



Washington
Department of
**FISH and
WILDLIFE**



An Independent, Scientific Review of the Biological Opinion (2010)
of the Fisheries Management Plan
for the Bering Sea/Aleutian Islands Management Areas



Photo by NOAA Fisheries
Steller Sea Lion (*Eumetopias jubatus*)

Public Meeting
22 August, 2011
Anchorage, Alaska USA



The North Pacific Fishery Management Council unanimously passed a motion in August 2010 which included the following:

The Council notes concerns and recommendations by their Science and Statistical Committee (on the draft biological opinion) including:

- *stating as fact some conclusions that still have a great deal of uncertainty about them such as past conservation methods having a “positive impact on reducing the impacts of the fishery exploitation strategy on Steller sea lions”;*
- *assumptions underlying the BiOp analysis including biomass projection methodology, biomass apportionment, and nutritional stress as the causal factor for low natality;*

and therefore recommends an independent review of the BiOp.

Review Panel Members

Dr. Andrew Trites, Marine Mammal Scientist

Dr. Gunnar Knapp, Resource Economist

Mr. Steven Jeffries, Marine Mammal Scientist (co-chair)

Dr. David Bernard, Fisheries Scientist (co-chair)

Mr. Steve MacLean, Marine Mammal Scientist (liaison w/ NPFMC)

Our Charge in the TOR

The review panel will focus, but not necessarily limit, their review on conclusions in the Final BiOp involving:

- The finding of Jeopardy of Adverse Modification for groundfish fisheries in the Bering Sea/Aleutian Islands (BSAI) management area;
- The likelihood that Reasonably Prudent Alternatives (RPAs) will result in recovery of Steller sea lions in the BSAI area; and
- The likelihood that among all possible RPAs that could result in recovery, the RPAs chosen will incur minimal economic and social costs.

Also, the review panel will evaluate evidence that public comments on the draft BiOp had been addressed in the Final BiOp.

Topics Covered in Our Draft Review

2. THE BIOP'S STANDARD FOR LIKELIHOOD OF JEOPARDY

3. STATISTICAL RELATIONSHIPS BETWEEN FISHERIES AND STELLER SEA LION POPULATIONS

Statistical Meta-Analysis w/emphasis on the Foot-Print Analysis

4. THE BIOP'S EXPLANATION OF THE ECOLOGICAL RELATIONSHIP BETWEEN FISHERIES AND STELLER SEA LIONS

Fishery-driven Nutritional Stress: Schematics, Forage Ratios, "Birth Rates", Exposure of Habitat to Fishing, Overlaps, Food-web Dynamics

5. ALTERNATIVE HYPOTHESES FOR CAUSES OF THE STELLER SEA LION DECLINE

The "Junk Food" Hypothesis (Environmentally-driven Nutritional Stress) and Killer Whale Predation

Topics Covered in Our Draft Review

6. THE BIOP'S ANALYSIS OF EFFECTS OF RPAS

Expectations for RPAs and Predicting Responses to RPAs

7. ECONOMIC ANALYSIS IN THE REGULATORY IMPACT REVIEW

**Cost-benefit Analysis, "Least Adverse Effects", Minimizing
Economic/Social Impacts**

8. CONSIDERATION OF PEER AND PUBLIC COMMENTS

9. CONCLUSIONS: Fulfilling the TOR

Today and Tomorrow

- **The purpose of this meeting is to provide an opportunity for public comment on our draft review. We will consider all comments in preparing our final review. We welcome constructive critical comment. We are particularly interested in identifying any errors, misinterpretations or omissions in our draft review.**
- **Testimony will be recorded and later be available on the WDFW website. Presentations and written comments in e-formats are solicited, and to the extent practicable, will also be available on the same website.**
- **Our intention is not to debate, but to listen. Members of the review panel may occasionally interrupt testimony with questions of clarification. Our silence during testimony is not to be taken as evidence of agreement or disagreement with testimony.**
- **We plan to complete our review by the end of September, 2011. Issues identified during this meeting and through the website until the end of this month will be addressed to the degree practicable.**



