

MEMORANDUM

TO: Council, SSC and AP Members
FROM: Chris Oliver *Chris*
Executive Director
DATE: September 26, 2006
SUBJECT: Protected Resources Report

ESTIMATED TIME 1 HOUR

ACTION REQUIRED

Receive report on Protected Resources issues and take action as necessary.

BACKGROUND

A. Seabirds

At its June 2006 meeting, the Council received a report from scientists with the Washington and Alaska Sea Grant programs regarding research conducted on the occurrence of albatross and other seabird species in inside waters, and on the performance of seabird avoidance gear on 26–55 ft vessels. At that meeting, NMFS suggested the Council consider refinements to the existing seabird avoidance measures and perhaps seek additional public comment and suggestions for improving seabird avoidance. The Council approved proceeding with an analysis and preparation of an Environmental Assessment of new regulations that would change seabird avoidance measures in inside waters and performance standards for seabird deterrence on small vessels fishing outside waters. Several alternatives also were suggested. NMFS and Council staffs have developed a draft problem statement, list of alternatives, and preliminary analysis of these alternatives and this document is currently in internal review. The Council will receive the report at its December 2006 meeting.

B. Cook Inlet Beluga Whales

As previously reported to the Council, NMFS is conducting a status review of the Cook Inlet beluga whale Pursuant to the Endangered Species Act. The agency has published a 90-day finding on a petition to list the Cook Inlet population as endangered under the ESA (Item B-7(a)). NMFS has begun preparation of an Environmental Impact Statement that will examine potential effects on beluga whales from Cook Inlet oil and gas activities, commercial and recreational vessel traffic, municipal and industrial discharges, and fishing activities such as incidental mortality from gear entanglement, redistribution of belugas from fishing vessel activity, and effects on beluga whale prey items, particularly salmon. As new information is available on the development of this EIS, or other information on beluga whales in Cook Inlet, staff will provide this to the Council.

C. Steller Sea Lion Research Permits

As reported to the Council previously, the Humane Society and other plaintiffs have sued the Secretary of Commerce claiming violations of NEPA and other Federal statutes by issuing certain permits that authorize research on the Steller sea lion. On May 26, 2006 U.S. District Court Judge Ellen Segal Huvelle ordered that the contested permits that authorize research on SSLs be vacated. Thus, all SSL research, survey, and monitoring studies for 2006 were essentially halted. Since that time, researchers have met with the plaintiffs and the Court, and a settlement agreement will allow some noninvasive SSL research to proceed. A listing of those research projects allowed to continue is attached as Item B-7(b).

An EIS on NMFS' program for grants and permits for SSL and northern fur seal research was initiated in the fall of 2005, and the scoping process has continued through 2006. The NMFS contractor preparing the EIS, URS Corporation, held a series of Focus Group Meetings to help URS and NMFS identify reasonable alternatives for analysis in the EIS. The Council was invited to one of those Focus Group Meetings. Additional information including a report on the Focus Group Meetings is provided as Item B-7(c). The current schedule for completion of the EIS (Item B-7(d)) calls for a final EIS in March 2007 and a Record of Decision by May 2007. The SSL research community hopes that with completion of the EIS process on this schedule, SSL research and monitoring studies can restart for the 2007 season.

D. Experimental Pollock Fishery in Aleutian Islands

In February 2006, the Council recommended approval of an Exempted Fishing Permit (EFP) to the Aleut Enterprise Corporation to allow trawling for pollock in certain areas of critical habitat for Steller sea lions in the Aleutian Islands. The objective of that project was to test the feasibility of using commercial fishing vessels for acoustic surveys of pollock in the Aleutian Islands. The project was completed last spring, and the Alaska Fisheries Science Center has completed data analysis. Attached as Item B-7(e) is a preliminary report of progress for the Council and public to review. At the December 2006 Council meeting, Dr. Steve Barbeaux with the AFSC will present the study design and results of the project and can answer questions about this project at that time. Dr. Barbeaux and representatives of the Aleut Enterprise Corporation also plan to discuss with the Council a request for a new EFP that would modify the experimental design to improve the study in 2007.

E. Draft Revised Steller Sea Lion Recovery Plan

The SSC met August 15-16, 2006 in Juneau in a special session to review the draft revised SSL Recovery Plan. The SSC's minutes of that meeting are attached as Item B-7(f). The Council met in a special session via teleconference on August 25, 2006 to receive the SSC's report and to prepare comments on the plan. The Council's letter is attached as Item B-7(g). Since the comment closing date of September 1, 2006, NMFS has been reviewing the comments to determine how to proceed. NMFS staff will be available to answer questions.

F. International Whaling Commission Meeting in 2007

As reported to the Council previously, the International Whaling Commission (IWC) will convene its 2007 meeting in Anchorage, Alaska. During the IWC's 2006 meeting, NMFS Director Dr. Hogarth was elected by the commissioners of the IWC to be the new chair for the next three years. As such, Dr. Hogarth will chair the May 2007 meeting (see Item B-7(h)), which is expected to consider several potentially sensitive issues including subsistence whaling by Alaskan Native villages. As additional information becomes available, the Council will receive updates on next year's IWC meeting.

G. FMP Consultation and draft BiOp Progress

The NMFS has notified the Council that the schedule for completion of the draft BiOp has changed (see Item B-7(i)). The Council will receive the draft BiOp in early December 2006.

As an interim step in the process of preparing the draft BiOp, a progress report on its development was provided by NMFS Protected Resources Division to NMFS Sustainable Fisheries Division in early August 2006. This report, in the form of a preliminary draft of the first four chapters of the draft BiOp, was also provided to the Council (sent out in a Council mailing in early September). The SSL Mitigation Committee received a presentation on these first chapters at their September 12-13 meeting (minutes of that meeting are attached as Item B-7 (j)). The Council will receive a detailed presentation on the full draft BiOp, as well as the SSLMC's comments, at its February 2007 meeting.

VII. In accordance with Section 766.23(c), Khan and Pakland may file an appeal with the Administrative Law Judge.

VIII. A copy of this Order shall be delivered to Karni and the Related Persons. This Order shall be published in the **Federal Register**.

Dated: August 1, 2006.

Eileen M. Albanese,

Director, Office of Exporter Services.

[FR Doc. 06-6716 Filed 8-4-06; 8:45 am]

BILLING CODE 3510-DT-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 0713061]

Endangered Species; Permit Nos. 1579, 1555, and 1545

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

ACTION: Notice; Issuance of permits.

SUMMARY: Notice is hereby given that the following groups have been issued scientific research or enhancement permits to take shortnose sturgeon (*Acipenser brevirostrum*):

Alden Research Laboratory, Inc. (Edward P. Taft, Responsible Party), 30 Shrewsbury Street, Holden, MA 01520 (Permit No. 1579);

David J. Stier, Springfield Science Museum, 220 State Street, Springfield, MA 01103 (Permit No. 1555); and

North Carolina Zoological Park (John D. Groves, Principal Investigator), 4401 Zoo Parkway, Asheboro, NC 27205 (Permit No. 1545).

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

All documents: 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)427-2521;

For Permit Nos. 1579 and 1555: Northeast Region, NMFS, One Blackburn Drive, Gloucester, MA 01930-2298; phone (978)281-9328; fax (978)281-9394; and

For Permit No. 1545: Southeast Region, NMFS, 263 13th Avenue South, St. Petersburg, FL 33701; phone (727)824-5312; fax (727)824-5309.

FOR FURTHER INFORMATION CONTACT: Kate Swails or Jennifer Skidmore at (301)713-2289.

SUPPLEMENTARY INFORMATION: The requested permits have been issued under the authority of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*) and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR parts 222-226).

Permit No. 1579: On May 26, 2006, notice was published in the **Federal Register** (71 FR 30385) that a request for a scientific research permit to take shortnose sturgeon had been submitted by Alden Research Laboratory, Inc. Alden will perform research on entrainment and impingement rates for selected bar rack and bypass configurations in attempt to identify design criteria for a downstream passage facility at the Hadley Falls Hydroelectric Project on the Connecticut River. The applicant will use captive-bred sturgeon and all testing will take place in the Alden Lab testing flume. During the first year of the permit up to 70 sturgeon will be transported from hatcheries, measured, handled, Passive Integrated Transponder tagged, and participate in the flume testing. During the remaining four years up to 200 sturgeon will participate in the study annually. At the end of the five-year study the sturgeon will be sacrificed.

Permit Nos. 1555 and 1545: On November 4, 2005 and November 10, 2005, notice was published in the **Federal Register** (70 FR 67141 and 70 FR 68398) that requests for enhancement permits to take shortnose sturgeon had been submitted by David Steir and the North Carolina Zoological Park (John D. Groves, Principal Investigator), respectively. Mr. Steir will obtain and use five captive-bred, non-releaseable juvenile shortnose sturgeon from the Silvio O. Conte Anadromous Fish Research Center in Turners Falls, MA. The North Carolina Zoological Park will use ten captive-bred, non-releaseable shortnose sturgeon from the U.S. Fish and Wildlife Service's Warm Springs National Fish Hatchery for the purposes of educational display. The proposed projects to display endangered cultured shortnose sturgeon respond directly to a recommendation from the NMFS recovery plan outline for this species. These sturgeon displays will be used to increase public awareness of the shortnose sturgeon and its status. The proposed projects will educate the public on shortnose sturgeon life history and the reasons for the species decline. The permits are issued for 5 years.

Issuance of these permits, as required by the ESA, was based on a finding that these permits (1) Were applied for in good faith, (2) will not operate to the

disadvantage of such endangered or threatened species, and (3) are consistent with the purposes and policies set forth in section 2 of the ESA.

Dated: August 1, 2006.

P. Michael Payne,

Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. E6-12755 Filed 8-4-06; 8:45 am]

BILLING CODE 3510-22-S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[Docket No. 060725202-6202* I.D. No. 072006D]

Endangered and Threatened Wildlife; 90-Day Finding for a Petition To List the Cook Inlet Beluga Whale as an Endangered Species

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

ACTION: Notice of 90-day petition finding.

SUMMARY: We (NMFS) announce a 90-day finding on a petition to list the Cook Inlet beluga whale as an endangered species under the Endangered Species Act (ESA). We find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted.

DATES: The finding announced in this document was made on August 7, 2006.

ADDRESSES: Requests for copies of the petition should be addressed to NMFS, Protected Resources Division, 709 West 9th Street, Box 21668, Juneau, AK 99802-1668. The petition may also be viewed on our Web site at <http://www.fakr.noaa.gov/>.

FOR FURTHER INFORMATION CONTACT: Brad Smith, NMFS, 222 West 7th Avenue, Anchorage, AK 99517, telephone (907) 271-5006, fax (907) 271-3030; Kaja Brix, NMFS, (907)586-7235, fax (907) 586-7012; or Marta Nammack, NMFS, (301)713-2289; 1401.

SUPPLEMENTARY INFORMATION: On April 20, 2006, we received a petition from Trustees For Alaska to list the Cook Inlet beluga whale as endangered under the ESA. Section 4(b)(3)(A) of the ESA requires, to the maximum extent practicable, that within 90 days of receipt of a petition to designate a species as threatened or endangered, the Secretary of Commerce (Secretary) make a finding on whether that petition

presents substantial scientific or commercial information indicating that the petitioned action may be warranted. That finding is to be published promptly in the **Federal Register**.

In determining whether a petition contains substantial information, we consider information submitted with and referenced in the petition and all other information readily available in our files. We do not conduct additional research at this point, and we subject the petition to critical review. Our ESA implementing regulations at 50 CFR 424.14(b)(1) define substantial information as the amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted. If the petition is found to present such information, the Secretary must conduct a status review of the involved species. In making a finding on a petition to list a species, the Secretary must consider whether such a petition (i) clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved; (ii) contains detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved and any threats faced by the species; (iii) provides information regarding the status of the species over all or a significant portion of its range; and (iv) is accompanied by the appropriate supporting documentation in the form of bibliographic references, reprints of pertinent publications, copies of reports or letters from authorities, and maps (50 CFR 424.14(b)(2)).

The petition submitted by Trustees for Alaska presents substantial evidence in support of their request. The petition states the Cook Inlet population of beluga whales is a "species" under the definition of the ESA, and that NMFS in June 2000 wrote that the Cook Inlet population of beluga whales qualifies as a Distinct Population Segment (DPS), which is a species under the ESA) under the joint NMFS/U.S. Fish and Wildlife policy on the Recognition of Distinct Vertebrate Population Segments under the ESA (61 FR 4722; February 7, 1996). This policy states that a population can be considered a DPS if it is discrete from other conspecific populations and if it is significant to the taxon to which it belongs. The petitioner provides genetic and geographic information to support that the Cook Inlet beluga whale is discrete from other beluga whale populations, as well as rationale for why this population is also significant to the beluga whale species. It is the

petitioner's contention that the Cook Inlet beluga whale is in danger of extinction throughout its range, and, therefore, is an endangered species as defined under 16 U.S.C. 1532(6). The petition presents information on the abundance, demographics, and distribution of the Cook Inlet beluga whales, as well as a discussion of the applicability of the ESA section 4(a)(1) factors found at 16 U.S.C. 1533(a).

We evaluated whether the information provided or cited in the petition met the ESA's standard for "substantial information." After reviewing the information contained in the petition, as described above, as well as other scientific information readily available, we have determined that the petition presents substantial scientific information indicating that the petitioned action may be warranted.

We initiated a status review on March 29, 2006 (71 FR 14836), prior to receiving the petition. A status review is an evaluation of the available information about the biological vulnerability of a species, subspecies, or DPS. Information considered during a status review includes demographic information such as abundance, reproductive success, age structure, and distribution, and information provided in a petition for listing. A status review considers both historical and recent trends in these parameters, to the extent that this information is available. The status review must also evaluate current and potential threats facing the species and ongoing efforts to protect the species, subspecies, or DPS. We solicited information from the public to help us in evaluating the status of the Cook Inlet beluga whale when we announced the initiation of the status review (71 FR 14836; March 24, 2006).

Upon completion of the status review, and within 12 months of the petition, we must make one of the following findings: (1) The petitioned action is not warranted, in which case the Secretary shall promptly publish such finding in the Federal Register and so notify the petitioner; (2) the petitioned action is warranted, in which case the Secretary shall promptly publish in the **Federal Register** a proposed regulation to implement the action pursuant to 50 CFR 424.16; or (3) the petitioned action is warranted, but that (A) the immediate proposal and timely promulgation of a regulation to implement the petitioned action is precluded because of other pending proposals to list, delist, or reclassify species, and (B) expeditious progress is being made to list, delist, or reclassify qualified species, in which case such findings shall be promptly published in the **Federal Register**

together with a description and evaluation of the reasons and data on which the finding is based.

Authority

The authority for this action is the ESA, as amended (16 U.S.C. 1531 *et seq.*).

Dated: August 1, 2006.

William Hogarth,

Assistant Administrator for Fisheries,
National Marine Fisheries Service.

[FR Doc. E6-12754 Filed 8-4-06; 8:45 am]

BILLING CODE 3510-22-S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 080106B]

Endangered and Threatened Species; Take of Anadromous Fish

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

ACTION: Applications for seven scientific research permits (1135, 1290, 1318, 1322, 1330, 1333, 1461).

SUMMARY: Notice is hereby given that NMFS has received seven scientific research permit application requests relating to Pacific salmonids. The proposed research is intended to increase knowledge of species listed under the Endangered Species Act (ESA) and to help guide management and conservation efforts.

DATES: Comments or requests for a public hearing on the applications must be received at the appropriate address or fax number (see ADDRESSES) no later than 5 p.m. Pacific standard time on September 6, 2006.

ADDRESSES: Written comments on the applications should be sent to the Protected Resources Division, NMFS, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232-1274. Comments may also be sent via fax to 503-230-5441 or by E-mail to resapps.nwr@noaa.gov.

FOR FURTHER INFORMATION CONTACT: Garth Griffin, Portland, OR (ph.: 503-231-2005, Fax: 503-230-5441, E-mail: Garth.Griffin@noaa.gov). Permit application instructions are available from the address above.

SUPPLEMENTARY INFORMATION:

Species Covered in This Notice

The following listed species are covered in this notice:



The Humane Society of the United States vs. National Marine Fisheries Service

A recent settlement in a case between the Humane Society and NOAA's National Marine Fisheries Service has allowed specific "no-take and low-take" Steller sea lion research activity to resume under the following permits.

- U.S. District Court Opinion, May 2006
- U.S. District Court Order, May 2006

Settlement Agreement, June 2006

A. No Take Activities. The following "no take" activities may be conducted by the following permit holders:

(1) **Permit No. 782-1768 National Marine Mammal Laboratory, NMFS**

Behavioral and demographic observations from land:

Visual observation of sea lions from hidden observation posts on Ugamak and Marmot Islands, outside of the view of sea lions. No sea lion disturbance is anticipated.

(2) **Permit No. 358-1769 Alaska Department of Fish and Game**

Behavioral and demographic observations from land:

Visual observation of sea lions from hidden observation posts on Lowrie Island, outside of the view of sea lions. No sea lion disturbance is anticipated.

(3) **Permit No. 881-1668 Alaska Sea Life Center**

Operation of remote-controlled camera systems:

Operation of a remote-controlled camera (already in place) on Chiswell Island, and receiving a video feed to observe sea lions hauling out within range of the cameras. This activity does not require approaching the rookery, or disturbance in any manner. No sea lion disturbance is anticipated.

(4) **Permit No. 434-1669 Oregon Department of Fish and Wildlife**

Operation of remote-controlled camera systems:

Operation of a remote-controlled camera (already in place) at Rogue Reef (OR) and St. George Reef (CA) and receiving a video feed to observe sea lions hauling out within range of the cameras. This activity does not require approaching the rookery, or disturbance in any manner. No sea lion disturbance is anticipated.

B. Low Take Non-Invasive Activities. The following "low take" activities may be conducted by the following permit holders:

(1) **Permit No. 782-1768 National Marine Mammal Laboratory, NMFS**

Incidental disturbance during observations of sea lions from boats:

Low-level disturbances of sea lions during counts and mark resighting cruises conducted from small boats moving in front of haulouts and rookeries. These surveys will occur for approximately two (2)

weeks during each of two time periods, May 1-31, 2007 and August 1-31, 2007. Defendants believe that during such surveys, the likely behavioral change is that some sea lions may alter their behavior from a resting position to an alert posture and that a few animals may enter the water, but believe this reaction is not common.

Incidental disturbance during aerial surveys:

Low-level incidental disturbance associated with aerial surveys to assess population trends. These aerial surveys are for localized, regional surveys around Kodiak, Alaska. These surveys are to be conducted in addition to the non-invasive "non-pup" aerial survey by the National Marine Mammal Laboratory as permitted by the court in its June 13, 2006 order. This survey will occur for a two week period between June 15, 2006 and July 15, 2006, September – December 2006, and March 2007. Defendants believe that the actual number of seals showing any reaction to an aircraft passing overhead is likely to be small. For those sea lions that do show some reaction, the typical response is to change from a resting to an alert posture and that a few animals may enter the water, but Defendants believe that this response is not common.

(2) Permit No. 358-1769 Alaska Department of Fish and Game

Incidental disturbance during observations of sea lions from boats:

Low-level disturbances of sea lions during counts and mark resighting cruises conducted from small boats moving in front of haulouts and rookeries. The cruises will occur over a two week period during the following months in 2006-2007: January– February, April, and June-July. Defendants believe that during such surveys the only behavioral change likely is that some sea lions may alter their behavior from a resting position to an alert posture.

(3) Permit No. 881-1668 Alaska Sea Life Center

Maintenance of remote-controlled camera systems:

Routine maintenance of a remote-controlled camera system (already in place) at Chiswell Island, Alaska conducted several times per year. There is no set maintenance schedule and it is done on an as-needed basis. However, maintenance will not occur during the peak pupping period from May 15-July 10. Maintenance activities at other times at the camera site may cause minimal disturbance of sea lions along the periphery of the rookery. This activity does not require directly approaching the rookery, but personnel approaching the nearby camera site may be seen by sea lions, which could result in low level disturbance including animals altering behavior from a resting posture to an alert posture. The activity will not occur during the pupping season.

(4) Permit No. 715-1784 North Pacific Universities Marine Mammal Research Consortium

Incidental disturbance during observations of sea lions from boats:

Low-level disturbances of sea lions during counts and mark resighting cruises conducted from small boats moving in front of haulouts and rookeries. The boat surveys are frequent, approximately one per month year round in southeast Alaska. Defendants believe that, during such surveys, the only behavioral change likely is that some sea lions may alter their position from a resting posture to an alert posture and that a few animals may enter the water, but Defendants believe that this response is not common.

Incidental disturbance during aerial surveys:

Low-level incidental disturbance associated with aerial surveys to assess population trends. The aerial surveys are coordinated with the boat surveys and occur approximately once per month year round in Southeast Alaska. Defendants believe that the actual number of seals showing any reaction to an aircraft passing overhead is likely to be small. Defendants believe that, for those sea lions that do show some reaction, the typical response is to change from a resting to an alert posture.

Behavioral and demographic observations from land:

Visual observation of sea lions from observation posts on Brothers Island in southeast Alaska. During these activities there is a possibility that a small number of sea lions may be incidentally disturbed while the observers are making their way to and from their observation posts. This activity does not require directly approaching this haulout site. According to Defendants, Brothers Island is not a rookery, so no pupping occurs at this location. Personnel approaching the observation posts may be seen by sea lions, which could result in low level disturbance such as changing from a resting posture

to an alert posture.

Maintenance of remote-controlled camera systems:

Routine maintenance of a remote-controlled camera system (already in place) at Brothers Island, Alaska several times per year. There is no set maintenance schedule. However, when necessary, routine maintenance usually occurs during boat surveys. This would result in up to one maintenance activity per month. However, Brothers Island is not a rookery; therefore, no pups or mother-pup pairs will be disturbed. Maintenance may cause minimal disturbance of sea lions along the periphery of the rookery. This activity does not require directly approaching the rookery, but personnel approaching the nearby camera site may be seen by sea lions, which could result in low level disturbance. Defendants believe that some sea lions may alter their position from a resting posture to an alert posture and that a few animals may enter the water, but believe this response is not common.

(5) Permit No. 434-1669 Oregon Department of Fish and Wildlife

Maintenance of remote-controlled camera systems:

Routine maintenance of a remote-controlled camera system (already in place) at Rogue Reef, Oregon and St. George Reef, California. Maintenance activities at the camera site may cause minimal disturbance of sea lions along the periphery of the rookery. This activity does not require directly approaching the rookery, but personnel approaching the nearby camera site may be seen by sea lions, which could result in low level disturbance. The activity will not occur during the pupping season.

(6) Permit No. 1010-1641 Aleutians East Borough

Incidental disturbance during aerial surveys:

Low-level incidental disturbance during quarterly aerial surveys of Steller sea lion abundance and trend surveys conducted in March, June, September and December. Defendants believe that the actual number of sea lions showing any reaction to an aircraft passing overhead is likely to be small. For those sea lions that do show some reaction, the typical response is to change from a resting to an alert posture.

C. Low Take Handling and Release of Captured Animals. The low take handling and release of previously captured animals may be conducted by the following permit holder:

(1) Permit No. 881-1668 Alaska Sea Life Center

Release of captive animals:

Release of sea lions that the Alaska SeaLife Center is now holding in captivity. Prior to the permits being vacated, the ASLC had captured four (4) sea lions to conduct health assessments that now need to be released.

The protocol for release of sea lions now held by the ASLC will include the following: collection of blood for CBC, blood chemistry, viral serology; skin and mucosal swabs for pathogen screening; and morphometrics and ultrasound readings for body condition. Pathogen screening requires two weeks, during which time the animals will not be handled or sampled.

During the release (approximate time -- end of June 2006) the animals will be sampled for blood (for final CBC and chemistries), morphometrics and ultrasound readings. Anesthesia and physical restraint will be required for the safety of the animals and personnel.

The protocol for release of animals currently held by ASLC will not include additional standard exit procedures, including deuterium oxide dilution, blubber biopsy, branding, flipper tagging, and satellite tagging.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

AGENDA B-7(
OCTOBER 2006

July 27, 2006

Mr. Bill Wilson
North Pacific Fishery Management Council
Protected Resources Coordinator
605 West 4th, Suite 306
Anchorage, Alaska 99501-2252

Dear Mr. Wilson,

The National Marine Fisheries Service is continuing work on an Environmental Impact Statement (EIS) reviewing its program of grants and permits for research on Steller sea lions and northern fur seals. We are grateful for the comments and suggestions that many of you have already provided in the scoping stage at public meetings and other correspondence.

As described in the attached memo, recent legal developments have required changes in the EIS approach and schedule. As part of our accelerated schedule for completing the EIS we are holding Focus Group meetings with various stakeholder groups to identify a reasonable range of alternatives and gather information for our analyses.

We wish to invite your participation in a Focus Group Meeting and project briefing on Thursday, August 10, 2006 from 10:00am-12:00pm in the Executive Dining Room of the Anchorage Federal Building located on 7th Avenue. Attached is a draft agenda, a power point presentation describing project background, and our current draft alternative descriptions and associated alternative matrix for your review prior to the meeting. For those of you unable to attend in Anchorage, we have the ability to set up a conference call line upon request. If you are unable to participate in this meeting, there will be other opportunities for providing comments on the Draft EIS later this fall.

Please RSVP to Anne Southam (Anne_Southam@urscorp.com or 907-562-3366) by August 7, 2006. If you have any questions, please contact me at (301)713-2289, or our URS colleagues Jon Isaacs and Anne Southam at (907)562-3366. We look forward to your participation in this discussion.

Sincerely,

Tammy C. Adams, Ph.D.
Project Manager
Office of Protected Resources

Attachments



**NATIONAL MARINE FISHERIES SERVICE
STELLER SEA LION AND NORTHERN
FUR SEAL RESEARCH EIS
FOCUS GROUP MEETINGS
SUMMARY REPORT**

AUGUST 2006

**NATIONAL MARINE FISHERIES SERVICE
IN COOPERATION WITH
URS CORPORATION**

NORTH PACIFIC RESEARCH BOARD (NPRB) AND NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL FOCUS GROUP MEETING – ANCHORAGE, AK (AUGUST 10, 2006)

Meeting Participants (please see sign-in sheet in Appendix B): Diana Evans, Bill Wilson, Clarence Pautzke, Steve Davis, Ann Garrett*, Tammy Adams*, Mike Payne*, Anne Southam*, Rich Kleinleder*, Jon Isaacs*

* Indicates EIS Project Team

General Comments on the EIS

- NPRB will be making decisions about funding new marine mammal research in April 2007. Is this schedule possible given this EIS?
- *[The EIS project team responded that PRI is planning discussions with researchers about the type of information that will need to be included in their new proposals so as to cover potential new activities.]*
- Can the NPRB put an advisory note in request for proposals (RFPs) for upcoming research on marine mammals to alert researchers that work on SSL or NFS may have to wait until after the permits are approved after the ROD is issued in 2007?
- What time period will this EIS cover?
- *[The EIS project team responded that we hope that it will cover permits for up to ten years. We are trying to build flexibility into this document by including future research activities.]*
- Is there a statement summarizing the types of research being done and why? Is this in the SSL Recovery Plan?
- Who will be issuing the ROD?
- *[The EIS project team responded Dr. Bill Hogarth is the agency official who signs the ROD. There will be a 30-day cooling off period after the ROD is issued before any permits can be issued.]*
- *[Section 7 Consultation would begin with the PDEIS in October 2006 (tentatively).]*
- Will the vacated permits be re-instated after the ROD?
- *[That would be up to the Court to re-authorize those permits. It may be faster to just begin a new permit process by submitting a new application. .]⁶*
- *[The EIS project team noted that researchers who want permits as quickly as possible after the ROD is signed are advised to follow the EIS process and look at the alternatives so they are aware of any necessary changes to their proposals before applying for new permits.]*
- How is this NEPA process linked to the existing northern right whale research?
- *[The EIS project team responded that there is a separate EIS for northern right whales that is currently underway by PRI.]*

Purpose and Need

⁶ In addition, a new permit application gives researchers the opportunity to make changes to their activities as needed since they were first issued in 2002 or 2005, whereas a court order likely would not.

- Is there a Purpose and Need (P&N) statement for the EIS? The P&N should focus on the status of the species and the regulatory context. The P&N needs to be succinct but followed by a section that summarizes the important issues or questions that will be analyzed later in the document.
- *[The EIS project team responded that the Notice of Intent (NOI) stated the P&N which included the regulatory context and why these species must be studied.]*
- This EIS could take the opportunity of providing a clear outline of what it is we are doing by all this research and the millions of dollars at stake if we do not do this research (i.e., commercial fishing). If we did not have certain kinds of data, the Council could/ would have to be more conservative in fisheries management. There is a high cost associated with funding research programs not only related to better understanding the species to promote recovery but to also allow other actions to continue such as commercial fishing.
- Is it appropriate in this EIS that one of the needs is that research must be done so that other activities such as commercial fishing can continue?
- SSL data are currently being used to refine management measures in the Council process and if we didn't have information about these species from the current research, we would not have as much knowledge about them to properly manage commercial fishing. There are conservation issues that certain research needs to address. This context needs to be placed up front in the EIS document.

Range and Structure of Alternatives

- Will you be identifying a preferred alternative in the DEIS?
- *[The EIS project team responded that this has not been determined.]*
- You may want to do so in order to avoid getting comments on alternatives that are not likely to be chosen as a preferred alternative.
- Do not forget about the grant process in this EIS. Under the No Action Alternative, grants that do not require permits could be issued.
- Will the permit process be included in the EIS alternatives?
- There is value of having a discussion of proposed changes to the permit process so the public would understand the potential implications of these changes on the permit process.
- A Center for Independent Expert (CIE) review of a research techniques manual should be under all alternatives (i.e., an element common to all alternatives).
- Should this be an option in an alternative at all? Or should it be part of implementation?

SSL Recovery Plan and NFS Conservation Plan Research Priorities

(This discussion relates to the priorities identified in the species' plans listed in the implementation schedule of each of those plans; see handouts in Appendix A).

- Recently, the comment period on the 2006 Draft SSL Recovery Plan was extended until September 1, 2006. What if the SSL Recovery Plan has major changes before we finalize this EIS? Is it a good idea to tie the alternatives so heavily to the Conservation and Recovery Plans?
- *[The EIS project team responded that this is not likely to be an issue. Whether you use the existing Recovery or Conservation Plans or the new draft Plans, we're focusing on research techniques in this EIS more than anything.]*

- Using the Recovery and Conservation Plan Priorities (listed in the implementation schedules of the Plans) in the alternatives is confusing. It may be better to use different descriptions.

Impact Analyses and Criteria

- A question was raised about 'humane methods' used in research.
- [*There is a statutory requirement related to 'humaneness' which requires researchers to justify their research techniques by explaining why available techniques that would result in less pain, stress or suffering would not fulfill the study objective.*]
- Where in the EIS will you discuss issues such as 'fluorescent paint is less effective than hot branding' for marking because of 'said' reasons for meeting specific research needs?
- Could the EIS discuss the range of techniques used to answer the same research questions and in this discussion provide information on the advantages and disadvantages of these research techniques (e.g., similar to the QA papers (Appendix F) in the Alaska Groundfish PSEIS).
- [*The EIS could expand Appendix E of the SSL Permit EA to include a discussion on the 'effectiveness' of research techniques.*]
- [*Under MMPA, the burden is on the applicant to justify techniques chosen for research.*]
- What metrics will be used for analysis?
- [*The EIS project team stated that Potential Biological Removal (PBR) or the total number of animals that die from research is only one element of our cumulative effects analysis. We continue to develop our methodology for analysis.*]
- One key element to your evaluation criteria should tie all this to the P&N and why we're doing research. Tie results of your alternatives analysis to the overarching scientific questions that are driving the research.
- Should we base the alternatives on the research activities themselves and how those activities meet the needs of the major research questions?

The NEPA Process

Proposed Project Schedule

- Finalize Alternatives – end of August 2006
- Preliminary Draft EIS – end of October 2006
- Release Draft EIS – December 2006
- Public comment period for Draft EIS – January 2007
- Prepare Final EIS – March 2007
- ROD, estimated completion – May 2007

2006 Aleutian Islands Cooperative Acoustic Survey Study

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In March-April 2006 the Aleutian Islands Cooperative Acoustic Survey Study (AICASS) was conducted to assess the feasibility of using a small (< 35 m) commercial fishing vessel to estimate the abundance of walleye pollock (*Theragra chalcogramma*) in waters off the central Aleutian Islands. NMFS currently has limited resources to conduct acoustic surveys of pollock in the Aleutian Islands subarea. The acoustic and biological information from the study is being used to assess: 1) if it is feasible to conduct acoustic surveys in the Aleutian Islands using commercial fishing vessels, 2) if the data collected are of sufficient quality for management purposes, and 3) the extent that fine scale spatial and temporal management measures may be biologically reasonable. The project was envisioned as a first step in the development of a co-management/co-monitoring system that would involve the Aleut Corporation (the local Alaskan native corporation that has been allocated the pollock quota for this area), local fishermen, and NMFS. This could potentially lead to limited pollock harvests that explicitly accounts for the needs of Steller sea lion (*Eumetopias jubatus*) within critical habitat.

The project was conducted aboard the F/V Muir Milach, a 32 m stern trawler (Fig. 1), in three activity phases: (1) evaluating the commercial fishing vessel's appropriateness as an acoustic sampling platform; (2) opportunistically collecting acoustic data of pollock distribution around two sites, Kanaga Sound and Atka Island (Fig. 2) and (3) direct acoustic and biological data sampling at one of the study sites. To verify the acoustic data and to support the study, 1000 mt of walleye pollock was allocated to be harvested within an area that included waters within 20 nautical miles (nm) to 3 nm of Steller sea lion haulouts.

A SONAR-self noise test was conducted on 15 February 2006 to assess the noise characteristics of the vessel and determine the optimum vessel speed for conducting the survey. An engine speed of 1200 rpm was determined to be optimal for acoustic surveying resulting in a survey speed between 6 and 8 knots and a signal to noise ratio of at least 10:1 (Fig. 3). The acoustic system calibration followed standard sphere calibration protocols (Foote et al. 1987) and were conducted prior to and post study to ensure system reliability. Sphere calibration showed that the system was stable during the duration of the survey. These tests therefore allowed us to conclude that the acoustic data from the F/V Muir Milach were of sufficient quality for abundance estimation.

Opportunistic acoustic data were collected by the F/V Muir Milach within two proposed study sites during the Pacific cod (*Gadus macrocephalus*) fishing season in February 2006. In consultation with the fishing vessel captain and upon review of the opportunistic acoustic data, a survey area inside the Atka Island study site, east of North Cape, Atka Island and west of Kasatochi Island, was selected because the area had the highest observed densities of pollock and had less area closed to fishing due to proximity to Steller sea lion haulouts.

The primary factor thought to affect the ability to survey from small vessels in the Aleutian Islands in the winter months is the weather. Between 13 March and 6 April 2006 the winds were primarily



southerly, between 90° and 270°, and hourly average wind speed ranged from 0.5 kts to 20.9 kts with a median and mean of 5.9 kts and 6.9 kts respectively (Fig. 4). Between 13 March and 6 April the maximum daily wind gusts exceeded 30 kts for 19 of the 25 days and exceeded 50 kts for 9 of the 25 days. Surveying and commercial fishing were suspended from 16 March through 17 March due to high southeasterly winds with gusts exceeding 50 kts. Although other strong wind events occurred during the survey period, they did not affect the ability of the vessel to fish or conduct surveys.

Six acoustic surveys were successfully conducted between 14 March and 4 April 2006. The area from North Cape of Atka Island to Koniuji Island (~ 1 degree longitude) was surveyed three times while a smaller subset of this area was surveyed on three other occasions. The three larger surveys (180 nm² with transect spacing at 1.5 nm) were conducted in the beginning (Survey 2), middle (Survey 4), and end (Survey 8) of the study period. Survey 5 was conducted parallel to the shelf break and covered only 9 nm² (with transects spaced at 0.5 nm). This survey provided data useful for geostatistical analyses. Surveys 6 and 7 covered 72 nm² with 1.5 nm transect and occurred in the middle of the large survey area coincident with the highest density of pollock. All survey transects were designed to sample 5 nm offshore after the shelf break (181 m isobath) and 1 nm inshore from the shelf break. To reduce survey time, an adaptive strategy was implemented and transects were ended when it was determined that pollock sign was no longer encountered along a transect. Small trawl tows (< 10 mt) were conducted during the surveys to identify acoustic sign. Between survey periods the vessel was allowed to commercial fish until it reached capacity (~165 t). The catch was then delivered to the Adak Fisheries fish processing plant on Adak Island. Biological samples including length, weight, maturity, otoliths, and fin clips were collected from both the verification and commercial tows. Physical oceanographic data were also collected throughout the survey using a Sea-bird conductivity-temperature-depth (CTD) system.

Between 14 March and 4 April 2006 six successful surveys were completed resulting in relatively precise estimates of biomass for the survey area over time. Survey 2, conducted 14-15 March, provided a biomass estimate for pollock of 8,910 t. The biomass estimate for subsequent surveys were lower (although not statistically significantly lower for Survey 4) and dropped significantly after Survey 4 to a low of 2,845 t for the final survey (Table 2, Fig. 5, Fig. 6, and Fig. 7)

The size of pollock captured in the verification and commercial trawls varied between 35 cm and 75 cm (Fig. 8) with a mean length of males at 56.9 cm and females at 58.5 cm. For all of the verification and commercial trawl hauls 55% of the pollock were female. Male pollock averaged 1.58 kg while females were somewhat larger, averaging 1.80 kg. The age data revealed that the age 6 and age 5 pollock (2000 and 1999 year classes) were the most abundant (Fig. 9).

In total, 965 t of fish were harvested during this study the majority of which (97% or 935 t) were harvested from the smaller area covered in Survey 6 and 7 (Fig. 10). Most (77%) of the harvest (745 t) occurred after Survey 4 (Day 9). The pollock biomass apparently declined by 68% in the large survey area during the three weeks of the study. In the smaller “fished” area, the decline was estimated at 90% (Fig 3). The “unfished” region showed no significant difference in biomass estimates between Surveys 2 and 8. Further analyses are needed to evaluate the cause the decline in the fished area. A conservative estimate on the change in biomass over the study period is about 4,000 t—much greater than the amount of pollock caught. A trend in the maturity data (Fig. 11) shows that the pollock began to show signs of active spawning only at the end of the study period. This could



indicate that fish were moving out of the area to spawn. This may account for some of the observed declines.

In short the 2006 AICASS was successful. In addition to achieving its scientific objectives, this project fostered an excellent working relationship between NMFS, the Aleut Enterprise Corporation, and the fishing industry. Local participation and stakeholder involvement enhances NMFS ability to provide responsible stewardship of this important marine resource. Future work should consider the expansion of this technique to survey more areas within the Aleutian Islands to determine the health and behavioral dynamics of this stock within Steller sea lion critical habitat.

References

Foote, K.G., Knudsen, H.P., Vestnes, G., MacLennan, D.N., and Simmonds, E.J. 1987. Calibration of acoustic instruments for fish density estimation: a practical guide. ICES Cooperative Research Reports, Int. Counc. Explor. Sea Coop. Res. Rep. No. 144, 69p.

Table 1: Summary of 2006 AICASS surveys.

Survey	Dates	Survey Day	Spacing (nm)	Number of Transects	Survey Area (nm ²)
2	14-15 Mar.	1	1.5	18	180
4	23-24 Mar.	9	1.5	18	180
5	24 Mar.	10	0.5	7	9
6	28-29 Mar.	14	1.0	12	72
7	1 Apr.	19	1.0	12	72
8	3-4 Apr.	21	1.5	18	180

Table 2: Abundance estimation for 2006 AICASS surveys.

Survey	Area (nm ²)	Deadzone (Y/N)	Biomass (t)	Relative Precision (E _i)	High Biom. (t)	Low Biom. (t)	Density (t / nm ²)
2	180	N	8233.8	8.67%	9632.5	6835.1	45.7
2	180	Y	8809.9	8.04%	10198.4	7421.4	48.9
2	72	N	6484.5	12.29%	8046.1	4922.9	90.1
2	72	Y	6706.6	14.32%	8589.2	4824.0	93.1
4	180	N	6600.4	7.96%	7630.1	5570.7	36.7
4	180	Y	7980.2	7.87%	9210.6	6749.8	44.3
4	72	N	5246.4	12.31%	6512.6	3980.2	72.9
4	72	Y	6149.8	11.89%	7582.5	4717.1	85.4
5	9	N	890.8	5.29%	983.2	798.4	99.0
5	9	Y	1036.6	4.75%	1133.1	940.1	115.2
6	72	N	3015.0	6.64%	3407.4	2622.6	41.9
6	72	Y	3458.5	6.44%	3894.9	3022.1	48.0
7	72	N	1159.0	6.83%	1314.2	1003.8	16.1
7	72	Y	2179.7	5.05%	2395.4	1964.0	30.3
8	180	N	2313.6	14.51%	2971.6	1655.6	12.9
8	180	Y	2845.2	14.24%	3639.0	2051.4	15.8
8	72	N	559.2	14.32%	716.1	402.3	7.8
8	72	Y	677.0	12.96%	848.9	505.1	9.4



Figures

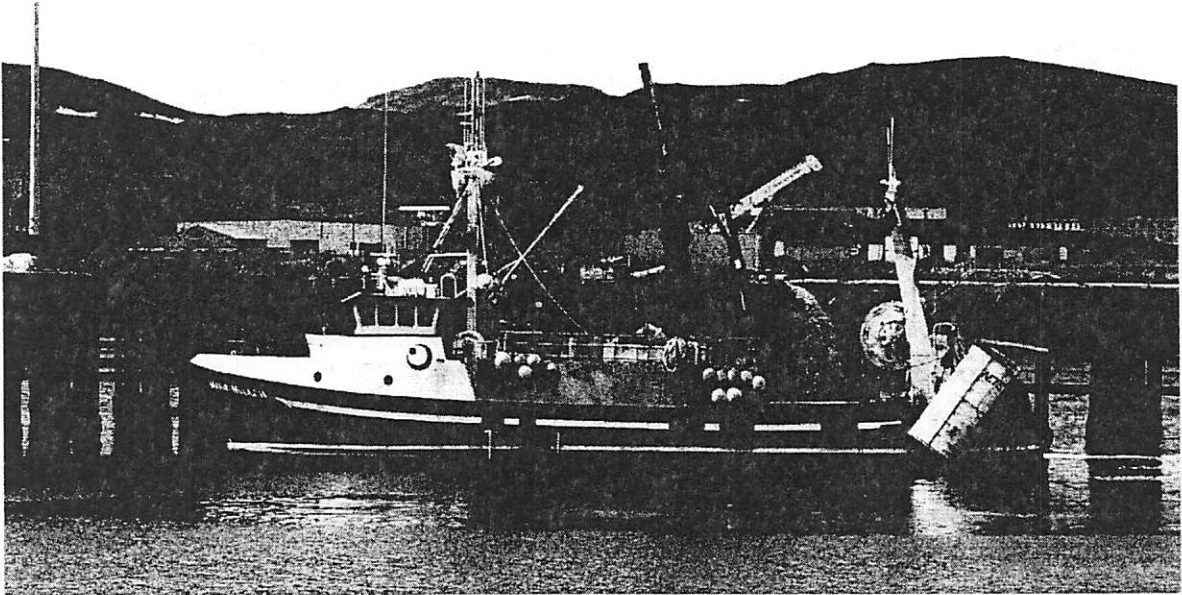


Figure 1: At port in Adak, Alaska, the F/V Muir Milach, a 32 m stern trawler was used to conduct the 2006 Aleutian Islands cooperative acoustic survey study.

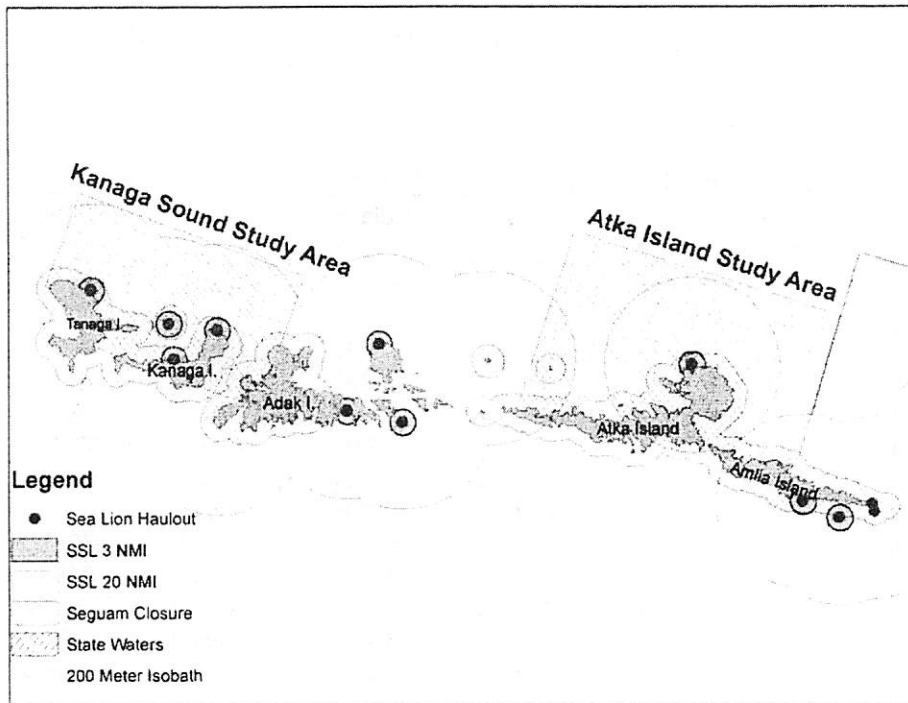
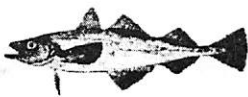


Figure 2: Proposed 2006 AICASS sites within the Central Aleutian Islands



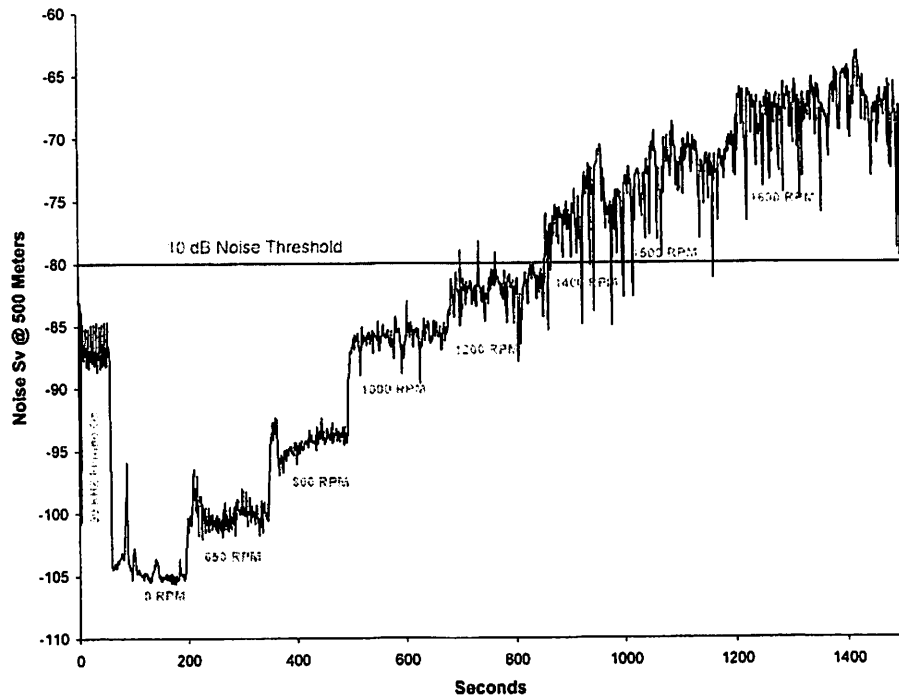


Figure 3: F/V Muir Milach 15 February 2006 Sonar-self noise test with -80dB threshold at different levels of engine RPM.

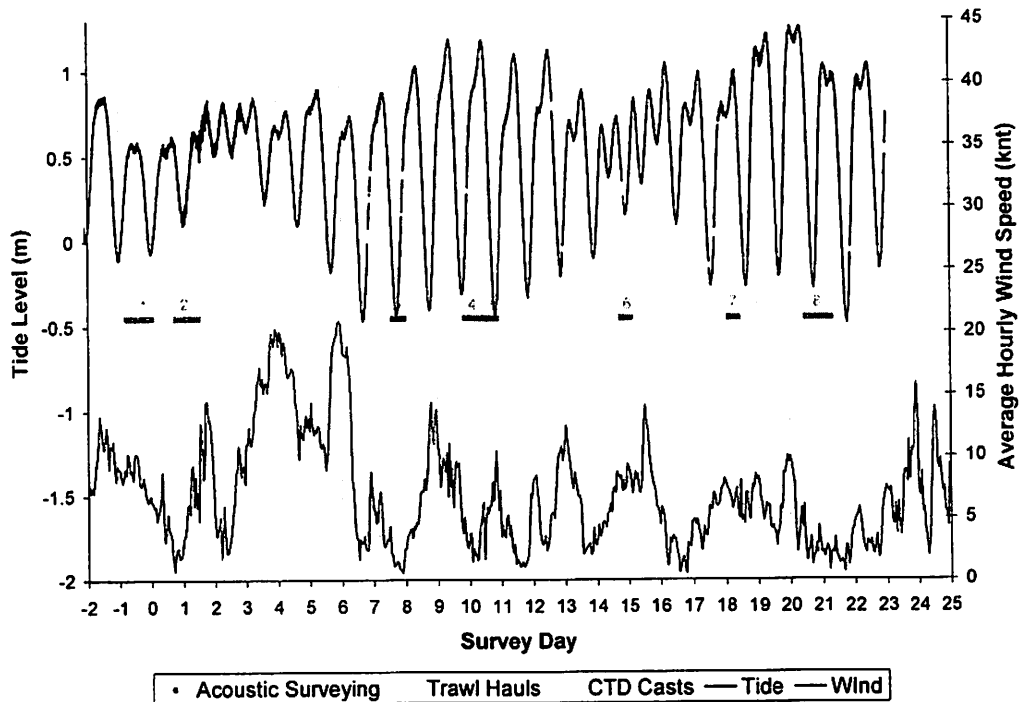


Figure 4: Weather and tide fluctuations relative to survey activities. Survey number is in pink. Wind speed and tide data from Adak, Alaska station ADKA2 - 9461380 (NOAA 2006).



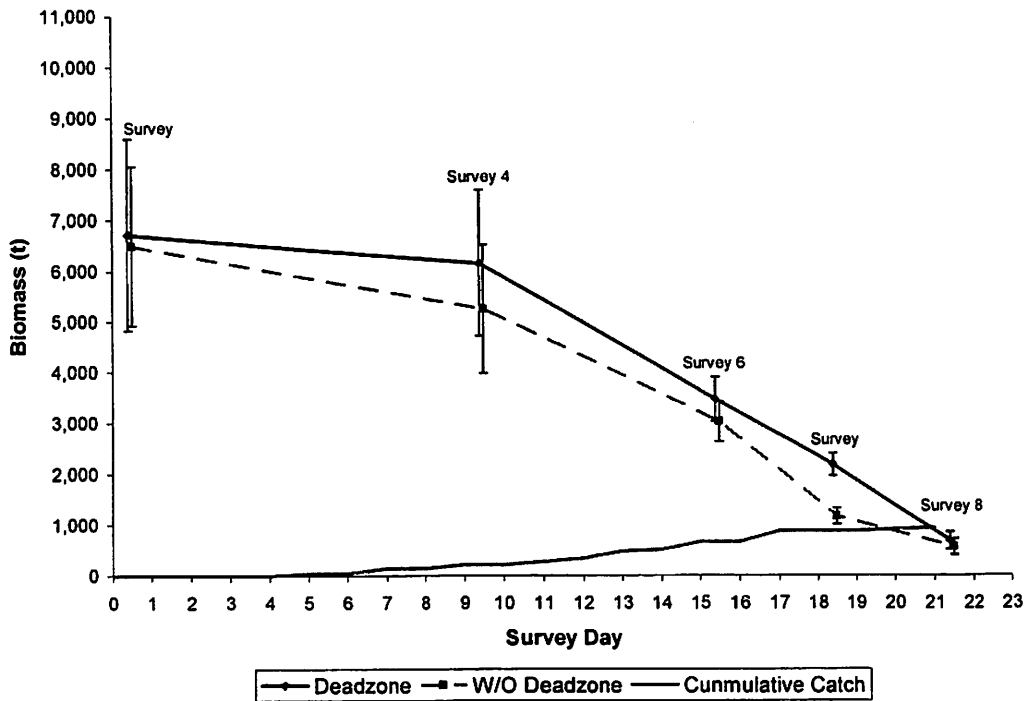
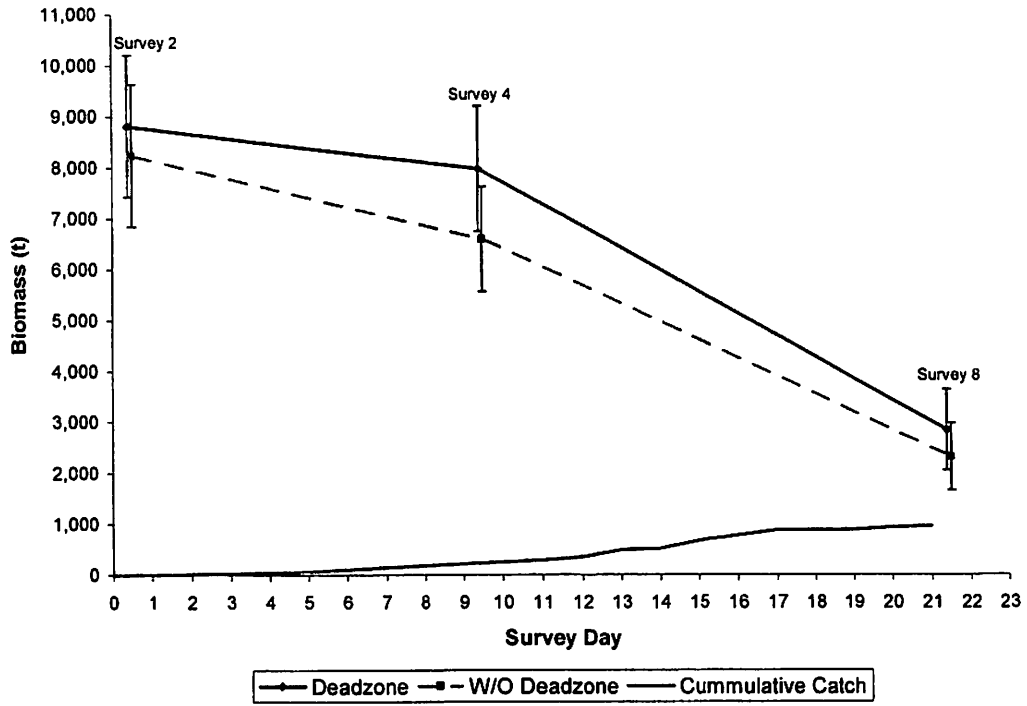


Figure 5: Pollock abundance estimation and cumulative catch for large (top) and small (bottom) survey areas. Note error bars are $\pm 1.96 \times E_i \times B_i$.



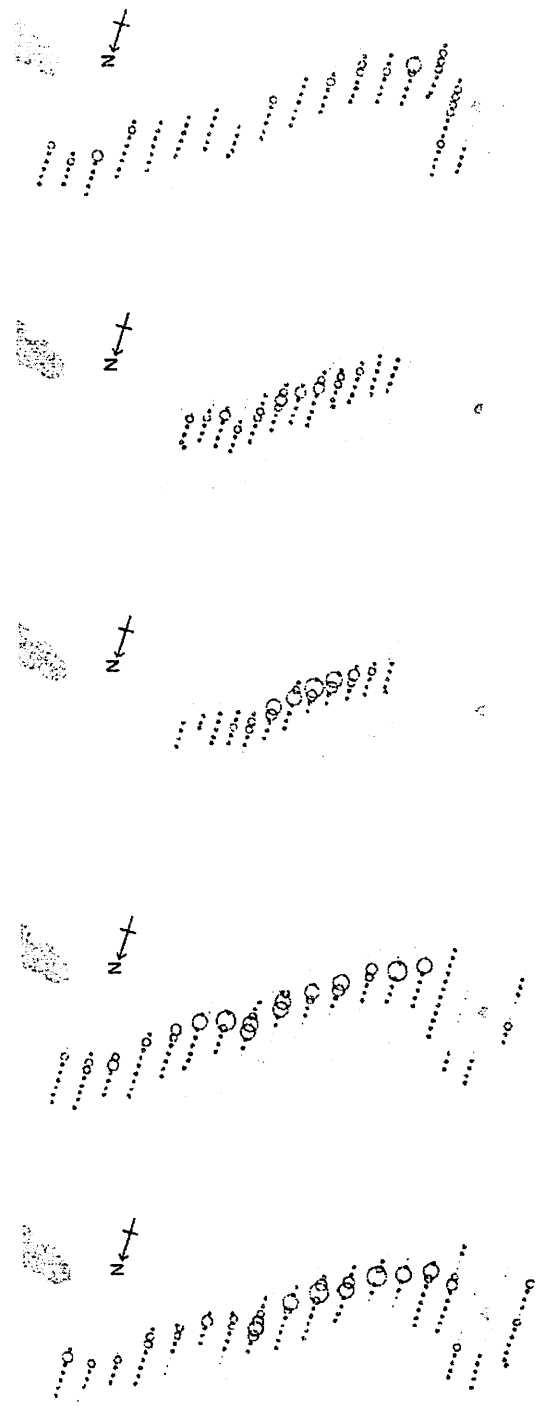


Figure 6: 2006 AICASS distributions of pollock. Figures from left to right correspond to Surveys 2, 4, 6, 7, and 8.

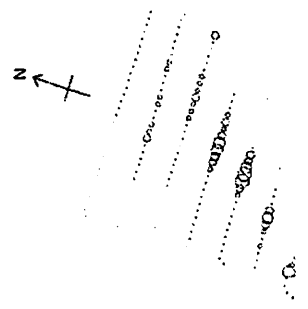


Figure 7: 2006 AICASS Survey 5 distribution of pollock. Please note that the axes of the map are different from Figure 6.



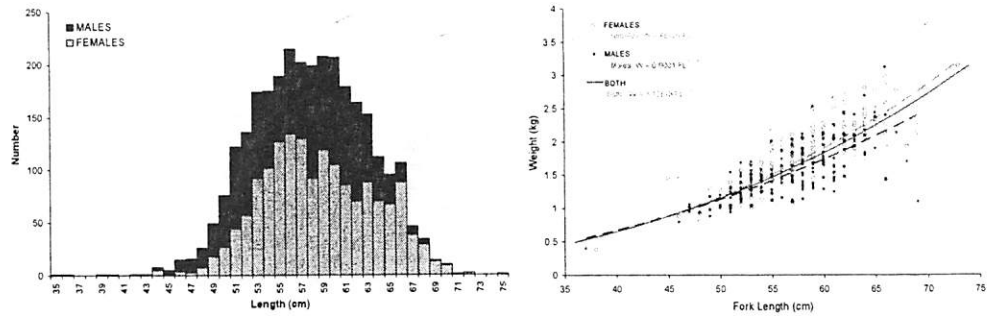


Figure 8: Pollock length frequency and weight at length from the 2006 AICASS.

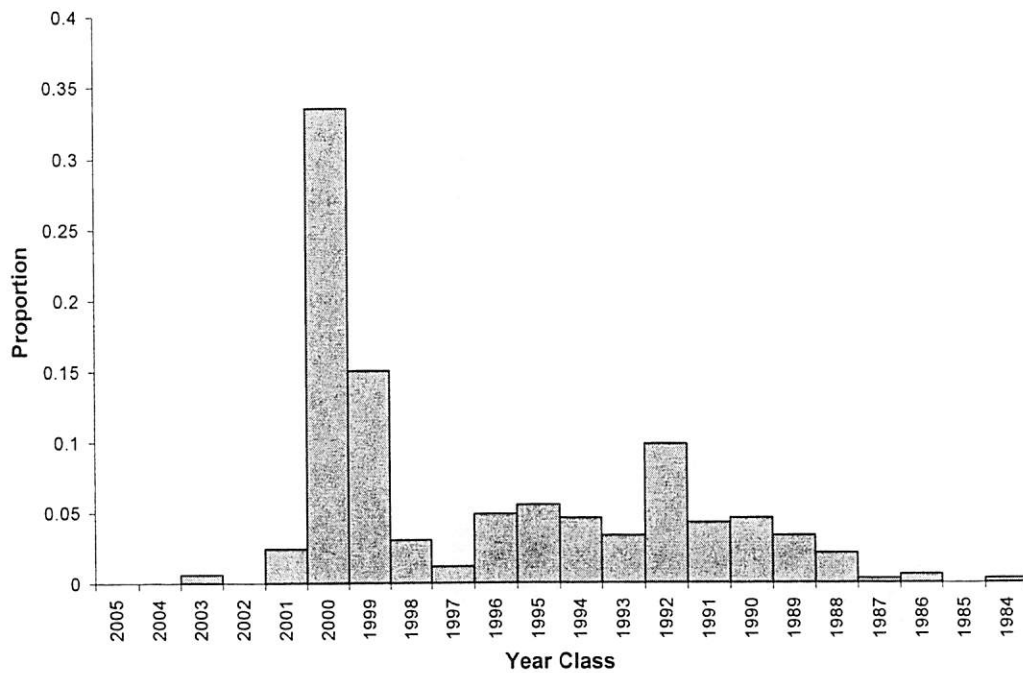
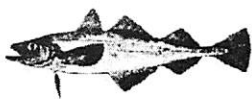


Figure 9: Age composition from the otolith data collected during the 2006 AICASS.



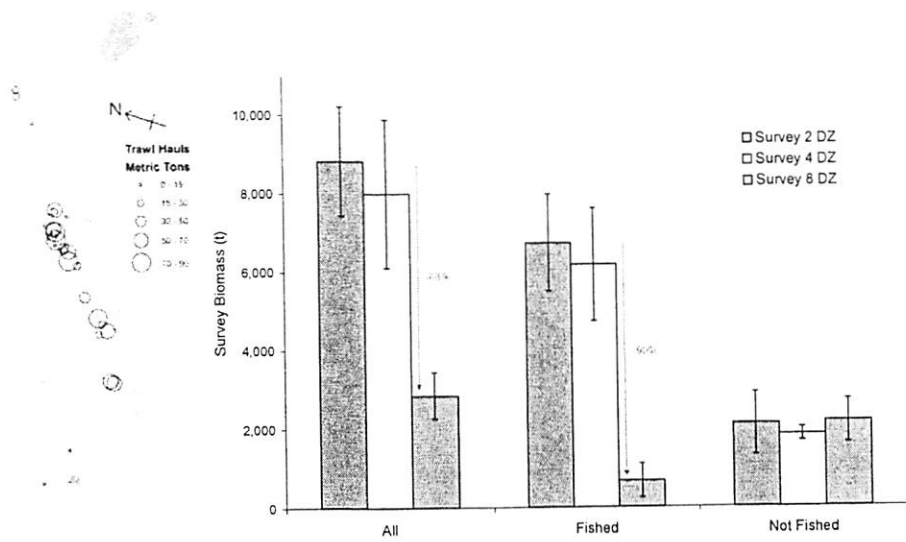


Figure 10: Trawl haul start locations (left) and pollock biomass estimates (right). The area encircled is the large survey area (“All”) and the red lines are the small survey area (“Fished”) and the orange lines are the “Not Fished region”. The blue shaded regions are Steller sea lion critical habitat.

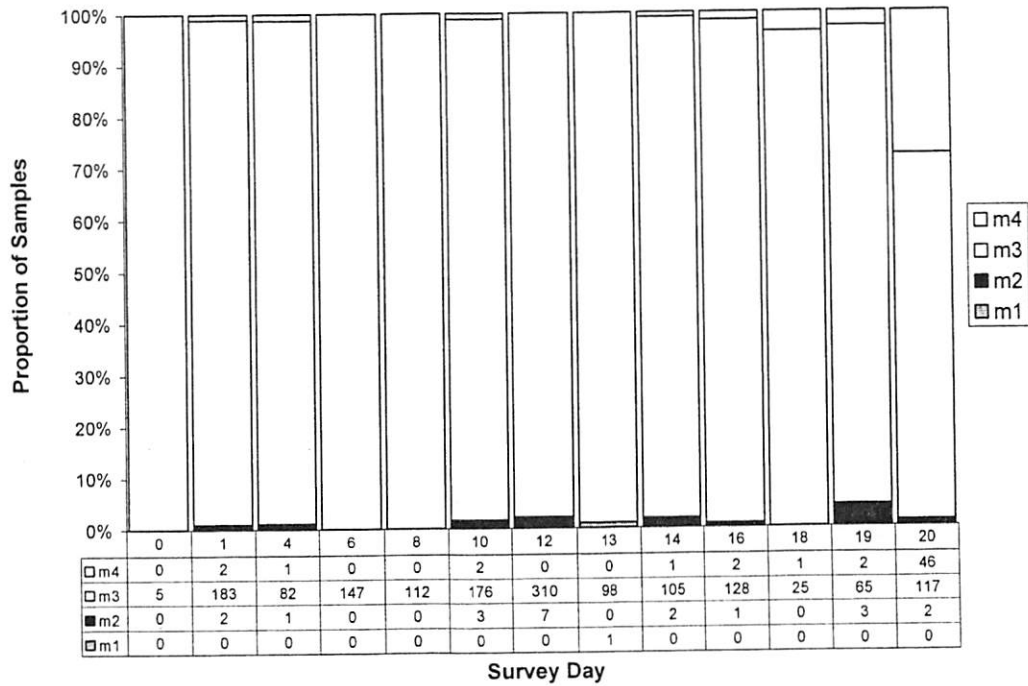


Figure 11: Female pollock maturity over the duration of the 2006 AICASS. Gonad stages are: M4-actively spawning, M3-prespawning, M2-developing, M1-immature. Note: no M5-spent fish were observed.



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Date: 9/19/06

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 some 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 downlisting and delisting, as would be provided by a PVA, as discussed previously. If the population risk of extinction as generated by the PVA is above the threshold for downlisting 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:

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

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.*
 - *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 codends 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.

Decision Tool to Evaluate Proposals for Changes to SSL Protection Measures

Dr. Margaret Merritt (Resource Decision Support) presented a draft SSLMC report on the status of development of a multi-criteria decision tool (Analytic Hierarchy Process, AHP) to evaluate proposals for change in SSL protection measures in the GOA and BSAI Groundfish fisheries. Bill Wilson (NPFMC staff), Larry Cotter (SSLMC chair), Daniel Hennen (SSLMC) also contributed to the report presentation and provided information about the anticipated timing of SSLMC work to refine the decision tool and the receipt and review of proposals. Dave Fraser (Adak Enterprise Corporation) provided public comment.

In our June 2006 minutes, the SSC expressed reservations about the proposal evaluation tools then being considered (bump and zonal) and suggested consideration of an AHP-based decision tool as an alternative; the multi-criteria decision tool described in the SSLMC report was developed in response to our suggestion. The SSC would like to express appreciation to the SSLMC for their consideration of our

request. We commend Dr. Merritt, the SSLMC, and NPFMC and NMFS staff for progress that has been made towards development of the decision tool. The SSC is encouraged by the initial progress in development of the decision tool and recommends that the tool continue to be refined in advance of the October 2006 Council meeting. Among other refinements, the SSC encourages the SSLMC to consider the following suggestions:

1. The decision tool should reflect the suite of anthropogenic factors that have been identified as potential threats to the recovery of distinct population segments of the SSL population. Even though some of the potential threats (e.g., commercial takes, subsistence takes, illegal shooting, incidental takes, and entanglement) may be invariant across proposals, explicit inclusion of these threats as criteria for judging the likely impact of proposals will assure the public that these factors have been considered. In addition, the decision tool should consider the impact of the proposals on non-target species including species taken in state-water fisheries for salmon and groundfish as well as bycatches of other non-target species that are SSL prey.
2. The proposed use of a TAC/biomass ratio as a proxy for prey availability is ill-advised because it has been demonstrated that likely prey-field effects operate on a local scale and not on the global scale at which biomass is assessed and TAC is set. Moreover, the absolute and relative abundance of the mix of prey species available in near proximity to SSL protection areas varies over time and the importance of these species to SSL diets is likely to vary depending on the season of the year and the age and gender of the SSL, etc. While data are not currently available to model local scale effects, the TAC/biomass ratio seems particularly problematic. As alternatives, the SSC suggests that the SSLMC consider other proxies for prey availability. Potential proxies might include: (1) a ratio of the target species biomass to the biomass of all principal prey species; (2) the ratio of current prey species abundance to B_0 or biomass in a reference year; (3) biomass density per area or depth stratum; and (4) the ratio of prey species biomass within a local area to the number of SSL. Where data on local prey availability become available, they should be used in place of global scale proxies.
3. One variable used in the decision tool is fishing duration, expressed as pulse (TAC taken in 3-10 days) versus prolonged (TAC is spread out over time). The SSC encourages the SSLMC to consider including in their analysis estimates of fishery removal rates as a function of gear type and total effort. To the extent that a pulse fishery is more likely to cause localized depletion, some gears remove fish more quickly than others. Also, some gears remove other SSL prey differentially through bycatch. The combined rate of reduction of SSL prey (both target and non-target species) should factor into the ranking of proposals with regard to fishing duration.
4. The SSLMC should consider that some proposals may be difficult to score using the decision tool because the tool presupposes that all actions will fall into predetermined categories affecting either prey abundance and distribution or SSL behavior and physiology. The analysis of proposals should retain some flexibility to address special situations for which the tool cannot adequately address.
5. The SSC cautions that scat data expressed as the frequency of occurrence of prey species in the diet of SSL does not provide a clear indication of the relative energetic contribution of those prey species to SSL diet. However, use of the scat frequency data is appropriate as the best available science until better measures become available.
6. Because it can be anticipated that some of the proposals will suggest changes at scales that are too fine to be resolved by the decision tool given the current level of resolution in important data series, the SSC suggests that provision be made for the decision tool to evolve as more refined data become available. In the interim, sensitivity analyses and bounding analyses (best case-worst case scenarios) could be helpful.

7. The SSC concurs with the intent of the SSLMC to examine the decision tool at various levels of the hierarchy to ensure that weightings accurately reflect SSLMC assessments of the importance of the variables.
8. It should be noted that the decision tool can be used to conduct pairwise comparisons of proposals or to compare proposals against a status quo standard. In addition, the decision tool can be used to assess the likely impact of combinations of proposals.
9. The next revision of the report should include a clear statement of the intent of the decision tool and the problem statement that it addresses — the decision tool is intended to be used to form consensus judgments about the likely relative consequences of the proposals, a reflection of SSLMC's perception of the problem and not a stand-alone measure of the impact of the proposals on SSL populations. In addition, the report should include a simple example to help convey an understanding of jargon to members of the public. Data sets used in the decision tool should be fully referenced.

North Pacific Fishery Management Council

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August 28, 2006

Kaja Brix
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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 generally endorses these recommendations, with the exception of the placement of the PVA in the Recovery Plan, and we request that NMFS consider the SSC comments which are attached to this letter. Below we highlight some of our more pressing concerns, based on the SSC report and public comment received by the Council:

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 evaluated. **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, and the range of effects should be identified prior to the Recovery Plan being finalized.

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; including the Council and SSC. We recognize that this will require additional time, 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 should make recommendations for the development of recovery actions rather than suggest that particular actions are mandatory for recovery to occur. Moreover, the Plan should (a) make it clear that the Council and NMFS should have broad flexibility to modify existing fishery management measures on a continuing basis as new information becomes available; (b) drop its specification of a large scale adaptive management program as a necessary recovery action; and, (c) set out a clearly prioritized research plan, together with a recommended public process, under the auspices of the North Pacific Research Board (NPRB), to develop realistic, specific research proposals directly related to the most pressing conservation and management needs. To underscore item (b) above, we believe 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 be removed as a necessary Recovery action.**

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 D. Madsen

Stephanie D. Madsen
Chair

CC: Council members

Attachments: SSC report



NEWS FROM NOAA

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION • US DEPARTMENT OF COMMERCE

Contact: Daniel Parry
(301) 713-2370

FOR IMMEDIATE RELEASE
June 21, 2006

U.S. FISHERIES CHIEF, WILLIAM HOGARTH, ELECTED TO CHAIR INTERNATIONAL WHALING COMMISSION *2007 meeting held in Anchorage, Alaska*

St. Kitts and Nevis, West Indies — Member nations of the International Whaling Commission have elected NOAA Fisheries Service Director, William Hogarth, to be the next chair of the Commission. Elected by consensus of the 70 commissioners, the chairman serves for a period of three years confronting issues of commercial and subsistence whaling limits, the rebuilding of whale stocks, whale sanctuaries, and the sharing of latest scientific data and information.

Dr. Hogarth is the Assistant Administrator for Fisheries at the National Marine Fisheries Service, National Oceanic and Atmospheric Administration. As Assistant Administrator, he is responsible for overseeing the management and conservation of marine fisheries and the protection of marine mammals, sea turtles, and coastal fisheries and their habitats within the United States Exclusive Economic Zone. In 2005, Dr. Hogarth was elected as Chair of the International Commission for the Conservation of Atlantic Tuna (ICCAT) — an organization responsible for the conservation of tuna and tuna-like species in the Atlantic Ocean and adjacent seas.

"I am honored to be elected Chair of the IWC," said Bill Hogarth. "I expect to bring a spirit of cooperation and openness to the work conducted by the IWC and the debate that surrounds the many challenging issues we face."

The United States will host the 59th International Whaling Commission meeting, held for the first time in Anchorage, Alaska, May 4 through May 31, 2007. A critical focus of the meeting will be subsistence hunting quotas of the Western Arctic bowhead whale. Ten Alaska Native villages in the far north conduct subsistence bowhead whale hunts overseen by the Alaska Eskimo Whaling Commission and NOAA Fisheries Service. Also to be discussed are aboriginal whaling quotas for the eastern population of the North Pacific gray whale.

The International Whaling Commission was set up under the International Convention for the Regulation of Whaling on December 2, 1946. The purpose of the Convention is to provide for the proper conservation of whale stocks and the orderly development of the whaling industry. The main duty of the Commission is to keep under review and revise the measures specified in the Schedule to the Convention—governing conduct of whaling throughout the world.

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NOAA Fisheries Service is dedicated to protecting and preserving our nation's living marine resources and their habitats through scientific research, management and enforcement. NOAA Fisheries Service provides effective stewardship of these resources for the benefit of the nation, supporting coastal communities that depend upon them, and helping to provide safe and healthy seafood to consumers and recreational opportunities for the American public.

NOAA, an agency of the U.S. Department of Commerce, is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and providing environmental stewardship of the nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, over 60 countries and the European Commission to develop a global network that is as integrated as the planet it observes, predicts and protects.

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On the Web:

NOAA Fisheries Service: www.nmfs.noaa.gov

NOAA: www.noaa.gov



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

August 18, 2006

Ms. Stephanie Madsen, Chair
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, Alaska 99501-2252

Dear Stephanie,

We wish to inform you of the revised schedule for the development of the fishery management plan level biological opinion (BiOp) for the Alaska groundfish fisheries. We have made significant progress in writing the BiOp and will be providing portions of the draft document to the Council for its review at the October 2006 meeting. These portions will include a description of the action, status of the Endangered Species Act (ESA)-listed species, and a nearly completed description of the baseline conditions of the current environment.

We expect to have the entire draft BiOp completed and submitted to the Council by December 1, 2006. This schedule would allow opportunity for Council review and comment at its February 2007 meeting. The subsequent development and analysis of any Council proposed alternatives to the Steller sea lion protection measures could progress during the summer of 2007. Final Council action on any changes to the Steller sea lion protection measures may be possible in late 2007 or early 2008, depending on the nature of the environmental analysis required and pending review under the ESA. Pending Secretarial approval, implementation of any changes could occur by late 2008.

We appreciate the dedication and cooperation of the Council in maintaining priority attention to new information concerning the status of Steller sea lions. We look forward to working with you as the Council considers potential refinements to the Steller sea lion protection measures.

Sincerely,

A handwritten signature in black ink that reads "Robert D. Mecum".

Robert D. Mecum
Acting Administrator, Alaska Region



DRAFT

**North Pacific Fishery Management Council
Steller Sea Lion Mitigation Committee
September 12-13, 2006
Alaska Fisheries Science Center**

Minutes

The Steller Sea Lion Mitigation Committee (SSLMC) convened at the Alaska Fisheries Science Center on September 12-13, 2006. Committee members present were: Larry Cotter (Chair), Jerry Bongen, Julie Bonney, Sam Cotten, Ed Dersham, Kevin Duffy, John Gauvin, John Henderschedt, Dan Hennen, Sue Hills, Terry Leitzell, Dave Little, and Art Nelson. Also present were Kristin Mabry, Shane Capron, Melanie Brown (rapporteur), Kaja Brix and Dana Seagars (NMFS AK Region); Doug DeMaster, Lowell Fritz and Brian Fadely (NMFS AFSC), John Lepore (NOAA GC, AKR); and other NMFS and State personnel and members of the public. The primary focus of this meeting was a review of Chapters 1-4 of the preliminary draft Biological Opinion (BiOp) and continued work on the proposal ranking tool developed by the SSLMC with assistance from Peggy Merritt of Resource Decision Support of Fairbanks, Alaska.

Chairman Cotter reviewed the agenda, and Ms. Mabry briefly explained that the structure of the proposal ranking tool and some examples of model runs and sensitivity testing will be reviewed with the SSLMC after the BiOp discussion. A third version of the CD with the most recent supporting materials was given to each member of the SSLMC and others. This CD includes the responses to questions that were used to develop the draft BiOp, and presentations from the August and September SSLMC meetings. The minutes from the August 2006 meeting were accepted with Ms. Bonney's correction of attendees which she emailed to Bill Wilson.

Review of Draft BiOp

Notes here are based on the draft BiOp PowerPoint presentation attached to these minutes and from the discussion during this agenda item. Mr. Shane Capron of NMFS AKR Protected Resources Division (PR) presented a summary of the first four chapters of the draft BiOp. These chapters were provided to the SSLMC by NMFS Sustainable Fisheries Division (SF) and are not subject to public review at this time. The SSLMC and Council may wish to provide comments to SF to include in SF comments to PR by November 1, 2006. The public review draft BiOp is scheduled for release on December 1, 2006. The Council will review the entire draft BiOp at its February 2007 meeting. Once the public review draft of the BiOp is released, the SSLMC may begin considering potential changes to the action described in the BiOp. Fur seals are not part of this process because they are not listed, and ESA-listed salmon are being consulted on separately with the NMFS NW Region.

Chairman Cotter stated that it is likely that most of the SSLMC members have not had a chance to read the document since it was not released from NMFS SF until September 7, 2006, and some committee members did not receive the document via email and FTP transmittals attempted in the few days between its release from SF and this meeting. Mr. Capron stated that this new BiOp is also new to the agency with much new information and will take time to review.

The consultation process began on April 19, 2006, with SF requesting formal consultation with PR. PR agreed to initiate consultation and received an extension to produce the BiOp. PR gave the first four chapters of the draft BiOp to SF on September 7, 2006. SF provided this document to the SSLMC to allow for development of comments which the Council may consider if they choose to provide comments to SF. SF may incorporate the Council's comments in its response to PR. PR is seeking comments from SF on the baseline description and

accuracy of fisheries and pertinent information in other chapters before moving forward with the analysis in Chapter 5.

Several sources of information provided important background for the BiOp. These included:

- Biological Assessment of the Effect of the Federal and State Parallel Groundfish Fisheries on ESA-listed Species and designated critical habitat. This document is SF's analysis of all ESA-listed species occurring in the action area, description of the action, and determinations of whether the fisheries were likely to adversely affect the species or designated critical habitat,
- Programmatic Supplemental Environmental Impact Statement for the Alaska Groundfish Fisheries,
- Response to Questions posed by PR to AFSC and SF regarding Steller sea lions and fisheries. This document is important for describing baseline and effects information,
- Draft Revised Steller Sea Lion Recovery Plan,
- Goodman et al. (2002) for the description of the action, and
- Other literature.

Mr. Capron gave an overview of the process for developing the BiOp, which includes a deconstruct of the action, identifying species and critical habitat occurring in the action area, describing species status, and analyzing and determining effects. The draft BiOp only addresses Steller sea lions and their critical habitat, but humpback whales and sperm whales will be added to the final draft of the BiOp.

The final draft BiOp may have up to twelve chapters, depending on whether a jeopardy or adverse modification (JAM) determination is made. Chapter 2 is a more complete description of the action compared to Chapter 2 in the 2000 BiOp. The reasonable and prudent alternative (RPA) chapter would not be needed if the agency does not make a JAM determination.

Chapter 2 includes a deconstruction of the action (Figure 2.1). The action is broken into four main components: fisheries management policy, exploitation strategy, annual fisheries assessment, and fisheries implementation. An important part of the description that has not yet been completed in this draft is where, when and how much catch occurs inside and outside critical habitat. Dana Seagars is working with Mr. Capron to resolve data issues and to produce this analysis for the final draft. Mr. Seagars is on a detail from the U.S. Fish and Wildlife Service to assist PR with the BiOp. Catch data will cover years 1990 through 2005. The description of the State of Alaska fisheries is in section 4.4.4, and this will be updated when the State finishes a new description of the fisheries. The new ADF&G document uses 2005 as the base year and will describe by fishery: the harvest management strategy, recent changes in temporal and spatial distribution since the 2000 document, and potential Steller sea lion interactions. The State's report will be provided to the SSLMC when it is available.

Chapter 3 describes the status of species and critical habitat. The Steller sea lion pup and non-pup survey for this year is not as comprehensive as in previous years due to the Humane Society litigation. The 2006 survey results will be included in the final draft BiOp. The population status including stock structure is based on recent papers looking at genetic structure using DNA (nuclear and mitochondrial) analysis. The DNA analysis indicates that the Asian stock should not be split out at this time. One paper also has indicated that the current genetic fingerprint has been influenced by previous glaciations. Chapter 3 also includes information on the Steller sea lion life cycle, demographic modeling, vital rates, and population viability analysis (PVA). Juvenile and adult survival has rebounded since the 1970s, but female reproduction rates have declined. Mr. Capron noted that a decline in the fecundity will slow population increases.

Telemetry results discussed in Chapter 3 are similar to the 2000 BiOp. Most locations recorded were inside 0-10 nm of critical habitat. Data to support the junk food hypothesis are lacking. Nutritional stress is likely to have occurred in the past and may still be a stressor based on the low fecundity. Nutritional stress is the only

support for the bottom-up theory for effects on Steller sea lions. Because of the low pup production, a continued increase in the population is not likely, and the population is expected to stabilize.

Chapter 3 includes an analysis of count data to identify sites important to Steller sea lions. Currently, 19 additional sites (RPA sites) are included with critical habitat sites that have protection measures. The 2000 BiOp considered protection of these sites important to avoid jeopardy. Chapter 3 of the draft BiOp identifies an updated total of 22 sites in this category, including some of the original 19 sites and several rookeries and haulouts that have been deleted or added based on recent usage. The analysis also identifies the important seasons. This information will be useful for determining the potential effects of any proposed actions. This analysis also assists PR in understanding how the action may be important in terms of jeopardy because these sites are not critical habitat. Critical habitat cannot be changed with the consultation process. These 22 sites will not be part of the adverse modification analysis because they are not critical habitat, but they can be considered in the jeopardy determination.

Chapter 4 is the description of the environmental baseline. Climate and biological regime shifts and Steller sea lion responses to these shifts are examined. There are some conflicting conclusions based on the use of two different scales: single species and ecosystem wide perspectives.

Killer whale (KW) predation was a concern to some SSLMC members. Mr. Capron and Dr. DeMaster stated that KW predation is unlikely to be a current stressor on the population. Ms. Bonney stated that reported numbers of KW predation events was not believable (86 events is likely too few) based on anecdotal observations in Kodiak alone. Mr. Capron stressed that the researchers have determined that KWs are not a stressor on Steller sea lions because the transient population is not big enough to influence Steller sea lion population trends on a stock-wide scale. Data are missing for some locations such as in the western Aleutian Islands.

Other items in Chapter 4 include an expanded discussion on Steller sea lion prey resources beyond pollock, P. cod and Atka mackerel and historical accounts of Steller sea lions (Section 4.3.11).

The description of the impacts of fisheries is very incomplete. Mr. Capron stated that Chapters 2 and 5 will need to be completed before the impacts of the fisheries on the baseline in Chapter 4 can be completed. The groundfish fisheries are part of the baseline because the current environment is modified by the fisheries. Two questions that PR will look at are:

- What would be the baseline if we hadn't fished?
- What would the baseline be like if we stopped fishing?

No conclusions have been developed for this section. PR looked at prey overlap and did mostly a cursory review. Fisheries catch data from Chapter 2 have not yet been compiled and are important to Chapter 4. The analysis will look at all species harvested because Steller sea lions eat more than just Pacific cod, Atka mackerel and pollock. This discussion will be expanded.

Some preliminary conclusions are based on information in the draft BiOp and are included in Table 4.8. These conclusions are up for review and may change. The consultation handbook requires NMFS to show stressors other than the action in the baseline description. The SSLMC had significant and lively discussion over the contents of Table 4.8. This table shows how PR's opinion of the contribution of different stressors on Steller sea lions has changed since the 2000 BiOp. The opinion of the indirect fisheries effects has changed from "possible" in 2000 to "likely" in this draft opinion. Mr. Capron stated that enough information exists to see a fisheries signal with all the other environmental changes that have occurred. The next task is to determine how important fisheries are and what effect they may have on the Steller sea lion population. Some SSLMC members were concerned that KWs have moved to the "unlikely" category for a current stressor on Steller sea lions. Dr. DeMaster stated that this table is based on information in the Recovery Plan where fisheries were

ranked a potentially high threat to Steller sea lion recovery. KW predation and shooting are not at a level that could drive fecundity down as currently seen. In the draft BiOp, PR is trying to synthesize the information and cannot disentangle fisheries and environmental effects. Mr. Capron stated that KW data do not support the idea that KW predation is outside the realm of natural mortality and that pieces are missing that are needed to inform the arguments for the conclusions.

The whole first part of Chapter 4 looks at regime changes and fisheries impacts. It is not clear how to determine separate effects. Some reports show fishing clearly changes ecosystem dynamics. If fisheries detract from the pristine environment, then fisheries are considered a current stressor and were a contributor to the decline.

SSLMC members were concerned that different definitions are used in Table 4.8 for 2000 compared to 2006, and that the determinations are not well explained. Dr. DeMaster stated that in 2000, NMFS did not have vital rate information. Because NMFS now has information to indicate fecundity is down, a nutritional stress conclusion is appropriate. Mr. Capron stated that in 2000, NMFS had a primarily single species perspective. Now NMFS can look at single species and ecosystems perspectives. NMFS knows more about fisheries impacts, that they likely have had irreversible impacts, and impacts are more complicated than single species. NMFS now has data to support the conclusion that fisheries have fundamentally changed the baseline.

Chapter 5 will have two parts: an exposure analysis and a response analysis at the individual and population levels.

Adverse Modification and Jeopardy

Counsel Lepore reviewed the agency position on analyzing adverse modification of critical habitat based on the Hogarth memo from 11/7/05. Only the statutory definition of adverse modification can be used and not the regulatory definition based on this memo. This is based on a case where the court determined that the agency should not use a similar definition for adverse modification and jeopardy. Therefore, the agency focuses the jeopardy question on the survival and recovery of the population while the adverse modification question addresses only critical habitat and focuses more on recovery. The 2000 BiOp used the old definitions from the regulations, but the new BiOp will follow the Hogarth memo for adverse modification and use the regulatory definition for jeopardy.

Recovery in the new BiOp will rely on the recovery plan standards. The current recovery plan is totally inadequate and does not even apply to the correct population listed under the ESA. NMFS hopes that the revised recovery plan will be done in time to support the final BiOp.

National Public Survey of Steller Sea Lion Protection

Mr. Cotten requested additional information on a contingent valuation project conducted by the AFSC. Dr. DeMaster has been involved in reviewing and revising the survey which asks U.S. citizens to assign an economic value to the existence and protection of SSL. More will be shared with the SSLMC when it is available.

Chairman Cotter instructed the SSLMC members to take the afternoon of Tuesday, Sept 12th, to read the draft chapters of the BiOp in detail, and to be prepared to ask PR questions the next morning.

SSLMC Discussion regarding the draft BiOp

On the second day, no one took the opportunity for public comment in the morning. Lowell Fritz, Mr. Capron and Brian Fadely answered questions regarding Chapters 3 and 4 of the draft BiOp. The following are the issues discussed by the SSLMC regarding the draft BiOp.

Recovery criteria: Chairman Cotter wondered what the basis was for the recovery criteria of 1 percent in 100 years. Dr. DeMaster stated that this value was recommended by NMFS during recovery plan development. Conservation biology literature includes the % in 100 years standard for recovery. NMFS and the USFWS have tried to come up with more guidance, but the USFWS preferred to address it on a case by case basis. Dr. DeMaster worked with the Quantitative ESA listing group which provided three alternatives for delisting criteria. Currently, a post doc is analyzing the three alternatives including: a PVA, 50 % decline in 5 generations, and Grant Thompson's approach by Bayesian modeling. Mr. Capron stated that there is no policy or guideline for determining risk of becoming endangered or risk of extinction. Whether a population may become endangered is looked at over a longer time period than looking at the potential for a species to be threatened.

Chapter 4, page 83: The discussion here on the probability of extinction is quoted from Winship and Trites 2006. They concluded that certain metapopulations within the population will likely be extirpated but not the entire population. A major portion of the range could be extirpated and the whole range is at risk of going extinct based on a mix of PVAs. The discussion here is based on PVAs done in different ways with different data.

Chapter 4, page 42: This section describes the directed causes of mortality. Shooting data are for 2000-2004. This information is from the recovery plan and Goodman's work on the PVA. We do not know the actual amount of shootings but have estimated 250 animals shot per year. This estimate was made by the team that worked on the Goodman PVA. Some members of the SSC think the shooting estimates for all time periods may be low. If the number is actually higher, it would decrease the likelihood of extinction in the PVA. The Recovery Team based the shooting estimates on Trites' work. From 1990 on, the numbers are more estimated and not based on Trites. Human activities can be controlled and that makes the extinction less likely because we can predict that the shooting portion of mortality will not happen in the future.

Table 3.14. Ms. Bonney thought this table should show the 0-3 nm zone because management measures are specific to 0-3 nm, and NMFS has emphasized the importance of this area. Mr. Capron confirmed that 0-3 nm is important but data is presented in 0-10 nm for analytical purposes and to be clearer to the court. The information in this BiOp is consistent with previous information in the 2001 BiOp (2003 Supplement) so the data do not need to be binned at 0-3 nm. **Ms. Bonney thinks the public will want the 0-3 nm information.**

Toxicity: Chairman Cotter was concerned with the lack of discussion on toxicity. He was concerned that this is an area that may be having an impact on Steller sea lions. Mr. Capron stated that the draft currently discusses all that is known, but maybe more weight can be given to it in the discussion of baseline. Very little is known about toxicity effects on fecundity. NMFS assumes the effect on fecundity is bottom up, and NMFS cannot distinguish between environmental regime change or fisheries. Dr. DeMaster stated that some pinnipeds may have immune responses that may affect reproduction, but we do not have specific information for Steller sea lion.

Chapter 4, page 19. This paragraph eliminates the environmental effect as the sole cause of the Steller sea lion decline. NMFS cannot distinguish between fisheries and environmental effects with the available data. This is a general summary section and NMFS will look at other effects that may have caused the decline.

Chapter 4, page 17 A disconnect exists between paragraphs regarding the ramping up of the fisheries. This paragraph states the ramp up of fisheries occurred in the 1980s, but a paragraph on page 19 states it occurred in the 60's and 70s. Is the ramp up for the foreign or domestic fisheries? This section is linking the ramp up with the environmental change. Mr. Capron stated **this section needs to be condensed.**

Single species modeling vs. multi species. Broad conclusions are made at the end of Chapter 4. The Ecopath model shows that if fishing is stopped, the Steller sea lion population increases and then decreases. NMFS is trying to reconcile what we have thought fisheries impacts are with the Ecopath model that shows fisheries do not have that much impact on prey. Various models show various results. NMFS will need to struggle with this issue in Chapter 5. NMFS will try to determine if Steller sea lions are exposed to fisheries, will there be a response. Chapter 4 conclusions are intended to be stepping off points for Chapter 5. Fisheries can change age structure and distribution, and NMFS needs to determine what it means for Steller sea lions. PR will go back to Chapter 4 and reevaluate how the fisheries are described after doing Chapter 5. Dr. DeMaster explained that the single species models of fishing at F_{40} shows more impact than the multispecies model. We do not have the same level of response in the model types because of prey being used in a more complicated way with ecosystem models. Ecosystem models are not ready for use in management decisions. A conservative single species approach is what should be used now. Using a F_{40} fishing strategy is good for management under the Magnuson-Stevens Act but is not necessarily appropriate for ESA management. The important issue for Steller sea lions is localized depletion rather than overall reduction in prey base.

Telemetry Chapter 3, page 28. Recent telemetry data show a slight decrease in telemetry hits in the 0-10 nm area and a slight increase beyond 20 nm compared to previous data. The change was so minimal that it does not change how zones are prioritized.

State Waters There was discussion on federal regulations in state waters. Federal regulations include no-transit zones under the ESA and no groundfish fishing zones from 0-3 nm around rookeries under the MSA. Harvest in the GOA may be underrepresented in catch data near shore compared to the BSAI because of less observer coverage in the GOA. In many instances in the GOA, NMFS has data by State statistical area only. Chairman Cotter suggested that NMFS needs a better monitoring program beyond VMS such as log books. **Mr. Cotten requested a better description of the sources of state waters harvest information compared to federal harvest information.** In the draft BiOp, observer catch information was used to estimate harvest in areas without observer data. In the past, NMFS tried to extrapolate from fish ticket data, but it took too many assumptions. Observer data underestimates catch based on observer coverage by vessel size class. **One suggestion was to compare 2001 ADF&G fish ticket data with observer data in GOA.**

Chapter 4, page 52. Why does harvest in State waters have more effect than previously thought? NMFS is comparing current telemetry data to what was known in 2000. This section will be revised when the State completes its review of the State fisheries. They are close to finishing the document.

Salmon Sharks One SSLMC member asked if stomach analysis is planned for salmon sharks. Salmon sharks are primarily fish-eating but maybe they eat mammals too. Anecdotal information has salmon sharks eating sea otters. Dr. DeMaster stated that it could not be considered until the 07 budget is available. There is no current plan for such research, and it is probably not a priority.

Foraging Chapter 3, page 37 and Figure 3.20b. The dominant prey items vary. Table 3.20b contains the same information that was used for the proposal ranking tool model development. These species are frequently consumed. NMFS need to expand analysis of prey beyond pollock, Pacific cod, and Atka mackerel. Several

papers related diet to population trends. There appears to be less decline and stability where more prey items are available.

Table 3.23 page 76 NMFS should add the SE region to the table for comparison. Mr. Fritz led the SSLMC through a review of the Holmes et al. model. This model gives the numbers of females at age in 2004. NMFS projected the age structure forward with assumptions and adjusted the vital rates. The results showed adult and juvenile survival increase. The question to be answered is how the population can grow. Table 3.25 on page 78 provides the building blocks for projections. Mr. Fritz extrapolated data from the CGOA for other regions. This is appropriate because similar patterns of decline occur, and it is a reasonable first start. The analysis looked at regional differences in natality. Table 3.26 shows the adult female to pup ratios. Because adult females come and go from the survey sites, the estimated pup/female ratio is lower than the observed ratios. About 44 % of the females are photographed compared to all the pups. Regional differences in pup/female ratios reflect regional differences in natality rates. Age 4 females have higher survivability and are expected to start to give birth compared to juvenile females. The prime years for female reproductive are 7-16.

NMFS cannot measure fecundity today in the same manner as it was measured in the 1970s because the research programs today do not involve killing the animals. NMFS therefore compares natality today to fecundity (pregnancy) back in the 70s. Natality is giving birth to a pup that survives to 1 month so they can be counted in an aerial survey. **NMFS should refer to table 3.26 in text to clear up confusion. There was concern that the 44% in 1976 compared to 35% today on table 3.26 may not be accurate. Mr. Fritz will check the 44% number in the text.** Table 3.26 attempts to look at regional differences in natality. These differences seen are confirmed with survey data. Mr. Fritz used Table 3.28 fecundity values and scaled by region based on ratios in Table 3.26 and an overall scalar of 10/20/30 % change. Not all regions declined the same amount from 1976. Table 3.29 shows how population changes with changed fecundity and various population growth rates. This demonstrates that it is difficult to get populations to grow with modest changes in natality. This also shows that increases in population are due to increases in survival. This analysis accounts for age specific changes in reproductive capability. Branding data show that juvenile survivorship is almost the same now as in the 1970s. The analysis projected forward to 2015 made the population grow by changing adult survivorship. Holmes et al. shows adult survivorship may be higher now than it was in '76. Based on Holmes et al. and branding data, increasing populations in some subareas may be driven mostly by adult and juvenile survivorship. Empirical support for this hypothesis is shown in Table 3.26. One would see more pups if the population increase was driven by fecundity. Natality rates are subarea specific. The analysis results were similar to site counts from medium format high resolution photos which is an accurate method for doing counts. **NMFS should add a footnote to Table 3.27 that explains the use of natality rates now vs. fecundity rates from 1976.** The Holmes et al. paper is available from her website.

Mr. Leitzell was concerned about using CGOA data in this analysis and extrapolating to all areas, especially considering the different findings in Winship and Trites (2006) compared to Holmes et al. Mr. Fritz explained that Winship and Trites assumed the adult survival could be no better than in the '70s which forced fecundity to be a higher rate. Holmes et al. accounted for juvenile recruitment so that the changes in age structure reflect changes in fecundity. The extrapolation is appropriate because the site count data in other regions are consistent with what is seen in CGOA.

Table 3.13. Page 65. Ms. Bonney would like the data to be binned to various depths. Dr. Fadely stated that the data have been filtered to remove points from 0-4 m because they are not certain that feeding is going on in less than 4 m. **Ms. Bonney asked for the depth data to be displayed in a manner similar to the telemetry data.**

Chapter 3 page 49. Are the historic population declines based on the 1970s? Incidental takes in the fisheries are estimated to be 25% of mortality in 1985-89 which seems high. This level of mortality could be a reason for the increased survival today because NMFS has stopped much of those mortalities. Count data show these early declines. **NMFS should include references for the early decline data discussed in this section.**

Nutritional Stress vs. Disease and Contaminants: Mr. Gauvin was concerned that there was not enough consideration of the potential effects of disease or contaminants on fecundity. Adult and juveniles appear not to be affected by bottom up factors since survival is up. Mr. Capron stated that NMFS cannot rule out influence of contaminants on reproduction, but NMFS does not have evidence of it. Females with a pup have to acquire a lot of energy and are limited on where they can go for foraging. This limitation makes females more sensitive to changes in prey availability. There is a much greater decline in pregnancy in lactating females which is considered a sublethal effect. **Dr. Fadely stated that disease effects on fecundity will be covered.** Improved adult survival doesn't mean conditions are able to support high levels of pupping. Getting pregnant is not a large energetic cost which may be why pregnancy rates are similar between the 1970s and 1980s. Energetic costs are greater later in the pregnancy term. Disease incidence and contaminant levels are the same in the east and west populations so NMFS cannot conclude these potential stressors have any effect on natality.

Chapter 3, page 40: Some members of the SSLMC recommend that the contaminants section should be expanded here and on page 20 Chapter. 4. Mr. Capron explained that the expanded discussion on this topic is in the recovery plan, and these sections are a condensed version.

Dave Fraser recommended that a section should include the overlap of depth of fishing and depths of dives. He also recommended information on the overlap of Atka mackerel, pollock, and Pacific cod. A figure on the size distribution of Pacific cod in the Pacific cod fisheries would also be helpful.

Fig. 2.4 on page 98: Why is the carrying capacity a 0 before biomass of prey reaches 0? There is concern that this figure shows carrying capacity going to 0 around B_{30} . This does not agree with the figures of biomass showing B dropping below 30 yet the Steller sea lions have not disappeared. Mr. Capron stated that at some point before 0 biomass is reached, there will be no Steller sea lions because the available biomass would not support foraging. NMFS still does not have a clear understanding of the relationship.

Chapter 4, page 24 How did Williams calculated the number 240-500 Steller sea lions eaten in the BSAI by KWs? Some suspect the number is higher. Mr. Capron stated that there may be seasonal components or other factors that are not described. Dr. Wade with the AFSC addressed this issue in Question 42 in the Response to Questions document. Most KWs are assumed to come from the Shumagins and to the west in the calculations, and the analysis is based on an 8 month time period. **Dr. DeMaster will look at this issue more to ensure it is accurate.**

Chapter 4, page 6. There is conflicting information related to the biological and climate regime shifts. Mr. Capron stated that this shows the different perspectives from different authors. **NMFS will continue working on this and do a narration to deal with conflicts and what it means.**

Weaning: **Dr. Fadely stated that new information on weaning will be considered for including in the BiOp**

Chairman Cotter thinks the SSLMC does not need to comment on the draft BiOp to the Council, but will report at the October Council meeting that the SSLMC did receive and review the draft BiOp. Kaja Brix stated that the Council Chair wants a status report and not a review of the document, so the BiOp is only an informational item at the October Council meeting.

Presentation of Proposal Ranking Tool

Ms. Kristin Mabry presented the Proposal Ranking Tool (PRT) to the SSLMC including a review of the scope, structure, and variables of the model, and a demonstration of how the model works including examples model runs and sensitivity analyses. Her PowerPoint presentation is included with these minutes.

The PRT is designed to rank proposals according to their relative impact to Steller sea lions against each other and against the status quo. Model output is only one piece of information that the SSLMC will use to make informed decisions when putting together a package for the Council. It is very important to note that the PRT does not provide any information about determinations of whether or not the proposals individually or cumulatively will result in JAM.

Once the SSLMC knows how much additional impact, if any, will be considered under the 'jeopardy bar', model scores from the proposal runs and status quo scenarios could be used to 'trade' one score for another, and to compare status quo situations to additional restrictions, in order to find a suitable cumulative accounting of impacts. The SSLMC may wish to consider other tools beyond the PRT to account for impacts and benefits not explicitly addressed in the model. Other determinations outside the PRT must be carefully documented.

The current PRT is spatially and temporally explicit, so its use in scoring proposals that have spatial and temporal components is straightforward. Many of the proposals received by the SSLMC and some examples discussed at this meeting do not fit as easily into the current model structure as presented. These proposals will require clarification and extra information from the proposers to make sure the model is characterizing proposal effects correctly. A PRT subcommittee was appointed to include committee members Dan Hennen and Sue Hills, and also will include Kristin Mabry, Doug DeMaster, and Lowell Fritz. The subcommittee is tasked with assembling datasets for model use and making and documenting technical determinations about best use practices for the PRT.

A number of PRT variables needed to be more clearly defined, and committee discussion during Ms. Mabry's presentation resulted in the following definitions. In a few cases, the committee may choose to revisit definitions at one or both of the October meetings as data become available and proposals are more clearly understood.

% TAC: Percentage of the sum of all the seasonal TACs for that target species. For instance, Pacific cod would be the percentage of all the sectors' seasonal allocations. A specific year does not have to be assigned to the TAC value. The calculation would either add or subtract the percent of TAC from the status quo. If a shift of seasonal TAC is for one sector, the model would need the overall effect for the entire Pacific cod fishery.

Duration: This term is related to intensity of harvest (amount and time) and addresses localized depletion concerns. Less harvest in a longer time frame is less likely to result in localized depletion, and this would be considered a longer duration fishery. There was some discussion about semantics, and some members of the public offered the term "temporal distribution" as an option to the term duration. It could be that shifting TAC by eliminating or instituting seasonal splits would change the duration of a fishery, but not necessarily the duration within the season.

List of Sites: Mr. Fritz reviewed how the sites were categorized based on use and time period. Sites to consider include critical habitat and additional sites that NMFS has identified as important. The percent of sites is based on the number of sites affect in a subarea. The model does not differentiate importance among sites and that would have to be done based on criteria outside the model. The delisting criteria in the current version of the Steller sea lion recovery plan identified six subareas of equal importance to delisting based on historical and survey locations. There was some committee discussion that all sites and all regions might not be considered equal based on population trajectories from Anne York's metapopulation work, and opinions provided by the

PR in the 2004 informal consultation. **The SSLMC also needs to decide how to deal with different types of sites in a subarea.** Options include using the worst case scenario, using the type of the majority of sites in an area, or adding the effect of each type of site together.

Season: The effects of fisheries on Steller sea lions dimension of the PRT defines the season variable based on breeding/non-breeding Steller sea lion behavior, and the effects of fisheries on the prey field defines the season variable based on fishing season. The regulatory seasons for fishing do not match up with the breeding seasons for Steller sea lions. **The PRT subcommittee needs to determine how to use the model to address partial overlaps between these two variable definitions. Ms. Bonney and Mr. Henderschedt volunteered to work with Ms. Mabry to develop a table that assigns the regulatory seasons to the seasons in the model. This table will include their experience regarding timing of harvest to ensure the actual harvest during a season is taken into consideration.**

Status Quo: There was considerable discussion on how to define Status Quo in the model to detect impacts correctly for each proposal. The example runs (described below) show that definition of status quo has a direct bearing on the net effect of each proposal. The SSLMC generally agreed that status quo needs to be considered in the context of each proposal, scoring the model variables consistently in each case.

Ms. Mabry presented model runs on the negative impacts portions of two proposals that were considered by the SSLMC in 2004 for potential changes to the GOA Steller sea lion protection measures. One of the proposals was accepted and implemented (Puale Bay) and one proposal (Marmot Island) was rejected. Because the SSLMC expert judgments in the PRT weigh proximity and site-type very heavily in scoring proposals, the model gave a higher score (more negative impact) to the Puale Bay proposal than to the Marmot Island proposal. Even though Marmot Island is a rookery, this proposal only opened up critical habitat down to 10 nm from shore. The Puale Bay (haulout) proposal opened up critical habitat down to 3 nm. In 2004, PR determined that Marmot Island as a single rookery was important to the recovery of the species, and the agency needed to maintain protection in that area. Currently the model does not have this level of detail. The committee discussed the possibility of assigning differential weights to individual sites based on detailed information from PR (see List of Sites text above). If the model is not fully informed with this type of information, then decisions about proposals outside the use of the model should be fully documented with that information.

Several members of the SSLMC and the public stayed after the close of the formal meeting to look at the sensitivity of the model. In Expert Choice software, the user can interactively shift priorities among variables, and watch the resulting model weight change. Two hypothetical proposals were run through the model. One had an expected high impact, and the other had an expected low impact. The SSLMC was pleased to see the actual model output scores reflect a common sense approach to categorizing the impacts. Additionally SSLMC members wanted to see what happened to total proposal scores when different bins were selected for the variables. For example, if a proposal changed from a shorter duration to the same (current) duration, they could see the total score decrease, reflecting the preference for a longer temporal fishery distribution to avoid SSL nutritional stress. Also, if a proposal changed species from Atka mackerel in the western Aleutian Islands to Pacific cod in the same area, the total score decreased, reflecting the importance of Atka mackerel in SSL scats in that area. This pleased those in attendance, as the model is accurately representing the expert judgments the SSLMC members contributed in the formulation of the model. Ms. Mabry will present additional model runs at the next two SSLMC meetings so that the committee can see how model development is progressing.

Chairman Cotter requested PR's feedback on the SSLMC's use of the PRT and for guidance on how the resulting proposal package might be viewed in terms of the latest findings in the complete draft BiOp before taking this package to the Council in February 2007. Counsel Lepore stated that PR likely will not be able to give an evaluation of the model before the BiOp is completed. Dr. DeMaster stated that it is reasonable to ask for PR's impression on whether the conservation measures have been lessened and direction of change, and on the criteria that will be used to judge proposals. PR's response could be to not accept actions that would

be too aggressive, be noncommittal about moderate impacts, or accept actions that have minimal impacts. Counsel Lepore stated that this is difficult to predict at this time because we do not even know PR's opinion on status quo yet.

The Council is scheduled to take final action in June. The final BiOp that includes the SSLMC package may show the fisheries as amended are not likely to result in JAM, or if JAM is determined, it would include RPAs to offset potential impacts to SSL. **The SSLMC should let PR know what the committee needs.**

Wrap-Up

Ms. Mabry will compile the Response to Questions reference in the draft BiOp presentation into an easier-to-use document and distribute it to committee members in the next few days. She will work with AFSC and the PRT subcommittee to assemble datasets required to score variables correctly in each proposal and in status quo. She will work with the PRT subcommittee to begin fine-tuning the model and running more examples for discussion at the next two SSLMC meetings.

The revised PRT will be presented to the SSC at the October 2006 Council meeting to get feedback on any additional improvements. **Each of the SSC's concerns from their August meeting should be addressed in the presentation.**

The SSLMC will give a presentation at the Board of Fisheries meeting on October 14-15, 2006. The BOF has specifically requested NMFS be at this meeting. At the October 16 -18 meeting of the SSLMC immediately following the BOF meeting in Anchorage, the BOF action will be presented to the SSLMC. **NMFS needs to review the BOF proposals and be prepared to provide the federal perspective on the potential impacts.** Also at this meeting, each proposer will be given the opportunity to present their proposal to the SSLMC in detail, and should be available to answer questions. **Ms. Mabry is working on an outline for proposers, detailing necessary information to be included in each presentation.** This meeting will be held at the Hawthorne Suites in Anchorage. The late October meeting will include fine-tuning the PRT based on subcommittee input, bundling/eliminating proposals, and model runs. This meeting will be held at the AFSC October 30 – November 1.

Two meetings will likely be needed in January. The first meeting will be to review and comment on the entire draft BiOp which will be released in December, and the second meeting will be completion of the package of the SSLMC's recommendations for management measures for presentation to the Council in February. The Council may refine these recommendations.

OCTOBER 4, 2006

B-7

AFTERNOON

Good Morning Madam Chair and Members of the Council,

My name is Ed Richardson, and I'm speaking to you today on behalf of the Pollock Conservation Cooperative, an association of seafood companies that catches and processes about half of the eastern Bering sea pollock TAC.

Madam Chair, the purpose of my testimony today is to bring to the Council's attention what may turn out to be a very influential study of Steller sea lion population changes based on recent work analyzing the numbers of SSLs in the central Gulf of Alaska. I mention this study now because it appears, from a reading of the draft BiOp chapters, that it will likely motivate NMFS Protected Resources view of the fate of the entire western distinct population segment of SSLs, much like an earlier study of SSL declining body size from the same small area motivated Protected Resources viewpoints expressed in the SSL BiOps that resulted in the reasonable and prudent alternative management measures that exist today to protect the western DPS.

My purpose in highlighting this study now, which evidently is under review, and likely follows closely the methods used in a study by Holmes and York published in 2003 in the scientific journal Conservation Biology, is to remind the Council that significant uncertainty and gaps still exist in the SSL population data, and that the Council family should be prepared to carefully assess studies such as these, especially as concerns the data and methods used.

Madam Chair, to keep my testimony brief at this very early stage of the BiOp development process, let me just quickly say that the published study claims that between the period 1988-1992 and the period 1993-1998 the fecundity of female SSLs declined significantly when compared to that estimated during the 1970s in a life table developed by Ann York and published in 1994. Madam Chair, as it turns out, I testified here before the Council about this 1994 work many years ago, but at the risk of repeating myself, I will report to you again that the 1994 work seemed to indicate that the primary factor responsible for the prior declines in SSL numbers in the central Gulf was reduced juvenile survival.

In contrast, the study I mention today, the one under review, and the study published in 2003 by Holmes and York, claims that during the period 1988-1992 juvenile survival rebounded and then subsequently female fecundity declined sharply in the central Gulf of Alaska. An important

implication of such a change in SSL vital rates is that it would seem to narrow the likely causes of the more recent declines -- that is to say, it points to problems associated with nutrition as the mechanism for these recent declines. As to the likely factors responsible for problems associated with female SSL nutrition, it was stated at the September Plan Team meetings in Seattle that they include only climate change or competition with the commercial fisheries for scarce prey resources.

Now Madam Chair, I guess such rapid changes in SSL vital rates are possible, although frankly the relatively large changes over such short periods, both in juvenile survival and female fecundity, seem odd to me. But I'm an economist today, not an ecologist as I was in college, and so I certainly would want experts on SSL population dynamics to evaluate these results. As Holmes and York state, the changes in vital rates they claim to have revealed depend entirely on their efforts to estimate the numbers of juvenile SSLs in the central Gulf of Alaska. Now there are no direct estimates of the numbers of juveniles in the area -- that is to say, there are no estimates of the number of juveniles in the area based on the ages of the SSLs in the area.

A reading of the published study reveals that many highly subjective data selection methods and assumptions were employed to develop indirectly the data on the juvenile fraction of the population that was used to determine the vital rate changes. The methods used to determine the pup numbers used the analysis could be similarly described. Madam Chair, with the benefit of a masters and a PhD in economics, I think I do have sufficient experience and credentials to recognize subjective data selection methods and an analysis that is driven by assumptions. And its these data selection methods and assumptions that the Council must be prepared to have assessed. It requires access to the data and an ability to carry out the analysis using alternative assumptions and methods to evaluate the robustness of the analytical results, even as they might pertain to the numbers of SSLs in the central Gulf. Unfortunately, checking and reviewing the work of others is often tedious and thankless work, but its a job that the Council family must be prepared to take on, and soon.

Madam Chair, thanks for the opportunity to present our views.