Minutes: Seventeenth Meeting of the Alaska Scientific Review Group

17-18 November 2003
Anchorage, AK

This report summarizes the 17th 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. The revised agenda is included as Appendix 1 and the list of SRG members and observers present is provided in Appendix 2.

1) Adoption of agenda

After some discussion, Sue Moore's presentation of 2004 NMML research plans was moved from 18 November to 17 November. SRG members decided to discuss designation of entangled humpback whales when the SARs for humpback whales were discussed rather than give this a separate agenda item.

2) Adoption of minutes from March 2003 meeting

Kelly asked whether there were any final comments on the minutes from the March meeting; no comments were made and the minutes were adopted.

3) Administration

Angliss reminded the SRG to submit their travel vouchers promptly. SRG members asked why it was taking up to 9 months to get their vouchers processed. Angliss indicated that the individual who processes the travel had been out of the office a lot in 2003, and that SRG members with late vouchers should cc her on correspondence so she can ensure that the vouchers are processed in a timely manner.

Kelly questioned whether the SRG would like to discuss adding additional members to the group, but stated that, at the last meeting, the group had indicated that the group is satisfied with the current membership. Kelly noted that, at the last meeting, the SRG had asked Angliss to circulate a list of when each SRG member had been appointed. Angliss indicated that she believed this had been done shortly after the March 2003 SRG meeting and indicated that she would re-circulate the material.

SRG members noted that John Gauvin had not made some recent meetings and questioned whether a move should be made to replace him with another person who is knowledgeable about Alaska fisheries. Angliss indicated that the group had formerly identified Doug Woodby as a possibility, but that the SRG had also discussed the appointment of individuals with additional fisheries expertise in the past and had decided that the current fisheries representation is adequate. Kelly or Hills agreed to talk to Gauvin to confirm that he remains interested in participating on the SRG.

Kelly asked the SRG about the election of a new chair. Matkin nominated Sue Hills, Johnson seconded the nomination, and there were no dissenting views. Hills will be the chair as of the end of the current meeting. The SRG recommended that the chair rotates periodically, and that new chairs should be willing to commit to the position for more than 1 year.

4) GAMMS II meeting report

Kelly and Jan Straley attended the GAMMS II meeting in Seattle in September, and Kelly provided a summary of the main discussions at the meeting. The goal of the meeting was to revisit the PBR guidelines and decide whether any changes to the guidelines should be made. Because identification of stock structure was a major item on the agenda for GAMMS II, NOAA Fisheries provided workshop participants with a two day intensive course on conservation genetics prior to the workshop. Kelly indicated that there was more basic information covered in the course than really necessary (e.g., "what is a mitochondria") and that it probably would have been more helpful to spend more time on current analytic methods. Angliss noted that in the course feedback, many participants said that they spent too much time on really basic genetics information, and that other participants seemed to appreciate that the instructor started with the basics. Kelly noted that one good take home message was that there are "rules of thumb" about what a low, medium, and high F_{ST} value says about population structure. Based on the instructor's presentation, a F_{ST} value of 0-0.1 indicates little structure, a F_{ST} value of 0.1-0.2 indicates a moderate level of structure, and a F_{ST} value of > 0.2 indicates a highly structured population. (see page 3-27 in the conservation genetics workshop booklet). Barrett-Lennard noted that there is a fair amount of difference in F_{ST} values for different taxa; thus, the F_{ST} value of 0.15 for southern resident killer whales vs. northern resident killer whales is small relative to a F_{ST} value for different salmon populations, but large relative to a marine mammal population.

Kelly continued with the description of the GAMMS II meeting. After the minicourse on conservation genetics, there was a series of presentations on case histories regarding stock structure issues, including harbor seals, AT1 killer whales, bottlenose dolphins in the Atlantic, North Atlantic humpback whales, and harbor porpoise along California/Oregon/Washington. Some key issues discussed included:

- The use of the term "identifying" vs "defining" when talking or writing about stock differentiation. Because the use of the terminology "identifying stocks" implied that researchers and managers were "inventing" stocks, the preferred terminology should be "defining stocks".
- There was a good discussion about the importance of demographic isolation; the group seemed really concerned about defining stocks in situations where internal migration is more important than external migration.
- Kelly noted that the GAMMS II workshop participants agreed that the SARs should include an explanation of what evidence was used to separate stocks.
- The SARs will be published every 3 years, and minor updates to the SARs would be provided online. Lowry commented that an expanded FR notice might have to be written

if a marine mammal stock is proposed to change from non-strategic to strategic or vice versa. Barrett-Lennard suggested that if the status changes (either under the ESA or MMPA), the entire SAR should be reviewed, revised, and discussed by the SRG.

Kelly noted that he found it troubling that the group generally felt that if a species was generally homogeneous, morphologically, genetically and demographically, a stock could still be defined for some smaller unit if there are local actions that cause local depletion. Kelly stated that if this is the case, you'd have to know how long it would take for a depleted zone to be augmented by animals from other areas.

Barrett-Lennard questioned whether there is a move to allow an area that has been depleted be called a stock in order to preserve ecosystem function. Kelly was not sure that this was the case.

Kelly noted that the trend seems to be that smaller stock structure is found every time researchers look for it, and indicated concern that NOAA Fisheries may have to start managing very small population units, such as individual pods of killer whales.

Matkin noted that the GAMMS II workshop participants had recommended identifying provisional stocks of marine mammals for management purposes. Kelly stated that this recommendation occurred because of the agency's slow rate of defining new stocks. Angliss indicated that designating "provisional stocks" formalizes what NOAA Fisheries has already been doing with marine mammal stock assessments. For instance, the stock assessment report for central North Pacific stock of humpback whales now includes two "provisional stocks", as do some of the Atlantic bottlenose dolphin reports. Matkin added that if we had the option of "provisional stocks" a long time ago, the agency might have designated "provisional stocks" of harbor seals a long time ago. Kelly indicated that there was some concern on the part of GAMMS II workshop participants about using the term "provisional" stock, so the term adopted will probably be "prospective." Lowry reiterated that this was essentially a formalization of how stock designation has been dealt with recently.

Matkin noted that NOAA seems to be getting more hesitant to divide stocks and that there seems to be a requirement to have more information prior to defining stocks. He felt that having the option of "provisional stocks" provides the agency a way to get around this problem.

Barrett-Lennard commented that he approved of the addition of a paragraph that indicated a PBR level should not be calculated for a stock that is declining rapidly.

Beth Matthews asked whether the GAMMS II participants discussed whether there should be a different default Rmax for baleen vs. odontocete whales. Angliss noted that most of the meeting involved stock structure issues, and that Rmax was not discussed at length. However, the Pacific SRG has adopted the Rmax approach in the Taylor paper. Straley indicated that the Rmax and serious injury discussions were short, which she found very disappointing because the Alaska SRG has had some serious problems with those issues.

Kelly noted that Paul Wade's presentation on the stock structure of AT1 killer whales was fantastic and asked how his synthesis of information would be incorporated into a revised SAR. Angliss indicated that the information would be incorporated briefly, but that much of the material would only be referenced.

Kelly noted that, if separate SARs were written for each stock, the SRG could have to review a very large number of reports. The issue of how the SRG evaluates the evidence requires some careful scrutiny. For instance, if we just say that two areas are different based solely on different population trajectories, we could designate the Glacier Bay harbor seal population as a stock just because the group of seals at the glacier moves to another area.

Lowry and Mathews both commented that the SRG should review the material used to define stocks when the SARs are reviewed. Mathews added that one way to address this would be to revise the SARs to list the Dizon et al criteria in the order they were used to define the stocks and provide references that support each decision.

Kelly noted that including all of this information would make the SARs very long, and that the SRG should comment on the revised PBR guidelines, and that not all this information should be put in the SARs.

Kelly added that, at the GAMMS II workshop, the participants supported the concept that NOAA Fisheries should "guess" at what the stock structure should be based on similar stocks when there is a situations where information for designating stock structure is inadequate. Kelly stated that he was uncomfortable with this approach, given that even similar species may have very different stock structure.

The SRG discussed the statement in the draft revised PBR guidelines (page 9, 2nd sentence) that the GAMMS II workshop participants agreed that mortality should be prorated when you have a mixed stock situation. Kelly and Straley's sense of the GAMMS II group was that this concept was presented, and that staff at both the Southwest Fisheries Science Center and along the Atlantic prorate mortalities for mixed stock situations, but that staff at the Alaska Fisheries Science Center does not prorate mortalities, and that the Alaska SRG supports this approach. The Alaska SRG disagrees with the 2nd sentence of the paragraph, **which states:**

> "When biological information is sufficient to identify dead animals by stock, then mortality estimates should be partitioned by the proportions of each stock included in the observed mortality."

Sue Hills commented that, in the current guidelines, there is a lot of guidance about how to select recovery factors. Kelly added that the current guidelines recommend that default values of Rmax only be changed when you have reliable stock-specific information.

Angliss noted that GAMMS II workshop participants mentioned a few cases where there are inconsistencies between how the different SAR authors are addressing issues (e.g., prorating

mortalities or not, what constitutes "serious injury"). The SAR authors plan to meet during the spring of 2004 to discuss inconsistencies and decide how (or whether) the inconsistencies should be addressed.

Angliss indicated that the next step for the revised guidelines resulting from the GAMMS II workshop is to request that agency leadership review and approve the revised guidelines, then release the guidelines for public comment. Angliss indicated that she would relay the SRGs comments on the GAMMS II workshop to Eagle for his consideration prior to circulating the draft revised PBR guidelines to the agency leadership.

5) Walrus population estimation

Kelly introduced this agenda item by reminding the SRG that they had decided a few meetings ago that they should meet annually in Anchorage to allow the USFWS a convenient venue for providing updates on the species that they manage.

Doug Burn provided an update on the FWS' attempts to estimate the population of Pacific walrus. He indicated that, at the November 2002 meeting of the SRG, he gave a presentation on their 2002 walrus research using a high resolution camera system and a thermal imaging system. At this meeting, Burn provided an update on research conducted with both systems.

Airborne Thermal Imagery Survey of Pacific Walrus

From 5-10 April 2003, the FWS conducted aerial transects around St. Lawrence Island at an altitude of 10,500ft using thermal imagery to find "hotspots", which indicate the presence of walrus groups. Once the hotspots were found, the researchers returned to the area to do aerial photography of the area so that the number of animals in the group could be documented. On April 10, the FWS coordinated satellite imagery with their aerial transects for thermal imagery, and recorded the same walrus groups from the aircraft and from the satellite.

The FWS also flew transects near Nunivak Island on 17-18 April 2003. They recorded lots of walrus in this area.

Burn summarized the basic results of the study as follows:

- the FWS flew surveys on 7 days
- researchers scanned 30,000km^2 of thermal imagery, which involved 50GB of data
- the FWS has analyzed all but 2 transect lines and have isolated 62 hotspots so far
- high resolution aerial photography was conducted over 50 walrus groups

Burn noted that the FWS crew hopes to fly surveys out of Murmansk, Russia this spring.

Kelly questioned whether there was any sense of the range of conditions when thermal imagery is most effective. Burn noted that thermal imagery works better when the air temperature is

colder, because there is higher contrast between ice, water, and walrus bodies. Also, when you can easily distinguish between ice and water, it's easier to match aerial photographs with the thermal imagery.

Mathews asked whether the thermal imagery is capable of detecting other pinnipeds. Burn responded that, because the resolution on the thermal imagery equipment is 4m and most other pinnipeds are smaller than this, it's unlikely that pinnipeds other than walrus will be detected. This is supported by field observations: every time the FWS has used aerial photography to confirm a hotspot, the hotspot has consisted only of walrus.

Burn added that the FWS is currently developing a new thermal imagery scanner that will allow flights at 20,000ft to detect walrus groups. Flying at that altitude will greatly increase the width of the strip imaged on each transect, and allow much greater aerial coverage during a survey.

Development of a correction factor for time spent in the water

Chad Jay described the results of his recent work to develop tags for walrus so that the proportion of time that the animal spends on the surface can be determined. There are two major challenges to this work: developing a remote delivery system for the tag, and retaining the tag on the animal. The research program started in earnest in 2002, when a crossbow was used to attach tags to 5 females on the ice floes. However, those tags were not retained on the animals for more than 5 days. In 2003, a different tag design was used on males. However, there were problems with retention time for those tags as well. In 2004, the USGS will be trying a new type of tag design developed by Jeff Goodyear of "Habit". Eight tags have been tested; these new tags also record conductivity (salinity) in 20min blocks of time. The results of the tag tests was that one animal retained the tag for 2 weeks; other animals lost the tags almost immediately.

Jay reported that Telonics has adopted a 2-barb system for their tags. These were deployed on 8 walrus at Cape Seniavin. Anderson questioned where the tags were attached. Jay responded that they are attached at the midline of the animal from about 10m distance. The midline is the best place to attach the tags because of the thickness of the blubber in that area. Also, the midline attachment is most effective because the antennae will likely be out of the water and able to transmit frequently. Jay reported that tag retention was more consistent for the double-barbed tag: this tag remained on the animals for at least 5 days and up to 2 weeks. Jay will be investigating a few additional tag designs this spring, such as a single-post transmitter and a fully implantable transmitter. In addition, some tags will include an antibiotic mixture on the head of the transmitter that will hopefully decrease the chances of infection and increase the length of time the tag is retained.

Straley questioned how long the FWS would like the tag to remain on the animal. Jay indicated that a 2 week retention time would be good. This would provide information on a few complete haulout cycles and allow the researchers to estimate the amount of time spent hauled out. Ideally, the tags would be applied just prior to an aerial survey for population abundances, and the information on the tagged animals could then be used to correct the data for animals not

visible during the survey. Jay indicated that in 2004 and 2005, they will be testing 2 additional tag designs on female walrus hauled out on ice floes.

Jay noted that there are several covariates for time-in-water for walrus, such as prey abundance, haul-out substrate, reproductive status, age class, gender, etc. Because the aerial surveys will likely occur on clear days with northerly winds, the time-in-water correction factor for the abundance surveys would have to be estimated under similar conditions.

Mathews questioned whether carcasses had been used to test the attachments; carcasses could be towed behind a boat to determine whether attachments were likely to work. Jay indicated that they had hoped to do this, but had not received the tags in time in 2003. However, they have been able to test the attachments on large pieces of blubber. In the future, Jay may use the pneumatic projector technology adopted for whales by Mads-Peter Heide-Jorgensen.

Kelly pointed out that the tag work is being conducted with the goal of using tag data to correct an aerial count and allow an abundance to be estimated, and questioned when this step would be taken. Burn replied that, if all goes well, abundance could be estimated in spring of 2005. Delaying the development of a full population abundance estimate to 2004/05 is necessary in order to ensure good results from both the thermal imagery and the tagging. In addition, once the analysis of the surveys near St. Lawrence Island are completed, they will have a better idea of the amount of flight time, days of thermal imagery data, etc, needed to complete an abundance estimate. In addition, the FWS is currently coordinating with Russian researchers to obtain a count of walrus in the western Bering Sea; coordination is ongoing, but additional time will be needed to calibrate Russian equipment so that roughly comparable methods are used by both research teams. Burn indicated that, if the thermal imagery is calibrated, the tagging works, and the Russian research team is prepared, an abundance survey could be flown in spring of 2005.

6) Sea otter listing

Meehan provided an update on the status of the proposed rule to list southwest Alaska sea otters as a distinct population segment under the Endangered Species Act. The proposed rule was sent to the Washington, D.C. office in the fall of 2002, but the rule has not yet been cleared for publication in the Federal Register. As illustrated in the handouts provided to the SRG, the summer 2003 surveys in the Aleutian Islands made it clear that the population decline in that area has continued. Over the past three years, there has been a 63% decline overall and Attu has experienced a decline of over 90% since 1986.

Straley asked how the FWS aerial surveys compare to those conducted by Estes. Burn indicated that the same methods are used for both and that no correction factor for animals missed is applied. Angie Doroff (FWS) added that, if the decline had been due to movement of animals offshore, the movement would have been observed during the course of offshore surveys being conducted concurrent with the coastal surveys. Burn added that the question of otter movement to other areas is always raised, but no-one can say where 65,000 sea otters could be hiding.

Matkin questioned whether there was a lot of support for listing from the public. Burn indicated that the FWS did a lot of outreach last year and that the constituents seemed unsure of what the impacts of listing would be. Matkin asked whether the delay on the part of the FWS is being caused by internal politics. Burn responded that the workload in the FWS is primarily driven by court order right now, so it can be very difficult to make progress on issues that are not currently being addressed by the court.

Kelly asked for details about the implications of listing sea otters. Burn indicated that listing would trigger interagency consultations for all federal actions; however, consultations on these actions started a few years ago when sea otters were designated a candidate species. If sea otters are listed, the FWS would be required to convene a recovery team, and would hope to receive additional funds to continue population monitoring and identify the vulnerability of the population to current and future threats. Meehan added that, under Section 6 of the ESA, once the species is listed, they could enter into cooperative agreements with the State of Alaska. Partnerships with the state could be very important since sea otters primarily live in state waters.

Bob Small (ADF&G) asked about the plans for additional population survey work. Meehan indicated that the Alaska SeaLife Center recently received pass-through funds for conducting a population monitoring study. The ASLC will be hosting a workshop to discuss the study design in the near future. Burn added that method used for the last set of aerial surveys was driven by the method used in the past, so three different survey methods were used in different parts of Alaska. However, it has become apparent that they need to consider re-designing their surveys. The technique used at Kodiak, where animals are counted several times in order to correct for animals missed on the first pass, is not used elsewhere in Alaska. The FWS will continue to use skiffs to assess local trend sites, but more broad aerial surveys will probably be done elsewhere.

Hills questioned whether sea otter habitat research that has been done by Estes would continue. Burn responded that the type of research Estes pursued generally has not been pursued elsewhere in Alaska. Similar studies around Kodiak Island would be particularly useful because there is existing historical information that could be used for comparison. The FWS did receive some funds to conduct a 3-year telemetry study beginning in 2004. Ideally, it would be very useful to look at otter behavior at both Kodiak and the Shumagins, but it is considerably more difficult to work at the Shumagins. In response to a question from Hills, Burn indicated that the FWS does not know how much additional funds would be provided if the species is listed, but they do have some funds to leverage with the ASLC and they hope to receive more.

The question remains: what happened to 65,000 sea otters "lost" to the population? Burn indicated that they have noticed some very unusual sea otter behavior. Doroff related that, in the Near Islands, otter density is very low (1 otter every few km), so the social integrity in the area is gone. Oddly, when the research skiff came by, a female otter with a pup immediately hauled out on a rock and hauled her pup roughly up the rock as well. This behavior seems novel based on historical observations, but others have seen this recently. In addition, there have been several orca sightings around the Near Islands.

Barrett-Lennard commented that killer whales will turn harbor seals inside-out, and their pelt will later wash up on the shore, and asked whether anything similar occurs with sea otters. Doroff indicated that they have walked the beaches and have not seen skins.

Burn mentioned that they have also looked at data from other cruises that have occurred in the sea otter range. The vessel survey for murrelets west of Castle Cape didn't have a single sea otter sighting along the coast; a few years ago, they saw 500 otters on the same trackline.

Ralph Anderson asked whether there are any data on sea otter population abundance and trend on the Pacific side of the AK Peninsula (e.g., in Shelikof Strait). Burn indicated that there has been no evidence of a decline in that area; in fact, surveys indicated that there has been an increase in the population, and large numbers of otters were seen in Chignik Lagoon. Anderson stated that he had heard from people at Port Heiden that sea otters travel over the Alaska Peninsula by land. Burn confirmed that there had been observations of that type during heavy ice winters in the early 1990s.

Barrett-Lennard indicated that the Canadian government has just started funding sea otter research, and that they seem to have a rapidly expanding population.

7) NMML research update for 2004

Sue Moore provided a brief update on NMML's budget and planned research for 2004. As of the date of this meeting, Congress had not yet passed a budget for the Department of Commerce. However, based on the Senate mark, much of the MMPA and ESA monies used to support NMML's research had been eliminated. If the Senate mark goes through, much of NMMLs research will be vulnerable. With that in mind, the following are projects that are planned:

- A mark-recapture study of bowhead whales using aerial photogrammetry was initiated in 2003, and will continue in spring of 2004.
- NMML and the Southwest Fisheries Science Center will continue to pursue the "SPLASH" humpback whale assessment project. Funds have already been obligated for the winter surveys in Hawaii in Dec 2003-Mar 2004; funds for surveys in Alaska during the summer of 2004 are not yet available. NMML/SWFSC plans to use 120 days on the NOAA R.V. MacArthur in Alaska to conduct transects, photo-identification, and biopsy work on humpback whales in the Gulf of Alaska if funding levels allow.
- NMML has completed the third year of surveys for killer whales in western Alaska and plans to complete a mark-recapture abundance estimate early in 2004. In 2004, NMML hopes to conduct another survey from Unimak Pass to Tanaga Is.
- The funds used to study right whales in the Bering Sea may not be available in 2004, so little research on right whales is planned for 2004. Three additional acoustic recorders have been built, but NMML lacks the funds needed to charter a vessel and deploy the instruments. Analysis of recorders placed in the southeast Bering Sea in the past has shown that right whale calls occur from late May through at least early November. Moore is currently developing a North Pacific Research Board proposal for deploying the

instruments in the Gulf of Alaska; if NMML receives the funds, they will be able to do another large scale acoustic project.

- The priorities of the Steller sea lion research program have remained roughly the same as last year. Priorities include: brand resight cruises, pup counts, assessment of body condition, foraging behavior, and genetics. The SWFSC staff has taken over responsibility for the aerial surveys. Due to decreased funds, there will be fewer cruises on the Tiglax in 2004.
- Moore announced that the Senate budget mark for 2004 included an additional $2M for harbor seals in Alaska; it is not yet clear how the $2M would be divided between organizations and agencies doing harbor seal research, but it is clear that NMML would not use the entire $2M in-house. Abundance surveys are rotated around the state, and the Aleutians will be surveyed in 2004.
- In 2003, Congress appropriated $250K for ice seals, which was split in between NMML and the ADF&G. There have recently been two meetings of Alaska Natives to discuss the formation of an ice seal comanagement committee; these meetings have also been supported in part by the funds appropriated by Congress.
- Moore indicated that the North Pacific Fishery Management Council recently asked that a special group be convened to discuss the decline of northern fur seals.
- The Cetacean Assessment and Ecology program conducted an aerial survey in Southeast Alaska for small cetaceans in 2003. Provided that funds are available, surveys of the central Gulf of Alaska and the Bering Sea will be conducted in 2004 and 2005, respectively.
- Moore closed by stating that NMML hopes to know its budget, and thus what research can be conducted in 2004, very soon.

Meehan added that the FWS budget has been steady for the past few years. In 2003, they received a special appropriation of $1M that was used to fund walrus research and to front-load aerial survey contracts for the range-wide abundance surveys planned for 2005.

Straley asked whether budget cuts at NMML could results in loss of staff. Moore responded that budget cuts may limit hiring of contractor personnel, but that no permanent staff will lose their positions.

Hills questioned why the northern fur seal population is declining. Moore responded that the reason for the decline was unknown, but that it has become apparent that the fishery management measures taken to protect Steller sea lions have pushed the fisheries into areas where fur seals forage. Hills asked whether critical habitat for northern fur seals would be designated; Moore responded that this could occur. Angliss clarified that, at this time, northern fur seals are listed as "depleted" under the Marine Mammal Protection Act, and that designation as "threatened" or "endangered" under the Endangered Species Act would be required before critical habitat could be designated for this species.

Kelly asked for clarification regarding how NMML would handle a budget cut of up to 30%. Moore indicated that this cut would have to come out of specific research projects.

Small asked what would happen with Cook Inlet beluga research if the Senate mark was enacted. Moore responded that, technically, the Senate mark eliminates the funds for the Cook Inlet beluga research. However, due to the importance of this stock, NMML would have to figure out how to fund the research regardless of whether Congress appropriates the funds. In response to a question from Kelly regarding why NMFS' budget was being reduced, Moore indicated that the prevailing rumor is that NMFS' was not particularly good at providing requested budget information in the right format to the right people in Congress.

Kelly noted that there has been a recommendation from some members of the Alaska Native community that management authority for ice seals should be moved from NOAA Fisheries to the FWS. Moore confirmed that there had been Congressional testimony provided by some Alaska Natives that ice seals should move to FWS, and that NOAA Fisheries is very interested in retaining management authority for ice seals. Johnson added that recent recommendations from the Alaska Native community included that the Nanuuq Commission and IPCOMM should discuss who in the community should be involved in the comanagement of ice seals, and the resulting body would develop a proposal to NOAA Fisheries that would describe how they would like comanagement to be carried out. Johnson further indicated that representatives on the committee will be obtained from Kawerak and other organizations. Anderson added that the good part of the situation is that we are not yet at a critical point with ice seals, so there is some time to set up a comanagement committee. The group being set up now will be a planning committee. The last meeting regarding ice seals was attended by NOAA Fisheries (Barb Mahoney) and ADF&G (Lori Quakenbush); at that meeting, Quakenbush alerted the Alaska Native community about the $250K that the agencies received for ice seals in 2003. Johnson indicated IPCOMM would like to see management authority for ice seals shift, and that the group of 5 individuals involved in the planning meetings will make recommendations regarding how management should change.

In response to a question from Small, Anderson indicated that the results of the last ice seal comanagement meeting were already presented to the Bristol Bay Native Association and the group was asked to appoint a representative. Johnson added that regional meetings in the communities will occur before the February planning meeting on ice seal comanagement.

Kelly asked for an update on MMPA reauthorization. Johnson indicated that he had just returned from DC and that the latest estimate is that reauthorization will occur in April or May of 2004. The committee has drafted language, but it does not include new section 119 language, including language regarding harvest management, because of Congressional discomfort about issues of tribal authority, sovereignty, and potential requests for funding for comanagement groups.

Meehan added that the most recent version of the MMPA bill is on the House floor, and the Senate version is lagging well behind the House version. Another contentious issue is a new statutory definition of harassment: the Department of Defense bill included a new definition of harassment for the military and for federal researchers, so there may soon be two different legal standards for what constitutes "harassment".

8) Updates to the 2004 Stock Assessment Reports

Angliss indicated that there are two major issues with the 2004 draft SARs. First, because the draft 2003 SARs were released to the public for comment very late in 2003, the public comments on the SARs have not yet been received and there may be some changes to the SARs as a result of these comments. Second, there are two draft SARs for 2004 that are still in progress and are not yet available for comment by the SRG. These two SARs, for bowhead whales and the eastern stock of Steller sea lions, will be circulated electronically to the SRG for comment in late 2003 or early 2004.

Steller sea lion - western stock An SRG member commented that the current draft SAR fails to mention that John Bickham has a paper coming out in 2004 that will argue for 3 stocks: an Asian, western, and eastern stock. Bob Small added that the Steller Sea Lion Recovery Team has recommended that the western Steller sea lion distinct population segment be separated based on these genetic results. Lowry noted that these new results will not mean a change in the SAR if the boundary between the proposed Asian and western DPS units is the demarcation line between US and Russian waters.

Lowry and Wynne asked why a correction factor has not been calculated to adjust for Steller sea lions missed while at sea. Angliss responded that this has come up at previous SRG meetings, that she has confirmed that NMML researchers are confident that a correction factor is unnecessary and that the current method of calculating Nmin is adequate.

Northern fur seals A SRG member mentioned that the Ream (2002) reference is Ream's dissertation, and questioned whether it was appropriate to use this in the SAR. Angliss recommended that it be retained, as other SARs include information from dissertations when that is the best information available. The SRG recommended that the counts for northern fur seals should not be averaged over 3 years, and that the most recent year should be used as the basis for calculating a PBR level. This change is important because the population is in decline and using the average artificially inflates the PBR level. The SRG asked again whether the 4.5 multiplier is appropriate to correct for animals not on the rookery when the counts are made. Angliss noted that this concern had been raised before, that she had queried NMML staff about this issue, and that NMML staff felt that this value was still the best available.

Cook Inlet beluga The SRG noted that the vulnerability of this population is extreme and it is not clear why NOAA Fisheries is unwilling to set the recovery factor for the PBR equation at 0.1. Lowry noted that the SRG has made this recommendation before and should go on record again that the recovery factor should be set at 0.1. The SRG noted that the habitat concerns section included some language that should be revised.

Sperm whale Wynne noted that a sperm whale calf was found stranded in Alaska approximately 3 years ago, which indicates that calves are now coming up into the Gulf of Alaska. Straley said that she obtained approximately 14 additional genetic samples from sperm

whales in 2003. Straley noted that there have been increasing interactions between sperm whales and the longline fishery and that this should be referenced in the SAR. Straley will try to track down the reference; mention of this issue may also occur in the sablefish SAFE report.

Beaked whales Angliss noted that the beaked whale SARs had been updated for the first time since the SARs were first published. Wynne noted that there should be some reports of ship strikes of Cuvier's beaked whales; Mathews and other SRG members added that there have been several stranded Cuvier's in Southeast Alaska in recent years.

Fin whales The SRG stated that the Mizroch et al manuscript regarding fin whale stock structure should be incorporated in the SAR once it is in review by a journal.

North Pacific right whales Barrett-Lennard noted that NOAA Fisheries had received a petition to designate critical habitat for right whales, and asked why "the box" where animals had been observed had not yet been designated. Moore responded that the "whipsnake decision" has forced NOAA Fisheries to adhere to higher standards when designating critical habitat. That decision states that the constituent elements that are necessary for the species in an particular habitat must be known before critical habitat can be designated; thus, it is no longer sufficient to simply observe that animals occur in a particular area. While AFSC staff (Jeff Napp) has oceanographic data for that area, we do not yet understand what constituent elements are in the area and are responsible for the animals using the area. Barrett-Lennard asked whether the SRG could recommend some language to add to the SAR that a box around the right whales distribution should be called a "reserve". Angliss indicated that the SARs is not the appropriate way to declare a "reserve" for animals. Barrett-Lennard asked whether ship strikes would be a problem in "the box". Moore responded that ship strikes in the Atlantic are common because right whales overlap with shipping lanes, but there are no shipping lanes near areas where right whales have been found in the Bering Sea. Lowry pointed out that any type of fishing in the area means that there is some chance that right whales will entangle in the gear.

Anderson questioned what could be accomplished by drawing lines on a map to conserve animals in a particular area, and stated that the focus should be on obtaining population abundance and trend information. Barrett-Lennard stated that there is no time to get reliable estimates of abundance and trend, because the population level is extremely low and every animal is critically important to the survival of the species. Kelly added that researchers only recently discovered that this species still existed in the North Pacific.

The SRG indicated that it would be extremely helpful for right whale conservation to pursue two lines of research: 1) acoustic receivers, which will provide information on seasonal presence of right whales in large areas of Alaska, and 2) satellite-linked tags, which will provide information on where animals are located during non-summer months. The SRG recommended that these research needs be stressed in a letter to NOAA Fisheries.

Johnson questioned whether information on right whale calls could be obtained from the Navy. Moore responded that most of the Navy assets were better for recording low frequency sounds,

not high frequency sounds. In addition, the area where the right whales have been seen is far too shallow for the Navy to place assets in the area. Thus, Navy assets are not that useful for detecting right whales.

The SRG asked about overlap between the commercial crab pot fishery in the Bering Sea and the area where right whales have been seen. Angliss indicated that it has been thought that there is little seasonal overlap between right whales and the crab pot fishery; however, now that right whale calls have been detected in this area between May and November, this should be revisited. Hills noted that, at a minimum, the crab stock assessment reports should note where right whale sightings have occurred; this would raise the awareness that the whales are in the area.

The SRG questioned why the Yakutat Bay sightings from the 1970's just "turned up". Angliss responded that nobody thought to review the old Platforms of Opportunity database until just recently.

Blue whales

The SRG noted a few areas where the SAR should be expanded to better encompass the full range of the stock. For instance:

- The map for the western North Pacific stock of blue whales be extended to show the distribution into areas other than Hawaii, including the Gulf of Alaska
- The section on human-caused mortality and serious injury should be expanded to consider Alaskan fisheries. The statement "Gillnets appear to capture marine mammals wherever they are used" should be struck, as it is not the case in Alaskan waters.

Humpback whales - Central North Pacific

Stock structure

The SRG asked whether the CNP stock structure would be modified to separate the Southeast Alaska feeding aggregation. Angliss responded that the Southeast Alaska group has already been separated out in the SAR as a provisional stock in the draft SAR for 2003, and that this was likely to go into the final SARs for 2003, pending receipt and review of the public comments. An SRG member noted that the migratory destination of the whales that winter offshore Mexico is unknown, but what little information we have indicates that they migrate all over the North Pacific. Forney is revisiting the idea of adding the offshore Mexico animals as a 4^{th} stock of humpback whales. New stock assessment reports for humpback whales will not be developed until the results of the SPLASH research planned for FY03 and 04 are available.

Maximum rate of increase

The AK SRG reviewed the annual rates of increase for various populations of humpback whales, including two rates from recent studies for the central stock (Mizroch et al. and Mobely et al.). Mizroch et al estimated a trend of 10% in a paper focused primarily on estimating adult survival for the central stock. Mobely et al estimated a trend of 7% for 1993-00 using data from aerial surveys that were conducted in a consistent manner for several years across all of the Hawaiian

Islands and were developed specifically to estimate a trend for the central stock. The SRG recommended that Rmax should be increased to 7% based on the focused study by Mobely et al., and recommended that the SAR should also note that Rmax may be as high as 10% based on Mizroch et al.

Serious injury test

Background: The MMPA requires that commercial fisheries be classified based on "serious injuries and mortalities" of marine mammals in those fisheries. Fisheries placed into Categories I or II using serious injury and mortality information are required to reduce their impact on marine mammals. Guidelines for determining what should constitute a serious injury were developed in the mid-1990s, but NOAA Fisheries did not develop regulations to solidify the guidelines. At previous Alaska SRG meetings, members have indicated concern about the criteria used to determine whether an injury is considered "serious". Concerns include:

1) the guidelines indicate that injured animals are either alive (injured) or dead (seriously injured), and do not allow for intermediate, or probabilistic, values for animals that may die as a result of their injury;
2) the determination of "serious" vs "non-serious" injury is a judgment call that may not be done correctly; and
3) the serious injury guidelines were developed in the mid-1990s, and there may now be sources of information provided by the scientific community that could provide substantial additional information on whether an animal is likely to die as a result of a particular injury.

In order to shed additional light on the problems with the current serious injury guidelines, Alaska SRG members were provided with a list of injuries to humpback whales and asked to determine, using their best professional judgment, whether the injuries were sufficient to be considered "serious". The results of this "test" are provided in Appendix 3, and the results were discussed at length at the SRG meeting.

Observations and Discussion:

The "test" resulted in the following observations and discussion:

- Observation: SRG members who reviewed the stranding records often felt that there was insufficient information to determine whether the animal was likely to die as a result of the injury/entanglement.
  Discussion: There was general recognition that, is most cases, determining whether an injury is serious would require a considerable judgment call. NOAA Fisheries could consider adding more "prompts" to the stranding form so that additional information could be requested, but from a practical standpoint, many of the entanglement reports are provided via telephone after-the-fact by fishermen or recreational boaters, and it is unlikely that they would be able to reliably report an additional level of detail.
- Observation: Some SRG members felt that the greatest weight should be placed on in-field determinations of the severity of the injury when the observer was experienced in cetacean entanglement/injuries.

- Observation: It would be most useful if a "probability of mortality" was assigned to each injury/entanglement instead of using the black-and-white "serious injury" or "not serious injury" terminology.
  Discussion: Angliss noted that the MMPA requires that the agency make the serious/not serious call, and that neither the statute or the serious injury guidelines allow for probabilities to be assigned. In addition, given the lack of consensus on the SRG about whether some injuries should be considered serious, it seems unlikely that consensus would be improved by attempting to assign "probability if mortality". The final recommendation from the SRG was to add a third option, "unknown", so that the SAR would be clear about situations where insufficient information is available to make a informed judgment call. NOAA Fisheries managers could then decide whether to lump the animals with "unknown" outcomes with "serious injuries" or non-serious injuries for fishery management purposes. Although adding this information to the table would not be consistent with how other SARs are written, the Alaska SRG felt that accurately reflecting the level of information available was more important than national consistency.
- Observation: The table of information on injured/entangled whales provided in the SARs could be improved.
  Discussion: Some SRG members felt that the level of detail historically provided in the SARs is insufficient to describe why a particular injury/entanglement should be considered a "serious injury". There was wide recognition that a balance should be struck between summarizing information to a point that it is no longer very useful, and providing all information available. The final recommendation was to include substantial detail about injuries/entanglements for the most recent year, and add a summary of entanglements as an appendix to the SARs.
- Observation: In the past, summarized data on entanglements and injuries were used to determine whether an incident should be considered "serious".
  Discussion: The decision regarding whether an injury/entanglement should be considered "serious" should only be made after reviewing the original data. Summaries should not be used.

The SRG restated that the Center for Coastal Studies has a longitudinal database on right whales that have become entangled, and that a survival rate for different entanglement types could be calculated from this database. Angliss indicated that she had located the individual responsible for this database, and that the individual had been in the field and had not yet responded. However, discussions with other informed parties indicated that an analysis of survival rates for different types of entanglements would not be forthcoming[1]. Some SRG members noted that the fishing gear on the east coast is substantially different from that on the west coast, and that extrapolations from one coast to the other may not be ideal. However, there appeared to be a general feeling that the CCS database provided the best current opportunity for estimating the

[1] Informed parties indicated that the sample size for any type of entanglement would be small, hence linking the outcome of specific types of entanglements to a probability of survival is likely to be unpredictable/imprecise.

probability of survival after entanglement.

The SRG recommended that NOAA Fisheries improve the guidelines for determining what should constitute a serious injury to a marine mammal. The SRG further recommended that a panel of experts, including Alaska SRG representation, should be convened to address this issue. Prior to the meeting, a checklist of entanglement types should be developed and circulated, and NOAA Fisheries should work with and/or fund the CCS to analyze longitudinal data on right whales to get better predictions about the the outcomes of entanglements. Angliss noted that the need for regulations that define serious injury had been brought up at recent national meetings of NOAA Fisheries marine mammal staff and highlighted as one of the most critical issues for headquarters. However, NOAA Fisheries staff at the SRG meeting indicated that the current guidelines seemed pretty clear (injuries should be considered serious if they impede movement or feeding), and that improving upon these guidelines seemed unlikely.

The Alaska SRG decided that they should redo their "test" to determine which injuries are serious using the current guidelines, but use the raw data sheets rather than summarized information. SRG members participating in the exercise would keep track of why they made a particular judgment call. A subgroup (Straley, Mathews, Lowry, Hills, Matkin, Wynne - lead) to tackle this issue was developed to review the original data sheets and provide feedback to Angliss by late December 2003.

In summary, the recommendations from the SRG regarding serious injury were as follows:
(1) reconvene the serious injury workshop w/Alaska SRG representation;
(2) develop a checklist that a decisionmaker would go thru to help decide whether something is serious;
(3) look at available data from the Center for Coastal Studies and other sources to determine survival rates of injured/entangled whales; and
(4) the SARs should include information about the amount of information available to the agency to determine whether an injury should be considered serious.

Humpback whales, western North Pacific The SRG considered whether the Rmax should be increased for this stock as it was increased for the central North Pacific stock. Angliss noted that the PBR guidelines recommended only using stock specific information, but they are only guidelines, and we now have good information indicating that 7% is a more realistic Rmax for a closely related stock in the same ocean basin. Lowry recommended using 7% for the western North Pacific stock and other SRG members concurred.

Wynne noted that, at the GAMMS II workshop, there was a recommendation to pro-rate mortalities to stocks when commercial fisheries may be taking individuals from more than one stock of marine mammals. Historically, we have not had sufficient information to do this in Alaska, so 100% of fishery take is assigned to multiple stocks. SRG members generally felt that pro-rating in Alaska was not useful because of insufficient information about stocks.

Bowhead whale and eastern Steller sea lion stock assessment reports Angliss noted that the

bowhead whale and eastern Steller sea lion stock assessment reports are yet to be updated because of missing information on fishery-related mortality and on population abundance, respectively. These will be circulated to the SRG for comment electronically.

9) North Pacific killer whales

Barrett-Lennard provided a brief summary of the recent genetics analysis conducted on North Pacific killer whales. He indicated that he recently drafted a white paper that describes his microsatellite analysis conducted last year in response to receiving both samples of transient killer whales and research funds from NMML. These funds were provided in order to determine whether the AT1 group could be part of a larger group of related transient killer whales. Although the "AT1 genotype" was found in transient killer whales that are not part of this group, the gene frequency in the groups is markedly different, which is a strong indication that they are distinct groups. In contrast, mtDNA studies suggest that the western Alaska transient killer whales are closely related. Assignment tests also indicated that AT1 animals clusterred well, while the animal with the AT1 genotype sampled in western Alaska was not known to associate with the AT1 group.

In response to a question from an SRG member, Barrett-Lennard indicated that the AT1 group ended up with a single haplotype, and that there are also very few haplotypes in the resident populations. This is likely caused by lineage splitting. Mathews asked whether Barrett-Lennard can use the genetics to conclude how long the population has been separate from other populations. Barrett-Lennard indicated that some researchers would attempt to use genetics to hypothesize how long a population had been separate, but the estimated length of time is dependent on models that assume random breeding; since we know that random breeding doesn't occur, the models are unreliable. Estimates of the length of time could be developed, but would likely result in large confidence intervals. In addition, only nuclear, not mtDNA, could be used for this purpose.

Angliss indicated that updates on killer whale genetics, stock abundance estimates, and rates of increase would be very useful because the killer whale stock assessment reports need to be updated in 2005, and for new information to be included, it must be available to the agency by late summer of 2004. Barrett-Lennard indicated that, for genetics information and stock separation, there will not be a publication so the agency should use his doctoral dissertation. He added that stock structure in western Alaska will probably take a few years to determine, as data have only recently been collected. Both association and genetics information indicate that there may be a gap in distribution between Prince William Sound resident killer whale pods and those found in western Alaska (west of Kodiak). In addition, there may be some complications with the current transient killer whale stock structure, as animals with a Gulf of Alaska haplotype have been seen mixing with animals from the west coast transient stock; based on the genetics results in Barrett-Lennard's dissertation, there could be interbreeding between the Gulf of Alaska and west coast stocks.

The following are sources of information on killer whales that may be available in time for the

revised SARs for killer whales:

- A paper by Matkin and Straley about residents and transients in Southeast Alaska and Prince William Sound.
- A mark-recapture estimate of transient killer whale abundance. Barrett-Lennard added that the estimate may be compromised because of the recent discovery of 82 "new" transient whales in 2003.
- The SRG members did not expect that new papers on predation events would be forthcoming, as observing predation events is very challenging. Matkin added that stories about killer whale transients eating only the tongue and neck of a large cetacean are misleading. Many times, a small number of transient animals make the kill, and a small number of animals can only eat so much of a large animal. Thus, only parts of the animal will be eaten.
- Results of the Trites study that involves the use of passive acoustics to determine predation rates and winter distribution should be available in a year or two; however, it is not expected that this study will provide good information on broad-scale movements.
- Results of the Trites study that involved mariners calling in killer whale sightings will be available soon; however, little information was gained during this study.

Johnson asked whether killer whales in the Bering Straits that take walrus are from the False Pass population. Matkin responded that the relationship between these killer whales and others is unknown.

Kelly pointed out that, at the conservation genetics seminar offered recently by NOAA Fisheries, the Fst value was presented as a way to determine the relative discreteness of populations, and asked whether this was used when looking at relative discreteness of killer whale populations. Barrett-Lennard stated that he investigated whether Fst values were significantly different from zero, developed putative populations, then tested Fst values between populations. Using this approach, southern resident killer whales are quite different from northern and Alaska resident killer whales, and northern and Alaska resident killer whales could be logically combined into one population.

In response to a question from Kelly regarding whether some "rule of thumb" about Fst values could be used to make decisions about the discreteness of a group of animals, Barrett-Lennard indicated that his preference would be to make the stock call based on the totality of the information, not just a Fst value. Further, Barrett-Lennard stated that the totality of the information, not just a low Fst value, should have been used to list southern resident killer whales under the Endangered Species Act. Matkin emphasized that it is very important to look at all of the information when making a decision about whether a group of animals is a stock.

Barrett-Lennard indicated that there is lot of genetic diversity within the AT1 group, so we're sure that they haven't been a small group of animals for more than 2-3 generations. However, it is not clear how large the group was; the only guidance is that levels of heterozygosity in the AT1 group is higher than that in the southern residents, so we can probably assume that the AT1

group used to be at least as big as the southern resident pod.

Kelly asked about how the AT1 group was defined as a group. Matkin indicated that there were 22 animals in the group in 1984, and that they typically travel in small, predictable groups of 3-5 animals and do not travel together in a larger group. Kelly asked how they could be classified as "a group" if they travel separately in small groups. Matkin indicated that they were all seen together once and do not associate with any other groups. In addition, Matkin indicated that their vocalizations are very different from any other killer whale group. Matkin indicated that there were 22 animals in the group in 1988 and that the first clear evidence of a reduction occurred in 1989, after the Exxon Valdez oil spill. There were many sightings of AT1 animals in 1989, and the group apparently lost 9 animals after the spill. A few additional animals died over the years, and no new calves had been recorded since 1984. Of the remaining animals, 50% are female. Two of the remaining females may be senescent, but 2 females might be able to reproduce. The decline in the AT1 group was not raised as an issue immediately after the oil spill because there is movement between groups so animals were considered "dead" only if there was an identifiable carcass on the beach or if an animal hadn't been photographed for 5-6 years

The SRG was generally supportive of NOAA Fisheries' proposal to designate the AT1 pod as "depleted" under the MMPA. The SRG asked whether a conservation plan for the pod would be developed if the pod was listed as depleted. Angliss responded that, under the MMPA, conservation plans may be written for a depleted stock, but the act does not require that a plan be written. Barrett-Lennard stated that the agency deserves some credit for the proposal to list the stock as depleted because it was likely a difficult decision for the agency to make. Barrett-Lennard also stated that there is very little chance that this stock would persist given it's small size and lack of reproductive females. However, there is an unique opportunity to study the demise of this population. Matkin commented that NOAA Fisheries staff contacted him directly and asked what management he would recommend to conserve the group of animals; Matkin indicated that he had no idea what kind of management to pursue. Angliss added that the petitioners felt that, even if management measures could not be developed, there was value in the depleted designation because it would focus resources on studying the group.

In response to a question from the SRG, Angliss indicated that the status review has been posted on the NOAA Fisheries Alaska Region website. Matkin asked whether the SRG was willing to recommend that the agency find that the AT1 group be designated as depleted; Lowry responded that the SRG has typically just commented on the science and stayed away from policy issues.

10) Alaska harbor seals

Kelly summarized that this item was placed on the agenda because many interested parties have struggled with the Alaska harbor seal stock structure issue for a long time. One concern on the part of many parties is that the methods had not yet undergone external peer review. Kelly indicated that the Alaska Native Harbor Seal Commission had received funds a few years ago to contract a peer review of the methods used to define stocks of marine mammals. Kelly indicated that NMML and the SWFSC started to pursue commissioning a peer review through the

American Institute of Biological Sciences (AIBS) that would fulfill both the goals of the ANHSC's review and NOAA Fisheries' review, but that there was not agreement regarding what the review should entail. Thus, the SWFSC has decided to pursue a review through the Center of Independent Experts; the ANHSC will also pursue a review, but the process for the review has not yet been determined.

Kelly asked when NOAA Fisheries plans to revise the harbor seal SARs. Angliss indicated that NOAA Fisheries does not plan to update the harbor seal SARs until the comanagement committee makes a recommendation regarding harbor seal stock structure. Matkin asked whether NOAA Fisheries would consider making "provisional stocks" of harbor seals; Angliss indicated that this change in how SARs would be written must first be vetted through the public comment process before it's formally used in the SARs. In addition, the agency has made a strong commitment to the comanagement process, and would likely not identify even provisional stocks until there is a recommendation from the comanagement committee.

Angliss stated that, per the request of the SRG, she has begun to compile the latest information on Alaska harbor seal abundance, rates of decline, and human-related mortality levels. This material should be reviewed by NMML staff prior to distribution to the SRG and should be available for review at the spring 2004 meeting. Angliss asked whether the SRG is aware of additional information that should be included in this compilation. Small responded that new information is now available for harbor seal trends in Prince William Sound. In PWS, the annual rate of decline from 1990-2003 was -4% per year, for a total of a ~43% decline in abundance since 1990. Mathews indicated that she and G. Pendleton have an updated report on abundance and trends in Glacier Bay.

Kelly noted that a technical memorandum describing the genetics and modeling techniques used to identify putative stocks was now available for the SRG to review. The SRG recognized that the document could not be discussed at length at this meeting because some members had difficulty retrieving the document from the web and because most SRG members had not yet had time to read the report. Kelly indicated that the document does a very nice job of summarizing the methods and results; Small added that the document presents all the information available for selecting stocks, synthesizes that information, and runs some additional tests to make sure that the results are robust.

Kelly noted that O'Corry-Crowe had started to look at microsatellites and asked if anyone knew how this work was progressing. Brix indicated that the SWFSC has examined a subset of their data, but she did not know whether additional work had been done. Kelly commented that it would be useful to confirm that mtDNA results with other genetics markers.

Hills commented that she had hoped that the results of the GAMMS II workshop would shed a lot of light on how to make stock structure decisions for harbor seals. Angliss responded that, while GAMMS II did make several recommendations regarding how to define stocks, they did not do so in the context of the comanagement agreements that exist for several species of marine mammals in Alaska. When a comanagement agreement exists, NOAA Fisheries must work

through that agreement to make stock decisions and the process will be different from that used to designate a stock for a species for which there is not a comanagement agreement. Kelly added that the analytical methods used today to interpret genetics results are not something that any of the SRG members learned or used in college, so one of the major challenges is to put the new genetics techniques, results, and interpretations into a language that can be understood by all parties. Lowry pointed out that stock definition relies on more than just genetics, and that recommendations regarding stocks can also be based on other lines of evidence.

SRG members had some initial questions about portions of the harbor seal genetics report, such as the definition of "diversity index" and use of the H value to define stocks. One member pointed out that the rule-of-thumb is that it typically doesn't take more than 1 disperser per generation to maintain homogeneity, but that on page viii, item 4, the report indicates that the dispersal rates between areas is actually quite large (4.25 females/year). Further comment and discussion was delayed until other SRG members could read the report.

The SRG recommended that discussion of the SWFSC's report be placed on the agenda for the spring 2004 meeting. In the interim, SRG members should review the report. In lieu of asking that SWFSC staff attend the next SRG meeting and present their harbor seal work, the SRG recommended that questions for the report authors should be provided to Angliss by 1 February so the SWFSC staff have an opportunity to respond in writing prior to the March 04 SRG meeting.

11) ZMRG

Angliss briefly described the Advanced Notice of Proposed Rulemaking for a regulatory definition of the Zero Mortality Rate Goal. Two SRG members, Hills and Kelly, participated in a conference call with SRG members from the Pacific and Atlantic SRGs. Kelly indicated that conference call participants generally thought that options 2 and 3 described in the FR notices were very complicated; the Pacific SRG decided that they could tolerate either option 1 or 2. Kelly further noted that the drawbacks of option 1 are that it may lead to overly conservative levels of protection for ESA-listed species. Hills noted that participants were concerned that even if fisheries achieve the ZMRG there could be other impacts that are not being considered. Angliss responded that this was true, but that both the ZMRG and PBR management schemes are designed only to address fishery-related impacts, not all possible impacts.

Lowry questioned whether the agency is planning to run any simulations to determine the relative outcomes of the different ZMRG options. Angliss indicated that she did not think this would occur, but that a NEPA document (EA or EIS) would likely have to be written and that would examine the outcomes of different options for definitions of Category I, II, and III fisheries and the ZMRB.

David Cottingham (MMS) added that Emily Menashes (F/PR) has run some fisheries through the various classificaiton/ZMRG options and that in some cases the classification is sensible, and in some cases it was not sensible. For instance, when fisheries are evaluated as to their progress

towards the ZMRG, in some cases, the ZMRG level may be thousands of animals (e.g., California sea lions).

Cottingham noted the Commission's letter commenting on the ANPR states that if the ZMRG is calculated and the numbers are still large, there should be some lower number of animals identified as the goal.

Lowry observed that he is not hearing a strong indication that this group has any strong preferences for one option over another. Regardless of what ZMRG definition is used, the annual takes will be under PBR, and this should allow the impacted marine mammal population to recover. The SRG had no recommendations regarding the definition of ZMRG.

12) Protected Species Stock Assessment Improvement Plan

Angliss updated the SRG on NOAA Fisheries' progress towards developing a Stock Assessment Improvement Plan for protected species. This plan was initiated in 2001 as a companion to the marine fisheries Stock Assessment Improvement Plan, which was successful in supporting a funding increase for marine fish assessments in FY04. The protected species plan draft is expected to be released soon.

13) Joint SRG meeting

Angliss indicated that the Atlantic SRG recently recommended that a joint meeting of the SRGs be held, but added that the reason for the meeting was not yet know. Kelly noted that he had mixed feelings about holding a joint meeting: it was very informative in the past to hear about conservation efforts in other parts of the country, but this, by itself, should not be a reason to hold a joint meeting.

In response to a question about that national-level issues might be vetted by the SRGs, Angliss provided the following list:

- serious injury guidelines
- guidelines for using other than default values for Rmax
- implementing a new 3-year schedule for SARs
- stock structure issues
- improving how SARs are developed and reviewed
- commenting on the GAMMS II report

Kelly and Hills committed to contact the chair of the Atlantic SRG and discuss reasons for a joint SRG meeting.

14) Frequency of future Alaska SRG meetings

Kelly noted that, from time to time, the group has discussed changing from 2 meetings to 1 meeting per year. Lowry responded that they could do the bare minimum of business with one

meeting/year; but the group would likely not have good discussions about observer programs or other issues with just one meeting/year. The group maintained a preference for two short meetings each year in lieu of one long meeting.

15) Research funding for observer programs

Wynne questioned what will happen to the Alaska Marine Mammal Observer Program under the FY04 budget for the AKR. Brix indicated that the fate is uncertain and that the person in charge of the observer program, Bridget Mansfield, would like an opportunity to discuss the observer program with the SRG at the next meeting. Brix added that if the AKR receives funds for a program, Mansfield has a plan for the program. However, if the AKR only receives a small portion of the $1M+ needed to do a program, it is unknown what can be done as this point. Continuing to seek funding for the program is a priority for the AKR. Straley asked what fishery they would observe next if funds were received. Brix responded that they plan to observe at Kodiak for a 2nd year, and then move the observer program to Southeast Alaska. Mansfield would certainly be interested in hearing what fisheries the Alaska SRG feels are a high priority for an observer program.

16) Next meeting

After some discussion, the SRG identified 9-10 March 2004, in Juneau, as the next meeting of the group.

17) Changing reviews of SARs

The SRG discussed the process being used to review the draft SARs for 2004. The SRG agreed that it is fine for NOAA Fisheries to distribute the SARs shortly before the SRG meeting (e.g., materials were distributed 2-3 weeks before the November 2003 meeting). Lowry would prefer to receive pertinent information periodically. For instance, relevant information could be distributed by Angliss as it arrives in her office. Kelly recommended that the SRG draft the agendas for upcoming meetings quite early so that Angliss knows what materials need to be provided. The SRG commented that setting up a website where PDF files are posted was a great way to distribute materials. The SRG encouraged Angliss to post materials at least one week prior to the meeting.

18) Draft agenda items for the next meeting

The following items were identified as topics for the next AK SRG meeting:

- Serious injury test – follow up on the results of the subcommittee review of entanglement data
- Alaska observer program update
- Review and discuss the O'Corry-Crowe harbor seal administrative report

19) Action items

The following were identified as action items for Angliss:

- Recirculate list of when folks were added
- If NOAA Fisheries decides to reduce the frequency of the production of hardcopies of SARs, it might be necessary to do an expanded FR notice if a marine mammal is proposed to change status from nonstrategic to strategic
- The habitat concerns sections for northern fur seals and Cook Inlet beluga whales should be revised.
- The AK SRG would like to read the upcoming Martien and Taylor manuscript when it becomes available.

The following were identified as action items for the AK SRG:

- The SRG will read the O'Corry-Crowe et al report on harbor seal stock structure and will send questions about the report to Angliss by 1 February. Angliss will distribute these questions to the SWFSC and ask that they respond prior to the next AK SRG meeting.

20) Official recommendations

The following were the official recommendations that the AK SRG planned to make to NOAA Fisheries:

- Because the vulnerability of the Cook Inlet beluga population is extreme, NOAA Fisheries should set the recovery factor at 0.1. Although the Alaska SRG has made this recommendation before, it should be made to agency leadership again.
- North Pacific right whales should be tagged to determine where they occur outside of the SE Bering Sea. In addition, NOAA Fisheries should continue to use passive acoustics to determine where animals occur seasonally.
- The SRG continues to have concerns about the guidelines used to determine whether an injury is serious. NOAA Fisheries should reconsider the current guidelines for serious injury and should involve interested groups such as selected AK SRG members.
- The AK SRG was pleased to hear that the FWS sea otter surveys were successful and that the FWS was currently evaluating potential causes of the decline. The SRG recommended that the FWS identify what possible mortality factors could be occurring, particular mortality factors other than killer whale predation.

Appendix 1: SRG meeting agenda

ALASKA SCIENTIFIC REVIEW GROUP MEETING
17-18 November 2003

1) Adoption of agenda

2) Adoption of minutes

3) Administration
    Travel
    Membership
    Election of chair

4) Introductions

5) GAMMS II report (Brendan, Jan, and Robyn)

6) Polar bear harvest modeling

7) Walrus population estimation

8) Sea otter listing

9) SAR updates for NMFS species in 2004

    Steller sea lion, western
    Steller sea lion, eastern
    Northern fur seal
    Beluga whale, Cook Inlet
    Dall's porpoise
    Baird's, Cuvier's, and Stejneger's beaked whales
    Fin whale
    Humpback whale, both stocks (see mortality level updates)
    Bowhead whale
    North Pacific right whale
    Blue whale

10) Killer whales
    Genetics update
    Killer whale research in AK from 2001-03
    Update trends in southern Alaska resident (Matkin ms)
    Update on trends in BC resident killer whales (on the Olesiuk ms?)
    Update on the AT1 petition

NMML plans for updating the killer whale SARs

11) Harbor seals

NMFS' technical bulletin:

O'Corry-Crowe, G. M, K. K. Martien and B. L. Taylor. 2003. The analysis of population genetic structure in Alaskan harbor seals, *Phoca vitulina*, as a framework for the identification of management stocks. U.S. Dep. Commer., NOAA Admin. Rep. LJ-03-08, 64 p.
(http://swfsc.nmfs.noaa.gov/prd/genetics/harborseal.htm)

Peer review of harbor seal genetics studies

12) ZMRG - (Robyn or Tom Eagle)

13) NMFS research funding and plans (Sue Moore)

14) Stock Assessment Improvement Plan

Appendix 2: Meeting participants and observers

SRG members
Brendan Kelly, Chair
Ralph Anderson
Beth Mathews
Lance Barrett-Lennard
Craig Matkin
Jan Straley
Lloyd Lowry
Sue Hills
Kate Wynne
Robyn Angliss, Executive Secretary

Observers
Kathy Frost
Mark Weber, FWS
Wells Stevenson, FWS
Sue Moore, NOAA Fisheries
Bob Small, ADF&G
Chad Jay, USGS
Lianna Jack, ASSLSOC
Harald Martin, Walrus Commission
Angie Doroff, FWS
Kaja Brix, NOAA Fisheries
Joel Garlich-Miller, FWS
Monica Reidel, Harbor Seal Commission
Rex Snyder, ANHSC
David Cottingham, Marine Mammal Commission

Appendix 3: Summary of survey of AK SRG members regarding whether humpback whale entanglements are likely to cause mortality.

PRELIMINARY RESULTS OF NEW SERIOUS INJURY TEST - 11/14/03 rpa: Six SRG members provided their best assessments regarding whether the following entanglements and/or injuries should be considered seriously injured, and therefore likely to die, based on the description provided. This table summarizes the responses. I allowed 4 responses: yes, maybe (or "?"), no, and not enough information. If a response resembled "probably", "yes, not enough information to be certain", "yes, as long as it can be confirmed with person X", these responses were logged as "Yes". Not all respondents used all 4 responses, but 5 out of 6 felt that EITHER "maybe" or "not enough information" was an acceptable response; thus, it might be best to equate "maybe" and "not enough information" since it seemed that different individuals used these terms in the same context.

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
1996	"Hawaiian waters"	Released alive	Disentangled from non-fishing gear	1	3	1	1	No
1996	Oahu, HI	Injured; status unknown	Ship strike	3	-	2	1	Yes
1996	Oahu, HI	Injured; status unknown	Partial disentanglement from Hawaiian crab fishery gear; some gear around pectoral fin and mouth still attached	4	1	1	-	Yes
8/2/96	Sand Point, AK	Entangled; status unknown	Released from fishing gear, but appeared injured; thought to have died Gear consistent with salmon set net fishing (before net is set); see detailed for further details on release and condition of whale.	5	1	-	-	Yes
8/17/96	Juneau	Injured	Eggers reported to Heard that he witnessed "a humpback blow very close to [Heard's] boat on [the] port side. Immediately [the boat] went airborne (the entire boat was out of the water with a foot or better of air). " Heard reported that the collision occurred in his 26' I/O fiberglass vessel at 23 mph while traveling between Amalga Harbor and PR area. A "sudden and violent impact occurred"; neither the person at the helm nor a another party who'd been looking directly ahead of the boat saw anything before the impact. There was no damage to the hull, engine or outdrive although superficial damage is noted.	4	2	-	-	
9/2/96	Sitka	Entangled	Sitka Sentinel article reports extensive salmon gillnet entanglement (scars criss-crossing back noted) with partial release (40 ft. of net left trailing from area behind dorsal fin to tail). Believed to be resighted the next day, temporarily stranded on a shoal, then seen later with injuries [witnesses, article assumed these caused by net vs. shoal]. Article available.	5	1	-	-	
9/24/96	Chatham Strait	Entangled	Sharpe via Jorgensen reported most gear cut away and remaining line should not hinder whale. Video made. Unless video depicts, gear type and WOW details not available.	-	5	-	1	

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
1996	Alitak Beach, Kodiak Island, AK	Released alive	Released from commercial purse seine net	-	6	-	-	No
1997	Island of Hawaii	Released alive	Alaska crab pot floats removed by U.S. Coast Guard	-	4	1	1	No
1997	Shelter Island	Alive	Collision with skiff	1	3	1	1	No
6/29/97	Bering Straits	Entangled	USCG observed netting wrapped around ~mid-section of body including flippers, orange buoy(s) trailing. Two hand drawn illustrations available, only one buoy common to both sightings.	6	-	-	-	
7/3/97	Peril Straits, AK	Injured	As reported in Sitka Sentinel: entangled in line between shrimp pot buoy and the pot, appeared the buoy was preventing animal from diving but not from swimming; buoy was being 'towed at slow pace about 100 ft behind the whale; a second line from the buoy become tangled in the outboard of the skiff attempting to disentangle the whale...'the whale took off, spinning the [Boston] Whaler around and pulling it backward and down, until the stern of the boast and the motor were completely under water...the boat swamped and flipped...one person left hanging on the hull of the boat reported 'there were two tugs and the line snapped, as the whale attempted another dive'...another observer reported that '[the whale] seemed better off after that'. The buoy was retrieved. Unknown if/how much gear remained.	4	1	-	1	Yes
7/12/97	Juneau	Injured, status unknown	As reported in the Juneau Empire: 16' skiff with engine turned off was turned over by surfacing whale, destroying the engine and causing $10,000 in loss (gear and damages).	-	5	1	-	
7/13/97	Shelter Island	Injured	Tail stock showing flesh injury from crab pot line and buoy. No further details on tangle available.	-	3	1	2	Yes
9/15/97	Admiralty Island	Alive; entangled	Free swimming animal reported to be entangled in line and a 2ft. buoy. No further details on tangle available.	4	1	1	-	Yes
1998	Maalaea Bay, Lanai	Alive; entangled	Disentangled from gear, but some line still attached	2	3	1	-	Yes
1998	Jakolof Bay	Alive	Disentangled from personal use pot gear	-	4	1	1	No

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
7/18/98	Sitka, AK	Alive; entangled	Lawrie reported thick green net (fishery cbd) around head and flippers -not impeding progress (animal keeping up with others). No further details available.	4	-	2	-	Yes
7/28/98	Petersburg	Alive; entangled	Whale trailing possible king crab buoy and line, attached to tail; surfaced a under boat, shifting boat (tangle AND collision); disentangled except for a loop of line around fluke.	1	4	1	-	
7/31/98	Ketchikan, AK	Entangled	Salmon purse seiner reported 'whale tore through net, went down and was not seen again"; dead floater seen in area 8/5/98 assumed to be same whale. Floater not seen again.	3	1	-	2	Yes
8/11/98	Juneau, AK	Injured	Whale surfaced under and between hulls of forward idle-ing whale-watch catamaran; reported to be "glancing blow"; whale seen to blow and fluke with no apparent injury nor were injured whales sighted in area.	-	6	-	-	No
8/22/98	Juneau, AK	Entangled, alive	No further information available. Report not confirmed.	1	2	1	2	
8/23/98	Wrangell, AK	Entangled, alive	Crab buoy/line. Fadely reported via Nelson "buoy line wrapped on facial barnacles, trailing line, buoy was at dorsal fin area; whale could not submerge; buoy and line easily removed with boat hook."	1	5	-	-	No
9/17/98	Homer, AK	Alive; entangled	USCG Reported via Matkin: Subsistence/personal tanner crab pot line and buoy wrapped 3-4 times around the tail stock, over the fluke and probably also around one foreflipper, the pot end of the line was draped over the fluke and the whale seemed semi-immobilized; float retrieved; several inch deep scars apparent.	5	-	1	-	No
9/24/98	Juneau, AK	Injured	ENF/CG investigated. Report via Brix of "24' whale watch boat traveling at 15-18 knts ran up on the dorsal surface of animal behind blowhole, tipped the boat; whale dove and hit the kicker(knocked loose) & port side bow(cracked hull). Other animals in the group came to injured whale, circled it & swam off together. Animals were observed for a while by other charter boats who observed no change in behavior or apparent injuries."	2	4	-	-	No
10/10/98	Sitka, AK	Entangled, alive	100# Pot, red line, buoy; Sitka news reported line gear around whale through mouth, around one flipper and tail stock (pot on tail stock line); released except for line in mouth	2	3	1	-	No

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
10/15/98	Ketchikan	Entangled, alive	Witness, nk via NMFS reported entanglement involved 30 fa of line, 2 buoys (possibly shrimp pot gear); freely swimming animal	4	1	1	-	
1/6/1999	Hawaii	Entanglement	Similar to tangles seen in Sitka 1998 and June 1999 (no match possible, per Straley). Photos show line just behind blowhole, snug once (unless this is actual a white scar) and then crossing over whale a bit further down but before dorsal fin, then connecting to a single float (cylindrical, orange and white (foam?)) lying on water behind whale around about 3/4 of body length.	4	-	2	-	Yes
6/9/99	Sitka	Entangled, alive	S. Neimi (NMFS OLE) reported line and buoy wrapped around whale starting near the pec fins; a bright orange buoy without visible markings was closer to tail (about 3/4 distance from front of animal); little or nothing dragging. Large whale was having no problems diving, breathing, or swimming. NMFS had difficultly keeping up while Spirit of Endeavor reported whale to be traveling at 2 knots (Endeavor also reported seeing 3 buoys). An attempt to relocate whale on the 11th for disentanglement was not successful.	2	3	1	-	Yes
6/26/99	Resurrection Bay	Alive, status unknown	ADN article reported that couple hooked a humpback on halibut hook (100#); fisher cut line.	-	6	-	-	
7/7/99	Sitka	Alive	73' wooden sailboat at anchor stuck by whale causing 5' hole in hull. No witness, baleen left at site	1	3	2	-	Yes
9/6/99	Sisters Island	Alive, status unknown	Lobed reported via Brix that "whale surfaced underneath sailboat and brought tail down on the forward deck & damaged hardware topside & put some spider cracks in fiberglass. Boat started to take on water~ 1"(?)/min. Vessel underway (power) when incident occurred. Boat taken to Hoonah where leakage stopped. No apparent injuries to whale."	-	6	-	-	No
10/1999	Prince of Wales Island	Entangled	Pot gear, fishery cbd; Brix reported (via Freitag, via fisher) "Fisher on site when MN got caught on line of his pot gear. Freitag relayed via USCG for fisher to apply pressure/ drag [?] gear to tire whale...fisher cut buoy free from whale's mouth. Whale swam off apparently ok."	1	4	-	1	No

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
1999	Homer	Entangled	Personal use crab pot gear; USCG news reported a "crab pot buoy close to the tail with a line trailing down in the water...the crew cut the line leading to the submerged crab pot releasing tension on the line around the fluke of the whale...the rest of the buoy and line on the whale came free after we cut the trap line."	-	5	1	-	No
7/8/00	Lynn Canal	Entangled, released alive, status unknown	Seine gear completely entangling whale reported via Enfs, no further information available.	4	1	-	1	Yes
10/16/00	Uyak Bay	Entangled, released alive	Some line removed, but gear remained. Wynne reported that gear on with knot on underside of whale; "could not fully extend head or flukes because they were bound together."	6	-	-	-	Yes
11/2/99	Metlakatla	Injury; status unknown	Anon. via Brix reported "Pleasure craft-bayliner- struck a humpback whale while underway near Metlakatla. Skin left on bow of vessel." Skin not collected, no further details available.	2	3	1	-	Yes
12/4/00	Skagway	Entangled, released alive	Shrimp pot gear released except for single buoy. Straley and Gabriele report "tight wrap of line around whale's head (just above it's pectoral fin, on it's right-hand side. A second set of 4 buoys (some of which fisher added when he saw entangled whale) was trailing behind the whale on a 50 ft piece of ~1/2" leaded polypropylene line."	1	3	1	1	Yes
1/28/01	Kauai, Hawaii	Entanglement, Injured	NMFS-MN-01-02-EA; crab line and buoy removed. No details on tangle available.	2	3	1	-	Yes
5/28/01	Resurrection Bay	Entangled, released alive	Mns0101; Mixed gear described as "a single loop through mouth with several ropes connecting to 3 orange buoys, a crab pot, 2 foam floats, 30# anchor, chain, ball of fishing line" by Aderholt as quoted by Little in AND.	2	2	-	2	Yes
6/15/01	Kodiak	Entangled	Disentanglement attempted but not successful; Fishery cbd (subsistence crab or shrimp possible). Wynne reported Mother and calf towing a single small orange buoy ~35'-30' behind and between them, two lines across the calf's rostrum just forward of the blowhole; line visible across adult's back.	4	-	1	1	Yes

Year	Area	Condition	Description	Yes	No	Maybe	Not enough information	SAR
6/19/01	Dixon Entrance	Possibly injured	USCG reported Naushon traveling 12kts when "whale surfaced approximately 10 ft in front of cutter. Cutter immediately backed down and then came to all stop as the whale dived under the cutter. After a couple of minutes the lookout sighted the whale off the starboard quarter. The whale surfaced and then dived again. Personnel in forward berthing reported hearing a thump just prior to the cutter backing down. No unusual vibrations were detected when testing propulsion nor was there any blood in the water. No indications of whale strike above the waterline were evident....There were no whale sightings in the vicinity prior to the encounter."	-	5	1	-	Yes
8/7/01	Sitka	Entangled	Green net, fishery cbd, reported to be seen on top of rostrum	3	1	1	1	
8/13/01	Hoonah Sound	Entangled, released alive	Shrimp pot gear; Brix recorded 'wounds on dorsal ridge and tail stock from line'; also that whale had been' tethered by the right side of mouth, with free end (which has been attached to buoy) exiting the left side of it's mouth with about 40 -50ft of nylon floating line; anchored to pot gear'	2	3	1	-	No
9/19/01	Lynn Canal	Entangled, release alive, status unknown	Shrimp pot gear wrapped on tail according to T- with Chilkat Crusies via Enfs	3	2	1	-	No
10/30/01	Sitka	Entangled, release alive, status unknown	Longline, no further information provided by Anon boater via FWS	1	3	1	1	