

Public Testimony Sign-Up Sheet

Agenda Item C-1 SSL Issues

NAME (PLEASE PRINT)	AFFILIATION
1	Dave Fraser Adak Fisheries
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NOTE to persons providing oral or written testimony to the Council: Section 307(1)(I) of the Magnuson-Stevens Fishery Conservation and Management Act prohibits any person "to knowingly and willfully submit to a Council, the Secretary, or the Governor of a State false information (including, but not limited to, false information regarding the capacity and extent to which a United State fish processor, on an annual basis, will process a portion of the optimum yield of a fishery that will be harvested by fishing vessels of the United States) regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out this Act.

MEMORANDUM

TO: Council, SSC and AP Members
FROM: Chris Oliver *CO*
Executive Director
DATE: March 25, 2008
SUBJECT: Steller Sea Lions

ESTIMATED TIME
3 HOURS

ACTION REQUIRED

- (a) Review NMFS Response to Fast-Tracking Two SSLMC Proposals
- (b) Review Final Revised SSL Recovery Plan
- (b) Receive Report from SSLMC on Preliminary Recommendations for Changes in SSL Protection Measures

BACKGROUND

A. Response From NMFS on Two SSLMC Proposals

At the February 2008 meeting, the Council was requested by the public to consider fast-tracking an analysis and possible rule making for two proposals identified by the Steller Sea Lion Mitigation Committee (SSLMC) that may have minimal impact on SSLs, or may be perceived as SSL friendly, and that could improve fishery management and also benefit the industry. These include a proposal for improved Atka mackerel fishery management in the AI region using cooperatives (Proposal # 8), and a proposal for a minor change in fishing season start date for the pollock C season in the GOA (Proposal # 16). The Council heard public testimony on these proposals, and reviewed comments provided by the SSLMC. The Council requested that NMFS develop discussion papers that outline the process that would be involved in fast-tracking these two proposals, and how that might affect the overall SSL consultation process and schedule.

NMFS has completed a preliminary review of these proposals, and has provided a response to the Council. Their letter is attached as Item C-1(a). This letter was previously sent out in a Council mailing. If the Council has questions, NMFS staff is available to discuss their assessment of these two proposals.

B. Final Revised Steller Sea Lion Recovery Plan

The Office of Protected Resources, NMFS, has recently completed the Final Revised Steller Sea Lion (SSL) Recovery Plan. The Federal Register Notice of Availability of the final recovery plan is attached as Item C-1(b). In development since the early 2000s, the recovery plan provides the Agency with a blueprint for "recovering" the endangered western SSL and the threatened eastern SSL. The Council and SSC previously reviewed a May 2007 draft of this recovery plan at a special meeting in August 2007. The Council's letter and SSC minutes, outlining their concerns with the draft recovery plan, is attached as Item C-1 (c). The introductory pages and the Executive Summary of the March 2008 final recovery

plan are attached as Item C-1(d). NMFS staff will present the recovery plan to the Council, highlighting updates and changes made to the plan since the May 2007 draft.

C. Update on SSLMC Proposal Review Process

The new EIS and consultation schedule requires the Council's SSL Mitigation Committee (SSLMC) to finalize its recommendations for changes in SSL protection measures by the Council's June 2008 meeting. The SSLMC met March 10-12, 2008 to receive a briefing on the Final Revised SSL Recovery Plan, to continue its evaluation of proposals for revising SSL protection measures, and to prepare a preliminary package of recommendations for Council review at this meeting. The SSLMC plans to complete its work in May when it reviews the draft *status quo* BiOp and finalizes its recommended changes to SSL protection measures; those recommendations will be informed by both the final SSL Recovery Plan and the draft *status quo* BiOp.

After receiving a presentation of the Final Revised SSL Recovery Plan, the SSLMC reassessed its plans for preparing a preliminary recommendation to the Council for this April 2008 meeting. In light of the conclusions in the recovery plan, and the nature of the final recovery criteria, the SSLMC was concerned that it did not have a sufficiently clear perspective on what kinds of changes in SSL protection measures might be possible. The SSLMC believes that much of this information and the Agency's view of SSL interactions with fisheries will not be available until the draft *status quo* BiOp is released for public review in May 2008, and therefore the SSLMC decided to delay further consideration of proposals until the BiOp is available. The SSLMC requested that Chairman Larry Cotter present to the Council the Committee's lingering concerns with the final recovery plan, and to outline for the Council its plans for completion of the Committee's recommendations in May 2008. The minutes of the Committee's March 10-12 meeting are attached as Item C-1(e). (Currently, the SSLMC is scheduled to meet May 12-16, 2008 to receive and review the draft *status quo* BiOp, and to finalize its recommendations.)



AGENDA C-1(a)
APRIL 2008
UNITED STATES DEPARTMENT OF
National Oceanic and Atmospheric Administration

National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 3, 2008

Mr. Chris Oliver, Executive Director
North Pacific Fishery Management Council
605 W. 4th Avenue
Anchorage, Alaska 99501-2252

Dear Mr. Oliver:

In February 2008, the North Pacific Fishery Management Council (Council) requested that staff develop discussion papers on two proposed changes to Steller sea lion (SSL) protection measures. These proposals are identified as Proposal 8 and Proposal 16 among proposals that currently are being considered by the Council's Steller Sea Lion Mitigation Committee (SSLMC). Proposal 8 (Enclosure 1) would modify the Atka mackerel harvest limit area (HLA) fisheries to control catch rates of Atka mackerel through an industry catch limitation agreement among Atka mackerel fishery participants. Proposal 16 (Enclosure 2) would change the Gulf of Alaska pollock C season start date from August 25 to September 1. This proposal would shorten the C season but lengthen the time period between the B and C seasons when no pollock fishing would occur.

The Council wished to explore the option of "fast tracking" these two measures and proceed more rapidly toward their implementation outside the SSL environmental impact statement (SSL EIS) process. Proposal 16 may appear to be a simple change, but an analysis would be required to understand the trade off between compressing the fishing season and extending the time period of no fishing. It is not clear how this proposal would meet the SSL protection measures goal to temporally disperse harvest.

Proposal 8 would be a complicated action that may have impacts on multiple fisheries. We believe this proposal would require that two new and separate management programs be developed for entities that choose to participate in an industry contract to limit Atka mackerel catch rates and those that do not. Further, regulatory provisions must be developed and incorporated into any catch limitation agreement to ensure that objectives for self regulated catch rates are met. Proposal 8 would not be a simple program to develop and would require close consultation with NOAA General Counsel, in addition to analysis to understand potential socioeconomic impacts on different fishing sectors and other impacts on the human environment.

A careful analysis of each proposal would be required before rulemaking could be initiated. Each proposal would have to be analyzed under the National Environmental Policy Act and may require consultation under the Endangered Species Act (ESA). Without a careful analysis, we cannot determine at this time the level of consultation that may be required under the ESA. In order to analyze these two proposals separately under a more aggressive schedule than that being



followed for the SSL EIS, staff resources would need to be diverted from the SSL EIS and the EIS on alternatives to reduce salmon bycatch, resulting in a delay of these two projects. If the Council made this choice and assuming an ESA formal consultation is not required, draft analyses of Proposals 8 and 16 may be available in October or December 2008 for initial Council consideration given existing staff workload priorities. The Council's final action on these two proposals could occur in February or April 2009, resulting in implementation in late 2009 or early 2010. *This is the same time schedule for the other SSL protection measures revisions, assuming the SSL EIS is not delayed (Enclosure 3). Thus, advantages of fast tracking these two proposals and delaying the SSL EIS and the salmon bycatch EIS are unclear.*

We note that this is the first year of harvesting Atka mackerel under the Amendment 80 cooperative, and we have yet to determine whether the potential problems articulated in Proposal 8 will materialize to the extent anticipated. We are working closely with the fleet; and, as we have done in the past, are able to manage successive 14 day openers of the HLA fisheries to increase opportunity to harvest Atka mackerel. We have seen consolidation and stacking of harvest on fewer vessels in the Amendment 80 limited access fishery and believe this continues to be an option for the Amendment 80 cooperative fishery as well. In other words, we do not see a situation that requires reprioritizing a separate analysis of Proposal 8 over the timely development of the SSL EIS.

We appreciate the Council's desire to rapidly make changes to the SSL protection measures in ways that would not be harmful to SSLs and provide some relief to fishermen. Given current priorities and staff resources and the timeline for separate rulemaking for Proposals 8 and 16, we recommend that the two proposals remain with the package of proposals currently being reviewed by the SSLMC and continue to be considered under the same process as other proposals.

Sincerely,



Robert D. Mecum
Acting Administrator, Alaska Region

Enclosures (3)
Proposals 8 and 16
SSL EIS Schedule

Cc: Bill Wilson
Larry Cotter, Chair SSLMC
John Gauvin, Gauvin and Associates, LLC
Julie Bonney, Alaska Groundfish Databank

SSL Proposal 8
Last Revised 02/09/08

FISHERY MANAGEMENT PLAN or REGULATORY AMENDMENT PROPOSAL
North Pacific Fishery Management Council – Steller Sea Lion Mitigation Committee
Provide the following information – attach additional pages as necessary:

Name of Proposer: H&G Environmental Workgroup with input from Adak Seafoods (Dave Fraser)

Date: February 9, 2008.

Address: John Gauvin, Gauvin and Associates LLC, 2104 SW 170th, Burien WA 98166

Telephone: (206) 660-0359

Fishery Management Plan: BS/AI groundfish

Brief Statement of Proposal: We propose to modify the Harvest Limitation Area (HLA) fishery regulations for the Aleutian Islands Atka mackerel fishery. The following components of the HLA regulations would be removed:

1. The requirement to pre-register with NMFS for HLA fishing
2. NMFS' random assignments of vessels to separate fishing areas (HLA 542 and HLA 543)
3. The maximum 14 day duration of an HLA fishery opening
4. Regulations triggering the start of HLA fisheries following the Area 541 mackerel fishery
5. Requirements for closure periods between HLA platoon fisheries to allow area switching
6. Stand down provisions for vessels electing to participate in the mackerel HLA fisheries.

Under our proposal, a mackerel catch limitation agreement (MCLA) would then be substituted for the above elements. The agreement would use private contracts between HLA fishery participants to govern daily/weekly catch rates in the HLA mackerel fisheries. This agreement will govern daily/weekly catch rates such that these rates would not exceed those that occurred in the HLA fishery in the years since the implementation of the HLA regulations (2001 to present). The constructs of the mackerel catch limit agreement are described in detail below. While preventing any increase in daily/weekly mackerel catch rates in each HLA fishery sub-area, the MCLA will help the mackerel fishery avoid the unnecessary costs and inefficiencies of the current HLA measures. The switch from the current HLA fishery regulations to the arrangement described in this proposal and in particular the MCLA will also allow for stacking of mackerel catch allocations on a smaller number of vessels. As is explained below, consolidation/specialization of the mackerel fishing to a smaller number of vessels is not currently viable. Stacking of mackerel allocations would achieve even lower daily and weekly harvest rates in the fishery and greater benefits to SSL than would be possible under the current management arrangement for Atka mackerel.

Objectives of Proposal (What is the problem?): The measures in place for Aleutians Islands HLA mackerel fishery were designed to help decrease HLA area-specific mackerel catch rates under the open access "race for fish" fishery that existed prior to Amendment 80. The splitting of the mackerel fleet into groups that fish in separate HLA areas was to decrease localized (HLA area-specific) catch rates per day/week and thereby help reduce the chance for local mackerel depletions and effects on sea lion foraging. Amendment 80, however, was put in place to create direct incentives to reduce overcapitalization and remove the race for fish in the non-pollock trawl fisheries of the Bering Sea/Aleutian Islands. The current SSL regulations trump Amendment 80 and thus the current HLA system continues to subject fishery participants to the divide into groups (platoons) and other elements of the HLA fishery regulations. This means that to fish for mackerel in the HLA, interested vessels that

have the necessary mackerel rights via Amendment 80 must pre-register for HLA mackerel fishing. NMFS then randomly divides these vessels into separate groups (AKA "platoons") and assigns the separate platoons to start mackerel fishing in opposing HLA areas. Further, the duration of an HLA fishery opening for the different groups in each HLA area cannot exceed 14 days. The maximum 14 day duration was originally set to ensure that the mackerel fishery closes and thus allow the cod fishery timely access to the HLA areas. The 14 day maximum was originally approximately the time needed to accommodate the likely duration of mackerel fisheries during the race for fish period (prior to Amendment 80). But with Amendment 80 now in place, the race for fish is now removed and vessels qualified to fish in the HLA fisheries do not need to fish at the same pace and are not necessarily interested in fishing for mackerel at the same time as other HLA participants. Further, the mackerel fishery cannot truly rationalize its fishery effort under the current regulations which induce participants to fish at rates similar to those prior to Amendment 80. The fishery cannot utilize the Amendment 80 incentives because if fishermen do not fish at historical catch rates or if they attempt to reduce the number of mackerel vessels they face potential for forfeiting inside HLA fishing if in-season managers are unable to schedule another opening of the fishery (once again, not to exceed 14 days).

On the whole, HLA regulations continue the historically high catch pace of the mackerel fishery, create unnecessary costs and obstacles to participation of qualified fishermen, and serve to prevent the stacking of mackerel HLA catch rights on a smaller number of dedicated mackerel vessels. This prevents the evolution of an efficient mackerel fishery that also achieves the "lower and slower" objectives that were sought in the SSL Biological Opinion.

In place of the components of the HLA regulations listed above, a mackerel catch limitation agreement would govern mackerel catch rates directly. Under this change, any entity that is qualified to and wishes to engage in directed fishing for Atka mackerel in the HLA would have to fish in the HLA though its participation in the MCLA. The MCLA will schedule the fishing in the HLA areas over the days available to mackerel fishery. This will be done via a binding agreement and substantial penalties for breaches of contract. Thus the MCLA will be used to directly control catch rates in the separate HLA fisheries. Catch rates will be controlled such that weekly mackerel and daily catch rates established via the agreement not be exceeded. Daily and weekly catch limits will be specified for the two HLA sub-areas via this action such that they reflect historical catch rates within each of the HLA fishing area from 2001-2007 (period during which the mackerel HLA "platoon" regulations have in place). Hence catch rates in the HLA fisheries will at a minimum not exceed historical rates that have occurred since the creation of the HLA regulations.

The MCLA will specifically allow all entities that have rights to fish for mackerel in the 542 and 543 HLA fisheries to participate in the MCLA whether as a participant in an Amendment 80 cooperative or not. An entity that is not participating in an Amendment 80 cooperative can participate as an individual company or other relevant business entity. A draft of the mackerel MCLA will be provided to the NPFMC and NMFS Alaska Region prior to final action on this proposal.

The remainder of the management aspects of the HLA regulations are retained and are therefore not be affected by the adoption of this proposal. These are: the area and A and B season TAC splits, the restriction on harvesting no more than 60% of the AI sub-area TAC inside each HLA sub-area, and the no concurrent cod and mackerel fishing in the HLA sub-areas. Through the mackerel HLA fishing agreement, the HLA mackerel fishery will work with NMFS in-season managers to coordinate the scheduling of directed cod fishing in 542 and 543 HLA area. The MCLA will schedule its mackerel fishing during the times when directed cod fishing is not taking place.

Important background information on the original purpose of the current regulations for Atka mackerel and cod trawling in the Harvest Limitation Area: The term "HLA" refers to the portion of Aleutian Islands sub-areas 542 and 543 that falls within SSL critical habitat (CH) for those management sub-areas. For purposes of understanding how the Atka mackerel fishery is managed within the HLA,

there are two separate inside of CH fisheries for mackerel which can be referred to as 542 HLA and 543 HLA. The HLA fishing areas are generally preferred by Atka mackerel fishermen because the average size of mackerel inside the HLA is usually considerably larger than outside the HLA and therefore more valuable. Also, mackerel inside the HLA 542 also tends to be larger and more valuable than in HLA 543. These price differentials and the competitive aspects of the different fishing areas for mackerel were in fact the basic reason why the original sea lion regulations were developed. Prior to the SSL regulations, fishermen tended to fish nearly exclusively inside of AI sub-area 542 SSL critical habitat area first. Once that TAC was taken, they moved to (all vessels together) AI 543 inside-CH fishing areas. As fishermen competed for mackerel catches at each successively less valuable catch area, high daily catch rates raised concern about potential for "localized depletions" of mackerel, a known prey of SSL.

To reduce potential for prey competition with SSL from the mackerel fishery, regulations were put in place to 1) seasonally split the mackerel TAC into two equal seasons (50% during the A season and 50% during the B season) and 2) require that no more than 60% of each seasonal allowance be harvested inside SSL CH is each AI sub-area (now called 542 HLA and 543 HLA). Further, vessels wishing to fish inside the separate HLA areas of 542 and 543 were required to pre-register to participate in the HLA Atka mackerel fishery. Upon pre-registering, the regulations require that vessels electing to fish in the HLA areas were randomly split into two groups (or "platoons") that fished simultaneously, with half starting in HLA 542 and the other half in HLA 543. After a maximum of 14 days, the HLA areas are closed and the then re-opened after a designated time to allow the "platoons" that started in the first randomly assigned HLA to switch to the other HLA fishing areas. Upon switching areas, vessels are provided up to 14 days to catch the portion of the sub-area TAC that is allowed to be caught inside the separate HLA fisheries. If years where HLA catch amounts were not met in the first 14 day maximum period, re-openings were sometimes arranged as long as this did not conflict with the scheduling of directed cod fishing which by regulation cannot occur simultaneously.

Specific Elements of this proposal are as follows:

1- Use of a mackerel catch limitation agreement to govern daily and weekly harvest rates for HLA mackerel fisheries (HLA 542 and HLA 543) at levels at or below historical levels in each area (based on 2001-2007 catch history in each HLA fishery. Weekly and daily rates for the mackerel fishery will be established in the agreement once the necessary data are provided by NMFS. A draft of the mackerel HLA agreement will be provided to the NPFMC before final action of this proposal is taken.

2- Directed fishing for Atka mackerel inside the HLA fishing areas will only be allowed for vessels eligible to fish for mackerel in the HLA fisheries that are participating in the mackerel HLA fishing agreement..

3- The non-amendment 80 CV fishery is allowed to harvest up to 10% of the mackerel TAC in sub-area 542. Vessels qualified to fish in this sector can either be managed within the MCLA or subjected to different regulations to achieve control over harvest rates. Options are therefore:
OPTION 1: Required to enter into the mackerel HLA fishing agreement in order to fish for Atka mackerel inside the HLA areas.

OPTION 3: If participation in the MCLA is not practical or otherwise possible, these vessels must:

- a) Register with NMFS for the fishery for each week of intended participation (In any week in which more than 3 vessels register, NMFS would limit participation by lottery)
- b) Be subject to a trip limit when directed fishing for Atka mackerel of one delivery per day not to exceed 100 tons, for a maximum of 3 deliveries per week.

Need and Justification for Council Action (Why can't the problem be resolved through other channels?): Because SSL regulations trump Amendment 80, the potential benefits of slowing down fishing to make higher-quality mackerel products or stacking mackerel HLA fishing on a smaller number of vessels is not possible under the current regulations. This is because the constructs of the

HLA fishery retain the maximum 14 day fishery durations thus locking participants into historical catch rates based that were derived during the race for this prior to Amendment 80.

Foreseeable Impacts of Proposal (Who wins, who loses?): We believe Atka mackerel stock concerns and SSL foraging opportunities are greatly enhanced through enactment of this proposal. The mackerel fishery will achieve NMFS' "low and slow" catch rate objectives and avoid daily spikes in catch rates that continue to occur under the present platoon management system. The affected fishing fleet can viably adjust its fishing around these measures because Amendment 80 provides the appropriate tool and economic incentives for the mackerel fishery. Also, NMFS' in-season managers will no longer have to micro-manage the openings and closings of the mackerel fishery. The cod seasons will, however, still require coordination between the mackerel fishery under its MCLA and NMFS' in-seas managers.

Are there Alternative Solutions? If so, what are they and why do you consider your proposal the best way of solving the problem? The only alternative solution would be to change the HLA regulations through application for an exempted fishing permit. This might allow the changes sought here to be implemented on a faster track than through the SSL regulation package process. But an EFP would be of limited duration and would not allow the SSL regulations to be changed permanently.

Supporting Data & Other Information. What data are available and where can they be found? Be specific and cite references. Daily mackerel harvest rates in MT are depicted in Table 1 below. These data were obtained from NMFS in-seas managers in 2006. It is important to note that these data obtained from NMFS do not include the days in each AI sub-area where there were fewer than three vessels in a given AI sub-area. This is due to NMFS confidentiality regulations. We assume, however, that days with fewer than 3 vessels in a sub-area would likely have lower rates than the ones with three or more vessels- so the effect of the incomplete data downwardly biases the daily rates in the table. **These data need to be updated so that we can incorporate the weekly and daily peak rates as "not to exceed" limits within this proposal.**

Offsetting Measures. OPTIONAL - What protection measures might be increased in the region to offset the proposed action? Offsetting measures are already built into our proposal itself because the inter-cooperative management of mackerel to cap daily harvest rates is essentially a reduction in the current potential effects on the SSL prey field.

Signature:



Table 1.

Atka Mackerel In Atka Mackerel target - Critical Habitat Average and High in A and B Seasons, 2003-2006

		2003			2004			2005			2006		
		CH Avg	CH High	No. of days above 600 mt	CH Avg	CH High	No. of days above 600 mt	CH Avg	CH High	No. of days above 600 mt	CH Avg	CH High	No. of days above 600 m
542	A Season	480	877	3 of 12	326	474	0 of 18	379	604	1 of 22	398	509	0 of 19
	B Season	485	736	3 of 14	416	658	2 of 18	495	738	5 of 18			
543	A Season	403	680		347	387		227	327				
	B Season	418	474		178	304		74	106				

FISHERY MANAGEMENT PLAN AMENDMENT PROPOSAL
North Pacific Fishery Management Council

Name of Proposer: Alaska Groundfish Data Bank **Date:** 8/18/06
Alaska Draggers Association
Western Gulf of Alaska Fishermen

Address: P.O. Box 788 Kodiak, Alaska 99615
P.O. Box 991 Kodiak, Alaska 99615
301 Seward St, suite 201 Juneau, Alaska 99801

Telephone: (907)-486-3033
(907)-486-3910
(907)-723-5257

Fishery Management Plan: Gulf of Alaska

Brief Statement of Proposal: Change the C season pollock fishery date from August 25th to September 1st.

Objectives of Proposal: (What is the problem?) The goal of the proposal is to realign the C season pollock fishery start time to avoid conflicts with the pink salmon processing time frame.

Need and Justification for Council Action: (Why can't the problem be resolved through other channels?)
The Council and NMFS are the only bodies that have control over the fishery management structure making adjustments to the Pollock seasonal start dates.

Foreseeable Impacts of Proposal: (Who wins, who loses?)
GOA coastal communities would win under this proposal.

Are there Alternative Solutions? If so, what are they and why do you consider your proposal the best way of solving the problem?
The ultimate solution is to allocate fish to individual harvesters through GOA rationalization and end the race for fish. The Council appears to be committed to GOA rationalization but immediate relief is not available.

Supportive Data & Other Information: What data are available and where can they be found? Be specific and cite references.
Pink salmon harvest history by time for the different state of Alaska salmon districts. Contact the Alaska Department of Fish and Game.

Offsetting Measures. What protection measures might be increased in the region to offset the proposed action?

It is anticipated that moving the season start time farther into the fall would be beneficial to SSL since juvenile SSLs are weaned during the month of June.

Signature

John Bonney

Draft Steller Sea Lion Measures Development Timeline (12/20/07) - assumes that all key events and document releases occur on schedule and that key staff are available to accomplish analytical workload.

		2008											
		jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
SSL Project Components			SSL/NOA makes models on proposals		Review final Recovery Plan and SSL/NOA progress report		Review Status Quo BiOp, SSL/NOA recommendations and SEIS scoping report and recommend (1) range of alternatives for Subsistence and (2) preliminary preferred alternative for Action BiOp						
				(1) Review final recovery plan and submit with proposal		(2) Review Status Quo BiOp and make recommendations							
ESA Documentation				(1) NOA and Release Final Recovery Plan		(1) Release draft Status Quo BiOp - May 1		Develop Action Biological Assessment based on Council preim preferred alternative			Develop draft Action BiOp		Release draft Action BiOp
NEPA, Regulatory Flexibility Act, and E.O. 12866 Documentation			SEIS scoping period ends April 21			Develop scoping report	Scoping report to Council - June 1			Develop draft SEIS/IR/IRFA			

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG01

Endangered and Threatened Species;
Revised Recovery Plan for Distinct
Population Segments of Steller Sea
Lion

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, Commerce.

ACTION: Notice of Availability, responses to comments.

SUMMARY: The National Marine Fisheries Service (NMFS) announces the availability of the Final Revised Recovery Plan, dated March 2008, for the western and eastern distinct population segments (DPS) of Steller sea lion (*Eumetopias jubatus*). NMFS also provides a link to the comprehensive and extensive responses to comments on the May 2007 Draft Revised Steller Sea Lion Recovery Plan posted on our website.

ADDRESSES: The Final Revised Steller Sea Lion Recovery Plan and the Responses to Comments are available on the Internet at the following address: <http://alaskafisheries.noaa.gov/protectedresources/stellers/recovery.htm>. Copies of the Plan may also be obtained from NMFS, Protected Resources Division, 222 W 7th St, Anchorage, Alaska 99513; or from the Alaska Regional Office, Protected Resources Division, 709 W. 9th St, Juneau, AK, 99802-1668.

FOR FURTHER INFORMATION CONTACT: Lisa Rotterman at 907-271-5006, email lisa.rotterman@noaa.gov, or Kaja Brix at 907 586 7235, e-mail kaja.brix@noaa.gov.

SUPPLEMENTARY INFORMATION:**Background**

Recovery plans are guidance documents that describe the actions considered necessary for the conservation and recovery of species listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). Development and implementation of a recovery plan helps to ensure that recovery efforts utilize limited resources effectively and efficiently. The ESA requires the development of recovery plans for listed species, unless such a plan would not promote the recovery of a particular species. The ESA requires that recovery plans incorporate the following: (1) objective, measurable criteria that, when

met, would result in a determination that the species is no longer threatened or endangered; (2) site-specific management actions necessary to achieve the plan's goals; and (3) estimates of the time and costs required to implement recovery actions.

NMFS' goal is to restore endangered and threatened Steller sea lion (*Eumetopias jubatus*) populations to levels at which they are secure, self-sustaining components of their ecosystems and no longer require the protections of the ESA. The Steller sea lion was listed as a threatened species under the ESA on April 5, 1990 (55 FR 12645), due to substantial declines in the western portion of the range. Critical habitat was designated on August 27, 1993 (58 FR 45269), based on the locations of terrestrial rookeries and haulouts, the spatial extent of foraging trips, and availability of prey. In 1997, the Steller sea lion population was split into a western DPS and an eastern DPS, based on demographic and genetic dissimilarities (62 FR 30772). Due to a persistent population decline, the western DPS was reclassified as endangered at that time. The increasing eastern DPS remained classified as threatened. Through the 1990s, the western DPS continued to decline. Then, between 2000 and 2004, the western population showed a growth rate of approximately three percent per year the first recorded increase in the population since the 1970s. However, partial surveys in 2006 and 2007 suggest that the overall trend for the western population in Alaska is either stable or may be decreasing slightly. Based on recent counts, the approximate abundance of Steller sea lions in the western DPS in Alaska is currently approximately 45,000 animals. The estimated abundance of sea lions in Russia is approximately 16,000. Based on population-wide surveys in 2002, total abundance of the eastern DPS is currently estimated at between 46,000 and 58,000 animals and has been increasing at a rate of approximately three percent per year since the late 1970s.

The first Steller sea lion recovery plan was completed in December 1992 and encompassed the entire range of the species. However, the recovery plan became obsolete after the split into two DPSs in 1997. By that time, nearly all of the recovery actions recommended in the original plan were completed. In 2001, NMFS assembled a new recovery team to update the plan. The team was comprised of members representing the fishing industry, Alaska Natives, fishery and marine mammal scientists, and environmental organizations. The

recovery team completed a draft revision in February 2006, then solicited peer review on the draft recovery plan in accordance with NMFS'1994 peer review policy. The team requested reviews from five scientists and managers with expertise in recovery planning, statistical analyses, fisheries, and marine mammals. In response to reviewers' comments, the team clarified the recovery criteria, added delisting criteria for the western DPS, and further refined priorities and recovery actions. In March 2006, the Team submitted the revised plan to NOAA Fisheries with unanimous endorsement from the 17 Team members.

In May 2006, NMFS released the Draft Steller Sea Lion Recovery Plan for public review and comment (71 FR 29919). On July 20, 2006, NMFS extended the customary 60-day comment period until September 1, 2006 (71 FR 41206), to provide additional time for public review and comments. NMFS received comments from 18 individuals and organizations during the 100-day comment period. We reviewed these comments and incorporated recommendations into the Draft Revised Plan.

Due to extensive public interest and the controversial nature of the recovery plan, NMFS released the Draft Revised Plan for another round of public reviews and comments (72 FR 28473, May 21, 2007). This subsequent release provided the public an opportunity to review changes made based on earlier public input and to provide further comments prior to release of a final Steller Sea Lion Recovery Plan.

NMFS received 8,058 letters of comment on the May 2007 draft of the revised plan. Comments were provided by a wide range of interested parties, including members of the fishing industry, non-governmental organizations (NGOs), members of academia, the public, and other interested parties. In response to two solicitations, from NMFS and the North Pacific Fishery Management Council (NPFMC), peer review comments were received from the Center for Independent Experts and from scientific experts commissioned by the North Pacific Research Board, at the request of the NPFMC. NMFS reviewed the comments and recommendations submitted by peer reviewers and the public on the 2007 version of the draft revised plan and modified the plan as appropriate to produce this Final Revised Steller Sea Lion Recovery Plan (Plan). NMFS's response to comments on the May 2007 draft of the plan is available at <http://alaskafisheries.noaa.gov/>

[protectedresources/stellers/recovery.htm](#).

Several important issues were highlighted by the comments received and were addressed in the Final Revised Plan. The comments almost exclusively addressed the western DPS. The principal changes made by NMFS in response to comments included expansion of the discussion and a change to the rating of the killer whale threat, and modification of the nutritional stress discussion. Other, more minor changes were also made.

The Team had originally labeled the killer whale threat, along with fisheries and environmental variability, as "potentially high." NMFS reclassified that threat to "medium" in the May 2007 draft plan based on new scientific evidence that had not been available when the Team developed their assessment. However, due to continuing controversy on the role that killer whales play in the recovery of Steller sea lions, the uncertainty associated with some of the data, and the need to take a precautionary approach, NMFS has reinstated the "potentially high" designation for the killer whale threat.

Comments were received on the nutritional stress section of the May 2007 Plan. NMFS has more fully explained some of the theories and the data on the role of nutritional stress in the recovery of Steller sea lions in the Final Revised Plan.

Overview

The Final Revised Plan contains: (1) a comprehensive review of Steller sea lion ecology, (2) a review of previous conservation actions, (3) a threats assessment, (4) biological and recovery criteria for downlisting and delisting, (4) actions necessary for the recovery of the species, and (5) estimates of time and costs for recovery.

The threats assessment concludes that the following threats to the western DPS are relatively minor: Alaska Native subsistence harvest, illegal shooting, entanglement in marine debris, disease, and disturbance from vessel traffic and scientific research. Although much has been learned about Steller sea lions and the North Pacific ecosystem, considerable uncertainty remains about the magnitude and likelihood of the following potential threats (relative impacts in parentheses): competition with fisheries (potentially high), environmental variability (potentially high), killer whale predation (potentially high), incidental take by fisheries (low), and toxic substances (medium). In contrast, no threats were identified for the eastern DPS. Although several factors that affect the western

DPS also affect the eastern DPS (e.g., environmental variability, killer whale predation, toxic substances, disturbance), these threats do not appear to be limiting recovery of the population at this time.

The Final Revised Plan identifies an array of substantive actions that will foster recovery of the western DPS by addressing the broad range of threats. It highlights three actions (detailed below) that are especially important to the recovery program for the western DPS:

1. *Maintain current or equivalent fishery conservation measures:* After a long-term decline, the western DPS appears to be stabilizing. The first slowing of the decline began in the 1990s, which suggests that management measures implemented in the early 1990s may have been effective in reducing anthropogenic effects (e.g., shooting, harassment, and incidental take). The apparent population stability observed from 2000 to 2004 (surveys were conducted in 2006 and 2007 but were incomplete) appeared to be associated with comprehensive fishery management measures implemented since the late 1990s. Therefore, the current or equivalent suite of management actions (or, more specifically, the equivalent protection as afforded by the current management measures) should be maintained until substantive evidence demonstrates that these measures can be altered without inhibiting recovery.

2. *Design and implement an adaptive management program to evaluate fishery conservation measures:* A scientifically rigorous adaptive management program should be developed and implemented. A well-designed adaptive management plan has the potential to assess the relative impact of commercial fisheries on Steller sea lions and distinguish the impacts of fisheries from other threats (including killer whale predation). This program will require a robust experimental design with replication at appropriate temporal and spatial scales. It will be a challenge to construct an adaptive management plan that is statistically sound, meets the requirements of the ESA and can be implemented in a practicable manner.

3. *Continue population monitoring and research on the key threats potentially impeding sea lion recovery:* Estimates of population abundance and trends, spatial distribution, health, and essential habitat characteristics are fundamental to Steller sea lion management and recovery. Current knowledge of the effects of primary threats on these parameters is insufficient to determine their relative

impacts on species recovery. Focused research is needed to assess the effects of threats on sea lion population dynamics and identify suitable mitigation measures.

Criteria for reclassification of the eastern DPS and western DPS of Steller sea lion are included in the Final Revised Plan (see above).

Time and costs for recovery actions for the western DPS are estimated at \$93,840,000 for the first 5 fiscal years and \$430,425,000 for full recovery. The recovery program for the eastern DPS will cost an estimated \$150,000 for the first year and \$1,050,000 total, including 10 years of post-delisting monitoring.

Authority: 16 U.S.C. 1531 *et seq.*

Dated: February 28, 2008.

Angela Somma,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. E8-4235 Filed 3-4-08; 8:45 am]

BILLING CODE 3510-22-S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XF98

Endangered Species; File No. 1614

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Issuance of permit.

SUMMARY: Notice is hereby given that the NOAA Fisheries Northeast Region, Protected Resources Division [Responsible Party: Mary Colligan], One Blackburn Drive, Gloucester, MA 01930, has been issued a permit to take dead shortnose sturgeon for purposes of scientific research.

ADDRESSES: The permit and related documents are available for review upon written request or by appointment in the following offices:

Permits, Conservation and Education Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Room 13705, Silver Spring, MD 20910; phone (301) 713-2289; fax (301) 713-0376; and Northeast Region, NMFS, One Blackburn Drive, Gloucester, MA 01930-2298; phone (978) 281-9300; fax (978) 281-9394.

FOR FURTHER INFORMATION CONTACT: Brandy Belmas or Jennifer Skidmore, (301) 713-2289.

SUPPLEMENTARY INFORMATION: On September 26, 2007, notice was published in the Federal Register (72

North Pacific Fishery Management Council

AGENDA C-1(c)
APRIL 2008

Stephanie Madsen, Chair
Chris Oliver, Executive Director

Telephone (907) 271-2809



605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Fax (907) 271-2817

Visit our website: <http://www.fakr.noaa.gov/npfmc>

August 10, 2007

Kaja Brix
Assistant Regional Administrator
Protected Resources Division, Alaska Region
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802

Dear Ms. Brix,

The North Pacific Fishery Management Council appreciates the opportunity to review and provide comments on the May 2007 draft Revised Steller Sea Lion (SSL) Recovery Plan (Plan). The Council and its Scientific and Statistical Committee (SSC) received a briefing on the Plan during the Council's special August 1-3, 2007 meeting in Anchorage. During that meeting, the Council and SSC also heard presentations of three Center for Independent Experts (CIE) peer reviews of the plan requested by the National Marine Fisheries Service (NMFS), a peer review of the plan requested by the Council and conducted by the North Pacific Research Board (NPRB), a review of recovery criteria in other endangered or threatened populations, comments from the State of Alaska, comments from fishing industry representatives and the public, and comments from other scientists involved in SSL research. This letter appends the comments of our SSC, and this letter also highlights specific suggestions which were included in the Council motion. However, we also include below some general comments which we believe significantly reflect a general unease with this Plan, and which are based on the full administrative record of our discussions last week.

NMFS has responded to some of the Council's and SSC's comments on the earlier May 2006 version of the Plan, and has revised the document in many areas, particularly by clarifying how Population Viability Analysis modeling was used to help guide development of the recovery criteria. However, the Council is disappointed that other Council and SSC comments and suggestions were not addressed in the May 2007 draft recovery plan, and we request that NMFS re-visit the Council's and SSC's comments on the May 2006 version of the recovery plan (enclosed). Moreover, the Council is particularly concerned with the greatly divergent views expressed within the scientific community over several key issues associated with the May 2007 draft recovery plan, including the lack of support for the plan by several members of the SSL Recovery Team. The most pervasive criticism, and one which was raised by Council members as well as members of the scientific community, is a perceived disparate treatment of available scientific information relative to a few key issues. Given the reliance of our process on sound and credible science, coupled with the existing great reputation of NMFS as the primary provider of that science to our process, the Council is most concerned and believes that NMFS should take a serious look at the treatment of available information on these key issues before finalizing the Plan.

First, the Council is concerned over the conspicuous lack of consensus among members of the SSL Recovery Team on how scientific information was used to support some of the recommendations in the Plan. This is especially notable for two hypotheses of factors that may be affecting SSL recovery:

transient killer whale predation and low female SSL natality or pup production (and the attendant link to chronic nutritional stress). This particular example was discussed during Council deliberations, and serves as a primary example of the perceived disparate treatment of information. Relative to the killer whale information, and subsequent reclassification to 'Medium' threat level, the Plan misquotes information from key published studies on potential levels of predation, embraces information which indicates a potentially lower predation level (wherein the author of the publication cautioned against extrapolation of the results to broader areas), and ignores information which could be relevant to this hypothesis (for example, the incident of one killer whale found dead with 14 pup flipper tags in its stomach). Then, noting that killer whale predation is the single greatest source of natural mortality, the Plan downgrades killer whale predation to a medium threat level. Alternatively, relative to nutritional stress and potential fishery interactions, the Plan describes numerous studies which clearly refute the hypothesis of acute nutritional stress, offers no proof of chronic nutritional stress (citing only one limited study relative to reduced natality, which is extrapolated to broader areas), and based on the natality study and the *lack* of acute nutritional stress, the Plan asserts that chronic nutritional stress must be occurring. Further, the Plan maintains a 'Potentially High' threat level for fisheries interactions, based on the relatively thin evidence of chronic nutritional stress. During Council discussions and public comment it was opined that, based on the available scientific information, these two threats (killer whale predation and fisheries interactions) should have equal threat level classifications.

It is clear from both public comment and from peer reviews that scientific discord on these two issues is very strong. The Plan lays out a strategy for SSL recovery based on interpretations of scientific information, but the strong disagreement among scientists, including several members of the SSL Recovery Team, diminishes public confidence in the recommendations stated in the Plan and raises doubt over the efficacy of the proposed recovery strategy. The Council is particularly disturbed that several distinguished scientists who were members of the SSL Recovery Team have been so alarmed over its content that they are renouncing the Plan, or have requested removal from the list of Team members who prepared the draft document from which this current plan has been developed.

The Council is faced with a confusing array of disagreements over the status of SSLs in the North Pacific from well respected scientists with significant publication track records. CIE reviewer Goldsworthy pointed out the lack of consensus on SSL threats, leaving the reader "... to evaluate a series of contradictory opinions." The Council similarly is left with a strong sense of uncertainty, not only over the current status and health of the SSL population in the North Pacific, but also with the recovery strategy as outlined in this recovery plan (which is apparently based on this lack of consensus). The Council and the public are receiving mixed scientific messages on SSL natality and pup production, impacts of transient killer whales on the SSL population, the carrying capacity of the North Pacific for increased numbers of SSLs, and the overall population structure of the wSSL. Some of these disagreements are focused on some of the key recommendations in the Plan, and this obvious strong dispute among scientists and the uncertainty it engenders suggests that much more work is required to assemble a plan that will evoke reasonable scientific concurrence and in turn public support.

Exacerbating the above concern is the appearance of bias in the Plan. The SSC noted the need to guard against the perception of unbalanced treatment of the scientific data, and noted that the Plan presents arguments on certain issues but does not reference other scientific studies that offer alternative arguments, and finally, the SSC asserts that it is "...important to maintain balance in the presentation of alternate hypotheses." As part of written public testimony, recognized marine mammal expert Dr. Ian Boyd pointed out several instances where the Plan favors one argument over another, and notes that NMFS appears to be selectively quoting from the literature to support a certain point of view or arguing to the level of advocacy for a preferred hypothesis (e.g. the killer whale threat issue or the sequential megafaunal collapse hypothesis). Some public testimony and written comments received by the Council asserted bias in the Plan. Comments on apparent bias in the Plan from the State of Alaska state that the

Plan does not present an objective description of research on killer whales and the Plan's narrative seems combative, the uncertainty over nutritional stress on SSLs should be fairly and fully evaluated, and the Plan should provide an objective accounting of the Fishery Interaction Team field test results rather than attempting to discredit these field studies. These comments raise grave concerns with the Council over the Plan's objectivity in the presentation of the available scientific information and the recovery criteria developed from the information contained in the Plan. We also believe that some of the recovery criteria are based only partly on scientific guidance, and are more policy positions which should be re-evaluated.

Therefore, based on a careful review of the Plan; a series of reports and presentations from NMFS, the State of Alaska, and the Council's Scientific and Statistical Committee (SSC); and comments from other scientists, the fishing industry, and the public, the Council recommends that NMFS consider the comments above, as well as the following more specific comments, before finalizing the Plan. The following numbering system corresponds with the motion passed by the Council at its August 2007 meeting (see attached). For each of these recommendations, the Council provides additional rationale in brackets.

1 a & b. The Plan currently provides criteria for downlisting and delisting the wSSL that include requirements for population increase and for increasing subregional trends. **The Council requests that these criteria be modified to allow downlisting of the wSSL if this population continues to remain stable or increases in abundance over a period of 15 years commencing with the year 2000, and to allow delisting of the wSSL if this population continues to remain stable or increases in abundance over a period of 30 years commencing with year 2000.** The Council requests that the population trends be an average of all of the U.S. subpopulations only, specifically **excluding the Russia/Asia subregion group of SSLs.** The Council also recommends that the recovery criteria be reevaluated and revised every five years or as new information becomes available.

[The Council has received comments from scientists and its SSC that the North Pacific currently could be at optimal carrying capacity for SSLs, and that an additional increase in the eSSL or wSSL may not be possible without reductions in vital rates or other responses that could adversely affect SSLs. Thus, under such a scenario, a stable or moderately increasing population would be appropriate. The SSC noted the possibility that carrying capacity for SSLs might be at equilibrium and additional population increase could be problematic, and thus the SSC recommended that the Plan discuss how a modified carrying capacity might affect the appropriateness of the proposed recovery criteria. The Council does not believe current science supports a hard and fast goal of increasing the wSSL to over 100,000 individuals. The Council also believes that including the Russia/Asia subregion may compromise the future management of SSLs in the U.S. The U.S. has no control over SSL management in Russia/Asia, and therefore it is inappropriate to hinge recovery actions taken in U.S. waters on the performance of SSLs in a subregion outside the U.S. The Council also received testimony that subregional abundance of the wSSL population could fluctuate naturally across the many subgroups of wSSL across its range, and the criterion that requires that no two adjacent subregions decline may be nearly impossible to assure; note that only three rookeries occur in the western Aleutian Islands, which is adjacent to the Russia/Asia subregion which is beyond any management authority of the U.S. The measure in the Plan requiring that no two subregions be declining was noted by CIE reviewer Hindell as possibly being too restrictive. The Council recommends that any reference to subregional trends be excluded from the final recovery plan.]

1 c. The Council requests that the Plan allow flexibility in adjusting SSL protection measures in fishery regulations to respond to changing environmental conditions, fishery stocks, and new SSL information. The current Plan recommends maintaining *current* regulations; **the Council requests that the Plan allow for appropriate measures that reflect changing conditions.**

[The Plan recommends conducting adaptive management experiments to gather additional information on how SSLs interact with fisheries. However, the Council has heard considerable criticism of this measure, suggesting that both maintaining current fishery regulations and conducting adaptive studies may be difficult or impossible. The Council supports the general concept of adaptive management, but requires the flexibility to adjust SSL protection measures to allow for such experiments. The Council also requires some flexibility in adjusting SSL protection measures, partly to reflect new scientific information but also partly to offer opportunities to test the efficacy of some of these measures in the conservation of SSLs while allowing sustainable fisheries. Finally, the Plan should clarify that the Council retains the flexibility to adjust the current management measures within the constraints of the ESA.]

2. The Plan used Population Viability Analysis (PVA) to inform the development of recovery criteria. The Plan's PVA assumed a threshold risk of extinction of 1% over 100 years (i.e. the species will no longer be considered endangered when the probability of quasi-extinction is less than 1 % in 100 years). NMFS based this standard on the Quantitative Working Group (QWG) guidelines. **The Council requests that NMFS consider a 10% risk of extinction in 30 years, and reevaluate and discuss in the final recovery plan how this might affect the development of recovery criteria.**

[The 1 % risk of extinction in 100 years standard was taken from the QWG guidelines which were developed by NMFS as a preliminary recommendation for developing recovery criteria for ESA-listed species under management authority of NMFS. The Council heard testimony that this threshold of 1% over 100 years was at least partly based on risks appropriate for much longer lived animals such as large cetaceans (which could go through two generations in that period of time), and that a more appropriate risk standard for SSLs, that recognizes their shorter life span, should be used to develop recovery criteria. The SSC notes that this risk threshold needs to be reexamined and more justification provided for using the 100-year timeframe for sea lions that have a shorter generation time than is characteristic for large cetaceans for which the 100-year timeframe was developed. The Council finds it more reasonable to use a time frame appropriate to SSLs which may live to be 10 years or older, and over 30 years SSLs would on average likely go through about three generations. The Council notes that some organizations such as the IUCN suggest that a 10 % or a 20 % risk is an appropriate threshold for risk-of-extinction standards. CIE reviewer Goldsworthy also made this recommendation, suggesting that the IUCN criteria be evaluated; Dr. Goldsworthy stated that, based on the extinction risk framework in the Plan, "...what is presented does not leave me feeling confident that the criteria developed are entirely appropriate."]

3. The Plan lists killer whales as a medium threat to recovery of the wSSL, which is a downgrading of this threat from potentially high in the May 2006 draft recovery plan. The Council believes that transient killer whales pose a far greater threat to the wSSL and requests that NMFS reconsider and **rank killer whale predation as a potentially high threat**. In addition, the Council requests that NMFS conduct more research on killer whale population dynamics in the North Pacific, and convene one or more workshops to discuss and resolve issues with assessment of effects of transient killer whales on the wSSL and how killer whales may affect recovery of the wSSL. The Council requests that this process of gathering scientific information and hosting workshops include a broad spectrum of scientists who hold various views on the issue of killer whale effects on SSLs.

[The Council received many comments from peer reviewers, other scientists, its SSC, and the public on how transient killer whales may be affecting SSLs in the North Pacific. Some comments indicate that the analysis in the Plan extrapolates inappropriately killer whale feeding dynamics observed in small areas to the larger range of the entire wSSL population. Others object to the apparent one-sided treatment of this issue in the Plan, and disagree with the Plan's denigration of alternative hypotheses. Considerable disagreement exists in the scientific community over this issue, and as a result there is

considerable uncertainty over any one hypothesis. The case has not been made that managers can dismiss the threat killer whales have over portions of or the entire range of wSSL. The Council believes that a more even-handed treatment of this issue is necessary, including fair discussion of alternative hypotheses for how killer whales may have in the past or are currently affecting the wSSL.]

4. The Council concurs with the Plan's recommendation to **reexamine the designation of critical habitat for SSLs**. Listed as Recovery Action 2.1, the Plan gives this a priority ranking of 3. **The Council requests that the priority for this recovery action be changed to 2a**, an action that must be taken as a first priority action.

[Critical habitat was designated for SSLs about 15 years ago. Since that time, scientists have gathered considerable amounts of new information on how, and the extent to which, SSLs use their habitat on a seasonal and a spatial basis. The SSC has recommended that, based on this new information, this recovery action be given a higher priority; the SSC recommends Priority 2a. Other scientists have made similar recommendations, and the Council believes that, based on the many millions of dollars spent on SSL research in the past decade, we now have a far better understanding of how SSLs use their habitat. Since critical habitat was used as a basis for many of the current SSL protection measures, changes in critical habitat designation could benefit not only SSLs but also fishery management.]

5. The Plan sets forth a Recovery Action entitled Develop an Implementation Plan (action 1.5). This action calls for establishing priorities among the individual actions and developing a strategy for their implementation. **The Council requests that NMFS adopt the SSC's recommendation to develop the Implementation Plan and prioritize actions around a multiple hypothesis testing framework**. One of the scenarios should include an assumption of a lower carrying capacity for SSLs in the North Pacific.

[The Council heard testimony that NMFS appears to have used a sequential testing technique in developing the threats assessment in the Plan. That is, NMFS appears to have examined threats individually, dismissing threats one after another that individually do not appear to solely account for the SSL decline, and continuing in a sequential process until arriving at a threat that, in their opinion, may be the only viable hypothesis left. Some reviewers, including the SSC, believe a more appropriate process is a multiple hypothesis approach.

The Council also received comments from scientists, the SSC, and the public that the Plan should consider future conservation of SSLs in light of a changed carrying capacity of the North Pacific. The NPRB review team stated that it is fundamentally important to expect changes in the marine ecosystem and to design research and recovery actions in light of these changes, noting that human effects in the North Pacific have occurred over centuries and have undoubtedly changed the environment that supports SSLs. The State of Alaska pointed out Dr. Doug DeMaster's comment to the SSL Mitigation Committee that SSLs seem to be acting like a population above carrying capacity, and the State recommends research on density dependent effects and the carrying capacity of the ecosystem to support SSLs. The Plan should recognize this possibility and explore consequences to long-term viability of SSLs in light of the carrying capacity dimension.]

6. The Plan's recovery strategy was informed by the use of a PVA. One of the assumptions in the PVA was that the recorded history of the wSSL represents both natural and anthropogenic effects on the population, some of which are unlikely to occur again in the future. The Council believes that the Plan may have understated the influence of humans in the historic declines of the wSSL, and therefore the model projections may be overly pessimistic. **The Council disagrees that the conditions leading to the steep decline through the 1980s will occur again, and requests that NMFS reevaluate the assumptions used in the PVA to project future population growth under current conditions.**

[Factors other than intentional take and unregulated incidental take in fisheries during the 70s through 80s are largely unknown, but the Council believes these are unlikely to reoccur. The Council received comments from scientists and fishermen indicating the intentional take by shooting or mortality in fishing activities was high in the past, particularly in the 1980s, and these conditions will likely never be experienced again in the future. Some have suggested that the intentional killing resulted in a possible differentially high mortality on female SSLs, which would not only reduce female abundance but also affect mortality of attending pups or juveniles. And new analyses have been recently completed (e.g. Turek et al. 2007), and others are anticipated in the near future (e.g. Dr. Gordon Kruse's study of intentional shooting will be available in late 2007), and should be consulted for additional information on events that are unlikely to occur again, and rerun the PVA with more up-to-date assumptions on anthropogenic influences on the wSSL in the past. Also the Council received testimony and comments from scientists that recommend considering density dependence more prominently in the PVA; the Council believes that, again, carrying capacity issues need to be considered as an important factor in retrospective analyses of the wSSL population.]

7. The Council requests that NMFS provide to the Council and the public an annual report on the status of SSLs in the North Pacific. This report would discuss new scientific information, summarize new trends in the population, summarize any actions taken pursuant to the revised recovery plan, and provide information on the status of the population relative to recovery factors and the listing criteria.

[Concerns have been raised by past members of the Recovery Team, the State of Alaska, some independent scientific peer reviewers, other scientists, the seafood industry, and members of the public about the perception of bias in the Plan and selective use of scientific information and hypotheses. The Council shares those concerns, especially since this perception undermines the credibility of the scientific process in the management of fisheries in the North Pacific. The Council believes that the foundation of our system of management is the confidence all parties have in the scientific process. To that end, the Council recommends more opportunity for sharing information, and an annual report could facilitate that process and enhance increased dialogue on implementation of the final recovery plan.]

8. The Council requests that the paragraph under Recovery Action 2.6.6 that discusses the need to account for SSL food requirements when setting acceptable biological catches of groundfish be deleted. The Plan needs to be rewritten to clearly note that the Council does account for these needs, and indeed the needs of the entire ecosystem, when it approves Acceptable Biological Catch (ABC), Total Allowable Catch (TAC), and other harvest limits. **The Council also requests that Recovery Action 2.6.7 be given a priority 3 ranking; it is currently ranked as priority 2b.**

[The Council is concerned that the narrative under Recovery Action 2.6.6 infers that fishery management does not account for the nutritional needs of species that utilize fish targeted in commercial fisheries. The Council in fact deliberately and consciously does account for other ecosystem needs in setting ABC and TAC levels for all target species. This is an integral part of the annual specifications process, and the Council considers other ecosystem issues during its annual review of the ecosystem considerations appendix to the SAFE reports for both the GOA and BSAI groundfish fisheries. The Plan appears to ignore this important step in the annual TAC-setting process, and as currently written, the Plan seems to call for another level of accounting for other ecosystem needs. In that regard, the Plan is misleading.]

Recovery Action 2.6.7 is given a priority 2b designation in the Plan, which mandates this action be accomplished as a second order priority, yet this action is already being done in the normal course of the Council process. As currently written, this action implies that the Council does not consider other ecosystem needs when setting ABC and harvest limits. This is not correct, as the Council indeed does explicitly evaluate the status of the ecosystem in its annual specifications process, as discussed above.

This recovery action should be rewritten to reflect current practice, and be given a lower priority or removed from the Plan.]

9. The Council recommends that NMFS summarize and discuss recent field work on localized depletion in the final recovery plan. As currently written, the Plan largely ignores important work accomplished by NMFS' Fisheries Interaction Team (FIT) whose research in the past several years has focused explicitly on how fisheries may affect the prey field for SSLs.

[The Council received testimony from the public and reviewed minutes of the June 2007 SSL Mitigation Committee that expressed concern that important FIT research results were largely absent from the Plan. Of all the SSL research accomplished by NMFS, the State of Alaska, and other scientists in the past decade, the Council believes that the FIT studies were some of the most directly applicable to the issue of fishery effects on SSLs. The FIT studies were designed to evaluate localized depletion and the effectiveness of fishing exclusion zones around SSL sites, and have produced many reports, papers, and scientific presentations that summarize important information on how fisheries may affect the SSL prey fields. Yet NMFS has not summarized and included in the Plan the results of this important research. The Council concurs with comments it has received, and requests that NMFS document in the final recovery plan the results of the Atka mackerel, Pacific cod and pollock prey field studies.]

In summary, the above recommendations are very important to the Council, and we request that NMFS seriously consider these comments as it finalizes the recovery plan. The Council believes that finalizing the recovery plan should be completed as a high priority task for NMFS, and we look forward to an update on progress at our October 2008 meeting.

Sincerely,

Stephanie D. Madsen

Stephanie D. Madsen
Chair

Cc: Doug Mecum, Sue Salveson, Jim Balsiger, Doug DeMaster, Bill Hogarth

Attachments:

Council and SSC comments on May 2006 draft Revised SSL Recovery Plan

SSC Minutes from August 1-2, 2007 Meeting (review of May 2007 draft Revised SSL Recovery Plan)

Council Motion from August 2-3, 2007 Meeting (on May 2007 draft Revised SSL Recovery Plan)

North Pacific Fishery Management Council

Stephanie Madsen, Chair
Chris Oliver, Executive Director

Telephone (907) 271-2809



605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Fax (907) 271-2817

Visit our website: <http://www.fakr.noaa.gov/npfmc>

August 28, 2006

Kaja Brix
Assistant Regional Administrator – Protected Resources Division
Alaska Region – National Marine Fisheries Service
709 West 9th Street – Room 461
Juneau, AK 99802

ATTN: Ellen Walsh

Dear Ms. Brix:

The North Pacific Fishery Management Council appreciates the opportunity to review and provide comments on the draft revised Steller Sea Lion Recovery Plan (Plan) prepared by the Steller Sea Lion Recovery Team for the National Marine Fisheries Service. Thank you for extending the comment period to September 1, 2006. The Council and its Scientific and Statistical Committee (SSC) and Advisory Panel (AP) received a briefing on the Plan during the Council's June 2006 meeting in Kodiak. Given the importance of this Plan, the Council asked its SSC to make a thorough review of the document. The SSC met August 15-16, 2006 to conduct this review.

The Council convened on August 25, 2006 to review the SSC comments and to formulate recommendations to NMFS on the Plan. The SSC raises a number of concerns and recommendations for improving the Plan. The Council endorses these recommendations, and we ask that NMFS consider all of the SSC comments which are attached to this letter. Below we highlight some of our more pressing concerns:

1. The Recovery Team's Population Viability Analysis (PVA) provided in the Plan has raised concerns. The Council generally concurs with the use of a PVA as an analytic tool, but not necessarily the specific model used by the Recovery Team. **We recommend that the Recovery Team's PVA should be placed in an appendix and specifically referred to as an example, among other available PVA models, of how a PVA can be used to quantitatively evaluate risk to the SSL population.**
2. The SSC has identified a number of weaknesses and desirable improvements to the Plan's PVA model, and recommends that sources of uncertainty in the input parameters be explored. **The Council recommends that the Plan's PVA be rerun using the input parameters outlined in the SSC letter.** Using alternative assumptions and iteratively rerunning the PVA would test its sensitivity to these input parameters.
3. Given the number and the nature of SSC comments on this Plan, **we recommend that NMFS prepare a revision of the Plan and circulate this new draft for public review.** We recognize

that this may require additional time, and perhaps reconvening the Recovery Team, but this effort should produce an improved and more flexible framework for SSL recovery that is more consistent with the best available science.

4. The Plan should eliminate rigid recovery criteria, especially those that may be unattainable. We believe that the future management of SSLs in context with a changing environment evokes a need for a less rigid set of recovery actions; a process for measuring recovery should be dynamic and responsive to new scientific information. **The Council recommends that NMFS consider the following: (a) retain the 15 year time period for down-listing but expand the rationale for this criterion, (b) eliminate the measurement of vital rates as down-listing and delisting criteria, (c) remove the requirement that significant declines not be occurring in two adjacent sub regions, and (d) delete the 50 percent criterion for delisting.**
5. The Plan does not provide a clear rationale for the requirement for an adaptive management program as a needed recovery action for the western DPS. **While an adaptive management experiment could provide helpful insights into effects of fishing on the environment and sea lion response to these effects, we do not believe such an experiment is an appropriate high priority action before the western population is considered recovered, and we recommend this action be removed.**

The Council considers SSL management a high priority issue, and for many years has worked closely with the NMFS Alaska Region to implement fishery management measures to assure protection for this marine mammal while at the same time providing for sustainable fisheries in the Alaskan EEZ. The Council appreciates the work that NMFS and the Recovery Team have put in this draft revised SSL recovery plan, and we look forward to continued work with NMFS on SSL issues in the future.

Sincerely,

Stephanie Madsen
Chair

Cc: Dr. Jim Balsiger, Doug Mecum, Sue Salvesson, Shane Capron, Chris Oliver, Bill Wilson

DRAFT REPORT
of the
SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
August 15-16, 2006

The Scientific and Statistical Committee met during August 15-16 at the Federal Building, Juneau, AK. The meeting was teleconferenced to sites in Seattle and Anchorage and by dial-in from other locations. Members present were:

Gordon Kruse, Chair
University of Alaska Fairbanks

Pat Livingston, Vice Chair
NOAA Fisheries—AFSC

Keith Criddle
University of Alaska Fairbanks

Sue Hills
University of Alaska Fairbanks

George Hunt
University of Washington

Franz Mueter
Sigma Plus Consulting

Steve Parker
Oregon Department of Fish and Wildlife

Terry Quinn II
University of Alaska Fairbanks

Doug Woodby
Alaska Department of Fish and Game

Members absent:

Steven Hare
International Pacific Halibut Commission

Mark Herrmann
University of Alaska Fairbanks

Anne Hollowed
NOAA Fisheries—AFSC

Seth Macinko
University of Rhode Island

Ken Pitcher
Alaska Department of Fish and Game

Farron Wallace
Washington Department of Fish and Wildlife

Population Viability Analysis (PVA) Model

Prof. Dan Goodman gave an overview of the development of a model to conduct Population Viability Analysis (PVA) for the western and eastern DPS segments of Steller sea lions, under the auspices of the Steller Sea Lion Recovery Team (SSLRT). Public comments on the PVA were provided by Dave Fraser (Adak Enterprises Inc.), Kevin Duffy (MCA), and Donna Parker (Arctic Storm).

The PVA model is described in Appendix 3 in the current draft of the Steller Sea Lion Recovery Plan. This model is used in a decision theory framework to derive recovery criteria that satisfy ESA for the western DPS segment of Steller sea lion. **This approach, based on the best science available, helps to formulate a structured and technically defensible approach that offers a quantitative and biologically relevant basis for evaluating risk.** Although the ESA does not provide explicit standards for recovery criteria, it does require that recovery criteria be measurable and objective.) **The SSC recommends that the PVA be moved from the appendix and included in the main body of the recovery plan as a subchapter in the threats assessment section.**

A sub-panel of the SSLRT provided expert opinion for quantification of policy elements, specification on uncertain data elements needed for modeling, and specification of the probability of essential correctness of the core assumptions. The quantitative standard adopted in the PVA was that a quasi-extinction probability of more than 1% in 100 years would leave the western DPS in the endangered category; although another standard could have been specified, this standard has some support in the scientific literature. The reference point for quasi-extinction was assumed to be an effective population size of 1,000, which when adjusted to account for population demographics, corresponds to a total population size of 4,743 individuals.

Core assumptions adopted in this PVA are that:

- The western DPS is governed by the dynamics of a single integrated population.
- The net growth of the western DPS is not moderated by density dependence.
- The population growth rates are independent and serially uncorrelated normal random variables that hold for discrete periods, and the duration of those periods is described by serially uncorrelated exponentially distributed random variables with a mean duration of 10 years.
- Underlying factors influencing population dynamics in the future will not differ from the underlying factors that have governed population dynamics for the past 50 years, except that the component of mortality attributed to human factors (extraneous influences) can be estimated and, to the extent that these factors have been mitigated, can be assumed to not influence future populations.
- Fishery restrictions adopted in 2000 have resulted in a 2.5% increase in annual growth relative to the 1989-2000 period because of reduced prey-competition with the fishery (Table 4).
- There is an 80% probability that the core assumptions of the PVA are correct as estimated by the PVA subgroup of the SSLRT. That is, the combined probability of all other alternatives (which assume there is no risk to the stock) is 20%.
- If the effective population size decreases below 1,000 individuals (corresponding to a total population size of 4,743 individuals) at any time, the population is considered to be extinct and has negligible probability of recovery.

While a PVA could have been structured around alternative assumptions, the assumptions adopted for this PVA are not unreasonable and the PVA modeling approach is not restricted to the particular assumptions used to characterize this PVA. **The SSC endorses the PVA modeling approach as a valuable tool that provides a transparent, quantitative approach that addresses some aspects of the ESA requirements for evaluating risk.** The PVA model is a major advance in linking sea lion dynamics to hypotheses about factors affecting the population. We note in particular that the PVA includes a parameter to represent extraneous mortality (such as that due to shootings in the 1980's) and a parameter to represent hypothetical competition between sea lions and fisheries. Although there are a lot of uncertainties about the model, it has already helped and can help in the future to structure our thinking about the problem, synthesize much of the available data in a coherent approach, identify data gaps, and suggest refutable hypotheses and priorities for research.

The SSC envisions that a formal assessment using this PVA will follow the approval of the recovery plan, and that further refinement and revision of the PVA will continue with regular reports to the Council. Shane Capron (NOAA Fisheries) confirmed that the intent is to review the Recovery Plan every 5 years, which would require PVA model development and results. In essence this would create a parallel assessment process for SSL recovery efforts that would accord with the assessment processes in place for groundfish, crab, and scallops.

The SSC identified a number of weaknesses and desirable improvements that need to be addressed in future iterations of the PVA model:

- The model is a simplification of the real population, lacking age structure, lag effects in recruitment and population parameters, and density dependent effects. Yet the SSLRT assigned the model an 80% probability of being the "correct" model, which seems too high given the uncertainty about the population ecology.
- There is obviously large uncertainty about the "correct" or "best" model to use. Other model structures (e.g. Winship and Trites, 2006, Marine Mammal Science 22:124-155) should be explored, for example models that incorporate age structure and models that incorporate metapopulation structure, both of which are likely to influence estimated likelihoods of extinction. Results of already existing models of Steller sea lion population dynamics should be

compared to the current PVA. (See for example, Gerber and Van Blaricom, 2001; Fay, 2004; Winship and Trites, 2006; Wolf and Mangel, in press).

- Other sources of uncertainty in the input parameters need to be examined through sensitivity analyses, including, but not limited to:
 - The assumed quasi-extinction level of 1,000 effective individuals. This was fixed in the model although the conservation biology literature includes ranges from 500 to as high as 10,000. The choice of this threshold can be expected to have a very large impact on the results.
 - The magnitude of the estimated fishery prey-interaction effect. The estimate (reduction of 2.5% in the absolute annual growth rate between 1989-2000 and 2000-2004) was not adequately justified and is likely to be highly uncertain. One case of interest would be to assume that there is no competitive effect at current prey biomass levels and fishery exploitation rates.
 - The magnitude of the estimated extraneous mortality that can be attributed to incidental takes, harvests, etc., is not known with certainty and should be examined through sensitivity analyses or modeled as stochastic processes.
 - The assumption that growth rates in successive periods are independent is likely to have an important influence in the results and should be closely examined. There appears to be positive autocorrelation in the growth rate between periods, which is not accounted for in the present model.
 - The effects of assuming a constant growth rate within a period.
 - The effect of weighting each observed growth rate equally, even though the rates were averaged over very different periods of time, ranging from 5-19 years. This has the effect of overstating the impact of the steep decline observed between 1985 and 1989. One alternative approach would be to combine two shorter periods. For example, 1977-1985 and 1985-1989 could be combined into a single period that would correspond to a known oceanographic regime. Other approaches include weighting period-specific growth rates by the number of years over which they were averaged, or representing growth rates as a moving average process.
 - The assumption that the population does not display density dependence was not adequately justified and models with density dependence should be explored. In particular, it would be of interest to determine the effect of increasing the growth rate at low population levels to 5-10% as has been observed in other pinniped populations.
 - The probability that the PVA model is correct.

The description of the PVA should be revised so that the rationale behind the assumptions and model specification are made more transparent. The rationale for aggregating survey data to the level of a single DPS-wide growth rate spanning a number of years is presented as a preferred choice while metapopulation structure, regional, or rookery-scale observations, or shorter-time scale observations were dismissed without discussion. Given the constraints imposed from utilizing only five growth rates to model a growth rate distribution, further discussion is warranted to enable the reader to understand the basis for the choice of binning. The data used to choose an effective population size threshold of 4,783 animals should be explicitly described, not just providing a reference to genetic effects. The rationale for choice of values for biological parameters and values for the fishery competition effect in Table 4 should also be made explicit. The term "regime" should be replaced with the term "period" as regime causes direct confusion with generally accepted oceanographic regimes that do not precisely correspond with the five periods represented in the PVA model.

The PVA provides a useful framework for future evaluation of population recovery and changes in extinction risk. In the future, as additional consistent, spatially discrete biennial counts are completed, the PVA model can be refined to better reflect information on distribution of growth rates to more accurately

describe the variance in that distribution for forecasting. This should allow the approach of other modelers to be incorporated and yielding a currently optimal model form and parameter choices and to ultimately create a spatially explicit metapopulation model of the western DPS.

SSL Recovery Plan

The SSC received a presentation on the draft revised Steller Sea Lion Recovery Plan at the June 2006 meeting in Kodiak. At this meeting, the SSC identified major issues and developed comments on the plan as advice to the Council.

The SSC appreciates the efforts of the SSL recovery team to provide a balanced and fair treatment of the difficult issues surrounding development of a recovery plan. Public comments were provided by Dave Fraser (Adak Enterprises Inc.), Kevin Duffy (Marine Conservation Alliance), Doug Eggers (ADF&G), and Donna Parker (Arctic Storm). The SSC identified seven major issues within the recovery plan for which we offer the following comments and recommendations.

Population Structure

The SSC recommends that the plan be revised to provide a more comprehensive examination of the structure of the SSL population. For present legal purposes, there are just two segments – the eastern DPS and the western DPS. However, from a scientific perspective, there needs to be a more thorough evaluation of whether the population dynamics of this species are well described as two largely independent population segments or if it would be more realistic to describe the SSL as a metapopulation. A metapopulation, by definition, consists of discrete population segments (perhaps rookeries or fixed or slowly shifting sets of rookeries) connected by dispersal, where the dispersal among segments is not so minimal as to be negligible, nor so great that local dynamics are swamped. Information is presented in the recovery plan on segment mixing and on nuclear DNA research suggesting that male dispersal and inter-segment mixing may be higher than would be concluded from the mtDNA research alone, supporting a metapopulation interpretation. If the issue of population structure cannot be resolved, at a minimum, the management implications of the several possibilities should be clearly spelled out.

Biological Criteria

The delisting criterion for the western DPS (3% average annual increase for 30 years) is poorly motivated; the logic of using the recent history of the eastern DPS as a model for criteria to apply to the western DPS is, at best, questionable. A logically consistent approach could be based on a quantitative assessment of the probability of extinction in a specified time period for down listing and delisting, as would be provided by a PVA, as discussed above. If the population risk of extinction as generated by the PVA is above the threshold for down listing or delisting, then biological criteria (vital rates) are irrelevant. It is only if the population does not meet the stated thresholds that other data are needed to help explain why and help to define the threat to the population. The rationale for criterion 3, which requires that no two adjacent population units are simultaneously in decline, should be grounded in sound science, possibly from results of a spatially distributed or metapopulation-based PVA model. A criterion of this sort should reflect the reality of the spatial correlation that is likely to occur between adjacent areas due to the spatial and temporal scales at which oceanographic processes are likely to operate. Also, the SSC suggests that the plan clarify that this criterion applies for the specified time period in criterion 1, and that this criterion is predicated on criterion 1 being achieved.

Research plan to test the three major hypotheses (climate, killer whales, prey availability)

The SSC recommends that there be greater consistency within the plan in the treatment of hypotheses. In particular, Appendix 2A cites a substantial body of evidence that is inconsistent with nutritional stress as a causative factor in the 1990s, whereas the plan (p. 89-92) purports that evidence that sea lions were nutritionally stressed in the 1990s has been inconclusive. The recovery plan should be revised to reflect the evidence presented in Appendix 2A or should include explicit arguments for why that evidence is rejected. **We recommend that Appendix 2 be incorporated into the body of the recovery plan and that the distinction between acute and chronic nutritional stress be clarified.** The recovery plan needs to be more consistent in its treatment of the sequential megafaunal collapse hypothesis, which is thoroughly discounted at one point and then resurrected (p. 110) as though it had not been discounted. The possibility that climate-related changes in the prey base have served as a significant forcing function in SSL population changes is dismissed too quickly (p. 86), particularly given evidence for such changes in seabird data. **Greater consistency and less repetition are encouraged.**

The SSC suggests that the recovery plan could be improved by inclusion of a table comparing the hypotheses with any additional data to date. (See for example the NRC 2003 report.) Appendix 2A cites a Table 1, which was not included. Table 111-2 (p. 93) may be related to the missing table.

The SSC remains supportive of the development and implementation of an adaptive management program, but recognizes the difficulties in constructing and implementing such a plan. The problem with the current recovery plan is that it requires that the implementation of an adaptive management plan is "necessary to prevent extinction" but provides no rationale for this requirement. The SSC does not agree that an adaptive management program should be a required element of the recovery plan. Nevertheless, we continue to strongly support the design of experiments at small but meaningful spatial scales with the appropriate level of monitoring to document effects of fishing on target and incidental species and habitats as well as sea lion response to those effects. The focus of the experiments should be to determine the level of fishing in the vicinity of rookeries that has a detectable effect on vital rates and population status of SSL.

Efficacy of Past Management Measures

There needs to be better quantitative assessment of the efficacy of management measures and population increases and benefits. The recovery plan is very vague in this regard but mainly points to management measures in the 1990s as being responsible for the population stabilization observed. The plan needs to be more specific about the exact measures and when they were put in place and the timing of observed population stabilization, along with an analysis, couched in terms of time-lags associated with SSL population dynamics, that examines the concordance of in population-level responses with implementation of those measures. A table with a chronology of management actions would be a helpful starting point.

Critical Habitat Designation

When NMFS adopted the 20-nm buffers in 1993 (federal rule 50 CFR Part 226), they stated:

"It is important to emphasize that in designating these extended aquatic zones, NMFS is not attempting to justify or prove that these areas, in fact, actually do need special management or special regulation, but rather that these areas may be in need of management."

NMFS went on to say:

"If and when specific management measures are proposed, it is anticipated that the proposed rule will explain the scientific basis and justification for the measures."

Regarding the need for scientific justification, NMFS pointed out that new research was planned on sea lion foraging behavior including satellite telemetry studies and that

“Modification of critical habitat designation or specific management measures may be considered based upon this research.”

Given the extensive research that has ensued in the past 13 years, it would be expected that the basis for designating critical habitats would have a stronger scientific basis. Critical habitat designations should be reviewed and adjusted to better reflect research findings.

Threats Assessments

The ranking of impacts of threats appears to be subjective. For example, the medium rank for toxic substances seems high given the information on toxin levels reported in the recovery plan; however, as learned in discussion, the medium ranking is due to concerns for toxins in Russian waters. It would be helpful to have the basis for this and other ranking to be better clarified in the plan.

Although rankings for incidental take in fisheries are based on the available data, some of those data seem ripe for reconsideration. For example, the take estimate for the Prince William Sound gillnet fishery has been carried forward from an extrapolated estimate that is likely too high; whereas takes in unobserved fisheries may not be adequately accounted for.

Priorities for Plan Actions

The plan provides a long list of priority actions (p. 157-163) that must be taken. The requirement to take action on tasks under all three priority levels seems implausible given the extensive and varied list of actions. **If the language used to define the priorities is based on a NMFS standard and is required for this purpose, then this should be clearly described for the reader's benefit.**

Other Specific Comments

The following comments are offered for consideration when the final revision of the SSL Recovery Plan is prepared.

1. The SSL Recovery plan should include estimates of the costs (foregone net revenues) to industry of existing SSL conservation measures and the relative distribution of costs across industry sectors and regions, especially for IRFA small entities.
2. If a Russian/Asian population segment is included in criteria that affect ESA listing, the Department of Commerce should explore trade measures to ensure that the U.S. industry, which incurs elevated costs to accommodate SSL conservation measures, is not unduly disadvantaged in competition with domestic imports of Russian/Asian product that does not incur comparable costs of SSL conservation measures.
3. Trend Analyses (p. 11-21)
The trend analyses have several inconsistent or questionable attributes:
 - a. In the trend model, parameters are assumed to be fixed as presented in the plan, yet PVA analysis is predicated on the assumption that the parameters are stochastic. To be consistent, the trend analysis should use a random coefficients estimator rather than ordinary least squares.
 - b. The trend models assume that the observations are drawn from a homoskedastic distribution, yet some of the observations are composites across multiple years and others (i.e., 2004) have been deflated by an assumed constant (3.64%). It is unreasonable to assume that the variance of observation errors associated with these data are constant. The trend analyses should use a GLS or MLE estimator designed to address heteroscedasticity.

- c. The trend models as specified are monotonic and consequently do not allow for density dependence.
 - d. Some of the trend models omit observations (e.g., trend estimates for St. George Reef, CA omit the observation for 1994). Other trend models include observations that represent incomplete censuses (e.g., the 1990 observation for the Western Aleutian Islands do not include observations from the Gillon Point and Agattu Island). The rationale for these omissions and the inclusion of incomplete observations should be discussed in the text or in footnotes.
 - e. Because the trend models were estimated as log-transforms of simple exponential models, the default statistics reported in the regression analysis are for the log-transformed relationship. These statistics should be rescaled and expressed in terms of the untransformed data. For example, for St. George Reef, the reported value of R^2 is 0.703 with a p-value for the associated F-statistic equal to 0.009. When rescaled in terms of the untransformed data, the value of R^2 is 0.808 with a p-value for the associated F-statistic equal to 0.002.
 - f. Because the trend models share a common set of explanatory variables and because the allocation of counts to six regions is arbitrary, there would be strong advantages to using a seemingly unrelated regression (SUR) or other simultaneous equation model to estimate model parameters and to test the statistical significance of differences in the estimated parameters between regions.
 - g. Autoregression and moving average models or polynomial time-trend models can also be used to estimate or describe trends without imposing the assumption that the trend is constant across the observation period.
 - h. The use of linear splines to represent hypothetical changes in trends needs to be cautioned: the analysis should explicitly note that the splines were specified rather than fitted and that the same discontinuities were assumed for all regions. If the model is to be represented using linear splines, an MLE technique should be used to select the number of splines and the locus of the discontinuities simultaneous with estimation of the coefficients. In regards to the apparent upswing in growth rates, the SSC recommends an analysis be conducted to evaluate the significance of changes in trends circa 2000.
4. (p. 14, bottom). It was surprising that papers on historical declines such as Causey et al. 2005¹, and others cited in Hunt and Stabeno (2005), most notably Turner (1886) are not cited. Additionally, Nelson (1987) provides useful information on past changes in SSL numbers in the Aleutians:

Nelson, E.W. 1887. Mammals. Page 267 in H.W. Henshaw, ed. Report upon natural history collections made in Alaska between the years 1877 and 1881. Report III, U.S. Government Printing Office, Washington, D.C.

Some quotes from this publication include:

- *Formerly they were abundant all along the Aleutian chain. They are now so scarce among these islands, and the ones that are found there frequent places so difficult to access, that the Aleuts secure very few of them each year. They are still rather common at a few points along the north shore of Unimak Island and the peninsula of Alaska, while small parties are found scattered all along the Aleutian chain, hauling up on certain rocky points and shelves facing the sea, most of which are well known localities to the Aleuts.*

¹ See Fisheries Oceanography 14 (Suppl. 1) 2005.

- *From the Aleutian Islands eastward and southward they occur all along the coast to California, where their range overlaps that of the southern species.*
 - *The natives of the Seal Islands (Pribilof Islands) claim that nearly seventy years ago the sea lions alone occupied nearly all of the shore line of Saint George Island, and numbered several hundred thousand individuals. By direction of the Russians they were driven off repeatedly until they left the place, and the shore was then occupied by fur seals.*
 - *Like the fur seal they have a dreaded enemy in the Killer Whale, which pursues and captures them at sea and about their rocky resorts. The native hunters when at sea frequently see them leaping high out of the water in useless endeavor to escape their pursuers. At such times they say it is dangerous for an umiak or other small boat to be in the vicinity, as the animal, in its terror, will sometimes leap into and wreck the boat. They are hunted with gun and spear in the Aleutian Islands, but, unlike most seals, if shot in the water in summer they will sink at once, owing to the small amount of fat on them at that season. In common with the fur seal, this species has the habit of swallowing stones. Mr. Elliott found stones weighing a pound or two in their stomachs, and preserved one stomach containing over 10 pounds of such stones.*
5. (p. 16). The description of population trends in Russian waters is presented in an odd way. First, there is the good news of recent increases, then discussions of earlier declines, with the reader left with the impression that these populations are not recovering. Table 1-4 suggests very strong recovery. What, if any, special protections are in place to aid this population segment?
 6. (p. 17). Nearly all increases in pup numbers in SE Alaska have been in new rookeries. Is the size of rookeries in SE Alaska determined by prey availability or the availability of suitable terrestrial space?
 7. (p. 17, bottom, to p. 18, top). It was surprising to see no mention about shooting of Steller sea lions at salmon net pens in British Columbia, particularly in the late 1990s. A timeline of management measure implementation in BC would be a useful addition to the plan.
 8. (p. 31). Herring is listed as an important prey in many areas, but Bering Sea populations of this fish have not recovered from heavy fishing pressure in earlier decades. Likewise capelin populations are down in the Bering Sea /Aleutian Islands. How does the seasonal availability of these fish fit with periods when juvenile Steller sea lions are weaning?
 9. (p. 35-36). Discussion of ecosystem interactions for the western DPS should reference recently published work on the marine ecosystem in the central and eastern Aleutians (e.g., 2005 Fisheries Oceanography, supplement).
 10. (p. 61-62). As noted in the NAS (2003) report, elimination of the provision to use lethal deterrence in commercial fisheries in 1990 and the reduction in the rate of the sea lion population decline starting in 1990 are unlikely to be mere coincidence. The number of shootings is not well documented, but anecdotal reports suggest that it may have been substantial. Much shooting of sea lions was reported in conjunction with the pollock roe-stripping fishery in Shelikof in the mid to late 1980s.
 11. (p. 62). The historical review of conservation measures regarding incidental takes is rather weak. For instance, the thousands of sea lions that were incidentally caught in the roe-stripping fishery in Shelikof Strait in the 1980s are not mentioned. That fishery was eliminated, in part because of the sea lion issue but also because of concerns about wanton waste. The section does not mention that NMFS observers are confined to groundfish vessels and does not report the large number of small vessels lacking coverage, nor the lack of observers on salmon and herring vessels, for instance. There is a

long history of interactions between longline, troll, and other fishing vessels and sea lions since the start of these fisheries in the late 1880s.

12. (p. 75-76). The review of orca predation is thorough. However, regarding sharks, it is difficult to fully rule out the possibility of sleeper shark predation on sea lions as only one study examined the diets of sleeper sharks near rookeries. Hulbert et al. (2006) found sleeper sharks to be an ambush predator with significant depth and geographic overlap with sea lions; they concluded that predation potential exists. Documentation of harbor seal remains in sleeper shark stomachs by Sigler et al. (2006) demonstrates that sleeper sharks are capable of consuming mammals of the size of sea lion pups or juveniles. Finally, a congener, the Greenland shark, has been implicated to inflict significant mortality on harbor seals on Sable Island, Nova Scotia, so population-level effects of shark predation are possible. Given this information, it seems premature to fully discount sleeper shark predation on Steller sea lions.
13. (p. 76). Potential beneficial relationships with fisheries should be considered and discussed. Sea lions have been depredating commercial fishing gear since commercial fisheries began in Alaska in the late 1880s. Presumably, there is some energetic benefit to consume a longlined cod or gillnetted salmon, both in terms of caloric intake and reduced energetic costs from not having to seek and capture a free-swimming prey. Discards may also benefit SSL.
14. (p. 76). It is puzzling why, in the discussion of the impact of commercial harvests on pinnipeds, there is no discussion of what has happened with northern fur seals since the early 1900s.
15. (p. 76-77). In addition to subsistence hunting by natives, non-natives also hunted sea lions as a cheap source of protein on fox farms. Also, shooting sea lions was considered great sport in the time when such shooting was not only legal, but encouraged by state and territorial governments.
16. (p. 78-79). The total incidental take of sea lions by the joint-venture trawl fishery in Shelikof Strait in the 1980s is underestimated by observer counts of sea lions taken in trawl cod ends transferred to motherships. Anecdotal estimates indicate that a similar number of sea lions were shot as fishermen tried to protect their nets and catches when nets were dragged near the surface by boats that were in cue for delivery to the motherships.
17. (p. 80). When attempting to estimate rates of sea lion entanglement in fishing gear, it should be noted that a significant proportion of sea lions sink immediately after death, thus reducing the probability of recovering carcasses on beach surveys.
18. (p. 86). The description of groundfish harvest strategy for the North Pacific is oversimplified and misleading. A $F_{40\%}$ harvest strategy is not exactly a MSY harvest strategy; a $F_{35\%}$ harvest strategy results in harvests somewhat less than those that would result from a F_{msy} strategy. The $F_{35\%}$ is set as overfishing, which is a limit not a target. $F_{40\%}$ results in harvests set to be safely below $F_{35\%}$. Possibly, higher fishing levels have been applied in parts of the Pacific region and BC, where sea lion numbers are increasing.
19. (p. 88-89). Much of the argument about diet overlap with other apex predators seems irrelevant. Seabirds take a trivial proportion of the prey biomass that might be of use to sea lions, and grey whales use small benthic invertebrates that they sieve from the mud. If forage fish are acknowledged to be of critical importance to sea lions, then increasing numbers of humpback and fin whales may be significant competitors. If this issue is to be invoked, why not examine the spatial relationship between the distributions of these two whale species and the diets/population trajectories of the sea

lions? Competition for forage fish from adult pollock and cod may be substantial and should be discussed.

20. (p. 95). The discussion of Grebmeier's paper seems irrelevant given the types of benthic invertebrates that she is discussing and the region where she is working.
21. (p. 97 on). There seemed to be much repetition in this section of material covered in Section III. The new presentations in Section IV, however, did not always follow the flavor of those in Section III, which was confusing. It would have been useful for this section to focus on the interpretations of the threats. At the end of section 1. Direct Threats, and 2. Indirect Threats on page 98, one would like to know what these findings meant.
22. (p.97-98). Classification of direct and indirect threats is not entirely clear. It is stated that *direct effects* are those that kill individuals and reduce survival rate and that *indirect effects* are those that reduce body condition. Most animal species can die of diseases and lethal doses of toxins, however, these two sources are placed in the *indirect threats*. Conversely, disturbance is listed as *direct*. This is understandable, if a disturbed animal tramples a pup or is consumed by a killer whale, but one would expect most disturbed animals to simply increase their activity rate, perhaps lowering their body condition (unless they caught a nice juicy salmon while in the water). In sum, the black/white distinction of direct/indirect is not likely to be so sharp; some threats fit into both categories as currently defined.
23. (p. 97, bottom to p. 98, top). The plan says,
If one or more direct threats were major impediments to recovery for the western DPS, continued low rates of juvenile and/or adult survivorship would be expected or observed, potentially with little or no change in fecundity, birth rates or condition. Current estimates of sea lion vital rates do not follow these expected trends.
This seems to be a sweeping, unsubstantiated conclusion. There is an unsubstantiated statement on p. 90 saying,
However, total birth rates at some rookeries and overall survival rates appeared to be lower in the 1990s.
These are examples of internal inconsistencies. Also, one does not expect all threats to be 100% or 0%; that is, reduction, but not elimination, of illegal shooting could have increased survivorship modestly, but not to full potential that would be associated with an absence of shooting.
24. (p. 102 top). The invocation of the precautionary approach here seems strange. From a management prospective, the precautionary approach would be to dismiss the role of killer whales and focus on the potential role of fisheries, which is the only area in which we can take precautionary action.
25. (p. 102 middle). The relevance of whether the present climate shifts are outside the range of past climate shifts is not clear. Almost certainly there have been climate shifts in historical, let alone prehistoric times, which rival those of the present. However, the changes in the present have taken place in the context of an altered ecosystem and thus may stress sea lions in ways that were not present before. A quick look at the Aleutian volume of Fisheries Oceanography will provide evidence of major declines in sea lion populations and shifts in populations of fish in the not so distant past.
26. (p. 102). It is not accurate to say that fish community structure in the eastern Bering prior to the 1976-77 regime shift is similar to that of today. Community structure is more than just species composition- the proportion of those species also plays an important role. Arrowtooth flounder and other flatfishes increased substantially, pollock increased and then decreased, salmon increased and

stayed high, and changes in forage fishes have been observed. So, it is hard to accept this assertion without some supportive analysis. Qualitatively, looking at Table I-13 on p.49, it almost looks like squid and octopus were significant portions of the diet before the decline in the 1940s to 1970s and again in the late 90s and 00s. Apparent increases in squid bycatch in the pollock fishery in Shelikof Strait in recent years and EBS this year makes one wonder whether squid abundance has increased or their distribution has shifted to favor feeding by sea lions. Perhaps the relative abundances of squid and octopus have changed over time; they do seem to be important to the diet of sea lions.

27. (p. 103 middle). The issue of a 60% reduction of biomass in multiple prey species is invoked, but it is not clear that this is the case in the Bering Sea Aleutian Islands. Circumstances in SE, the Gulf of Alaska, Aleutians and Bering Sea are all quite different. There is a need to be explicit about which area is being referred to, and how well information from one area can be extrapolated to another.
28. (p. 109, Summary and Scenarios). The statement is made that, *Steller sea lions had adapted to and accommodated fluctuations in the carrying capacity ... and apparently maintained, on average, a relatively large population size.* Again, published accounts from Nelson (1887) directly contradict this statement; apparently the western stock of sea lions had experienced a dramatic decline to low abundance by the 1880s before substantial fisheries developed. To reiterate, a relevant quote from Nelson (1887) is: *Formerly they were abundant all along the Aleutian chain. They are now so scarce among these islands, and the ones that are found there frequent places so difficult to access, that the Aleuts secure very few of them each year.* Of course, there could be a role of subsistence harvests in this decline, so former declines may not be fully attributable to natural causes.
29. (p. 109, Summary and Scenarios). These scenarios come across as rather speculative, although there is a substantial literature that evaluated roles of predation, fisheries, and multiple factors on the sea lion population; this literature should have been better cited when making statements and drawing conclusions.
30. (p. 114). The argument that the current measures should be maintained because “apparent population stability in the last 6 years is correlated with comprehensive fishery management measures implemented since the late 1990s” is spurious. Correlation cannot be equated with causation. This can be demonstrated by the observation that “*apparent population stability in the last 6 years*” is also positively correlated with the magnitude of SSL research expenditures, the average salary of SSL researchers, and the decline of tropical rainforest cover.
31. (p. 116). The statement is made that the eastern DPS has been recovering for nearly 30 years. Yet, no information was presented to suggest that the eastern DPS has ever been as abundant as it is now. Thus, the term “recovering” is unjustified.
32. (p. 117). The choice of statistically significant increase over 15 years appears arbitrary and subjective. There are no statements about what “statistically significant” means. With a enough data points, an increase of 0.01% is significant. Most real populations increase and decrease over different periods. So, the way in which the increase is calculated will determine the outcome of the significance test. Conditions (2) and (3) are vague and highly subjective. Similar reasoning was used to leave the eastern DPS as “threatened” in 1997 even though, in hindsight, the basis for listing is not strongly motivated.
33. (p. 118). The statement is made that, *Modification of the foraging habitat of the western DPS of Steller sea lion, through both natural and anthropogenic sources, likely resulted in decreased survival and reproduction and may currently limit recovery.* This appears to be the first place in the

document where it is indicated that the sea lion's habitat has been modified. Citations and supportive information are necessary prior to making such a statement.

34. (p. 119). Why would the risks of disease increase if the population declined further? If the animals are less crowded, transmission may decline, though clearly, as a population declines, each death has a greater proportional effect.
35. The recovery plan does not address any actions or planning for the possibility of future decreases in SSL abundance. Given the historical population trend, and the lack of understanding of what is driving the trend, an argument could be made that further poor performance is not unlikely in the future, and it will not be possible to assign impacts to anthropogenic versus natural causes. Explicit planning for this occurrence, and rationale for any management response should be present in the document.
36. Misc. errors:
 - p. 113 misspelling of discrete
 - p. 117 item 2: "determine that whether" – wording problem
 - p. 132 misspelling of implementation.
 - p. 132, item 5: "examines possibly effects" – some wording problem here
 - p. 136: misspelling of Ecosim.
 - p. 157: The threats legend for this table does not describe what "M" is.

DRAFT REPORT
of the
SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
August 1-2, 2007

The SSC met during August 1-2, 2007 at the Marriott Hotel, Anchorage, Alaska. Members present were:

Pat Livingston, Chair
NOAA Fisheries—AFSC

Keith Criddle, Vice Chair
University of Alaska Fairbanks

Sue Hills
University of Alaska Fairbanks

Anne Hollowed
NOAA Fisheries—AFSC

George Hunt
University of Washington

Lew Queirolo
NMFS—Alaska Region

Terry Quinn II
University of Alaska Fairbanks

Farron Wallace
Washington Dept of Fish and Wildlife

Doug Woodby
Alaska Department of Fish and Game

Members absent were:

Bill Clark
International Pacific Halibut Commission

Gordon Kruse
University of Alaska Fairbanks

Seth Macinko
University of Rhode Island

Franz Mueter
SigmaPlus Consulting

A. Review of May 2007 Draft Revised SSL Recovery Plan

Presentations were provided by Bill Wilson (NPFMC staff), Kaja Brix (NMFS-PRD), Tom Gellatt (NMFS-NMML), Lowell Fritz (NMFS-NMML), Paul Wade (NMFS-NMML), Tom Loughlin (TRL Wildlife Consulting), Don Bowen (NPRB Review Panel), and Earl Krygier (ADF&G). Public testimony was provided by Andrew Trites (UBC, NPMMC, and former member of SSLRT), Dave Fraser (FV Muir Milach and former member of SSLRT), John Gauvin (H&G Workgroup), and Dave Benton (MCA).

The May 2007 revision of the May 2006 draft recovery plan prepared by the Steller sea lion recovery team (SSLRT) was taken on by a group within NOAA because the SSLRT was disbanded upon completion of the May 2006 draft. The SSC notes that although the revised draft recovery plan built on the foundation of work completed by the SSLRT, the current draft was not reviewed or approved by the SSLRT.

The SSC appreciates the substantial efforts that were involved in developing the revised draft recovery plan and in organizing the external reviews of earlier drafts of the recovery plan. Some portions of this draft have incorporated previous comments made by the SSC. However some issues are still outstanding and these form the basis of our comments that follow.

Background and Conservation Measures

Distribution and Population Structure. The SSC appreciates the added information on the Asian portion of the wDPS and some additional discussion on the possibility of SSL being a metapopulation. However, metapopulations or other alternatives to the current legal structure of two distinct populations should be developed further. In particular, a discussion of the criteria (for example rates of movement in addition to genetics) that would be needed for the agency to revise its determination of the population structure would be helpful. The SSC recognizes that analysis and interpretation of genetic and movement data is

not easy. **Therefore, until stock structure has been definitively delineated, the recovery plan should explore the management implications of possible alternative stock structures.**

The recovery plan does not include a parallel discussion of population structure (or lack thereof) for the eDPS. As a basis for and justification of the subsequent lack of subregional recovery requirements, it seems reasonable to expect evidence here that the eDPS has no structure, or much less than that in the wDPS. This aspect of similarity or dissimilarity between the eDPS and wDPS should be explored.

Habitat characterization and use. The new information on habitat usage by Steller sea lions (presented in section 2—Marine Habitat Use) improves on the information that was originally used to designate critical habitat (section 3—Designated Critical Habitat). Thus, in accord with our previous recommendations, the SSC recommends that Recovery Task 2.1 (maintain, modify as needed, critical habitat) be given a priority of 2a instead of 3.

Feeding Ecology. Data on energetic demands should be addressed separately from discussion of the validity of the “junk food hypothesis”; understanding energetic demands is important to understanding potential impediments to Steller sea lion recovery irrespective of the validity of the “junk food hypothesis”. Continued use of the term “junk food” in reference to nutritional studies is confusing and should be discontinued.

Factors Potentially Influencing Western and Eastern Populations

Overall, this section presents a comprehensive discussion of the potential threats to Steller sea lion recovery. **The SSC is not aware of additional threat factors that should be considered, but notes that the recovery of Steller sea lions will be influenced by the interplay of multiple factors.**

Issues of food quality and/or limitation are discussed in three sections of the document: page 40, page 81, and page 100. This treatment is confusing. On page 81, the document correctly states that bottom up forces may result from: a) natural changes in the species composition, distribution or quality of prey; or b) changes in the species composition, distribution or quality of prey caused by fishing. However, the discussion of the influence of these changes on Steller sea lions appears on pages 40 and 100. Page 81 notes that the potential effects of bottom up forcing include changes in size at age and the number of successful pregnancies. Juvenile survival should be added to this list. Likewise, page 100 should include a discussion of nutritional stress related to changes in prey diversity.

Care should be taken to differentiate between the effect of shifts in the abundance and composition of Steller sea lion prey and the nutritional value of gadids and other forage fish.

It is important to maintain balance in the presentation of alternate hypotheses. For example, on page 101, the document cites a paper by Fritz and Hinckley (2005) as conclusive evidence that climate-induced changes in prey availability were not associated with the Steller sea lion decline. For balance, this section should reference the paper by Trites et al (2006), which suggests that climate-induced changes may have contributed to the decline. **The SSC notes that climate-induced shifts in the carrying capacity could occur. These shifts could influence the abundance and distribution of prey.** Differentiating between climate-induced and fishery-induced reductions in carrying capacity will be difficult but is of substantial research and public interest.

The SSC appreciates that the revised draft recovery plan includes historical references. However, it may be advantageous to consider including the historical references under a separate section, to highlight that the information is different in scope and character from information generated in modern sampling efforts.

The draft recovery plan should include additional explanation of the reasons for which the threat assessment for killer whale predation was downgraded from high to medium. Was the change made because there is a low probability of mitigating the impact, or because the weight of evidence suggests

that the estimates of killer whale predation do not exceed the estimated natural mortality rate of Steller sea lions? The draft recovery plan should explain if the threat assessments, in general, are influenced by mitigation potential. **Threat assessment should be determined independent of mitigation potential.**

The section on sequential megafaunal collapse should be moved either immediately before, or immediately after, the section on the potential impact of killer whale predation. **The SSC agrees with the NPRB reviewers who remarked that rejecting the sequential megafaunal collapse hypothesis does not lessen the possibility of top-down impacts of killer whale predation; it is a separate issue.**

The SSC was pleased to see the new information on transient killer whale abundance, distribution and diet in the document and in Paul Wade's (NMFS-NMML) overview of recent information on transient killer whale abundance, distribution, and diet that was used for the new killer whale threat discussion.

Throughout the document (e.g., pages 27, 42, 82, and 106) the recovery plan references Holmes et al. (in press) as a study that provides evidence of prolonged declines in birth rate. The SSC received a pre-publication copy of this manuscript. Page 17 of the manuscript includes a description of sensitivity analyses that were conducted. However, none of these examples held birthrate constant. Figure 4 of the manuscript shows adult survivorship was perhaps inversely correlated with birthrate. The constant birthrate hypothesis would balance the hypotheses regarding change in birthrate and change in juvenile survivorship.

Threats Assessment

Overall, this section presents a comprehensive discussion of potential threats to Steller sea lion recovery that might be operating in both the eastern and western DPS. Sections of the recovery plan regarding threats posed by killer whale predation, threats posed by environmental change, and threats posed by competition with fisheries have been revised from the 2006 version of the plan that was provided to the external reviewers. **To guard against the perception of an unbalanced treatment of the scientific data, and to be sure that all new data are included, a small group of non-agency scientists should be included in a team responsible for preparing a final draft of the recovery plan.**

- The ranking of impacts of threats needs further clarification. How was the "weight of evidence approach" used to categorize the relative impact of each threat? Providing detailed explanation of how factors were ranked and what influenced the ranking decisions would contribute to public understanding.
- The SSC notes that the recovery plan includes separate discussions of the food web and threats affecting Steller sea lions. This partitioning results in discussions on nutritional stress being presented several pages after the discussion of bottom-up forcing. The section on nutritional stress should be moved closer to or included in the bottom up section.
- The recovery plan concludes that toxic substances are found in relatively low concentrations in SSL tissues and provides no evidence to support the "medium" threat level designation. Further clarification is needed.
- Although the reasons for the decline of the western DPS are unlikely to ever be known with any degree of certainty, it is clear that the factors responsible for the decline may not be identical to the factors limiting population growth at this time. This realization is mentioned in the recovery plan but further discussion of how multiple factors may be operating and may have differing strengths in various regions is warranted.

Recovery Strategy, Development of Recovery Criteria, and Delisting Criteria

One substantive improvement in this draft recovery plan is that it more fully incorporates the PVA model developed by Goodman. The SSC reiterates that an appropriately structured PVA “provides a useful framework for evaluation of population recovery and changes in extinction risk”. Nevertheless, endorsement of the use of a PVA, should be understood as an endorsement of PVA as an analytic framework designed to highlight assumptions and data gaps; our August 2006 report includes several recommendations for needed improvements and modifications to the PVA developed by Goodman as well as several suggestions for improvements that are needed in the estimation and forecasts of population trajectories. While our advice was acknowledged in NMFS’ response to comments, the technical issues that we identified in the PVA and in the trend projections have not been addressed in the current draft recovery plan. The extinction risk of 1% in 100 years, lack of density dependence, and use of old growth rates in the PVA are examples of assumptions that need to be re-examined in future analyses.

The recovery criteria are based on an assumption that a change in carrying capacity has not occurred, even though the recovery plan (page 89) acknowledges that it may have. **The recovery plan should include a discussion of how a modified carrying capacity might affect the appropriateness of the proposed recovery criteria.** When the PVA is developed for the implementation plan, the issue of a change in carrying capacity should be fully explored.

The recovery plan should include a more detailed explanation of the reasons for the recovery criteria and how their attainment will be assessed. For example, more justification is needed for using the 100-year timeframe as a recovery criterion for Steller sea lions, a pinniped with a shorter generation time than is characteristic of the large cetaceans for which the 100-year timeframe was developed.

The description of the recovery criteria should be revised to emphasize that the specific values obtained (e.g., 3% over thirty years) are subject to revision as new information becomes available and new analyses are undertaken. Furthermore, those values should be connected with the concepts of recovery explained earlier in the section involving risk probability and increasing population trends.

Recovery criteria are required to be objective and measurable under the ESA. However the first and second downlisting criteria (page 136) are vague with respect to the definition of statistical significance and need to be defined explicitly.

NMFS has indicated that it intends to revisit recovery criteria every five years, but this schedule is not specified in the body of the recovery plan. In fact, the only place that modification of approved recovery plans is mentioned is in the discussion on page *ii*. There it says that plans may be changed for “new information, changes in species status and the completion of recovery actions.” Is this really intended to be an “and” and how will this comport with the 5-year revision scenario? **The process for the 5-year evaluation of recovery criteria should be described in the recovery plan and in the implementation plan.** It is important that this process be specified soon, because compiling and analyzing new information will be a multi-year task.

Recovery Action Outline and Implementation Schedule for the Western DPS of SSL.

The SSC has again reviewed the proposed recovery actions for the wDPS of SSL and notes that four items (1—maintain population monitoring and research on key threats, 2—maintain current fishery conservation measures, 3—design and implement an adaptive management program, and 4—develop an implementation plan) were selected from the list of recovery actions and identified on pages 124-125 as items to be implemented. The SSC suggests that the plan provide greater justification for the selection of those items. Items two through four are identified in the plan as having priority 2a, while numerous other actions identified in the schedule (pages 176-184) as priority 2a are not included. **In particular, action 1.2 “estimate vital rates” should be included in the short list of priority items to implement.** We

concur that the implementation plan itself (item 3) belongs in the list of items to implement first. When the implementation plan is written, attention should be given to identification of actions that will be taken in the event that one or more of the recovery criteria for downlisting and delisting are not met during periodic review/revision of the recovery plan (e.g., every 5 years). **The implementation plan should provide an outline of the process, timeline, and expected participants for revising the plan and using a PVA to identify the most prudent actions to promote recovery.**

The SSC suggests that item 2.1 “maintain and modify critical habitat” be elevated from priority 3 to 2a. In addition, research to specifically test whether the wDPS is now under a new, lower natural carrying capacity should be included as a priority 2a action, and a hypothesis testing framework should be included with clear criteria for that determination.

With regard to the priority levels, the SSC suggests that the agency revisit the recovery planning guidelines and consider adding a category for monitoring activities. The motivation for this suggestion is that monitoring activities are vital for determining the status of the population, but cannot be easily construed as “an action that must be taken to prevent extinction ...”

It should be noted that the recovery action costs reported in this section are projected costs for the agency to conduct research and outreach activities as outlined. These agency costs do not reflect the costs (foregone net revenues) to communities and industry or the relative distribution of costs across industry sectors and regions.

As noted in our August 2006 report and as noted by the NPRB review panel, because the causes of the decline of Steller sea lion populations and their slow recovery are unknown, the efficacy of management actions taken to date and of the actions contemplated in the recovery plan is, at best, uncertain.

Council Motion on the Steller Sea Lion Recovery Plan (May 2007 Draft)

The Council moves that a letter be drafted and sent to the Secretary regarding the Steller Sea Lion Recovery Plan. The Council endorses and appends the SSC's comments on the May 2006 and May 2007 Recovery Plan drafts. The letter should highlight the following concerns and issues:

1) Modify the wDPS recovery criteria as follows:

a) Modify the downlisting criteria: The population will be downlisted from endangered to threatened if the population is determined to be stable or increasing over a period of 1.5 generations (equivalent to the Team's 15 years) in U.S. jurisdiction, without requiring subarea consideration (current data indicate this period would start in 2000).

b) Modify the delisting criteria: The population will be delisted if the population is determined to be stable or increasing over a period of 3 generations (current data indicate this period would start in 2000).

c) The recovery criteria requirements to keep in place current fishery mitigation regulations at 50 CFR 679 should be modified to accommodate appropriate adaptive management and mitigation measures based on the best available science. The agency should modify the criteria to focus on adaptive management measures appropriately scaled to localized conditions instead of large scale experimental design. Further, the criteria should call for *appropriate* rather than *current* mitigation measures.

2) Modify the Threats Assessment such that the standard for determining the likelihood of extinction is modified from the standard of 1% chance of extinction in 100 years (10 generations) to 10% chance over three generations (30 years).

3) Reinstate the Recovery Team recommendation that the killer whale predation threat be "Potentially High" rather than "Medium", and conduct additional research and scientific workshops to resolve issues with the assessment of the effects of transient killer whales on the current wDPS population and the impact on the population's recovery. This process should include a broad cross section of scientists with views on all sides of this issue.

4) Increase priority of Critical Habitat redesignation to 2a from level 3.

5) Adopt SSC recommendations on prioritizing actions and developing the Implementation Plan designed around a multiple hypothesis testing framework, including lower carrying capacity.

6) The current analysis is based on the unsupported assumption that conditions leading to the steep decline through the 1980s will occur again. The Council disagrees. The Council recommends a reevaluation of this assumption underlying the PVA. Further, the Council recommends model results excluding periods of high incidental and intentional takes be presented for comparison with results presented in the current draft.

7) Include in the Recovery Plan a provision for an annual report from NOAA regarding the actions taken pursuant to the plan, any new information regarding the status of SSL populations relative to recovery factors, and any new information regarding the status of the species under the listing criteria.

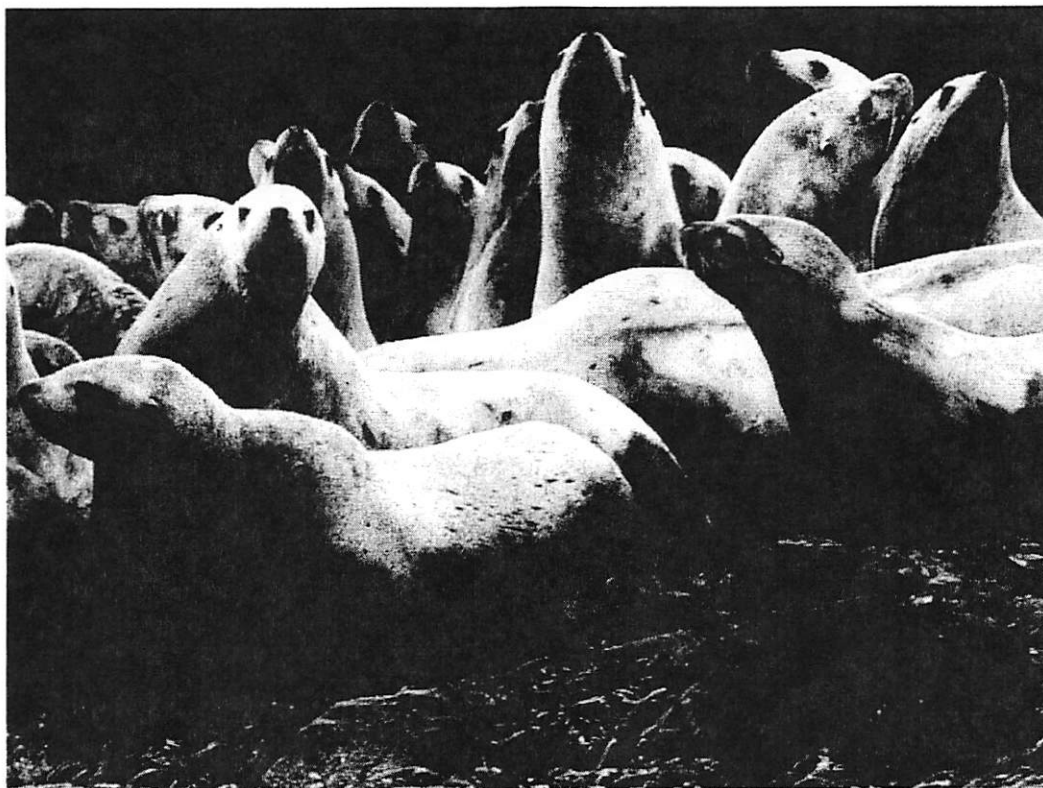
8) Delete ABC adjustment sub-task from Section 2.6.6, and retain 2.6.7 as a priority 3 task.

9) The Council recommends that the draft recovery plan summarize and discuss recent field work on localized depletion.

RECOVERY PLAN FOR THE STELLER SEA LION

Eastern and Western Distinct Population Segments
(*Eumetopias jubatus*)

REVISION



National Marine Fisheries Service
National Oceanic and Atmospheric Administration

March 2008

**RECOVERY PLAN FOR THE
STELLER SEA LION**

Eastern and Western Distinct Population Segments
(*Eumetopias jubatus*)

REVISION

Original Version: December 1992

Prepared by

National Oceanic and Atmospheric Administration
National Marine Fisheries Services
Office of Protected Resources

Approved: _____

John Alward for

James W. Balsiger, Ph.D.
Acting Assistant Administrator for Fisheries
National Oceanic and Atmospheric Administration

Date: 2-29-08

PREFACE

Congress passed the Endangered Species Act of 1973 (16 USC 1531 *et seq.*) (ESA) to protect species of plants and animals endangered or threatened with extinction. The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) share responsibility for the administration of the Act. NMFS is responsible for most marine mammals including 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 has determined that a Recovery Plan would promote the conservation of the eastern and western distinct population segments of Steller sea lion.

NMFS completed the first recovery plan for Steller sea lions in December 1992. At that time, the entire species was listed as threatened under the ESA. Because that recovery plan became obsolete after the reclassification of Steller sea lions into two distinct population segments (DPS) in 1997, and because nearly all of the recovery actions contained in the first plan had been completed, NMFS assembled a new Steller Sea Lion Recovery Team (Team) in 2001 to assist NMFS in revising the Plan to promote the conservation of the Steller sea lion. The first draft of the revised plan was written by the Team at the request of the Assistant Administrator for Fisheries. The recovery team included: experts on marine mammals from the private sector, academia, and government; experts on endangered species conservation; and representatives of the commercial fishing industry, the Alaska Native Steller sea lion subsistence hunting community, and the environmental community.

In March 2006, the Team submitted a draft of the Recovery Plan to NMFS, at which time it became an agency document. NMFS made minor editorial changes prior to releasing the first draft for public review and comment in May 2006. Upon review of the comments and recommendations submitted by peer reviewers and the public, and in light of new information available, NMFS further revised and updated the Plan. The changes made by NMFS were reflected in the Agency's updated (May 2007 version) Draft Revised Steller Sea Lion Recovery Plan, released by NMFS for further public review and comment on May 21, 2007 (72 FR 28473), with the comment period closing on August 20, 2007.

NMFS received 8,058 letters of comment on the May 2007 draft of the revised Plan. Comments were provided by a wide range of interested parties: members of the fishing industry, non-governmental organizations (NGOs), members of academia, the public, and other interested parties. In response to two solicitations, from NMFS and the North Pacific Fishery Management Council (NPFMC), peer review comments were received from the Center for Independent Experts and from scientific experts commissioned by the North Pacific Research Board, at the request of the NPFMC. NMFS reviewed the comments and recommendations submitted by peer reviewers and the public on the 2007 version of the draft revised plan and modified the plan as appropriate to produce this Final Revised Steller Sea Lion Recovery Plan (Plan). NMFS's response to comments on the May 2007 draft of the Plan is available at <http://www.fakr.noaa.gov/>

Steller Sea Lion Recovery Plan

NMFS believes that the goals and objectives of the Plan can be achieved only with a long-term commitment to support the actions recommended here. Achievement of these goals and objectives will require the continued cooperation of the governments of the United States, Canada, and Russia. Within the United States, the shared resources and cooperative involvement of federal, state (especially the State of Alaska) and local governments, industry, academia, non-government organizations, and individual citizens will be required throughout the recovery period.

DISCLAIMER

Recovery plans delineate such reasonable actions as may be necessary, based upon the best scientific and commercial data available, for the conservation and survival of listed species. Plans are published by the National Marine Fisheries Service (NMFS), sometimes prepared with the assistance of recovery teams, contractors, State agencies and others. Recovery plans do not necessarily represent the views, official positions or approval of any individuals or agencies involved in the plan formulation, other than NMFS. They represent the official position of NMFS only after they have been signed by the Assistant Administrator. Recovery plans are guidance and planning documents only; identification of an action to be implemented by any public or private party does not create a legal obligation beyond existing legal requirements. Nothing in this plan should be construed as a commitment or requirement that any Federal agency obligate or pay funds in any one fiscal year in excess of appropriations made by Congress for that fiscal year in contravention of the Anti-Deficiency Act, 31 U.S.C. 1341, or any other law or regulation. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery actions.

Literature Citation should read as follows:

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Additional Copies May Be Obtained From:

National Marine Fisheries Service
Alaska Regional Office
709 West 9th Street
Juneau, AK 99802-1668
907-586-7235
On Line: <http://www.fakr.noaa.gov>

Recovery plans can be downloaded at no cost from:
<http://www.nmfs.noaa.gov/pr/recovery/plans.htm>

Cover photo by Lowell Fritz, National Marine Mammal Laboratory, NMFS.

ACKNOWLEDGEMENTS

The National Marine Fisheries Service gratefully acknowledges the Steller Sea Lion Recovery Team for their work in developing their draft (the first draft) of this Recovery Plan for the Steller Sea Lion. That draft was subsequently modified by NMFS, and revised again after peer review and public review to produce this final plan. The members of the Steller Sea Lion Recovery Team are given below

RECOVERY TEAM MEMBERS

Team Member	Affiliation
Dr. Robert J. Small - Chair	Alaska Department of Fish and Game
Dr. Shannon Atkinson	Alaska SeaLife Center/University of Alaska Fairbanks
Ms. Linda Behnken	Alaska Longline Fishermen's Association
Mr. Vernon Byrd	U.S. Fish and Wildlife Service
Mr. Dave Fraser	F/V Muir Milach
Mr. Lowell Fritz	National Marine Fisheries Service
Dr. Tom Gelatt	National Marine Fisheries Service
Dr. David Hanson	Pacific States Marine Fisheries Commission
Ms. Lianna Jack	Alaska Sea Otter and Steller Sea Lion Commission
Mr. Denby Lloyd	Alaska Department of Fish and Game
Ms. Donna Parker	F/V Arctic Storm
Mr. Ken Pitcher	Alaska Department of Fish and Game
Dr. Alan Springer	Institute of Marine Science/University of Alaska Fairbanks
Mr. Ken Stump	Citizen
Dr. Andrew Trites	North Pacific Universities Marine Mammal Research Consortium
Dr. Terrie Williams	University of California Santa Cruz
Ms. Kate Wynne	University of Alaska

ACKNOWLEDGEMENTS FROM THE STELLER SEA LION RECOVERY TEAM

The Steller Sea Lion Recovery Team acknowledged and thanked the following individuals for their expert advice, research results, and general guidance and assistance that allowed them to complete the monumental task of writing the first draft of the Steller Sea Lion Recovery Plan: Shane Capron, the Steller sea lion coordinator for NMFS, invested a tremendous amount of time and energy in guiding the Team through the recovery planning process. He also engaged the Team in critically important discussions that resulted in substantial improvements to the Plan. Don Calkins, Doug Eggers, Tom Loughlin, and Robin Samuelsen all contributed as members of the Team when our endeavor began. Al Didier demonstrated an amazing ability to accurately transcribe the important and pertinent points of the discussions at our meetings into useful meeting summaries. The following NMFS staff, especially of the Alaska Region and the Alaska Fisheries Science Center, provided unpublished data and reports, and substantial time and advice on most aspects of the Plan: Tammy Adams, Robyn Angliss, Vladimir Burkanov, Marilyn Dalheim, Robert DeLong, John Durbin, Tom Eagle, Brandee Gerke, Jim Hale, Lee Hulbert, Peggy Krahn, Marina Lindsey, Libby Loggerwell, Mark Lowry, Greg O'Corry-Crowe, Erika Green Phillips, Sharon Melin, Mike Payne, Susan Pultz, Mike Sigler, Beth Sinclair, Barbara Taylor, Johanna Vollenweider, Paul Wade, Bill Wilson, and Anne York. Several other individuals provided expert advice, including Lance Barrett-Lennard (Vancouver Aquarium), Kimberlee Beckmen (ADF&G), John Bickham (Texas A&M University), Kathy Burek (Alaska Veterinary Pathology Services), Michael Castellini (University of Alaska), Dan Hennen (Montana State University), Ken Goldman (California State University - Long Beach), Tracey Goldstein (Alaska SeaLife Center), Judy Jacobs (FWS), Lloyd Lowry (Marine Mammal Commission), Nate Mantua (University of Washington), Craig Matkin (North Gulf Oceanic Society), Lorrie Rea (ADF&G), David Rosen (University of British Columbia), and Arliss Winship (University of British Columbia). Dan Goodman (Montana State University) developed a Population Viability Analysis that required the Team to transparently integrate their knowledge. Ed Bangs (FWS), Don Siniff (University of Minnesota), Don Bowen (Bedford Institute of Oceanography), Bob Hofman (Marine Mammal Commission - retired), and Terry Quinn (University of Alaska) reviewed the Plan and provided comments that improved it. Teresa Fairchild and Sharon Perkins of the Pacific States Marine Fisheries Commission undertook the numerous tasks associated with putting on our meetings, including travel arrangements and lodging. Brock Bernstein (Consultant) facilitated the final two meetings.

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APPENDIX: A PVA MODEL FOR EVALUATING RECOVERY CRITERIA FOR STELLER SEA LIONS 1

ACRONYM LIST

The following is a list of acronyms and terms used throughout the plan

ADF&G - Alaska Department of Fish and Game
AKR - Alaska Regional Office
AFSC - Alaska Fisheries Science Center
ANO - Alaskan Native Organization
BEST - Bering Ecosystem Study
BSAI - Bering Sea/Aleutian Islands
DEIS - Draft Environmental Impact Statement
DPS - Distinct population segment
Delisting - removal from the List of Endangered and Threatened Wildlife and Plants
EBS - Eastern Bering Sea
EEZ - Exclusive Economic Zone
EIS - Environmental Impact Statement
EPA - U.S. Environmental Protection Agency
ESA - Endangered Species Act
FOCI - Fisheries-Oceanography Coordinated Investigations (NOAA)
FMP - Fisheries Management Plan
FR - Federal Register
FWS - Fish and Wildlife Service
GOA - Gulf of Alaska
Team - Steller sea lion recovery team
List - Federal List of Endangered and Threatened Wildlife and Plants
MARPOL - International Convention for the Prevention of Marine Pollution
MMC - Marine Mammal Commission
MMPA - Marine Mammal Protection Act
mtDNA - Mitochondrial DNA
nm - Nautical Miles
NMML - National Marine Mammal Laboratory
NMFS - National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
NRC - National Research Council
PBR - Potential Biological Removal
Plan - Steller Sea Lion Recovery Plan
PVA - Population viability analysis
TDR - Time-depth recorder
UME - Unusual mortality event
USCG - United States Coast Guard
VMS - Vessel monitoring system

EXECUTIVE SUMMARY

CURRENT SPECIES STATUS: The Steller sea lion (*Eumetopias jubatus*) was listed as a threatened species under the ESA on April 5, 1990 (55 FR 12645¹) due to substantial declines in the western portion of the range. At the time of listing, the overall abundance of sea lions in the eastern portion of the range (in southeastern Alaska and Canada) was increasing at approximately 3% per year. Critical habitat was designated on August 27, 1993 (58 FR 45269) based on the location of terrestrial rookery and haulout sites, spatial extent of foraging trips, and availability of prey. In 1997, based on demographic and genetic dissimilarities, NMFS designated two distinct population segments (DPSs) of Steller sea lions under the ESA: a western distinct population segment (DPS) and an eastern DPS (62 FR 24345, 62 FR 30772). Due to persistent decline, the western DPS was reclassified as endangered, while the increasing eastern DPS remained classified as threatened. Through the 1990s, the western DPS continued to decline. The western population showed an increase of approximately 3% per year between 2000 and 2004. This was the first recorded increase in the population since the 1970s. However, the most recent available data from incomplete non-pup surveys in 2006 and 2007 suggest that the overall trend for the western DPS, through 2007, is either stable or slightly declining. Data indicate there are significant trend differences amongst sub-regions within the western DPS. Based on 2004-2005 data, the total population size of western Steller sea lions in Alaska is estimated to be approximately 45,000 animals. The current (as of 2005) population of Steller sea lions in Russia (part of the western DPS) is estimated to be about 16,000. The eastern DPS was estimated to number between 46,000 and 58,000 animals in 2002, and has been increasing at approximately 3% per year since the late 1970s (Pitcher *et al.* 2007).

RECOVERY PLAN: The first recovery plan for Steller sea lions was completed in December 1992 and covered the entire range of the species, which was, at that time, listed as threatened under the ESA. However, that recovery plan became obsolete after NMFS designated two distinct population segments (DPS) of Steller sea lions under the ESA in 1997. The eastern DPS was listed as threatened and the western DPS) was listed as endangered. Nearly all of the recovery actions contained in the first plan had also been completed. Therefore, in 2001, NMFS assembled a new recovery team (Team) to assist NMFS in revising the Plan. Team members represented marine mammal and fishery scientists, the fishing industry, Alaska Natives, and the environmental community. The Team completed a draft revision of the Steller Sea Lion Recovery Plan in March 2006 and submitted their draft to NMFS, at which time it became an agency document. In May 2006, NMFS released the first draft of a revised Plan for public review and comment (71 FR 29919) and extended the period of comment in July 2006 (71 FR 41206). Upon review of the comments and recommendations submitted by peer reviewers and the public, and in light of new information available, NMFS further revised and updated the Plan. The changes made by NMFS were reflected in the Agency's updated 2007 Draft Revised Steller Sea Lion Recovery Plan, released by NMFS for further public review and comment in May 2007 (72 FR 28473). NMFS reviewed the comments and recommendations submitted by peer reviewers and the public on the 2007 version of the draft revised plan and modified the plan as appropriate to produce this Final Revised Steller Sea Lion Recovery Plan. Responses to the comments are posted at: <http://www.fakr.noaa.gov/>.

¹ Refers to Federal Register, Volume 55, page 12645.

Steller Sea Lion Recovery Plan

The Plan contains: (1) a comprehensive review of Steller sea lion status and ecology, (2) a review of previous conservation actions, (3) a threats assessment, (4) biological and recovery criteria for downlisting and delisting, (5) actions necessary for the recovery of the species, and (6) estimates of time and cost to recovery.

OVERVIEW: There appear to be two very distinct phases in the decline of the western DPS. The population declined about 70% between the late 1970s and 1990, but the initial decline likely began as early as the late 1950s in some areas. The rate of decline in the 1980s was very rapid, reaching about 15% per year during 1985-89. During this period, mortality incidental to commercial fishing was thought to contribute to perhaps as much as 25% of the observed decline. In addition, during that period it was legal for fishermen to protect their gear and catch by shooting Steller sea lions. Unfortunately, adequate records on the magnitude of such takes are not available. Some evidence indicates that animals in this population were nutritionally stressed during this time period, while other sources of mortality (e.g., predation by killer whales, mortality associated with disease) cannot be quantified due to a lack of information. There were distinct differences in the rates and pattern of decline in the six subareas used to monitor this population: the eastern Gulf of Alaska, central Gulf, western Gulf, eastern Aleutians, central Aleutians, and western Aleutians. Therefore, it is possible that several factors were important in driving the population decline during this time period.

In the 1990s, the rate of decline in the western DPS decreased from 15% to 5% per year. This decrease in the rate of decline followed further environmental changes in the 1990s and the implementation of extensive fishery regulations intended to reduce direct impacts, such as shooting, and indirect impacts, such as competition for prey. During this decade, Steller sea lions did not appear to be nutritionally stressed. The primary factors associated with the decline during this period have not been identified. As was the case in the 1980s, the pattern and rate of declines in abundance varied significantly by subregion.

Critical habitat for Steller sea lions was designated by NMFS on August 27, 1993 to respond to requirements of the Endangered Species Act (50 CFR 226.202). Steller sea lion critical habitat includes a 20 nautical mile buffer around all major haulouts and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas (see <http://alaskafisheries.noaa.gov/protectedresources/stellers/habitat.htm>).

In the late 1990s and early 2000s, NMFS reviewed and evaluated the potential impacts of federally managed groundfish fisheries in Alaska on Steller sea lions through a series of consultations under section 7 of the ESA. Two of those consultations resulted in a determination that the commercial fisheries were likely to jeopardize the continued existence of the western DPS of Steller sea lion and adversely modify its critical habitat. Therefore, as required under the ESA, additional conservation measures were implemented to avoid jeopardy and adverse modification. In 2002, NMFS implemented a set of regulations to change spatial and temporal patterns of the pollock, Pacific cod and Atka mackerel fisheries throughout the range of the western stock in U.S waters (Angliss and Outlaw, 2006) which have been amended over time (see Sea Lion Protection Measures at website: <http://alaskafisheries.noaa.gov/sustainablefisheries/2003hrvstspecssl.htm>). The management

measures were intended to disperse fishing over time and area to protect against potential competition for important Steller sea lion prey species near rookeries and important haulouts. These measures were expected to promote the recovery of Steller sea lions in areas where potential competition from commercial fisheries may have contributed to the population decline.

It is plausible that the conservation measures implemented since 1990 are positively affecting the recovery of the western DPS. Between 2000 and 2004, survey data suggested that the estimated overall abundance of the western DPS of Steller sea lions increased for the first time in decades. However, an increasing trend was not detected in all subregions, and incomplete data from 2006 and 2007 indicate the population overall is either stable or declining slightly. It is not known whether the slow down in decline, the period of increase, and the current stability or near stability is a result of management actions, natural changes in the ecosystem, or other factors.

COMPLETED RECOVERY ACTIONS: The 1992 recovery plan included 61 discrete recovery actions (or tasks) with estimated costs and responsible parties associated with those tasks. In our review, we determined that each of the 61 tasks has been accomplished to a substantial degree with one exception – the development of international conservation agreements. Much of the effort was focused on eliminating the most direct and certain causes of decline (e.g., shooting, incidental take). These efforts are detailed in the Plan, and include the following:

- substantial reduction in disturbance of important rookeries and haulouts;
- substantial reduction in the incidental catch of Steller sea lions in commercial fishing operations, particularly the groundfish trawl fishery;
- significant efforts to reduce intentional take by prohibiting shooting at or near Steller sea lions
- intensive research to better describe the threats to Steller sea lions and provide management with options for recovery actions;
- potential reduction in the competitive interactions between Steller sea lions and commercial fisheries for pollock, Atka mackerel, and Pacific cod in Alaska;
- acquired additional information on the status, foraging ecology, and survivorship of Steller sea lions.

THREATS TO THE RECOVERY OF STELLER SEA LIONS: The extensive research program has increased the understanding of the relative impacts of threats that potentially impede the recovery of Steller sea lions. For the western DPS, the threats assessment concludes that the following threats are relatively minor: (1) Alaska Native subsistence harvest, (2) illegal shooting, (3) entanglement in marine debris, (4) disease, and (5) disturbance from vessel traffic and scientific research. Although much has been learned about Steller sea lions and the North Pacific ecosystem, considerable uncertainty remains about the magnitude and likelihood of the following potential threats to the recovery of the western DPS (relative impacts in parenthesis): competition with fisheries (potentially high), environmental variability (potentially high), incidental take by fisheries (low), toxic substances (medium) and predation by killer whales (potentially high). Uncertainty, controversy, and disagreement within the scientific and stakeholder communities with regards to the potential threat posed by killer whale predation is

especially great, with conclusions about the magnitude of that threat being fairly polarized (low vs. high). However, due to the uncertainty and the need to be precautionary in our assessment of possible threats to the recovery of this endangered DPS, NMFS has categorized the relative potential impact of this threat as “potentially high”, and we have expanded our presentation and critical evaluation of the major studies and viewpoints of this threat in the Plan.

In contrast, no threats to continued recovery were identified for the eastern DPS. Although several factors affecting the western DPS also affect the eastern DPS (e.g., environmental variability, killer whale predation, toxic substances, disturbance, shooting), these threats do not appear to be at a level sufficient to keep this population from continuing to recover, given the long term sustained growth of the population as a whole. However, concerns exist regarding global climate change and the potential for the southern part of the range (i.e., California) to be adversely affected. Future monitoring should target this southern portion of the range.

RECOVERY GOAL: The goal of this recovery plan is to restore endangered and threatened Steller sea lion populations to the point at which they are again secure, self-sustaining members of their ecosystems, allowing initially for reclassification of the western DPS to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife (List). The eastern DPS has been recovering for since the late 1970s and should be considered for removal from the List.

RECOVERY CRITERIA:

The western DPS of Steller sea lions will be considered for reclassification to “threatened” when all of the following conditions are met:

1. The population for the U.S. region has increased (statistically significant) for 15 years on average, based on counts of non-pups (i.e., juveniles and adults). Based on an estimated population size of roughly 42,500 animals in 2000 and assuming a consistent but slow (e.g. 1.5%) increasing trend, this would represent approximately 53,100 animals in 2015.
2. The trends in non-pups in at least 5 of the 7 sub-regions are consistent with the trend observed under criterion #1. The population trend in any two adjacent sub-regions cannot be declining significantly. The 7 sub-regions are:
 - a. Eastern Gulf of Alaska (US)
 - b. Central Gulf of Alaska (US)
 - c. Western Gulf of Alaska (US)
 - d. Eastern Aleutian Islands (including the eastern Bering Sea) (US)
 - e. Central Aleutian Islands (US)
 - f. Western Aleutian Islands (US)
 - g. Russia/Asia
3. The ESA listing factor criteria are met.

The western DPS of Steller sea lions will be considered for delisting if all the following conditions are met:

1. The population for the U.S. region of this DPS has increased (statistically significant) for 30 years (at an average annual growth rate of 3%), based on counts of non-pups (i.e., juveniles and adults). Based on an estimated population size of about 42,500 animals in 2000, this would represent approximately 103,000 animals in 2030.
2. The trends in non-pups in at least 5 of the 7 sub-regions are stable or increasing, consistent with the trend observed under criterion #1. The population trend in any two adjacent sub-regions can not be declining significantly. The population trend in any sub-region cannot have declined by more than 50%. The 7 sub-regions are:
 - a. Eastern Gulf of Alaska (US)
 - b. Central Gulf of Alaska (US)
 - c. Western Gulf of Alaska (US)
 - d. Eastern Aleutian Islands (including the eastern Bering Sea) (US)
 - e. Central Aleutian Islands (US)
 - f. Western Aleutian Islands (US)
 - g. Russia/Asia
3. The ESA listing factor criteria are met.

The eastern DPS of Steller sea lion will be considered for delisting if all the following conditions are met:

1. The population has increased at an average annual growth rate of 3% per year for 30 years.
2. The ESA listing factor criteria are met.

ACTIONS NEEDED: The Plan identifies 78 substantive actions needed to achieve recovery of the western DPS by addressing the broad range of threats. These actions are aimed at addressing three main objectives: (1) the collection of information on status and vital rates, (2) research programs to collect information on the remaining threats to recovery, including natural and anthropogenic factors, and (3) the implementation of conservation measures to remove impacts of anthropogenic threats to recovery. The Plan highlights four actions (below) that are especially important to the recovery program for the western DPS:

Continue population monitoring and research on the key threats potentially impeding sea lion recovery (Action 1.1.1 and others)

Estimates of population abundance, trend, distribution, health, and essential habitat characteristics are fundamental to Steller sea lion management and recovery. Further, current information on the primary threats is insufficient to assess their impact on recovery. Focused research is needed on how these threats impact sea lion population growth and how they may be mitigated in order to facilitate recovery. In addition to studies on individual threats, the

dynamics between threats needs to be better understood to assess the cumulative effects on sea lions.

Maintain current or equivalent level of fishery conservation measures (Action 2.6.6)

After a long term decline, the western DPS may be stabilizing. The first slowing of the decline began in the 1990s, suggesting that the management measures implemented in the early 1990s may have been effective in reducing some anthropogenic effects (e.g., shooting, harassment, and incidental take). The apparent relative population stability observed in the last 6 years is correlated with comprehensive fishery management measures implemented since the late 1990s. The current suite of management actions (or their equivalent protection) should be maintained until substantive evidence demonstrates that these measures can be reduced without limiting recovery.

Design and implement an adaptive management program to evaluate fishery conservation measures (Action 2.6.8)

Due to the uncertainty as to how fisheries affect Steller sea lions and their habitat, and the difficulty in extrapolating from individual scientific experiments, a properly designed adaptive management program should be implemented. This type of program has the potential to assess the relative impact of commercial fisheries and to better distinguish the impacts of other threats (including killer whale predation). This program will require a robust experimental design with replication at the proper temporal and spatial scales with the appropriate levels of commercial fishing as experimental treatments. It will be a challenge to construct an adaptive management plan that meets the requirements of the ESA, is statistically sufficient, and can be implemented by the commercial fisheries. Acknowledging these hurdles, a significant effort must be made to determine the feasibility of such a program.

Develop an implementation plan (Action 1.5)

An implementation plan will be developed that includes a comprehensive ecological and conceptual framework that integrates and further prioritizes the numerous recovery actions provided in this plan. The implementation plan will contain a synthesis of, and establish priorities among, the individual actions, as well as coordinate their implementation in a cohesive strategy. Several components will be integrated in the conceptual framework of the implementation plan: (1) the complex dynamics of the North Pacific marine ecosystem, (2) multiple causation in those systems, (3) the need for long-term research, (4) the monitoring required to assess the effectiveness of management regulations, and (5) the development of a modeling approach that examines possible effects of multiple threats on sea lion population dynamics to evaluate the strength of the evidence for different hypotheses.

PERIODIC REVIEW OF THE PLAN: NMFS (2007) recognizes that recovery planning is an iterative process. Data generated through careful monitoring and other research should feed back into refinements of recovery plans and actions. It is a goal of the NMFS to review recovery plans and the status of listed species every five years.

TOTAL ESTIMATED COST OF RECOVERY:

Western DPS: \$93,840,000 for the first five fiscal years; \$430,425,000 to full recovery assuming 30 years for recovery starting in 2000 and using Year 5 costs in this Plan as the cost for all future years

Eastern DPS: \$ 150,000 for the first year; \$1,050,000 total, including 10 years post-delisting monitoring

ANTICIPATED DATE OF RECOVERY: The time to recovery for the western DPS will be dependent upon population trajectories over time. While increasing trend counts were observed between 2000 and 2004, data from incomplete counts in 2006 and 2007 suggest that the population is stable or declining slightly. However, if one assumes that the population can and will achieve a modest, but steady, rate of increase, such as the 3% annual increase observed for the eastern DPS, it would be eligible for consideration for downlisting to threatened status within roughly seven years (i.e., by about 2015). If that trend continues further, as has been the case for the eastern DPS, then consideration for delisting is possible shortly after 2030. As more information is obtained on the threats, their impact on sea lions, and how they can be effectively mitigated, more robust projections will be developed about the time to recovery, and its expense.

The eastern DPS appears to have recovered from predator control programs in the 20th century which extirpated animals at rookeries and haulouts. Currently, no substantial threats are evident, and the population continues to increase at approximately 3% per year. The primary action in the plan is to initiate a status review for the eastern DPS and consider removing it from the federal List of Endangered Wildlife and Plants.

**North Pacific Fishery Management Council
Steller Sea Lion Mitigation Committee Meeting
March 10-12, 2008
Hawthorne Suites, Anchorage**

Minutes

The Steller Sea Lion Mitigation Committee (SSLMC) convened in Anchorage at the Hawthorne Suites Hotel on March 10-12, 2008. Committee members present were: Larry Cotter (Chairman), Jerry Bongen, Julie Bonney, John Gauvin, John Henderschedt, Dan Hennen, Sue Hills, Frank Kelty, Earl Krygier (replaces Ed Dersham), Terry Leitzell, Dave Little, Steve MacLean, Stephanie Madsen, Max Malavansky Jr, Art Nelson, and Beth Stewart. Also present were Bill Wilson and Chris Oliver (Council staff); Dr. Doug DeMaster (NMFS AFSC); Kaja Brix, Lisa Rotterman, Kristin Mabry, Sue Salveson, and Melanie Brown (NMFS AK Region staff); Mel Morris and John Jensen (Chairman and Vice Chairman, respectively, Alaska Board of Fisheries); John Lepore (NOAA General Counsel AKR); and several members of the public.

Bill Wilson reviewed the agenda (attached), the work schedule for the coming several days, and the handout materials provided to each committee member. The minutes of the SSLMC's January 6-8, 2008 meeting were reviewed and approved.

At their January 2008 meeting, the SSLMC requested that the Council be alerted to upcoming reports from the SSLMC on SSL issues. The SSLMC intends to review the final Revised SSL Recovery Plan in March 2008 and based on that recovery plan prepare some initial/preliminary recommendations for changes in SSL protection measures. Those preliminary recommendations would be provided to the Council at the Council's April 2008 meeting. Then at a May 2008 meeting, the SSLMC would receive the draft status quo BiOp, and in light of this BiOp finalize its recommendations to the Council; those recommendations would be presented to the Council at its June 2008 meeting. Mr. Wilson noted that the Council was given this information at their February 2008 meeting, and has placed on their April and June agendas these SSL issues.

In January, the SSLMC also approved allowing the proponents of proposals 8 and 16 to ask the Council to fast track an analysis of these proposals given their potential positive effects on fishery management and minimal effects on SSLs. [Note: Proposal 8 is identified as Proposal 33/7/24 in the current suite of proposals under SSLMC consideration.] The proponents presented these proposals to the Council in February, and the Council requested that NMFS review the proposals to determine the work involved and potential time savings if they were fast tracked through an analysis and potential rulemaking. NMFS has reviewed these two proposals, and has written a letter to the Council with their recommendations. John Gauvin emailed that letter to all SSLMC members. NMFS has also discussed the proposals and the work involved in their analysis with the proponents, indicating that the analysis of these proposals could require a large effort, and the overall fast track process would likely not save appreciable time over the ongoing SSLMC process. NMFS also indicated some potential implementation concerns with proposal 8. Mr. Gauvin

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expanded on this discussion, noting that the SSLMC may be able to develop alternatives that could overcome these concerns. Similarly, Julie Bonney noted that proposal 16 has benefits to fishery management, and more discussion with NMFS is needed to identify potential management issues so that proponents could suggest alternatives. Mr. Cotter requested that Melanie Brown discuss management issues with all proposals with NMFS, and bring to the May SSLMC meeting additional information on implementation of these and the other proposals, to the extent the Agency has time to do so.

Mr. Cotter stated that the goals of this SSLMC meeting are to receive a presentation from NMFS on the final Revised SSL Recovery Plan, understand the recovery plan and what flexibility the Committee may have in recommending changes, and with that background to work through proposals to develop an initial or preliminary set of recommendations for Council review. The EIS schedule calls for a preliminary package by the April 2008 Council meeting and a final package by June 2008. This SSLMC meeting also provides a forum for public review of the newly-released final SSL recovery plan.

Beth Stewart congratulated NMFS for completing the final recovery plan on schedule. The SSLMC concurred.

Final Revised SSL Recovery Plan

Kaja Brix and Dr. Lisa Rotterman presented an overview of the final SSL recovery plan. Dr. Rotterman is NMFS' new SSL coordinator, and has assumed responsibilities for SSL management issues for the Agency. Dr. Rotterman presented the final recovery plan to the SSLMC in four general categories: acknowledgements, rationale for plan development, plan history and process, and plan content.

Acknowledgements

The plan recognizes the many individuals and groups responsible for its development, including particularly the SSL Recovery Team. Other inputs and comments on the plan that facilitated its preparation were provided by various stakeholders, particularly the commercial fishing industry, several peer reviewers, the Marine Mammal Commission, the State of Alaska, and the NPFMC.

Rationale

Dr. Rotterman summarized the background and rationale for developing the plan (ESA mandates), noting that a recovery plan must contain management actions necessary for recovery of a listed species, recovery criteria, and the time and cost to achieve recovery. The SSLMC discussed how new interpretations of adverse modification of critical habitat relate to recovery. Dr. Rotterman pointed out that recovery does not necessarily require restoring the SSL population to historic levels. Dr. Rotterman also noted that this final plan has been reformatted to facilitate updating, in that sections can be updated as new scientific information is available without opening up the entire plan. And, while this recovery plan is scheduled for review in five years, it may be unlikely that the Agency will convene

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another recovery team in the near future; NMFS does not envision major revisions to the plan in five years, but would conduct a review and update it. The format of this final plan will facilitate updating to aid SSL management without the complex and lengthy process involving appointment of a recovery team and revision of the entire plan.

Plan History and Process

After the SSL was listed under the ESA, the process for recovering this species started with development of the first recovery plan published in 1992. With the separation of the SSL into two stocks or Distinct Population Segments (DPS) in 1997, a new recovery team was convened (in 2001) to address recovery of both DPSs. A first draft of a revised recovery plan was produced by the Team and released by the Agency in 2006, and a second draft in 2007. This final recovery plan (March 2008) is a revision of the original 1992 plan and the culmination of many years' effort.

Plan Content

Dr. Rotterman noted that the final recovery plan is similar in content to the May 2007 version with some updates in SSL counts and trends, considerable editing and updating of narratives, and various changes made in response to comments received. The overall conclusion of NMFS is that the western DPS shows regional differences in abundance trends with some subareas increasing and some subareas decreasing, but the overall trend for the wDPS is stable or slightly decreasing.

Highlights of Changes from the May 2007 Draft

Dr. Rotterman identified the main changes made to the plan based on comments received from the public, peer reviewers, and agencies. The plan narrative has changed in tone and content, and the plan now contains updated information on SSL birth and survival rates, clarification of the terms "Asian" and "Russian" subareas, and a revised discussion of nutritional stress. The threats assessment and conservation measures are largely unchanged. In the section on factors affecting the wDPS, NMFS has expanded the discussion of killer whale predation, expanded the discussion of the megafaunal collapse hypothesis, modified the nutritional stress section, and added a discussion of the Fishery Interaction Team studies. The main change in the plan is moving the killer whale threat from medium to potentially high, largely in response to public comment. All other threats classifications remain as in the May 2007 draft.

The recovery goals section is largely unchanged, and the Agency highlights these important recovery goals: continue population monitoring, maintain the current (or equivalent) fishery mitigation measures, evaluate the efficacy of these conservation measures through an adaptive management program, and develop a recovery implementation plan.

The downlisting/delisting criteria section also is largely unchanged. The PVA section remains an appendix. The SSLMC discussed how recovery criteria must meet the five listing criteria (from the ESA). The final plan still references a need to consider the

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Russia/Asia SSL subarea in the recovery of the overall wDPS. The SSLMC remains concerned over inclusion of this subarea in the recovery criteria since management actions (or inactions) in Russia, over which the U.S. may have little control, may affect SSL management in Alaska. The criterion referencing performance of SSLs in two adjacent subareas remains in the plan.

The Committee also discussed the definition of “significantly” as the term is used in specifying recovery criteria requiring SSL performance over the specified time periods. The Committee noted the difficulty in acquiring annual SSL counts throughout the SSL range, and how this may affect monitoring the population and measuring the attainment of significant increases – and ultimately a recovery determination.

The recovery action implementation section is largely unchanged from the May 2007 draft, and no major changes were made in the recovery plan sections for the eastern DPS. The plan does recommend a status review of the eDPS and possible delisting.

Dr. Rotterman summarized some of the peer reviewers’ comments (from the CIE and NPRB reviews), noting most were favorable. Dr. Rotterman also highlighted several of the comments received from the public on the May 2007 draft and the Agency’s responses. Some commented on whether NMFS will continue to consider the zonal approach to fishery mitigation as an important component of future SSL protection measures; Dr. Rotterman indicated this will be discussed in the upcoming status quo BiOp. Dr. Rotterman explained the Agency’s views of killer whale predation as a threat to SSL recovery and the justification for changing this threat from medium to potentially high. She noted that the final recovery plan includes discussion of the Fishery Interaction Team research findings. A question was posed about legal coverage for authorized take in certain State fisheries if an incidental take of SSLs occurs in these fisheries; Ms. Brix noted that there is no Incidental Take Statement (ITS) for State water fisheries nor for State salmon and herring fisheries.

The SSLMC discussed the issue of adverse modification and how the final recovery criteria relate to the current Agency interpretation of past court decisions. John Lepore stated that adverse mod involves both survival and recovery of a listed species, and the Agency is required to consider adverse mod in developing recovery criteria. Terry Leitzell also noted that since this final recovery plan is a review of the latest science, adverse mod is now evaluated in the plan based on recent litigation and addresses the conservation of SSLs. To satisfy the current adverse mod standard, the analysis in this final plan includes critical habitat and in that light how current fisheries may affect recovery. Adverse mod of designated Critical Habitat will be covered in the upcoming BiOp.

Mr. Cotter posed another question: given the SSL population is determined to be stable or declining, as stated in the final recovery plan, how can NMFS conclude that SSLs can recover under the current suite of SSL protection measures? Dr. Rotterman stated that this will be discussed in the BiOp. The Committee extensively discussed the recovery plan statement that continuing the current protection measures, or their “equivalent”, is required to allow recovery. The Committee questioned whether the term “equivalent measures”

may provide some room to develop alternative mitigation measures. To what extent was this a policy call on the part of NMFS? And are the current fishery management measures sufficient for recovery? John Lepore noted that the conclusions in this final recovery plan are partly based on the last BiOp, and jeopardy and adverse mod under the current management measures will be addressed in the upcoming status quo BiOp. The SSLMC will need that BiOp to determine what changes in protection measures may be feasible.

The SSLMC also discussed the process that follows publication of the final recovery plan. The SSLMC understood that the final recovery plan would be a guide to where the SSLMC can go in developing new management measures, but yet there seems to be little "room" for change given the specific statement in the plan that requires continuation of current or equivalent management measures. Lengthy discussion concluded that the draft status quo BiOp will need to be consulted; this BiOp will be a significant document that may provide insights and answers to some of the Committee's concerns.

The Committee also observed that this final recovery plan does not include updated and recent data on SSLs and recent fishery management changes; Dr. Rotterman noted that the BiOp would contain the most recent data.

Later in the meeting the SSLMC developed a statement of concerns with the final recovery plan. The SSLMC asked that the Chairman bring these concerns to the Council at its April 2008 meeting. Since the Council will be given a briefing on the final recovery plan, the SSLMC suggested that some of its concerns with the plan may assist the Council in its review. This summary statement is as follows.

Committee Summary Statement to the Council on the Final Revised SSL Recovery Plan

Part of motion?

The SSLMC is generally concerned that the final Revised SSL Recovery Plan is little changed from the May 2007 draft. While some improvements have been made, some members of the SSLMC are concerned with certain recovery criteria remaining in the recovery plan that have questionable merit and may be unattainable. These are discussed below. The SSLMC is also concerned that there is no clear direction or guidance in the final recovery plan as to what NMFS intends to do at the 5 yr review of this recovery plan. Can some of the issues identified by the SSLMC be addressed in a 5-year review? As reported to the SSLMC, NMFS does not envision appointing new recovery team or a major rewrite, but rather envisions only small revisions at the 5-year review. The SSLMC is concerned that there may not be an opportunity for making changes to the final recovery plan any time soon.

The SSLMC recommends the following to the Council:

- (1) That the Council request the NMFS permitting section to again allow permits for handling and tagging or branding adult female SSLs. Though the prohibition against allowing such permits to handle adult female SSLs is scheduled to sunset in 2009, it should sunset sooner - this year if possible. If the sunset can not be in place this year, the prohibition surely should not be reinstated or extended after the 2009

sunset. Scientists can only understand many of the proposed natality and population health issues by having these permits available to study reproducing female SSLs.

- (2) That the Council express concern to NMFS that including the Russian SSL subarea as an element in the Recovery Criteria was an agency policy decision that could have been made differently. While it is expected and required that NMFS consider the Russian segment of the wDPS under the five listing factors of the ESA, it was a discretionary choice for NMFS to adopt Russia as one of the seven sub areas needed to determine if rebuilding has occurred. It is particularly troubling since: (a) the Russian segment has shown no rebuilding; (b) there is no international agreement with Russia that they will protect these SSL stocks (particularly from bycatch mortality occurring in their herring fisheries); and (c) formulation of such an international protection agreement was the only uncompleted Recovery Action from the 1992 1st Recovery Plan. While this is a Final Recovery Plan document, there needs to be a strong commitment by NMFS to update this document at the 5-year review, where they could reconsider this policy decision.
- (3) That the Council express concern to NMFS that adopting a specific wSSL population increase rate and target population size for delisting was another agency policy decision that could have been made differently. In the recovery plan, NMFS has made a discretionary choice to adopt a 3% rate of increase over 30 years and a target of 103,000 animals as a metric to determine if delisting the wSSL can occur. NMFS did not need to be this draconian; the Agency could have adopted the same metric as in down-listing (that there would be a statistically significant increase in the SSL population over a 15 year period). The justification for the 3% metric was discussed, but some members of the SSLMC believe this justification is predicated on very conservative assumptions in the PVA model used by the recovery team and assumes that carrying capacity has not limited the population trajectory. The SSLMC also noted that the Alaska Sea Life Center has funded Russian SSL counts for the last several years, but this funding will not likely continue into the future, potentially jeopardizing the monitoring of the wSSL population. The SSLMC again notes that, while this is a Final Recovery Plan document, there needs to be a strong commitment by NMFS to update this document at the 5-year review, where they could reconsider this policy decision.
- (4) That the Council expresses its continued concerns with the inconsistency of application of ESA standards within the Agency and between Agencies (e.g. widely varying population change targets for recovery of Yellowstone grizzly bears or Northern Rocky Mountain gray wolves or Hawaiian monk seals).

Finally, the recovery plan specifies that an adaptive management program is required to assess the efficacy of fishery mitigation measures and to reduce the uncertainty in how fisheries may affect SSLs, yet no adaptive management approach has been developed even though many have attempted to do so. If adaptive management is not feasible, yet it is mandated in the recovery plan, the Council might request the Agency to explain how this action can be implemented.

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Other Discussion of the SSL Recovery Plan

The SSLMC discussed the recovery plan several times during this meeting. The above are the main concerns, but other issues also were of concern to some committee members. The following is a summary of those additional discussions.

The SSLMC discussed the origins of the recovery criterion that requires a 3% growth of the wSSL over 30 years. Dr. DeMaster recounted that this figure was chosen because the eSSL has grown at nearly 3% over the past 30 years, the wSSL population surveys showed that this DPS increased about 3% over the years 2000-2004, and the PVA modeling indicated that growth of the wSSL over 30 years would allow the population to attain a level that would minimize the risk of it declining to the quasi-extinction threshold of 4743 animals.

The SSLMC notes that the monitoring plan specified in the final recovery plan is a very important action. Monitoring is critical to understanding the population dynamics of the wSSL in future years and to verify the efficacy of the protection measures currently in place.

An adaptive management program will be difficult to implement given the mandates of the ESA. The recovery process needs a clear set of guidelines for how NMFS intends to implement adaptive management.

The SSLMC discussed at length its concern that the Recovery Plan does not provide clear insights for how SSL protection measures might be modified. This uncertainty will affect the SSLMC's process for developing a suite of recommendations for Council consideration. The upcoming status quo BiOp is characterized by NMFS as a document that will provide the insights the SSLMC will need to develop its recommendations, and thus the BiOp now takes on increased importance.

The SSLMC believes that NMFS should expeditiously proceed with the process required to delist the eSSL. This population has performed as required for delisting by the Recovery Plan.

The SSLMC discussed whether NMFS will now revisit Critical Habitat designation for the wSSL. Will the Agency relook at CH now that the final Recovery Plan is completed? Some are concerned that this could lead to imposition of more fishery restrictions, and this process should be approached cautiously. Dr. DeMaster stated that now that the recovery plan is final, the Agency will look at the merits of revising the existing Critical Habitat designation.

The SSLMC also notes that it is unclear from the presentation of the final Recovery Plan whether NMFS intends to conduct a 5-year review of the plan. The Council should be

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alerted to this and perhaps request a firm commitment for a review of the plan and a possible revision in five years.

EIS Process

Gretchen Harrington with NMFS, AK Region reviewed the process for developing an EIS on the proposed changes to SSL protection measures. To meet the Council's desired date for implementation of new measures, the beginning of the fishing year 2010, a purpose and need (P&N) statement and a set of alternative actions should be drafted by June 2008. These will form the basis for writing the EIS and the analysis it will contain. A draft P&N statement has been prepared by staff, and this was reviewed by the SSLMC. With a few editorial changes, the SSLMC felt that the draft P&N statement was appropriate.

Regarding alternatives, Stephanie Madsen noted that the Federal Register notice that NMFS will prepare an EIS provided some general alternatives, and would these be sufficient, or are more detailed alternatives required to start the EIS process. Ms. Harrington noted that the NOI's alternatives are intended to give the public a place to start, but more specific alternatives will be required when the Council selects its preliminary preferred alternative. The alternatives will partly be developed based on public input during scoping, and partly on the proposals.

The SSLMC discussed concerns over whether this Committee can develop recommendations, and alternatives, since the final recovery plan provides little guidance or insights into what changes in SSL protection measures may be possible. Most felt that this process must await publication of the status quo BiOp, as the BiOp will significantly affect how the SSLMC proceeds. It is too early to give the Council even preliminary or initial recommendations. Mr. Cotter suggested that the SSLMC could inform the Council in April of what proposals are still under active consideration by the SSLMC, and the main elements of each proposal, and that the SSLMC will complete its review of proposals and will develop recommendations for the Council after it receives and understands the status quo BiOp. Development of alternatives must await the BiOp and the SSLMC's May 2008 meeting.

The SSLMC voiced concerns over the schedule, and whether the Council would have sufficient time to review the SSLMC's recommendations at their June 2008 meeting, even if given a report in April as suggested above. If the SSLMC is now delayed in paring down the list of proposals or otherwise making initial determinations of what kinds of management measures can be changed until after its May 2008 meeting, will the Council's June meeting alone be sufficient opportunity for the Council to select a preliminary preferred suite of changes to SSL protection measures to start the EIS process? A Council decision in June will be required to keep the overall schedule on track. Some Committee members suggested proceeding now with a review of the proposals, attempt to do some prioritization and combination or elimination of some proposals, and frame up a package of active proposals for the May 2008 SSLMC meeting in Seward. The consensus was to proceed as such, and do what work is possible now. The SSLMC also concurred with Mr.

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Cotter's suggestion to give the Council a report in April on what proposals remain active, and that the SSLMC will complete its work during the May 2008 meeting.

In light of this delay, some questioned whether the scoping period should be extended. Ms. Harrington noted that under the current schedule, the scoping period ends in late April so a scoping report can be prepared for the Council in time for the June 2008 meeting. Public involvement continues, however, as the EIS alternatives are further developed in June, so there is additional opportunity for public comment even after the formal scoping period closes.

Proposal Review and Discussion

The SSLMC proceeded with a review of each proposal and discussed remaining data needs and whether some proposals can be eliminated or combined. The following summarizes those discussions. NOTE: some proposals were discussed in more detail than others; at their May 2008 meeting, the SSLMC intends to complete a more detailed analysis of each proposal.

Areas in **BOLD** are data or information products still pending from various sources (noted).

Note: the SSLMC requested that NMFS provide to the SSLMC a review of each proposal for any legal or management issues that may create a problem for how the proposal might be implemented. The Committee also requested a PR review for any potential ESA issues.

Proposal 1/29

- Should the A season start date be specific? 7 days was the decision
- Should the end of the B season be shortened an equivalent number of days?
- The proponents propose that the end of the A season be shortened an equivalent number of days, but not the B season
- For SSL conservation, NMFS may require the current length of the period between the end of the B season and the start of the A season to remain as is; however, some believe there may be some flexibility in changing the length of this period
- No new data sets are required for review of this proposal

Proposal 2/27

- This proposal could affect the amount of pollock harvested from SSL CH in the BSAI (that is, the SCA) – proponents believe less pollock would come from the SCA if this proposal is implemented
- The proponents provided a statement of this proposal to help guide development of data needs: *Given the restrictions on pollock harvests within BSAI SSL critical habitat in the A and B seasons (the restrictions are different between the A and B seasons), what is the effect on potential CH removals of shifting 5% of the TAC from the B season to the A season in a year when the directed pollock TAC is 1.3*

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million mt or less? The status quo A/B season split is 40/60; the proposed A/B season split is 45/55.

- The proposed change in TAC allocation to the A and B seasons can be referenced to the 2003 BiOp Supplement's red light/green light table that indicates 40/60 was green but that the guideline was 50/50
- The proposed threshold of 1 million mt was discussed and is retained as a feature of this proposal
- **The SSLMC will need a more comprehensive table of data showing pollock TACS and harvests in the BSAI fishery, in the A and B seasons, inside and outside the SCA in each season, and percentages, over the period 2003-2007**

Proposal 3

- Withdrawn – Paul Soper email to L. Cotter

Proposal 4

- NPLA no longer exists, but the new Freezer Longline Coalition (FLC) wishes the proposal to remain active
- **Data needs: seabird bycatch in BSAI C/P H&L cod fishery, A and B seasons, last 10 years**

Proposal 8

- This is a proposal for management of a Bering Sea Atka mackerel fishery
- Agency's new definition of "trip" negates ability of fleet to harvest Atka mackerel in the Bering Sea (previously AM could be harvested incidental to other fisheries)
- Industry desires an AM fishery in the Bering Sea; put more AM into BS; need areas to fish; could benefit SSLs
- NOTE: the fast track request referenced at the beginning of these minutes was actually for Proposal 33/7/24, not Proposal 8
- **Need data from 541 AM harvests, bycatch, etc.; J. Gauvin to obtain data from Sea State**

Proposal 9

- No new data sets are required for review of this proposal

Proposal 11

- The seasonal apportionments of pollock TAC in the GOA will be addressed in Proposal 14
- This proposal is withdrawn

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Proposal 12

- No new data sets are required for review of this proposal

Proposal 13

- Data for average catch, last 5 years, are in hand
- **F. Kelty to provide vessel numbers in this area for last 5 years**
- **SSLMC requests an example of how this fishery currently “works” (overall cod TAC in BSAI for a year, allocation amount to the jig and longline sector for that year, cap amount, etc.) and an example how it would “work” as proposed (F. Kelty to provide)**

Proposal 14

- **J. Bonney to provide season start dates if the A&B seasons and the C&D seasons are combined, as proposed – the desired start dates – and Martin Dorn’s analysis update**
- **J. Bonney also to provide an updated, clarified proposal – including elements of Proposal 11**

Proposal 15

- No new data sets are required for review of this proposal

Proposal 16

- No new data sets are required for review of this proposal

Proposal 17/10

- The SSLMC decided to eliminate the option for a 100/0 seasonal apportionment and retain only an 80/20 seasonal apportionment proposal
- **Data needs: halibut and salmon bycatch data for this fishery for historic (1998-2000) and recent years to judge impacts on bycatch from changing the seasonal apportionments**

Proposal 18

- No new data sets are required for review of this proposal

Proposal 19

- No new data sets are required for review of this proposal

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Proposal 20

- The SSLMC believes that the catch data needed to judge the merits of this proposal are confidential
- **C. McCallum will provide confidential data**

Proposal 21

- Data needed for review of this proposal are likely to be confidential
- **C. McCallum will provide confidential data**

Proposal 22

- Proponent has changed this proposal to only a change in the pollock trawl closure at Atka North Cape from 20 nm to 3 nm; may include Kanaga Sound option also
- The SSLMC believes that some of the other options proposed will likely not be possible
- It was noted that NMFS has determined a 454 mt fishery in the Adak area will require formal consultation, indicating chances of this fishery may be slim
- There may be some informative data in SSL scat samples for this area
- **The data needs identified previously for this proposal are still valid – the SSLMC will need those data sets relevant to the Atka North Cape option – including recent surveys by NMFS in this area**

Proposal 23

- The SSLMC discussed whether to keep this proposal given the apparent current lack of current Council interest in an AI/BS cod split
- The proponents want it retained, as there may be helpful information provided in the status quo BiOp with which this proposal might be judged; keep it as a place holder
- The SSLMC noted that the Council has put off into the future any further consideration of the concept of a cod TAC split, and the science is still unfolding; developing allocation scheme will be difficult and time consuming
- The proponents want this kept in the mix of proposals for the upcoming consultation on the package of recommendations
- Some believe that by retaining the proposal in any package of recommendations forwarded by the SSLMC, this could slow the analysis process and affect the schedule
- The SSLMC believes this is a call for the Council since the Council will receive information from the BSAI Plan Team this fall and may wish to take further action at that time

Proposal 24

- This is reactivated as an alternative to Proposal 33/7/24 (see below)

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- This proposal will be a backup proposal for consideration in case Proposal 33/7/24 does not advance

Proposal 25

- There hasn't been a recent fishery in this area, so there are no data available
- Need information on abundance of Atka mackerel in the area, but it is unlikely there are survey data available
- May need to look at AM survey data and fishery performance data from other areas as a proxy for how to analyze this proposal
- **Request to D. Fraser and J. Gauvin for data to help analyze this proposal**

Proposal 26

- After Amendment 85, C/Vs now have an allocation but have difficulty harvesting the quota late in the year
- No new data sets are required for review of this proposal

Proposal 28

- Withdrawn

Proposal 30

- This has two options: conduct fishery as a State waters fishery or as a State parallel fishery
- **Data needs: the Board of Fisheries information package that accompanied Proposal 6 (HQ-06F-002) which may have the historic data from a previous Commissioner's permitted fishery**

Proposal 31

- Data are available in the recent NMFS letter to the BOF
- No new data sets are required for review of this proposal

Proposal 32

- Proposal may be withdrawn pending additional input from the BOF
- No new data sets are required for review of this proposal

Proposal 33/7/24

- This has morphed into a proposal for a new approach to Atka mackerel fishery management; requires intercooperative agreements and participation
- This is the proposal the proponents wanted fast tracked (not Proposal 8)

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- Have in hand the NMFS response to a request to fast track
- A new start date option was added to the proposal
- Note – old proposal 24 will be retained as a separate proposal for consideration in case this proposal does not advance
- **J. Gauvin and D. Fraser to jointly develop this proposal further and bring to the next meeting a summary sheet comparing status quo AM management and how AM would be managed under this new approach (including fishery start dates, length of fishing periods, etc.)**

Changes in SSL Use of Haulouts and Rookeries

The SSLMC discussed new data on SSL use of haulout and rookery sites in the BSAI and the GOA. In recent years, NMML scientists have observed that at some sites, SSL usage has either declined or increased, and in some cases sites are no longer used and in other cases new sites are now occupied. The SSLMC questioned how this would be addressed by NMFS, particularly related to critical habitat designation and imposition (or removing) of SSL protection measures in conjunction with these changes. In other words, would NMFS change the protection measures if a haulout is now considered a rookery? And what would that process involve? NMFS reported that a revision to regulations could be proposed in the future, but this will require rule making. Earlier in the meeting, Dr. Rotterman noted that the BiOp will provide a comprehensive review of all SSL sites, and will identify where changes have occurred and where new sites are now being used.

The SSLMC also discussed whether recolonization of sites is an indicator of recovery? How will NMFS treat the changes observed in SSL site usage in the recovery process and in future consideration of changes in SSL protection measures? Some insights will be provided in the status quo BiOp. The BiOp looks at the current situation, including all available (and new) data on SSL site usage.

Biological Opinion Schedule

The SSLMC requests the opportunity to review the draft status quo BiOp as early as possible, but at least a week or so before the May 12-16 meeting. Since this BiOp will be a critical information source that will guide the SSLMC's work, an opportunity to fully digest and understand the BiOp and its conclusions is essential to the SSLMC's efforts to develop a package of recommendations. The SSLMC also requests a clarification from NMFS if there will be an opportunity for a revision to this draft status quo BiOp, or time in the schedule to allow for review and comment on the draft status quo BiOp, before proceeding with preparation of an action BiOp?

Next Meeting and Work Schedule

The SSLMC will meet during the week of May 12-16 in Seward at the Alaska Sea Life Center. This meeting will be to complete the proposal analysis process and to develop final recommendations for Council review. The SSLMC will receive the draft status quo BiOp at this May meeting, and prepare its recommendations based on information in the BiOp.

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The SSLMC also needs to rescore all proposals with the PRT since there have been changes, deletions, etc. and the rankings need to be updated . Chairman Cotter requested that SSLMC members reserve that entire week for this meeting, although the Committee could finish its work early.

The SSLMC's final recommendations will be based on all of the Committee's previous work, including proposal ranking by the Proposal Ranking Tool, analysis of proposals using all available information and new data on SSLs and SSL/fishery interactions, comports proposals with the final SSL Recovery Plan and the draft status quo BiOp, consideration of public comment and input during SSLMC meetings over the past 2 years, and its own knowledge and consideration of information gathered during PowerPoint presentations from marine mammal biologists and fishery researchers, reviewing new scientific publications, consideration of the large number of publications in the SSL Compendium compiled by Drs. Loughlin and Tagart, and many other information and data sources as provided on the resource CDs and DVD. This final set of recommendations, and the rationale and justification for them, as well as the record built during the proposal review process, will be presented to the Council at its June 2008 meeting. The intent will be that this set of recommendations would be modified, and then approved by the Council as the "proposed action" for analysis in a supplemental draft EIS.

Adjourn

The Committee adjourned at 10:30 am March 12.

Bill Wilson
Bill.wilson@noaa.gov

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North Pacific Fishery Management Council
Steller Sea Lion Mitigation Committee Meeting
March 10-14, 2008
Hawthorne Suites, Ballroom B
1110 West 8th Avenue
Anchorage

Purpose: Proceed with proposal analysis, review additional data sets requested at January 2008 meeting, and develop preliminary draft package of recommendations for Council review.

AGENDA

March 10 – 1:00 PM – 5:00 PM

1. Introductions and Opening Remarks, Announcements, Agenda Approval (Cotter)
2. Minutes of Last Meeting (Wilson)
3. Update on February 2008 Council Meeting and SSLMC Schedule (Wilson, Cotter)
4. Review Final SSL Recovery Plan (Rotterman)

March 11-12-13 – 8:30 AM – 5:00 PM

5. Summary of Proposals as of January 2008 Meeting (Cotter, Wilson)
6. Receive and Discuss Additional Databases Requested for Proposal Review (Mabry, Lewis, Miller, Brown)
7. Initiate Proposal Analysis: Review Proposals, Databases, Rankings, Other Information
8. Evaluate Tradeoffs, Develop Preliminary Draft Recommendations

March 14 – 8:30 AM – 5:00 PM

9. Continue Development of Preliminary Draft Recommendations
10. Finalize Preliminary Draft Recommendations
11. Discuss Process for BiOp Review at May 2008 Meeting
12. Schedule and Logistics for May 2008 Meeting in Seward (Wilson)
13. Action Items, Closing Remarks, Adjourn (Cotter)

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Public comment periods will be provided during the meeting.

Contact Bill Wilson at the Council offices if you have questions: 907-271-2809 or bill.wilson@noaa.gov

Proposal #	Status	Description	Sector	Area	Proponent
1/29	Active	Start pollock A season 5-15 days earlier	AFA pollock trawl	BSAI	APA/UCB
2/27	Active	Framework pollock A/B TAC apportionment: 45/55 % if BSAI TAC <1.3 M mt; 40/60 % if BSAI TAC >1.3 M mt	AFA pollock trawl	BSAI	APA/UCB
3	Withdrawn	Start C/P Cod fishery B season 17 days earlier	C/P cod pot	BSAI	Trident
4	Active	Allow H&L C/P cod fishery to harvest 70% in A season, 30 % in B season from current 51/49%; additional A season harvest outside CH only	C/P cod H&L	BSAI	FLC (NPLA)
8	Active	Allow directed fishing for Atka mackerel between 10 and 20 nm of SSL sites in two discrete Bering Sea areas. The purpose is to increase the fishing grounds available to the 541/BS mackerel fishery	Atka mackerel trawl	EBS	H&G W.G.
9	Active	Change A/B season cod apportionment in pot C/V >60' sector from 51/49 to 80/20 %	C/V cod pot	BSAI	UFMA
11	Withdrawn	Change pollock ABCD season apportionment in GOA Area 610 to 1/3, 1/3, 1/6, 1/6	Pollock trawl	WGOA	AEB
12	Active	Open a portion of Jude Is. closure outside 10 nm for pollock trawling (open Pavlof Bay)	Pollock trawl	WGOA	AEB
13	Active	Increase harvest cap for Bogoslof exemption area for <60' jig and H&L sector to no more than 1% of the BSAI cod TAC; include allowing pot vessels also; include jig set aside of 10% of the cap	Cod jig, H&L; pot(?)	BSAI	UNFA
14	Active	Aggregate GOA pollock A and B season TACs and aggregate C and D season TACs when GOA pollock TACs are low	Pollock trawl	GOA	AGDB
15	Active	Allow pollock trawling to 3nm at Cape Ugat (Area 620) during A & B seasons and to 10 nm in C & D seasons	Pollock trawl	CGOA	AGDB
16	Active	Change GOA pollock C season start date from Aug 25 to Sept 1 (the humpy proposal)	Pollock trawl	GOA	AGDB
17/10	Active	Change GOA cod (all gear) A/B seasonal TAC apportionments from current 60/40 to up to 80/20	Cod fixed/trawl	GOA	AGDB/AEB
18	Active	Allow cod trawling to 10 nm Jan 20 to June 1 at Chernabura (WGOA)	Cod trawl	WGOA	WGF
19	Active	Change groundfish trawl closure around Dalnoi Pt from 0-3 to 0-20 n mi (option 0-10 n mi)	Groundfish trawl	EBS	St. George

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20	Active	Remove Spitz Is. 0-3 n mi closure to allow fishing to the beach for cod jig and pot gear <60' vessels only	Cod jig/pot	CGOA	Chignik
21	Active	Change Sutwik Is. 0-20 n mi closure to 0-3 n mi for cod jig and pot gear <60' vessels only	Cod jig/pot	CGOA	Chignik
22	Active	Change pollock fishery geographic closures in AI to match the cod fishery closures in the AI; option to change by subarea; option to limit harvest in relaxed zones; option to open only the Kanaga and Atka "boxes"	Pollock trawl	AI	AEC/Adak Fish
23	Active	Split cod TAC apportionment between AI and BS	Cod (all sectors)	BSAI	AEC/Adak Fish
24	Active	Subject limited access trawl C/V fleet to registration, trip limits, and weekly delivery limits. Back-up proposal to 33/7/24.	Atka mackerel trawl	AI	AEC/Adak Fish
25	Active	Allow C/V Atka mackerel fishing to 10 n mi at the Kasatochi SSL site in Area 541	Atka mackerel trawl	AI	AEC/Adak Fish
26	Active	Change A/B/C seasonal BSAI cod trawl C/V apportionment from 74/11/15 to an A/B seasonal apportionment of 89/11	Cod C/V trawl	BSAI	UCB
28	Withdrawn	Extend end of BSAI pollock B season from Nov. 1 to Dec. 1	Pollock trawl	BS	UCB
30*	Active	Open closed areas >3 nm from Rugged, Chiswell, & Seal SSL sites between 149 & 150 in state waters to pollock trawling	Pollock trawl	CGOA	ADF&G
31*	Active	Change allocation of cod in WGOA state waters fishery from 25% to 50% of Federal WGOA TAC	Cod jig, pot	WGOA	Sand Point
32*	Active (pending BOF confirmation)	Limit vessels to <60' in WGOA cod fishery in state waters	Cod jig, pot, H&L, trawl	WGOA	King Cove
33/7/24 33a/7/24	Active	Change SSL regulations affecting Atka mackerel fishery in AI sub-areas 542 and 543 to allow inter-cooperative agreements to control daily and weekly harvest rates at less than or equal 2001-2007 catch rates in lieu of HLA regulations; option (a) to change date of fishery end	Atka mackerel trawl	AI	H&G W.G./AEC & Adak Fish

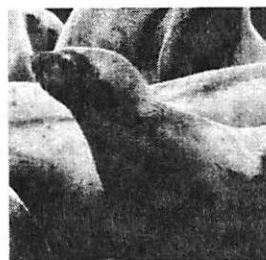
* SSLMC recommendations to be advisory; will require BOF approval



RECOVERY PLAN FOR THE STELLER SEA LION REVISED



MARCH 2008



Rationale of Plan Development: Requirements and Goals

ESA Statutory req. 4(f):

The Secretary shall develop and implement plans for the conservation and survival of endangered and threatened species.

Goal - to restore a listed species to the point where it is no longer endangered or threatened; recovery under the ESA does not necessarily mean historic or current carrying capacity

ESA: Components of Recovery Plans

Each plan must include:

- Descriptions of site specific management actions necessary for recovery
- Objective, measurable criteria that, when met, would result in removing the species from the list of endangered and threatened species
- Estimates of time and cost to carry out the recommended recovery measures

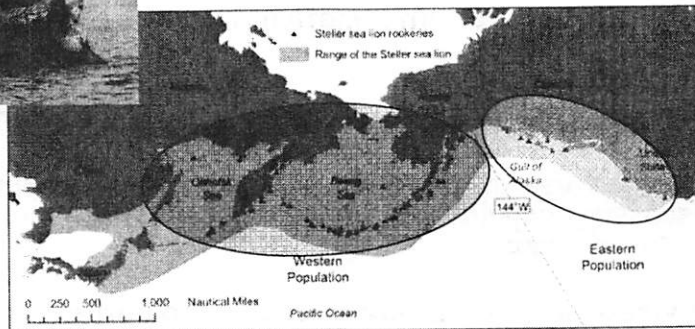
SSL Recovery Plan Content

- Population structure and distribution: eastern and western DPS
- Western Population Status and Ecology
- Review of Conservation Actions
- Threats Assessment
- Criteria for Downlisting/Delisting
- Recovery Actions (78 for wDPS)
- Estimates of Time/Cost to Recovery

Steller Sea Lion DPS Delineation



Western and Eastern Distinct Population Segments



Chapter I: Background

Updated Status -2006 & 2007

- Previous draft: data indicated increasing trend in abundance
- Based on incomplete non-pup surveys in 2006 and 2007: size of adult and juvenile portion of wDPS throughout much of its range (Cape St. Elias to Tanaga Island) in Alaska largely unchanged between 2004 (N=23,107) and 2007 (N=23,118)
- Significant regional differences exist in recent trends: increases between 2004 and 2007 in the E ALEU, W GULF and C GULF have largely been offset by decreases in the eastern C ALEU and E GULF.
- Recent trends (through 2004 and 2006) in the western C ALEU and W ALEU have been negative, suggesting that the overall trend for the wDPS in Alaska (through 2007) is either stable or declining slightly.

Changes from 2007 Draft Plan Chapter I: Background on wDPS

- Tone and content are changed to incorporate and reflect new information from 2006 and 2007 incomplete non-pup counts that suggest current population stability or possible slight decline overall
- Retained updated information on birth and survival rates
- Clarified and updated sections on population structure
- Clarified use of the terms "Asian" and "Russian" when discussing populations, geographic regions, habitats; modified figure
- Revised Nutritional Stress section to correct error in references; revise presentation and discussion

Chapter I: Background

Chapter III: Factors Potentially Influencing wDPS

Plan describes factors affecting sea lion survival and reproduction rates. Final keeps the enhanced description of factors provided in the 2007 draft in terms of:

Top-Down

- Predation
- Commercial harvest
- Intentional shooting
- Entanglements
- Incidental catch by fishing gear
- Disturbance
- Disease



Bottom-Up

- Reductions in prey biomass, availability or quality
- Environmental variability
- Disturbance
- Disease, parasites
- Contaminants

Chapter III: Factors Potentially Influencing wDPS

Chapter III: Comparison with 2007 Draft Plan

- **Revised and expanded killer whale predation section to incorporate new information. Expanded and clarified discussion of studies with differing points of view about the potential threat posed by this predation.**
- **Expanded discussion of "sequential megafaunal collapse" hypothesis and direct impact of killer whales**
- **Retained updated section on contaminants**
- **Modified nutritional stress section to improve clarity**

Chapter III: Factors Potentially Affecting the wDPS

Chapter III: Comparison with 2007 Draft Plan

- **Added description and discussion of FIT studies in response to comments**
- **Explanation of how effects of disturbance may be either direct (reactions could lead to direct injury, mortality) or indirect (reduced fitness, increased risk of predation) retained**
- **Added "Data Gaps" section to all factors**

Chapter III: Factors Potentially Affecting the wDPS

Conceptual Definition of Threat Levels

High: threat with **substantial** impacts to recovery requiring mitigation and/or further research to identify extent of impacts

Medium: threat with **moderate** impacts; mitigation could improve the likelihood of recovery, but in and of itself threat has limited impact on population trajectories

Low: source of mortality that is unlikely to have much impact on population trajectory

Chapter IV: Threats Assessment for wDPS

Relative Impacts of Threats: western DPS

Threat	Relative Impact	Uncertainty	Mitigation Feasibility
Environmental Variability	Potentially High	High	Low
Competition from Fisheries	Potentially High	High	High
Killer Whales	Potentially High	High	Low
Toxic Substances	Medium	High	Medium
Incidental Take (Fisheries)	Low	Medium	Medium
Illegal Shooting	Low	Medium	Medium
Entanglement	Low	Medium	Medium
Disease/Parasitism	Low	Medium	Low
Disturbance/Vessels	Low	Medium	High
Disturbance/Research	Low	Low	High

Chapter IV: Threats Assessment for wDPS

Change from 2007 Draft Plan: Killer Whale Threat Rating and Discussion

- To be deliberately precautionary: Potential Threat from Killer Whale Predation returned to **"potentially high"** from **"medium"**; This reflects the high level of uncertainty associated with this potential threat



Chapter IV: Threats Assessment for wDPS

Retained Changes in 2007 Draft Plan on Incidental Take Threat Scenario

Relative Impact of Incidental Takes - kept reclassification at **"low"**

- Juvenile sea lions are the age-class most vulnerable to incidental take
- < 100 takes per year across the entire wDPS (estimated)
- Medium level of uncertainty - primarily pertains to takes in Russia/Asia
- Medium feasibility of mitigation - take won't be much further reduced without extraordinary measures

Change from draft--Added a small amount of information to observer coverage discussion for clarity

Chapter IV: Threats Assessment for wDPS

Chapter V: Recovery Goals and Strategy for the Western DPS

Goals - consistent with the ESA, downlist and then delist wDPS

Strategy - 4 actions are especially important to recovery:

1. Continue population monitoring and research on key threats to reduce and minimize uncertainty
2. Maintain current (or equivalent) fishery conservation measures [Action 2.6.6]
3. Design and implement an adaptive management program to evaluate fishery conservation measures [Action 2.6.8]
4. Develop a Recovery Implementation Plan

Chapter V: Recovery Plan for the wDPS

Downlisting/Delisting Criteria Development

Plan must include "objective, measurable" criteria (biological) and listing factor (threats) criteria [ESA 4(a) & 4(f)]

PVA

Recovery Team commissioned PVA to estimate risk of extinction based on recovery scenarios (Dr. Goodman; detailed in Plan Appendix)

- PVA process helped Team focus on development of criteria, but biological recovery criteria were not developed directly from PVA

Weight of Evidence Approach:

1. Review and synthesize all available biological and ecological information
2. Determine key demographic parameters, other factors that would indicate species is no longer at risk of extinction
 - performance of the population over substantial time period, and
 - reduction of threats

Chapter V: Recovery Plan for the wDPS

Considerations in Selecting Recovery Criteria for wDPS

Population Performance Benchmarks:

- Listing under ESA was due to population trends not population numbers
- IUCN Endangered Criteria: 50% decline in 3 generations (which is 30 years for SSLs)
- eDPS has shown a 3% yearly increase in population for 30 years, no environmental signal; wDPS increased at 3% between 2000-04, so this is a reasonable scenario for recovery
- 3% annual growth rate recommended in Plan is less conservative than default maximum growth rate of 12% used in PBR

Chapter V: Recovery Plan for the wDPS

Final Maintains Changes to Chapter V Made in 2007 Draft - Recovery of wDPS

- Vital Rates removed as a downlisting and delisting biological criterion, based on recommendations made during 2006 Public comment period
- More comprehensive overview of PVA added here from Appendix
- Further clarification and enhanced description of recovery criteria development

Listing Factor (Threats) Criteria

Five standard listing factors must be addressed in any reclassification of a species (required by ESA Section 4(c)(2)(B):

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) Inadequacy of existing regulatory mechanisms; and
- (E) Other natural or manmade factors affecting its continued existence

Recovery is based on reduction or removal of threats and improvement of species' status during the period in which it is listed

Chapter V: Recovery Plan for the wDPS

Western DPS Recovery Criteria: Downlisting from Endangered to Threatened

1. The population for the U.S. region has increased (statistically significant) for 15 yrs. on average, based on counts of non-pups. Based on est. population size of ~42,500 animals in 2000 and assuming a consistent but slow (i.e., 1.5%) increasing trend, this would represent ~ 53,100 animals in 2015.
2. Population trends in at least 5 of 7 subareas must be consistent with criterion 1; the population trend in any two adjacent subareas cannot be declining significantly.

Subareas: EGOA, CGOA, WGOA, EAI, CAI, WAI, Russia/Asia

3. Listing factor (threats) criteria are met



Chapter V: Recovery Plan for the wDPS

Western DPS Recovery Criteria: Delisting

1. Population for the U.S. region of the DPS has increased (statistically significant) for 30 years (at an annual growth rate of 3%), based on counts of non-pups. Based on an est. population size of ~ 42,500 animals in 2000, this would represent ~103,000 in 2030.
2. Population trends (non-pups) in at least 5 of 7 sub-regions are stable or increasing, consistent with the trend under criterion #1. The population trend in any two adjacent subareas cannot be declining significantly; and the trend in any one subarea cannot decline by more than 50%

Subareas: EGOA, CGOA, WGOA, EAI, CAI, WAI, Russia/Asia

3. Listing factor (threats) criteria are met



Chapter V: Recovery Plan for the wDPS

Subareas Issue

- NOAA Fisheries received comment that it should remove subarea requirement because Russia is outside of U.S. managerial control
- Sea lions breeding in Russia are part of the western DPS of Steller sea lions
- NOAA Fisheries needs to consider all portions of the DPS in reviews of listing status

Recovery Action Implementation for wDPS

78 Actions in 5 categories
Estimated \$430 million cost to full recovery

1. Baseline Population Monitoring: 11 actions; \$3.1 Million*
 - Completion of annual surveys to estimate trends for pups and non-pups is the only Priority 1 Action identified in the Plan
2. Ensure Adequate Habitat and Range for Recovery: 23 actions; \$10.1 Million*
3. Protect from Over-Utilization for Commercial, Recreational, Scientific, or Educational Purposes: 10 actions; \$1.7 Million*
4. Protect from Diseases, Contaminants, and Predation: 18 actions; \$2.9 Million*
5. Protect from Other Natural or Manmade Actions and Administer the Recovery Program: 16 actions; \$2.3 Million*

Chapter V: Recovery Plan for the wDPS

* Cost estimates shown for Fiscal Year #1

Chapter VII: Eastern DPS Recovery Plan Delisting Criteria

1. Population should increase at 3% (on average) for 30 years (which is 3 generations)
2. Listing factors (threats) criteria prescribed by ESA must be met

Chapter VII: Recovery Plan for the eDPS

Chapter VII: Eastern DPS Recovery Actions

Recovery actions are limited to:

- (a) initiation of status review; and then
- (b) developing a post-delisting monitoring plan



Chapter VII: Recovery Plan for the eDPS

