance of Chinook available to SRKW .**"*

"…foregone harvest would likely not consist exclusively of Chinook stocks that are important to SRKW." (lines 269-270)

- **Include References**: e.g., Hanson, et al 2010 /Adicks WS2 / Hagen-Breaux WS2

*"…harvest rates on Chinook salmon are now quite low (on the order of **20%** on average) so that there is limited room for reductions in Chinook harvesting to increase the abundance of Chinook."*

- **Cite source**: Ward ? LaVoy ? Hagen-Breaux ? CTC ?

2.4 Recommendations for Future Work

Critical Missing Pieces: Contaminant Fingerprinting

"…could establish the major Chinook stocks that contribute to SRKW diet. This would help identify which Chinook indices of abundance are most appropriate indicators of food supply." (lines 269-270)

- *Critical Need ? Winter feeding only?*
- *Many Assumptions*
- *Existing Genetic Stock Identification Methods Not Adequate?*

4.0 Feeding Habit and Energetic Needs

Diet (Species and Size Selectivity)

"Selectivity by Southern Residents on different stock of Chinook is poorly known..." (lines 587-590)

- Referring to winter feeding only ??

- Summer stock comp "well known": e.g., Hanson, et al 2010
  - – 339 dietary samples
  - – 178 of chinook remains in feces id'd to stock
  - And – 46 SRKW diet samples from Ford & Ellis 2006

4.0 Feeding Habit and Energetic Needs

Diet (Species and Size Selectivity)

"…they have a strong preference for large Chinook salmon…" (lines 579-580)

- Suggest alternative language:

"…they primarily consume large Chinook salmon from late spring to fall…"

SRKW may be "selective" or have preference: e.g., Adicks-WS2 & **KW-tomorrow**

5.0 Fisheries and Prey Availability

5.2 General Comments & 5.3 Key Questions and Responses

" Many Chinook populations ***would not be available even during this winter period****, however, including immature fish from the northern Oregon coast and many far-north-migrating Columbia River stocks that are probably generally beyond the northern range of the SRKW …"* (lines 914-917)

"…far-northern-migrating Chinook stocks (including those from the Northern Oregon Coast, NOC) ***would likely not be present in substantial numbers within the range of the SRKW during the winter months*** *and they would very clearly not be available during the summer months as they would have no reason to enter the Strait of Juan de Fuca or Puget Sound…"* (lines 1056-1060)

5.0 Fisheries and Prey Availability

5.2 General Comments & 5.3 Key Questions and Responses

" Northern Oregon Coastal stocks, and most late-maturing Columbia River fall Chinook stocks are "far north-migrating" and are captured in fisheries in "outside coastal waters" off Washington, British Columbia and Alaska." (lines 813-815)

5.3 Key Questions and Responses

- Agreed: Winter diet poorly understood

"…it is conceivable, even perhaps likely, that abundance of Chinook salmon during winter months is more critical to successful reproduction and survival of SRKW." (969-971)

" As noted previously, it is quite possible that winter availability of Chinook is even more important for SRKW survival and reproduction." (1077-1078)

- Unclear & Lacking basis

6.4 Assessing Recovery

Key Question 4 – Additional analyses?

*"The Panel suggests that simulation analyses be performed to determine whether any magnitude of realistic **increase** in salmon fisheries would have a detectable effect on future killer whale growth rates."* (lines 1310-1311)

- Unclear
- Given poor information, – may not be possible
- What about at Extremely Low Chinook Abundance ??? (Seabirds and marine mammals – reduced and more variable productivity when prey biomass < threshold)
- Practical ? Predictable ?

Conclusion