

**Steller Sea Lion Protection Measures for  
Groundfish Fisheries in the Bering Sea and  
Aleutian Islands Management Area  
Environmental Impact Statement**

**Scoping Report**



**United States Department of Commerce**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service, Alaska Region

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**NOAA FISHERIES**

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## Introduction

This report summarizes the comments NMFS received during the April 17, 2012, to October 15, 2012, scoping period for the Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area Environmental Impact Statement (EIS). That scoping period began the public process of developing the EIS in accordance with the National Environmental Policy Act (NEPA) and in compliance with a March 5, 2012 order from the U.S. District Court for the District of Alaska. The EIS, which will serve as the central decision-making document for the North Pacific Fishery Management Council (Council), is intended to evaluate the environmental, social, and economic effects of alternative Steller sea lion protection measures and to ensure that management of the Alaska groundfish fisheries complies with the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

NMFS has two major statutory responsibilities related to the action analyzed in this EIS. The first is to manage the groundfish fisheries of Alaska in accordance with the Magnuson-Stevens Act. The second is to protect listed species such as the endangered Steller sea lion and ensure that the agency's actions do not jeopardize its continued existence or adversely modify or destroy critical habitat such as haulouts, rookeries, and foraging locations. The endangered Steller sea lion population (the western distinct population segment or wDPS) lives and has critical habitat throughout the same waters of the Bering Sea and Aleutian Islands as the Alaska groundfish fisheries. Moreover, the sea lions and the fisheries compete for the same prey species of fish.

If a federal agency's actions have the potential to affect an ESA-listed species or its critical habitat, the ESA requires the agency to conduct a Section 7 consultation. In November 2010, NMFS completed a Section 7 consultation on the Alaska groundfish fisheries and issued a biological opinion determining that the groundfish fisheries—specifically, the Western and Central Aleutian Islands Pacific cod and Atka mackerel fisheries—were likely to jeopardize the wDPS of Steller sea lions and adversely modify the population's habitat. The biological opinion (FMP Biop) includes a reasonable and prudent alternative (RPA), as required under the ESA, to mitigate the effects of those fisheries on the endangered population of Steller sea lions in NMFS Statistical Areas 543, 542, and 541 of the Aleutian Islands (NMFS, 2010).

In December 2010, NMFS published an interim final rule that implemented the RPA in the FMP Biop (75 FR 77535, December 13, 2010, corrected 75 FR 81921, December 29, 2010). Effective January 1, 2011, that RPA imposed fishery restrictions focused primarily on the Atka mackerel and Pacific cod fisheries in the Aleutian Islands and with only a minor change made to the Atka mackerel fishery in the Bering Sea subarea to provide for management of the combined Area 541/Bering Sea quota and to allow the continued practices for this fishery in this location.

Upon publication of the interim final rule, the State of Alaska, the Alaska Seafood Cooperative, and the Freezer Longline Coalition filed suit against NMFS in the U.S District Court for the District of Alaska, contending that NMFS failed to properly follow statutory procedures in developing the FMP Biop and the interim final rule. The Court found that, although NMFS properly followed the ESA and the Administrative Procedure Act in developing the biological opinion and implementing the interim final rule, the agency's NEPA process for preparing the

environmental assessment for the interim final rule did not provide the public with sufficient opportunity for review and comment on the environmental assessment, the conclusions of which were highly controversial and uncertain. Hence, the court ordered NMFS to prepare an EIS to take a hard look at the environmental consequences of the interim final rule and to adequately involve the public in its decision-making process.

This scoping report summarizes the issues associated with the proposed action and describes alternative protection measures raised in public comments during the scoping process. The purpose of this report is to inform the Council and the public of the results of scoping and to assist in the development of the range alternatives and analysis for the draft EIS.

The NMFS Alaska Region web site contains additional information on the EIS (<http://www.alaskafisheries.noaa.gov/sustainablefisheries/sslpm/eis/default.htm>). Once published, the Draft EIS will be available for download at this site. Additionally, this site contains a form to request a hard copy of the Draft EIS. This site also contains the notice of intent to prepare the EIS, this scoping report, and related information.

### ***What is this Action?***

The proposed action is a suite of Steller sea lion protection measures to (1) control the location, gear type, and timing of fishing for Atka mackerel, pollock, and Pacific cod in the Aleutian Islands, (2) control groundfish fishing near a new Steller sea lion rookery in the Aleutian Islands, and (3) research fishery interactions with Steller sea lions for adaptive fisheries management. While this action pertains chiefly to reporting areas in the Aleutian Islands, the management of the Atka mackerel quota in the Aleutian Islands statistical area 541 is combined with the Bering Sea subarea; therefore, this action would also control the Atka mackerel fishery in Bering Sea subarea, as further explained below.

The status quo analyzed in the EIS is the 2011 Steller sea lion protection measures in the Aleutian Islands as implemented under the December 2010 interim final rule and under the January 2003 final rule for the pollock fishery (68 FR 204, January 2, 2003). The details of the Steller sea lion protection measures are in these rules. Directed fishing for pollock, Atka mackerel, and Pacific cod in the Aleutian Islands is prohibited in most or all of Steller sea lion critical habitat depending on the location, gear type and time of year. Harvest of these species is limited overall and seasonally apportioned to temporally disperse potential prey removal, protecting Steller sea lion prey fields. The Steller sea lion protection measures were developed considering potential impacts of the groundfish fisheries on Steller sea lions and their critical habitat. Impact information is detailed in chapter 8 of the FMP Biop (NMFS, 2010).

### ***Draft Purpose and Need for this Action***

This action is needed to comply with the ESA requirement that a federal agency ensure that the agency's actions are not likely to jeopardize the continued existence of endangered species or to adversely modify or destroy critical habitat. In this case, NMFS's action is the management of the Alaska groundfish fisheries (including the authorization of research necessary to support such management) and the endangered species is the wDPS of Steller sea lions. Having determined that the Alaska groundfish fisheries were likely to jeopardize the continued existence of the wDPS of Steller sea lions and their designated critical habitat, NMFS designed an RPA to

mitigate the fishery impacts that NMFS had identified as having the potential to cause JAM. The RPA restricted the Aleutian Islands Atka mackerel and Pacific cod fisheries to provide additional protection to the wDPS of Steller sea lions and their critical habitat. The RPA and other existing fishery management measures designed to protect Steller sea lions in the Aleutian Islands are known, collectively, as the Steller sea lion protection measures. The Steller sea lion protection measures restrict the Atka mackerel, Pacific cod and pollock fisheries in a manner that causes substantial economic impacts.

The purpose of this action is to implement Steller sea lion protection measures for the Aleutian Islands groundfish fisheries, and its supporting research, in a manner that mitigates potential impacts on Steller sea lions and minimizes economic impacts to the groundfish fisheries. New information is available to evaluate and potentially revise the Steller sea lion protection measures to reduce the economic impacts to the extent practicable on the fisheries while still providing necessary protection to Steller sea lions.

### Action Area

This action occurs predominately in the Aleutian Islands subarea of the Bering Sea and Aleutian Islands Management Area (BSAI) shown in Figure 1 to part 679 below. The BSAI includes waters of the exclusive economic zone (EEZ) from 3 nm to 200 nm off Alaska. State of Alaska waters are those from 0 nm to 3 nm offshore. The Bering Sea subarea is affected only by that part of the action that effects changes to the Atka mackerel fishery.

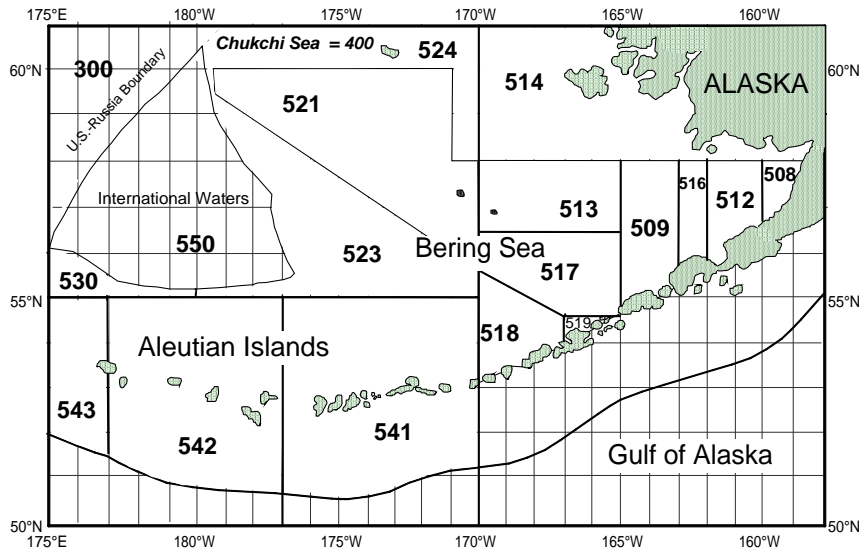
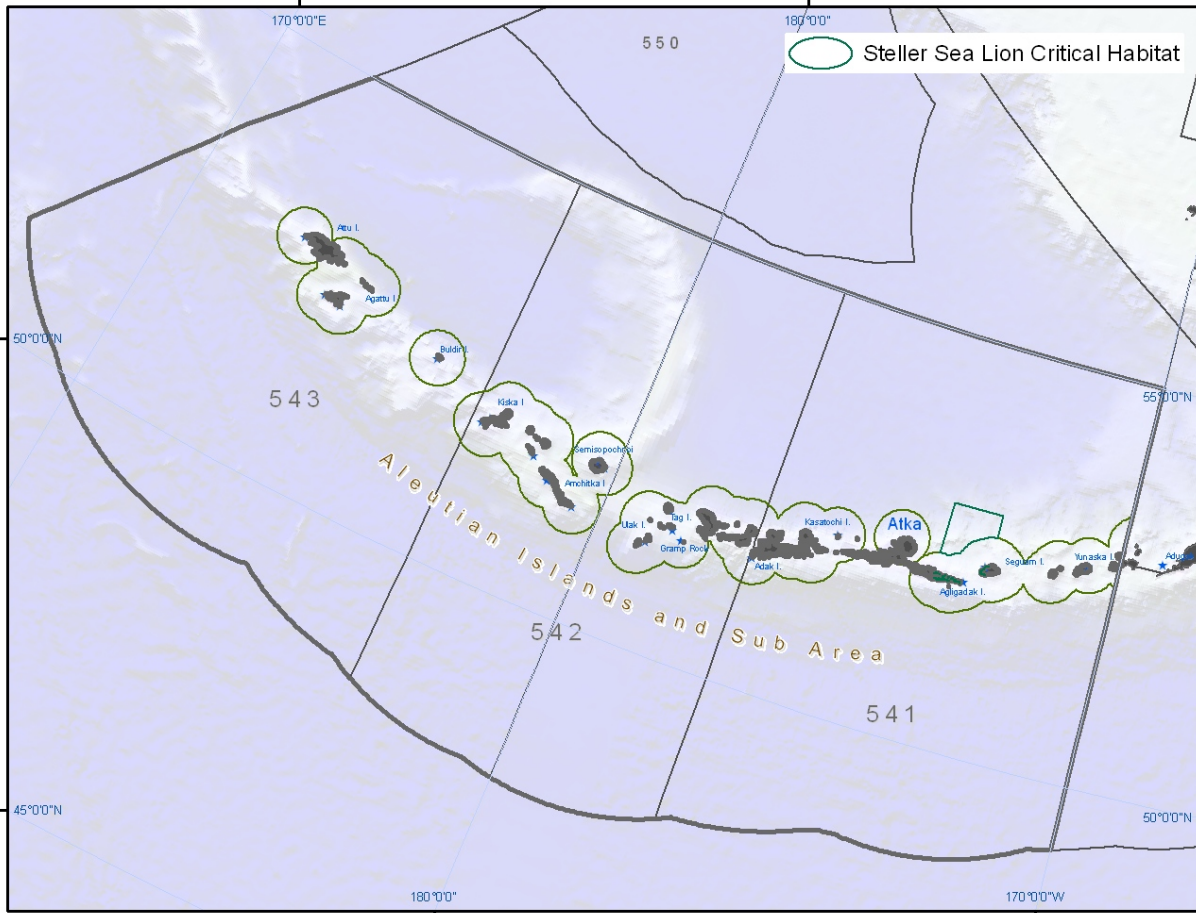


Figure 1 to Part 679--Bering Sea and Aleutian Islands statistical and reporting Areas  
a. Map

The Aleutian Islands Subarea (AI) of the BSAI means that portion of the EEZ off Alaska contained in Statistical Areas 541, 542, and 543 (Figure 1). These waters are 3 nm to 200 nm off Alaska.





**Figure 1 Map of the Aleutian Islands Management Areas (541, 542, and 543) showing designated critical habitat for Steller sea lions. (Steve Lewis, NMFS Alaska Region, Analytical Team)**

The action area also includes State waters from the shoreline to 3 nm off Alaska in the Aleutian Islands for federally permitted vessels (those named on a federal fisheries permit, as defined at 50 CFR 679.2). However, federally permitted vessels participating in the Aleutian Islands State-managed Pacific cod fishery under authority of 5 AAC 28.647 would not be required to comply with protection measures implemented by this proposed action.

The wDPS of Steller sea lions occur primarily west of 144°W longitude. Even though the action is located primarily in the Aleutian Islands, the wDPS of Steller sea lions extends into the Bering Sea and Gulf of Alaska (GOA), with the majority of the population occurring in the GOA. NMFS must ensure that the Alaska groundfish fisheries are not likely to likely to jeopardize the entire wDPS of Steller sea lions, so the full range of the wDPS will be considered in the analysis in the EIS.

**Statutory Authority for this Action**

Under the Magnuson-Stevens Act (16 USC 1801, et seq.), the United States has exclusive fishery management authority over all marine fishery resources found within the EEZ. Management of

these marine resources is vested in the Secretary of Commerce and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing FMPs for the marine fisheries that require conservation and management, and for submitting their recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the Federal mandates of the Department of Commerce with regard to marine and anadromous fish.

The BSAI groundfish fisheries in the EEZ off Alaska are managed under the FMP for Groundfish of the Bering Sea and Aleutian Islands. The Steller sea lion protection measures under consideration would amend Federal regulations at 50 CFR 679. Actions taken to amend regulations governing these fisheries must meet the requirements of Federal laws and regulations.

### **Schedule**

Analyses under two laws and an executive order will be provided to the Council to inform their decision on this action. NEPA requires the preparation of the EIS and the U.S. District Court for the District of Alaska has provided a schedule of milestones for the completion of the EIS. The Council also will review a regulatory impact review (RIR) as required by Executive Order 12866 and an initial regulatory flexibility analysis (IRFA), as required by the Regulatory Flexibility Act. The following schedule provides the target milestones for the EIS/RIR/IRFA:

<b>April 2012 to October 2012</b>	Scoping Period
<b>December 2012</b>	Present scoping report to Council and Council recommends range of alternatives
<b>April 2013</b>	Council reviews initial Draft EIS/RIR/IRFA, identifies a preliminary preferred alternative, and recommends for public release
<b>May 2013</b>	Draft EIS/RIR/IRFA published
<b>May to July 2013</b>	Public comment period on Draft EIS/RIR/IRFA
<b>September 2013</b>	NMFS provides comment analysis report to Council
<b>October 2013</b>	Council takes final action to recommend Steller sea lion protection measures
<b>February 2014</b>	Final EIS/RIR/IRFA released
<b>January 2015</b>	Implementation of Steller sea lion protection measures

## **Public Participation – Scoping**

The development of this EIS provides the opportunity for public participation. Scoping is the term used for involving the public in the NEPA process at its initial stages. In the initial stages of the NEPA process, federal agencies involve the public through the scoping process which gives the public and other agencies and interest groups a formal opportunity to comment on potential issues associated with the proposed action. Scoping helps to identify all the environmental issues related to the proposed action and identify alternatives to be considered in the EIS. Scoping is accomplished through written communications and consultations with agency officials, interested members of the public and organizations, Alaska Native representatives, and State and local governments.

The formal scoping period began with the publication of a Notice of Intent in the Federal Register on April 17, 2012 (77 FR 22750). Public comments were due to NMFS by October 15, 2012. In the Notice of Intent, NMFS requested written comments from the public on the range of alternatives to be analyzed and on the environmental, social, and economic issues to be considered in the analysis. NMFS published a news release on April 17, 2012 to remind people of the opportunity to participate in this scoping process. NMFS held a scoping meeting for the EIS in coordination with the Council at its October 2012 meeting (77 FR 52674, August 30, 2012). Approximately 35 people attended this meeting, where the agency presented information about the action and the NEPA process and provided agency staff to answer questions. The participants also were provided the opportunity to provide written comments to the agency at this meeting.

Additionally, members of the public have the opportunity to comment during the Council process and during the Council's committee meetings. Through its Steller Sea Lion Mitigation Committee (SSLMC), the Council is working with NMFS and the public to develop recommended alternatives for analysis in the EIS and to provide guidance to the agency on contents of the document. The Council notifies the public of the SSLMC's meetings and of the Council's schedule to discuss the development of this EIS. The Council process, which involves regularly scheduled and noticed public Council meetings and Council committee meetings, is a critical part of the development of this EIS and will continue after this formal scoping process is completed. NMFS also briefed the Council on this issue and EIS at its June 2012 meeting, provided information to the public, and answered questions posed by Council members. This scoping report summarizes issues and alternatives from the formal scoping process and summarizes, to the extent possible, issues raised in the independent reviews of the FMP Biop, the litigation on this action and in the Council process through the October 2012 Council meeting. The EIS will address the relevant issues identified during the scoping and the Council processes.

### ***Tribal governments and Alaska Native Claims Settlement Act regional and village corporations***

NMFS is obligated to consult and coordinate with Federally recognized tribal governments and Alaska Native Claims Settlement Act (ANCSA) regional and village corporations on a government-to-government basis pursuant to Executive Order 13175, the Executive Memorandum of April 29, 1994, on "Government-to-Government Relations with Native

American Tribal Governments,” and Section 161 of the Consolidated Appropriations Act of 2004 (P.L. 108-199, 188 Stat. 452), as amended by Section 518 of the Consolidated Appropriations Act of 2005 (P.L. 108-447, 118 Stat. 3267).

In April 2012, letters were mailed to approximately 660 Alaska tribal governments, ANCSA corporations, and related organizations providing information about the EIS and soliciting consultation and coordination with interested tribal governments and ANCSA corporations. NMFS received no comments from tribal government and ANCSA corporation representatives.

In November 2012, the St. George Traditional Council sent a letter to the North Pacific Fishery Management Council’s Steller Sea Lion Mitigation Committee asking for immediate closure of all trawl fisheries and the Pacific cod pot fishery in waters out to 20 nm from Dalnoi Point on St. George Island. They recommend this closure based on observations of the use of this site by up to 400 Steller sea lions of all ages. Commercial fishing for groundfish species, including pollock and Pacific cod occur in waters outside of 3 nm from this location and may cause competition for prey resources with Steller sea lions. The Traditional Council’s recommendation will be included in the report from the Steller Sea Lion Mitigation Committee to the North Pacific Fishery Management Council in December 2012, for consideration in recommending alternatives to be analyzed in the EIS.

### ***Cooperating Agencies***

The Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the NEPA emphasize agency cooperation early in the NEPA process. The CEQ regulations provide for any State or federal agency to be a cooperating agency if it has special expertise with respect to any environmental issue to be addressed in an EIS. Cooperating agencies agree to participate in the early development of the EIS, including the scoping process and assist in the writing and review of portions of the EIS that are within their expertise or management responsibility.

The United States Coast Guard (USCG), Alaska Department of Fish and Game (ADF&G), and the U. S. Fish and Wildlife Service (USFWS) are cooperating agencies for this EIS. The USCG has special expertise on issues related to safety and enforcement of fisheries regulations and is responsible for conducting at-sea enforcement for all U.S. commercial fishing vessels under federal regulations. ADF&G has special expertise and interest in matters concerning Steller sea lions and the State-managed groundfish fisheries. USFWS has management authority and special expertise related to seabirds, walrus, and sea otters. The agencies selected staff to assist NMFS in the development of this EIS to ensure a thorough analysis of issues outside the management authority or expertise of NMFS.

Additionally, during the June and October 2012 Council meetings, representatives of the Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife were notified of the intent to prepare an EIS and will be informed throughout the development of the document through staff presentations at Council meetings.

## Related Documents

The documents listed below have detailed information on the groundfish fisheries, Steller sea lions, and other marine resources, and the economic and social activities and communities affected by the groundfish fisheries. These documents contain valuable background for the action under consideration in this EIS/RIR/IRFA. The CEQ regulations encourages agencies preparing NEPA documents to incorporate, by reference, the general discussion from a broader EIS and concentrate solely on the issues specific to the NEPA analysis subsequently prepared. According to the CEQ regulations, whenever a broader EIS has been prepared and a NEPA analysis is then prepared on an action included within the entire program or policy, the subsequent analysis shall concentrate on the issues specific to the subsequent action. The subsequent NEPA analysis need only summarize the issues discussed and incorporate discussions in the broader EIS by reference (see 40 CFR 1502.20).

The EIS analyzes alternatives to the current Steller sea lion protection measures in the Aleutian Islands subarea. This proposed action derives from the policy established in the preferred alternative in the Alaska groundfish programmatic supplemental EIS (PSEIS) (NMFS, 2004). The supplemental EIS for Steller sea lion protection measures (NMFS, 2001) contains detailed information regarding the protection measures used in the groundfish fisheries to spatially, temporally, and globally protect Steller sea lions and their designated critical habitat. This action would modify some of these protection measures, primarily in the AI.

Two ESA documents also contain detailed information that supports the EIS. The final Revised Recovery Plan for the Steller sea lion (NMFS, 2008) and the FMP Biop (NMFS, 2010) contain recent biological and fisheries interaction information that is crucial to this analysis. The independent reviews of the FMP Biop (Bernard, Jeffries, Knapp, & Trites, 2011), (Stokes, 2012), (Bowen, 2012), and (Stewart, 2012) provide additional and new information regarding Steller sea lions and fisheries interactions that inform this analysis. The EIS incorporates by reference, information from the documents described below, when applicable, to focus the analysis on the issues ripe for decision, and to eliminate repetitive discussions.

### **Alaska Groundfish Programmatic Supplemental EIS (PSEIS)**

In June 2004, NMFS completed the PSEIS that disclosed the direct, indirect, and cumulative impacts from alternative groundfish fishery management programs on the human environment (NMFS, 2004). The following provides information on the relationship between the Steller sea lion protection measures EIS and the PSEIS. NMFS issued a Record of Decision on August 26, 2004, with the simultaneous approval of Amendments 74 and 81 to the groundfish FMPs to implement the preferred alternative in the PSEIS. This decision implemented a policy for the groundfish fisheries management programs that is ecosystem-based and is more precautionary when faced with scientific uncertainty. For more information on the PSEIS, see the NMFS Alaska Region website at <http://www.alaskafisheries.noaa.gov/sustainablefisheries/seis/default.htm>.

The PSEIS brings the decision-maker and the public up to date on the current state of the human environment based on the best available information, while describing the potential environmental, social, and economic consequences of alternative policy approaches and their corresponding management regimes for management of the groundfish fisheries off Alaska. In

doing so, it serves as the overarching analytical framework that is used to define future management policy with a range of potential management actions. Future amendments and actions derive from the chosen policy direction set for the PSEIS's preferred alternative.

As stated in the PSEIS, any specific FMP amendments or regulatory actions proposed in the future are evaluated by subsequent EAs or EISs that incorporate by reference information from the PSEIS but stand as case-specific NEPA documents, offering more detailed analyses of the specific proposed actions. As a comprehensive foundation for management of the Alaska groundfish fisheries, the PSEIS functions as a baseline analysis for evaluating subsequent management actions and for incorporation by reference into subsequent EAs and EISs, focusing on specific federal actions.

### **Alaska Groundfish Harvest Specifications EIS**

In January 2007, NMFS completed the EIS analyzing the impacts of various harvest strategies for the Alaska groundfish fisheries (NMFS, 2007). Except for the no action alternative, the alternatives analyzed in this EIS would implement the preferred management strategy contained in the PSEIS. This document contains an analysis of the effects of the alternative harvest strategies on target groundfish species, non-target species, prohibited species, marine mammals, seabirds, habitat, ecosystem relationships, and social and economic concerns. The analysis is based on the latest information at that time regarding the status of each of these environmental components and provides the most recent consideration of reasonably foreseeable future actions to consider in the cumulative effects analysis of other NEPA documents. Each year, a Supplemental Information Report (SIR) provides updates on the status of the environment and reasonably foreseeable future action to determine if the analysis in the EIS needs to be updated. The harvest specifications EIS and the annual SIRs provide the latest overall analysis of the impacts of the groundfish fisheries on the environment and provides a substantial amount of reference material for the Steller sea lion protection measures EIS. The final harvest specifications EIS and the SIRs may be found on the NMFS Alaska Region website at <http://www.alaskafisheries.noaa.gov/analyses/specs/eis/default.htm>.

### **Essential Fish Habitat EIS**

In 2005, NMFS and the Council completed the EIS for Essential Fish Habitat Identification and Conservation in Alaska (EFH EIS) (NMFS, 2005). The EFH EIS provided a thorough analysis of alternatives and environmental consequences for amending the Council's FMPs to include EFH information pursuant to section 303(a)(7) of the Magnuson-Stevens Act and 50 CFR 600.815(a). Specifically, the EFH EIS examined three actions: (1) describing and identifying EFH for Council managed fisheries, (2) adopting an approach to identify habitat areas of particular concern (HAPC) within EFH, and (3) minimizing to the extent practicable the adverse effects of fishing on EFH. The Council's preferred alternatives from the EFH EIS are implemented through Amendments 78/65 to the BSAI groundfish FMP. Regulations implementing the EFH/HAPC protection measures were effective July 28, 2006 (71 FR 36694, June 28, 2006). The final EFH EIS may be found on the NMFS Alaska Region website at <http://alaskafisheries.noaa.gov/habitat/seis/efheis.htm>.

Because the proposed action analyzed in the Steller sea lion protection measures EIS may change fishing locations, the information in the EFH EIS may be used to identify potential impacts to

EFH and bottom habitat. Information specific to gear types and locations can be used to characterize potential impacts. Extensive habitat area closures currently exist in the Aleutian Islands (50 CFR 679.22). The EFH EIS contains recent information on fishing effects on habitat and may be referenced to describe the potential impacts on habitat by the proposed action analyzed in the Steller sea lion protection measures EIS.

### **2008 Revised Recovery Plan for the Steller Sea Lion**

Section 4(f) of the ESA directs the responsible agency to develop and implement a recovery plan, unless such a plan will not promote the conservation of a species. NMFS determined that a recovery plan would promote the conservation of the eastern DPS and wDPS of Steller sea lions. NMFS released the Revised Recovery Plan in 2008 (NMFS, 2008). The Revised Recovery Plan contains a description of the eastern DPS and wDPS of Steller sea lions, including population status and trends, habitat, vital rates, feeding ecology, conservation measures, factors influencing the populations, threats, and the recovery criteria needed to remove the DPSs from the ESA list. Information in the Revised Recovery Plan informed the FMP Biop, particularly the aspect of recovery. Information in the Revised Recovery Plan will be incorporated by reference in the Steller sea lion protection measures EIS in the section on Steller sea lions (chapter 5) and in the description of the alternatives (chapter 2).

### **2010 Biological Opinion on the Effects of the Alaska Groundfish Fisheries on ESA-listed Species (FMP Biop)**

The FMP Biop details the groundfish fisheries management, status of the eastern DPS and wDPS of Steller sea lions and their designated critical habitat, human and natural effects on Steller sea lions and their habitat, response of Steller sea lions and their habitat to the environmental baseline and to human effects, and non-federal cumulative impacts (NMFS, 2010). The incidental take statement describes the amount of take of Steller sea lions expected by the action and the amount of take of Steller sea lions that would require reinitiation of Section 7 formal consultation.

The Steller sea lion protection measures EIS will reference much of the Steller sea lion biological and status information and fisheries effects descriptions provided in the FMP Biop. Information from these sections of the FMP Biop may be the best available scientific information regarding Steller sea lions, their critical habitat, and fisheries interactions. This information will be incorporated by reference as appropriate.

### **Reviews of the FMP Biop**

Two reviews of the FMP Biop were conducted, one sponsored by NMFS and one sponsored by the States of Washington and Alaska. The first review was sponsored by the States and occurred in 2011 (Bernard et al., 2011). This review was conducted by an independent panel of experts in marine mammal, fisheries science, and resource economics. They reviewed the issues involving the wDPS of Steller sea lions in general, and the impacts of the groundfish fisheries on sea lions, focusing on the Western and Central Aleutian Islands.

The States-sponsored independent review disagreed with NMFS that the findings of JAM in the FMP Biop was warranted, based on the evidence presented. The panel found that the NMFS theory of nutritional stress from competition with fisheries was not well supported, and that other

scientific explanations were inadequately examined. They found that the RPA in the FMP Biop was unlikely to contribute to sea lion recovery. The economic valuations in the analysis for the interim final rule accurately reflected the actual impacts to the affected communities and fishing fleets. NMFS is reviewing the concerns raised by the Bernard et al. report and will consider these concerns in the Steller sea lion protection measures EIS analysis and in future ESA consultations.

For the second review, NMFS contracted the Center for Independent Experts (CIE) to have three experts review the FMP Biop. The CIE is a group that provides independent peer reviews of the science upon which many of NMFS's management decisions are based, including reviews of stock assessments for fish and marine mammals. The structure and operation of the CIE are designed to ensure the quality, relevance, and independence of the reviews. Independence is maintained by eliminating any role for NMFS in selecting reviewers or in approving the content of reviewers' reports. Details of the terms of reference for the FMP Biop review are available from the NMFS Alaska Region website at

<http://www.fakr.noaa.gov/protectedresources/stellers/esa/biop/final/cie/sow040512.pdf>.

The terms of reference for the review included two parts. The first part was a desk audit of the FMP Biop, examining the information and analysis used to develop the FMP Biop. The second part of the review was a public panel review of new information since the completion of the FMP Biop regarding Steller sea lions and fisheries interactions based on presentations by State, industry, Council, academic, and NMFS representatives. Each CIE reviewer independently produced a two-chapter report, addressing the desk audit and public panel review. The final CIE reports were available on September 6, 2012, during the scoping period for the Steller sea lion protection measures EIS, informing the public of potential issues with the FMP Biop and assisting the public in the development of scoping comments (Bowen, 2012), (Stewart, 2012), and (Stokes, 2012). The CIE reports were considered by NMFS in the development of this EIS and for future biological opinions.

## **Areas of Controversy**

Areas of controversy regarding the Steller sea lion protection measures include differences of opinion on the interpretation of scientific information and on the application of law in fisheries management. In the application of law, the challenge is managing the fisheries to comply with several statutes, including the Magnuson-Stevens Act and the ESA. The application of the ESA to fisheries management is controversial. NMFS uses a weight-of-evidence approach to determine if a plausible pathway exists between the effects of the action and the condition of an ESA-listed species or its critical habitat to determine if mitigation may be warranted. Several scoping comments stated that the reviews of the FMP Biop constitute new information that compel NMFS to immediately reinstate consultation and to implement Steller sea lion protection measures that were in place before 2011.

Regarding scientific information, there are several issues related to Steller sea lion biology and potential fisheries interaction for which information is scarce or conflicting. When information is limited or contradictory, NMFS has to evaluate the information that is available and make a determination consistent with its statutory requirements. Under the ESA, NMFS is required to ensure the federal action is not likely to result in jeopardy or adverse modification of habitat, and



in situations where data are uncertain or unavailable the benefit of the doubt must be given to the ESA-listed species. In developing this EIS for Steller sea lion protection measures, NMFS will consider the following areas of controversy as they relate to fisheries management measures to protect Steller sea lions and their designated critical habitat.

- Nutritional stress in Steller sea lions, in general, and fishery-induced nutritional stress in particular,
- The poor diet (aka: Junk Food) hypothesis,
- Effects of killer whale predation,
- Reductions in Steller sea lion fitness caused by disease or contaminants,
- Changes in the ecosystem carrying capacity,
- Fisheries' effects on Steller sea lion prey, including overlap between fisheries harvesting and Steller sea lion foraging
- Estimates and inferences about Steller sea lion vital rates (reproduction and survival),
- ESA delisting and downlisting criteria (aka: recovery criteria) for Steller sea lions,
- Steller sea lion population structure and associated viability inferences,
- Importance of Pacific cod in the diet of Steller sea lions,
- Steller sea lion foraging ratios, and
- Multispecies vs single species modeling.

## **Summary of Alternatives and Issues Identified During Scoping**

NMFS received 11 comment letters from the public and interested parties. Due to the volume of information provided in these letters, it is not practical to append these documents to this scoping report. The letters are available for review by going to [www.regulations.gov](http://www.regulations.gov) and entering NOAA-NMFS-2012-0013 in the search screen. NMFS reviewed all letters and attachments and summarized the comments received to 295 distinct comments.

The comments are organized under topic headings, which also indicate the chapter of the EIS where the comments would be considered. The EIS is organized into the following chapters:

- Chapter 1: Introduction, Purpose and Need, Action, Action Area, Best Available information,
- Chapter 2: Description of the Alternatives
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As the EIS is developed, each comment will be considered. Only those analytical issues that provide an understanding of the impacts of the proposed action and its alternatives on the human environment will be addressed in the EIS. A number of comments received during scoping were specifically related to the FMP Biop and may not be addressed in the EIS. Other issues

identified during scoping may be addressed in the subsequent ESA consultation on this action, if appropriate.

## ***Chapter 1 Purpose and Need***

### **C1. Purpose of EIS**

The purpose of this EIS is to authorize Aleutian Island fisheries under the Magnuson-Stevens Act within the constraints of the ESA. The purpose and needs statement should explicitly acknowledge the National Standards objectives, particularly as they relate to attaining optimum yield and protecting fishery dependent communities.

### **C2. Public comment on the 2010 draft and final FMP Biop**

The EIS needs to reexamine public comments received on the draft and final FMP Biop in light of the three reviews by the Center for Independent Experts and the review by the Independent Scientific Review Panel.

### **C3. Public process and coordination**

The State of Alaska has substantial expertise to contribute, and would prefer to contribute starting early in the EIS process and continuing throughout the process, rather than limiting its input to additional comments in response to NMFS.

### **Compliance with Applicable Law**

### **C4. Court decision regarding NMFS's parameters in FMP Biop**

The Court decision upholds NMFS's parameters in the FMP Biop that should be used for any fisheries management regime in the BSAI.

### **C5. EIS compliance with ESA, NEPA, 2010 FMP Biop**

The EIS must comply with the ESA, NEPA, and the standards and science in the 2010 FMP Biop.

### **C6. Immediate Reinitiation of ESA Section 7 Consultation**

Findings and recommendations of the independent scientific peer reviews should be fully incorporated into the EIS and require reinitiation of consultation under the ESA. That consultation should run concurrently with the development of the EIS. The need for timely action is clear; NMFS must reinitiate consultation immediately and prepare a supplemental Biological Opinion that fully incorporates the findings and recommendations of the two independent scientific reviews. Preparation of the EIS and reinitiation of consultation needs to be expedited, and the existing schedule should be amended.

## **Action Areas**

### **C7. Effects beyond Western and Central Aleutian Islands.**

The geographic scope of the EIS is the entire range of the wDPS of Steller sea lions, and fisheries authorized under the Bering Sea and Aleutian Islands and Gulf of Alaska Groundfish Fishery Management Plans. Therefore, the EIS should consider effects beyond the western and central Aleutian Islands, and may include alternatives that extend beyond the western and central Aleutians.

## **Best Available Information**

### **C8. Baseline data for fisheries catch for the AI pollock fishery**

Because of the unique status of the community of Adak, the period following the 2000 FMP Biop is not reliable or reflective of the community-based fishing effort, targeting patterns, and catch deliveries characteristic of Adak-adjacent areas. The analysis should consider inclusion of pre- 2000 fishing data in their baseline description and look to the 1990's observer data on the pollock fishery as the best available baseline information.

### **C9. Approach to analysis of effects of groundfish on population status of SSL**

We urge NMFS to apply the highest level of scientific rigor to their present approach to analysis of the effects of groundfish fisheries on the population status of sea lions in the western and central Aleutians. Scrupulous application of scientific rigor to determining the cause of reported continued declines of sea lions in the western and central Aleutians is warranted because of the widely diverging viewpoints of marine mammal experts regarding interpretation of the available scientific information.

### **C10. Scientific Peer Review importance**

Scientific Peer Reviews constitute significant new scientific information. The EIS analysis should fully incorporate the findings, critiques, and recommendations made by the CIE review reports from Dr. Bowen, Dr. Stewart, and Dr. Stokes and the Independent Scientific Review Panel report of October 8, 2011.

### **C11. Findings of peer reviews and FMP Biop bias**

The findings of the peer reviews on the FMP Biop and the bias in the FMP Biop analysis should be addressed.

### **C12. Incorporation of comments on draft FMP Biop into EIS**

Incorporation of comments on draft FMP Biop into the EIS is necessary to ensure scientific integrity, comply with NEPA, and provide a transparent and accountable process that was lacking in the development of the 2010 FMP Biop.

### **C13. EIS fair and balanced consideration**

Given the reviews of the CIE and Independent Scientific Review Panel of the 2010 FMP Biop, it is incumbent upon NMFS to make extraordinary efforts to utilize a fair and balanced consideration of the best available science in the EIS and ESA re-consultation process.

### **C14. EIS should not be limited to new information since 2010 FMP Biop**

The scope of the analysis in the EIS should not be limited to only new information developed since the preparation of the 2010 FMP Biop, but also incorporate the critiques and comments raised by the two independent scientific review bodies and the public. The EIS should also incorporate the recommendations of the Council.

### **C15. Appropriate baseline for information**

The appropriate baseline for Steller sea lion (SSL) population data should be from 2000 (and not from 2004) forward. NMFS should also strive to capture that time period (2000-2012) in the fishery catch information to the extent practicable.

### **SSL Preservation**

#### **C221. No real protection measures in place for SSL**

There are no real protection measures in place for the Steller sea lion, which are continually shot to death by commercial fish profiteers. The fish profiteers will shoot any animal that needs a fish to stay alive. These greedy depraved commercial fish profiteers operate under the law of the commons. Meanwhile, we have all species going extinct because of the toothless administration of NOAA, which really only works for the commercial fish profiteers, who are creating havoc in the sea and a dead world for the rest of the people on earth. Taxpayers prostrate themselves to pay taxes for these fat cat bureaucrats at NOAA who do nothing to protect the fish species so our kids will have fish on earth in the future.

#### **C222. Stop the capture import/export of all marine life**

Please stop the capture import and export of all marine life.

#### **C223. Rescuing SSLs from extinction**

The protection of the Steller sea lion from the Alaskan groundfish fisheries is extremely important in attempting to rescue the sea lions from extinction. This EIS should be a top priority because fisheries must be regulated in order to control their negative impact on the sea lions. Economic impacts can be curbed through alternative fishing methods. Sea lions protection must come first. I support this EIS. It is important to take into account the economic interests of the citizens in the area, but once the already endangered Steller sea lion is irreversibly adversely affected by overfishing and loss of habitat, this species cannot be brought back. While the new restrictions might be a strain and take some sacrifices, we must do all we can to preserve species while we still can, and not wait until it is much too late to attempt to change our behavior. With enough research, it seems an amenable compromise can be reached. With more animals being added to the endangered species list and becoming extinct at an alarming rate, it is important to preserve what we still can. These restrictions appear to be an effective way to increase the Steller sea lions' chance of survival.

## **Chapter 2 Description of the Alternatives**

### **C16. Evaluation of Council alternative**

The Council's alternative from August 2010 should be evaluated. The Council's proposal was a reasonable, protective alternative with respect to sea lions.

### **C17. Seasonal Pacific cod trawl fishing**

Pacific cod trawl fishing is appropriate during a short winter window when Pacific cod abundance is high and in areas where removals are not likely to affect sea lion foraging opportunities. More Pacific cod fishing in the summer is appropriate in light of studies showing that 94 percent of sea lion scat samples collected during the summer contained no Pacific cod.

### **C18. More Area 541 fishing**

It is appropriate to allow more fishing in Area 541 because Area 541 pups are increasing and non-pups are at least stable if not increasing.

### **C19. Re: conclusions of the 2010 FMP Biop**

Because the scientific foundation of the 2010 FMP Biop has been challenged legally, and questioned scientifically by reviewers from the Center for Independent Experts and a review commissioned by the States of Alaska and Washington, the reasonable range of alternatives in the EIS should not be constrained by conclusions of the 2010 FMP Biop.

### **C20. Council motion, alternatives**

Alternative 2 would be the regulations and Steller sea lion protection measures in place prior to adoption of the 2010 interim final rule adjusted to take into account changes in fishery management that have been implemented since 2003 (Amendment 80, etc); and Alternative 3 has the Alternative 2 regulations with reductions in the pollock closures in the central and western Aleutians.

### **C21. Consider the Aleutian Islands (AI) Pollock fishery**

The Aleut Corporation repeatedly petition NMFS and the Council for project level consultation on alternative pollock management measures beginning in 2005. Consultation on alternative pollock management measures was deferred to a programmatic Biop (the 2010 FMP Biop), which failed to provide any analysis of pollock management measures for the Aleutians. The management measures for pollock in the Aleutians are more restrictive than pollock management in any other area. 100% of Critical Habitat in the AI is closed to pollock fishing. Given the bathymetry of the AI, this has effectively amounted to a total closure of the fishery, leaving no opportunity for a commercially viable fishery.

### **C22. Alternatives and their basis**

A reasonable range of alternatives should be considered in the EIS. The findings of the peer reviews on the FMP Biop and the bias in its analysis should be addressed in both the EIS and any new Biop.

### **C23. Appropriate Regulatory Action, Expedited schedule for EIS, EIS process**

- 1.) Take appropriate regulatory action to vacate the management measures implemented by the interim final rule in time for the 2013 fishery and revert to 2001 measures except where no longer appropriate (e.g. Harvest Limit Area regulations with 178 degrees west longitude line and the platoon system).
- 2.) Adopt an expedited schedule for completion of the EIS so that it supports the completion of rulemaking for a final rule with new final management measures such that these measures can be fully in place for start of the 2014 fishery.
- 3.) Concurrent with the expedited EIS process, immediately reinstate consultation with regard to Central and Western Aleutian Islands, and prepare a supplemental Biop that incorporates the findings and recommendations of the CIE review and Independent Scientific Review Panel. These findings substantially change what is the best scientific information that is now currently available, and the new supplemental Biological Opinion should reflect this new information as it reconsiders the jeopardy and adverse modification determinations for groundfish fisheries in the Aleutian Islands.

### **C24. General alternatives**

- a. Alternative One: Management measures from the 2010 interim final rule.
- b. Alternative Two: The regulations and RPAs in place prior to adoption of the 2010 interim final rule adjusted to take into account changes in fishery management that have been implemented since 2003 (Amendment 80, etc.), with options for removing the platoon system. This is similar to the Council's proposed alternative 2.
- c. Alternative Three: A placeholder for an alternative developed through the Council's Steller Sea Lion Mitigation Committee (SSLMC) public process.

### **C25. Scientific premise for alternatives**

Given the findings and conclusions of the CIE reviewers and Independent Scientific Review Panel of the 2010 FMP Biop, it is not reasonable or appropriate to include an alternative that is more precautionary and more restrictive on fishing than the current RPA. The scientific premise for the proposed action has now been found to be baseless; and it is imperative that NMFS consider a number of other, less stringent, alternatives in its EIS and remove the proposed action from consideration because it represents an alternative that is no longer viable and that is not consistent with the best available science.

### **Proposed Alternatives for SSLMC Consideration**

#### **C26. AI Pacific cod trawl allowed Nov. 1-Dec 31**

Modify the November 1 closure to directed Pacific cod trawl fishing to keep the fishery open until Dec.31. Change the Pacific cod C season from June 10 – November 1st to June 10 to December 31.

#### **C27. Dalnoi Pt Closure**

Extend SSL critical habitat (CH) protection measures for important Bering Sea haulout areas in the Pribilof Islands. Specifically at St. George's Dalnoi Point, expand the closed CH to 20 nm. At Dalnoi

Point, reduce significantly the proportion of the catches of pollock and Pacific cod taken within 20 nm and the proportion taken in winter.

### **C28. Revise harvest strategy**

Revise the Harvest Management Strategy (e.g., optimum yield, harvest control rules, tier system, total allowable catch (TAC) setting process) for important prey species (pollock, Atka mackerel, and Pacific cod) so that it explicitly incorporates the needs of Steller sea lions, birds, and other apex predators, and in particular, the needs of ESA listed species to meet their recovery goals. Changes to harvest strategy may be preferable as substitute for current standard approaches (e.g. no fishing zones in critical habitat, seasonal restrictions). Improve the fish biomass surveys for important prey species to provide information on a finer spatial and temporal scale so as to provide better information about Steller sea lion prey in critical habitat and in winter. NMFS should focus its required EIS on a full analysis of fisheries effects on SSL, especially the effects of intentionally reducing target stock biomass by 60 percent or more; such a focus and analysis is necessary if the service is to identify clearly the potential ecological effects of its fishing strategy based on the maximum sustainable yield and develop the type of adaptive management approach that is needed to characterize and manage those effects.

### **C29. Change pollock and Pacific cod season dates and apportionments in GOA**

Reallocate the western GOA (WGOA) pollock seasonal TAC distribution from the D season evenly between the A, B, and C seasons, so that each remaining season has an equal allocation of 33.3 %.

An alternative solution would be to redistribute the D-season Pollock to the A, B and C seasons in uneven proportions of A season 30%, B season 30% and C season 40%.

Change the opening date of the Pacific cod A season in the WGOA NMFS reporting area 610. The current season opening date is January 1 for fixed gear, January 20 for trawl gear. The proposed A-season opening date would be February 1 for all gear types.

An alternative solution would be to have the fixed gear sector open earlier on January 15, and only the trawl sector open February 1st. This staggered opening may mitigate any SSL nutritional stress concerns.

Change the apportionment of the Pacific cod TAC between the A and B seasons in the Western GOA NMFS reporting area 610. The TAC is currently apportioned to 60% of the TAC in the A season, 40 % in the B season. The proposed alternative apportionment would be 80% in the A season, and 20% in the B season.

An alternative that could be considered is apportioning 70% of the WGOA Pacific cod TAC to the A season and 30% to the B season.

### **C30. Change GOA sites transit exception regulations**

Add six listed Steller Sea lion rookery sites within the navigable waters of the Aleutians East Borough to the Navigational Transit exceptions in the Steller Sea lion regulations Title 50 section 223.202 (b)(6), to allow vessel continuous transit to maintain a minimum of 1 nautical mile from each rookery site. Those sites from Table 1 are: 6) Atkins I, 7) Chernabura I, 8) Pinnacle Rock, 10) Sea Lion Rocks, 11) Ugamak I, 12) Akun I.

An alternative solution would be to remove sites, including Atkins Island, from rookery listed status. Anecdotal accounts suggest Atkins Island is no longer used by any SSL populations.

**C31. Area 543 Atka mackerel allow fishing outside critical habitat (CH) and outside 10 nm of Builder**

Modify current AI Atka mackerel regulations to allow fishing outside of SSL CH in the western AI (Area 543) and to allow fishing outside 10 nm at Buldir Island.

**C32. Change determination of Atka mackerel management in Area 541/Bering Sea**

Change the Maximum Retainable Amount regulations for Atka mackerel in the Eastern Aleutian Islands (Area 541) and Bering Sea wherein retention percentages would be measured on an offload to offload basis instead of the current instantaneous basis.

Alternatively allow directed Atka mackerel fishing in the Bering Sea. This would require modifying the current trawl exclusion zones to 10 miles at some or all of the following SSL sites: Unalaska/Bishop Point and Akutan Island /Reef Lava, Unimak Island, Akun Island/Billings Head and Unimak Island/Cape Sarichef.

**C33. Extend AI Atka mackerel season to Dec. 31**

Allow directed fishing for Atka mackerel in the AI from January 20 to June 10 (A) and June 10 to December 31 (B) season.

**C34. August 2010 Council recommendation for Atka mackerel fishing**

Modify the current management measures for Atka mackerel in Areas 542 and 543 to those proposed by the Council in August 2010.

Allow mackerel fishing in a limited portion of AI 543 outside of SSL CH and east of the 174 degrees 30 minutes east longitude line. Atka Mackerel catch in AI 543 was limited to 65% of the acceptable biological catch (ABC). For AI 542, the Council proposed TAC not to exceed 65% of ABC, and to allow some inside CH fishing at Tanaga and Kiska, with no mackerel directed fishing inside CH from 178 East to 180 degrees (~74 nm area swath Amchitka). Mackerel fishing inside CH in AI 542 was limited to 50% of the TAC in that area in the portion of CH remaining open.

Use seasons of Jan. 20 - June 10 and June 10 - Dec. 31 with no roll over provisions between A and B seasons.

**C35. Pre 2011 Pacific cod fishery, no limit fishing during Atka mackerel fishing**

Revert to Aleutian Island trawl Pacific cod management measures in place before the 2010 interim final rule with one change, removal of the 178 degrees West “no concurrent Pacific cod/Atka mackerel fishing” measures that were in place prior to 2011 under the Harvest Limit Area (HLA) regulations.



**C36. Pre 2011 Pacific cod fishery for fixed gear, cap Pacific cod removals based on biomass estimate**

Reinstate the pre-2010 Steller sea lion protection measures to allow fishing for Pacific cod in the Aleutian Islands management area. Establish a cap on the ACL/TAC based on best estimate of Pacific cod biomass. Reopen critical habitat west of the Seguam foraging area except outside of 3 miles from rookeries and within 10 miles of Buldir rookery.

**C37. Pacific cod trawl closed areas at rookeries and haulouts in 543, 542, and 541**

Reopen critical habitat to Pacific cod trawling in 543 and in 542 west of 178 west, outside of 10 nm of listed haulouts and rookeries. East of 178 west in 542 and in 541, reopen critical habitat to Pacific cod trawling outside of 10 nm from rookeries and 3 nm from haulouts. Eliminate the provision from the 2001 Steller sea lion protection measures that required that the Atka mackerel platoons complete their HLA harvest prior to allowing a Pacific cod trawl fishery between 10 and 20 nm of a listed site. Reopen fixed gear closure in critical habitat west of the Seguam foraging area except outside of 3 nm from rookeries and within 10 nm of the Buldir rookery. Add a cap on Pacific cod removals in the AI based on the best estimate of biomass, either the ratio of AI survey biomass to eastern Bering Sea (EBS) survey biomass, or an AI TAC based on an the Council's Scientific and Statistical Committee (SSC) approved stock assessment model.

**C38. August 2010 Council's recommended AI Pacific cod fishery**

Pacific cod trawl Area 543:

- No Pacific cod trawling in critical habitat east of 174 degrees 30 minutes East longitude.
- Pacific cod trawling in critical habitat west of 174 degrees 30 minutes from 10 nm and out from February 15 to March 15.
- Pacific cod trawl harvest limited to no more than 2.5% of BS/AI ABC.

Area 541 and Area 542 east of 178 degrees West Longitude:

- Trawl Pacific cod fishery is A Season only (January 20 to June 10).
- Trawl Pacific cod fishery inside critical habitat is only east of 178 degrees W to 541 management border.
- No inside critical habitat cod fishing west of 178 degrees W to 177 degrees E.
- Increase haulout closures to 10 nm for cod trawl between 170 degrees W to 174 W.
- Status quo West of 174 W to 178 W Pacific cod fixed gear.
- No additional restrictions on vessels under 60' using fixed gear.

Area 543:

- Prohibit directed fishery for Pacific cod.

Areas 542:

- Pacific cod fishery is limited to B season only (June 10 to November 1).
- Critical habitat open outside 4 nm from rookeries and haulouts.

Area 541/Bering Sea:

- No new 541 restrictions on fixed gear Pacific cod fishing.

**C39. Pollock fishery managed like pre 2011 Pacific cod trawl fishery, pollock caps by area based on biomass estimates from rolling average surveys**

Open critical habitat to pelagic pollock fishing in 543 and in 542 west of 178 west, outside of 10 nm of listed haulouts and rookeries. East of 178 west in 542 and in 541, open critical habitat to pelagic pollock fishing outside of 10 nm from rookeries and 3 nm from haulouts.

Provide for caps on pollock removals in each AI statistical areas (541, 542, and 543) based on the best estimate of biomass distribution using the same rolling averages of surveys procedure applied to the AI pollock ABC that is used to apportion the Atka mackerel ABC. The proposal would retain the Amendment 82 limit on the proportion of the AI pollock ABC that can be harvested in the A season.

**C40. Open CH at select haulouts outside of 3 nm to pollock fishing, pollock caps by area based on biomass estimates from rolling average surveys**

In 541:

- Open particular areas around Atka North Cape and in Kanaga Sound. (see maps provided by the Adak Community Development Corporation (ACDC)).
- Open a portion of CH to pelagic pollock fishing outside of Amutka Pass outside 10 nm from Amutka and outside 3 nm for Segum/Southside.

In 542:

- Open a portion of CH to pelagic pollock fishing around a limited number of haulouts in the Rat Islands outside 3 nm from Krysi Pt., Tanadak, Segula haulouts and outside 10 nm from Little Sitkin and Ayugudak haulouts (see ACDC maps).

In 543:

- Open a portion of CH to pelagic pollock fishing around a limited number of haulouts in 543 outside 3 nm from the Shemya, Alid, and Chirikof haulouts (see ACDC maps.)
- Provide for caps on pollock removals in each statistical area based on rolling averages of survey biomass distribution as used to apportion the Atka mackerel ABC.
- Retain the Amendment 82 limit on the proportion of the AI pollock ABC that can be harvested in the A season (40% of ABC).

**C41. Keep Status Quo**

Keep protection measures at status quo for the following rookery cluster areas (RCAs):

- RCAs 1-5: Retain management measures as described in 2010 FMP Biop.
- Aleutian Islands Pollock: Continue to prohibit directed fishing for pollock in the Aleutian Islands.
- RCA 7: No fishery management changes at this time.

- RCA 10: No fishery management changes at this time.

#### **C42. Further Restrict Fisheries**

Understand whether displaced fishing effort has impacted SSL outside of the Areas 541 and 542. NMFS should consider additional protection measures for important Bering Sea haulout areas in the Pribilof Islands, especially if increased fishing effort occurred as a consequence of the FMP Biop and interim final rule.

In RCAs 8-9, reduce significantly the proportion of the catches of pollock and Pacific cod taken inside CH and the proportion taken in winter. In addition, significantly increase the extent of CH areas closed to all directed fisheries for both species.

#### **C43. Pre 2011 AI Atka mackerel, except no HLA**

Modify current AI Atka mackerel management measures to revert to areas that were open for mackerel trawling prior to 2011 with two changes: removal of the HLA regulations requiring vessels to register and be divided into HLA “platoons” and retaining the current season dates of Jan. 20 – Jun. 10 and Jun. 10 – Nov. 1.

Retain the inside of critical habitat catch limits in place prior to the 2010 FMP Biop (no more than 60% of mackerel TAC can be caught inside SSL critical habitat).

Instead of having “platoons”, fishing effort inside 542 and 543 SSL CH would be spread over time by the incentives already in place with Amendment 80 cooperatives, and the 2010 FMP Biop Atka mackerel seasons of January 20 to June 10 and June 10 to November 1st would be retained.

### ***Chapter 3 Target Species Effects***

#### **Stock Assessment and Harvest Rate**

#### **C44. Best estimate of total biomass for each species**

Harvest rates should be revised to include the best estimate of total biomass for each species.

#### **C45. Atka mackerel stock in Area 543**

The most recent annual stock assessment shows that the Atka mackerel stock in Area 543 is currently at the levels that closure of the Atka mackerel fishery under the interim final rule is intended to achieve.

#### **C46. Minor harvest of Atka mackerel**

Stock assessment surveys in Areas 541-543 show fisheries impose a minor annual harvest rate (~8%) on a large biomass of Atka mackerel.

#### **C47. Impacts of overfishing AI pollock & GOA Atka mackerel**

The EIS should consider impacts of overfishing of Aleutian Islands pollock and GOA Atka mackerel.

#### **C48. 2010 trawl survey biomass estimate increase for Atka mackerel**

In the Western Aleutian Islands (Area 543), the 2010 trawl survey biomass estimate for Atka mackerel increased +151% to 253,819 mt - without new fishing restrictions to reduce harvest.

#### **C49. Variability in recruitment for pollock**

The Aleutian Islands directed pollock fishery has been closed since 1998; however, the biomass in 2011 is at the same level as 1998 due to variability in recruitment.

#### **C50. Biomass of Atka mackerel has increased in the AI**

The biomass of Atka mackerel has increased in the AI and harvest rates are low (7%). Pacific cod comprises a small portion of the overall groundfish biomass in the AI, and the FMP Biop overstates harvest rates on AI Pacific cod by as much as 2.5 times.

#### **C51. Benefit of closure to pollock stock**

The FMP Biop contained no analysis of the benefit of the closure to the pollock stock.

#### **C52. Bottom trawl surveys provide evidence of AI rate of biomass production**

The FMP Biop fails to provide evidence that the AI rate of biomass production is lower than other areas in terms of those species that make up the SSL prey field. Bottom trawl surveys provide readily available biomass data. The bottom trawl survey data provide the biomass estimates by species and the sq. km. of survey strata using the average of the last 3 bottom trawl surveys for the AI. Using the conventional "rate per unit area" definition of productivity, the AI is 70% more productive than the EBS and nearly an order of magnitude more productive than Southeast Alaska.

#### **C53. Eastern Bering Sea (EBS) model biomass ratio**

It is the practice of the Stock Assessment and Fishery Evaluation (SAFE) authors to scale up the EBS model biomass by the ratio of the AI to EBS survey estimates. This implies that the best estimate of actual age 3+ Pacific cod biomass in the AI is about double the survey biomass estimate. Thus the exploitation rates in table 5.8 of the 2010 FMP Biop probably overstates the portion of actual Pacific cod biomass taken by the fishery in the AI by a factor of 2.

#### **C54. High fraction of biomass resides within CH in AI**

A higher fraction of the biomass resides within CH in the Aleutians than in either the EBS or GOA (roughly 1/3rd in the AI versus roughly 1/50th in the EBS based on the new table on page 298 of the final FMP Biop). If fishing should be distributed relative to biomass, it follows that a higher fraction of the AI fishery should be conducted inside CH relative to EBS fisheries.

#### **C55. Entire prey field status assessment (issues also for Chapters 4 and 5)**

Provide assessment of the abundance, distribution, energy contribution, and seasonality of all SSL prey species in the Aleutians such as salmon, herring, sculpins, sand lance, etc. Include changes in abundance

and distribution of the prey field species over time. Include the presence or absence of SSL feeding aggregations in the Aleutians and prey species involved. Determine the proportion of pollock, Pacific cod, and Atka mackerel in the entire prey field in the AI. If the data is available for the Commander Islands, a similar analysis of the available prey field would be useful.

#### **C56. Prioritization of strata in AI trawls survey**

The EIS should address the prioritization of resources for fish biomass surveys in the Aleutians to heighten the importance of Atka mackerel and Pacific cod in survey design.

#### **C57. Biomass survey, proportion in prey field, harvest rates**

- The EIS should include the 2010 trawl survey and biomass results by area (541-543), including the estimates for BSAI Age 3+ total biomass and the apportionments between EBS and AI (as was done in the Alaska Fisheries Science Center (AFSC) 2010 footprint analysis and Ormseth et al 2008). The partition of biomass should include estimates of coefficient of variance (CV) and should not be done to the RCA level due to the high levels of variance.
- The EIS should include the proportion of Atka mackerel biomass in the overall prey field by season by area (541-543).
- The EIS should include the historical harvest rates (2000-2012) on Atka mackerel by area (541-543) along with an estimation of biomass left in the water of Atka mackerel after fishing (and that proportion of the total prey field).

#### **C58. Ormseth et al 2008**

Ormseth et al 2008 was not cited or included in the FMP Biop but should be included in the EIS.

#### **C59. Incorrect estimation of total Pacific cod biomass results in overestimating harvest rates**

The EIS should revise and re-calculate harvest rates for AI Pacific cod using the best estimate of total biomass in the Aleutian Islands (not trawl survey biomass which underestimates total biomass by -60%).

#### **Fisheries Catch and Bycatch Information**

#### **C60. RPA measures taken from mistaken estimates**

NMFS based the FMP Biop's RPA measures on a mistaken estimate of the longline catch in 2008.

#### **C61. RPA compromises Amend. 80 (issues also for Chapter 4)**

The RPA compromises the ability of Amendment 80 vessels to reduce bycatch.

## **Fisheries Management and Modeling**

### **C62. Single species model**

A Single species model is inappropriate for projecting increases in Atka mackerel and Pacific cod biomasses.

### **C63. Assumption of stock independence**

The model incorporates an assumption that the stock in each fishery management area is independent. This is wrong.

### **C64. False recruitment average**

The model assumes that recruitment is average and constant. This is wrong.

### **C65. Uncertainty of harvest reductions**

Given low exploitation rates used for Alaska fisheries management, the impact of harvest reductions is highly uncertain.

### **C66. Non-standard methodology**

NMFS used a methodology to estimate the fraction of biomass removed by the fisheries that was non-standard and vastly overestimated the relevant fraction.

### **C67. Untested assumptions regarding SSL (issue also for Chapter 5)**

NMFS made the untested assumption that if a large fraction of the biomass were harvested, less would be available for Steller sea lions.

### **C68. Directed fishery for Atka mackerel**

The only directed fishery for Atka mackerel in the Bering Sea and Aleutian Islands management area takes place in the Aleutian Islands, where it is the largest fishery, accounting for approximately 60 percent of all groundfish catch.

### **C69. Pacific cod in BS and GOA**

Pacific cod is the second largest directed fishery in the Aleutian Islands, and this fishery also occurs in the Bering Sea and GOA.

### **C70. Pacific cod, cooperative structures, catch share programs (issue also for Chapter 4)**

Pacific cod fisheries employ cooperative structures and catch share programs that provide flexibility for the conduct of the fisheries by cooperative members, encourage efficient harvesting, and allow the avoidance of the catch of prohibited species.

## ***Impacts of Fishery Restrictions (Chapters 3 and 5)***

### **C71. Analyze redistribution of fishing fleets/flexibility to harvest other species (issue also for Chapter 8)**

The EIS should analyze the redistribution of the fishing fleets, and the flexibility of the fleets to harvest other species or change gear types from previous regulation such as Amendment 80, various catch share programs, etc.

### **C72. Include summary illustrating timing of fishing activities**

The EIS should include a summary (table or text) that clearly illustrates the timing of fishing activities, target fish behavior, and SSL behavior throughout the year.

### **C73. Reduction of Pacific cod and impacts on SSL**

Reduced Pacific cod harvests may hurt Steller sea lions as Pacific cod prey on Atka mackerel, which is an important prey species of Steller sea lions. This is not recognized because of the use of a single-species rather than a multi-species model for analysis.

### **C74. Evaluation of stock status, population trends, etc (issue also for Chapter 4)**

The EIS should evaluate the stock status, population trends, and state and federal fishery removals for all Steller sea lion prey species, including salmon and herring.

### **C75. Pollock closure in relation to population trends of SSLs in AI**

The EIS should evaluate the effect of the Aleutian Islands pollock closure on the population trends of pollock and SSLs in the Aleutians, and whether that closure remains necessary to protect Steller sea lions in the Aleutians.

### **C76. Rationale for seasonality of fishing restrictions**

The EIS should reevaluate the rationale for seasonality of fishing restrictions, and reevaluate whether changes to existing fishing seasons may be warranted.

### **C77. Impacts of multiple fishery restrictions in small geographic areas**

The EIS should evaluate the impacts that multiple fishery restrictions have had on the consolidation of fishery catch into small geographic areas that remain open to fishing.

### **C78. Summary of relationships between fishing and SSL population trends (issue also for Chapter 1)**

The EIS should provide a summary, including important assumptions, etc., of the studies that have been conducted examining the relationships between fishing activities and SSL population trends.

### **C79. Multi-species modeling indicate no SSL increase (issue also for Chapter 7)**

Multi-species, food web modeling by NMFS indicated no long-term improvement in sea lion numbers if fisheries for Atka mackerel or Pacific cod are reduced in the western and central Aleutian Islands.

### **C80. Relationships between fishing and SSLs**

The FMP Biop gives little considerations to studies that examined the relationship between fishing and SSLs, such as Calkins 2008 and Trites 2010. The States sponsored Independent Review Panel found that since 2000 the studies are unequivocal, and none of these studies found statistically significant associations consistent with harm by fisheries. FIT studies do not support persistent localized depletion due to fishing.

### **C81. Competition**

Competition should be evaluated on a local basis (harvest rates by sub-area and other information on local harvest rates).

### **C82. Spatial restrictions (issue also for Chapter 8)**

Examine how the fishery might deploy spatially with alternative spatial restrictions.

### **C83. Fishing depths**

Examine how fishing depths in the Aleutians contrast to fishing depths in the EBS and GOA, for use in a quantitative evaluation of overlap with SSL dive depths.

### **C84. Cumulative management actions (issue also for Chapters 1, 4, 7, and 8)**

The EIS should evaluate the impacts of the closures and multiple fishing restrictions in the Aleutian Islands and the effect on the re-distribution of fishing effort and concentration of harvest.

Provide a description of additional management measures taken in the Aleutian Islands that facilitate distribution of fishery catches over time and area, increased license limitation (minimizing the race for fish) including Amendments 80 and 85; parallel fisheries licensing requirements; trawl recency etc.

Include a qualitative and quantitative description of the individual and cumulative management actions that have resulted in closures in the Aleutian Islands since 1997 including: closure of the directed pollock fishery; HAPC closures; EFH closures; 2001 and 2011 Steller sea lion protection measures; etc. Provide a cumulative figure of the closed and open areas of the Aleutians for pollock, Pacific cod, and Atka mackerel fisheries.

The EIS should include the potential problems and limitations from further re-distribution of fishing effort (due to Steller sea lion protection measures). The discussion should include: a.) potential changes in bycatch and prohibited species catch; b.) regulatory limitations and license limitations/requirements for vessels to move into new areas to fish for different species or with different gear types; c.) limitations of vessel configurations for converting to different fisheries or gear types; and d.) inability of fixed processing plants in the Aleutians to shift locations and fisheries.



The EIS should include a description and chart of the areas that have been closed to fishing in the AI for all reasons (SSLs, EFH, HAPC etc), and include an analysis of the additive effects of those closures for Steller sea lions; the prey resources and availability; and the limitations placed on fishing fleets.

### **C85. Effects of fisheries by gear type**

The analysis has to look at the different effects of different gear types. Examine the effects of fisheries by gear type, including the direct and indirect effect, however minimal, of the freezer longline fishery. This was not done in the FMP Biop. Three dimensions of this problem are identified: (1) Because of the nature of the gear and techniques used, the longline fleet fishes in a way that disperses fishing effort over time and space; (2) There is no overlap between the lengths of Pacific cod taken by longline gear and the lengths caught by Steller sea lions; (3) The longline fishery does not catch Pacific cod in the water depths where Steller sea lions forage.

## ***Chapter 5 Marine Mammal Effects***

### **WDPS Population, Status, Demographics, and Distribution**

#### **C86. SSL foraging habits**

Telemetry data shows that sea lions forage mostly inside 10 nm during the winter.

#### **C87. Western distinct population segment of SSL**

The wDPS of Steller sea lions has increased in the past decade even though the two western subregions as identified in the Recovery Plan have not increased. The reason for the difference in abundance for the entire distinct population segment compared to the two western subregions is unknown.

#### **C88. Best estimate of total population of SSLs in wDPS**

The EIS should include the best estimate of the total population of Steller sea lions in the wDPS, rather than only estimates from trend sites. Included should be the total population estimates and trend of SSLs in the Alaskan and Russian portions of the wDPS.

#### **C89. Movements of SSLs between AI**

The EIS should evaluate in greater detail the movements of SSLs between and among subareas in the Aleutians, and describe dispersal of SSLs from their natal rookeries.

#### **C90. FMP Biop DPS units (issue also for Chapter 1)**

No unit smaller than a DPS is relevant when considering actions that arise from claims under the provisions of the ESA.

#### **C91. SSL trend sites is poor method**

Use of SSL trend sites is a poor method to assess overall population status and vitality, because trend sites may "blink" in and out if SSLs are metapopulations.

### **C92. SSL Decline as movement is not supported in FMP Biop**

Dismissing the SSL decline in the FMP Biop as movement to other areas is not supported.

### **C93. Insufficient analysis of telemetry data**

The FMP Biop has insufficient analysis of telemetry data for SSL movement and distribution.

### **C94. Increase of wDPS population**

The total population of the wDPS of SSLs has increased +54% to 60% since 2000. The best estimate of the total wDPS population in 2011 would be 77,000-80,000.

### **C95. Pup counts increase**

The total pup counts in the U. S. wDPS in 2011 have increased +4% (from 2009; +16% (from 2005); and +34% (from 2002).

### **C96. Problems with 2010 FMP Biop according to CIE reviewers (issue also for Chapter 1)**

The CIE reviewers found fault with the 2010 FMP Biop in the analysis and use of: uncorrected “frequency of occurrence” in scat analysis; pup to non-pup ratio methodology as proxy for natality; inconsistent use of forage ratios; bias in the presentation of alternative theories of SSL decline; and the use of single species modeling versus multi-species modeling.

### **C97. Consider entire range of SSLs**

The EIS should focus on the entire wDPS (including Russia) while also considering relevant studies from the eastern DPS and other pinniped populations from the around the world. Include information on Russian SSLs including population trends ; movement; fisheries operating in the Russia zone and fishery closures in the area that relate to SSLs.

### **C98. Low estimate of SSL abundance**

NMFS has used an estimate of SSL abundance that is low. NMFS estimates of the size of the wDPS are too low. NMFS estimating techniques accounted for movement of eastern DPS animals into the western area, but did not account for the movement of wDPS animals into the eastern area.

### **C99. Recovery plan criteria (issue also for Chapter 1)**

The Recovery Plan criteria reference growth of the total population of the U. S. wDPS of SSLs since 2000. Therefore 2000-2012 is the most appropriate baseline period particularly for SSL population growth in the wDPS.

### **C100. EIS best estimates of population**

The EIS should include the best estimates of the total population of the wDPS and the U. S. wDPS.

### **C101. Pup counts, survey**

The total population for the U. S. wDPS can be estimated from total pup counts. The 2011 pup survey results in a total population estimate for the U. S. wDPS of 52,000 (using a pup multiplier of 4.5). The best estimate of total population for the U. S. wDPS is not the minimum population estimate (which is the sum of a subset of survey counts at trend sites for non-pups and pups). The key index of population status and trends is a count of pups.

### **C102. List of EIS inclusions and considerations**

- Total population estimate for wDPS: Provide the total population estimates for the entire wDPS (U. S. and Russia) from 2000 through 2012, rather than only estimates from trend sites. Include an explanation of methodology to estimate the total wDPS population.
- Total population estimate for Russian portion of wDPS: Provide the total population estimate for Russian SSL population 2000 through 2012. Include an explanation of the methodology used to estimate total Russian population.
- Total population estimate for U. S. wDPS: Provide the total population estimates for U. S. wDPS from 2000 through 2012. Include an explanation of methodology to estimate total U. S. wDPS.
- wDPS Pup surveys: Provide the total pup counts (not trend rookeries) from surveys from 2002 – 2011 (and resulting total population estimates for the U. S. wDPS (from the 4.5 pup multiplier). Provide total pup counts by subarea 2002-2011 (not trend rookeries).
- 2011 wDPS Non-Pup Survey: Provide the total unadjusted non-pup counts (in addition to trend sites). Compare to the total unadjusted non-pup counts from the 2008 survey. Compare 2011 survey to 2008 survey for only sites surveyed in both years (as was done in the NMFS comparison of the 2007 to 2004 survey) and provide non-pup population trend from 2008 to 2011.
- Compare population trend analysis from total population estimates for the U. S. wDPS to trend analysis from the trend sites. The EIS should provide a comparison of the total wDPS population trend 2000-2012 as calculated from total population estimates (from pup surveys and multipliers) and as calculated from non-pup trend site analysis.
- Non-pup trend site count methodology: Provide a clear explanation of the methodology in non-pup trend site counts and analysis including a list of all the inherent adjustments (camera angle; adjustments for SSL movements; etc). Provide what counts are included and what is excluded from the counts or not considered in the counts (animals at sea, SSLs at Round Island and other locations at the time of survey with known SSL presence etc).
- Round Island: Include SSL counts from Round Island. Provide explanation why these counts are not used in the non-pup population estimate or in the SSL minimum population estimate.
- Other SSL aggregations: Provide information regarding numbers, timing of SSL aggregations in the wDPS (i.e. St. Lawrence Island, etc.) and the eastern DPS (i.e. Akwe, Sitka, etc.) including branding information.
- Eastern DPS/wDPS: Provide information on the extent and timing of movement from the wDPS to the eastern DPS (and from the eastern DPS to the wDPS). Provide the proportion of sampled pups at eastern DPS rookeries that are from wDPS females.

### **C103. SSL Movement**

The EIS should include quantitative information of movement of SSLs within and outside of the wDPS (immigration and emigration).

#### **C104. SSL Movement considerations to include in EIS**

- Provide brand/resight movement and dispersal information between rookeries within Russia and outside Russia to the U. S. wDPS. Include break outs by male/female, adult/ juvenile etc. as in the Burkanov presentation.
- Provide brand/resight movement between rookeries, between subareas, between eastern DPS/wDPS, and between Russia/U. S. wDPS. Breakout by male/female, etc.
- Provide brand re-sight information and timing from known SSL aggregations such as St. Lawrence Island, Akwe River, Sitka, Berners' Bay, Round Island, etc. Breakout by male/female, etc.
- Include results and comparison of previous movement studies such as Raum-Suryan 2002 and other relevant studies etc.

#### **C105. Boor Platform of Opportunity (POP)**

Provide expanded discussion of limitations of dataset of POP observations used in Boor including: list of areas with few to no POP sightings (holes in the data); areas with few POP sightings since 2000 or largely dated observations (pre 1990). The EIS should include lat./long. of POP sightings in the AI to determine depth and identification of type of vessel reporting the sightings (within the confines of confidentiality).

#### **C106. Russian population importance of wDPS**

The Russian population is an important component of the wDPS, and information on the status of SSL in Russia and the fisheries that may affect them should be an important component of the EIS.

#### **C107. EIS should provide more information regarding western AI to Russian, SSL population trends**

The EIS should provide more information and comparison of the western AI to Russia in terms of SSL population trends and fisheries.

#### **C108. Inclusion of examination of fisheries and SSL in Russia Zone**

The EIS should include an examination of the fisheries and fishery closures in the Russia zone and the relationship (or lack thereof) with SSL population demographics. This should include information on fisheries and SSL population trends in areas such as the Sea Okhotsk as well as the Commander Islands. Discussion and analysis should include examination of Medny (Commander Islands) with 30 mile fishing closures since at least 1980. Discussion should include the increasing SSL population in the Sea of Okhotsk alongside large scale fisheries. This examination will be useful in evaluating the utility and relevance of fishery restrictions for SSL purposes.

#### **C109. Description of fisheries in Russia by area (Sea of Okhotsk, Commanders, etc.)**

Include a description of species, catch, size and type of vessels etc. in the Russian zone (such as the Catcher Processor pollock fishery in the Sea of Okhotsk). Include the extent and duration of closures (such as the Commander Islands) that relate or are relevant to SSL management.

### **C110. Description of fishery regulations relevant to SSL management**

Include the extent and duration of closures (such as the Commander Islands) that relate or are relevant to SSL management.

### **C111. Movement information in Russia: Medny**

The EIS should discuss: a) potential reasons on why Medny is the only Russian rookery that has no immigrants (among branded animals) in all categories (adults, juveniles, male/female etc.); b) why Medny has the longest dispersal distance of branded animals of all Russian rookeries; and c) the extent and direction of that dispersal from Medny to locations in Russia and Alaska.

### **C112. Comparison of the Commander Islands and the WAI and/or Aleutian**

Discussion should include: a) the available prey field (and seasonality) in the Commanders with a comparison to the prey field found in the AI; b) overall comparison of the SSL demographics in the Commanders to the AI.; c) comparison of killer whale populations in each area and observed predation on SSLs; and d) comparison of SSL movement information in the two areas. The EIS should include a discussion to determine if the SSLs in the WAI are migrating and dispersing to the same extent as SSLs at Medny and if the WAI rookeries are experiencing the same lack of immigrants from other rookeries as is occurring at Medny (and if so, the potential causation).

### **SSL Natality**

#### **C113. Non-pup to pup ratios in the FMP Biop is weak**

Use of non-pup to pup ratios in the FMP Biop is a primary weakness for an assessment of population change. The use of pup:non-pup ratio as a measure of reproductive output is potentially problematic. It is not known if this ratio is a reliable proxy for natality.

#### **C114. Natality and nutritional stress**

In the FMP Biop, the only inference for nutritional stress is reduction in natality.

#### **C115. Reduced natality during high juvenile survival is unexpected**

Reduced natality during high juvenile survival seems unexpected. This implies inexperienced juveniles are foraging more successfully than adult females.

### **SSL Diet**

#### **C116. Need for greater detail of scat frequency, diet**

The EIS should provide greater detail on the use and limitations of scat frequency of occurrence (FO) to describe the contribution of various prey species to the SSL diet, and should provide a summary and results (wherever possible) of other, emerging methods to assess SSL diet (fatty acid analysis, etc.).

### **C117. Consideration of contribution of prey species**

In considering effects of fisheries on SSL prey base. The EIS should consider the contribution of prey species that are not harvested by commercial fisheries in the Aleutians (e.g., Irish lords, sand lance, myctophids, cephalopods, and flatfish) to the SSL nutritional and energetic needs.

### **C118. Pacific cod as prey item for SSL**

Pacific cod is not an important prey item for Steller sea lions. The FMP Biop does not provide evidence that Pacific cod are an important Steller sea lion prey for the wDPS in the western and central Aleutian Islands. Moreover, the analysis does not assert that Pacific cod are an important prey in the western Aleutian Islands.

### **C119. Frequency of Occurrence (FO) is not informative for diet**

FO is the least informative estimate of what is consumed by SSLs.

### **C120. Scat analyses**

Based on 1990-2005 data, scat analyses indicate that Pacific cod is at best a minor component of sea lion diets from information given in the FMP Biop.

### **C121. Forage ratios inversely related to SSL abundance**

Forage ratios (available biomass divided by estimated dietary needs) are inversely related to percent changes in abundance of SSL.

### **C122. Atka Mackerel**

Atka mackerel is clearly an important prey item based on scat data. SSL eat mackerel of a mean size smaller than fishery size.

### **C123. FO Pollock in SSL scat**

The FO of pollock in SSL scat is lower than other groundfish species in the Aleutians and lower in the AI in other areas.

### **C124. Groundfish foraging ratio in the EBS**

For the species of groundfish with the highest FOs the foraging ratio is still higher in the EBS than the AI or GOA, by a factor of 5:1. The EBS biomass is spread out over a much larger area. The EBS bottom trawl survey data report locates over half of the pollock biomass in Stratum 61, which is from 200 to 500 miles away from the Unimak Pass area where the preponderance of the SSL in RCA 6 are located.

### **C125. Prey species (issue also for Chapter 3)**

Aydin 2007 provides the biomass estimates (B, t/ km<sup>2</sup>) for the AI, EBS, and GOA that were used as model inputs. The primary groundfish prey species are based on FO, as well other SSL prey species with

relatively high FOs such as salmon, cephalopods, herring, sandlance and other small forage fish species. The SSL prey field is over twice as dense per unit of area in the AI when compared to the EBS or GOA.

#### **C126. SSL diet composition**

Provide the type of information best suited to determine SSL diet composition. Provide what information is available to provide the best estimate of SSL diet composition and seasonality of diet (in appropriate temporal scale to accurately reflect short term feeding aggregations if any). Discuss potential limitations, uncertainty, and bias of available information.

#### **C127. Limitations of Frequency of Occurrence**

Provide an explanation of the limitations, uncertainty, and potential bias of the analysis and use of FO. This should include: FO does not represent proportion of diet; FO overestimates hard part species; FO underestimates soft part species; and FO overestimates minor prey species consistently found year round, etc. Respond to the concerns of the CIE review over the use of FO uncorrected for bias and in particular the critiques of Dr. Bowen.

#### **C128. Scat FO for Pacific cod and Atka mackerel**

The EIS should provide an updated estimate of FO for Pacific cod and Atka mackerel in SSL scat that is corrected for bias. Scat samples collected in April should be attributed to “summer” similar to telemetry data.

#### **C129. EIS needs to re-evaluate basis for determination that AI Pacific cod fisheries are a "fishery of concern"**

The EIS needs to re-evaluate the basis for the determination that the AI Pacific cod fisheries are a “fishery of concern” as the initial determination is based on FO, which is subject to bias and overestimates the importance of gadids in SSL diet.

#### **C130. Importance of Pacific cod compared with other prey species (issue also for Chapter 7)**

The relative importance of Pacific cod, compared with other prey species, to Steller sea lions should be examined, including consideration of "multi-species food web" models.

#### **C131. Proportion of biomass in overall prey field**

The EIS should include the estimation of the proportion of Pacific cod in the entire AI prey field. The EIS should incorporate Table 4.6 of the States sponsored Independent Scientific Review Panel report that shows the relative contribution of Pacific cod to the groundfish prey field biomass is also minimal.

### **Stresses on Steller Sea Lions and Behavior**

#### **C132. Fishing on prey fields**

The analysis of risks posed by fishing to prey fields is flawed.

### **C133. Failure to support nutritional stress explanation**

NMFS failed to scientifically support its fishery driven nutritional stress explanation and misrepresented or misinterpreted evidence to the contrary. The FMP Biop does not explicitly define its standard for “likely.” This standard should be explicitly defined and the scientific evidence should meet that standard.

### **C134. All stressors may be possible, reality unknown**

The CIE review finds that fishery-induced and natural nutritional stress and killer whale predation on SSLs is possible. The reality is that the reasons for SSL lack of recovery in some sub-regions are complicated and may never be unraveled.

### **C135. Failure to consider environmentally driven nutritional stress/killer whale predation**

NMFS did not seriously consider environmentally driven nutritional stress or killer whale predation for declines in Steller sea lion numbers.

### **C136. Framework in Figure 4.25 in FMP Biop**

It is not clear if the framework presented in Figure 4.25 was used to evaluate SSL responses to reduced prey availability. Most of the text in Chapter 5 of the FMP Biop has little to do with the evaluation of evidence for food limitation

### **C137. No review of fishery effects hypothesis**

No comprehensive review of studies that have attempted to test the fishery effects hypothesis. The lack of critical review of these studies is concerning given the importance of their findings in the FMP Biop.

### **C138. Factors unlikely to play a role in decline**

CIE reviewers agree that disease, parasites and contaminants are unlikely to have played a role in the SSL decline.

### **C139. Killer whale predation unknown**

It is clear that there are sufficient numbers of transient killer whales to exert significant predation mortality on SSLs, but we are still a ways off from having sufficient data to estimate how killer whale predation mortality might vary throughout the wDPS. The effect of killer whale predation on SSLs remains unknown.

### **C140. Harvest rates too small to result in stress (issue also for Chapter 3)**

Harvest rates of Atka mackerel are too low and the fraction of Pacific cod in these areas too small for a fishery on these species to result in nutritional stress.



#### **C141. Longline Fishery effects on wDPS SSL**

Recent scientific information shows that the longline fishery has no adverse effect on wDPS Steller sea lions. The discussion in the FMP Biop is pretty general and is based particularly on a study by Calkins (2008), which concluded that the evidence that Calkins had reviewed (not described in detail) was consistent with the hypothesis that longline fishing and SSL population trends are largely independent of each other. The text in the FMP Biop says that the Calkin's results are consistent with those of other relevant studies.

#### **C142. Current stressors to wDPS SSL**

Current stressors to the wDPS pf Steller sea lions may include a change in carrying capacity in the North Pacific Ocean, killer whale predation, overlapping diets among competitors, disease, contaminants, and nutritional stress.

#### **C143. Need to expand discussion of effects of contaminants on SSL (issue also for Chapter 1)**

The EIS should expand the discussion of the presence and effects of contaminants (including organochlorines, heavy metals, and emerging contaminants) on Steller sea lions in the wDPS.

#### **C144. Population decline factors**

A number of factors may contribute to the population decline including a climate shift in the late 1970s that may have altered available prey, increased predation, and modified human-caused mortality and fishery-related effects; and (ii) direct mortality (then-legal shootings, commercial and subsistence harvest, and incidental take in fisheries).

#### **C145. Nutritional Stress**

Nutritional stress is an unproven theory that has been related to potential effects on Steller sea lion populations. There is little evidence that nutritional stress occurred in the past and virtually no evidence that SSL are currently experiencing nutritional stress from multiple studies. The evidence for fishery-induced nutritional stress is weak; effectively remains conjecture – the evidence suggests there is no more than a possibility of this occurring. This interpretation of “likely” is out of sync with that applied elsewhere for resource standards.

#### **C146. SSL declines in natality, local declines, etc**

NMFS should examine SSL issues including declines in natality, local declines in some regions, rebuilding Pribilof Island rookeries, and effects on past reductions of prey by commercial fisheries, including Aleutian and Aleutian Basin/Bogoslof Basin pollock stocks.

#### **C147. Nutritional stress hypothesis, multispecies model, foodweb cycle (issue also for Chapter 7)**

The fishery driven nutritional stress hypothesis requires consideration of the fishery and sea lion food webs; and therefore, a multispecies model is required for development of a SSL protection measures in a scientific manner. The multispecies modeling should include measures of uncertainty in parameters in

initial conditions and in environmental conditions, and an analysis of the sensitivity of results to the model structure, reporting results in probabilistic terms.

#### **C148. SSL numbers and expectations**

The expectation that Steller sea lion numbers in the Aleutian Islands would increase under the RPA based on experiences with fisheries management and SSLs in the GOA is not based on science. There is insufficient evidence that SSL numbers increased in the GOA due to fisheries management to protect sea lions. The multispecies model in the FMP Biop showed that increases in sea lion numbers in the last decade were a coincidence.

#### **C149. 10 percent reduction in Atka not explained in FMP Biop**

A 10 percent reduction in Atka mackerel mortality leading to a 6 percent increase in SSL biomass based on Aydin (2010) was not explained in the FMP Biop. Further discussion should include:

- Address how to reduce Atka mackerel rates the additional 2 percent beyond the closure of the Atka mackerel fishery (8 percent) to reach the modeled 10 percent.
- How many years would it take to reach the 6 percent increase in sea lion biomass?
- Would the increases in biomass persist (for sea lions and Atka mackerel)?
- What would be the effect of closing both the Pacific cod and Atka mackerel fisheries on sea lions?

#### **C150. Failure to consider effect of groundfish on SSL**

The FMP Biop did not consider that increased amounts of groundfish might have negative consequences to sea lions (junk food hypothesis).

#### **C151. Lack of information on nutritional stress**

Information on nutritional stress is lacking in the FMP Biop. The reduced reproduction information was contradictory.

#### **C152. Forage ratios for SSL prey**

Forage ratios for Steller sea lion prey inside CH are higher in the AI than in the EBS and GOA, yet EBS and GOA animals do not show nutritional stress. Forage ratio data are counter to results in the FMP Biop, thus the FMP Biop dismisses their value. An alternative conclusion is that high forage ratios in an area of SSL decline suggests that food is not limiting.

#### **C153. Statistical negative associations between fishing and sea lion numbers**

If fisheries adversely affect sea lion numbers, statistically significant negative associations should be detectable between measures of fishing and measures of sea lion numbers. Studies after 2000 cited in the FMP Biop and two studies cited in (Bernard et al., 2011) did not have statistically significant associations consistent with harm by fisheries. The food driven nutritional stress hypothesis as an explanation for central and western AI SSL decline should be scientifically rejected.

## **Fishery and SSL Overlap**

### **C154. Examination of proportion of habitat types (issue also for Chapter 3)**

The EIS should examine the proportion of habitat types (defined by bathymetry, etc.) where the majority of foraging dives occur (e.g. CRAWL model from Lander et al. (2011)), and compare those results to commercial fishery catch data.

### **C155. SSL outcompete fisheries**

Steller sea lions "out-compete" fisheries for prey by feeding mostly on recruit and pre-recruit Atka mackerel and Pacific cod while fisheries largely catch older fish.

### **C156. Atka mackerel and SSL overlap**

Under Steller sea lion protection measures before 2011, Atka mackerel fishing was occurring mostly outside of 10 nm of SSL sites in CH and at least 40% of TAC had to be caught outside of CH; fishing depths are generally greater than 100 meters; fishing was spread out temporally by platoons and later by Amendment 80 Co-ops.

### **C157. RPA Shift (issue also for Chapter 3)**

The RPA shifted Atka mackerel fishing to Petrel Bank in Area 542 where the fish are the same size as SSL prey from scat data.

### **C158. SSL Sightings**

SSL sightings and telemetry locations outside of CH do not "appear" align with fishing locations for groundfish.

### **C159. Fishing depths for Pollock (issue also for Chapter 3)**

Fishing depths for pollock are deeper than other Steller sea lion prey species in the Aleutians and deeper in the AI than in other areas.

### **C160. Benefit of closure to SSL**

The FMP Biop contained no analysis of the benefit of the fisheries closures to sea lions.

### **C161. Dimensions of overlap**

The dimensions of overlap include depth, prey size, species (as represented by FO in the diet), space and time. Each of these dimensions of overlap interact in a cumulative manner to diminish the significance of any competition that may occur in a single dimension. If SSL and fisheries are using the same space at different times for different species, it is less likely to be limiting than if they use the same space at the same time for the same species.

### **C162. Same space, different times, different species**

If SSL and fisheries are using the same space at different times for different species it is less likely to be limiting than if they using the same space at the same time for the same species.

### **C163. Overlap in size of Pacific cod consumed by SSL and the AI winter trawl fishery**

There is minimal overlap in size of Pacific cod consumed by SSL and the AI winter trawl fishery. Steller sea lions eat younger, smaller fish than those caught in the fisheries. This is especially true for Pacific cod. Based on the best available data, SSL may occasionally consume Pacific cod between 60 and 80cm (an 80 cm Pacific cod weighs about 6 kgs.) By contrast, based on the 1990s observer data, 57% by numbers and 78% by weight, of the Pacific cod harvested in the AI trawl fishery are from fish larger than 80cm.

### **C164. SSL dive data**

Fadely's data indicates not only were 89.9% of SSL dives shallower than 100 m in winter, 94.9% were also inside 5 miles of land.

### **C165. Distribution of AI SSL dive depth and AI Pacific cod fishery**

The draft FMP Biop should have presented updated data on the distribution of AI SSL dive depth and AI Pacific cod fishery haul depths to better evaluate the need for additional mitigation measures in the AI Pacific cod fishery.

### **C166. Dimensions of overlap – Prey field (issue also for Chapters 3 and 7)**

Based on the biomass estimates used in table C-1 from Aydin 2007, for those species likely to be a significant part of the SSL prey field, Pacific cod makes up just a few percent of the SSL prey field in the AI.

### **C167. Dimensions of Overlap-Temporal**

It is believed that sea lions feed more extensively at night (Louglin, 1998). It is also known that Pacific cod schools disperse at night (anecdotal information from trawl skippers). While it is possible that the limited daytime feeding by SSL may be focused on schooled Pacific cod, there is nothing to suggest that it is easier to find a commercial scale school of Pacific cod, than for a sea lion to find its daily ration of Pacific cod when they are dispersed. If hunting is random, dispersion would increase the probability of encounter. The hypothesis that sea lions 'prefer' to hunt schooled fish, and that trawling interferes with their hunting by breaking up the schools is highly speculative. The rate of success implied by the FO on non-schooling fish with lower biomasses than Pacific cod (snailfish, octopus, greenling, sculpins, salmon) suggests that the opposite may be the case.

### **C168. Dimensions of Overlap - Spatial**

The location data do not justify expanding the existing closures of CH in the AI. While spatial overlap occurs, the overlap is limited. The annual figures for the AI regions show most dive activity inside 3 nm. The draft FMP Biop shows that the observations outside CH are also "outside the 1000 meter isobaths." Based on the bathymetry, it is highly unlikely that SSL foraging outside CH in the AI is targeted on

Pacific cod or Atka mackerel. Neither the telemetry, nor the POP data indicate competitive spatial overlap with fisheries for groundfish.

### **C169. Role of Pacific Cod as competitor for SSL prey (issue also for Chapters 3 and 7)**

To evaluate the significance of the AI trawl harvest of Pacific cod, and whether dramatically reducing fishing for Pacific cod in area 543 and 542 is likely to have a positive net impact on prey availability to sea lions, it is necessary to examine the role of Pacific cod as direct competitors with sea lions for other prey.

The EIS should examine "Food Habits of Important Groundfishes in the Aleutian Islands in 1994 and 1997" (Yang 2003). Roughly 30% of the diet is from species that overlap with SSL (Atka mackerel, pollock, sculpin, and sandlance), the text of the report show that much of the Atka mackerel consumption is in the 543 and the western portion of 542. This suggests that increasing Pacific cod biomass in the area where the FMP Biop RPA intends to increase Atka mackerel biomass could be counterproductive.

Aydin, et al 2007 paper "A Comparison of the Bering Sea, Gulf of Alaska, and Aleutian Islands Large Marine Ecosystems Through Food Web Modeling" provides a wealth of material which could be brought to bear on the question of whether stopping or dramatically reducing fishing for Pacific cod in Areas 543 and 542 will benefit the SSL prey field (Aydin, Gaichas, Ortiz, Kinzey, & Friday, 2007). While Aydin et al. 2007 does not examine a total closure of Pacific cod fishing in Area 543 or drastic reductions in Area 542, the information on Pacific cod consumption of SSL prey is strong enough to suggest that the RPA may be more likely than not to negatively impact the SSL prey field in Areas 543 and 542.

Multispecies modeling by Dorn 2005, Aydin et al 2007, Kinzey 2009 and others using Ecopath all suggests that if the goal of closures of both Atka mackerel and Pacific cod (in addition to the existing virtual closure of AI pollock) under the FMP Biop RPA is an adaptive management experiment to double the prey of both species, it is unlikely the linear results of single species models will be achieved. This is particularly true given the role of Pacific cod as the dominant predator in the AI.

### **C170. Overlap for "prey size"**

In the text of the FMP Biop in section 4.5.3, there lacks any data or references to studies by which one could begin to look at degree of overlap for prey size (4.5.3.1) or depth (4.5.3.2) in the AI Pacific cod fishery that is the subject of the RPA.

### **C171. Boor's work on POP location data set**

NMFS should have looked directly at the location data set and plotted it together with bathymetry, trawl survey data, fishery haul location data and telemetry data on the scale of Area 543 to test our assertion that the distribution of mackerel and Pacific cod habitat based on bathymetry do not overlap with the high density POP locations. A similar examination of an excerpt covering Area 541 - from Boor's Figure 13 "Non-breeding season (September through April) encounter rate posterior distribution modes resulting from the Bayesian inference on POP Steller sea lion observations per ship-day" - also seems to support the previous zonal approach for Pacific cod east of 178 W longitude. It appears from Boor's work that one is at least an order of magnitude more likely to encounter an SSL in the donut hole than on the shelf in Area 541.

### **C172. POP locations impact on groundfish fishery**

POP locations in the Aleutians are primarily in the deep basin and therefore have minimal overlap with the groundfish fishery and should not be used to justify extending the FMP Biop RPA closures beyond CH in Area 543.

### **C173. Correlation between Fisheries and SSL demographics**

Ten studies examined the correlation between fisheries and SSL demographics. Given inadequate scientific analysis or consideration, these studies need to be included in the new EIS. We suggest that NMFS provide an analysis of these studies, particularly focusing on post -2000

### **C174. Frequency of Occurrence threshold for “fisheries of concern” □**

Given the limitations, bias, and uncertainty of the use of FO, the EIS should eliminate the use of FO threshold to define “fishery of concern” as it is arbitrary and flawed basis for making a determination. Instead, the EIS should provide an analysis of the quantitative degree of overlap of SSLs with fisheries in terms of size of prey, depth, area, and season as well as harvest rate and proportion of prey field.

### **C175. Include the States sponsored Independent Scientific Review Panel’s studies of relationship between fishing and SSLs**

The EIS should incorporate the analysis and its conclusions from the States sponsored Independent Scientific Review Panel regarding the studies of the relationship between fishing and SSLs.

### **C176. EIS should include Fisheries Interaction Team (FIT) studies**

The EIS also should incorporate the studies of the FIT that have examined the issue of localized depletion of prey from fishing over various species (Pacific cod, pollock, and Atka mackerel) in the BSAI. The EIS should not include localized depletion studies for Pacific cod where harvest rates are incorrectly calculated by substituting trawl survey biomass to represent total biomass which results in biased harvest rates that are skewed high. Similarly the EIS should not rely on the conclusions from correlative studies that used standards of statistical confidence that are not acceptable for scientific endeavors (e.g. AFSC 2010 “Footprint Analysis” which used pvalues of 0.25).

### **C177. Consideration of FIT studies and effects on localized depletion**

The EIS should incorporate the studies from the FIT, which found little fisheries effect on localized depletion of prey fields. The EIS should incorporate the more rigorous analysis of these correlative studies as was done in the States sponsored Independent Scientific Review Panel (Chapter 3: Statistical Relationship Between Fisheries and Steller Sea Lion Populations, pp. 18-25) with special emphasis on Table 3.1.

The FIT studies include:

- A localized depletion study of pollock off Kodiak found variable pollock biomass abundance, but not due to fishing. Changes in pollock abundance caused by fishery are likely small compared to natural fluctuation.

- A localized depletion study of Pacific cod in the Unimak Pass/Cape Sarichef area found no difference in seasonal abundance between fished and un-fished areas. An opportunistic tagging study showed that Pacific cod were highly mobile.
- A tagging study on AI Atka mackerel showed that the areas with the highest biomass (Seguam, Kiska, and Tanaga) had small rates of movement of tagged fish between inside and outside trawl exclusion zones (TEZ). When estimates of local biomass of Atka mackerel in these areas were compared to quantities of Atka mackerel being harvested annually in the commercial fishery, the de facto harvest rates were well under 5% of local biomass. In the background chapters of the 2010 FMP Biop, this harvest rate was described as not having a negative effect on SSL but this point was not considered in the analytical sections of the FMP Biop, or in the development of the FMP Biop's conclusions. The only area with large rates of movement between inside and outside TEZs was the area with the lowest biomass of Atka mackerel (Amchitka).
- An Aleutians Islands food web model for the area inside the TEZ estimated there is currently sufficient Atka mackerel for consumption by SSLs and other predators –with large surpluses in the Seguam, Tanaga, and Kiska area (with the exception being Amchitka - the area of the lowest biomass and most movement). This extraordinary conclusion was based on the artificial assumption that Atka mackerel was the only food source for SSLs and it is well known that SSLs in the Aleutians eat other prey as well.

### **C178. Quantitative analysis of overlap with fisheries**

The FMP Biop does not include any quantitative analysis of the overlap between fisheries and SSLs in terms of size of prey, depth, and spatial overlap. The AI fisheries are largely conducted in waters deeper than 100 meters (50 meters) on fish that are larger than those eaten by SSLs. The FMP Biop includes one half of one page of a qualitative discussion of overlap with the fisheries. The EIS should incorporate quantitative evaluation of the extent of overlap between fisheries and SSLs. The EIS needs to include the quantitative extent of overlap for each species (pollock, Pacific cod, and Atka mackerel) for size of prey; predominant and proportions of SSL dive depth and fishing depth; spatial use by season (from telemetry) and overlap with fisheries.

### **C179. Size overlap with SSL and fishery**

Fisheries and sea lions show little overlap in the size of the Pacific cod they target. The EIS should include a quantification of the extent of size overlap between SSL prey and Pacific cod fisheries (by gear type) and by season. This information should include size information from the NMFS draft Pacific cod EA; Ormseth et al 2008; the States sponsored Independent Scientific Review Panel report; and BSAI Pacific cod SAFE documents. The EIS should include the quantified extent of overlap of size of fish between SSLs and the Atka mackerel fishery. The EIS also should include the shift in the size of the Atka mackerel in Area 542 as a result of the 2011 Steller sea lion protection measures. The EIS should include quantitative estimates of the size of pollock found in SSL diet studies and size caught in the commercial fishery. The EIS should quantify the extent of size overlap.

### **C180. Depth overlap with SSL and fishery**

The EIS should include the quantified extent of depth overlap between the Atka mackerel fishery and SSLs. The overlap should be evaluated in terms of proportion of SSL dives at depth compared to proportion of the fishery at depths.

### **C181. Area overlap with SSL and fishery**

The EIS should include the quantified extent of spatial overlap with the fishery and spatial use by SSL (from telemetry data) by season. The use of Boor and POP data is not appropriate to determine foraging behavior of SSLs as there are numerous questionable assumptions concerning the POP database, as expressed by the CIE reviewers.

### **C182. Atka mackerel movement in and out of TEZ by locations (issue also for Chapter 3)**

The EIS should include the latest information on movement of Atka mackerel in and out of TEZs including the magnitude of movement (amount) and the proportion. The EIS should include the likelihood of localized depletion given the movement information and local exploitation rates.

### **C183. Include conclusions of Aydin 2010 on multispecies modeling (issue also for Chapters 3, 7, and 12)**

The EIS needs to incorporate the multi-species food web model as it is the model that incorporates predator/prey relationships. The EIS should incorporate the conclusions of Aydin 2010 on the multispecies modeling that indicated little to no benefit to SSLs from closure and restriction of the AI Pacific cod fisheries.

### **C184. Depth overlap with SSL and fishery**

The EIS should include the quantified extent of depth overlap between the AI Pacific cod fisheries (by gear type) and SSLs. The overlap should be evaluated in terms of proportion of SSL dives at depth compared to proportion of the fisheries at depths. The EIS should include an analysis of fishing depths for pollock in the Aleutian Islands. Fishing depth for AI pollock is generally deeper than that of the EBS pollock fishery. The EIS should quantify the extent of potential overlap between the fishery and SSL dive depths by comparing the proportion of SSL dives to depths to that of the proportion of the depths fished by the AI pollock fishery

### **C185. Multi-species food web model (issue also for Chapter 7)**

The EIS needs to incorporate the conclusions of Aydin 2010 on the multispecies modeling that indicated little to no benefit to SSLs from closure and restriction of the AI Pacific cod fisheries.

### **C186. Forage ratios and productivity in the AI**

Fadely 2010 shows that the forage ratios in the Aleutians are the highest of all areas. The EIS should also include that the productivity of the Aleutians is high. Fadely et al 2010 “Updated Forage Ratio Estimates for 2000 and 2008”

### **C187. Size and location of Pacific cod caught by freezer longline fishery vs Pacific cod preyed upon by SSL**

The size and location of Pacific cod caught by the freezer longline fishery should be compared to the size and location of Pacific cod preyed upon by Steller sea lions. In this respect the longline fishery's impacts must be evaluated according to data presented in NMFS's official Catch Accounting System.



**C188. Analyze similarities/differences between size of fish vs. size of SSL prey etc.**

The EIS should quantitatively analyze the similarities or differences between the size of fish harvested by commercial fisheries vs. size of SSL prey, the depths of fishery catch vs. SSL foraging dives, and the distance from rookeries or haulouts of commercial catch vs. typical SSL foraging trip distances.

***Chapter 7 Ecosystem Effects***

**C189. Impacts of groundfish fisheries on marine ecosystem**

The EIS should look at the impacts of the groundfish fisheries on the marine ecosystem, including Steller sea lions. The EIS should also consider the interactions described in the Aleutian Islands Fishery Ecosystem Plan (FEP) as well as the integrated fisheries management approach in the FEP that considers the needs of predators when setting fishing levels.

**C190. Maximum yield approach**

The maximum yield approach does not allow for Steller sea lion recovery and basic changes should be made to fisheries management to resolve this shortcoming.

**C191. Methods to include predator/prey relationships**

The EIS should use analytical methods that include predator/prey relationships.

**C192. Environmental variability in FMP Biop**

The effects of environmental variability on Steller sea lions are unknown.

**C193. Other stressors not controlled (issue also for Chapter 5)**

The EIS should not interpret responses of Steller sea lion populations in areas of increased fishing protection measures without controlling for other stressors (e.g. predation).

**C194. Single species model does not incorporate predator-prey relationships (issue also for Chapter 3 and 5)**

The single species model does not incorporate predator/prey relationships. The multi-species food web model shows a small expected increase in Steller sea lion biomass and a decrease in pollock biomass from restrictions on the Atka mackerel fishery as well as potential deleterious effects on SSLs by restrictions on the Pacific cod fishery.

## **Chapters 8 and 10 Community Impacts**

### **Adak**

#### **C195. Loss of local fuel sales**

The EIS should evaluate the loss of local fuel sales by Aleut Enterprise to commercial fishing vessels, which will drive up fuel costs for the community of Adak and the local utility. Decreased sales volume could cause fuel prices to spike by as much as 90 percent, causing a corresponding spike in electricity prices and imposing severe financial hardship on all residents and businesses in the Adak community, especially during the harsh winters when fuel and electricity are at a premium.

#### **C196. Negative impacts on tax revenues**

The EIS should consider the drastic negative impacts on tax revenues for the City of Adak. The Aleut Corporation and its subsidiaries make up nearly one third of the City of Adak's tax base, and the Aleut Fisheries seafood processing facility provides approximately an additional 30 percent of local tax revenue. The revenue losses to the Aleut Corporation family of companies will severely undercut the tax revenue available to fund local programs and governmental operations to a degree that will be difficult, if not impossible, for the Adak community to overcome.

#### **C197. Impact of protection measures on Aleuts of Adak**

The EIS should consider the impacts of protection measures on the health and welfare of minority and low income native Aleuts, who will be disproportionately impacted by the protection measures. Their communities depend heavily on the commercial fishing industry for economic opportunities; tax revenues to support social and public health programs; and economic and educational opportunities provided by the Aleut Corporation and its subsidiaries, including shareholder dividend income, community investment, and scholarship awards.

#### **C198. Reduced customer base for businesses**

The EIS should evaluate the effect of a severely reduced customer base for all local businesses and a corresponding undercut to commercial revenues coming into the community. For example, the commercial fishing fleet has historically used Adak for fishing vessel crew changes. Those crew changes provided demand for airline services, and as a result, Alaska Airlines has been offering twice weekly flights between Adak and Anchorage. Alaska Airlines will reduce or terminate its air service to Adak, leading to higher costs to get to Adak, fewer visitors, and less outside revenue coming into the community.

### **Aleut Dependence on Fishing Income**

#### **C199. Aleut commercial business concerns**

The EIS should consider the impact of the Interim Final Rule on Aleut Enterprise's commercial fishing fleet customer base, which fishes the Atka mackerel and Pacific cod fisheries in Areas 541, 542, and 543. Aleut Enterprise operates a fueling facility at Adak in the central Aleutian Islands, near the border between Areas 541 and 542 that has historically served commercial fishing vessels as its primary

customers. In addition, Adak Enterprise and other local businesses at Adak provide various goods and services, including lodging, to commercial fishermen that create needed revenue to the community. Aleut Enterprise, and consequently the Aleut Corporation, stand to lose much of their revenue as a result of the Interim Final Rule. Reduced revenues to the Aleut Corporation will negatively impact its shareholders and their communities throughout the Aleutian Islands, not just in Adak. Under the Interim Final Rule, the Aleut Entities project that they will immediately be forced to terminate three of their nine employees in Adak, eliminating the primary means of support for approximately seven residents of Adak, or approximately 4 percent of the Adak community's population.

### **Impacts on Aleut Fisheries**

#### **C200. Undercutting value of seafood processing facility in Adak (issue also for Chapter 10)**

Aleut Fisheries owns a seafood processing facility at Adak that historically has processed large amounts of catch from the Atka mackerel and Pacific cod fisheries in Areas 541, 542, and 543. The restrictions and closures to those fisheries contained in the Interim Final Rule will drastically reduce the amount of that catch being brought to the Aleut Fisheries facility for processing. The reduction in processing will severely undercut the value of that facility to Aleut Fisheries reducing the revenue generated by the Aleut Fisheries and the Aleut Corporation.

#### **C201. Tax revenues that impact fisheries**

The EIS should present a clear discussion about the share of tax revenues that could be affected to facilitate a more accurate assessment of the potential impacts of alternatives to communities. Accompanying tables should separate out tax revenues from the potentially impacted fisheries.

#### **C202. Differential roe recovery rates**

The EIS should examine how differential roe recovery rates in the Aleutians relative to the eastern Bering Sea and Gulf of Mexico affect the economic value of the fishery and the foregone revenue to the Aleut Corporation resulting from current RPAs.

#### **C203. Negative impacts effecting fishing jobs (issue also for Chapter 10)**

The protection measures from the Interim Rule have devastating effects on crewmembers, captains, owners, operators, and other participants in the fisheries. These impacts include up to 750 jobs lost in the region and over \$83 million annually in total lost earnings.

#### **C204. Economic consequences**

The adverse economic consequences in 2011 from the Interim Final Rule are on the order of \$23 million for Alaska Seafood Cooperative and \$21 million for Alaska Groundfish Cooperative and its members.

#### **C205. Mitigation impacts**

Impacts from the Interim Final Rule cannot be mitigated by vessels shifting their fisheries temporally or geographically.

#### **C206. Willingness-to-pay (WTP) for changes in SSL**

The EIS should make clear the purpose of WTP for changes in sea lion populations. For instance if the purpose is to provide a rough sense of the order of magnitude of expected benefits, then that should be made clear.

### **C207. Framework to include cost information**

The EIS should develop a framework that allows for a more robust use of cost information, including relaxing assumptions that alternatives may impact revenue, but will have no impact on the variable cost ratio.

### **C208. Cost allocation**

The RIR should provide detailed information about how costs are allocated into fixed vs. variable costs. For example, maintenance is assumed to be split evenly between fixed and variable costs, but the basis for the assumption should be stated.

### **C209. Restrictions and closure impact on opportunities benefiting from nearby fisheries**

The Aleut Corporation received a large portion of the Aleutian Islands from Sand Point in the East to Attu in the West, including the communities of Attu, Atka, and Adak, through the Alaska Native Claims Settlement Act, 43 U.S.C. §§ 1601 *et seq.* All of these native Aleut communities continue to depend heavily on the groundfish fishing industry, including Pacific cod and Atka mackerel, in Management Areas 541, 542, and 543. The Interim Final Rule imposes restrictions and closures that will severely diminish opportunities to benefit from these nearby fisheries. Severe and disparate impacts on their business interests and the welfare of the local Aleut communities in the Aleutian Islands result from the protection measures. The community of Adak, which is heavily dependent on the nearby groundfish fishing industry, is especially hard hit by NMFS' action.

### **C210. Royalty payments (issue also for Chapter 1)**

The EIS/RIR should address the socio-economic effects of the current RPAs on the Aleut Corporation and the community of Adak. Measured by Community Development Quota Bering Sea pollock royalty payments, the AI pollock allocation could bring roughly \$5,000,000 of net benefits annually to the Aleut Corporation to be used for economic development in Adak. As a result of the current RPAs, the Aleut Corporation and the community of Adak have gotten virtually no economic benefit from the allocation.

### **C211. Choice of statistics**

The EIS/RIR should carefully consider the choice of statistics for presentation. For example, it would be more informative for community impacts to express Adak's vessel engagement in the Pacific cod fishery as a portion of Adak's fleet, rather than a portion of the fixed gear catcher vessel fleet. A single vessel is a small portion of the total fleet, but half of Adak's fleet.

### **C212. Atka: top subsistence harvester**

The EIS should address the village of Atka more directly in the analysis as the top subsistence harvester of Steller sea lions in the state and due to their new capacity for processing Pacific cod.

### **C213. Rationale for selecting variables to include Principal Components Analysis**

The EIS/RIR should include a rationale for selecting variables to include in the Principal Components Analysis to evaluate community engagement.

### **C214. Communication with Adak**

Phone calls to communities and stakeholders should be made, particularly to communities, such as Adak or other communities where there may be no available data, to capture the changing nature of communities and their evolving capacities to respond to policy changes.

## ***Chapter 12 Research***

### **C215. Prioritization of resources for fish biomass surveys in AI (issue also for Chapter 3)**

The EIS should address the prioritization of resources for fish biomass surveys in the Aleutians to heighten the importance of Atka mackerel and Pacific cod in survey design.

### **C216. Pollock fishery reference (issue also for Chapters 3 and 5)**

The Aleut Corporation engaged in a multi-year cooperative research project with NMFS to evaluate management alternatives to current pollock fishery management, which resulted in papers (Barbeaux, et al) that are not referenced in the FMP Biop.

### **C217. Difficulty in obtaining permits to further study fish movement and potential localized depletion (issue also for Chapter 1 and 2)**

The EIS should include a discussion on the difficulty in obtaining permits in order to conduct fish movement studies inside Steller sea lion critical habitat and what effect this regulatory impediment is having on fisheries research. The discussion should include avenues to facilitate and expedite the permitting process for research necessary to explore fish movement and the potential (or lack thereof) for localized depletion.

### **C218. Research needed on Atka mackerel movement (issue also for Chapters 1, 2 and 3)**

The EIS should include a discussion of research needed on Atka mackerel movement and possible permitting barriers.

## **SSL Research**

### **C219. Emerging technologies for surveys (issue also for Chapters 1 and 2)**

The EIS should address new and emerging technologies for Steller sea lion surveys throughout the wDPS range (e.g., unmanned aerial survey technologies), and look toward facilitating the permitting process for these emerging technologies.

## **C220. Improvements to accuracy of SSL surveys and survey methodology**

The EIS should provide a discussion on the methods to improve the accuracy of Steller sea lion surveys including the use of drones, compensating for stage of tide, adding sites of known Steller sea lion use, and dropping sites with no recent Steller sea lion use.

## ***Comments on the FMP Biop***

### **C224. SSL Literature**

Steller sea lion and related literature published in the past few years or that was not considered in the FMP Biop is provided in the attached document. This list is to help ensure that we are all aware of recent Steller sea lion research and suggest that NMFS maintain an up to date list of literature on its website. (See list attached to comments submitted by Gemmel on [www.regulations.gov](http://www.regulations.gov))

### **C225. Need for greater detail in use of pup/nonpup adult female ratios, natality**

The EIS should provide greater detail in the use of pup/non pup or pup/adult female ratios as a proxy for natality, and should review other methods to estimate natality in the wDPS.

### **C226. Pribilof Islands analyzed as separate**

The Pribilof Islands and Round Island are geographically distinct from the Aleutians, and should be included in the EIS but analyzed separately from the Aleutians.

### **C227. Long term population trends of SSLs in North Pacific**

The EIS should consider the long-term (centuries to millennia) population trends of Steller sea lions in the North Pacific (e.g., Maschner et al. unpublished report).

### **C228. Holmes Natality Model**

The EIS should evaluate whether the assumptions in the (Holmes, Fritz, York, & Sweeney, 2007). natality model are credible. The EIS should reevaluate natality estimates with current SSL population dynamics data and should consider alternative estimates of natality (e.g., Maniscalco et al. 2009), and other alternatives to reduced natality (e.g., (Horning & Mellish, 2012)).

### **C229. Evaluation of wDPS, potential impacts of fishing activities on certain populations**

The EIS should evaluate the wDPS in the context of trends of pinnipeds globally (including ESA-listed and unlisted populations) and the potential impacts of fishing activities on those populations.

### **C230. Final Biop exploitation rates**

The FMP Biop found that exploitation rates were not excessive; NMFS should have modified the proposed RPA for Atka mackerel.

### **C231. Re-examine appropriateness of subareas identified in the wDPS**

The EIS should reexamine the appropriateness of the subareas identified in the wDPS, and whether population trends based on those subareas are appropriate with the potential for large scale Steller sea lion movements between subareas.

### **C232. RPAs for Pacific cod (issue also for Chapter 2)**

The RPA for Pacific cod is overly restrictive and not well designed. NMFS should have adopted an RPA for Pacific cod that prioritized an Aleutian Island Pacific cod stock assessment model and set an appropriate ABC for Pacific cod in the Aleutian Islands.

### **C233. A difficult foraging environment for SSL**

The draft FMP Biop stated that the Aleutians were a difficult foraging environment for Steller sea lions. NMFS changed this important piece of information in the final FMP Biop, yet it appears to have had no bearing on the conclusions.

### **C234. "Working model" for RPA closures in AI**

The "working model" provides a very weak basis for the new RPA closures in the Aleutian Islands, especially in light of comments where new information in the final FMP Biop has removed the underpinnings of high exploitation rates, low productivity, and low forage ratios.

### **C235. Mackerel RPA is overly restrictive (issue also for Chapter 2)**

The sky is not falling in Area 543 for Atka mackerel biomass, and the Atka mackerel RPA is overly restrictive.

### **C236. Bigg's killer whale predation in AI, contribution to SSL populations**

The EIS should provide a greater synthesis of Bigg's killer whale predation in the Aleutians and the Commander Islands, and its potential contribution to Steller sea lion population declines and lack of robust recovery.

### **C237. Conditions related to SSL recovery**

The EIS should consider whether conditions in the North Pacific have reduced carrying capacity for Steller sea lions such that recovery to pre-decline population levels is not possible.

### **C238. FMP Biop conclusions faulty (issue also for Chapter 1)**

The FMP Biop conclusions are not supported by persuasive arguments; the FMP Biop fails to provide reasonable support for its conclusions.

### **C239. Language issues in FMP Biop (issue also for Chapter 1)**

The FMP Biop equates language of possibility with language of substantial chance.

#### **C240. Lack of primary and unpublished literature in FMP Biop**

The FMP Biop does not have much in the critical evaluation of the primary published or unpublished literature.

#### **C241. Relevance of POP and deep basin telemetry**

The commenter questioned the relevance of POP and deep basin telemetry locations as justification for abandoning the zonal approach and extending the closures beyond the critical habitat boundaries.

#### **C242. Impact from new Pacific cod RPAs**

The biggest impact from the new Pacific cod RPA comes in extending the haulout buffers from 3 to 10 miles in RCA 4 in the winter. Figure 3 from AFSC 2010b shows that most of the potential overlap would be captured by a 5 mile buffer in that RCA. Note that Figure 3 is aggregated across seasons. Ideally the information would be parsed by RCA and season. However, we do know from FMP Biop Table 3.11, that 100% of all locations during winter in all RCA's 1-5 were inside 10 miles from a listed site. The telemetry data applied to the RCA 4 winter trawl fishery does not warrant increasing the haulout closures to 10 miles. Doing so will exacerbate the displacement of effort into RCA 5.

#### **C243. FMP Biop hypotheses lack support**

The top-down hypotheses in the FMP Biop lack support and remain hypothetical (e.g. killer whale predation); in addition, bottom-up hypotheses (fishery competition) lacks evidentiary support and remains hypothetical.

#### **C244. Weight of speculative inferences**

NMFS has reached its jeopardy conclusion, not on the weight of evidence, but rather on the weight of speculative inferences often contrary to the evidence. The final RPA is anything but a “measured approach.”

#### **C245. NMFS Protected Resources prejudged outcome of FMP Biop**

NMFS Protected Resources prejudged the outcome of the FMP Biop and ignored the revised “weight of evidence” that a less draconian RPA would have been adequate to avoid the likelihood of jeopardy or adverse modification of critical habitat for Steller sea lions.

#### **C246. Multi-species modeling and weight of evidence**

Multi-species modeling suggests that the odds that stopping fishing for Pacific cod and Atka mackerel in Area 543 may substantially improve the SSL prey field are little better than a flip of the coin. This subtracts from the “weight of evidence” for the rationale for imposing total closures of these fisheries.

#### **C247. Climate difference in regions**

The central Aleutians are certainly frequently stormy, but the range of variation in temperatures is less than anywhere else along the Alaskan coast. It rarely gets below 20 degrees and it rarely gets above 55



degrees. To say that an environment that is rigorous for humans is bad for a species that evolved in that environment, smacks of anthropocentricity.

#### **C248. Adaptive experiment effects (issue also for Chapter 2)**

The adaptive experiment of the Interim Rule would have more power if the central Aleutian Islands were used as a control rather than in applying a variety of new treatments within the various RCAs that comprise the central Aleutian Islands.

#### **C249. FMP Biop doesn't have evidence for fisheries competition with SSL**

No direct evidence exists in the FMP Biop that fisheries compete with Steller sea lions in the central and western Aleutians and elsewhere.

#### **C250. FMP Biop weight of evidence issues**

Weight of evidence in the FMP Biop rests on speculation of what is possible rather than what is supported by scientific evidence. There needs to be a critical and unbiased evaluation of the evidence. It was difficult to determine the weight of evidence method.

#### **C251. FMP Biop put emphasis on “ensure” in JAM (issue also for Chapter 1)**

The FMP Biop put emphasis on “ensure” rather than “reasonably likely” and “appreciably” (measurable) in interpretation of JAM standard.

#### **C252. FMP Biop dismisses non-supportive references**

The FMP Biop dismissed work that countered main sources used for inference that are often barely described and used uncritically.

#### **C253. Analyze the Pribilof Islands and Round Island separately (issue also for Chapter 1)**

NMFS should examine the justification for lumping the Pribilof Islands with a portion of the Aleutian Islands. The Pribilof Islands and Round Island are geographically distinct from the Aleutians; they should be included in the EIS but analyzed separately from the Aleutians. As a unique area in the Bering Sea, the Pribilof Islands should not be grouped with another Rookery Cluster Area in the EIS.

#### **C254. Grouping and analyzing rookeries (issue also for Chapter 2)**

The EIS should group and analyze rookeries so that important and significant declines in Steller sea lions will not be washed out or go unnoticed.

#### **C255. Area of controversy (issue also for Chapter 1)**

The CIE reviews of the FMP Biop conclude that the JAM determination and conclusions of the FMP Biop are not supported by the best available scientific information and the RPA (fishery management restrictions) is not warranted.

### **C256. Council motion, CIE reviewers**

The CIE reviewers found that: 1) the conclusions of the 2010 FMP Biop are not supported by scientific evidence and are largely based on qualitative statements, opinions, and speculation rather than science; 2) the determination of jeopardy and adverse modification is not compelling or supported by the scientific record; 3) there is no evidence for the hypothesized indirect effects of fishing on Steller sea lion prey species; and 4) the RPA measures are not warranted, will have no positive effects on Steller sea lions and have little utility as an adaptive management experiment.

### **C257. Council motion, CIE conclusions (issue also for Chapter 1)**

CIE reviewers' conclusions are in agreement with the Independent Scientific Review Panel (convened by the States of Alaska and Washington).

### **C258. 98% of recovery plan population**

The total population of the U.S. wDPS is 98% of the recovery plan population downlisting threshold of 53,100 by 2015.

### **C259. Independent Review Panel results**

The FMP Biop finding for jeopardy for the entire wDPS is not supported by the best available science as was concluded by the States sponsored Independent Review Panel and Dr. Ian Boyd.

### **C260. Pup count increase**

The observations of Maniscalco 2010, (Horning & Mellish, 2012), the States sponsored Independent Review Panel, and the 2011 pup survey do not support the FMP Biop's contention that birth rates are continuing to fall in the central GOA (and by extension in the entire wDPS). In the central GOA, total pup counts increased +16% from 2009 to 2011. Pup counts at trend rookeries in the central GOA have increased +29% and +33% in the eastern GOA since 2004.

### **C261. Forage Ratios in FMP Biop**

The revised forage ratios in the final FMP Biop show that in 2008, the forage ratio in critical habitat in the Aleutian Islands is the highest of all areas and has increased +39% since 2000. The forage ratio in the western Aleutian Islands is highest (5x) of all the areas in the Aleutians. The forage ratio in critical habitat in the Aleutian Islands is higher than the Eastern Bering Sea critical habitat and GOA critical habitat combined.

### **C262. Forage ratios in Critical Habitat**

The forage ratios in critical habitat, the 2010 trawl survey, and the Atka mackerel tagging studies do not support a finding of adverse modification of critical habitat for the entire wDPS.

### **C263. Quantitative info on SSL movement between sub-areas**

The FMP Biop provides no quantitative information on Steller sea lion movement between sub-areas. In the Russian Commander Islands, no branded Steller sea lions have immigrated to the Medny rookery. (Other Russian rookeries have an average population of 28% immigrants from 2002-2008). The Commander Islands have had 20 mile fishery closures since 1958.

### **C264. Frequency Occurrence**

The use of FO in the FMP Biop is fraught with numerous problems and does not represent percent of diet. Little rationale is provided for the ten percent threshold for a "fishery of concern". The FMP Biop provides little information on the status of non-groundfish prey (salmon and herring) in the Aleutians.

### **C265. Recovery criteria**

The recovery criteria for down-listing reference an increase in population growth to approximately 53,100 animals by 2015. The total U. S. wDPS is approaching this number.

### **C266. Performance Standards (issue also for Chapter 3)**

The FMP Biop used performance standard approach to an RPA in favor of using the FIT local biomass information.

### **C267. Conclusions of FMP Biop**

The FMP Biop conclusions rely heavily on "corrective evidence" and "Adaptive Management" arguments based on measures from the 2001.

### **C268. 2001 RPAs not valid Adaptive Management experiment**

The 2001 RPAs are not a valid Adaptive Management experiment. Steller sea lion sub-area population declines were occurring at approximately same rate as the current rates on both sides of 178 degrees west longitude. Before 2001, there was no Atka mackerel fishing east of the 178 W longitude in Area 542 as this is not an Atka mackerel fishing area, thus the curtailment of Atka mackerel fishing east of 178 W longitude under the 2001 RPA was only a "paper" regulation. Under the 2001 RPA, Atka mackerel fishing continued at a somewhat lower level west of the 178 W longitude.

### **C269. 30 mile closure at Medny Island likely to be a good indicator of prospects of WAI closures**

The 30 mile closure at Medny Island is likely a reasonably good indicator of prospects of western Aleutian Islands closures. The Medny closure is similar to the Aleutian Islands in terms of narrow shelf; the 30 mile closure includes all depths where groundfish would be fished; the closure is located directly adjacent to the western Aleutians; and groundfish resources in Commander Islands are dominated by hexagramids, sebastes, and gadids.

## **C270. Alternative Approach**

An alternative approach would look both at degree of overlap and the interaction of degree in multiple dimensions.

## **C271. Dimensions of Overlap between Fisheries and Sea Lions**

The dimensions of overlap between fisheries and sea lions are:

- Type of fish eaten/caught
- Size of fish eaten/caught
- Depth of fishing/foraging
- Area of fishing/foraging
- Season/time of day of fishing/foraging

## **C272. EIS include discussion about Jeopardy (issue also for Chapter 1)**

Given the growth in the total population of the wDPS and growth in total pup and non-pup counts, the EIS should provide a quantitative scientific explanation on how the entire wDPS is in jeopardy. The EIS should include discussion of Boyd (2010) on projected Steller sea lion populations and potential risk of extinction. The determination in the 2010 FMP Biop that the decline in one area jeopardizes the recovery of the entire population appears to be based more on belief than actual science.

## **C273. Killer Whale Predation**

Depending on the numbers of transients, sea lions need only comprise a small portion of killer whale diet to create a "predator pit" effect. Just 10 killer whales could consume the entire western Aleutian Islands annual Steller sea lion pup production. Just 25 killer whales could shift the central Aleutian Islands Steller sea lion population growth rate by 3%. Only 12% of the minimum count of transient killer whales counted west from the Shumagins can fully explain the population trend of Steller sea lions in the central and western Aleutian Islands, even after applying the discount factors caveats identified in the FMP Biop to Williams. Combined with the new information in the final FMP Biop on Aleutian Islands productivity and forage ratios, as well as harvest exploitation rates, NMFS should have substantially revised its final RPA.

## **C274. Clarify Recovery Criteria for U. S. wDPS**

The EIS should clarify that the 42,500 population reference in the Recovery Criteria is the total population estimate for the U. S. wDPS in 2000 (and not the non-pup population as is currently stated). The EIS should provide the best estimate for the total U. S. wDPS population in 2000 and the total wDPS population in 2000. The EIS should provide the methodology used to arrive at the 42,500 population estimate in the Recovery Plan for the U. S. wDPS (from the Population Viability Analysis).

## **C275. FMP Biop case against fisheries in AI (issue also for Chapter 1)**

The FMP Biop case against fisheries in the Aleutians as they were being managed under the pre-2010 RPA is not supported by strong evidence.

### **C276. Recovery Plan population growth criteria progress**

The EIS should compare the most recent estimate for total U. S. wDPS population to the downlisting population criteria of 53,100.

### **C277. Carrying capacity and long term historic SSL population trends for the total wDPS and by sub-area**

The EIS should include a discussion of potential changes in Steller sea lion carrying capacity due to changes in environmental conditions and long term historic population abundance of Steller sea lions, especially on the sub-region basis. The EIS should examine the quantitative evidence or basis to determine if Steller sea lion numbers on a sub-region basis have been stable over longer periods of time or are subject to large fluctuations.

### **C278. Other pinniped populations**

The EIS should include a discussion and comparison of pinniped populations in the world whose populations are stable or increasing in the proximity of groundfish fisheries. The discussion should include Parrish et al (2011) and the importance of including environmental variability and changes in carrying capacity in recovery.

### **C279. SPOIR: Significant portion of its range**

The EIS should include a discussion of the designation of SPOIR for the U. S. wDPS. The term “endangered species” means any species which is in danger of extinction throughout all or a significant portion of its range. NMFS has proposed declaring SPOIR for the eastern DPS in the Federal Register notice for de-listing the eastern DPS but has not done so for the wDPS. NMFS trend site analysis has long depicted the core of the wDPS as Kenai to Kiska. The CIE reviewers noted the absence of analysis in the 2010 FMP Biop of the differential importance of core and fringe subareas to the total population.

### **C280. Reexamine relevancy of the RCAs**

The EIS should re-examine the efficacy and relevancy of RCAs and recovery plan sub-areas in context of Steller sea lion movement information. The CIE reviewers raised a number of concerns regarding the basis of the RCAs. The relevancy of the RCAs should be re-examined given these concerns as well as in light of information regarding Steller sea lion movement.

### **C281. FMP Biop ignores info**

The FMP Biop ignores some information and mis-uses other information that doesn't fit the FMP Biop pre-conceptions.

### **C282. Re-examination of efficacy and relevancy of RCAs and sub-area in context of SSL movement information.**

The CIE reviewers raised a number of concerns regarding the basis of the RCAs. The relevancy of the RCAs should be re-examined given these concerns as well as in light of information regarding SSL movement.

### **C283. FMP Biop provided no rationale for closure**

The FMP Biop provided no rationale for maintaining the closure for pollock.

### **C284. EIS should discard weight of evidence approach**

The EIS should discard the weight of evidence approach that resulted in the conclusion there was nutritional stress (and nutritional stress due to fishing) where the only purported evidence was reduced natality. The EIS should re-examine the underlying basis of the hypothesized nutritional stress and reduced natality that was based on the modeling work in (Holmes et al., 2007) in light of more recent information ((Horning & Mellish, 2012), Maniscalco 2010; central GOA pup counts since 2005 etc.).

### **C285. Pup/non pup ratios**

The EIS should provide factors that may affect pup/non-pup ratios, such as length of forage trips and the use of non-pups or breeding females in denominator, etc. In light of CIE review, the EIS should re-examine efficacy of using pup to non-pup ratios as a proxy for natality, including potential for inaccuracies and bias.

### **C286. Hypothesized reduced natality and nutritional stress from (Holmes et al., 2007)**

The EIS should provide information and conclusions from other natality related studies since 2004 such as Maniscalco (2010), (Horning & Mellish, 2012) etc. Contrast and compare the more recent information to (Holmes et al., 2007). The EIS should evaluate the validity of conclusions by Holmes in light of more recent studies, CIE and other peer reviews, and studies on pup surveys in the central GOA.

### **C287. Overlap between fisheries and SSL foraging**

Data of limited overlap is provided in (Bernard et al., 2011) and not in the FMP Biop. Size, temporal, and depth overlap between fisheries and Steller sea lion foraging were not investigated in the FMP Biop.

### **C288. FMP Biop fails to explain standard for "likely"**

The FMP Biop does not explicitly define its standard for "likely". This standard should be explicitly defined and the scientific evidence should meet that standard.

### **C289. Development of alternative metric for performance standards (other than modeled biomass projections)**

The EIS should consider a different metric for performance standards other than modeled biomass projections as was contained in the FMP Biop. NMFS must take into account that there is no scientific evidence to support nutritional stress from fishing. NMFS should incorporate the input of the SSLMC, which is the Council's committee currently working on development of alternatives for consideration by the Council.

**C290. Change in environmental conditions and potential carrying capacity (issue also for Chapter 1)**

The EIS should consider whether conditions in the North Pacific have reduced carrying capacity for Steller sea lions such that recovery to pre-decline population levels may not be based upon the best available science or simply not possible under current environmental conditions.

**C291. Contaminants (issue also for Chapter 1)**

The EIS should expand the discussion of the presence and effects of contaminants (including organochlorines, heavy metals, and emerging contaminants) on Steller sea lions in the wDPS.

**C292. Horning-Mellish 2012**

The EIS should incorporate the study and findings of (Horning & Mellish, 2012) regarding LHX transmitters and the proportion of sudden mortality predation events attributed to killer whales and sleeper sharks, including recent mortality events since the report was published, such as was included in the CIE briefing.

**C293. Effect of killer whales on other AI marine mammals (sea otters, etc.) (issue also for Chapter 1)**

The EIS should incorporate the discussion and findings of the 2010 Sea Otter Recovery Plan where the weight of evidence for the sea otter decline is predation by killer whales. The Sea Otter Recovery Plan rates this predation as “very likely” with a high degree of confidence over the entire western population geographic range. The EIS should incorporate known predation by killer whales on other marine mammals in the Aleutian Islands, such as grey whales and northern fur seals.

**C294. Killer Whales**

The EIS should re-evaluate the threat assessment of killer whales to Steller sea lions in the Aleutians. It should provide a greater synthesis of transient killer whale population estimates and predation in the Aleutians and the Commander Islands, and its potential contribution to Steller sea lion population declines and lack of robust recovery. Population estimates of killer whales should include both historic and current estimates for the Aleutian areas and the Commander Islands. The EIS should include the total population estimate of transient killer whales in Alaska (Eastern NP stock: BSAI and GOA) and the proportion of that stock that is found in the Aleutians. The EIS should provide an estimate of what portion of transient killer whale diet is composed of Steller sea lions as well as an estimate of the energetic resting discount. The EIS should also include estimates of the amount of predation (and number of killer whales) that could potentially trigger proportional changes in Steller sea lion population in the Aleutians.

**C295. Balanced presentation of theories**

The EIS should include a balanced presentation of theories other than fisheries-induced nutritional stress.

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