



NMFS Comments on Bernard et al. (2011)

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

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Comments: Draft Bernard et al. (2011)

- Bernard et al. noted that NMFS did not summarize or address comments received on the draft Biological Opinion (Biop) (p. 72)
- NMFS will summarize or address comments received on the interim final rule when it publishes a final rule

Comments: Draft Bernard et al. (2011)

- Bernard et al. note that “decisions should be based on the best possible understanding of the available scientific evidence”
- NMFS agrees with this finding in general, and notes that the legal standard is that decision should be based on the "best available scientific and commercial data available."

Comments: Draft Bernard et al. (2011)

- It is not clear what Bernard et al. meant by “jeopardy of adverse modification” [sic] at least in the context of the ESA (p. xi)
- It is not clear what Bernard et al. meant when referring to the Environmental Protection Act (EPA) (p. xi)
- Final Biop was signed 11-24-2010 (not Oct 2010) (p. 1)
- AFSC 2010a was not a key document in finalizing the Biop, as implied by Bernard et al. (p. 16, 73, and elsewhere)

Comments: Draft Bernard et al. (2011)

- NMFS determined that it was highly unlikely that natural environmental changes were the sole cause behind the decline of SSL since the 1970s.
- Bernard et al. appear to disagree with this determination based on a reference to Maschner et al. (2010) [sic - in review] (p. 49)
- NMFS believes that anthropogenic mortality *inter alia* contributed to the steep decline in abundance of SSLs in the late 1980s

Comments: Draft Bernard et al. (2011)

- Bernard et al. comment that the Biop does not address the contingency that both the killer whale hypothesis and the junk food hypothesis are not mutually exclusive (p. 52)
- This may be a misunderstanding
- Biop (p. 342) – “It appears from the best scientific and commercial data available that the following factors have acted or continue to act individually or together to cause significant declines or otherwise limit the rate of recovery in one or more of the sub-regions that comprise the distribution of this DPS.” (see list)

Comments: Draft Bernard et al. (2011)

- Bernard et al. inquire regarding a reference for the statement that the “... Council’s motion that led to a 3% improvement in prey field in both areas ...”
- Reference is on the NMFS website – Ianelli et al. (2010) Aleutian Islands trawl survey biomass summary. Table 7)
- http://alaskafisheries.noaa.gov/protectedresources/stellers/esa/biop/final/biomass_ianellietal2010.pdf

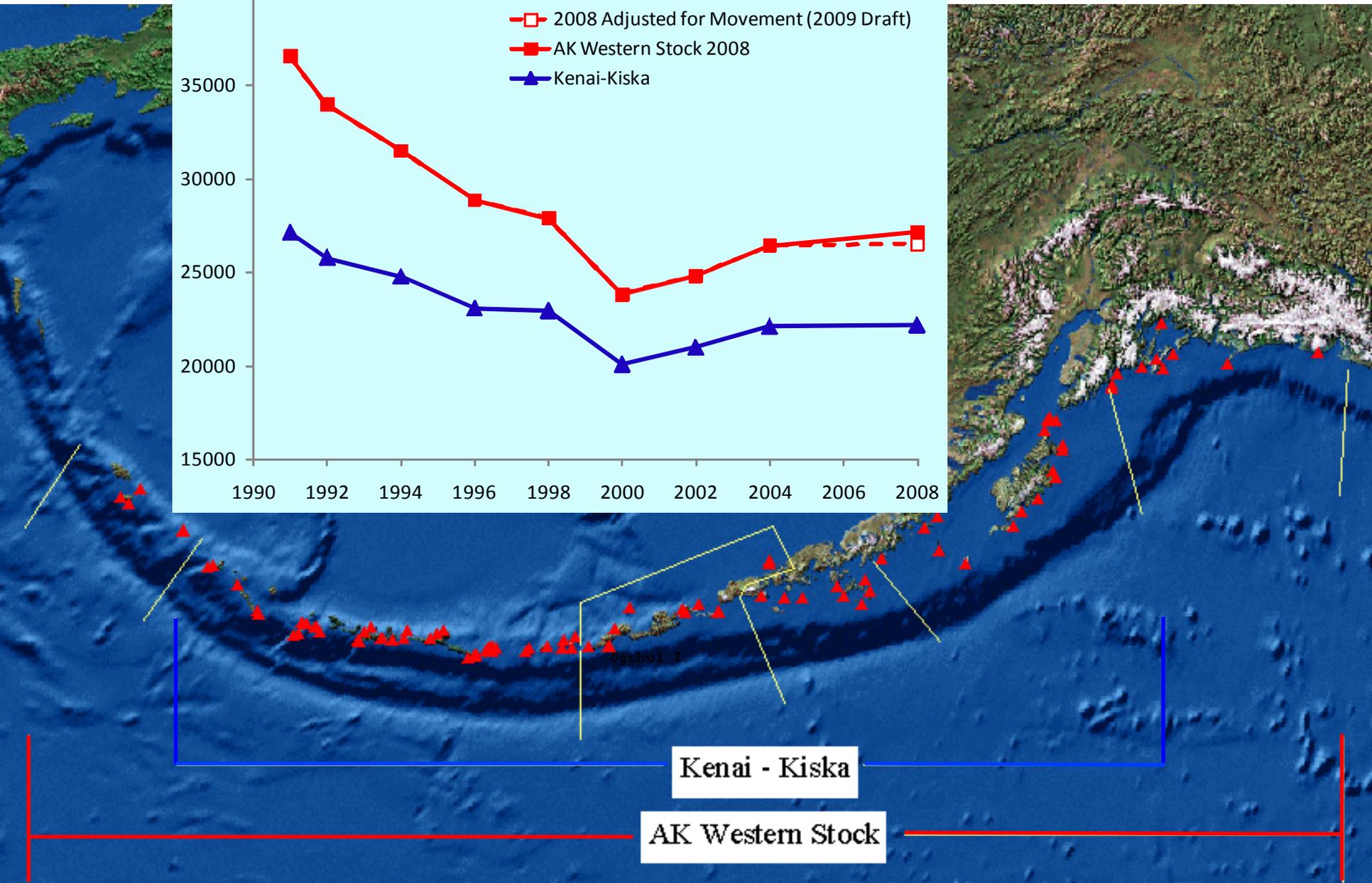
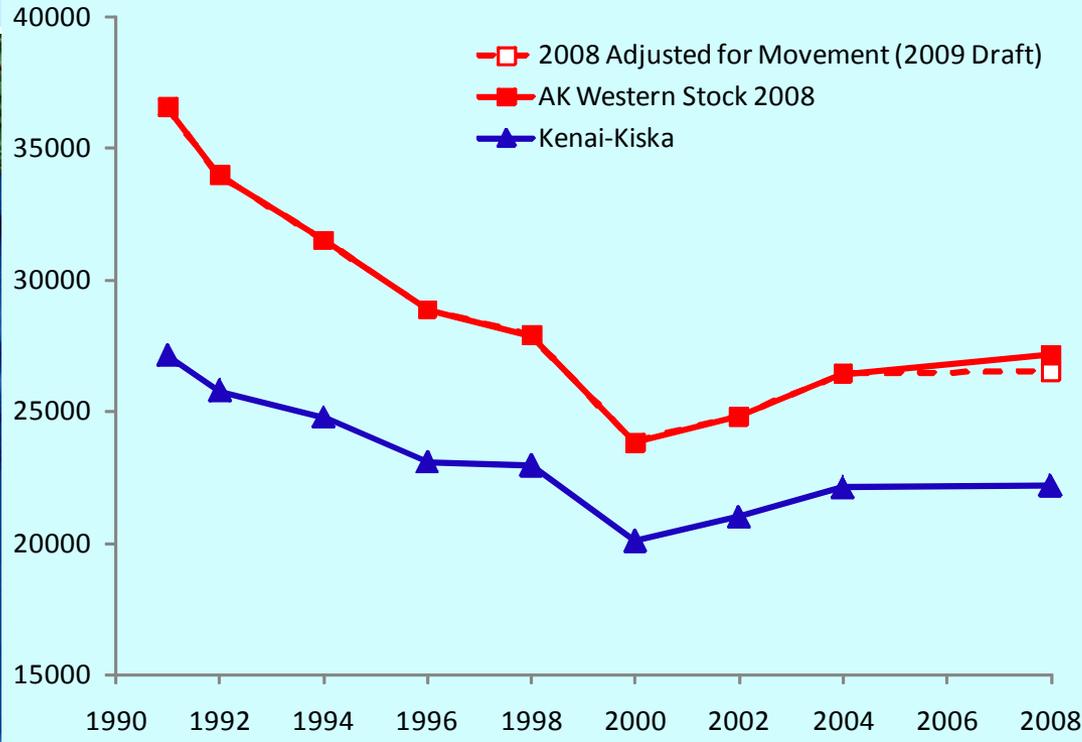
Comments: Draft Bernard et al. (2011)

- From Bernard et al, Terms of Reference:
- *“Do the conclusions represent the most likely scientific explanation for apparent population dynamics of the WDPS of SSL given the current state of knowledge?”*
- NMFS notes that this is not the legal standard in the ESA
- Under the ESA, NMFS is required to ensure that a Federal action is not likely to cause JAM
- A finding of statistical significance is not required as part of a Section 7 consultation that leads to a JAM determination

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- NMFS believes that the information reported in the Biop is compelling regarding a JAM determination, including:
 - After the implementation of management measures between 1998 and 2002, there was a significant improvement in trends in abundance
 - Pup:non-pup ratios for the wDPS are consistent with nutritional stress
 - Where management strategy changed between 1998 and 2002 (ie, 178 degrees W), sea lion pup production is dramatically different
 - Significant decline in abundance in wAI sub-region

Non-pup counts of western SSL



Kenai - Kiska

AK Western Stock

Western DPS SSL Non-Pup Counts: 2000-2008

From rookeries/haulouts consistently surveyed since 1991

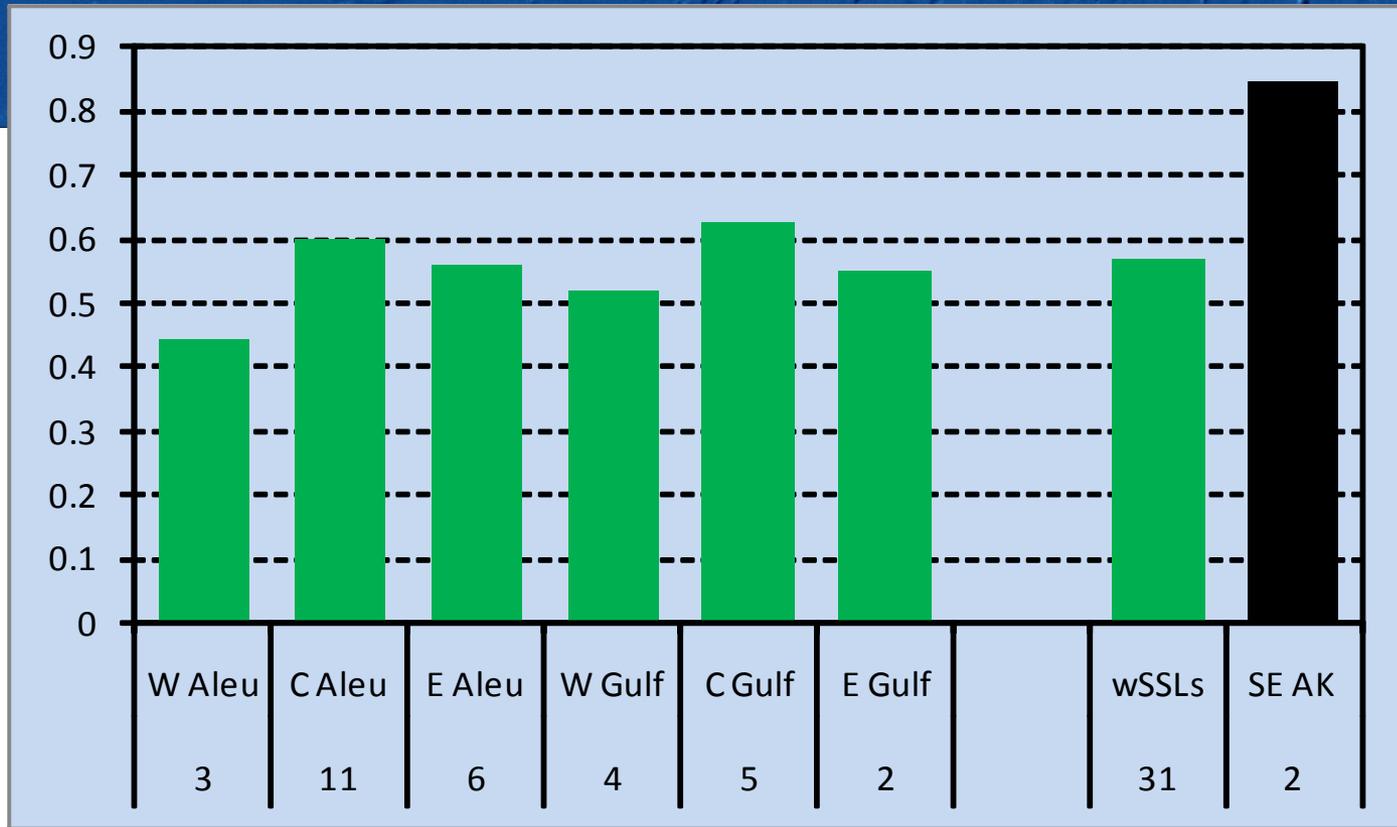
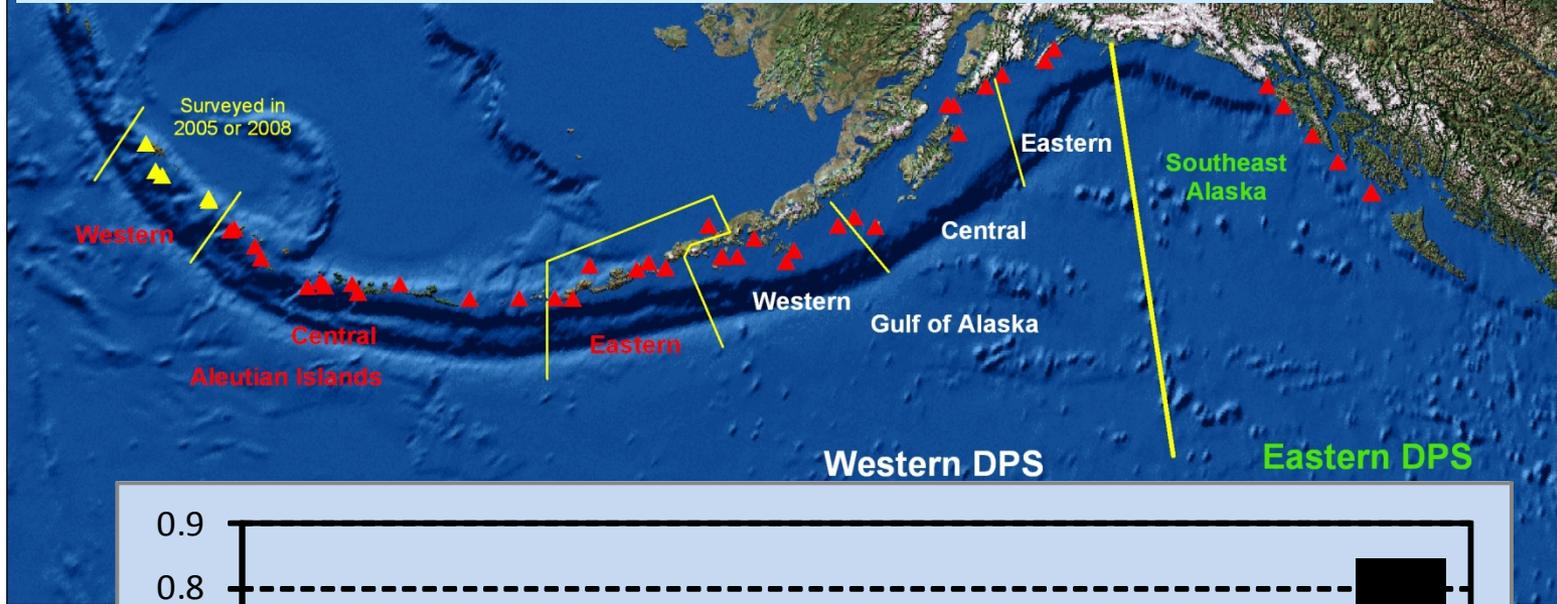
Year	wAI	cAI	eAI	wGOA	cGOA	eGOA	Total
<i>2000</i>	1633	6560	4990	3996	4555	2102	23836
<i>2002</i>	1196	6547	5261	4617	4594	2615	24829
<i>2004</i>	1286	6885	5991	5233	4028	3015	26438
<i>2006</i>	--	--	6031	--	--	3101	--
<i>2008 (adj)</i>	894	5817	6405	5558	4602	3313	26589
Trends/yr	0.935	0.985	1.033	1.041	0.999	1.056	1.014
<i>Change</i>	-45%	-11%	28%	39%	1%	58%	12%

Notes: 1) Russia/Asia subpopulation ROC = 1.043

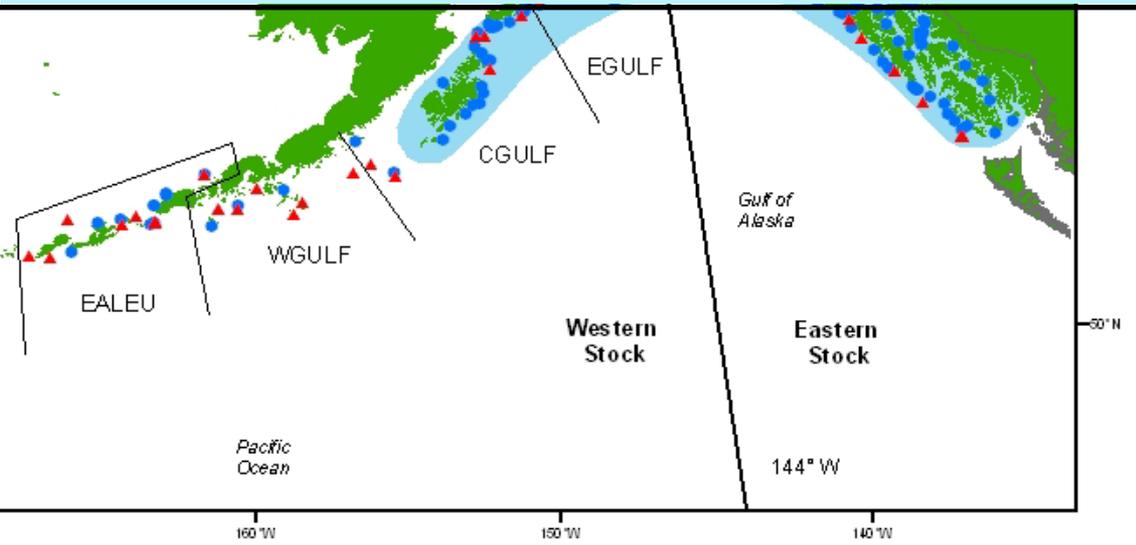
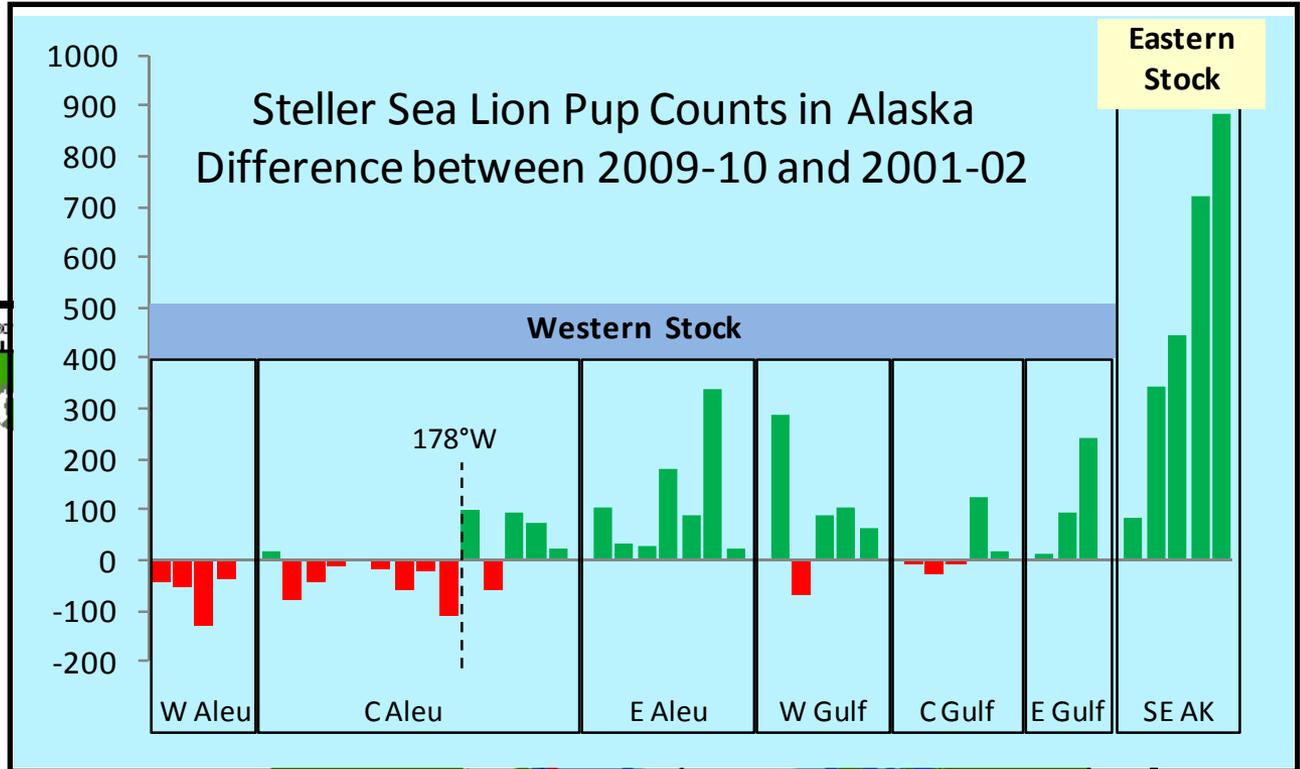
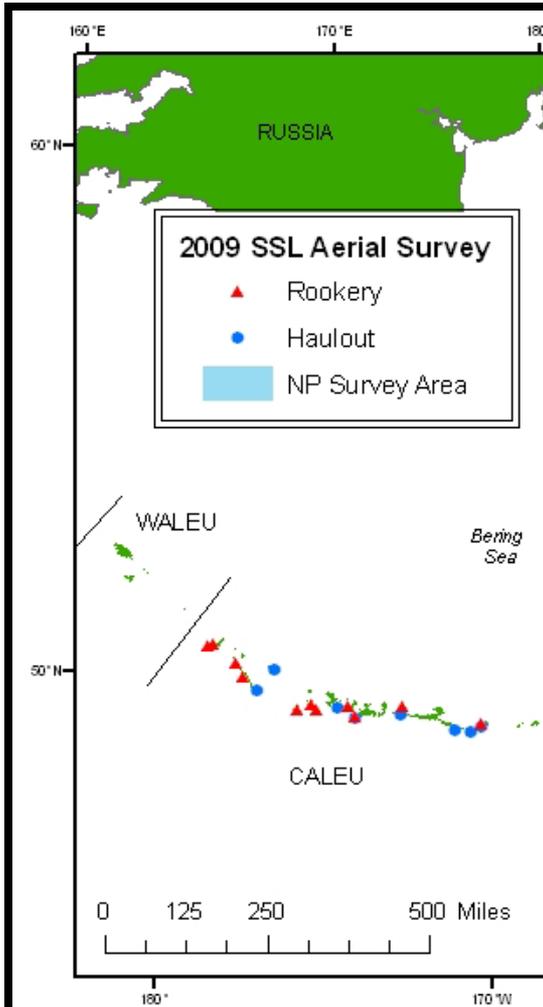
2) Overall wSSL ROC is approximately 1.021

3) If declines in wAI and cAI ended, wSSL ROC in US = 1.025

Ratio of Pups/Non-Pups on Rookeries



Status of western DPS of SSL



Comments: Draft Bernard et al. (2011)

- NMFS considered the following factors as likely or possible contributors to the population dynamics of wSSL in the past decade
 - o environmentally-driven nutritional stress,
 - o anthropogenically-driven nutritional stress,
 - o killer whale predation,
 - o other factors
- The ESA requires NMFS to make a decision that either a given action is unlikely to cause JAM or to modify the action such that the likelihood of JAM has been removed

from Biop (Nov 2010)

SSL population stressors	What We Knew in 2000		What We Know Now	
	Contributor to Decline	Current Stressor	Contributor to Decline	Current Stressor
Environmental Change	Possible	Possible	Likely	Likely
Indirect Fisheries Effects	Possible	Possible	Likely	Likely
Direct Human Effects	Likely	Possible	Yes	Unlikely
Predation				
Killer Whales	Possible	Possible	Possible	Possible
Sharks	Possible	Possible	No	No
Inter-Specific Competition	Possible	Possible	Possible	Possible
Disease	Possible	Possible	Unlikely	Unlikely
Contaminants	Possible	Possible	Possible	Possible

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- Ten studies were reported to be unable to detect statistical associations between measures of fishing and measures of sea lion numbers
- NMFS agrees with this finding
- NMFS considers these results to be equivocal in the context of the ESA; Bernard et al. consider these results to be “unequivocal” in the context of the ESA
- NMFS disagrees with Bernard et al. regarding the statistical power of these analyses (eg., Calkins et al. 2009 [sic])

Comments: Draft Bernard et al. (2011)

- Bernard et al. conclude that the hypothesis that *commercial fisheries are having a significant impact on the recovery of SSL* is highly unlikely
- They consider the analysis of available data to be unequivocal
- NMFS recommends that an appropriate analyses of statistical power be conducted
- NMFS disagrees with this conclusion based on the reasons laid out in the Biop
- NMFS recommends Bernard et al. include reviews of the findings of Fritz & Hinckley (2005) and Conn (2011) in their report

Comments: Draft Bernard et al. (2011)

- NMFS agrees with Bernard et al. that results from ecosystem models can provide important insights into ecosystem function
- Ecosystem models are currently not used in any of the groundfish assessments in the GOA or BSAI
- The output from single species assessment models at present are considered more reliable than ecosystem models
- Bernard et al. appear to disagree with NMFS as to the relative merits of the two types of models

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- Bernard et al. conclude that the RPA in the interim final rule and Biop do not minimize economic and social impacts compared with the RPA proposed by the Council
- NMFS determined that the RPA proposed by the Council did not remove the likelihood of JAM

Comments: Draft Bernard et al. (2011)

- Bernard et al. conclude that the hypothesis that fishery-driven nutritional stress is adversely affecting the wSSL population should be rejected
- NMFS believes that, for the most part, the same data used by Bernard et al. to support the environmentally-driven nutritional stress hypothesis can be used to support the fishery-driven nutritional stress hypothesis
- Basically, there are too few data in the wAI and cAI to discriminate between the two hypotheses

Comments: Draft Bernard et al. (2011)

- NMFS agrees with Bernard et al. that nutritional stress and predation could be contributing to the population dynamics of wSSL
- NMFS recommends Bernard et al. address available data on the following in their report:
 - Trends in pup production on either side of 178 degrees W
 - Statistically significant change in trend in abundance of wSSL before and after 2000
 - Change in trend in abundance of wSSL before and after 1989
 - Results reported in Fritz and Hinckley (2005)
- NMFS recommends that Bernard et al. submit their report to the NPFMC's SSC for comment

Comments: Draft Bernard et al. (2011)

- NMFS agreed to cooperate with planning and implementing this review
- NMFS agreed to work with States of WA and AK in drafting Terms of Reference and in procedures for selecting independent reviewers
- Given the process for selecting review panel members used by States of WA and AK, the panel and its report do not meet the NMFS standards for an independent scientific review
- NMFS intends to complete a CIE review of the Biop after receiving comments on the TOR from the NPFMC

Thanks.

- NOAA Fisheries appreciates this opportunity to provide comments on the draft report by Bernard et al. 2011



Biological Opinion – Section 7

Assessment under section 7 of the Endangered Species Act:

- Does the action jeopardize the continued existence of the listed species i.e. appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of the species
- Does the action destroy or adversely modify critical habitat i.e. diminish the conservation value of the habitat