Alaska Scientific Review Group

Minutes from Meetings 2 - 8

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Compiled: 20 April 1999

(final)

MEETING OF THE ALASKA SCIENTIFIC REVIEW GROUP ANCHORAGE, ALASKA 4-5 and 11 January 1995

INTRODUCTION AND APPROVAL OF AGENDA

The second meeting of the Alaska Scientific Review Group (ASRG) was held in Anchorage, AK, at the RuralCap Office on 4-5 and 11 January 1995. A participants list is presented in appendix 1. The meeting was chaired by Lloyd Lowry; Doug DeMaster served as the rapporteur. The agenda for the meeting is presented in appendix 2.

ROLE OF THE SCIENTIFIC REVIEW GROUP

Lowry noted that the purpose of the SRG, as stated in the amended Marine Mammal Protection Act (MMPA), is to advise the Secretary of Commerce and the Secretary of Interior on: 1) population estimates and the population status and trends of stocks; 2) uncertainties and research needed regarding stock separation, abundance, trends, and factors affecting the distribution, size or productivity of the stock; 3) uncertainties and research needed regarding the species, number, age, and reproductive status of marine mammals; 4) research needed to identify modifications in fishing gear and practices likely to reduce the incidental mortality and serious injury of marine mammals in commercial fisheries; 5) the actual, expected, or potential impacts of habitat destruction on specific marine mammal species or stocks, and for strategic stocks, appropriate conservation or management measures to alleviate any such impacts; and 6) any other issue which the Secretary or the groups consider appropriate. Lowry added that most of the efforts of the ASRG at this meeting would be directed at 1 and 2.

CHANGES IN PROCEDURES FOR STOCK ASSESSMENTS

Robert Small circulated a copy of the revised PBR guidelines, which were prepared by Jay Barlow (SWFSC) based on comments to the original guidelines from the Marine Mammal Commission, the public, and the SRGs. The ASRG noted that the revised guidelines incorporated increased flexibility in methods to determine stock structure, PBRs, and the zero rate mortality goal (ZRMG). Dana Seagars (FWS) commented that it was the intent of the FWS to follow the revised guidelines in preparing stock assessment reports (SAR) for stocks of polar bears, walrus, and sea otters. The ASRG questioned the representatives from NMFS and FWS as to how

much flexibility the SRGs had regarding recommendations that were inconsistent with the revised guidelines. DeMaster noted that the revised guidelines were still in draft status and that the ASRG could make recommended changes as appropriate. He added that it was the intent of NMFS (and likely FWS) to be as consistent as possible among the three regions in developing the SARs. The ASRG agreed to prepare a summary of recommended changes to the revised guidelines as part of the minutes from this meeting (appendix 3). Beth Mathews asked if there was a protocol for knowing what the other SRGs had recommended regarding the revised guidelines. Small noted that Barlow had recommended that each SRG circulate its minutes to the other two SRGs. There was general agreement among the ASRG that this was a good idea.

SUMMARY OF PUBLIC COMMENTS ON STOCK ASSESSMENT

Several of the ASRG noted that they included public comments considered relevant in the development of their written comments for the group. As available, written comments prepared by ASRG members were circulated to all participants at the review. It was agreed that these written comments would be appended to the minutes, if so desired by the ASRG member (i.e., appendix 4- Kelly, appendix 5- Kelly, appendix 6- Straley, appendix 7- Mathews, and appendix 8- Hild). Steve Zimmerman summarized comments received during a public meeting/teleconference held on 14 December 1994. Six sites (i.e., Sitka, Dillingham, Kotzebue, Nome, Kake, and Juneau) were interconnected during this teleconference. Comments included: 1) agencies should use the most recent survey data, whereas some of the reports used apparently outdated information, 2) agencies should initiate or enhance cooperative efforts with local people in conducting surveys, 3) every attempt should be made to make stock classification and the PBR calculations less arbitrary, 4) every effort should be made to blend traditional and western knowledge in the SARs, and 5) every effort should be made to increase observer coverage on commercial fisheries in Alaska that interact with marine mammals. Carl Hild commented that he thought the teleconference was very successful and involved good participation from the native community. Zimmerman offered to make a transcript of the teleconference available to any review participant upon request.

DeMaster summarized the general comments of the Marine Mammal Commission (MMC). They included: 1) the draft SARs vary in completeness and quality (e.g., the description of the commercial fisheries that are known to or may interact with a stock), 2) none of the draft SARs include a description of critical uncertainties concerning the discreteness and status of the stock or the sources and levels of non-natural mortality, and the research that would be required to resolve

those uncertainties, 3) agency scientists should consult other scientists currently conducting marine mammal research in U.S. waters to ensure assessments have used the most up-to-date information, 4) the PBR guidelines, while useful and appropriate for many stocks, are not appropriate for all stocks, 5) Rmax should be set to zero for stocks listed as endangered that are declining (e.g., the Hawaiian monk seal), 6) none of the draft SARs include a summary of the effects of changing habitat or prey quality on a stock, and 7) use of the 0.5 Rmax, which was statutorily mandated, results in the calculated PBR being roughly half the maximum sustainable yield level. DeMaster noted that many of the MMC's specific comments and several of the MMC's general comments were already incorporated into the revised draft SARs of NMFS, based on comments from the ASRG at its first meeting. These revised draft SARs had been sent to each of the ASRG members in mid-December 1995. Seagars noted that the SARs prepared by FWS had not been revised since the first meeting of the ASRG. In addition, it was noted that the MMC was misapprehended regarding their concern over 0.5Rmax being equal to 0.5MSY, as the MSY is based on the maximum number of animals that can be removed annually on a sustained basis and not the maximum rate of net production. Finally, DeMaster noted that the MMC's point concerning the need for additional information on habitat and prey effects was well taken, but that it was best applied to strategic stocks that were either declining or not recovering, according to the amended MMPA. He added that a decision from the NMFS Headquarters on whether to include summaries of uncertainties and habitat related issues was pending. Seagars added that he was unaware of how the FWS would respond to these specific comments from the MMC.

Because of time constraints on the review, further discussion on public comments was limited to a brief discussion of public comments on specific stocks.

REVIEW STOCK ASSESSMENTS FOR FWS SPECIES

Walrus (led by Sue Hills)

There was general agreement that the section on population size should include more detail (e.g., a table) on the estimated number of walrus and coefficient of variation (CV) for the estimate for each strata. Caleb Pungowiyi questioned the general level of confidence in the 1990 survey and whether the estimate had been "aged" (see revised PBR guidelines). Seagars responded that because of unusual ice conditions and because of a lack of replicate surveys of walrus along the Russian coast, the abundance estimate and its associated variance were considered negatively biased to an unknown degree. Lowry noted that counts of walrus hauled on the beach

along the Russian coast were conducted in late August/early September, while the surveys of walrus hauled on the ice in the Chukchi Sea were conducted in late September/early October. Therefore, while the possibility of double counting animals could not be excluded given the likely north to south movement of walrus at this time of year, the most likely result would be for some animals to have been missed entirely. Pungowiyi questioned whether the minimum population estimate (hereafter referred to as Nmin) based on the 1980 survey would be larger than the MPE based on the 1990 survey. Both Hills and Seagars suggested the latter would be greater because of the relatively high CV associated with the 1980 estimate.

Beth Mathews led a general discussion on the use of correction factors, which is summarized in appendix 7. There was general agreement that the most appropriate correction factor for a count of all age and sex classes was an estimate of "P(sight)" for the group counted, which accounted for factors that affect sightability (e.g., time of day, time of year, environmental conditions, survey platform, etc.), and included an estimate of the CV. Where estimates of precision were lacking, the ASRG recommended using a conservative correction factor to provide assurance that the Nmin was indeed an under-estimate of the actual level of abundance. Where a conservative correction factor was not available, it was agreed that the uncorrected count should be used as the Nmin. Further, where uncorrected counts lead to unrealistic estimates of Nmin, PBRs should not be estimated.

Concerning the section on population trends, it was recommended that the last two sentences of this paragraph be dropped. Regarding the use of 0.06 as the estimate for Rmax, there was general dissatisfaction with the way the estimate was derived. However, because the average reproductive interval (RI) for this species is approximately two years, while the default value of 0.12 was based on an RI of 1 year, there was dissatisfaction with using the default value. Seagars noted that the 0.06 estimate was the lower end of a range of estimates of Rmax based on a Lotka population model, which did not account for the skewed sex ratio in the population. There was general agreement that 0.06 was as severe an underestimate of Rmax as 0.12 was an over-estimate. DeMaster noted that based on a simple proration approach, the Rmax for populations with sex ratios of 1:2 (male:female) and 1:3 would be 0.08 and 0.09 relative to an Rmax of 0.06, given a sex ratio of 1.0. He added that this estimate was crude and should be verified by using an age and sex specific Lotka model. There was general agreement that the FWS should adopt this approach.

The ASRG agreed with the use of an F(R) of 1.0 for this stock of walrus. Concerning the section on human-caused removals, it was recommended that fishery-

related removals and removals caused by subsistence hunters for the last five years (i.e., 1990-1994) also be summarized in the text, and that these later figures be used in assessing whether the stock was strategic. It was also recommended that, where possible, the most recent data on "struck and lost" be used in estimating removal levels due to native subsistence hunters. Seagars noted that there were some unresolved questions concerning inconsistencies in the Russian harvest data, but that if it were assumed to be accurate, the average number of removals due to subsistence hunting between 1990 and 1994 was 5370. Pungowiyi commented that he thought the estimated "struck and lost" rate of 42% was likely too high and that this rate likely varied by region. Seagars responded that better data on struck and lost rates were needed. He added that a struck and lost rate of 0.0 was assumed for the Russian ship-based harvest of walrus. Brendan Kelly noted that the range of estimates for struck and loss from the Alaska Eskimo Walrus Commission was 30% to 42%. There was general agreement to use the 42% figure at this time for the U.S. data. However, it was recommended that the text should be expanded to include the level of harvest using the 30% figure as well. Lowry suggested that the kill data should be broken down by year and by sex. Seagars commented that data on the sex ratio of the harvest were only available from U.S. subsistence hunters. With regard to takes incidental to commercial fisheries, the ASRG recommended using data collected during the last 5 years.

Polar bear (led by Carl Hild)

After some discussion, there was general agreement with FWS's decision to classify polar bears into two stocks and to use the population estimates provided in the SARs. DeMaster questioned where the 16% gross productivity figure came from in the section on Rmax; Scott Schliebe responded that it was derived from a figure in a paper published by Bunnell and Tait. There was general agreement that the Rmax value of 0.10 should be re-evaluated using a modeling approach with specific life history parameters. DeMaster commented that the problem with using the approach of approximating the crude birth rate for a density near zero from the Bonnell and Tait paper was that age structure effects could not be incorporated properly and that it was unlikely the actual crude birth rate was as high as 16%.

Concerning the section on harvest, the ASRG recommended adding information from 1993 and 1994 and using the average harvest level over the last five years for evaluating whether the stock is strategic. There was general agreement that the PBR for the Chukchi Sea stock could not be calculated at this time.

Sea otter (led by Brendan Kelly)

There was general agreement with the proposed stock structure (i.e., one stock), but it was recommended that the stock structure of this species in Alaska needs to be revaluated (e.g., discuss Wilson et al. reference on subspecific status). Regarding population size, the ASRG noted that a reliable estimate of abundance is unavailable. However, they recommended using an Nmin of 100,000. Lowry commented that the dates in which population estimates were made should be added to the table in the SAR.

The ASRG recommended that the section on Rmax should be rewritten as there seems to be some confusion regarding differences in observed rates of increase and maximum rates of increase and which of these rates was applicable in this section. The group recommended using a Rmax rate of 0.20 at this time. Several participants noted that in California sea otters were only increasing at 5% per year, which indicates using a more conservative estimate of Rmax than 0.20. Lowry responded that there were important differences in habitat type and quality between Alaska and California and that, therefore, the maximum observed rate of increase in Alaska was the most appropriate rate to use in determining Rmax. Kelly noted that maximum rates of increase for sea otter populations in British Columbia and Washington were similar to maximum rates observed in Alaska.

Regarding fisheries information, Kate Wynne commented that based on observer data from 1992, 8 sea otters were killed incidental to pot fisheries in Alaska. Jim Branson added that this section should be expanded to include a discussion of pot and trap fisheries in Alaska. Finally, there was general agreement that the statement regarding status (i.e., within its OSP range) should be deleted given the absence of information on current population size.

ISSUES TO BE RESOLVED FROM DAY 1

Prior to the discussion on NMFS species, the group agreed to discuss two issues that arose the previous day: 1) how to define stocks, and 2) whether to include information from log books in the section on fishery interactions.

Stock Identification

Kelly raised the issue that reviews of the SARs were complicated by the group having a somewhat "mobile" definition of what a stock was. He recommended the ASRG agree to a single definition and then apply it to all of the species under review (see appendix 9). This approach was acceptable to all members of the ASRG. Zimmerman noted that Congress defined stocks in terms of "animals that interbreed when mature". Lowry commented that stocks in the context of the SRG should be considered logical management units, which were most appropriate at that sub-

specific level. However, he noted that stock distinctiveness was really a continuous measure when applied to the wide variety of species included under the term marine mammal. Denby Lloyd recommended that the ASRG define stocks such that sound scientific principals were not violated. He questioned if any of the stock determinations in the SARs were not based on sound scientific principals. DeMaster added that the ASRG's general guidelines for stock identification would be passed on to Jay Barlow (NMFS) for inclusion in the NMFS PBR guidelines.

Eric Smith (lawyer on retainer to RuralCap) briefly presented his perspective on stock determination, given the language in the amended MMPA. He noted that: 1) the native community unsuccessfully tried to lobby Congress that marine mammal stocks that do not interact with fisheries should not be dealt with in Section 117 of the Marine Mammal Protection Act (MMPA), 2) the environmental community was dissatisfied with NMFS regarding its mandate to assess all stocks of marine mammals in U.S. waters and successfully lobbied Congress regarding stocks which would be assessed, 3) by his interpretation, because of the differing Congressional intent behind Sec. 117 and 118 in the MMPA, stock assessments (and particularly, stock classification) should be based on biological grounds and should not be based on management related issues (e.g., the distribution of a particular fishery), and 4) after preliminary discussions with Kevin Collins (GC Office, NOAA), there seemed to be agreement that for the purpose of classifying a stock as depleted under the MMPA, stocks should be defined using biological data; however, it was not clear whether this same principal applied to stock determinations made for the purpose of classifying a stock as strategic. He added that from his perspective it was a matter of law that stocks should be defined based on scientific data. He further noted that within a stock designation, separate management units could be established. Where such an approach was not followed, he predicted that depleted classifications would be driven by considerations more related to fisheries management than the welfare of the marine mammal stock being considered. Lowry, in response, noted that a determination that a particular stock is strategic should not form the basis for a stock being declared depleted. After some discussion, what came to be known as the 5th factor (i.e., management needs) for stock determination (i.e., Dizon et al. list 4 biological factors) was considered inappropriate for most stock classifications. The only exception being that the MMPA directs the management agencies to manage stocks of marine mammals consistent with the "precautionary principle" and, therefore, where certain fishery interactions are suspected of adversely affecting a stock, a specific stock recommendation might be influenced by the "5th factor".

After some discussion, each member was asked to state their preference in defining stocks. There was general agreement that: 1) in each SAR, a summary of the

criteria used to define stocks should be included, 2) the Dizon et al. criteria should form the basis of the stock determination, 3) management related information should not be the primary reason for identifying separate stocks, and 4) some inconsistencies in stock identification were inevitable given the lack of information on some species, such as beaked whales, relative to other species, such as harbor seals.

Use of log book information (led by Kate Wynne)

Wynne passed out several handouts regarding log book information (appendix 5). She noted that the 1988 amendments established three categories of fisheries based on the rate at which a fishery interacted with marine mammals and mandated specific levels of coverage for fisheries that frequently interacted with marine mammals. She added that in 1990 and 1991 observers were placed on several drift and set net fisheries in Alaska and that data from these observers had been used to estimate total mortality of marine mammals in those years based on the observed rate of mortality per unit of fishing effort and an estimate of total fishing effort (note: such estimates are referred to as extrapolated estimates of mortality). For 1993, Wynne reported that there was no observer coverage in set and drift nets in Alaska and that the number of reports of interactions from fishers based on log book data was relatively low. She concluded by recommending that the SARs be expanded to include log book data to summarize kill estimates over the last five years, and to include estimates of marine mammal mortality related to fisheries deterring marine mammals from damaging gear or the catch. The group accepted these recommendations. However, Lloyd and Joe Blum noted that because it was legal under the Interim Exemption regime to kill marine mammals to protect ones gear or catch, that such takes before 1994 should not be included in the status determination because they only became illegal under the 1994 amendments to the MMPA. This recommendation was also accepted. Wynne agreed to summarize all of the log book mortality data by marine mammal stock and fishery in a table for the ASRG within the next few weeks.

REVIEW OF STOCK ASSESSMENTS FOR NMFS SPECIES

Northern fur seal (led by Denby Lloyd)

Questions were raised concerning the rate of exchange between the fur seals on the Pribilof Islands with fur seals in Russia and fur seals on San Miguel Island (SMI). Considering the degree to which fur seals show fidelity to the rookeries at which they were born, differences in population trends between the North Pacific and

SMI, and the discontinuous distribution of rookeries in the North Pacific, the stock classification proposed in the SAR was adopted. However, it was recommended that the name be changed to the eastern Pacific stock.

Regarding abundance and trends in abundance, the ASRG recommended adopting the estimate of 1,016,254. Further, the Nmin of 966,800 was adopted with several caveats: 1) the CV of 0.059 did not account for variance associated with the correction factor related to the proportion of pups in the population (i.e., 4.47), and 2) the Nmin estimate was likely a conservative estimate of abundance, given the population seems to be increasing slowly (i.e., the population has increased between 1983 and 1994 by 16%), the current number of pups was based on the average pup count between 1990, 1992, and 1994, and the CV of the pup count was incorporated in the estimate of the Nmin. In addition, Lloyd noted that the legend in figure 1 should be modified to reflect whether the data include the entire population or only data from St. Paul Island. The ASRG adopted the proposed Rmax of 0.086, as this was the observed rate of increase of the population when its status was severely depleted.

There was some discussion regarding the whether the F(R) of 0.5 was appropriate. Lloyd argued that the draft PBR guidelines allowed for the F(R) for fur seals to be increased by 0.2 to 0.7 because the removals were primarily caused by subsistence hunters and because the removal level was known with confidence because of existing monitoring programs. He further questioned whether a status determination of depleted was appropriate for this stock, given the current population is either stable or increasing very slowly relative to Rmax and given the relative low rate of human-related removals per year (e.g., less than 0.25% per year, which are mostly males). He recommended that NMFS re-evaluate the listing criteria for this stock. Initially, the ASRG agreed to raise the F(R) to 0.7. However, later in the day, Zimmerman raised the issue that the estimated current population size was less than 0.6 of the historic estimate of abundance. After considerable discussion, the ASRG could not come to agreement on whether the habitat had changed sufficiently to cause the historic carrying capacity to be significantly greater than the current carrying capacity. Therefore, the 0.5 F(R) was recommended for use in calculating the PBR, pending an evaluation of the status of this stock.

Regarding human-related mortality, there was general agreement that information from log books should be summarized in the SAR. Lloyd raised the issue of whether estimates of mortality related to entanglement in marine debris were available, and if so, whether they should be included in the SAR. There was general agreement not to include these estimates in the SAR at this time. There was also agreement that the zero rate mortality goal (ZRMG) was met and that this should be

stated explicitly.

Regarding status, the issue of changes in habitat quality due to fisheries in Alaska was discussed, but it was agreed that this was not a priority issue for this stock and should not be included in the SAR. The group noted that this stock was only listed as strategic because of its current listing as depleted under the MMPA.

Steller sea lion- Western stock (led by Lloyd Lowry)

The proposed two stock classification and estimate for population abundance was adopted by the ASRG. Regarding the Nmin, Kelly and Lowry recommended using the 1.331 correction factor and adding in the estimate of pup production, as the estimate was likely conservative. There was general agreement with this conclusion.

Regarding trends in abundance, Lowry noted that the text and tables should reference data from the trend sites and not include information on total abundance. He added that the a footnote should be added to the table noting that counts in the 1960s did not include animals from rookeries in the western Aleutians.

The ASRG recommended using an F(R) of 0.3 in estimating PBR because of the potential for this stock being listed as endangered in the near future. This figure was derived as being midway between the F(R) for a threatened stock (i.e., 0.5) and an endangered stock (i.e., 0.1). The ASRG concluded that Rmax should be set equal to the default value for pinnipeds and the adjustment in the PBR for declining trends in abundance should be made by adjusting the F(R).

Regarding fishery interactions, Wynne noted several changes in the estimated number of kills, which she will include in her summary table. She also noted that the text should include a statement that most of the mortalities in the fisheries around the Copper River were juveniles. There was agreement that all of the SARs should include the level of detail found in this section. Concerning the ZRMG, it was noted that the estimated level of mortalities related to fisheries was likely to be close, but still less than, 0.1PBR. However, it was agreed that where there was sufficient reason to consider the estimated mortality level negatively biased, the ZRMG could be considered unmet, pending additional information from fisheries over the next few years. A question was also raised as to how to consider log book information on dead and injured animals. It was agreed that mortalities would only include animals reported as dead in the log books because of the level of uncertainty in defining injury.

Regarding subsistence utilization, Pungowiyi recommended and there was agreement that any information on the sex ratio of the subsistence kill should be included in this section. Concerning the section on status, it was recommended that a summary of management related actions taken in the last several years should be included.

Steller sea lion- Eastern stock (led by Lloyd Lowry)

Many of the comments on the SAR for the western stock apply to this stock. It was recommended that the abundance estimate include animals in the waters of British Columbia, but that the PBR be calculated based on the Nmin of animals in U.S. waters. This recommendation was based on the ASRG determination that this stock should be considered non-migratory (see reference to migratory stocks in draft PBR guidelines). In addition, it was recommended that, where available, CVs for abundance estimates should be added to the text.

Regarding the F(R) used in the PBR calculation, Lowry questioned whether it should be raised to midway between 0.5 (appropriate for a threatened stock) and 1.0 (appropriate for a healthy stock). This proposal was adopted by the ASRG with the recommendation that NMFS should consider re-evaluating the status of this stock under the ESA and MMPA.

Concerning human-caused removals, there was general agreement to include estimates of mortality from log books for fisheries, where there were no observer placements. In addition, the ASRG recommended adding information on the sex ratio of removals, as available. The same recommendation was made for kills made by subsistence hunters. It was noted that estimated level of human-caused removals for this stock was well below the PBR and that this stock was only classified as strategic because it was currently listed as threatened under the ESA. In addition, it was recommended that management related activities undertaken since 1990 should be summarized in the section on status.

Harbor seal- SE stock (led by Beth Mathews)

There was considerable discussion regarding stock classification. Kelly noted that 1) the "gap" in density referenced in the text was marginal, 2) there were no data on where pups were recruited as adults relative to their natal rookery, 3) genetic data, while sample sizes were small and the data were not fully analyzed, were consistent with a one stock designation, and 4) data on morphometrics, pupping phenology, and color patterns indicated a continuous cline in population structure rather than a sharp

break in gene flow. He, therefore, recommended a single stock designation. Lowry responded that trends in abundance for the SE stock and the western stock were considerably different, which indicated that the exchange rate was not demographically significant. In addition, he noted that the satellite telemetry data that was currently available, while preliminary, indicated little exchange between Prince William Sound (PWS) and SE Alaska. Therefore, he supported the two stock designation. Zimmerman commented that the Alaska Region had recently drafted a Federal Register notice, which was supported by the National Marine Mammal Laboratory, which indicated that without information on the genetic structure of the population, a determination as to whether one or more stocks of harbor seals in Alaska could be identified, such that an evaluation of their status relative to OSP (i.e., deplete or not) could be made. He added that the draft notice was still under review with NMFS. Hild noted that the proposed stock structure of harbor seals along the west coast was apparently inconsistent as all harbor seals on the outer coast were apparently lumped into one stock, while harbor seals in inland waters of Washington were classified as a separate stock. There was general agreement that the data on stock structure in Alaska were equivocal. A vote was taken, which favored the two stock classification (6 votes to 4).

Regarding estimates of abundance and trends in abundance, Mathews noted that the correction factor used in the analysis was based on an estimate of the proportion of hauled harbor seals in Washington state during the pupping season, while the surveys in Alaska were predominantly done after the molt (i.e., September) period. She added that the P(hauled) during the molt was greater than the P(hauled) during the pupping season at least in some parts of Alaska, but that the P(hauled) after the molt dropped off sharply. After some discussion, it was agreed that the correction factor based on the P(hauled) during the pupping season, when applied to counts of hauled animals in September (i.e., after the molt) was likely conservative. Mathews commented that, if possible, the results of the 1994 survey should be incorporated into the SAR.

There was general agreement that the Rmax of 12% and the F(R) of 1.0 were acceptable. It was recommended that the draft PBR guidelines be modified to include the recommendation that the F(R) could be as high as 1.0, in the situation where a population was stable in the presence of a subsistence takes.

Regarding information on human-removals, as mentioned previously, the ASRG recommended that this section include information from log books, where appropriate, but that reported kills that were associated with deterrence measures should not be included in the total number of removals. The ASRG further

recommended that information on the sex ratio of subsistence kills and the potential for under-reporting be discussed in the SAR. Mathews commented that the "struck and lost" rate of 11% seems low for this species. Finally, it was recommended that information on illegal removals and a summary of reports from results of the Alaska stranding network be included in the SAR.

Based on the available date, the ASRG agreed with the conclusion that this stock should not be classified as strategic at this time.

Harbor seal- Gulf of Alaska and Bering Sea (led by Brendan Kelly)

There was no additional discussion on stock structure. Regarding the correction factor applied to the count data, concern was expressed that the correction factor for P(hauled) for animals hauled during the pupping season, may no longer be conservative as the counts for this stock were conducted during the peak of the molt (i.e., in August). Kelly noted that a comparison of maximum counts made on the southwest beach of Tugidak Island by ground observers and by observers in aircraft indicated that the latter were counting no more than 52% of the animals counted from the ground. After some discussion, there was general agreement that the correction factor of 1.61 was very likely to be conservative. It was further agreed that the correction factor should be applied to the mean count, not the maximum count, of hauled animals. Kelly added that it was important to add the estimated number of harbor seals from the Aleutian Islands to the abundance estimate, as removals from the Aleutians were included in the SAR.

Regarding trends in abundance, the ASRG recommended using the average rate of change in harbor seal numbers in Alaska rather than the change in numbers between 1976 and 1991 or 1976 and 1992. The Rmax of 12% was considered acceptable, as was the F(R) of 0.5.

As recommended for all the SARs, the ASRG recommended including information from log books. It was noted that Wynne's summary table would include much of this information. It was also recommended that, as available, information on the sex ratio of take by subsistence hunters and on the struck and lost rate be included in the SAR.

Beluga- Cook Inlet (led by Lloyd Lowry)

There was general agreement that the Cook Inlet population of beluga whales constituted a separate stock. This determination was based on the available genetic

information (Alaska Inuvialuit Beluga Whale Committee [AIBWC] unpublished report) and the geographic distribution of the species. It was noted that a correction factor for surveys of belugas in Cook Inlet was not currently available, but that the literature included correction factors for belugas ranging from a low of 2.0 to 2.75. After some discussion, it was agreed that the behavior and average group size of Cook Inlet belugas was more similar to Bristol Bay belugas than belugas at the mouth of the Mackenzie River. Lowry commented on a recent analysis by Frost (ADFG), which, based on a sample size of 3 radio tagged adult whales, reported correction factors of 2.62 (CV=0.02) for belugas surveyed in Bristol Bay and 3.00 (CV=0.03) for belugas surveyed in Norton Sound. It was noted that neither of these correction factors incorporates the reduced sightability of calves and yearlings. A separate correction factor for this bias has been published (CF=1.18). Small noted that Rod Hobbs (NMML) was currently conducting an analysis of the Cook Inlet survey data and would likely determine a set of correction factors (and CV) by early February 1995 that would account for the probability of missing an animal at the surface and the probability of missing a group of animals. The ASRG recommended using Frost's correction factor for Bristol Bay, if a correction factor for Cook Inlet was not available.

Concerning the Rmax, the ASRG accepted the estimate of 4%, but noted that it was likely that this estimate was negatively biased and recommended that additional analysis be directed at refining the estimate of Rmax for this species. Regarding human removals, the ASRG recommended incorporating additional information from the Alaska Stranding Network, the NMFS-native teleconference in December 1994, and the NMFS Alaska Regional Office on human-related removals. In particular, specific references to fisheries interactions should be included in the SAR. Finally, it was noted that the estimated number of removals referenced in Stanek's report was likely an under-estimate because hunters not resident to the Cook Inlet area were not included in the survey. There was general agreement that, while preliminary, the best estimate for the number of annual subsistence related removals in 1993 was 30 (i.e., 17 known kills, 3 previously unreported kills, and as estimate of 10 additional kills by hunters not living near and around Cook Inlet).

Beluga whale- Beaufort Sea Stock (led by Lloyd Lowry)

There was general agreement among ASRG members that the stocks of beluga whales in the Beaufort, Chukchi, and Bering Seas should be referred to as provisional stocks at this time. Regarding population size, Lowry noted that the most recent survey was in 1992 and that the reference should be "Department of Fisheries and Oceans, Canada, unpublished report". Kelly suggested that in general where "pers.

comm." was used in the status assessment reports (SAR), that the type and amount of data should be fully described.

The ASRG recommended using a CV of 0.3 for the kill estimate, which is consistent with the NMFS PBR guidelines. Lowry added that this stock of beluga whales is considered stable or increasing according to a recent report by Harwood et al. Therefore, it was recommended that the F(R) for this stock should be 1.0. Further, the ASRG recommended in general that references in the SAR to populations being at optimum levels only be included when there were published references supporting this determination. It was noted that this position was consistent with the NMFS PBR guidelines.

Regarding native harvest information, Lowry noted that the take of beluga whales from this stock in Alaska ranged between 44 and 48 animals over the last five years based on data from the AIBWC. Further, the Canadian take over the last five years averaged 110 animals per year. Therefore, the total removal level should be 158 animals per year.

Beluga whale- Western Alaskan "stock" (led by Lloyd Lowry)

Lowry commented that the separation of belugas whales in western Alaska into three stocks was provisional at this time. He added that this was the stock structure currently recommended by the AIBWC. However, he noted that the available genetic information (AIBWC unpublished data) was consistent with the decision to manage the eastern Chukchi Sea stock as a separate stock, while at present was not consistent with the decision to manage the Bristol Bay and Norton Sound stocks as separate stocks. Lowry added that the sample of animals in the analysis from Bristol Bay was very small (i.e.,n=5). He further noted that the apparent extirpation of local summering concentrations of belugas supported the hypothesis that there was little exchange between local concentrations of beluga whales in western Alaska. Hills and Pungowiyi commented that the available information on local extirpation of beluga whales due to overhunting seemed equivocal, given the lack of information on environmental changes, episodic die-offs, and the effects of human development (e.g., development of airports near beluga concentrations). Because consensus could not be reached on stock structure, a vote was taken (actually two votes were taken, where the final vote was seven for the following proposal and 4 against), which resulted in the following recommendation: the western Alaskan population of beluga whales should be managed as two stocks- 1) Eastern Chukchi Sea stock and 2) eastern Bering Sea (EBS) stock, including beluga whales from Norton Sound and Bristol Bay.

Regarding the correction factor for estimating abundance of beluga whales in the Chukchi Sea, Norton Sound, and Bristol Bay, a correction factor of 2.62 (CV=0.02) for non-calf sightability in the Chukchi Sea and Bristol Bay and 1.18 for calf sightability were considered most appropriate at this time, whereas for Norton Sound surveys, correction factors of 3.00 (CV=0.03) and 1.18 should be used. Further, concerning the estimate of the Nmin, the ASRG recommended using the default values from the draft PBR guidelines for the CV of the kill and initial status. For estimating the abundance of beluga whales in the EBS stock, it was recommended that the corrected 1992 Norton Sound survey data be added to the corrected 1994 Bristol Bay survey data. The ASRG recommended using an F(R) of 0.5 for the EBS stock and 1.0 for the eastern Chukchi Sea stock.

The ASRG also noted that the average kill from 1990 through 1994 should be provided, if available, and the reference should be AIBWC (unpublished data). Hild noted that a caveat should be added to the discussion concerning the uncertainty as to the stock classification of beluga whales taken in the fall by Norton Sound residents, as it is possible that some of the whales taken are from the Beaufort Sea or eastern Chukchi Sea stock. It was agreed that an Rmax of 0.04 was acceptable.

Sperm whale (led by Beth Mathews)

The ASRG agreed with the proposed stock structure in the SAR and noted that it was consistent with the stock structure proposed by the IWC for this species. Regarding abundance, it was recommended that the published estimates of abundance should be presented, but that current estimates of abundance, Nmin, and the PBR should be regarded as unavailable. It was also recommended that under the ZRMG section a statement be added that, if there were as few as 200,000 sperm whales in the North Pacific, 0.1 PBR would be 40 and, therefore, it was extremely likely that the ZRMG was met for this stock. Under status, the ASRG recommended changing the last sentence to read- 'On the basis of total abundance, current distribution, and regulatory measures that are currently in place, it is unlikely that this stock is in danger of extinction or threatened with becoming endangered in the foreseeable future (Braham 1992)'.

Northern Right Whale dolphin (led by Jan Straley)

The ASRG recommended that the stock section be expanded to better describe the actual distribution of animals included in this SAR and to clarify the reasons why this stock was separated from the eastern Pacific stock. It was noted that most of the information concerning the abundance of this stock was collected

because of interactions with the high seas driftnet fisheries and that very few interactions have been reported with fisheries in waters off Alaska. Therefore, the ASRG raised the issue as to whether this stock should be included in the list of stocks in the Alaska Region.

Regarding abundance and trends in abundance, the ASRG recommended that this section be expanded to include a discussion as to whether the estimated abundance level is likely biased due to incomplete sampling or sampling at an extremely low level of coverage. The ASRG accepted the information presented in the SAR on trends in abundance, Rmax, and F(R).

In the section on human-related mortality, the ASRG recommended that the text be clarified regarding the status of the high seas driftnet fisheries. Further, the group recommended that the reference to status be moved to the section on status.

Right whale (led by Jan Straley)

It was agreed that this population is a separate stock from the Atlantic stock. Regarding the estimate of abundance, there was general agreement that the recommended approach of the MMC to estimate a minimum abundance estimate based on sighting effort in the Pacific and the sighting rate of right whales in the Atlantic was not appropriate because of the lack of survey effort in areas expected to have concentrations of right whales in the North Pacific.

The ASRG accepted the Rmax estimate of 0.04, but recommended a summary of Best's recent paper on growth rates in baleen whales be presented in the SAR. In addition, the ASRG recommended adding to the section on PBRs a statement that an endangered stock of cetaceans would necessarily have a PBR of 0, if the Nmin was less than 500.

Finally, regarding human-related mortality, the ASRG recommended adding a statement that right whales in the North Atlantic are known to become entangled in fishing gear and to be struck by vessels and that there is no reason to assume mortalities in the North Pacific are not occurring due to similar interactions with human activities.

Fin whale (led by Kate Wynne)

The ASRG accepted the one stock classification for the North Pacific and

noted that it was consistent with the stock classification adopted by the IWC. The group also accepted the conclusion that reliable abundance estimates are not available, but recommended that the discussion in the text regarding published estimates of abundance should be expanded to include a description of the data used to derive specific estimates. It was further recommended that NMFS should include references to published reports of aerial surveys conducted in the Bering Sea. Finally, it was recommended that any information on changes in the distribution of fin whales in the North Pacific be added to the text, if available.

Minke whale

It was noted that the IWC considers all minke whales in the eastern North Pacific to belong to the same stock. After some discussion, the ASRG recommended that the minke whale SAR for the Pacific region be combined with the minke whale SAR for the Alaska region.

Pacific white-sided dolphin

It was noted that the proposed stock structure for this species was based on the distribution of fisheries and not consistent with the available biological data. It was further noted that this species has a continuous distribution along the west coast of North America to a northern latitude that includes Prince William Sound. Therefore, the ASRG recommended that this SAR be rewritten in consultation with the Pacific SRG.

In addition, Wynne noted that there was one reported mortality by an observer in 1992 on an Alaskan groundfish trawl vessel.

Beaked whales (led by Jim Branson)

There was general agreement that the stock structure of these stocks should not be dictated by the distribution of fisheries. Branson and Blum recommended, and the ASRG agreed, that individual SARs be prepared for each species in the eastern North Pacific in consultation with the Pacific SRG. It was noted that if the Pacific SRG was not in favor of combining populations within a species along the eastern North Pacific, individual SARs should be prepared for each of the four species.

Gray whale (led by Beth Mathews and Caleb Pungowiyi)

Pungowiyi noted that the summer feeding range includes the entire Chukchi

and Beaufort Seas. There was general agreement with the proposed stock structure for this species. Regarding abundance, the ASRG recommended using the 1993/1994 population estimate in estimating Nbest, the Nmin, and the PBR. The ASRG supported the proposed values for Rmax and F(R).

Regarding human-related removals, it was noted that gray whales are occasionally taken by Alaskan subsistence hunters and by fishermen (as noted in their log book reports). Further, some mortalities have been reported by the Alaska stranding network and the National Park Service (note: 1 reported stranding with evidence of entanglement in fishing gear from 1988 in Dry Bay, Alaska). Therefore, the statement that zero incidental mortalities have been reported since 1988 should be modified to reflect all of the available information on human-related interactions. The ASRG further recommended that the data on subsistence removals include information on the average number of animals taken in the Russian harvest from 1968 through 1991, information on the struck and lost rate, and information on the sex ratio of the harvest. Regarding the struck and lost rate, Lowry noted that these whales are taken using catcher boats, as opposed to traditional whaling techniques and, therefore, the struck and lost rate should refer to the loss rate typical of this type of fishery. Finally, the section should include a statement that there were no reported takes in 1992, 1993, and 1994 in Russian waters.

Bowhead whale (led by Carl Hild)

Hild recommended dropping the sentence in the stock section on "whales do not migrate out of the Bering and Chukchi Seas". It was further noted that the proposed stock structure was consistent with that currently used by the IWC in managing bowhead whales. This stock classification was considered acceptable by the ASRG with the caveat that there is little information on exchange rates between population centers along the Russian coast and in the Canadian Arctic. Pungowiyi noted, for example, that relatively large numbers of bowhead whales summer off the coast of the Chukotka peninsula.

The ASRG accepted the estimates for population abundance, Nmin, and Rmax. It was noted that the current rate of increase (3.1% per year) is an underestimate of Rmax because of the on-going removal of animals by subsistence hunters and because the population, having recovered substantially over the last 15 years, is unlikely to be increasing at its maximum rate of recovery (i.e., Rmax). The ASRG supported the MMC recommendation that the F(R) should be greater than 0.1 because the population is known to be increasing in the presence of a take. They recommended using an F(R) of 0.75.

Regarding human-related removals, Pungowiyi recommended deleting the first sentence in this section and using the actual PBR value in the status determination, as opposed to the quota recommended by the IWC. There was general agreement with this recommendation. Hild commented, and the SRG agreed, that in this SAR, and in general, the text should be written such that there is not a negative reflection on subsistence utilization of marine mammals by Alaskan natives.

Killer whale (led by Jan Straley)

Hild noted that the Pacific SRG recommended a stock structure that considered all killer whales south of Cape Flattery, WA to be a stock separate from a stock composed of killer whales north of Cape Flattery, WA. After some discussion, the ASRG noted that this stock definition relied too heavily on fisheries related information and recommended the following stock structure, pending agreement with the Pacific SRG: 1) all resident killer whales in the eastern North Pacific would be included in one stock, and 2) all transient whales in the eastern North Pacific would be included in a second stock. This classification was supported by recent publications that reported significant differences in the genetic structure and acoustic dialects of resident and transient killer whales in British Columbia. Straley added that in addition to this recommended change, Matkin and Saulitis have recently published a report that recommended a provisional stock structure of 7 unique stocks for killer whales in Alaska and that this paper should be referenced in the section on stocks. DeMaster noted the pragmatic problem of having observers at sea classify an animal as to whether it was a transient or resident type animal. After some discussion, it was noted that the number of incidental mortalities in fisheries was extremely limited and that pending additional review killer whales along the west coast of North America should be managed as two separate stocks. It was recommended that, if the Pacific SRG does not agree with this recommendation, killer whales in Alaskan waters should be managed as two separate stocks (i.e., resident and transient stocks).

The ASRG accepted the estimate of abundance and Nmin with the caveats that 1) considerable information from photo-identification studies conducted by the NMML in southeast Alaska was not analyzed and should be incorporated into the SAR as soon as possible and 2) information on killer whale abundance in waters off British Columbia, Canada, should be included in the estimate of Nbest. It was further recognized that a systematic survey for abundance in Alaskan waters has never been attempted to date. Regarding trends in abundance, it was recommended that a reference to the estimated growth rate of 2% per year in Prince William Sound from a report by Matkin and Saulitus be discussed. Further, it was noted that an Rmax of

0.04 may be an over-estimate for this species. The ASRG accepted the F(R) of 0.5.

The ASRG recommended that the human-related mortality section include available information from the Alaska stranding network, log books, or other unpublished information. Also, where observers were placed on commercial vessels, coverage rates should be specified. Further, this section should include a statement that illegal shooting of animals is likely occurring, but that the impact of this interaction is unknown at this time. Finally, there was general agreement that because of the distribution and typical preferred prey of resident-type animals, it was more likely for resident-type animals to interact with fisheries than it was for transient-type animals.

Humpback whale (led by Jan Straley)

Straley noted that the stock section should be modified to indicate that stock structure in the North Pacific is not well understood, but that there are likely three migratory populations of humpback whales in the North Pacific, where two of these populations are known to feed during the summer in waters off the coast of Alaska: 1) SE Alaska to waters off Kodiak Island, and 2) the waters west of Kodiak Island to waters off the Russian coast. Straley also noted that there were no records of individual humpback whales being sighted in different summers in the waters off Alaska and California. After some discussion, the ASRG recommended that the species should be separated into two stocks that feed during the summer in waters off Alaska: 1) central Pacific stock and 2) western Pacific stock.

Regarding the estimates of abundance, Straley noted that the estimate of abundance reported by Baker and Herman (i.e., 1,407) should be considered out of date because the data were collected between 1980 and 1983 and the population has likely been increasing over the past 10 years. She added that this estimate only applies to the central stock of humpback whales. Based on this discussion, the ASRG recommended that abundance be considered unknown at this time for both stocks (i.e., western and central stocks), but that the Nmin for the central stock be set equal to 1,407. DeMaster added that, if the annual rate of increase were 4% per year, the current abundance level of the central stock would be on the order of 2200 animals.

The ASRG accepted the estimates of Rmax and F(R). Regarding human-related mortalities, Straley noted that this section should be expanded to include information from various stranding networks, reports of entanglement, and log book

reports. Straley commented that she knew of at least one humpback whale mortality related to incidental entanglement in a purse seine in SE Alaska and at least twice humpback whales have been reported to have been struck and killed by vessel strikes. Lowry commented that in general he thought the number of interactions between humpback whales and fisheries was underestimated in the published literature, but that currently there was no way of evaluating the impact of these interactions on humpback whale stocks.

Harbor porpoise (led by Kate Wynne)

Wynne noted that the harbor porpoise have been sighted frequently in waters off Barrow, Alaska and the stock section should be modified to reflect this. Wynne further noted that she has recently sent samples suitable for genetic analysis to the Southwest Fisheries Science Center, but to date the results of this analysis are not available. The ASRG noted that the genetic data and the distributional data were not strongly supportive of establishing multiple stocks. It was noted that the Pacific SRG recommended establishing four stocks of harbor porpoise in the eastern Pacific, but that this stock structure primarily reflected the distribution of different fisheries. The ASRG did not support this general approach to stock classification. It was agreed that if the Pacific SRG was not supportive of a single stock designation at this time, the recommended stock structure of harbor porpoise in waters off Alaska and British Columbia should be to establish a single stock, where the PBR would be based on the Nmin for waters in Alaska only.

Regarding estimates of abundance and trends in abundance, the ASRG recommended that the correction factors published by Barlow for vessel and aerial surveys should be applied to the line- transect data. Further, the ASRG recommended that correction factors applied to surveys for the Atlantic stock of harbor porpoise should be referenced. Finally, it was agreed that the Rmax of 4% and the F(R) of 0.5 were acceptable.

The ASRG recommended, as noted previously, that log book information on human-related mortality should be added to the SAR. It was also recommended that a statement be added that it is extremely likely that the available information on fishery related mortalities will produce negatively biased estimates of total fishery related mortality. Therefore, it was recommended that a conservative approach be taken in evaluating whether the ZRMG was met. Finally, it was noted that there have been no reports of subsistence takes of harbor porpoise.

Dall's porpoise (led by Kate Wynne)

The ASRG recommended that this SAR be rewritten to reflect the true nature of fishery interactions in U.S. waters with Dall's porpoise. That is, U.S. fisheries are only likely to interact with animals off the coast of Alaska and British Columbia. Therefore, the ASRG recommended that Nbest for this stock be based on estimates of animals within the 200 miles of the coast of Alaska and British Columbia, while the PBR be based only on animals in waters off the coast of Alaska.

Regarding the estimate of abundance, it was recognized that comprehensive surveys for Dall's porpoise in waters off Alaska have not been carried out and, therefore, the abundance estimate should be considered unknown at this time. The ASRG recommended that, if available, an estimate of the number of Dall's porpoise in Bristol Bay and the waters around the Aleutian Islands should be used as a preliminary estimate of minimum abundance.

As noted previously, it was recommended that information on mortality from log books should be added to the SAR.

Spotted seal (led by Sue Hills)

It was recognized by the ASRG that NMFS scientists have not had the resources available to them to conduct surveys to determine abundance for any of the species of ice seals (ringed, bearded, ribbon, and spotted seals). This situation is primarily caused by the lack of fishery interactions with any species of ice seal. The ASRG recommended spotted seals be managed as a single stock. Lowry noted that the available genetic information and data from animals tagged with satellite telemetry in Alaska are consistent with this recommendation.

Regarding abundance and trends in abundance, the ASRG noted that Russian estimates of abundance should be referenced, but that at present abundance should be considered unknown. Regarding the use of the correction factor based on data from satellite tagged animals in the Chukchi Sea, Lowry noted that he did not recommend this approach because of the small number of animals tagged and the lack of data stratification to account for differences in hauling behavior related to time of day, time of year, and area. The ASRG recommended that the finding by Lowry and Frost that counts of spotted seals have been relatively stable at Kasegaluk lagoon over the last 15 years be added to the section on trends in abundance.

The ASRG noted that the reported estimate of subsistence kills was likely an underestimate of unknown magnitude. It was recommended that the estimate of subsistence kills reported in Marine Mammal Commission's species accounts be

referenced. There was general agreement that this stock should be classified as not strategic at this time because there is no information suggesting subsistence hunting is adversely affecting this stock and because of the lack of interactions between spotted seals and any U.S. fishery. A similar recommendation was made for all of the stocks of ice seals.

Bearded seal (led by Sue Hills)

The ASRG noted that the same comments made regarding spotted seals should be applied to this species. That is, one stock is acceptable, the reference to the population estimate by Russian scientists should be included in the text, Nbest should be considered unknown, the reference from the Marine Mammal Commission's species accounts should be used in the text as the best available estimate of annual subsistence takes, and the stock should be classified as non-strategic. Further, it was noted that if there were as few as 50,000 bearded seals in Alaskan waters, 0.1PBR would be 150. Given that it is likely that there are at least several times this number of bearded seals in Alaskan waters, the ASRG recommended that the ZRMG should be considered met for this stock. Finally, it was recommended that the statement concerning Russian subsistence takes should be deleted because of a lack of information regarding takes in Russian waters.

Ringed seal (led by Sue Hills)

The comments on the SAR for ringed seals by the ASRG were similar to the comments on the spotted seal SAR. That is, one stock is acceptable, abundance estimates from the literature should be referenced, the current abundance estimate should be considered unknown, it is likely that the ZRMG has been met for this stock, and the stock should be classified as non-strategic.

Ribbon seal (led by Sue Hills)

The ribbon seal comments were similar to the spotted seal comments.

NMFS PLAN FOR IMPLEMENTING MMPA AMENDMENTS

DeMaster noted that NMFS was attempting to publish the final SARs for all three regions in early March 1995, which would be 90 days after the close of the public comment period as mandated in the amended MMPA. It was also noted that NMFS had agreed to distribute draft SARs to the native community for comments prior to finalizing. Therefore, a tentative schedule for finalizing the SARs was suggested: 1) by 10 February, NMFS would make the revised SARs available to the native community and the ASRG, 2) by 20 February, comments would be returned to the NMFS, 3) by 28 February the SARs would be finalized and sent to the Federal Register for publication. It was noted that this schedule was "aggressive" and could change pending input from NMFS Headquarters.

SCHEDULE FOR FUTURE MEETINGS

There was general agreement that the ASRG would like to comment on the revised draft SARs at the same time they are made available to the Native community. Therefore, given that the proposed schedule allows for revised SARs to be distributed to the SRG and native groups on or about 10 February, the ASRG recommends reconvening on the 16-17 February in Anchorage, AK. The meeting would be hosted by RuralCap and would begin at 10:00 AM. DeMaster noted that he would try to have draft minutes to everyone by 16 January 1995 and requested comments be returned by 31 January 1995. Final minutes from the 4-5 and 11 January 1995 meeting will be distributed at the next meeting. In addition, DeMaster noted that he would attempt to get copies of the NMML's 1993 and 1994 Report on NMML Research for the NMFS's Marine Mammal Assessment Program. Lowry noted that the following topics were likely to be discussed at the next meeting: 1) review revised SARs, 2) prepare recommendations on research priorities, 3) prepare comments on uncertainties in information needed to assess the status of marine mammal stocks in U.S. waters, and 4) prepare recommendations regarding the impact of changes in habitat quality on any stocks of U.S. marine mammals.

The meeting ended at 2000 on 11 January 1995.

APPENDIX 1. LIST OF PARTICIPANTS

Scientific Review Group Members

Lloyd Lowry
Denby Lloyd
Joe Blum
Beth Mathews
Kate Wynne
Brendan Kelly
Carl Hild
Sue Hills
Jan Straley
Jim Branson
Caleb Pungowiyi

National Marine Fisheries Service participants

Steve Zimmerman
Robert Small
Doug DeMaster

U.S. Fish and Wildlife Service participants

Dana Seagars
Scott Schliebe
Carol Gorbics
Dave McGillivary

APPENDIX 2. AGENDA

ALASKA SCIENTIFIC REVIEW GROUP MEETING
4-5 and 11 January 1995
Anchorage, AK

4 January 1995

10:00 am	I.	Opening statments and introduction
	II.	Review and approval of agenda
10:15	III.	Discussion of role of Scientific Review Group
10:30	IV.	Changes in procedures for stock assessment
11:00	V.	Summary of public comments on stock assessment
12:00	LUNCH BREAK	
1:30	VI.	Review stock assessments of FWS species

5 January 1995 (carried over to 11 January 1995)

8:30	VII.	Review stock assessments of NMFS species
12:00	LUNCH BREAK	
4:00	IX.	Preparation of SRG report
4:15	X.	NMFS plans for implementing MMPA amendments
4:45	XI.	Schedule for future meetings
5:00	XII.	Adjourn

APPENDIX 3 RECOMMENDED CHANGES TO DRAFT REVISED GUIDELINES ALASKA SCIENTIFIC REVIEW GROUP

1. Stock identification

o stock classification should strictly follow the Dizon et al. criteria. That is, management implications (e.g., geographic distribution of fisheries) should not be the primary factor in stock classification.

2. Minimum population estimate (Nmin):

o If abundance estimates are believed to be negatively biased, appropriate correction factors can be applied to obtain minimum estimates of abundance, given that the correction factor is conservative. Where possible, the 20th percentile of a log-normal distribution of the unbiased estimate of abundance (referred to as Nbest) will be used as the Nmin. If the stock is utilized by native subsistence hunters and where it is not possible to calculate the 20th percentile of Nbest, Nmin may be calculated using a count and a conservative correction factor. For example, Nmin can be estimated as the product of a minimum estimate of pup production and an unbiased estimate of the proportion of the population that are pups.

3. Maximum population growth rates (Rmax):

o Estimates of Rmax may take into account information on the sex ratio of the stock. For example, stocks that have an equilibrium sex ratio (male:female) less than unity can have Rmax values greater than a stock with equal net productivity, but where the sex ratio is 1.0.

4. Recovery factors(F(R)):

o If a stock is listed as threatened (e.g., western stock of Steller sea lion), but is likely to be listed as endangered in the near future, an F(R) of 0.3 (i.e., midway between an F(R) of 0.1 and 0.5) is appropriate. If a stock is listed as endangered or threatened, but is likely to be downlisted (e.g., bowhead whale) or delisted (e.g., eastern stock of Steller sea lion) in the near future, F(R)s of 0.5 and 0.75, respectively, are appropriate. Other similar adjustments could be made in the future pending additional information on stock status. .

o A stock with uncertain status that is stable or increasing, while being utilized by native subsistence hunters, may have an F(R) of greater than 0.5 and as high as 1.0, as appropriate.

5. Zero rate mortality goal (ZRGM):

o The ZRMG can be met for stocks where Nmin's are not available, if there is reasonable assurance that the existing level of removals due to interactions with

commercial fisheries is less than 10% of the PBR, where the PBR is estimated with an extremely conservative estimate of Nbest.

6. Classification of strategic stocks:

o stocks that do not interact with fisheries and where information on abundance is lacking may be classified as non-strategic, even in the presence of removals by native subsistence hunters. Such a classification must be based on traditional and western knowledge that removals by native subsistence hunters are sustainable.