DRAFT

North Pacific Fishery Management Council
Steller Sea Lion Mitigation Committee Meeting
June 19-21, 2007
Alaska Fisheries Science Center, Seattle

Minutes

The Steller Sea Lion Mitigation Committee (SSLMC) convened in Seattle at the Alaska Fisheries Science Center on June 19-21, 2007. The SSLMC's Subcommittee on Proposal Scoring met briefly during the meeting on June 19 to review proposal scores and prepare for the full committee's review of the Proposal Ranking Tool (PRT) and proposal scores developed at the May 2007 meeting. Committee members present were: Larry Cotter (Chairman), Jerry Bongen, Julie Bonney, Earl Krygier (for Ed Dersham), John Gauvin, John Henderschedt, Dan Hennen, Sue Hills, Frank Kelty, Terry Leitzell, Dave Little, Steve MacLean, Max Malavansky Jr, and Art Nelson. Also present were Bill Wilson (Council staff); Dr. Doug DeMaster (NMFS AFSC); Kristin Mabry, Melanie Brown and Scott Miller (NMFS AK Region staff); John LePore (NOAA General Counsel AKR); Shannon Atkinson (Alaska Sea Life Center); several NMML scientists; and several members of the public.

Bill Wilson reviewed the agenda (attached), the work schedule for the coming several days, and the handout materials provided to each committee member. A presentation from Dr. Shannon Atkinson, Alaska Sea Life Center, was added to the agenda. The minutes of the SSLMC's May 7-10, 2007 meeting were reviewed and approved.

Mr. Wilson presented the draft agenda for the August 1-3, 2007 special Council and SSC meeting. This Council/SSC meeting will focus primarily on a review of the May 2007 draft Revised SSL Recovery Plan. NMFS is having the May 2007 draft recovery plan reviewed by the Center for Independent Experts (CIE); Terms of Reference for that review have been provided to the SSLMC. The Council is contracting with the North Pacific Research Board (NPRB) for a review of this recovery plan also; the Terms for the NPRB review are the same as those for the CIE review (the NPRB review Terms also have been provided to the SSLMC). Reports on both the CIE review and the NPRB review will be presented to the SSC and Council at the August meeting.

The SSLMC reviewed the schedules for completion of the SSL recovery plan, the consultation and preparation of a draft BiOp, and the NEPA timeline. A Notice of Intent to begin an EIS scoping process will be presented to the Council in draft form in October; the scoping process will begin in December. The SSLMC discussed how its work will mesh with this schedule, particularly with respect to the planned development of a status quo BiOp (in April 2008) followed by a revised BiOp that considers changes in SSL protection measures. John Lepore noted the importance of keeping separate the roles of Sustainable Fisheries (SF) and Protected Resources (PR) in the consultation process, and how the status quo BiOp will help inform the decision making on what changes can be made to the current SSL protection measures. Melanie Brown also noted that once a proposed package of changes in SSL protection measures is approved by the Council, SF

will provide a Biological Assessment to PR for consultation. This then leads to eventual preparation of the redrafted BiOp. The SSLMC also discussed what role the SSL recovery plan will play in the development of the new BiOp. The SSLMC hopes that PR can work with the SSLMC as it continues to develop a package of recommended changes to the SSL protection measures; Chairman Cotter and Mr. Wilson will discuss the SSLMC's suggestions with PR. The SSLMC will likely require two or three more meetings to evolve the current proposals into a package that would be recommended to the Council.

Kristin Mabry reviewed with the SSLMC a new DVD that contains an updated set of resources. The new DVD includes a variety of additional documents, scientific papers, the May 2007 SSL recovery plan, and other items. Copies of this DVD are available to the public by contacting Ms. Mabry.

Sea Life Center SSL Research Update

Dr. Atkinson presented an overview of new or ongoing SSL research programs at the Sea Life Center (ASLC).

Chiswell Island Monitoring

This program involves remote video camera monitoring of a small SSL rookery on Chiswell Island in the northern GOA. This effort is gathering a time series of data on SSLs including behavior, birth rates, pup mortality, maternal attendance, and other related data. SLC scientists can follow individuals on this site based on natural markings, color, etc. Mortality to pups washed off the rocks from waves is the highest source, followed by killer whale predation. Based on combined observation data and energetics calculations, scientists from the SLC have calculated potential levels of SSL mortality from transient killer whales (tKW) and suggest that the level may be approximately 50% of the level calculated by Dr. Terri Williams in her bioenergetics modeling work. Diet of tKWs is comprised of marine mammals including SSLs. There is some possibility that GOA tKWs may prey on squid, but additional work is needed to verify this. The SSLMC discussed with Dr. Atkinson the role of tKWs in the SSL decline and effects on SSLs from continued predation; more data are needed to better define this relationship; a key unknown is the number of tKWs present in the GOA in the 1970s.

A Review of Anthropogenic Causes of SSL Mortality

ASLC scientists and AFSC scientist Dr. DeMaster have drafted a paper that summarizes available data on anthropogenic causes of SSL mortality, including fishery-related nutritional stress, SSL take in fisheries, subsistence harvest, intentional shooting, contaminants, and scientific research. Of these, two factors appear to remain viable hypotheses for a role in the SSL decline, based on an overall ecosystem evaluation and available evidence: nutritional stress and contaminants. Neither, if viewed alone, can be solely the cause but either could be a factor if considered with other factors, including non-anthropogenic factors. Dr. Atkinson noted that nutritional stress is a multi-faceted

issue and may affect SSLs through climate change processes, but that SSLs do not appear emaciated or have other visible signs of nutritional stress. She reported on observations of visible evidence of nutritional stress in South American sea lions from recent field study, suggesting a broader ecosystem-level phenomenon occurring in parts of the world's oceans. To shed light on the overall issue of SSL decline, more scientific studies are needed on adult females, particularly pregnant females still nursing a yearling pup, to understand the effects of gestation combined with environmental stresses, the attentiveness of nursing females to newly-born pups, and related issues. Scientific permits to acquire such data are not approved for the upcoming years, frustrating scientists seeking this knowledge.

Captive SSL Studies

The SLC is using captive SSLs to study foraging behavior using satellite tags. Captive animals will be used if permits are granted for captive breeding – but to date, the NMFS permits office considered SSL copulation and parturition a "take" that may not be approved and thus not permitted at the ASLC. (!!)

Transient Juvenile SSL Studies

Juvenile SSLs are captured, placed in a quarantined facility, and subjected to health assessment and then fitted with satellite transmitters, and in some cases also life history tags, and then released back to the wild. These animals provide additional information on SSL behavior from animals that are free to forage in the natural environment.

Foreign Studies

ASLC researchers are conducting some SSL work in Russia. Permits are required, but are less cumbersome to obtain and the process is much quicker than in the U.S. A variety of biological and field assessments are conducted under this program.

SSL Physiology

This program includes studies of the SSL immune and endocrine systems.

Contaminants in SSLs

While expensive to collect, SSL contaminants data have been gathered for several years, suggesting that contaminants potentially could affect SSL health and survival (many contaminants are endocrine disruptors). Patterns of contaminant levels are inconsistent, but contaminants in some animals have been very high. A review of this SLC program by the American Institute of Biological Sciences suggested that the Center focus on data analysis to guide future efforts; the ASLC is thus working up data now before continuing with additional data gathering.

SSL Reproduction

This program includes observations at Chiswell Island as well as work with captive animals at the ASLC. Permits are still pending for the latter program since it involves handling animals and breeding of captive females. It is unlikely the ASLC – or any SSL researchers – will be granted permits to handle adult females, thus negating the opportunity to acquire very necessary data.

Killer Whales

The ASLC contributes to work by Dr. Craig Matkin in the eastern Aleutian Islands and studies of tKW diet diversity. This also includes tagging tKWs to monitor movements. Killer whales tagged at False Pass have been observed to travel northward toward the Pribilof Islands, and killer whales tagged in Seguam Pass have traveled to Hawaii (1000 miles).

Other Programs

The ASLC scientists are placing more efforts on completing data analyses and publishing results in peer-reviewed literature and will continue these efforts this year. Some staff have worked as members of the SSL Recovery Team, and while this effort is now complete scientists remain engaged in the overall recovery planning process.

Subcommittee on Proposal Scoring

This subcommittee (Hennen, Mabry, Wilson, DeMaster, and Hills) met on June 19 to review the proposal scores developed at the SSLMC's May 2007 meeting, and to present some scoring issues that have been raised. These include whether to re-score proposals that affect more than one of the seven sub regions, such as Proposal 22 which affects several Aleutian Islands regions. In this case, should the SSLMC divide it into sub proposals, and score each separately? A similar question affects proposal 8, and others. The Subcommittee suggests re-scoring any proposals that affect more than one region, since the PRT is partly driven by the assumption that a proposal affects a single region; the SSLMC accepted this suggestion as an appropriate application of the PRT. The Subcommittee noted that the PRT requires separate scoring for proposals that affect more than one season or more than one SSL site type.

The Subcommittee reviewed the draft list of outside the model considerations (OTMC) and discussed what kind of process might be used to include OTMCs in the proposal review process; this would then be provided as a recommendation to the SSLMC. One option would be a listing, with check-offs for whether a proposal would be a benefit or a detriment. Another option would be to "score" an OTMC based on the degree of effect – e.g. give it a "probably yes", "possibly yes", or "no" score? Then how would the sum of OTMC "scores" be evaluated? How might these be quantified, if at all? It is recognized also that the SSLMC proposal review process includes the allocation issues and a process for considering tradeoffs among proposals, reviewing economic effects and Council

objectives, and related issues. The PRT scores, the nutritional effects scores, and the OTMC review all combined would help the SSLMC do the final proposal evaluations.

Dr. DeMaster also noted that after the SSLMC completes its set of recommendations, and the Council forwards a package to NMFS, then PR will likely evaluate the recommended proposals in light of the data on harvests inside and outside SSL critical habitat as outlined in the 2003 BiOp Supplement to see which may increase (or decrease) levels of harvests in these zones. Most attention and concern will likely be noted for proposals that change (increase) harvests inside 10 n mi; spatial changes will likely be easier to quantify than seasonal changes. Mr. Lepore reminded that recovery is an important consideration in jeopardy and adverse modification determinations as well as in critical habitat assessments, and that the re-evaluation of status quo management measures may not result in a no jeopardy or no adverse modification determination as occurred in the last BiOp.

Ms. Brown suggested that the SSLMC strive to complete its recommendations prior to the Council's December 2007 meeting. In late 2007, the SSLMC may complete its initial recommendation for changes in SSL protection measures, and SF can begin development of a draft Biological Assessment. Once the draft status quo BiOp is available in April 2008, the SSLMC's initial recommendation would be compared by SF and the SSLMC to the draft status quo BiOp to ensure that conclusions in the BiOp match the proposed action. Then the SSLMC can finalize their recommendations, and by June 2008 provide these to the Council for their approval. Once the Council reviews these recommendations and approves a package of proposed changes to SSL protection measures, SF would be able to complete the Biological Assessment. Thus, the SSLMC may have to meet one or more times in late summer and fall to complete its work before early December.

The Subcommittee discussed how the revised SSL recovery plan may relate to the weightings given various elements in the PRT. One issue may be how the PRT treats season (giving summer a slightly higher level of concern) and how the recovery plan views season (winter and summer about the same importance to SSLs).

Report from Subcommittee to SSLMC

The Subcommittee reported on its review of proposal scores, and the SSLMC discussed several proposals. Of particular concern were proposals that affect multiple geographic regions – e.g. Proposal 22. The SSLMC was concerned that the PRT addresses geographic areas differently than the areas used in fishery management. This is a concern primarily with proposals that request a shift in TAC, since moving quota harvested from one season to another would affect the volume of fish removed from potentially more than one area, thus affecting SSLs in multiple areas. After review of several proposals, the SSLMC concluded that proposals that may affect multiple geographic regions may have to be re-scored because the PRT "season" is based on SSL census areas, not fishery regulatory areas. Thus a proposal for change in TAC, for example, in a fishery regulatory area might affect more than one SSL census area, and thus in the PRT the proposal would trigger effects on more than one season. The SSLMC

concurred with this approach, and the Subcommittee agreed to meet June 20 to re-score proposals that affect multiple SSL regions and present to the SSLMC a revised summary score sheet for all proposals. The SSLMC requested a map showing fishery management area boundaries and SSL census area boundaries together to see where overlap occurs.

Mr. Cotter cautioned (again) that the PRT is but one tool for proposal review. Data sets that are not part of the PRT will also be used, some of which have been referred to as OTMCs. Mr. Cotter noted also that the PRT has been reviewed many times by the Council's SSC and has been approved for use as a proposal ranking tool by the SSC.

The Subcommittee met June 20 to review all proposals, identify those that propose a TAC shift and affect more than one SSL census region, and rescore those proposals. The Subcommittee developed a new list of proposal rankings and presented this list to the SSLMC on June 21. Proposals rescored were: 2, 4, 8, 10, 11, 14, 19, 20, 21, and 27. The revised proposal rankings list is attached.

Tutorial on PRT

Ms. Mabry led the SSLMC through a review of how the PRT is used to score proposals. She explained how to use the three main tables that represent the three arms of the PRT in evaluating a proposal. Members of the SSLMC or the public can use these three tables to score proposals they may wish to evaluate. The SSLMC may, at a future meeting, use the PRT to consider modified proposals, or groups of proposals, as the Committee refines the proposals it has in hand, and ultimately the SSLMC will develop a set of recommendations for Council review. In the interim, Committee members can, on their own, use the PRT to evaluate modified proposals if they wish to do so prior to future meetings.

Outside the Model Considerations (OTMC)

The SSLMC was provided a draft list of OTMCs developed through the process of proposal scoring (draft list is attached). As proposals were scored by the SSLMC, the Committee often recognized issues that should be considered in the overall proposal review process but are not included in the PRT. These issues, or considerations that may affect how a proposal is viewed by the SSLMC, will be considered by the SSLMC in its ultimate rankings of proposals or combinations of proposals. However, per SSC recommendation, the Committee needs to describe the process by which OTMCs will be used in the proposal review and analysis process.

Discussion centered on whether to organize OTMCs into categories (e.g. those that relate to SSLs and those that relate to socioeconomics) or whether to weight certain considerations differently than others (e.g. safety higher than economic?). Some suggested that OTMCs will have greater effects on proposals than others, and thus the process for applying these considerations should have a scale of effect when used to evaluate proposals (e.g. a consideration could be viewed as having a large effect, or a moderate effect, or perhaps no effect – thus it could be numerically "scored" as such).

Some believe OTMCs should not be "scored" or should not be used to develop a quantitative assessment of a proposal, but rather OTMC analysis should result in merely a "footnote" or other non-quantitative use in evaluating proposals. Some suggest doing this so as to not imply that a proposal's resultant "score" for how it relates to OTMCs can be directly compared to – or even added to – that proposal's score derived from the PRT. The intent of OTMCs is to give proposals a full evaluation so that they are not viewed only in light of their PRT scores.

The SSLMC also discussed how long a list of OTMCs should be prepared, and how that process might occur. The wording of the OTMCs on the draft list also was discussed, and some on the Committee felt that certain OTMCs could be reworded. Some members suggested shortening the list. The SSLMC believes that use of OTMCs in the proposal review process needs to be objective and not arbitrary, and thus working off a list would serve as a reminder or a checklist to be sure all proposals are reviewed by the Committee in the same fashion. The SSLMC concluded that this list would evolve as proposals are reviewed and OTMCs would be added as they are deemed applicable to a proposal. Use of OTMCs will be documented in the SSLMC's meeting minutes as proposals are reviewed, thus providing a record of the decision-making process the Committee uses in developing its recommendation for the Council. All proposals should be evaluated equally – i.e. all OTMCs would be applied to each proposal; and those that do not apply to a particular proposal would be noted as such. The OTMC list is a way of reminding the SSLMC of some of the considerations the SSLMC should use as it proceeds with the proposal review process. The list in hand at this meeting is a start; the Committee will add to it as the proposal review process continues. While some on the SSLMC suggested some form of categorization of OTMCs, such as those that relate to SSLs might be categorized by the arms and elements in the PRT, most were complacent about the suggestion (late in the day) and Chairman Cotter stated "I would declare us brain dead" and the Committee adjourned.

Framework for Proposal Analysis

The SSLMC discussed what kind of overall process the Committee would use to analyze proposals and develop a package of recommendations to the Council. The SSC has requested that the SSLMC develop a process, which the SSC termed a framework, so that the Council and public can understand the role the PRT and other considerations will play in the eventual development of recommendations.

This issue rose several times during this meeting, and in particular the Committee discussed what kind of process or framework it would employ during its discussions of the OTMCs. Mr. Cotter noted the importance of building a record for how recommendations will be developed. Dave Little suggested a three step process that might be used after proposals have been scored with the PRT: 1) identify issues a proposal raises that are closely related to elements in the PRT but the PRT is too insensitive to evaluate, and "tweak" the PRT scores accordingly; 2) identify other larger effects a proposal may have on SSLs that are not addressed by the PRT, and give these an effects weighting (proposal will probably affect SSLs, either negatively or positively;

proposal will possibly affect, both + and -; or proposal will have no effect); and 3) identify those issues that are outside the PRT and have nothing to do with SSLs, and rank these in terms of impacts on a scale of 1 to 5 with 1 = low effect and 5 = high effect (e.g. if a proposal will increase safety in a fishery, and have a high degree of effect and render the fishery considerably more safe, then this consideration might receive a rating of 5). In the latter situation, the ranking (on a scale of 1 through 5) would be an average of votes cast by members of the SSLMC for that proposal and that particular issue.

Regarding step 1 above, some of the SSLMC felt that tweaking the PRT output could be problematic and we shouldn't modify the PRT any further by using additional factors and then adjusting PRT scores. Some suggested that the proposal analysis process needs to have a way to evaluate economic effects of a proposal without voting on the magnitude of those effects; voting on economic effects by a diverse group may not adequately reflect the degree of monetary importance or value of that proposal. Others described concerns with ranking some considerations on a scale as trying to objectively rate a subjective issue.

The Committee concluded that the framework process would include evaluation of PRT scores accompanied with a three step analysis of 1) SSL issues for which the PRT is not sensitive enough to score, 2) other SSL issues that are outside the PRT mode, and 3) other OTMCs. For each of these issues, in each of these three steps, the SSLMC will develop a short narrative that describes those effects. While not objective, this will provide a record of the main considerations given to each proposal, and will serve as a record for how and why the SSLMC made its decisions and derived its final recommendations. This also provides a framework for how PRT scores are integrated into this decision-making process.

Revised Draft SSL Recovery Plan Review

Bill Wilson led the SSLMC through a review of the May 2007 draft recovery plan (RP). Mr. Wilson reviewed the history of development of this RP, the role of the Recovery Team in its development, and the upcoming public and Council review; eventually, the RP will be redrafted according to comments received, and released as a final plan. The SSLMC was referred to a handout on the recovery planning process and a web site for the NOAA guidelines for recovery planning (dated 1992).

NMFS is responsible for working towards removing an ESA-listed species from that list. For endangered species, this means downlisting to threatened and eventually delisting. It is possible to delist an endangered species (NMFS has done so for the eastern North Pacific gray whale). Recovery criteria in a recovery plan are the steps or measures NMFS will use in part to evaluate whether to downlist and delist a "species"; because the status of an ESA-listed species is to be reviewed at least once every five years, these criteria are usually reviewed every five years, although this is often not rigorously done; revisions to recovery criteria require revisions to a recovery plan, not a small process. The goal of recovery is to remove threats that are impeding a population. The SSL Recovery Team met for several years to review available information on threats, to

categorize and determine which threats were of most concern, and developed a plan for how to reduce threats such that the SSL populations could recover.

This SSL RP does not commit the Agency to accomplish the work outlined; it gives the Agency a goal and priority actions, and identifies estimated budgets needed for accomplishing the recovery actions. The threats in the RP and the recovery criteria recommended in the RP assist NMFS as it conducts Section 7 consultations. In jeopardy or adverse mod decisions, the Agency must consider what is needed to recover an ESA-listed species. The RP does not address critical habitat (CH), which is a decision made upon or shortly after listing; revisiting CH would be a separate action from completion of the RP. However, since habitat is necessary for species' survival, NMFS must evaluate in any Federal action the effects of that action as it involves CH since the Agency cannot diminish the quality of this habitat such that it would impair the species' ability to recover.

The Committee engaged in discussions on a variety of issues raised by this version of the RP, including the recovery criteria and why these specific criteria are in the RP and how they were derived, how a listed species might be reevaluated and under what conditions, how long such a review might take, and how criteria might be changed. Dr. DeMaster fielded most of these questions and provided responses and perspectives from an ESA standpoint and from the Agency's perspective.

Dr. DeMaster also reviewed work accomplished by a Quantitative Working Group of NMFS and USFWS representatives who met in the early 2000s to develop a standardized process for developing ESA listing criteria. A publication from the Group is at http://spo.nmfs.noaa.gov/tm/tm67.pdf; Dr. DeMaster provided copies to those interested. This document is intended to provide NMFS guidance in future listings; but the Agency has more work to accomplish before it can implement these recommendations.

The SSLMC discussed jeopardy and adverse mod as it relates to ESA listed species and critical habitat. The SSLMC noted that, based on recent court decisions, there has been a necessary change on how NMFS will make jeopardy and adverse modification determinations. The courts have determined that the Agency needs to separate survival and recovery issues and analyze them independently. The Agency is now required to consider recovery of an ESA-listed species when it makes both jeopardy and adverse modification determinations.

Mr. Wilson reviewed some of the major changes made to the 2006 RP and included in the 2007 RP (see attached outline of major changes). These include:

- Threats assessment: Killer whale predation is now rated Medium (was Potentially High), and Incidental take due to interactions with fishing gear is now rated Low (was Medium)
- The scenarios for how the SSL decline could have unfolded have been removed
- The section on Factors potentially influencing the wSSL has been restructured slightly

- And the section on Development of recovery criteria has been restructured
- Appendices 1 and 2, Managing and maintaining SSL prey fields and Nutritional stress, respectively, have been removed, and discussion of nutritional stress has in some cases been beefed up and reorganized, with all of the nutritional stress discussions now part of the body of the RP
- Small revisions, updates, and clarifications are scattered throughout the RP, primarily in the wSSL sections; new literature has been added, and some sections have been augmented with additional explanatory text

The SSLMC discussed each revision, some in more detail than others. Main points of discussion focused on killer whale predation and effects of this predation on the wSSL population. The SSLMC also discussed the RP rating of the killer whale as a medium threat. The Committee discussed how to resolve the statement that killer whale predation is the largest single source of SSL natural mortality, yet rated as only a medium threat. Dr. DeMaster noted that this is not inconsistent with the data that suggest killer whale predation may account for around 20-25% and other factors also contribute to SSL mortality. Dr. Hennen noted that the decline of any animal population may be attributed to two main sources: removal of individuals caused by mortality, and/or the lack of contribution of individuals to the population related to reproduction; killer whale predation accounts for removals, but a population can be declining from both factors (i.e. not only removals but also lack of additions).

Nutritional stress was the subject of considerable discussion. The SSLMC revisited the role nutritional stress could have played in the SSL decline. The discussion of nutritional stress in the RP has been reorganized, supplemented with additional information, and the appendix on nutritional stress removed and incorporated into the body of the RP. The RP concludes that SSL reproduction – production of pups – seems to have declined, and one possible mechanism is through some effect of fishery removals on SSL nutrition. Dr. DeMaster noted that the RP goes through the various possible reasons for a lowered reproduction rate for the wSSL, and through a process of evaluating available information, the RP excludes disease and contaminants and several other factors as likely factors for lowered pup production. Dr. DeMaster suggested that at least the nutritional stress possibility is not incompatible with lowered reproductive rates. Steve MacLean question whether female SSLs could be sacrificing pup production to account for possible nutritional deficiency in order to maintain body condition (e.g. blubber thickness). Others questioned how fishery removals of some prey items in geographic areas well outside the predominant SSL feeding areas could have such an effect as to influence reproductive rate. One conclusion is that multiple factors are probably involved and no one factor is solely responsible.

Some suggested that the threat not be termed 'nutritional stress' but rather be termed reproductive rate decline, and then have the RP focus on various reasons why SSLs might be experiencing a change in reproductive rate and concentrate recovery actions on those causes. Others argued that a change in reproductive rate is the effect of a stressor and that nutritional stress is the appropriate term for the threat. Dr. DeMaster offered to

suggest to the preparers of the RP that they consider adding information on possible reasons a SSL population could be experiencing a lowered reproductive rate.

The chapters of the RP were reviewed in detail; Mr. Wilson pointed out where in the text changes have been made, and identified which may have been prompted by comments (either peer review or public) received on the May 2006 RP and which were changed because of new information. These are summarized on the handout (attached).

Executive Summary

The recovery criteria were the subject of considerable Committee discussion. Some criteria use the term "statistically significant" and the SSLMC questioned the meaning of this term; Dr. DeMaster stated this means that a trend in SSL abundance must be increasing over a period of years such that the increase in abundance is statistically significant at an alpha level of 0.05 (only a 5% probability that the trend observed is due to chance). The Committee had an extensive discussion of the criteria and the use of the PVA to develop these criteria. The RP now has a new section that provides considerable additional explanation on how the PVA was used to develop the criteria (p. 126-135). Some questioned whether the SSL decline from 1985-1989, due probably to intentional shooting and other non-recurring sources of mortality, was adequately treated in the PVA. Dr. Hennen noted that the PVA was constructed with the known sources of mortality for all time periods, where data were available, but then the Recovery Team modified the PVA model to reflect its concern that a possible major factor in 1985-1989 would not recur; the Team did this to take into account intentional shooting as an event that would not likely be repeated. Even with the adjustment to the PVA, the chance of extinction in the wSSL population predicted by the PVA was such that the Team agreed upon the criteria currently in the RP. An upcoming report from Dr. Gordon Kruse may shed more light on the intentional shooting issue; unfortunately, it is expected that this report may not be published in time to affect the recovery criteria contained in the current RP.

In the section on recovery actions, the RP refers to and identifies several "especially important" actions that it considers high priority; one of these actions was elevated in importance and a new action added. One action, 'conduct an adaptive management experiment', elicited some discussion. The SSLMC questioned how a meaningful adaptive management experiment could be conducted under current constraints imposed by the ESA and how such an experiment could be carried out under the current suite of SSL protection measures (given that the RP recommends maintaining the current suite of protection measures, this argues against the likelihood of carrying out such an experiment).

Background

Changes in this section of the RP were presented. Most of the discussion by the SSLMC focused on nutritional stress and the difference between acute and chronic nutritional stress. Some questioned whether environmental carrying capacity has been diminished;

the answer is likely it has, as reproduction appears to have declined for wSSL over the past 30 years (although survival rates of juveniles and adults appear to have recovered to their pre-decline levels). Discussion included the role of nutritional stress in SSL fecundity and whether there is other evidence of such stress such as appearance of elevated levels of stress hormones; Dr. DeMaster recounted some data, but publications are few. He reminded the SSLMC that the Recovery Team and NMFS have used a weight of evidence to derive the recommended recovery criteria.

Conservation Measures

Changes and revisions were noted.

Factors Potentially Influencing the Western Population

This chapter has been reorganized and some sections rewritten. New publications have been incorporated and cited, particularly in the killer whales section. Dr. DeMaster will check on one new publication that is cites as being "in review" to determine whether it is appropriate to cite it in this RP.

Threats Assessment

Changes and updates were noted. The Committee again discussed briefly the acute and chronic nutritional stress issue.

Recovery Plan for the Western Population

Changes and updates were reviewed. The RP now contains a new section on the definition of recovery. Some questioned the term "efficacy" as used in some of the recovery discussion in this chapter; this term relates to whether the measures are having the intended results. Some question how to measure this given the difficulty in implementing an adaptive management program – i.e. how to test efficacy without an experiment or some means to measure success?

The SSLMC discussed the funding levels suggested for implementing the recovery actions. Some believe the Agency will not likely receive adequate funding to carry out these actions. Dr. DeMaster noted that in the coming years, NMFS is scheduled to receive base funding for basic ongoing SSL research and monitoring; a large influx of additional money seems unlikely. NMFS is particularly concerned that some recommended fishery interaction studies and contaminants studies may not be funded, and it is unlikely there will be funds available for adaptive management experiment studies. Without adaptive management, Dr. DeMaster noted that we will be stuck with correlation studies which are insufficient to determine effectiveness of fishing regulations; good data are needed to support the contention that it is unlikely commercial fishing is affecting SSLs before changing regulations, a task made even more difficult because of ongoing changes in the environment and changes in how fisheries are prosecuted.

Another question from the SSLMC is what happens if the SSL population does not rebound and increase in abundance in the coming years. The current assumption is that the carrying capacity of the North Pacific for SSLs is sufficient to allow for a much larger population size. In the case where SSLs do not increase in abundance, Dr. DeMaster suggested that the Agency would have to relook at the potential factors that may be causing this, particularly such factors as contaminants, nutritional stress, disease, predation, and others, to identify possible reasons, and then conduct more studies on these factors.

The SSLMC discussed the RP's review of information on how fisheries interact with SSLs and their habitat. Mr. Gauvin noted that the RP does not cite available study results from the NMFS Fishery Interaction Team (FIT) program, e.g. p. 102-103 in the RP. Dr. DeMaster stated he would review this with the Agency. The SSLMC noted that the FIT studies were designed to evaluate how fisheries affect prey populations, and their work should be adequately cited in the RP.

This section of the RP contains a large new section that describes the development of the recovery criteria. This section explains how the PVA model was used to help the Recovery Team derive these criteria. The SSLMC discussed the lengths of time required to change the listing status of the wSSL, and some questioned the 30 years of population growth at 3% required to delist the populations. Dr. DeMaster explained how the PVA was constructed and run and the assumptions used by the Recovery Team. The PVA is a way to examine probability of extinction of the wSSL given certain assumptions. This modeling exercise incorporates uncertainty and risk, and sets a level of about 5,000 animals as the pseudo-extinction level (i.e. an effective population size of 1,000 animals). Given these parameters, and considering the population trends and other characteristics of the population, the PVA was run by integrating a choice of risk which is a policy decision made by the Agency. For the wSSL PVA, the PVA was run with a probability of extinction over time, which was set as a 1% probability of extinction in 100 years, which was a quantitative standard for a species considered in high risk of extinction (i.e. endangered)(this was a recommended standard from the NMFS Quantitative Working Group that developed guidelines on ESA listing criteria). The 30 year period was derived from the PVA model with the above risk assumption; this is a period of time long enough to overcome extinction risk. In 30 years, the SSL population will go through two generations, and the North Pacific may go through another ecosystem regime change and we can experience how this affects SSLs. Dr. DeMaster also noted that this period of time is a guideline generally accepted in conservation literature.

Factors Potentially Influencing the Eastern Population
Recovery Plan for the Eastern Population

These two sections were only slightly changed from the May 2006 RP.

Summary Discussion of RP

The SSLMC discussed some lingering concerns with the RP. While not all of the Committee agreed with these issues, they were raised by some members. Foremost, in the observation of the taker of these minutes, was an overriding concern over the RP's requirement that current fishery regulations (SSL protection measures) must be maintained until recovery is attained, that the RP's wording of the recovery criteria indicate that there appears to be little if any room for any even small changes in current regulations, and therefore there is little maneuvering room for the Council, and for the State of Alaska, to react to changes and to make modifications to management of these fisheries. Mr. Cotter noted that this RP does not provide any leeway for the Council and the State to make changes, setting up a likely confrontational problem. Dr. DeMaster noted that the Agency likely has some room to make adjustments in these fisheries, but that the Agency will still be required to ensure these changes do not cause JAM. Mr. Lepore noted that the RP is a guidance document, and as such is not so rigid that the Agency cannot adjust fishing regulations; the Agency must work toward downlisting and delisting, but can act other than as specified in the RP. Dr. DeMaster stated that right now the status quo may be a safe situation, and to move away from status quo will require strong rationale, with the further away from status quo we move the stronger the rationale that will be required. To make changes will require either good rationale or appropriate compensatory trade-offs.

The SSLMC also discussed the issue of SSL reproduction and that the current level of pup production, according to modeling work, is not sufficient to sustain and grow the wSSL population. Terry Leitzell noted that currently adult survival is good, juvenile survival is also good, and both are improving; the overall population is trending upwards since 2000; and birth rates are down; but the pups produced are healthy and survive and grow. Mr. Leitzell also noted that the overall SSL strategy seems to be to sacrifice a small portion of the population's pup production so that pups already born, juveniles, and adults can continue to be healthy and survive, and the overall population will grow but maybe more slowly than if pup production were higher. Mr. Leitzell noted this seems to be paradoxical and perplexing, and questioned why this situation couldn't be considered a healthy state for this population. Dr. DeMaster noted that the issue is that modeling suggests that this level of pup production cannot sustain the wSSL population, assuming vital rates continue as they are. And the reasons for lower pup production may be environmental factors, maybe prey field issues; in any case, the wSSL population seems to be "acting" like a population that is above carrying capacity but the current environmental carrying capacity should support more SSLs. NMFS needs to track wSSL vital rates, environmental conditions, nutrition, abundance, etc. to see if the population will stabilize, and at what population level.

Recovery Plan and PRT Discussion

Mr. Wilson asked the SSLMC their views on how the PRT comports with the information contained in the RP. Does the SSLMC's "view of the SSL" align with or sufficiently match the RP's view? Some believe the two do not conflict, although the

SSLMC discussed some slight differences in how seasonal importance is viewed. The PRT gives a very slightly greater importance to the summer season (summer being slightly more sensitive), while it appears that NMFS is moving toward a more equal view of the importance of both summer and winter to SSLs.

The PRT and RP both view proximity about the same; i.e. the fishery closed zones around SSL sites are important protections for SSLs, and the closer to a site fishing or other disturbance occurs the more concern this raises. Mr. Henderschedt noted that much of our knowledge of how SSLs relate to sites is based on telemetry studies of juvenile animals, and we know little about adults. Dr. DeMaster noted that these issues of proximity and season will be further evaluated and described in the next BiOp.

Future Work of the SSLMC and Meeting Schedule

Mr. Cotter stated that the process used by the old RPA Committee might be helpful to follow, at least in part, as the SSLMC continues its work on proposals. The SSLMC has built a lot of expertise, but a question now is whether to proceed with development of recommendations given the BiOp won't be available until next April. This imposes a dilemma for the SSLMC: how can this committee fully engage in a proposal review process without a sense of the latitude we may have in adjusting SSL protection measures? And the Committee won't have that information until next April's BiOp. Mr. Henderschedt stated a concern over a long hiatus in committee work and thus loosing familiarity with the proposals and the momentum that has built up; we do have some reasonable ideas on possible latitude based on recent presentations from NMFS, and the materials in the RP; perhaps the SSLMC can develop a preliminary package and then check it against the BiOp when it is released.

Mr. Cotter agreed, and noted the Committee has a lot of work ahead just to go through each proposal, and to evaluate each against OTMCs, including particularly the economic impacts of each proposal. He suggested we move ahead, acquire any data we need to complete a thorough review of the proposals, involve some of the process used by the old RPA Committee, and develop a preliminary package of recommendations. Ms. Brown noted that this would assist the Agency as it needs to develop a Biological Assessment document to inform the NEPA process, and some idea of where the SSLMC is likely to proceed would be helpful guidance.

Mr. Cotter asked that the SSLMC convene this fall, perhaps in mid to late October or early November, possibly in Seward at the Sea Life Center, to work through the proposals in a structured manner and develop a preliminary set of alternatives. This may be followed by an additional meeting to refine the alternatives. Then the Committee would compare these recommendations with the status quo BiOp scheduled for April 2008, and finalize the recommendations. The initial target date is a presentation of recommendations to the Council at its June 2008 meeting.

[Editor's note: Once this recommended package is accepted by the Council, it would be considered the "proposed action" that would be the subject of the ongoing Section 7

consultation, culminating in a revised BiOp that would be presented to the Council in September 2008. This proposed action also would be folded into the NEPA analysis and would be analyzed in a draft EIS scheduled for completion and presentation to the Council in September 2008.]

Adjourn

The Committee adjourned at 11:15 am June 21.

Bill Wilson
Bill.wilson@noaa.gov

DRAFT

North Pacific Fishery Management Council
Steller Sea Lion Mitigation Committee Meeting
Alaska Fisheries Science Center
Seattle, Washington
June 19-21, 2007

Purpose: Review proposal scores; review procedures for use of Proposal Ranking Tool; receive and review second draft Revised SSL Recovery Plan

AGENDA

June 19 - 8:30 AM – 5:00 PM

1. Introductions and Opening Remarks, Announcements, Agenda Approval (Cotter)

2a. Minutes of Last Meeting (Wilson)
2b. Update on Alaska Sea Life Center SSL Research and Publications (Atkinson)

3. Review/revisit proposal scores from May meeting (Mabry)

4. Clarify or correct PRT model runs from May meeting (Mabry, All)

June 20 – 8:30 AM – 5:00 PM

5. Tutorial on PRT (Mabry)

6. Outside the model resources – develop list (All)

7. Framework for Proposal Evaluation – SSC Request (All)

8. Introduction to Recovery Planning (Wilson)

9. Review second draft Revised SSL Recovery Plan (Wilson)

June 21 – 8:30 AM – 5:00 PM

10. Review second draft Revised SSL Recovery Plan (Continued)

11. Action Items, Closing Remarks, Adjourn (Cotter)

Public comment periods will be provided during the meeting.

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

Draft Revised Steller Sea Lion Recovery Plan

Comparison of May 2006 version with May 2007 version – A guide to inform the SSL Mitigation Committee's review of the May 2007 Draft Revised SSL Recovery Plan

Overall changes:

- Threats assessment: Killer whale predation is now rated Medium (was Potentially High), and Incidental take due to interactions with fishing gear is now rated Low (was Medium)
- The scenarios for how the SSL decline could have unfolded have been removed
- The section on Factors potentially influencing the wSSL has been restructured slightly
- And the section on Development of recovery criteria has been restructured
- Appendices 1 and 2, Managing and maintaining SSL prey fields and Nutritional stress, respectively, have been removed, and Nutritional stress beefed up, sections moved into body of the Plan, and reorganized
- Small revisions, updates, and clarifications are provided throughout the wSSL sections primarily

Detailed review:

(Note: Some changes made in the May 2007 draft plan because of comments received or new data are noted as such below.)

Executive Summary

- Recovery Criteria – wSSL Downlisting criteria: Removed #2 (Population ecology and vital rates are consistent with the trend observed under #1) and added an explanation to #1 **(COMMENTS)**
- wSSL Delisting criteria – same change as above
- eSSL delisting criteria – same change as above
- Recovery actions – moved to #1 Action 1.1.1 and added a fourth action (1.5 – develop an implementation plan) **(COMMENTS)**

Background

- Added discussion of Asian DPS genetic research and discussion of possible meta population structure in the eSSL and wSSL **(NEW DATA)**
- Updated discussion of non-pup counts **(NEW DATA)**
- Updated and revised section on reproduction
- Updated and expanded sections on birth and survival rates **(NEW DATA)**
- Revised and moved materials (equivalent to about 2 pages of text) to the nutritional stress section and included a summary; beefed up discussion of the issue **(COMMENTS)**
- Moved Table III-2 in old Plan to new Plan as Table I-15 (on data gaps for assessing manifestations of nutritional stress)

Conservation Measures

- Revised the introduction to clarify effects of shooting, fishery restrictions, and harvests of SSLs in SSL decline
- Slightly reorganized section on Reduced prey availability due to fisheries

Factors Potentially Influencing the Western Population

- This section was rewritten and reorganized **(COMMENTS)**
- New information added to Abundance and diet of killer whales **(NEW DATA)**
- New materials added to section on sequential megafauna collapse hypothesis
- New section on Direct impact of killer whales (about 5 paragraphs) **(NEW DATA)**
- New materials added to section on Toxic substances; also some updating **(NEW DATA)**
- Disturbance section was relocated
- Under Nutritional stress, Reduced prey biomass and quality, Environmental variability, some new materials were added on historic (100+ years ago) abundance and old sightings of SSLs in Alaska **(NEW DATA)**
- The Nutritional stress data gaps summary – fatty acid section was removed
- Table III-2 was removed (Data gaps for assessing potential biological manifestations of nutritional stress in the wSSL)

Threats Assessment for the wSSL

- The introduction was expanded and some new materials added to how the threats assessment was conducted **(COMMENTS)**
- Predation by killer whales was changed from High to Medium **(COMMENTS)** **(NEW DATA)**
- Additional and revised discussion of this threat were added
- Incidental take due to interactions with active fishing gear was changed from Medium to Low
- The discussion of this threat was revised
- Section on Synthesis and discussion of threats was added – it was previously a direct and indirect threats section – this new section is more focused on top-down and bottom-up threats **(COMMENTS)**
- Paragraphs describing alternative scenarios for the SSL decline were removed (those were: predation, environmental variability, fishing, and multiple threats) **(COMMENTS)**

Recovery Plan for the Western Population

- New section added on Definition of Recovery (2+ pages)
- Under Recovery strategy, Action 1.1.1 moved to #1 and a new priority action added (1.5: Develop an implementation plan) **(COMMENTS)**
- Section on Development of recovery criteria revised slightly and new materials added **(COMMENTS)**
- Extensive addition (9+ pages) of materials on how the PVA and other information was used to develop the recovery criteria **(COMMENTS)**

- A new section was added on how new vital rates information will be used to support reclassification **(COMMENTS)**
- The vital rates criterion was removed from the list of reclassification of the wSSL (and the eSSL in a later section) **(COMMENTS)**
- In the Recovery Factor Criteria – Threatened, under Factor E, the threat "Maintain sufficient NMFS staff..." was removed
- Under Recovery Factor Criteria – Delisting, under Factor E, threats were reordered and a new threat "A stranding network is in place" was added
- A summary of the recovery actions is provided at the beginning of the detailed outline
- Some minor changes were made to the Recovery action and implementation schedule (nothing substantive)

Factors Potentially Influencing the eSSL
- No changes

Recovery Plan for the eSSL
- A new section was added on how new vital rates information will be used to support reclassification
- The vital rates criterion was removed from the list of reclassification of the eSSL **(COMMENTS)**

Appendices
- Appendix 1 – Managing and maintaining SSL prey fields – removed **(COMMENTS)**
- Appendix 2 – Nutritional stress in SSLs – removed (some materials incorporated into the body of the document) **(COMMENTS)**

Notes:

(COMMENTS) = This change in the Plan was stimulated, at least in part, from comments received from the public or the peer reviewers on the May 2006 draft plan

(NEW DATA) = This change in the Plan was based, at least in part, on new data (or new published papers) that became available or additional publications were reviewed that provided new information on the issue.

Bill Wilson
June 6, 2007

Proposal Ranking – As Revised at June 2007 SSLMC Meeting

Negative Impact

No Impact

Positive Impact

Old Rank	New Rank
14	14
22 total	22
17	17
30 (6) total	10
11	11
10	30 (6) total
25 total	26
21 total	27
12	2
18	25 total
26	4
4	21
27	12
2	18
15	15
20 total	20
16	16
28	**9**
29	**28**
3	**29**
9	**3**
19	**19**
8	**8**

BOLD numbers indicate negative scores (positive impacts to SSL) as measured by the PRT and the SSLMC expert judgment

Nutrition Scores Ranking - As Revised at June 2007 SSLMC Meeting

Negative Impact

Old Rank	New Rank
22	14
25	22
33	25
14	10
11	11
15	17
20	26
16	15
24	2
8	27
12	20
21	16
1	33
2	24
27	12
10	21
17	1
18	4
31	18
32	31
4	32
13	13
26	30 (6)
30 (6)	**9**
9	**3**
3	**29**
19	**28**
29	**19**
28	8

No Impact

BOLD numbers indicate negative scores (positive impacts to SSL) as measured by the PRT and the SSLMC expert judgment

Positive Impact

Outside The Model Considerations (OTMCs) – Edited from June 2007 SSLMC Meeting Handout

The process of inputting proposals into the PRT has so far yielded 3 pieces of information.

1. the relative ranking of the proposal compared to other proposals received
2. a nutrition ranking – how important is the affected prey species to ssl in that area and season
3. a list of Outside The Model Considerations (OTMCs)

In response to previous SSC comments about developing a framework for outside the model issues, here is a DRAFT list of questions that would allow a standard comparison of proposals. The SSLMC discussed at their June 2007 meeting an option: Each proposal could get a "yes" or a "no" for each question to provide information in addition to the PRT and ranking. However, the SSLMC decided that they would use this list as a "tickler list" to be used in the process of reviewing all proposals. Each of these OTMCs would be considered for each proposal, and where appropriate, the SSLMC would develop a brief narrative that describes how that proposal would affect, or be affected, by these OTMCs.

This list of OTMCs was initially developed from the 'Outside the model considerations' that the SSLMC developed during their May 2007 meeting as the SSLMC went through each proposal. This list was supplemented with OTMCs defined in the Proposal Ranking Tool report (February 2007) and a list compiled by Dr. Sue Hills from her notes from several past SSLMC meetings.

The SSLMC agreed to add to this list as they continue the proposal review and analysis process in the coming meetings.

[NOTE: The minutes taker has edited this list from the version handed out at the meeting.]

Draft list of Outside The Model Considerations:

Steller sea lion considerations

- In the proposal area, what are the numbers of SSLs and SSL sites based on most recent SSL haulout and rookery counts and trends? Could the proposal indirectly affect nearby SSL sites?
- Does proposal indirectly provide protection to SSL sites?
- Does the proposal affect important research sites (e.g. Chiswell Island, Marmot Island)?

- Will there be potential gear interactions with SSLs because of proposal? Check data from annual Stock Assessment Reports.

- Does the proposal reduce/increase the November 1 to January 20 no-trawling time period considered critical foraging time for SSLs?

- Does the proposal potentially increase/decrease bycatch of other SSL prey species? See Gaichas and Hiatt data table.
    - Other non-SSL prey species?
    - PSC species?

- Will the proposal result in an effort shift to another fishery that might impact SSLs?

- Will the proposal result in additional/less fishing effort inside of SSL critical habitat?

- Does the proposal shift effort into time and/or space that may have negative effect on SSL?

Fishery management considerations

- What will be the harvest rate of target species (fish removal rate) before and after the proposal is implemented, by gear type, by area?

- How does the proposal compare with the annual TAC for the region, season, and fishery. Will other fisheries be affected by proposal? Use annual specifications tables.

- Will the proposal result in a net increase/decrease in fish taken out of the water?

- Will the proposal result in fishing in an area that is currently open/closed?

- Will the proposal shorten/lengthen the fishing season?

- Does the proposal offer additional measures to control fishing rate or effort?

- Does the proposal increase catch or other operational efficiency?

- Does the proposal have effects on CDQ fisheries?

- Will the proposed action be further affected by amendments 80/85?

- Does the proposal create any gear conflicts with other fisheries?

- Does the proposal involve a large amount of TAC relative to allocated TAC for sector and area?

- Will the proposal result in less competition with other fisheries, less grounds preemption or conflicts?

- Does this proposal improve logistical constraints, enforcement, fish processing, fishery management, or other benefits?

Economic or community considerations

- Does the proposal provide economic benefits to vessels, sectors?

- Does the proposal provide economic benefit to coastal communities? CDQ groups?

Other considerations

- Does the proposal include a research and/or monitoring component, thereby providing benefit to science or management?

- Does the proposal provide trade-offs that reduce the total negative effects to SSL?

- Does the proposal include or affect 0-3 nm waters that would require State action? Will the proposal complicate or conflict with State management, or improve State management?

- Does the proposal reduce/increase safety concerns?

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
1 NO MODEL SCORE	Pollock A season starts 10-15 days earlier (BSAI pollock trawl)			Nutrition score .002	Outside model: Shortening window between close of B and start of A Positive economic impact Unknown impact on Chinook bycatch Shoreside logistical concerns Effect b/c it closes earlier – go to cod trawl? – general spill-over effects
2 Net=..0063	Reapportion TAC from B to A season, magnitude of shift depending on total TAC (BSAI pollock trawl)	Sum-Wint/1-5%/Same		Wint/EAI-BS/Pollock Nutrition score .0038	Shift occurs when TAC drops below 1.3 MT, but what is effect to SSL? (low biomass) Not based on ABC, but on TAC If shift when biomass low, multiplicatively worse? than when biomass is high Note: TAC shift also affects Pribs Outside model: Positive economic impact Look at A and B season CPUE data
SQ .00000013		Sum/No Chng/same		Sum/EAI-BS/Pollock	
2.1 .0021	WAI			.0009	
2.2 .0021	CAI			.0009	
2.3 .0021	EAI			.002	
3 **.00000006** Net= -.00000007	C/P Cod Start date shifts 17 days earlier (BSAI pot C/P cod)	Sum/No Chng/longer		Nutrition score -.0019	Outside model: Economic benefits? Safer fishing in august

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
					Beneficial effects by extending season? Allow king crabbers safer fishing season Shortening window between close of B and start of A Offsetting considerations: may not effectively be a longer season Small number of vessels, small TAC
SQ .00000013		Sum/No Chng/same			
4 Net=.0051	Reapportion TAC from B to A (BSAI cod - LL C/P) A = 1/1 - 2/18 B = 8/15 - 10/21	Sum-Wint/1-5%/same		Wint/EAI-BS/cod Nutrition score .00184	Small percentage of whole TAC (8%) Offsetting considerations: most catch will likely shift from late winter to early winter Amount of fishing days will decline – pg 3 of proposal Fishing outside of CH for additional catch in A season Could report an annual 'shorter' duration score as well Could be a co-op
SQ=.00190		Sum/No Chng/same		Sum/EAI-BS/cod	
4.1 .0017	WAI			.00017	
4.2 .0017	CAI			.00017	
4.3 .0017	EAI			.0015	
7					Changes some limits inside CH

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
COMBINED WITH PROPOSAL 24 AS PROPOSAL 33	Removing some limits on TAC allocation from inside and outside CH & restrictions on concurrent cod and AM fishing-limit per day included				and would consider use of coops
8 **Total** **-0.0087**	Reduce size of trawl exclusion zone in Seguam Pass (CAI) for AM trade off with expansion at Cp Wrangel and Buldir (WAI)			Nutrition score .0261 Worst case of opening up fishing in WAI for Atka	beneficial from trade off at Buldir and Attu Open up rookeries at Seguam, but not foraging area Seguam is 1 of 12 rookeries in central Aleutians (SSL areas) Attu/Cape Wrangell and Buldir are 2 or 4 rookeries in western Aleutians (SSL areas)
8.1 A .0001	CAI winter		wint rk/10-20/1-10%	.0032	
8.1 B .0004	CAI summer		sum rk/10-20/1-10%	.0071	
8.2 A **-0.0035**	WAI winter		wint rk/20+/26-50%	.0032	
8.2 B **-0.0057**	WAI summer		wint rk/20+/1-10%	.0126	
9 **Net=-..00000002**	Shifting 29% TAC from B to A season (BSAI cod pot C/V >= 60 ft) A = 1/1 - 2/3 B=9/1-12/31	Sum-Wint/no change/same		Wint/EAI-BS/cod Nutrition score -.0015	Offsetting considerations: Most catch will likely shift from late winter to early winter. The status quo summer in column 3 is worst-case scenario assuming all

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
					catch taken in September – first month of B season. Total change in TAC is not detectable by the model, estimated at <1% of that sector's allocation.
SQ .00000012		Sum/No chng/same		Sum/EAI-BS/cod	
10 Net=.0140	Allow all TAC to be harvested in A season (WGOA - cod assumed fixed gear from given start date) A=1/1-6/10 B=9/1-12/31	Sum-Wint/>10%/same		Wint/WGOA/cod Nutrition score .0032	Outside the model: Large amount of fish not caught in B season, but under this scenario, will likely be taken during the A season. Net increase in harvest.
SQ .00000012		Sum/No chng/same		Sum/WGOA/cod	
10.1 .0070	WGOA			.0017	
10.2 .0070	EAI			.0015	
11 Net= .0140	Increase pollock trawl TAC in A,B by 1/3 (total) (WGOA) A=3/10 B=3/10-5/31 C=8/25-10/1 D=10/1-11/1	Sum-Wint/>10%/same		Wint/WGOA/pollock Nutrition score .0063	
SQ .00000012		Sum/No chng/same		Sum/WGOA/pollock	
11.1 .0070	WGOA			.0043	
11.2 .0070	EAI			.002	
12 .0041 Net=.0028	Open Jude Is. to 10 nm for pollock trawling 9 rooks in		sum rk/10-20/11-25%	Nutrition score .0027	Alternative to open only Pavlof Bay portion

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
	WGOA - Jude = 14% of sites				Jude is one of 7 rookeries in the western gulf
SQ .0013			sum rk/20+/11-25%		
13 No MODEL SCORE	Removing/increasing catch limits on fixed gear cod (<60ft) fishing in Bogoslof closure area (1 of 9 rooks in EAI)			Nutrition score .0015	Outside the model: Increase in harvest of about 500MT in an already open area Small boats only, small % of overall TAC Adding pot boats
14 Total .0744	Aggregate A and B and C and D pollock trawl seasons when TAC is low (WGOA) A=1/20-3/10 B=3/10-5/31 C=8/25-10/1 D=10/1-11/1			Nutrition score .018	Outside the model: Triggered when TAC is low (biomass is low). SSL effects? Could help control the fishery and keep it under quota.
SQ .00000012		Wint/No chng/same			
14.1 A .0120	EAI winter	Wint/>10%/shorter		.002	
14.1 B .0129	EAI summer	Sum/>10%/shorter		.0025	
14.2 A .012	WGOA winter	Wint/>10%/shorter		.0043	
14.2 B .0129	WGOA summer	Sum/>10%/shorter		.0027	
14.3 A .0120	CGOA winter	Wint/>10%/shorter		.0029	
14.3 B .0129	CGOA summer	Sum/>10%/shorter		.0036	
15 .0023 Net=.0015	Allow trawl pollock fishing to 3nm of Cape Ugat during A and B and to 10 km in C and D (WGOA)		Wint HO/3-10/1-10%	Nutrition score .0043	Outside the model: Safety concerns (1 of 26 haulouts in the central gulf)
SQ .0008			Wint HO/10-20/1-10%		

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
16 .000037 Net=.000037	Move pollock trawl C season back to 9/1 (from 8/25)	SUM/no change/shorter		Nutrition score .0036	Outside the model: To prevent conflict with salmon processing Gentleman's agreement to stand down anyway, practically status quo Offsetting considerations: 7 day change only
SQ .00000013		SUM/no change/same			
17 Total .021 SQ .00000013	Re-apportionment of cod TAC in GOA. 17A 100% in A, 17B 80 % in A (both gear types) Afixed=1/1-6/10 Atrawl=1/20-6/10 Bfixed=9/1-12/31 Btrawl=9/1-11/1 SQ = 60/40			Nutrition score .0052	Outside the model: Options in proposal include 80/20 or 100/0. The model cannot detect a difference since both are over 10%, triggering that element in the model. More cod will be harvested = economic benefit
17.1 .0070	wGOA	Sum-Wint/>10%/same		.0017	
17.2 .0070	cog	Sum-Wint/>10%/same		.002	
17.3 .0070	eGOA	Sum-Wint/>10%/same		.0015	
18 .027 Net=.0017	Allow Cod trawl fishing to 10 nm from 1/20-6/1 and to 20 nm from 6/1 - 11/1 at Chernabura (WGOA)		Wint Rk/10-20/11-25%	Nutrition score .0017	Outside the model: All currently participating vessels are less than 60 feet Opens a fraction of closed area around rookery

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
					1 of 7 western gulf rookeries
SQ .001			Wint Rk/20+/11-25%		
19 total **Net=-.0042**	Extend pollock trawl closures around Dalnoi Pt (from 3 nmi) Pribs To 20 nmi year-round			Nutrition score -.0121	Outside the model: Closure would cover other ssl sites Research component – counts of animals in all seasons Reduce bycatch 1 of 9 Bering Sea Haulouts Offsetting considerations: Include 3-10 as well as 10-20 (Look at amount of harvest) and seasonal aspects
19A .0005 **Net=-.0022**	Expand to 20 winter		Wint HO/20+/1-10%	.0029	
SQ .0027			Wint HO/0-3/1-10%-50%		
19B .0005 **Net=-.002**	Expand to 20 summer		Sum ho/20+/1-10%	.0092	
SQ .0025			Wint HO/0-3/1-10%		
20 Total .0007	Open Spitz Is. H/O to beach for jig and pot cod gear WGOA Now closed to 3nm			Nutrition score .0037	1 of 13 western gulf haulouts Outside the model: Variable seasonal use by ssl, possibly very little use

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
					Would ultimately be a BOF action for state waters fishery.
20 A .0025 Net=.0003	Summer		Sum HO/0-3/1-10%	.002	
SQ .0022			Sum HO/3-10/1-10%		
20B .0027 Net=.0004	Winter		Wint HO/0-3/1-10%	.0017	
SQ .0023			Wint HO/3-10/1-10%		
21 Total .0035 SQ .0005	Open Sutwik to 3nm for cod pot and jig gear CGOA Now closed to 20nm			Nutrition score .0022	Outside the model: 4 vessels Amenable to small boat limits 1 of 26 central gulf haulouts
21 A .0022 Net=.0017	summer		Sum HO/3-10/1-10%	.0002	
SQ .0005			Sum HO/20+/1-10%		
			Wint HO/3-10/1-	.002	

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
21 B .0023 Net=.0018			10%		
SQ .0005			Wint HO/20+/1-10%		
22 Total .0448 SQ .0004	Open all CH in AI to pollock trawling to 10 nm from rk and 3nm from H/O			Nutrition score .036	Outside the model: New effort in AI CH Economic boost for Adak Research component All rookeries and haulouts affected – (other options available) Estimate catch that may occur here
22.1 A .007	CAI rookeries		Wint Rk/10-20/76-100%	.0009	
22.1 B .0154	CAI haulouts		Wint HO/3-10/76-100%	.0009	
22.2 A .007	WAI rookeries		Wint Rk/10-20/76-100%	.0009	
22.2 B .0154	WAI haulouts		Wint HO/3-10/76-100%	.0009	
23 NO MODEL SCORE	TAC allocation split for cod between AI and BS				Can't be addressed by the model

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
24 COMBINED WITH PROPOSAL 7 AS PROPOSAL 33	Temporal dispersion of AM fishing in CAI				Outside the model: Trip limits, weekly limits
25 Total .0057	Allow AM trawl fishing to 10 nm from Kasatochi. CAI rook winter			Nutrition score .0206	
25 A .0023 Net = .0019	Winter haulout		Wint HO/3-10/1-10%	.0032	(1 of 12 rks)
SQ ,0004			Wint HO/not CH/1-10%		
25B .0022 Net=.0019	summer HO		Sum HO/3-10/1-10%	.0071	1 of 36 haulouts
SQ .0003			SumHO/not CH/1-10		
25 C .0011 Net=.0007	winter rook		Wint rk/10-20/1-10%	.0032	
SQ .0004			Wint rk/not CH/1-10%		
25 D .0017 Net=.0012	Summer rook		Sum rk/10-20/1-10%	.0071	

SSLMC Proposal Ranking Tool Model Output – REVISED

June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
SQ .0005			Sum rk/not CH/1-10%		
26 .0063	Transfer the BSAI cod trawl C/V C season apportionment (3.3%) to A season. A=1/20-3/8 C=7/19-8/31	Sum-Wint/1-5%/same		Wint/EAI-BS/cod Nutrition score .0049	Outside the model: Compacting 3 seasons into 2
SQ .00000012		Sum/no chng/same		Sum/EAI-BS/cod	
26.1 .0021	EAI-BS			.0015	
26.2 .0021	CAI			.0017	
26.3 .0021	WAI			.0017	
27 .0063	Shift pollock BSAI trawl A season from 40% to 45% of TAC A=1/20-4/1 B=6/10-11/1	Sum-Wint/1-5%/same		Wint/EAI-BS/Pollock Nutrition score .0038	Likely result in shorter fishery? Groundtruth. Increased efficiency Extra 5% outside of CH Like #2
SQ .00000012		Sum/no chng/same		Sum/EAI-BS/Pollock	
27.1 .0021	EAI-BS			.002	
27.2 .0021	CAI			.0009	
27.3 .0021	WAI			.0009	
28 .00000006 **Net =-.00000006**	Extend BS pollock trawl B season 'til 12/1 A=1/20-4/1 B=6/10-11/1	Sum/no change/longer		Nutrition score -.0025	Outside the model: Salmon bycatch issues Shortening window between close of B and start of A

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
SQ .00000012		Sum/no chng/same			
29 .00000006 **Net =-.00000006**	Make start date for BSAI pollock trawl 5 days earlier A=1/20-4/1	Wint/no chng/longer		Nutrition score -.002	Offsetting considerations: Close the A season five days earlier shorten separation between end of B and beginning A season
SQ .00000012		Wint/no chng/same			
30 (BOF 6) total .0132	Open closed areas >3 nm from SSL sites in EGOA near Seward Haul outs Rugged Is. HO, Seal Rx Kenai, Chiswell Rk. For pollock trawl fishing.			Nutrition score .0004	Chiswell as a rookery under draft BiOp eastern gulf (1 of 3 rks); Seal Rocks (Kenai) and Rugged Island are 2 of 12 haulouts in eastern gulf Outside the model: Economic benefit for Seward Important research rookery
30 (BOF 6) A .0099 Net=.0054	rookeries		Wint Rk/3-10/26-50%		
SQ .0045			Wint Rk/10-20/26-50%		
30 (BOF 6) B .0098 Net=.0078	haulouts		Wint HO/3-10/11-25%		

SSLMC Proposal Ranking Tool Model Output – REVISED
June 18, 2007

Proposal #	Description	Effects on Prey Field	Effects on SSL Proximity	Effects on SSL Nutrition	Outside the model
SQ .0020			Wint HO/10-20/11-25%		
31 (BOF 182) NO MODEL SCORE	Increase to 50% cod TAC in area M in state waters, subarea of WGOA			Nutrition score .0017	Model NMFS' analysis of proposal Not sure if including SSL protection measures. Outside the model: Handled by BOF
32 (BOF 185) NO MODEL SCORE	Restrict large vessels (>58') from cod fishing in State waters of WGOA area 610. winter			Nutrition score .0017	Outside the model: could lengthen season by allocating catch to vessels with lower catch rates Local economic benefit
33 New Joint Proposal combining former 7 and 24 NO MODEL SCORE	Revise Atka mackerel fishery management for SSL protection in the Aleutian Islands			Nutrition score .0032	Outside the Model; Control daily removals rates to help avoid localized depletion Allow slightly higher percentage taken inside CH where AM already occurs

SSLMC Proposal Ranking Tool Model Output – REVISED

June 18, 2007