

Minutes: Tenth Meeting of the Alaska Scientific Review Group (6 - 8 October, 1999)

1.1 Introduction

The tenth meeting of the Alaska Scientific Review Group (AKSRG) was held at the National Marine Fisheries Service (NMFS), Alaska Regional Office, Juneau, Alaska from 6 - 8 October, 1999. The purposes of the meeting included: 1) initial review of the revised 2000 Stock Assessment Reports (SARs) for NMFS stocks in Alaska, 2) update on Cook Inlet belugas, and 3) review NMFS and Fish and Wildlife Service (FWS) plans for marine mammal research and management. Appendix 1 contains the list of AKSRG, NMFS and FWS participants. Appendix 2 presents the agenda. Appendix 3 contains a list of the background papers and AKSRG documents that were distributed prior to, and during the meeting. Appendix 4 summarizes recent NMFS marine mammal population assessment activities. Appendix 5 (A-C) contains details of FWS issues related to walrus, sea otter and polar bears. The meeting was chaired by Lloyd Lowry. Richard Ferrero served as rapporteur.

1.2 Review and Approval of Agenda

The agenda was adopted as shown in Appendix 2. Two items were added to the original draft: a) a report from Sue Hills on the recent marine mammal Recover Protected Species (RPS) proposal and funding review meeting in Silver Spring, and b) a report from Brendan Kelly on Pacific walrus research in conjunction with the FWS presentations.

1.3 Other Business

Lowry was re-elected AKSRG chair for the 1999/2000.

2. Presentation and Discussion of Methods for Collecting and Analyzing Data on Small Cetaceans

Lowry clarified that the objective of this topic was to provide an opportunity for the SRG to focus on the underlying science behind the information presented in the SAR. This approach allows the SRG to apply its collective expertise and avoid more constrained technical or editorial reviews of the SAR chapters themselves. Kelly noted that when the SRG had taken this approach with the NMFS assessments in the past, the agency responded by either revising the SAR or modifying the approach used to estimate any of the parameters involved in calculating PBRs.

2.1 Aerial surveys

Doug DeMaster provided an overview of the National Marine Mammal Lab (NMML) small cetacean aerial survey program in Alaska. The state is broken into 3 regions (southeast, Gulf of Alaska, and Bristol Bay) and one area is surveyed each summer. He described the general approach to aerial line transect methods that uses teams of three observers to cover right, left and center zones relative to the transect line. The sightings are used to estimate a density

function for the effective area searched, or a strip, bracketing the transect line. The effective strip width for harbor porpoise, for example, is about 200m (given the other characteristics of the aerial survey). The survey density is then extrapolated over the study area, generally defined as the area within a line connecting the outermost points of adjacent transect endpoints. DeMaster went on to explain that the middle observer provided a means of assessing animals missed on the transect line by the side observers. This comparison provided a means of generating a "perception" correction factor. A second type of correction factor is also required for animals not at the surface at the time of the survey (*i.e.*, to address the "availability" bias).

Kelly asked how animals seen from the air that are below the surface are handled with reference to the application of an availability correction factor. DeMaster responded that the application of the availability correction factor to data containing both surface and subsurface sightings would "over correct", in other words result in a positively biased estimate of abundance. The severity of the bias would be dependent on the amount of time the animals spend in the upper subsurface zone (*i.e.*, 1-2 m depth) but still visible from the air. Several members of the SRG expressed concern about the potential magnitude of the problem. DeMaster indicated that Rod Hobbs would be asked to address the issue in a short report prepared for the next meeting of the SRG.

Lowry asked for comment on the reliability of estimates based on small numbers of sightings. In particular, the Gulf of Alaska harbor porpoise surveys resulted in only 114 animals sighted which extrapolated to a population of over 20,000 animals. DeMaster responded by reiterating that the density estimates are probably pretty good, with CVs in the 0.2 range. The scale of the extrapolation stems from the very narrow strip actually surveyed, compared to the much larger study area bounded by the outermost points of adjacent transect legs. Given the low encounter rate inherent with these animals, more survey effort is unlikely to improve the CV of the estimate significantly.

Kelly brought up the issue of stratification, where the differences in density across different habitats are not being considered in the estimate. As a case in point, Cook Inlet was dropped from the most recent survey for harbor porpoise because of the low numbers of harbor porpoise encountered there last time, whereas more bays and inlets were included which tend to have greater densities of animals. DeMaster reiterated that the point of a survey designed to estimate minimum abundance is to estimate density, such that the resulting estimate is representative of the area surveyed.

Kate Wynne questioned whether alternative survey platforms could be used to supplement the aerial coverage (*i.e.*, small boats in bays and inlets). DeMaster noted that a sufficient sample of sightings per platform type is still required, along with (ideally) a method to calibrate the survey methods. Craig Matkin suggested that it may be more informative to use alternative platforms for comparison of abundance estimates rather than as individual components of a composite survey approach.

Lowry remarked that he was unable to judge the appropriateness of the small cetacean

survey methods with the information currently available to the SRG, particularly how to stratify or what methods to suggest for different habitats. Likewise, the size of bias introduced by the concerns just discussed were unknown. DeMaster noted that information on the potential magnitude of this bias would be made available to the SRG at the next meeting.

With regard to the question of collecting additional or different information to improve the small cetacean estimates, the SRG noted that the present estimates are probably inadequate to detect any trends in population, but are likely to be adequate for determining N_{min} . In addition, the precision of the available estimate has to be considered relative to the magnitude of incidental mortality incurred, which, for the Alaskan small cetacean stocks, is thought to be low.

2.2 Life history parameters

Richard Ferrero summarized the Dall's porpoise growth and reproductive paper (Ferrero and Walker 1999) which was based on samples from the biological sampling program in the Japanese high seas salmon mothership fishery adjacent to the western Aleutian Islands during the 1980's. Lowry asked how the life history information could be used in the status of stocks reports. Ferrero indicated that the overall life history strategy that emerged from these analyses suggested an instance where the default value for R_{max} may not be appropriate. Rather, strong evidence for a) an annual reproductive interval, b) early onset of sexual maturity, c) rapid pre- and post-natal growth, d) short life span, and e) a highly modal and consistent calving season, point to a higher net reproductive rate compared to species with delphinid-like life history, on which the default values were based.

Milo Adkison asked if age structure data were available for the sample, to which Ferrero said it was. Adkison then asked why NMFS did not calculate an R_{max} value for Dall's specifically rather than using the default value. DeMaster explained that while the reproductive patterns were clear from these analyses, survivorship data were not available. Lowry and others countered by asking what the default value was based on. DeMaster described the original Barlow and Reilly analysis briefly, but again Lowry suggested that the survivorship assumptions in those analyses were not any better than that which could be applied to the very large life history data set available for Dall's porpoise. Lowry suggested that the SRG may want to make a recommendation to NMFS to use the Dall's porpoise life history information presented in Ferrero and Walker to at least explore estimation of a revised R_{max} value for the North Pacific stock of Dall's porpoise. DeMaster indicated that such an analysis could take the form of an extension of Barlow and Bovengs' publication on estimating growth rates by using the Dall's porpoise reproductive characteristics and available data on longevity.

The Dall's porpoise case prompted Lowry and several other members of the SRG to question when a data-driven estimate of R_{max} would be used instead of the default value. The Dall's porpoise age and reproductive sample is very large, and if it can not be used as the basis for investigating an alternative to the default R_{max} , then what would? DeMaster noted that R_{max} could only be estimated using life history parameters from populations that were severely

depleted. Again, the SRG argued that the assumptions associated with survivorship would probably not be any worse than those in the Barlow and Boveng model and applied to Dall's porpoise.

In addition, the issue of why to collect life history data at all, if it can not be used, arose. DeMaster mentioned the IWC precedent where if a direct estimate of net production was available for a population recovering from a severely depleted state, then life history collections in support of management contributed relatively little. Ferrero added, however, that life history studies can supply a wide range of information pertinent to assessing impacts rather than simply providing input to models used for management. For example, the Dall's porpoise life history investigations indicated that the fishery was occurring throughout the peak calving season and that parturient and lactating females comprised a large part of the take (*i.e.*, segregation of animals by age and sex class made harvest non-random).

After completing discussions of Dall's porpoise life history, the SRG turned to the Pacific white-sided dolphin paper by Ferrero and Walker (1996). Ferrero described the data origin, and highlighted the contrasting life history strategy compared to Dall's porpoise. Unlike Dall's, Pacific white-sided dolphins have a later onset of sexual maturation, at least biennial reproduction and relatively long life span. In short, and not surprisingly, Pacific white-sided dolphins fit the delphinid life history pattern for which the default value for R_{max} is most appropriate.

3. Initial review of draft 2000 SAR chapters for small cetaceans

3.1 Harbor porpoise

Kelly noted that the rationale for the separation of the three stocks of harbor porpoise was not well explained in the introductory section. Two points were made. First, the separation between SE and GOA was based on differences in density but that the degree to which density varied between the two stocks was not specified. Second, no rationale was provided for the line between GOA and BS. It was agreed that some language would be added to qualify the first point, while the second was more arbitrary. DeMaster indicated that he would refer to the '97 minutes where these boundaries were agreed to by the SRG and the appropriate changes to the text would follow. Lowry added that if the stock boundary question was sufficiently important to the SRG, then it might warrant closer attention in a future meeting.

In general the SRG felt that the stock issue was not likely to be resolved with the information available. Division into management units, like the three for harbor porpoise, was a reasonable approach in some cases even though decisions on the borders may not be based on scientific data.

Several members of the group expressed confusion over the text that described the availability of fisher self-reported mortality data and the statements about its unreliability since 1995. It was agreed that the text should be clarified and some of the background information on

mortality data sources appearing in the SAR Appendix 4 would be brought forward into the chapters. More importantly, there appears to be some inconsistency in which of these data (since the beginning of the logbook program) should be used to estimate annual mortality. Likewise, other sources of mortality data also exist which are not cited in the SAR (e.g., incidental mortality in nets used by fishery biologists to assess the stock status of various fish species). The SRG will consider recommending that NMFS develop the means to get reports of all mortality sources.

Several minor editorial changes to the chapter were suggested which will be incorporated in the next draft.

3.2 Dall's porpoise

The validity of the correction factor for vessel attraction was questioned by several members of the SRG. No members were familiar with the analysis by Turnock and Quinn (1991), therefore, copies of the paper were requested for all members to review and a sub-committee (Matkin, Adkison and Mathews) will coordinate comments.

As noted in earlier discussions, the SRG expressed interest in resolving whether a value for R_{max} , other than the cetacean default, could be estimated for Dall's porpoise. Even if the results of this analysis indicate that a value more appropriate than the default can not be determined, the exercise should be undertaken and reported in the SAR.

Kookesh also noted that other sources of Dall's mortality should be noted in the SAR. In particular he mentioned mortality incidental to trolling and recreational fishing. It was not clear, however, how the Alaska Regional Office would obtain such data as its reporting (at least in recreational fisheries) would be voluntary.

3.3 Pacific white-sided dolphin

Discussion initially focused on the comments in the SAR chapter that the abundance estimates may be biased upward because of vessel attraction. No correction factor has been developed for this species. Adkison asked about the appropriateness of using the uncorrected abundance estimate in calculations of N_{min} , recognizing that it was biased upward. Ferrero indicated that NMML staff could review the literature and speak with analysts at NMML to determine if any more information on the magnitude of a correction factor could be incorporated into the SAR.

Lowry noted that the source of the abundance data was well offshore, from the central North Pacific, well south of the area outlined in the SAR as the geographic range of the stock. Furthermore, the data on which this estimate was based were dated, having been collected in 1990/91. The SRG questioned whether the abundance estimate in the SAR was relevant to the Pacific white-sided dolphins off Alaska, realizing that the distribution and movements for this stock are largely unknown. Lowry proposed that the SAR be modified to describe the current

estimate and the limited sample of more recent data, then go on to explain that the SRG does not recommend using the Buckland *et. al.* (1993) estimate in the calculation of the PBR for this stock.

The SRG then reflected back on the Dall's porpoise abundance estimate, specifically the location of sightings used to generate it. Unlike the Pacific white-sided case, however, the survey area and the boundaries of the stock overlap, so the estimate as presented should stand. However, Ferrero pointed out that the stock boundaries as currently set do not discriminate between the Bering Sea and the area south of the Aleutian Islands, which is not consistent with indications of stock differences, particularly the genetics work in Winans and Jones (1988) and parasite incidence in Walker and Hacker (1990). It was agreed that the available literature would be reviewed and made available to the SRG for future consideration.

4. Presentation and discussion of methods for collecting and analyzing data on Eastern North Pacific gray whale

DeMaster described the gray whale survey methods wherein data from the southbound survey was used to estimate abundance and data from the northbound survey was used to estimate calf production. Unlike most species, an R_{max} value, based on the observed rate of population increase, has been calculated. Lowry noted that the work on this species should be familiar to the SRG by now and that it is well documented. In addition, the CVs on the abundance estimate are low, and the methods are sound.

The SRG discussed a variety of unusual observations of gray whales over the last year including low estimates of calf production, and higher than normal mortality. Kelly also reported seeing lower than expected numbers of animals between Nome and the Bering Strait in July, while Wynne reported large numbers of gray whales feeding in the Kodiak area in mid-summer. Lowry and others pointed out that such events may not be unexpected for a population approaching K . As such these events do not suggest an immediate conservation priority to the SRG. DeMaster noted, however, that scientists from Southwest Fisheries Science Center (SWC) and NMML had proposed conducting another calf count in 2000 (given the low calf production in 1999) and both an adult and calf count in 2001.

5. Initial Review of draft 2000 SAR Eastern North Pacific gray whale

In the draft gray whale SAR, the default value for R_{max} was used instead of the calculated value of .053. As in the earlier discussion on Dall's porpoise, the question arose as to why the default value was used instead of one based on data. DeMaster replied that the difference between the calculated value and the default was not significant according to the guidelines in Wade and Angliss (1997). None-the-less the SRG expressed a preference to use calculated values rather than defaults. After polling all members of the SRG, Lowry summarized: clearly, the SRG would prefer to use data driven estimates, regardless of the magnitude of their difference from a default value, but in this particular instance, they were not sufficiently familiar with the analysis that resulted in the .053 value to endorse it at this time.

Instead, it was recommended that NMFS and the SRG need to consider criteria for deciding when to change from defaults to data-based values for R_{max} .

6. Comments on Draft Year 2000 NMFS SARs for ESA-Listed Strategic Stocks

The SRG briefly reviewed the strategic stock chapters and suggested additions or revisions as described below. Ferrero noted that updated mortality and abundance data available through summer 1999 will be incorporated in the next draft.

Bowhead whale - Straley presented recent information on observations of scarring and entanglements in lines (possibly pot gear). The concern was based on Craig George's re-examination of bowhead harvest data which suggested that the number of such entanglements may be greater than previously thought. More complete information on bowhead interactions with fishing gear will be incorporated in the next SAR revision as available.

Fin whale - Insufficient sightings have been recorded to update the abundance estimate, however, a new analysis may be possible by 2001.

Humpback whale - Straley asked if further consideration would be given to separation of the central stocks on the basis of feeding areas. Lowry indicated that this would make a good feature topic for a future meeting, recognizing that the SRG has not been comfortable with the present approach.

Northern right whale - A new abundance estimate was not currently available, but an update may be available by 2001.

Northern fur seal - A revised estimate will be available for the 2001 SAR, following completion of pup counts in summer 2000.

Sperm whale - An survey of sperm whales in the Gulf of Alaska using acoustic receivers is currently underway. A revised abundance estimate may be available for the 2001 SAR.

Steller sea lion - A revised abundance estimate will be available for the 2001 SAR following an all-Alaska survey in June 2000.

7. Update on Current Issues

A collection of current issues were discussed by SRG members and NMFS staff. Note that the order of topics was rearranged slightly but the order of presentation herein follows the agenda.

7.1 Cook Inlet beluga whales

DeMaster reported on the aerial survey and tagging project completed in June. The index

count from the surveys (217 whales) is similar to last years number (193). The total abundance estimate will be available after the video analyses are completed this fall. One satellite tag was placed on 31 May and transmitted for a total of 112 days. Dive and surfacing data will be analyzed this winter. Michael Payne reported on the September beluga stranding event in Turnagain Arm where up to 60 animals were beached. Six animals were found dead, two of which were fresh enough for muktuk from the stranded whales to be distributed to the local Native community.

In subsequent discussions of the draft 2000 SAR, Lowry asked why a recovery factor of 0.3 was still used, despite previous recommendations from the SRG to use 0.1. Lowry further pointed to a letter in which the Alaska Regional Administrator had concurred with the SRG's recommendation. DeMaster explained that the agency position, at this time, was consistent with the decision to list this stock as depleted under the MMPA . He noted that a 0.1 recovery factor would have been required had the agency decided to do an emergency listing of endangered under the ESA. However, because the agency has not finalized a decision on ESA listing to date, a middle ground value of 0.3 was preferred. After considerable discussion, the SRG strongly reiterated its concern that the status of the Cook Inlet beluga stock warranted the more conservative approach and that 0.1 should be used. DeMaster indicated that the 2000 SAR would reflect the SRGs concerns and recommendations even if NMFS decides to take a different approach.

Highlights on the Cook Inlet beluga issue since the last SRG meeting were also discussed. Of note, sealing regulations requiring all harvested whales to be reported and a jaw sample to be turned over to NMFS were recently instituted. The SRG agreed that this was a major success and addressed their previous recommendation. Second, a legislative action restricting the Native harvest was also put into effect in May of 1999. In the absence of a co-management agreement, a moratorium on beluga hunting in Cook Inlet will be in place through September 2000. As of this meeting, no beluga hunting was known to have occurred during 1999.

Payne reported on NMFS activities relative to listing Cook Inlet belugas as depleted under the MMPA as well as efforts toward co-management. The proposed rule for the depleted listing is expected to be completed by mid to late September to allow publication of a final rule by February or March. The final rule will not include language related to the harvest. Rather an EIS on the harvest issue will be developed. Over the coming months, public hearings will be held to solicit input on the contents of a co-management agreement with completion expected by March. Once the agreement is in place, a rule to manage the beluga harvest would then be proposed.

Adkison and Kelly raised the issue of an SRG review of the beluga EIS, suggesting that the group might provide useful guidance. Lowry noted that the SRG has already been commenting on the science and may not necessarily need to formally review the document. The members agreed that they should all review the document individually, then decide whether to meet again as a group to comment formally.

DeMaster noted that NMFS was also petitioned to list Cook Inlet belugas under the ESA but that the agency had decided to use the full year allowed it under the mandates of the ESA. Both Payne and DeMaster described the underlying differences between the listing alternatives. Kelly asked if the SRG should comment on the alternative listing approaches. However, the SRG agreed to restrict comments to the underlying science and not address the issue of classification.

Lowry raised two further issues for the SRG to consider. First, what will happen when the legislative fix expires, and second, what level of illegal harvest may have occurred this summer? With regard to the former, it was hoped that restrictions under a co-management agreement would be in place by the end of the moratorium period as well as a regulation authorizing the agency to restrict Native harvest of belugas in Cook Inlet, as necessary. As for the latter, Payne indicated that while NMFS enforcement had been active in 1999, it did not have sufficient resources to detect violations reliably. The SRG discussed possible recommendations to increase enforcement capabilities. Kookesh and others strongly emphasized cooperation with hunters as the preferred step before considering additional enforcement measures. Following additional discussion, the SRG agreed to draft a letter supporting implementation of the sealing regulations and endorsement of expanded education and enforcement roles for information gathering.

7.2 Steller sea lions

Tim Ragen recapped the events over the last year involving Steller sea lion/commercial groundfish fisheries litigation. He provided an overview of recent events centered on NMFS progress toward responding to Judge Zilly's Reasonable and Prudent Alternatives (RPA) remand order. In particular, NMFS is reviewing the package of RPAs previously developed but found to be arbitrary and capricious by the Court. A revised package of actions including spatial and temporal redistribution of the pollock fisheries and establishment of additional buffer zones will be completed and filed by October 18. A more complete explanation of how the RPAs will avoid jeopardy remains the focus of the effort.

7.3 Humpbacks in southeast Alaska

Straley led a discussion of anthropogenic interactions with humpbacks in SE Alaska, noting that not all observed interactions appear in stranding records maintained by the Region. She showed slides of a boat hit by a humpback (presumably) which left a chunk of baleen behind. This represented a case where the whale would not have been reported as a stranding (unlike a whale hit by a boat). Reporting of entanglements in fishing gear was also thought to be somewhat inconsistent. For instance, whales transiting (unharmed) through gear are not reported as strandings. Kaja Brix clarified the Region's approach to recording these events, recognizing that reports of non-lethal interactions are fragmentary. The SRG agreed that all incidents should be recorded (to the extent possible given poor reporting) in order to better characterize the extent of possible interactions and that consistent definitions of terms used to describe strandings and fishing interactions should be used in all of the AK Region programs.

7.4 Contaminants in transient killer whales

Matkin presented information on contaminant loads (PCBs and DDTs primarily) found in biopsy samples from transient killer whales. The levels of contamination were considerably higher than found in resident killer whales. Furthermore, the levels were in a range high enough to be considered a potential health risk. The SRG briefly discussed possible sources of contamination and comparisons with other locations but did not suggest specific actions.

8.0 NMFS marine mammal program activities

The SRG discussed the following topics at various points in the day as time allowed.

8.1 Ringed seal incidental harassment authorizations

Kelly led a discussion of concerns about NMFS issuance of ringed seal incidental harassment authorizations associated with on ice oil/gas exploration and development activity. NMML personnel had assembled records of IHA applications, survey plans and annual reports as requested by the SRG to aid the discussion. Kelly described the methods used (and approved by NMFS) to estimate numbers of seals harassed by on-ice seismic activities as "dubious". Probing, infrared detection, and aerial survey methods were among the methods employed. Kelly noted that he had detected seal holes as well as a dead pup using dogs in an area previously deemed "clear". He noted that the oil company consultants and native observers have consistently considered dogs unnecessary. Kelly and others in the group expressed frustration that in spite of the problems with the adopted methodology, LOAs and IHAs have been consistently approved by NMFS. DeMaster noted that a letter from Dalton to Lowry on this issue indicates that NMFS believes that the process needs to be improved. Furthermore, the issue will be discussed at length on 14-15 October 1999 at a special workshop in Seattle convened by NMML. Lowry indicated that the issue should be tabled for now and revisited after the workshop is completed.

8.2 NMFS subsistence harvest monitoring strategy

Payne provided a brief overview of NMFS activities associated with the harbor seal and Steller sea lion harvest monitoring issue. In short, he had little progress to report, instead noting that they were still at the stage of determining whether to move ahead with a state contract or to develop a new program under a co-management agreement. The choice presents a management conundrum as the state contract option is inconsistent with an opportunity to work through co-management, while the co-management option would require assembly of an infrastructure (a feature already in place with the state option). Kookesh noted that at least the Alaska Native Harbor Seal Commission endorsed an approach that uses the existing state program, which could be continued under the new co-management agreement between NMFS and ANHSC.

Charlie Johnson provided an update on ice seal harvest monitoring where 1 yr co-management agreements have just been signed between Kawerak, the Alaska Native Nanuuq Commission, the North Slope Borough, and NMFS. Three activities are planned, the first as an

