

# **Minutes of the Twenty-third Meeting of the Alaska Scientific Review Group**

**3 - 4 February 2010, Anchorage, AK**

*This report summarizes the 23<sup>rd</sup> meeting of the Alaska Scientific Review Group (SRG). This document is intended to summarize the main points of the discussion and does not attempt to repeat everything that was said during the meeting. Appendix 1 contains a list of SRG recommendations to NMFS. A list of SRG members and observers present or participating via teleconference is provided in Appendix 2. The final agenda is included as Appendix 3.*

## **1) Adoption of agenda**

The agenda was reviewed and, after some discussion, adopted.

## **2) Adoption of minutes from January 2008 meeting**

The draft minutes from the February 2009 SRG meeting are not ready for distribution to the SRG. Dee Allen and Beth Mathews agreed to have the draft minutes distributed to the SRG in March 2010 so they can be adopted and finalized.

## **3) Introductions and Membership**

Individual introductions were made to the group, including SRG members and observers. Robert Suydam added that George Noongwook had intended to attend the meeting, but could not due to severe weather. Mathews informed the SRG that an invitation was made to Gordon Kruse and Karl Haflinger to join the SRG. Kruse declined the invitation due to his commitments to other committee; however, Haflinger accepted the invitation. Mathews recommended that the SRG may want to consider additional candidates for membership. Mathew also informed the SRG of her intention to step down as Chair, but will continue her position as a member of the SRG. Mathews nominated Robert Suydam as Chair of the SRG, which was unanimously approved by the SRG, and the nomination was accepted by Suydam.

## **4) Administration, travel, membership**

Allen addressed the issue of travel reimbursement for SRG members, and encouraged members to turn in papers as soon as possible for reimbursement. Allen also confirmed that there were no issues with travel paperwork from last year remaining.

## **5) Updates on development of marine mammal Serious Injury policy (Melissa Andersen, NMFS, HQ)**

Melissa Andersen updated the SRG on the development of a marine mammal serious injury policy. Andersen gave a brief background on the Serious Injury Workshop held in 2007. The first three days of the workshop consisted of an open session, which focused on reviewing of existing guidance for distinguishing serious from non-serious injuries in marine mammals (Angliss and DeMaster, 1998); gathering current scientific information obtained since the an initial workshop on this subject held in 1997; and discussing updates to the existing guidance based on the current information, if necessary. One of the significant outcomes of the workshop was the suggestion that NMFS develop a consistent approach for distinguishing serious from non-serious injuries of marine mammals. The open-session of the workshop included

representation from NMFS, FWS, state governments, SRG members, and external experts in the areas of marine mammal biology, pathobiology, veterinary medicine, and fishing gear. The fourth day of the meeting consisted of a closed session for government employees. During this session, it was recommended that NMFS develop an official policy on marine mammal serious injuries. As a result of this meeting, a table was developed (Table 1 in the workshop report) outlining new draft criteria for distinguishing serious from non-serious injury.

As a result of the input provided at the 2007 workshop, NMFS is currently in the process of developing a national policy for distinguishing serious from non-serious injuries of marine mammals. A serious injury is defined in regulations as “any injury that is likely to result in mortality.” In the development of this policy, NMFS is interpreting “likely” to mean “more likely than not.” This interpretation is consistent with one that was previously developed for a Coho salmon listing decision. This interpretation was subsequently upheld by the court during a lawsuit on that listing action.

In this policy, NMFS will also be developing a process for by which successful disentanglement events are enumerated and considered for the purposes of the LOF and its associated management measures (e.g., take reduction planning). Andersen also pointed out that the LOF classifies fisheries based on the level of serious injury and mortality of marine mammals, the difference in the data on serious injuries needed for the List of Fisheries (LOF) versus the Stock Assessment Reports (SARs). Information provided to the LOF includes data that will measure the total impacts of a fishery on a marine mammal stock; therefore, even cases of successful disentanglement from human intervention will be included. These cases would not be included in the estimates of serious injury and mortality as they do not reflect a removal from a stock if a disentanglement attempt is successful.

Andersen presented a timeline to-date for the three working groups (process, determination staff, and vet working groups) involved in the serious injury policy development, on-going activities in April – June 2010, as well as decisions made to-date. Andersen and Tom Eagle have already presented this update to the Pacific SRG, which provided feedback, and they are concurrently presenting to both the Alaska and Atlantic SRGs. The working groups will be working towards developing a process for making and documenting serious injury determinations under the “more likely than not to die” interpretation of the serious injury regulatory definition. Once a final policy is in place, the intention is to review the policy and injury criteria table on a cycle similar to the SARs (every 3 years unless substantial new information becomes available). The determination staff is currently developing a pro-rating method to help resolve injury events that are currently classified as “CBD” in the table, which would serve as a basis for classifying these questionable events as “serious” or “not serious” based on quantifiable information from known cases.

Andersen informed the SRG that the agency is seeking SRG comments or direction on the policy development. Kate Wynne inquired about how the agency intends to deal with debated determinations and how these data are being applied if serious injury determination staff do not agree. In addition, Wynne suggested that these cases should probably be flagged in some manner. Jan Straley noted that consistency in collecting data is critical to the usefulness of these data; the level of information available from the observer program and stranding networks is highly variable. Mathews suggested the use of digital cameras by fisheries observers may aid in documenting injuries. Grey Pendleton noted that there would need to be a mechanism for

acquiring these photos and for linking the right photos and information to the correct event. Allen agreed to work closely with the Alaska Regional Office staff on methods for better documenting information and decisions.

#### **6) Polar bears: key research findings, new work, and a strategic update on climate change and the Arctic (Steve Amstrup, USGS)**

Steve Amstrup presented an update on polar bear research conducted by the USGS. The key reason polar bears are in jeopardy is a threat to their habitat. Sea ice is critical for life history and feeding of polar bears. There is no evidence to suggest that polar bears can survive without sea ice. Polar bears are known to take advantage of other resources when they are presented to them, but it is not known whether they can survive solely on additional resources; sea ice is used extensively by polar bears for foraging on other marine mammals. Amstrup reported on the annual trend of an increasing amount of time when there is a low concentration of sea ice. The southern Beaufort Sea appears to be experiencing a slower rate of decline of sea ice than most of the rest of the polar basin. Amstrup reported a trend for declining sea ice and retreating sea ice in the summer, and there has been a 6.2% loss of optimal habitat for polar bears from 1985-2006. Amstrup noted that there are some areas that have been becoming more desirable habitat for polar bears due to changes in climate. Bears typically summer over deep water, and there is the threat of decrease survivability with retreating ice. It has been noted in the Hudson Bay that an earlier ice melt results in bears coming ashore earlier, and these bears are typically at reduced body weights. Amstrup commented that it will be a continuing challenge to measure changes in sea ice and the effect of these changes on polar bears.

Amstrup informed the SRG that the USGS has been completing a longitudinal assessment of the southern Bering Sea polar bear population since 2007. In the late 1980's and early 1990's, it appeared that this polar bear population was increasing; however, there were some data quality issues. Since then, better data have been collected, and the USGS is revisiting this analysis and reanalyzing this trend over time. Amstrup presented data on an analysis of the predicted effect of mitigating greenhouse gas emissions, as well as the predicted outcome if there is no mitigation of greenhouse gases. Amstrup also summarizes new and ongoing research that the USGS is conducting, including ongoing monitoring of animals through capture/ recapture analysis, refining sea ice models, health assessments, mapping of denning habitat, and monitoring duration of time individuals polar bears spend on the ice versus on land during the summers. The USFWS is working on a Chukchi polar bear study. In 2008, there were several sightings of polar bears in areas of little ice coverage on the continental shelf, indicating that bears will take advantage of these low ice levels and will stay on floes even if the ice is not dense. Amstrup added that studies are still being conducted to assess the effects of ecological changes on body condition and overall health of polar bears. Radio telemetry studies are now being conducted on younger animals and males; studies were previously limited to tagging females because of the concern of younger animals growing into an attached collar. Transmitters glued to the hair are now being tested. Amstrup stated that studies monitoring long-distance swims are also being conducted, including results from one animal that was tagged, swam a long-distance, then recaptured. Mapping of the den habitat is being conducted with IFSAR.

Mathews inquired whether there was any way to monitor the body condition of the animals that are staying on lower quality ice. Amstrup responded that this was not possible because researchers weren't able to get out on the ice due to the conditions of the ice. Amstrup also

noted that many of the radio-tagged animals were in this low ice area, suggesting a large portion of the population was there. Suydam inquired about what time of year seems most critical to bears? Amstrup responded that he believes that summer is the most critical period based on foraging as the limiting factor. Evidence suggests that bears prefer to hunt in more shallow water, so with the retreat of sea ice, they are probably having a hard time accessing shallow water. Suydam asked whether the increase in walrus and gray whale carcasses coming ashore will help the bears if they have these additional food sources. Amstrup responded that polar bears lose about 1 kg per day while on land in Hudson Bay, but they don't have the advantage of these alternative resources coming ashore, so this is a good question. Amstrup added that a large proportion of bears coming ashore are in good body condition; there is some sign that there is an increase in productivity in the Beaufort Sea with changes in climate, so perhaps the bears are able to take advantage of this. Mathews mentioned that there is some evidence that climate change is happening faster than has been predicted from previous models. Amstrup responded that the earlier models didn't consider several climate factors that are included in more recent models; there are many models that that being refined with new data, and some of the earlier models didn't work very well for predicting trends. It is important to look at the variation in models, as well as their scale; most models are being continuously updated.

## **7) Updates and overview of NMML activities (John Bengtson, NMML)**

John Bengtson provided an overview of NMML research activities and science, beginning with a reminder of the four NMML programs and a breakdown of the structure of NMML. Bengtson gave a summary of abundance estimates for Alaska marine mammal stocks based on whether abundance data is older than 8 years. Pinniped stocks with estimates less than 8 years old include both the western and eastern Steller sea lion, Northern fur seal, harbor seals (draft manuscript through 2003 based on 3 stocks, analysis through 2007 on 17 proposed stocks), ribbon seals (2008), and spotted seal (2009). Pinniped stocks with abundance estimates based on data older than 8 years include bearded seals (although a new estimate is expected in 2010) and ringed seals (this stock is the focus of new research, but there is no abundance estimate expected for at least 2 years). Ringed seals north of the Bering Strait are often under ice, so they are difficult to count. Coastal populations may be easier to assess.

Bengtson presented data on cetacean abundance estimates. Cetacean stocks with abundance estimates based on data less than 8 years old include Cook Inlet and Bristol Bay belugas, fin whales (partial estimate from 2005, but no funding), gray whale (2009, based on Laake et al. Tech. Memo.), western and central North Pacific humpback whales (worldwide draft status review should be available in February 2010), and North Pacific right whale (2010 paper in review; photo ID estimate: 31 individuals with a 95% CI: 23-54; genetics results in 28 individuals with a 95% CI: 23-42). Cetacean stocks with abundance estimates greater than 8 years old included all beluga stocks except Bristol Bay and Cook Inlet, Dall's porpoise (estimate for Southeast Alaska expected in 2010), harbor porpoises (Southeast Alaska estimate expected in 2010; no funding for Bering Sea of Gulf of Alaska stock), killer whales, Pacific white-sided dolphin (no funding), all beaked whales (no funding), minke whale (no funding), and sperm whales (no funding). Bengtson added that the SWFSC has the lead on sperm whale research, and there is a meeting planned in 2010 with AFSC to consider the best approaches for developing sperm whale abundance estimates. Killer whale photo mark/recapture analysis based on 2001-2003 data from the eastern Bering Sea and Aleutian Islands is currently being

conducted. Data on the central Aleutian Islands based on 2006 and planned cruises in 2010 will also explore photo mark/recapture analysis and line transect methods to compare with the minimum count from photo-identification; the southeast minimum counts of killer whales was submitted in 2010.

Straley commented that she has an abundance estimate for the eastern southeast Alaska region. Mathews noted that the SWFSC conducts multi-species surveys; data from these surveys can be complicated to analyze, but inquired whether NMML could conduct repeated mixed species surveys for abundance estimates. Bengtson responded that the problem is defining survey tracks for obtaining estimates, but added that an even bigger problem is acquiring ship time, and noted that in most cases all species are recorded during species-specific surveys. Mathews added that SWFSC gets a budget for these surveys and inquired how NMML can get more funding for these surveys. Bengtson responded that efforts are made to request an increase in funding for NMML. Currently, the base funding for NMML does not cover salaries, so external funding is also going towards salaries. External funding is directed, not discretionary. Mathews inquired whether there was a plan for southeast harbor porpoise surveys, to which Bengtson responded there is no plan right now. Mathews stated that if southeast harbor porpoise surveys are conducted, it would be good to make them comparable to previous aerial and ship surveys. **The SRG will draft a letter to encourage NMML to acquire funds for aerial and ship harbor porpoise surveys of southeast Alaska comparable to previous surveys so data can be compared and analyzed and an abundance estimate can be developed.**

#### **7) Update of status reviews of ice-dependent seals and other NMML “hot topics” (John Bengtson, NMML)**

Bengtson briefed the SRG on the progress of the status reviews of the ice-associated seal species. The ribbon seal status review was completed in 2008, resulting in a decision not to list ribbon seals under the ESA; there is a lawsuit to reconsider this decision pending from the Center for Biological Diversity (CBD) and other organizations. The spotted seal status review was completed in 2009, with a decision to list the Asian stock as threatened. The comment period on this decision is closing soon. Status reviews of the bearded and ringed seal are currently underway and will be completed by October 2010, and a listing decision will be made shortly thereafter. Mathews inquired about the reasons for listing the Asian stock of spotted seal. Bengtson responded that this is a very small population in a highly industrialized area, and this species pups on land, increasing threats from exposure to feral dogs and humans.

Bengtson updated the SRG on the status of the harbor seal stock revisions. Dialogue between NMFS and the Alaska Native Harbor Seal Commission (ANHSC) is continuing, and there is an agreement in place to evaluate the abundance estimates and PBRs associated with the proposed 17 stocks. Analyses are nearly complete, pending bycatch and fisheries data, and a meeting is scheduled in March 2010 in Juneau to review the analyses and progress. Lowry inquired about whether the SRG will be able to review the analyses in addition to NMFS and the ANHSC before things move forward with stock definition. **The SRG agreed to write a letter to the agency recommending that the SRG have an opportunity to review the harbor seal stock**

**analysis, including stock definition, abundance estimates, and PBRs before a decision is made by ANHSC and NMFS on redefining harbor seal stock structure.**

Bengtson provided a review of other NMML “hot topics” currently in the works. The Steller sea lion and groundfish Biological Opinion is due to be released 01 March 2010. A new vital rates study of northern fur seals is getting underway at St. Paul Island, which is a big undertaking. The ice-associated seal status reviews are ongoing, which have been occupying a lot of staff time. A new abundance estimate is available for North Pacific right whales, with a new low estimate around 30 individuals. There are also new research funds for the Cook Inlet beluga which will enable new research.

Bengtson gave a general overview on the outlook for NMML’s budget. Funding for most NMML programs in FY2010 is generally level or slightly reduced from FY2009 levels, with the exception of 2 areas: 1) ice seals, and 2) Cook Inlet beluga. There is approximately \$1,500K of new funds for research and management of ice seals, and some of these funds will also support harvest monitoring and co-management. Approximately \$485K of new funding is available for Cook Inlet beluga, bringing a total of approximately \$600K for Cook Inlet beluga.

**8) AKR updates: Cook Inlet beluga ESA listing and critical habitat designation and harbor seal stock assessment and co-management (Barb Mahoney, NMFS)**

Barb Mahoney presented information on the Cook Inlet beluga ESA listing and critical habitat designation, and added that there is funding available for Cook Inlet beluga work. Mahoney mentioned that the State of Alaska submitted an intention to sue over the ESA listing for Cook Inlet beluga. Doug ###, the ESA coordinator for the state of Alaska, clarified that this intention to sue is based on several factors including the definition of the DPS, a request for an explanation as to why the existing regulatory measures are considered inadequate, and the level of risk achieved in terms of long-term viability. ### clarified that a determination to sue has not been made; an intention to sue must be filed within 60 days of the announcement of the ESA listing, but a final decision to sue can be made within 3-5 years of submitting the intent. Mahoney briefed the SRG on the Cook Inlet beluga critical habitat designation.

Mahoney updated the SRG on a harbor seal co-management meeting planned with IPCOM at the end of February 2010 to discuss funding issues. Bengtson clarified that the co-management decision is being made within ANHSC, not with IPCOM. Wynne questioned what would happen if IPCOM does not agree with the decisions NMFS makes with ANHSC. Bengtson responded that one cannot trump the other, and that NMFS is working on reaching a mutual agreement with ANHSC regarding harbor seals. Lowry noted that subsistence is not the only concern with harbor seal stocks; this extended process for reaching a decision is counter to the conservation of the stock, and the lack of a timely decision is counter-productive. Lowry added that co-management groups are not the only constituents involved in this decision, and the best decision for conservation of harbor seals should be made. Lowry suggested that perhaps NMFS

may need to just make a decision and move forward with conservation measures. Bengtson expressed optimism that progress will be made on harbor seal management this year. **The SRG agreed to write another letter to the agency encouraging NMFS to move forward with redefining harbor seal stocks and other management and conservation decisions.**

#### **9) Updates from the 2010 Alaska Marine Science Symposium**

Several SRG members who attended the Alaska Marine Science Symposium gave updates on presentations of interest. Suydam remarked on the Marine Mammal Commission-sponsored meeting regarding the Arctic and some of the issues involved, which was a very productive meeting. Suydam also commented on recent findings by Hans Theweissen suggesting that there is good evidence that bowhead whales can smell. At the AMSS, Theweissen presented data on anatomical findings in bowhead whales linking structures of the airway to the brain, and genes have been discovered that suggest the olfactory system is important for these whales. If the olfactory system does play an important role for these whales, this could potentially impact how scientists and managers look at the effects of oil and gas and shipping on whales. Barrett-Lennard commented on an interesting presentation demonstrating that sperm whales take in milk through the blowhole.

#### **10) Overview of new bycatch information for Federal fisheries (Robyn Angliss, NMML)**

Robyn Angliss presented the preliminary results of an updated analysis of serious injuries and mortalities (SI/M) in federally regulated fisheries in Alaska for 2007 and 2008. The SARs currently include SI/M data from the 5 year period between 2002-2006. In 2007, two important actions occurred: the observer program database was dramatically modified and was given a very different structure, and a new analyst was assigned after the former analyst retired. Preliminary estimates of SI/M are now available for 2007 and 2008. This analysis followed the same analytical procedure (ratio-estimated method, uses metric tons as a unit of observed and total effort, stratified by fishery management area over a 4 week period); however, there are some differences, which will be presented during the second day of the meeting. Angliss informed the SRG that these preliminary data are included in the draft SARs, but are not combined with data from 2002-2006; mortality estimates over the most recent 5 years of data are still based on averages from 2002-2006. Wynne noted that several SARs are still using very old data from the 1990s to calculate mortality estimates. Angliss responded that those estimates are for state fisheries, and are the best available data for those fisheries; the data that Angliss is presenting is for federal fisheries. Mathews added that if data from the 1990s are the most recent and best data available for these states fisheries, than it is better to use those older estimates for take than to denote take as zero.

Angliss continued to present a description of differences between the previous bycatch analysis and the new bycatch analysis. One major change in the new analysis is that if a marine mammal is killed or injured in a haul for which a target species is not identified, NMFS does not try to

“guess” the target species and does not use that event to extrapolate to total level of bycatch. Mathews inquired as to why the observers cannot write down what the actual catch is when bycatch occurs. Angliss indicated that the observer does record the “predominant catch”, but that this is different from the “target species”, which is identified by fisheries managers after the fact. Angliss noted that the Michael Perez (2006) Tech Memo summarized the catch-accounting system, which tends to work really well for estimating target species for some fisheries, but not so well for other fisheries. Grey Pendleton commented that if the probability of catching a marine mammal is not related to tonnage, but perhaps to another variable such as number of hauls, than perhaps the wrong variable is being used to estimate SI/M if there is no direct correlation between metric tonnage and number of takes. Doug ###(state) stated that the observer should have the information on the target species versus actual species caught. Angliss expressed the agency’s concern over putting the observer into an enforcement role, which is not part of their duties, and re-emphasized that target species is a management term that is identified through an algorithm run by NMFS managers. Mathews inquired whether it made it difference whether the recorded species is the target catch versus the actual catch, to which several members responded affirmatively. Pendleton added that it matters when measuring the impact of a fishery. Mathews inquired whether fishers could report an incorrect target species when a take occurs, and Angliss responded that it was not entirely clear whether the system could be intentionally gamed. Amstrup inquired as to whether it is accurate that all catch recorded as a single metric ton effort database in which all data on hauls is lost, which was followed up with a request from Pendleton to clarify his understanding that observer data only pertains to the haul that the observer observes, and not all hauls are monitored. Angliss responded that it can be a problem assigning a take to a specific haul, such as a killer whale getting struck by the propeller of a fishing vessel, or a porpoise found in a fish hold during offload, if that take occurs outside of the observation period, or assigning that take to a fishery if the target species is not known. Angliss requested specific input from Pendleton regarding using metric tons of target species as a measure for bycatch estimates vs using metric tons of total catch. Pendleton responded that he was not convinced that metric tons, in general, is the best measure of effort and suggested possibly classifying fisheries by technique, not by target species. Wynne questioned how a take in a pollock trawl, which is a mid-water trawl, would be assigned if this trawl accidently drags bottom and picks up a Steller sea lion on the bottom. Pendleton responded that this take would still be assigned to the pollock trawl fishery. Mathews inquired whether the fisheries observers are the same observers who identify marine mammal takes, and whether these observers would know what the target species is if they are measuring fisheries bycatch. Amstrup expressed concern over an apparent disconnect between fishery management and marine mammal management with regard to the role of the observer. Wynne stated that data for fishery management is pretty tight; a fishery can be shut down in real-time if the bycatch or catch limit is reached or exceeded. The information is there, and the haul number is recorded on the marine mammal take records; however, it getting lost through the system. Angliss clarified that in the federally-managed groundfish fisheries, the goal of the observer program is to monitor marine

mammal bycatch and provide information for fisheries management; if a marine mammal is caught, observers do stop to count that take and to address it in federally-managed fisheries. The Alaska Marine Mammal Observer Program (AMMOP) focuses on state fisheries; resources are pooled over the years and AMMOP rotates which fisheries are observed. It would take about a 20 year period to cover all state fisheries under this system. The advantage with AMMOP is that the agency has a lot of control over how to set up the observer program to monitor the fisheries.

Barrett-Lennard inquired whether some fisheries are lumped, such as flatfish trawl, suggesting several species of flatfish are actually caught in this fishery. Angliss responded affirmatively, adding that some trawls and longlines target several species and are lumped together as a single fishery. (Don? Doug?) inquired about that level of error in the data from these fisheries. Angliss stated that the level of error varies; some fisheries have better coverage resulting in less error, others have a higher level of error.

## **11) Review of draft stock assessment reports**

Prior to beginning the review, Mathews informed the SRG that she and Angliss had discussed the possibility of the SRG conducting a conference call a month or so in advance of the SRG meeting to discuss which stocks they considered key stocks for that year, and to request that these key stocks get updated and distributed to the SRG for review about a month in advance of the meeting. This approach is being suggested given that the SRG now only meets once a year. Mathews also reminded the reviewers to focus on content edits, comments, and updates, not typographical or editorial fixes during this discussion. Mathews added that an attempt was made to assign stocks to individuals who had previously reviewed that stock, but also tried to assign a new reviewer to stocks.

### *Steller sea lion - western*

Pendleton led the review of the western Steller sea lion stock by noting that sea lions from the Commander Islands are still included in this SAR and inquired whether this has been designated as a separate stock, and hence should be removed from this SAR. Bengtson responded that these animals are still considered a part of the western stock of Steller sea lions. Lowry remarked that the EEZ on the distribution map appears to be a boundary for the stock and is confusing. Pendleton noted that the SAR mentions that estimated mortality is approaching PBR and expressed concern that actual take could possibly even exceed PBR if this estimate was based on real counts. Pendleton remarked that data from brand resights do not support a movement from the eastern Steller sea lion stock into the western, and noted that if these animals moved from the west to the east prior to the survey, then back after the survey, the movements may be incorrectly identified. Pendleton added that animals that move east to west are almost exclusively male, and those that move west to east are about 50% male and 50% female. Wynne noted that there may be too much focus on the movement; the difference in the counts could be based more on the difference in the timing of the surveys. If the surveys were conducted the same time of year,

trend counts may become more apparent. Lowry and Wynne commented on the use of take data from the 1990s and recommended that data on the state fisheries from the 1990s be removed from the SARs and not included in mortality estimates.

Pendleton expressed his concern with reporting zero takes for some fisheries because there is a huge difference between stating there is no coverage or little coverage and reporting total take as zero (when total take is really unknown) and reporting zero take for a fishery with a high level of observer coverage in which there were no observed takes. Mathews agreed and stated that it is bad science to report take as zero when in reality there are no data on take; these data should be reported as unknown, not by incorporating zeros into the estimates. Mathews suggested using a system for fisheries takes similar to the one reported in GAMMS in which the CV increases as the age of the abundance data increases. **Lowry noted that much of the observer data reported is aged and suggested the SRG write a specific letter to the agency to collect more recent data on takes for state fisheries.** Barrett-Lennard added that there are alternatives to an observer program that are more cost-efficient that might be able to collect similar take data. Wynne added that this letter needs to be addressed to the ARA of the AKR or higher up in or to be effective. Mathews inquired as to why more funding is going towards observer coverage for federal fisheries than for state fisheries if the state fisheries have having a greater impact on the marine mammal stocks. Angliss responded that the funding for observer programs for the state and federal fisheries come from different sources: the funding for observers for federal fisheries in Alaska comes from the fishing industry, while the funding for observers needed to assess levels of marine mammal incidental serious injury/mortality in state fisheries comes from NMFS. Wynne added that these programs are competing with funding for fisheries in other states that have much higher levels of marine mammal takes; overall, numbers of marine mammal takes in Alaska are relatively small and not considered a big enough problem to justify funding observer programs for state fisheries in Alaska over other fisheries elsewhere in the US. Melissa Andersen added that Alaska state fisheries and the scallop fishery on the east coast are the only fisheries where state fisheries are not getting federal support for observers. Wynne noted that Bristol Bay has 1,800 vessels as opposed to 500 vessels operating in Prince William Sound, so it will not be easy to observe that many boats. An alternative to an observer program could be to work with the fishermen through mitigation efforts such as education and outreach.

#### *Steller sea lion – eastern*

Barrett-Lennard led the review, noting that the estimated fishery mortality for the eastern stock of Steller sea lions is well under PBR, and there is no reason to think this is not an accurate estimate. Barrett-Lennard also suggested removing the sentences within the stock definition section that mention Russia animals in the SAR since they are included in the western stock. Barrett-Lennard added that  $R_{max}$  should surely be able to be calculated for this stock, and it would be good to include an actual  $R_{max}$  calculation. Doing so will not change PBR at all, but it would be good to consider calculating an actual  $R_{max}$  for those stocks where it is possible. Barrett-Lennard noted that the SAR includes a number of animals observed with flashers, but

was curious about how much of the population was observed and what percentage of the population would be estimated to have flashers. Pendleton would like to see the inclusion of more serious injury cases for this stock, especially those cases from marine debris, as well as information on how many of the 22 fisheries actually overlap with eastern Steller sea lion distribution. Lowry noted that it would be interesting to compare the number of animals observed with gunshot wounds with those reported as struck and lost.

#### *Northern fur seal*

Lowry had no substantial comments on this SAR, but would send minor editorial comments to Allen. Bob Gisiner inquired whether any northern fur seals had been sighted north of the Bering Strait. Suydam responded that one had been shot in Barrow about 10 years ago. Mathews asked Suydam whether unusual sightings around Barrow are being documented. Suydam informed the group that the North Slope Borough does collect reports of sightings from hunters. Lowry and Suydam added that it would be good to put a stronger word out that the Borough would like reports of any unusual sightings. Gisiner noted it would be interesting to document which species do show a range extension and which do not during climate regime shifts. Pendleton mentioned that there may be evidence that carrying capacity is being met for Northern fur seals, as suggested by the movement to Bogoslof. Pendleton also noted that observer coverage needs to be added to the Pacific cod longline data in the mortality table.

#### *Cook Inlet beluga*

Suydam recommended inserting parenthetical stock names within the statement citing Hazard 1988 in the stock definition for Cook Inlet beluga. Suydam also noted that Yakutat is not on the map and inquired whether this needs to be included as their range. **The SRG recommended that NMFS use the last 3 years of data for calculating Nmin for Cook Inlet beluga, not a single year; if systematic surveys are being conducted annually for this stock, the estimate is going to bounce around depending on survey conditions.** Suydam added that data presented in Figure 20 needs to be matched with data presented in the text (2<sup>nd</sup> paragraph under current population trend). Lowry noted that a recent LGL photogrammetry paper reported a Cook Inlet beluga population estimate of 211 animals, and also reported that no belugas were seen with net marks on them and very few with prop marks. Suydam mentioned that Lowry found a 4.8 rate of growth of belugas in Bristol Bay and suggested using data from this figure instead of a default Rmax. Pendleton made a general statement that there needs to be more consistency in calculating PBR within the SARs; Cook Inlet beluga has no PBR calculated, yet AT1 killer whales do. Suydam responded by inquiring about which method is better in these cases, calculating a PBR or listing it as undetermined. Gisiner added that there is a difference between undetermined and not able to calculate. **Mathews recommend that AT1 killer whales be listed as PBR undetermined and that NMFS be consistent with reporting PBR as undetermined for all small populations.**

*Killer whale – eastern North Pacific Alaska resident*

Matkin started out this review by distributing an updated version of a table of individual counts of killer whales within the eastern North Pacific Alaska resident SAR. In this updated table, many of the numbers have increased; this increase may not reflect an actual increase in the number of whales, but may be more of a reflection of better counts for groups that were previously not very well documented. Matkin suggested that NMFS should make a decision about how to use these numbers so they are not necessarily interpreted as a population increase. Matkin noted that 1,300 could certainly be used as a minimum estimate for this stock. Barrett-Lennard and Matkin also agreed that it might be useful to add a sentence about mixing of animals from different areas and overlapping haplotypes among groups; Barrett-Lennard agreed to draft the text. Matkin added that the text under population size will have to be matched with this updated table; much of the text is outdated, especially with the increase in the photo-identification data available. Straley noted that there was a 2005 mortality that should be added to the fisheries mortality data; this animal was found with hooks and other gear. Straley agreed to send a copy of the level A stranding and necropsy report. This event may not be able to be attributed to a particular longline fishery, and it is possible that it could have been a subsistence fishery. Matkin suggested removing the statement regarding shooting of killer whales under the other mortality section.

*Killer whale – eastern North Pacific northern resident*

Barrett-Lennard led by noting that the overall conclusion that mortality of eastern North Pacific northern resident killer whales is below PBR seems reasonable. Barrett-Lennard also suggested that this may be another stock for which an  $R_{max}$  could be calculated instead of using the default 4% for  $R_{max}$ , and recommended updating the population counts for BC as well as their listing status in Canada. Barrett-Lennard added that the use of a lower recovery factor is justified because this is a small population. Barrett-Lennard noted that there were at least 3 ship strikes in BC, with at least one fatal strike, and strongly encouraged NMFS to contact DFO, Canada for these data. Lowry suggested that a habitat concerns section should be added to this stock, which should include ship strikes and other interactions with vessels. Straley noted that there are a few fisheries in southern Southeast Alaska, but not many that would potentially interact with this stock. Pendleton noted that Table 28 reports 12 year old data and that more current data are available.

*Killer whale – Gulf of Alaska, Aleutian Islands, Bering Sea transient stock*

Matkin offered to draft a defensible statement as to why resident whales that have not been sighted in 10 or more years should be removed from the counts; transients are a little different given their wider range, so a lack of a sighting in 10 or more years is not necessarily indicative that an animal has been removed from a population, and it may still be there. Matkin mentioned a joint catalog with John Durban that consisted of 438 animals. Line transect surveys covered a

much smaller area than the known range, and a total of 552 animals were observed from these surveys. Matkin noted that mark-recapture data do not cover the Bering Sea; both the area and time have increased, so counts of whales have increased. There is also a difference in the area covered for the line transect and mark-recapture studies. Mathews inquired as to whether estimates for other species, such as Pacific white-sided dolphins and Dall's porpoise, could be obtained from these studies. **The SRG recommended that estimates for species other than the target species be analyzed from survey cruises that target a single species.**

Pendleton expressed concern over not having a protocol for removing animals from the counts for transients similar to the 10 year rule for residents; under the current system, it seems as if once an animal is counted in the catalog, it never comes out, which means the population counts will continue to increase. Matkin responded that it was decided that 10 years was the cut-off for transients as well; if a whale is not re-sighted after 10 years, it is not counted and considered dead. Matkin is currently collaborating with Durban on a manuscript that suggests that many more animals exist than are actually being counted. Pendleton noted that there appear to be multiple sources of data for counts, yet the PBR estimate is only based on one set of data, and inquired about how it is decided which set of data to use for calculating PBR. Matkin responded that the line transects do not cover as much area as the mark-recapture and photo-id studies, so the latter are used for calculating PBR. Gisinier added that the Pacific SRG has dealt with this issue with regard to photo-id data and line transect data. Matkin inquired whether the SRG and NMFS agreed with adopting the 10 year rule for transients in determining counts. Barrett-Lennard has also collaborated on a paper with Ellis, Ford, and Durban in which they also "kill off" an individual if it is not re-sighted within 10 years. Matkin noted that it is difficult to consider an individual dead in a population study, but there should be some sort of cut-off rule for when an individual is no longer counted.

Suydam asked Matkin whether he was getting data from tagged animals in the Chukchi Sea. Matkin responded that an animal that was tagged at False Pass is transmitting satellite data in the Chukchi Sea. Suydam added that killer whales are getting so common in the Chukchi Sea that hunters no longer report them as being unusual sightings. Suydam suggested updating the SAR map to extend the GOA, AI, BS transient killer whale stock distribution up to Barrow. It is very likely this stock will expand their range as the ice recedes, possibly following gray whales, belugas, and ice seals. Mathews noted that a habitat section needs to be added, and this section should mention range expansion.

#### *Killer whale – AT1 resident*

Barrett-Lennard led off this review by stating that most comments pertain to editorial edits, and will send updates with suggestions for rewriting some sections. Matkin reiterated Pendleton's earlier comment that PBR needs to be changed to undetermined. Matkin also suggested removing the legacy statements from the status of the stock section and to state that there are only 7 known individuals instead of mentioning the 11 animals that are unknown.

### *Killer whale – west coast transient*

Mathews posed a question to the group as to whether it is more acceptable in the scientific community to use “mammal-eating” vs. “fish-eating” or “resident” vs. “transient”. Barrett-Lennard responded that there are ecosystem differences; there are mammal-eating and fish-eating, but some transients are genetically more similar to fish-eating types. Transients and residents refer more to specific groups that are related. Therefore, the use of resident and transient is more genetic-based, and mammal and fish eating are more diet-based. In the southern ocean, many “transients” eat fish.

Mathews noted that the minimum population estimate and PBR section mentions eastern North Pacific transient stock; this should be changed to west coast transient stock. Mathew questioned whether it is accurate to remove whales from the west coast transient stock based solely on acoustics data. Barrett-Lennard responded that there is evidence to support this, but suggested that this statement needs a citation. Barrett-Lennard recommended adding the current California numbers and update the population estimate. Barrett-Lennard also inquired about the mortality rate CV used in calculating PBR, and questioned why this is used for this stock and not others. Barrett-Lennard suggested updating data on the potential thresher shark fishery mortality since these were last updated in 2003, and recommended that NMFS contact DFO for additional mortality data.

### *Harbor porpoise – Southeast Alaska*

Mathews noted that it is disappointing that there are no new data for Southeast Alaska harbor porpoise, including fishery mortality data. Mathews suggested that NMFS incorporate data from the AMMOP on Yakutat gillnet fisheries. **The SRG stated that harbor porpoise stock structure is not adequately defined and recommended that there should be a call for more genetics samples and a push to get existing samples analyzed.** Mathews added that there have been some local reports that harbor porpoise in some areas of Southeast Alaska seem to be disappearing. Wynne and Matkin responded that there are also reports suggesting an increase of harbor porpoises in other areas; this could indicate shifts or variable distribution over years. Mathews inquired whether funding was available for Southeast Alaska harbor porpoise surveys, to which Angliss responded affirmatively. Mathews restated the recommendation that these surveys be conducted in a manner that is comparable to previous surveys. Angliss added that funding will not be shifted from other projects to harbor porpoise surveys, and much of the base funding for NMML goes to salaries.

### *Harbor porpoise – Gulf of Alaska*

There were no additional comments regarding the Gulf of Alaska harbor porpoise SAR.

### *Harbor porpoise – Bering Sea*

Suydam mentioned that harbor porpoises are now the most commonly sighted cetacean seen during oil and gas surveys, which is a new observation. Suydam added that he will draft some text based on a report summarizing these sightings, and suggested that the map may need to be updated as well.

### *Sperm whale*

Wynne inquired about the type and severity of the injuries that are reported as serious injuries in the sablefish longline fishery. Wynne suggested adding in the potential effects of sonar into the habitat concerns section. Straley will provide NMFS with a regional population estimate for sperm whales in a small area of the Gulf of Alaska, and noted that some females and calves have been sighted. Wynne added that if sperm whales are considered the most commonly sighted cetacean on survey cruises, than a population estimate should be able to be generated. Straley mentioned that the SWFSC is working up genetics data from biopsies, and reported that one satellite tagged animal traveled as far as Mexico, suggesting that males may be coming into Alaska waters from other stocks. **The SRG strongly recommended that NMFS obtain a sperm whale abundance estimate, and noted that if sperm whales are the most commonly sighted cetacean during survey cruises in the Gulf of Alaska, than these data should be analyzed for an abundance estimate.** Pendleton also noted that the fisheries observer data needs percent observer coverage added to the table.

### *Narwhal*

Lowry summarized his review in one word – “why?”. Allen responded that Incidental Harassment Authorizations are being issued to the oil and gas industry for marine mammal takes, and given the potential, albeit possibly small, for a narwhal take, NMFS needs to consider narwhals when issuing these IHAs. In addition, there seems to be an increase in the reports of narwhal sightings from Alaska Native hunters. Lowry expressed his preference to not list this as an “Alaska stock” given that they are probably a part of the Baffin Bay stock, although that is not known, and suggested listing them as narwhal without assigning them to a stock. Suydam added that in the IHA applications from the oil companies, the agency is authorizing narwhal takes even though there are currently no management efforts of narwhals in the U.S. Before the oil and gas companies can conduct seismic operations, they need authorization for takes of specific species. Suydam also added that there are more and more sightings being reported on almost an annual basis, and most sightings are males. Pendleton suggested that the SAR state that takes are unknown, not zero. **The SRG recommended not reporting narwhals as an Alaska stock, and to include a statement that it is not known where narwhals sighting in Alaska waters are coming from.**

### *North Pacific right whales*

Barrett-Lennard remarked that Nmin should be able to be calculated from photo-id data for North Pacific right whales. Bengtson had updated the SRG that a paper on the results of a mark-

recapture analysis for right whales has been submitted, and Barrett-Lennard would like to see the SAR updated once this paper is published. Wynne noted that the data may be biased with regard to re-sights if survey vessels are always going back to the same areas to collect data. Barrett-Lennard would like to see the information on Kodiak sightings updated. Barrett-Lennard remarked that there is no mention of the Bering Sea crab fishery that occurs within the range of North Pacific right whales. Matkin added that the season for this crab fishery may not overlap with the period that the right whales use these areas. Barrett-Lennard responded that the fishery should still be mentioned; even if there is no temporal overlap, there is a spatial overlap, and since it is not known where these whales are going throughout the year, a lack of acoustic data is not strong enough evidence to suggest that the whales are not in the area, they may just be silent. Allen agreed to check with Paul Wade regarding the status of the manuscript and whether or not these data can be reported in the SAR since they have been presented in abstracts at several conferences.

#### *Humpback whale – western and central North Pacific*

Straley commented that the genetics data for Asia stocks are being analyzed. Straley reminded the group that a recommendation was made at the 2009 SRG meeting to hold a meeting jointly with representatives from the PSRG and AKSRG and NMFS to discuss how the results of SPLASH will be used in defining Pacific humpback whale stocks and inquired as to why this meeting never happened. Allen responded that there was not strong support from the Pacific regarding holding such a meeting since there was a SPLASH workshop planned at the 2009 SMM biennial meeting in Quebec. Angliss addressed a proposal to use a recovery factor of 0.2 for fin whales and 0.3 for both humpback whale stocks based on the suggested guidelines presented in Taylor et al. 2003. Given that the CV for humpbacks is assumed to be 0.3 and not actually calculated, NMFS is proposing to use a 0.3 recovery factor instead of 0.5 for humpbacks. Straley expressed concern about changing the recovery factor at this stage given that the genetics data and photo-id data are still being analyzed. Lowry suggested not changing the recovery factor until there is a known calculated CV. Straley noted that humpbacks in Prince William Sound are genetically distinct from neighboring populations. **The SRG recommended that NMFS use feeding areas to define stocks of humpback whales in the North Pacific, which concurs with the recommendation from the SPLASH steering committee.** Until this change is made in stock definition, **the SRG recommended that NMFS designate “stockettes” based on feeding aggregations within the central North Pacific humpback whale stock, and add to the existing “stockettes” presented in the SAR, calculating abundance estimates and PBR for each “stockette”.** Andersen reminded the SRG that “stock” has a specific definition in the MMPA and if whales in various feeding aggregations are inter-breeding because they are going to the same breeding areas, then feeding areas do not meeting the definition of a “stock”.

#### *Fin whale*

Angliss proposed to use a recovery factor of 0.2 for fin whales based on the guidelines from Taylor et al. 2003 and using the abundance estimate of 5,700. Pendleton noted that the abundance estimate only accounts for a small portion of the range, yet a PBR is calculated, and inquired whether a PBR can be calculated based on a portion of the population. Lowry responded that this is possible because this would be considered a minimum estimate. Pendleton added that the percent observer coverage needs to be filled in for the fisheries take table. Wynne recommended confirming whether the takes occurred in the GOA or the BSAI pollock trawl. Barrett-Lennard added that there were also one or more mortalities in BC that should be included.

## **12) Closed session**

The SRG held a closed session during which they primarily discussed changes in membership.

## **13) Sea otter critical habitat and recovery plan – Doug Burn (USFWS)**

Doug Burn briefed the SRG on the status of critical habitat designation and a recovery plan for Southeast Alaska sea otters. Since Southeast Alaska sea otters were listed as threatened, a recovery team was developed, including Lowry and Wynne from the SRG. A draft recovery plan is in the works, which includes a PVA analysis of the demographic delisting criteria; USFWS has contracted Randy Reeves to review the plan. Lowry added that the plan is very close to being ready for review. At the time of listing, critical habitat was not determinable. USFWS conducted a habitat assessment in response to a suit from the Center for Biological Diversity, and the public comment period ended over the summer 2009 on a draft economic analysis. USFWS experimented with a 30 day 24 hour a day call-in comment submission method, which seemed to be an innovative approach, but there were no call-in comments. There were a total of 25-30 comments submitted in total on the habitat analysis. The Navy requested exclusion of the archipelago for national security reasons. Mean high tide to 20 meters, which is essentially kelp bed areas, defines critical habitat. Mathews inquired about the results of the PVA. Burn responded that the results were very interesting; the PVA was conducted to determine the probability of extinction of this stock, and models were developed to determine what the population should be in order to be considered sustainable. Lowry gave a more detailed update of the analysis, which will be available in the recovery plan. Burns presented a paper on the status of sea otters in the western Aleutian Islands at the 2010 Alaska Marine Science Symposium; it appears the population decline is slowing down, but it is still not in the clear.

Burns mentioned that the three sea otter SARs were updated in August 2008; however, he asked the SRG for clarification on the review process for the SARs. Burns was unclear about the SRG review process for the stocks that are now listed as strategic, and there are discussions with USFWS staff at the Headquarters office on the process for review of the SARs. Mathews responded that the SRG is not so concerned with the legalities of the review process, but would

like to be updated on whether any changes occur to the SARs of strategic stocks. Burns suggested providing a table of updates to all SARs to the SRG.

#### **14) Plans for modeling Pacific walrus population dynamics (Mark Udevitz, USGS)**

Mark Udevitz briefed the SRG on plans to monitor the response of walruses to environmental changes. The USGS has been monitoring haulouts of walruses on land and the effects of environmental changes on the population level combined with the effects of the harvest. Several models already exist, including one by DeMaster (1984) in which a MSY was estimated at 2-5% takes of adult females per year. Witting and Born (2005) presented a Bayesian approach to model the Atlantic walrus population, and there are other bioenergetics and population dynamics models that have been published. Mathews found it unclear why demographic data are not available given the harvest and inquired whether the harvest is selective. Udevitz responded that the harvest is selective, and reproductive tracts and life history data are analyzed for females. Straley inquired about the type of data that are incorporated into the bioenergetics model, and Suydam inquired about which life history samples, specifically, are being taken from the harvest. Tim McCracken responded that teeth are being collected and sent out to labs for analysis, as well as reproductive tracts. Suydam noted that the harvest is selective, and inquired whether there were plans in place to expand the sampling of animals in order to remove the bias from a selective harvest. McCracken responded that USGS is expanding sampling as much as possible and collaborating with external researchers on sample collection. Suydam noted that the habitat section of the SAR did not consider the effects of oil and gas and was curious whether this factor was incorporated into the energetic model. Udevitz said oil and gas effects will be considered and environmental effects will be added to the model.

Mathews addressed Rosa Meehan and inquired about the response to a letter from the SRG regarding the walrus population estimate. Meehan responded that it is on record that the SRG recommended that the USFWS should not publish a population estimate that was not the best information available, and Meehan expressed appreciation for the letter from the SRG; however, the USFWS was required to publish an estimate. Suydam inquired about the level of communication between USFWS and CBD, particularly prior to press releases. Meehan responded that the USFWS does have some communication with CBD. Suydam suggested that CBD should consider the science when releasing information to the press; it was known that the walrus population estimate was a preliminary estimate, yet they were published anyway. Burn added that this analysis will be included in the walrus survey summary. Suydam added that there is an advantage to both extrapolating and not extrapolating in this analysis. Meehan noted that the walrus program staff have a lot going on at this time and will need to assess priorities; the survey data were expensive to collect, so it is a priority to make these data available. Suydam encouraged the USFWS to develop a final population estimate.

Lowry expressed concern with the comparability of the recent surveys with previous surveys; prior estimates did not account for walruses in the water. If the numbers from current estimates

match the previous estimates, the USFWS should not conclude that there was no change in the population since the previous survey did not account for animals in the water. Lowry inquired as to how the USFWS will address this comparability problem. Udevitz responded that the data may not be comparable, and perhaps the best approach is to ensure that it is known that comparisons should not be made between the two estimates. Suzann Speckman agreed to send the manuscript of the survey results to Mathews for distribution to the SRG. Mathews mentioned that the SRG is concerned about releasing numbers to the public if those numbers are not the best data available and added that the SRG will continue to respond in the future to prevent that from happening.

Meehan added that the USFWS is working on defining polar bear critical habitat. It appears that the Beaufort Sea animals are denning along the Beaufort Sea coast and the Chukchi Sea population is denning off Wrangle Island; the sea ice over the continental shelf is defined as critical habitat. Meehan expects the draft economic analysis to be released in late April to mid-June, which will summarize the proposed exclusions. Suydam requested that Meehan update the SRG on planning teams. Meehan responded that there were well over 250,000 public comments submitted. The USFWS is interested in developing partnerships to expand current activities, and would like to develop more long-term efforts, not solely define recovery teams with a limited time involvement. Suydam noted that it is important to involve the constituents; the hunters are concerned and would like to be included and have some role in working with the Service and advising the Service. Meehan added that any approaches to harvest management will be done through existing co-management partners.

### **15) Bycatch of marine mammals: What can we learn from the Atlantic SRG? (Andy Read and teleconference with Atlantic SRG)**

The Atlantic SRG called in for a teleconference discussion regarding bycatch. Mathews introduced the topic with several summary slides addressing the question – why review bycatch? The Alaska SRG as a group has never really taken a step back to look at bycatch, and this is a critical period to start considering some of the arising issues such as climate change and the potential for fisheries to move into new areas. Read et al. (2006) summarized bycatch in fisheries in the Atlantic, Pacific, and Alaska. Given that reports for Alaska were so low relative to other areas in the U.S., the question arose as to whether these numbers for Alaska are accurate. Alaska has a high level of fishing effort, so this is not a reflection of a lower level of fishing effort. Mathews recognized that Alaska fisheries are different from fisheries in other regions of the U.S.; however, it was believed that the Alaska SRG could benefit from learning how the Atlantic SRG improved monitoring bycatch of marine mammals for Atlantic fisheries. The difference in rate of marine mammal bycatch is also not a result of lower density of marine mammals. Mathews addressed several of the concerns of the Alaska SRG, including the low level of monitoring of Alaska fisheries for marine mammal bycatch, data on fisheries takes are being reported in the SARs as zero when in reality they should be reported as “no data available”, estimates of uncertainty are calculated for abundance but not for mortality. The

Alaska SRG would like to also explore alternatives to the current observer program, such as mobile bycatch observers or electronic monitoring. As Wynne has emphasized, if there are ways to mitigate bycatch, this should be done.

Andy Read emphasized that, for the Atlantic, there are no alternatives to observer programs. These observer programs analyze bycatch data in time and space, and collect data on when and where bycatch occurs. Detailed observations by observers allow for variations in fishing activities and monitor the affect of gear modifications. Other methods, such as voluntary reportings and fisher logbooks have been inaccurate, and strandings are negatively biased. Total effort is difficult to calculate, especially for gillnets, so proxies such as landings can be used. Alternative observer platforms seem to work well in some areas of the Atlantic. The observer programs have dedicated marine mammal watches; porpoises could be missed if there were not dedicated watches. Mitigation efforts, such as Take Reduction Teams (TRTs), have been effective at finding solutions when they exist. Mitigation measures that entail a cost? require enforcement, and the ease of enforcement should be a consideration when an alternative to observer programs are evaluated. TRTs typically should involve representatives of enforcement agencies when mitigation is discussed. Read gave several examples of TRTs from the Atlantic, including the Gulf of Maine harbor porpoise TRT in 1996. This TRT noted seasonal variations in bycatch, resulting in gear restrictions and the use of pingers. Matkin inquired about the use of a separate platform, such as a small boat, versus onboard observers, whether it is difficult to obtain CVs, and whether a large enough sample size can be obtained. Debi Palka responded that the advantage of a separate observer platform is that the observers can jump from boat to boat as gear is hauled. Wynne inquired whether haul is used as a unit of measure for effort. Read responded that haul is the unit of effort and agreed to send a document that explains using hauls to measure effort. Wynne commented that soak time is different among different fisheries; in Bristol Bay, there are approximately 1,800 boats fishing, and hauling frequently. Read added that there are some fisheries in the east with a short soak time that have interactions with Tursiops; despite the brief soak time, there are still entanglements and depredation occurring. Wynne inquired whether haul or landings are used as the measure of effort for these short soak time fisheries. Palka responded that haul is the unit of effort; as the unit of effort increases, take goes way up. There is always a CV and always variability in take. Mathews inquired how a measure of tonnage is acquired. Palka responded that the observers ask the boat captains; the captains a good at estimating tonnage.

Wynne asked about the price of pingers, and Palka responded that pingers are approximately \$40 each. Mathews inquired whether the presence of a porpoise in the net affects the catch. Read replied that porpoise bycatch does not really seem to affect catch rates. Wynne stated that all harbor porpoise stocks in Alaska are listed as strategic, which is based in part on the fact that the abundance estimate is calculated from data that are greater than 8 years old, and inquired whether the Atlantic had any stocks designated strategic based on a similar reason. Palka responded that the Atlantic did not have any stocks designated as strategic specifically for that

reason alone. Burn asked the Atlantic and Alaska SRG if they had any guidance for improving bycatch estimates for sea otters. Barrett-Lennard responded that BC has some information on sea otter bycatch and strandings in a database that might be useful. Bridget Mansfield added that the difference between fisheries being assigned as category 2 and 3 affects management actions. Angliss noted that NMML can report SI/M and bycatch in the SARs; however, whether the AKR uses those data for the List of Fisheries is up to them to decide. Lowry commented that the concern is not assigning categories for fisheries, the concern is mitigation; it is known that harbor porpoises are being taken in fisheries. Wynne suggested putting observer funding towards research into pingers: if 2 pingers were deployed on a net for all 1,800 boats, it would cost approximately \$1.5 million. Not every boat may be willing to participate, but many will. Wynne questioned whether the concern is getting a number for estimating bycatch, or mitigating the problem and trying to reduce bycatch. There is no PBR calculated for harbor porpoises, so a mortality estimate cannot be compared to a PBR for management purposes. Despite this, the goal is still to reduce bycatch of harbor porpoises. Mansfield commented that the TRT process is a very deliberative process.

**16) NMFS update on monitoring of state marine mammal bycatch and SEAK harbor porpoise; Take Reduction Plan developments (Bridget Mansfield, AKR)**

Wynne noted that in Alaska, a fishing permit has a value; fishermen are businessmen, and they have stake in the business, so outreach with these fishermen holds merit as a method for reducing bycatch. Wynne suggested that many fishermen would be willing to try using pingers, which would be a much more cost-effective method than placing observers. Barrett-Lennard supported the idea of using mitigation measures, especially since limited funding is an issue and NMFS is not able to accomplish what they are required to do regarding reducing bycatch. Wynne distributed a recent paper produced by David Cottingham at NMFS, HQ regarding the Government Accounting Office's (GAO) report on NMFS's efforts to reduce bycatch. GAO conducted a review of the NMFS's Take Reduction Plans (TRP) and the effectiveness of the plans, and GAO recognized that the agency has not implemented or developed a TRP for harbor porpoise in Alaska. Alaska has never had a TRT or TRP for any stock. In order to trigger the TRT process, a strategic stock has to interact with a category 1 or 2 fishery. Alaska harbor porpoises came out as a high priority because they are strategic stocks. Angliss added that harbor porpoises are designated as strategic because the abundance estimate is based on data greater than 8 years old, so there is essentially no accurate abundance estimate, and there are fisheries that are strongly suspected of interacting with these stocks. AMMOP received some additional funding this year because a higher up government agency (GAO) became aware of this issue with harbor porpoise. Suydam inquired about what the SRG needs to recommend to NMFS in response to bycatch reduction efforts, and support of AMMOP was encouraged. Mansfield expressed appreciation for Read's presentation and for the Atlantic SRG's input. Having worked in both the northeast and southeast regions, Mansfield recognized that Alaska is behind the curve with regard to bycatch. Mansfield mentioned that the agency has both

regulatory and statutory limitations. In addition, the AKR is limited to 1.5 staff members to work on the bycatch issue, so any letters from the SRG should recognize the limited resources, both funding and staff, in addressing recommendations and ideas.

Mansfield introduced Brian Manly, who was participating in the meeting via teleconference. Manly has been analyzing data from AMMOP. Mansfield also briefed the SRG on the plans to implement an observer program with the drift gillnet fisheries in southeast Alaska; a request for proposals will be released for conducting fieldwork in 2011. Mansfield briefly summarized the structure of the observer program, which is also posted on the AMMOP website. The AKR is on a fast-track to get this information in southeast Alaska because a TRT cannot be convened until these data exist. Mathews inquired as to why there is only a big push now pre-TRT, and why the collection of these data was not considered a priority before. Wynne added that this effort will be helpful with 2 data gaps, both takes and abundance of harbor porpoise. Straley noted that genetics should also get analyzed. Mansfield responded that genetics samples are collected for all takes, but they have not been analyzed yet. Mansfield mentioned that both Kaja and Bridget met with NMML staff for planning observer efforts in southeast Alaska.

#### **17) AKR proposed sampling design for observing fisheries and estimating marine mammal bycatch (Bryan Manly, W. Ecosystems Tech)**

Brian Manly briefed the SRG on a proposed sampling design for the AKR observer program for the salmon drift gillnet fishery. In 2008, total fishing effort amounted to 13,474 boat days. Manly presented data on all species of marine mammals that have interacted with this fishery since 1998. Effort will be focused on humpback and harbor porpoise interactions. Using adaptive sampling designs, it was determined that 13.9% coverage will be needed to assess humpback interactions, and 3.2% coverage will be needed for calculating harbor porpoise takes. Matkin noted that it is interesting that useful information can be obtained by focusing on hotspots. Pendleton added that the quantity that is being estimated is very small; this may result in a large CV for humpbacks, but the total confidence interval range may be small. Mathews inquired whether the actual data for Yakutat has been analyzed. Manly responded that comparisons between actual data and data from the model have not been made yet. Mansfield added that takes in Yakutat occurred only in one strata. Mansfield also requested SRG input on the fact that that other regions have a CV target, but Alaska does not. Mathews responded that perhaps a developing target CV is not the best approach.

#### **18) Update on current research on Chukchi polar bears (Karen Oakley, USGS)**

Karen Oakley presented an update on current and future research on Chukchi polar bears. A population estimate is not available at this time, which is difficult to determine without including data from Russia. Current data needs include individual health information and data on current movement patterns and distribution. These data are needed in order to identify which methodology to use to develop a population estimate, which in turn is needed to mitigate the

potential effects of oil and gas and loss of sea ice. A total of 21 adult females have been captured and collared, and this research will continue through 2012. Mathews inquired as to why denning does not occur on the U.S. coast, and why it primarily occurs on Wrangell Island. Karen responded that Wrangell Island is a protected area. Suydam commented on rumors that FWS will not be putting collars on bears in the next year or two; however, Karen is saying that this will be done. Karen responded that collars will not be deployed on animals in the Beaufort Sea; it is still being decided whether they will be deployed on bears in the Chukchi Sea. Suydam asked for a further explanation on the FWS concerns. Karen replied that the collars appear to be cutting into the neck of the animals once they are attached; this seems to especially be a problem with the bears that feed off whale carcasses, as these animals become much larger in overall size. Suydam has observed some bears with collars that cut into the skin and muscle, so this is a valid concern; however, these observations were made in the spring, so these bears were probably not feeding off whales.

Suydam inquired about efforts to fill in gaps in data from Russia. Karen responded that data are being collected on genetics, sightings, observations of feeding when ashore, etc. Tagging occurs between mid-March and April. Pendleton noted that state researchers had a problem with collars cutting into the neck of brown bears, so they are now using a more narrow collar that seems successful, and recommended that Karen contact Laverne ??? Straley inquired whether it seems that individuals prefer a certain diet, to which Karen responded there is no evidence to suggest this. Lowry questioned whether there has been good strategy for getting information on takes in Russia, as it is very difficult to collect data on illegal takes. Meehan added that several individuals check the Russia equivalent of “eBay” for availability of polar bear skins. Lowry noted that there is also some information on polar bears eating beluga in the spring.

## **11) Review of draft stock assessment reports – continued**

### *Minke whale*

Straley led the discussion by noting that there is more data available on minke whale sightings, which NMFS should look into obtaining. Pendleton noted that a statement in the SAR pertaining to subsistence is legacy information and suggested removing it. Pendleton also inquired as to why the minke whale sightings data are not being analyzed with they were also collected during the same cruise as the fin whale data were analyzed for an abundance estimate. Pendleton suggested adding a statement regarding the number of fisheries that overlap within the range of minke whales. Angliss suggested creating a new appendix for this type of information. **The SRG recommended adding an appendix to the SAR that includes a list of stocks and fisheries that have historically interacted with each fishery, as well as add a statement in each SAR summarizing the number of fisheries that occur within the range of each stock, which fisheries are monitored, which are not, and how many of these fisheries had takes.**

## **19) At-sea monitoring of bycatch using Electronic Monitoring Systems (Maria Jose Pria, Archipelago Marine Research, BC)**

Maria Jose Pria presented a summary of Electronic Monitoring Systems that are being used to monitor bycatch at sea. Jose Pria presented this technology as one component of a fishery “toolbox”; electronic monitoring is used to confirm landings. This system is being used for gillnet, longline, and several types of trawl fisheries internationally. Efforts are being made to work with the industry to give them incentive to want the system to work. Cameras are mounted on the vessel and linked to a database with continuous, unassisted operation; data flaws are estimated at <1%. Both sensor data and visual data are interpreted, and all data are integrated. Sensor data are collected every 10 seconds, and video data are collected continuously, so there are a lot of data to analyze. Data are then reconciled and reported. For some fisheries, the actual catch may not be visible, but the disposition of catches (discarded, kept, etc.) can be seen. The resolution of the cameras is good; however, the zoom and wide angle options are often adjusted to minimize the amount of data collected. Video monitoring is particularly useful to monitor catch handling; the video can confirm that catch is not getting sorted before coming in to the monitoring table where the observer is stationed. This system is useful as long as there is cooperation among all parties involved, although intentional blocking of the camera can occur, but can also be addressed. There are typically 3 cameras recording 3 perspectives of the operation, one is typically mounted overboard to monitor the haul and ensure bycatch did not fall out of the net before it is hauled onboard, and two cameras are typically recording onboard activities. In BC, each fisher develops a fishing portfolio; the fisher may be targeting one species and has a quota for that species, but also has a quota for other bycaught species, so bycatch does not need to be discarded. The cost of this system is about 20-30% of an observer program, and industry engagement is essential. Manly noted that observer programs also collect additional information other than bycatch. Mathews inquired about the success of electronic monitoring with gillnet fisheries. Mansfield reiterated Manly’s comment regarding the additional data that observers collect. Barrett-Lennard noted that if there is compliance, electronic monitoring might be useful. Mathews added that the purpose of this presentation was to emphasize that alternative approaches to monitoring fishery bycatch should be considered, especially if they are more cost-effective, but was not necessarily suggesting NMFS should replace the observer program with electronic monitoring. Electronic monitoring does seem to be a good system, as it involves the industry and encourages accurate logging of bycatch and compliance by fishers.

Wynne reported on a presentation given by John Gauvin at the 2010 Alaska Marine Science Symposium regarding electronic monitoring, which addressed several potential issues with the system such as positioning of the cameras and relying on the technology to not break down; data can be lost, and questions may arise whether this loss was intentional. Jose Pria concurred that data loss could be an issue, but the “stick and carrot” method seems to be a rather successful method; if the fishers do not provide good data, they are penalized. Jose Pria added that it takes anywhere from one to three years to implement a successful electronic monitoring system, and

feedback needs to be provided in order to succeed. It does not matter what the intention is – whether someone forgot to write something down or blocks the camera, intentionally or not intentionally. Feedback needs to be provided and users of the system need to be confronted when numbers do not add up or when the camera is being blocked; it does not matter what the intention was or whether it was accidental, but the actions contributed to poor data quality and this needs to be addressed. Mansfield inquired about the mobility of the electronic monitoring system and whether it can be moved from boat to boat. Jose Pria responded that the main sensor and control box is removable, but all the peripherals usually stay with a single vessel.

## **20) Discussion regarding target CVs in an observer program**

Manly inquired whether some sort of guidelines are needed in terms of accuracy in order to determine what is an acceptable accuracy level and when estimates are not accurate enough. Mansfield emphasized that cost-effectiveness needs to be considered as well. Barrett-Lennard added that it is critical to think about whether a CV is necessary or not with observer data. Pendleton noted that as observer coverage reaches 100%, then the CV will approach zero. Manly stated that when decisions are made about PBR and how close mortality is to PBR, then there must be something known about CV and the level of accuracy of the estimates in making these assessments. Pendleton added that CVs are fine, but they are difficult to consider when sample sizes are small. Barrett-Lennard suggested the use of confidence intervals to measure accuracy of the observer data. Mathews questioned why CVs are not currently incorporated into mortality estimate data. Angliss and Pendleton responded that CVs are included in the SARs for some mortality estimates and asked Mathews to expand on what was meant by “incorporated”. Angliss added that this may have been discussed at the GAMMS workshop, and suspected that Wade must have considered this issue if there were mortality estimates that were potentially inaccurate or with low confidence levels. Pendleton noted that he had spoken with Barb Taylor at the joint SRG meeting in Monterey and suggested that the current system may be applying more precision to the data than is truly there. Mathews cited the Caswell paper that concludes that when thresholds are being calculated for populations, then the level of certainty in all calculations from the data need to be taken into consideration, including mortality data. Mathews suggested addressing this issue with Wade and requesting a response.

Wynne noted that the CV in harbor porpoise mortality estimates is very low, but it is also known the confidence in the accuracy of this estimate is not high. Pendleton added that there must be built-in assumptions. Lowry stated that in the interest of the best use of funding for conservation and management of stocks, funding should be directed towards assessing populations, not towards obtaining mortality estimates. If a mortality problem arises with a particular stock, than mitigation efforts should be employed to remove or reduce mortality. Mansfield commented that if all SRGs agreed to this approach, then maybe something could be done to this affect. This is at the AA level and congressional level; NMFS is mandated to have the observer programs.

Wynne inquired about the reasoning for the designation of harbor porpoises as strategic stocks, especially in light of discussions regarding developing a Take Reduction Team. **The SRG agreed to write a letter to NMFS recommending that when a TRP/TRT is convened, the agency include directing funding towards concurrent aerial surveys with boat surveys and fisheries monitoring.**

## **21) Closing remarks and additional SRG membership issues**

Mathews gave closing remarks and thanked everyone for a productive meeting. Matkin mentioned his intention to step off the SRG due to other commitments and involvement in beluga committees. Straley intends to step off the SRG eventually, but would like to continue to work with humpback whale stock definition and may delay her departure until that is resolved. Several suggestions of new members were made. Mathews will work with Suydam during his transition in the SRG Chair position.

## **Appendix 1: SRG recommendations to NMFS**

- 1) The SRG will draft a letter to encourage NMML to acquire funds for aerial and ship harbor porpoise surveys of southeast Alaska comparable to previous surveys so data can be compared and analyzed and an abundance estimate can be developed.
- 2) The SRG agreed to write a letter to the agency recommending that the SRG have an opportunity to review the harbor seal stock analysis, including stock definition, abundance estimates, and PBRs before a decision is made by ANHSC and NMFS on redefining harbor seal stock structure.
- 3) The SRG agreed to write another letter to the agency encouraging NMFS to move forward with redefining harbor seal stocks and other management and conservation decisions.
- 4) Lowry noted that much of the observer data reported is aged and suggested the SRG write a specific letter to the agency to collect more recent data on takes for state fisheries.
- 5) The SRG recommended that NMFS use the last 3 years of data for calculating Nmin for Cook Inlet beluga, not a single year; if systematic surveys are being conducted annually for this stock, the estimate is going to bounce around depending on survey conditions.
- 6) Mathews recommend that AT1 killer whales be listed as PBR undetermined and that NMFS be consistent with reporting PBR as undetermined for all small populations.
- 7) The SRG recommended that estimates for species other than the target species be analyzed from survey cruises that target a single species.
- 8) The SRG stated that harbor porpoise stock structure is not adequately defined and recommended that there should be a call for more genetics samples and a push to get existing samples analyzed.
- 9) The SRG strongly recommended that NMFS obtain a sperm whale abundance estimate, and noted that if sperm whales are the most commonly sighted cetacean during survey cruises in the Gulf of Alaska, than these data should be analyzed for an abundance estimate.
- 10) The SRG recommended not reporting narwhals as an Alaska stock, and to include a statement that it is not known where narwhals sighting in Alaska waters are coming from.
- 11) The SRG recommended that NMFS use feeding areas to define stocks of humpback whales in the North Pacific, which concurs with the recommendation from the SPLASH steering committee.
- 12) Until a change is made in stock definition, the SRG recommended that NMFS designate “stockettes” based on feeding aggregations within the central North Pacific humpback whale stock, and add to the existing “stockettes” presented in the SAR, calculating abundance estimates and PBR for each “stockette”.
- 13) The SRG recommended adding an appendix to the SAR that includes a list of stocks and fisheries that have historically interacted with each fishery, as well as add a statement in each SAR summarizing the number of fisheries that occur within the range of each stock, which fisheries are monitored, which are not, and how many of these fisheries had takes.

14) The SRG agreed to write a letter to NMFS recommending that when a TRP/TRT is convened, the agency include directing funding towards concurrent aerial surveys with boat surveys and fisheries monitoring.

## **Appendix 2: List of Participants at 2010 Alaska SRG meeting**

### **Participants:**

#### SRG Members:

Beth Mathews (Chair)  
Kate Wynne  
Grey Pendleton  
Robert Suydam  
Jan Straley  
John Gauvin  
Craig Matkin  
Lloyd Lowry  
Lance Barrett-Lennard  
Karl Haflinger (via telecon)  
Dee Allen (NMFS – Executive Secretary)

#### Observers:

Bob Gisiner  
Bridget Mansfield  
Rosa Meehan  
John Bengtson  
Suzann Speckman  
Doug Vincent-Lang  
Steve Amstrup  
Samantha Simmons  
Barb Mahoney  
Melissa Andersen  
Maria Jose Pria  
Karen Oakley (polar bears)  
Mark Udevitz  
Tim McCracken  
Jonathan Snyder  
Doug Burn  
Robyn Angliss (NMFS)  
Bryan Manly (via telecon)  
Andy Read (via telecon)  
Atlantic SRG (via telecon)

**ALASKA Scientific Review Group (SRG) MEETING**  
**AGENDA (FINAL Feb 1 2010)**  
US Fish and Wildlife Service  
1011 E. Tudor Road, Anchorage, AK  
February 3-4, 2010

**3 Feb. Wed**

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<u>8:30 am</u>	<u>min</u>
1. Adoption of agenda	5
2. Adoption of minutes from January 2009 meeting	5
3. Introductions and welcome	5
4. Administration, Travel, Membership	10
5. Election of new AKSRG Chair	10

**9:10-10:30 Briefings from the NMFS and USGS**

1. Updates on development of marine mammal Serious Injury policy (M. Andersen, NMFS)	15
2. Polar bears: key research findings, new work, critical habitat. Strategic update on climate change and the Arctic (S. Amstrup, USGS)	15
3. Status Reviews of ice-dependent seals (J. Bengtson, NMML)	10
4. Cook Inlet Beluga ESA listing and critical habitat designation; harbor seal stock assessment and co-management (B. Mahoney, MNFS)	15
5. Updates from John Bengtson, Director NMML AFSC Science Plan/ AFSC research foci and how they affect marine mammal stock assessments. How to address Alaska stocks that are currently lacking an abundance estimate due to survey data that are more than 8 years old. ~ 80% of AK stocks (~26 of 36) have survey data >8 years old or no abundance data.	20
6. Brief overview of new bycatch information for Federal fisheries (Angliss)	5

10:30-10:45                      Coffee Break

<u>10:45</u> Strategic updates, Alaska Marine Science Symposium (Kate, John, Jan, Robert)	15
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**Scientific reviews of the NMFS's Alaska Marine Mammal Stock Assessment Reports**

(Members are encouraged to contribute to each stock review, but specific reviewers are expected to have carefully reviewed their specific stocks and to lead those discussions. Please submit word-smithing and typographical corrections on electronic or hard copy. Stock leaders will bring substantive issues to the attention of the group.)

	Stock		Reviewer Leaders	
1.	Steller sea lion, western stock	Grey Pendleton 1	Kate Wynne 3	
2.	Steller sea lion, eastern stock	Lance Barrett-Lenard 1	Grey Pendleton 2	
3.	Northern fur seal	Lloyd Lowry 1	G. Noongwook 3	
4.	Beluga whale, Cook Inlet	Robert Suydam 2	Lloyd Lowry 2	G. Pendleton 3
5.	Killer whale, ENP, Alaska resident	Jan Straley 4	Craig Matkin 2	
6.	Killer whale, ENP, Northern resident	Lance Barrett-Lenard 5	Lloyd Lowry 4	
7.	Killer whale, GOA, AI, BS transient	Craig Matkin 4	Kate Wynne 5	
8.	Killer whale, AT1 transient	Craig Matkin 1	L. Barrett-Lenard 2	
9.	Killer whale, west coast transient	Lance Barrett-Lenard 4	Beth Mathews 5	
10.	harbor porpoise, Southeast Alaska	Beth Mathews 1	John Gauvin 2	
11.	harbor porpoise, Gulf of Alaska	Beth Mathews 2	Lloyd Lowry 3	
12.	harbor porpoise, Bering Sea	Robert Suydam 1	Beth Mathews 3	
13.	Sperm whale	Kate Wynne 2	Jan Straley 3	
14.	Narwhal (first SAR)	Robert Suydam 4	G. Noongwook 5	L. Lowry 5
15.	Northern right whale	John Gauvin 1	L. Barrett-Lenard 3	K. Wynne 6
16.	Humpback whale, WN Pacific	Jan Straley 1	John Gauvin 3	
17.	Humpback whale, Central N Pacific	Jan Straley 2	Craig Matkin 3	
18.	Fin whale	Kate Wynne 1	G. Noongwook 2	
19.	Minke whale	Jan Straley 5	John Gauvin 5	
20.	Gray whale	Beth Mathews 4	Craig Matkin 5	
21.	Bowhead whale	George Noongwook 1	Robert Suydam 3	
22.	Baird's beaked whale	Kate Wynne 4	G. Noongwook 4	
23.	Cuvier's beaked whale	Grey Pendleton 4	Robert Suydam 5	
24.	Stejneger's beaked whale	Grey Pendleton 5	John Gauvin 4	

*Notes: Contributions within the appropriate stock assessment reviews as follows:*

- 20. Reanalysis of gray whale abundance data 1967-2006 (R. Angliss, NMML)
- 16,17: Update on the Status Review process for humpback whales (Melissa Andersen, NMFS).
- 16-18. New recovery factors for humpback and fin whales; see Taylor et al. 2003 (Angliss)

(Stock Assessment Reviews of stocks 20-24 may occur on Thursday afternoon.)

4:30

Feb. 3 Wed.

**General issues for stock assessment review**

- 1. How to handle strategic stock assessments that are not being updated annually (polar bears, walrus, SW Alaska sea otters) and assessments not being updated fully every 3 years (3 harbor seals stocks). What are the issues and possible repercussions? (Discussion) 15
- 2. Other general topics 10
- 3. Closed session (AKSRG only): membership, etc. 20
- 4. Closing comments/discussion/planning 5

5:30 Adjourn for the day

**Feb. 4, 2010 Thursday**

**Day 2**

8:30 Overview of day's schedule  
(We will break for lunch from 12:00-1:00 and have a morning and afternoon break.)

8:40-9:40 Briefings from the UFWS and USGS

- 1) Sea otter critical habitat and recovery plan (D. Burn, FWS) 10
- 2) Update on Pacific walrus and responses to the AKSRG's letter (3/27/2009), status of stock, ongoing ESA review (R. Meehan, FWS); survey results and research plans (D. Burn, FWS) 20
- 3) Plans for modeling Pacific walrus population dynamics (M. Udevitz USGS) 10
- Questions/Discussion 20

9:40 Coffee break

10:00

**Fisheries Interactions and Bycatch Reduction Seminar**

*Goal:* To learn about new approaches to marine mammal bycatch data collection, analysis, and mitigation and to explore options or advances that might be appropriate to implement in Alaska.

<u>Background</u>	<u>min</u>
• Introduction (Mathews, UAS)	10
• Bycatch of marine mammals: What can we learn from the Atlantic SRG? (Andy Read, teleconference w/slides) Background reading: Read <i>et al.</i> 2006	20
• Questions and Discussion	10

10:40 – 11:15 Monitoring Fisheries Interactions Feb. 4 Thurs.

- List of Fisheries (LOF) criteria for including or changing species listed as having SI/M associated with different fisheries (Wynne, Angliss, Andersen) 5
- Is fisheries effort shifting from larger, fisheries with better (e.g., required) observer coverage to smaller, less well monitored fisheries? Is it appropriate to exempt smaller vessels from being monitored for marine mammal bycatch? 10
- NMFS updates on monitoring of State marine mammal bycatch and SE harbor porpoise; prospective Take Reduction Plan (TRP) for AK harbor porpoise; responses to AKSRG letter (May 2007). (Mansfield, NMFS) 20

11:15-12:10

Sampling and Analysis of marine mammal bycatch data

- Results of analysis of Federal Observer Program SI/M data since implementation of new database management (Angliss) 15
- AKR proposed sampling design for observing fisheries and estimating marine mammal bycatch (Bryan Manly, W. Ecosystems Tech) 15
- Incorporating uncertainty into bycatch estimates (Discussion w/B. Manly) 20  
Background reading: Caswell 1998  
Incorporation of uncertainty into mortality estimates  
Estimating bycatch with no specific observer data  
Should there be a target/max. CV for designing observer programs? (e.g., <0.3?)

12:10 – 1:30 LUNCH BREAK

1:30 – 2:10 Data collection and bycatch mitigation: new approaches

- At-sea Monitoring of Bycatch Using Electronic Monitoring Systems (Maria Jose Pria, Archipelago Marine Research, B.C.) 20
- Questions and Discussion 20

2:10 Bycatch Overview: Discussion and recommendations 20

2:30 COFFEE BREAK

3:00-4:30

- Final wrap-up of stock assessment reviews (SARs) and other business. 70
- Closing comments, action items and letters, topics for our 2011 meeting, and assignments 20

4:30 AKSRG Closed session.

5:00 Adjourn