

FINAL Dec 07

Minutes: Twentieth Meeting of the Alaska Scientific Review Group 11-12 January 2007

Seattle, WA

This report summarizes the 20th meeting of the Alaska Scientific Review Group (SRG). This document is intended to summarize the main points of the discussion and does not attempt to repeat everything that was said during the meeting. The revised agenda is included as Appendix 1 and the list of SRG members and observers present is provided in Appendix 2.

1) Adoption of agenda

After some discussion, the agenda was adopted.

2) Membership

Some significant membership changes occurred. S. Hills announced that she would be both stepping down as SRG chair and stepping off the SRG. No SRG members volunteered to take on the position of chair; Kelly agreed to approach Mathews to be the next chair. There was a general feeling on the part of many SRG members that those individuals who had been on the SRG for many years yet had yet volunteered to chair the SRG should step up to take this responsibility soon.

In 2006, the SRG nominated Robert Suydam as a new member with expertise in Arctic marine mammals; Suydam had not yet been officially appointed to the group, but was in attendance at the meeting.

SRG members discussed the addition of someone with expertise in population dynamics and in Arctic/Bering Sea subsistence harvest. Individuals were recommended to fill these roles; Angliss will be contacting these individuals to assess their interest within the next several weeks.

3) Adoption of minutes from January 2006 meeting

The AK SRG adopted the draft final minutes from the January 2005 SRG meeting, pending the following:

- The addition of the sea otter discussion provided by S. Hills
- Confirmation that Kelly's comments had been incorporated.

4) Caution re. SRG recommendations to the agency

Eagle indicated that in 2006, the Atlantic SRG made a recommendation about a management measure prosing to close fisheries in an area where a right whale died. Eagle reminded the Alaska SRG to be careful about making statements that are advocating a specific

management approach; these statements may lead the public to believe that SRGs are an advocacy group, not a science/advisory group. All SRGs need to remember that their purpose is to be a scientific review group and should be very cautious about making specific management recommendations.

For example, if the SRG was interested in making recommendations about types of fishing gear that should be used, it would be more aligned with the purpose of the group to recommend research to design gear or to assess what gear would reduced impacts than to recommend that the agency develop regulations to require certain gear types.

5) Follow up on letters to NMFS

Hills summarized the list of letters that the SRG has intended to send to NMFS and the USFWS over the past few years: The following letters were identified:

Ice seals -- There was general agreement that it would still be relevant to send a letter urging the agency to collect information on ice seals and to work closely with the ice seal committee.

Observer program priorities – There was general agreement that the letter should reflect the SRGs discussion that NMFS should support mitigation and prevention of entanglement rather than spending funds on getting precise estimates of bycatch, that carcass surveys would be a viable alternative to observer programs, and that more information should be collected on the entangling gear. Matkin noted that at the last meeting, the SRG also discussed surveys that involve interviewing fishers; ensuing discussion indicated some concern about the usefulness of this method. There was also a discussion about whether the SRG should recommend that NMFS support a scarring study. Wynne pointed out that scarring studies cannot be used directly by the agency because they provide information on animals that survived, not animals that were seriously injured or killed. Straley noted that, in the Gulf of Maine, researchers are looking at how many whales get new scars in order to estimate scarring rates. Straley suggested conducting a 2-3 yr study to find out how fast animals are getting scars in Alaska. Matkin added that because it's not possible to tell what fishery is causing the scarring, a scarring study may not be that helpful for managers. Wynne noted that these types of studies need to be tied closely to the agency's need to estimate serious injury and mortality.

Walrus survey – The SRG felt that a letter commending the FWS on the rigorous preparation for the range-wide walrus survey would still be appropriate.

Hills questioned whether the SRG should routinely comment on documents such as draft recovery plans, draft Environmental Impact Statements or other management documents. Lowry stated that it is not clear that the SRG should review these types of documents; these types of reviews do not sit well with what the SRG is doing. The SRG is supposed to be reviewing the science; while all of these documents include science, it would be easy to get bogged down. Suydam responded that reviewing these types of documents could be very cumbersome, but there's a lot of issues that the SRG could weigh in on that would be helpful. For instance, the SRG could play a role in telling NMFS where data is lacking with respect to impacts of oil/gas on marine mammals in the Arctic. Suydam urged the SRG to avoid making a blanket policy that they would not review management related documents. Lowry agreed that the SRG should address these issues on a case by case basis.

6) Serious injury workshop update

Angliss reported that the serious injury workshop was initially scheduled for November 2006, but was postponed indefinitely due to budget uncertainties. The agency is now considering rescheduling for August 2007, but no firm plans will be made until the agency has a budget. NMFS remains committed to pursuing the workshop. . .it's just a question of when.

7) MMPA reauthorization

Eagle reported that the authorization of the appropriation for the MMPA expired in 1999. Since 2000, NMFS has been putting together a legislative proposal with the USFWS, Marine Mammal Commission, and the Navy. NMFS submitted the administration's legislative proposal in 2000, 2002, and 2005. The most significant changes are differences in the comanagement process with Alaska Natives, changes in the MMPA's ability to authorize recreational fisheries to take marine mammals and to reduce interactions, and changes in enforcement. The House of Representatives passed a bill last year that did not pass the Senate. Due to a recent court case involving state's rights in Hawaii, the MMPA may also be altered to make it clear that regulations in state waters can be enacted to protect whales. In addition, the administration proposes to broaden the definition of "Unusual Mortality Event" to include morbidity, and removes some limitations from the Prescott program.

8) Update on NMML's budget and preliminary research plans for 2007

Bengtson provided an update on NMML. At this time, NMML has 48 permanent staff, 9 term/temporary employees, 15 contractors, and 4 students or postdocs. In FY06, NMML's budget was \$9.7M of appropriated funds (not including reimbursable funds).

Bengtson provided a summary funds received in FY05, FY07, and the House mark for FY07 (Table 1). Bengtson pointed out that a considerable amount of funds must be used to pay for permanent staff; when overall budgets decrease, it disproportionately reduces the amount of funds available for science operations because the cost of permanent staff is fixed. Also, when funds are provided by NMFS Headquarters or the AKR, the funds are typically for specific projects (e.g. temporary North Pacific right whale funds provided in FY05) and cannot be redirected.

Table 1. Summary of funds received from various sources.

Source	FY05	FY06	FY07 (House mark)
Base	2,944	3,224	2,436
SSL/ESA	838	838	---
AK pinnipeds	5,943	4,827	1,893
Large whales temp	250	247	---
HQ SAIP temp	333	---	---
HQ temp	500	628	---
HQ right whale	100	---	---

temp			
TOTAL	10,908	9,764	4,513
Perm staff	4,305	4,635	4,960
Admin	415	430	430
Science operations	6,188	4,699	(877)

Table 2. Allocation of funds by species or species complex

Species	FY06 enacted
SSL	1811
NFS	687
HS	832
Ice seals	296
Large cetaceans	278
CIB	188
KW	116
Other small cetaceans	67
Non-AK stocks	99
	4374

Bengtson reported that, as of January 2007, there were rumors that we will be supported at the FY06 enacted, minus earmarks.

Matkin asked about the outlook for Steller sea lion research in FY07 given the permit situation. Bengtson responded that NMFS is working hard to complete NEPA compliance documents in time to allow research to continue in FY07, but that at this point, all Steller sea lion research is up in the air.

Lowry commented that, in general, the House mark is low and the Senate mark provides more funding for marine mammals: this pattern does not seem to be the case for FY07. Bengtson responded that the agency was told that we have to use the smaller of either the House or Senate mark until a budget is passed. Since House mark was smaller, we have to assume that level of funding. If the Senate mark was used until the budget was passed, this would have given us about a 10% increase in funds. If we get the FY06 enacted minus the earmarks, NMML will be down to just a few million dollars, most of which has to be used to pay for permanent staff.

9) Long-term plans for obtaining abundance information (Wade, Bengtson)

Wade provided a summary of the PLANSURV program which was used to develop the Wade & DeMaster (1999) paper in Marine Mammal Science. This paper presented a system that addressed the question of how often would we incorrectly say that a fishery would exceed the PBR level when the PBR level was actually not being exceeded. The results indicated that if you a particular stock has a CV for incidental mortality and a CV for abundance that is about 0.1, it is unlikely that we would incorrectly say that the fishery mortality level was exceeding the PBR level. If a particular stock has CVs of abundance and mortality that are about 0.3, it is still

unlikely that we would incorrectly say that the fishery mortality level was exceeding the PBR level. Further, modeling showed that even if you only do an abundance estimate every 8 years, the probability of incorrectly calling something strategic is pretty low as long as it is a good estimate.

This approach worked well when there were “Recover Protected Species” monies that were held by HQ and were competed for by the Science Center staff. This system allowed funds to move around the U.S., so that a harbor porpoise survey would be flown in New England for a few years, and would be flown in Alaska for a few years. That pot of money was eliminated several years ago and was given directly to Centers.

Barrett-Lennard questioned why the paper looked at positives instead of false negatives. Wade responded that the justification is in the paper, but basically the PBR system is set up to avoid false negatives so the authors wanted to test the converse.

One SRG member asked whether we actually do average abundance estimates over 8 years. Angliss responded that this is not done because, for the most part, we only get abundance every once in a while, so averaging would not be sensible.

Eagle noted that the agency staff discussed long time ago how often we should be doing abundance estimates. Taylor is coming out with a paper on our power to detect major changes in populations; using our current our ability to do this is painfully low.

10) SPLASH updates

Wade provided an update on the SPLASH humpback whale study. The objectives of this study are to obtain a better estimate of overall abundance of humpback whales in the North Pacific, and to estimate abundance for specific wintering and feeding areas to better serve management need. Table 3 provides a summary of the results to date.

Season	Unique identifications	Biopsy samples
Winter 04	1594	1063
Summer 04	2785	1047
Winter 05	1702	1105
Total unique	6081	3215
Total after inter-annual matches	5348	

Wade reported that 234, 255, and 296 matches were made between seasons winter 04, summer 04, winter 05. Further, preliminary counts indicate that there were 2081 unique animals photographed in summer of 2005 and over 1000 biopsy samples, and winter of 2006 was the biggest sample collection yet in terms of both unique identifications and collection of biosy samples. At this time, more than 5000 biopsy samples are in hand.

Mark recapture estimates comparing winter-summer vs. winter-winter are giving different abundance estimates. Analysts indicate that this difference is in part because of bias towards males (they're on the wintering grounds longer than females) and because of additional heterogeneity. If the genetics analysis can't be completed before an abundance estimate is produced, the analysis could be affected because it will be unknown whether the animals photographed are males or females.

Genetics analysis will focus first on mitochondrial DNA in order to get stock structure information. Encourage genetics folks to get external funds to do microsats so that additional analyses can be pursued.

11) Humpback whale feeding areas in the North Pacific

Clapham provided background on YONAH, the predecessor to SPLASH that occurred in the North Atlantic. This project collected both genetics and photo-identification information throughout the North Atlantic. While all animals mingle on the breeding grounds, there were genetic differences found between animals in feeding areas in Greenland, Labrador, Newfoundland, the Gulf of Maine, and the Gulf of St. Lawrence. Based on the genetics, it is clear that segregation into these feeding areas has been in place for a long time.

Nuclear genetics suggest that there are two North Atlantic breeding populations, but we don't know where the second breeding area is located.

Clapham stressed the importance of determining stock structure for North Atlantic humpback whales. He listed several feeding areas that were wiped out by commercial exploitation and have not yet been repopulated by whales. Based on this assessment, Clapham feels that recovery of feeding areas won't occur within a timespan of decades to centuries.

In addition to asserting that North Atlantic humpback feeding areas are stocks under the MMPA, Clapham feels that the feeding areas could constitute distinct population segments under the ESA because they are relatively discrete, animals in each feeding aggregation differ markedly in genetic characteristics, and because loss of any feeding aggregation would result in a significant gap in the range.

In 2001, the NEC changed the stock structure of humpback whales from North Atlantic humpback whale to Gulf of Maine humpback whale.

There are some key complications with defining feeding areas as stocks. For example, under the MMPA, a stock is a group of marine mammals in a common spatial arrangement that interbreed when mature. Gulf of Maine animals feed in the GME, but breed with animals from other feeding areas on the breeding grounds.

Currently in the North Pacific, stock structure is based on breeding areas. However, in 2006 the Pacific SRG recommended changing the stock definition of the CA/OR/WA stock to be based on feeding grounds. This was not pursued because SPLASH will likely be providing substantial additional information on which stock structure can be based in the next year or two.

For Alaska, we need information on demonstrated fidelity to feeding areas, low rates of exchanges between feeding areas, and genetic distinctness of animals in the feeding areas. At this time, the SPLASH data shows interchange between Southeast Alaska and the northern Gulf of Alaska, and between the northern Gulf of Alaska and the western Gulf of Alaska. This confusion makes it much more difficult to draw stock boundaries.

In conclusion, Clapham stated that there is generally greater fidelity to feeding areas than to breeding grounds, there is a strong precedent from the North Atlantic and from the CA/OR/WA stock to separate Alaska humpback whales into stocks based on feeding area, NMFS needs to finalize SPLASH analysis before boundaries can be drawn, and just the fact that there are major threats to humpback whales on their feeding grounds means there is a good argument for changing stock definitions to better highlight those threats.

Wade added that preliminary genetic information shows that there are genetic differences between feeding areas.

Barrett-Lennard asked whether it is possible that “stock boundary” is not the right word for what is going on with humpback whales. Clapham responded that under the MMPA, stocks much have boundaries, so there are no other options for defining management units.

Gauvin noted that he would expect the humpback whale food source to not be constant in an area, so he is surprised that whales would stay in the same area for a long time. Barrett-Lennard noted that the fact that there is so much site fidelity indicates that there are some real advantages to this approach. Gauvin responded that, in the Gulf of Maine, food sources have been up and down and animals have moved to exploit new resources. Clapham responded that food sources are up and down, but animals likely stay because historically it’s been a very productive area.

Angliss asked when will abundance information be available for review by the SRG and inclusion in the SARs. Wade indicated that some information would be available for review at the next SRG meeting.

12) U.S. Fish and Wildlife Service SARs

Doug Burn called in via speaker phone to discuss the USFWS SARs. The sea otter SAR revisions will be made available to the public by late February. Lowry indicated that most comments that the AK SRG would have would be editorial, and asked what the FWS deadline is for getting comments in hand. Burn indicated that editorial comments must be received by the end of January. Burn also indicated that the FWS had provided draft SARs to the Alaska Sea Otter and Steller Sea Lion Commission for their comment prior to publication.

The one major change in the southwest sea otter stock is that they have listed the PBR level as “undefined” because it is a stock that is declining. One SRG member questioned the impact of having an undefined PBR level. Eagle responded that the only time a PBR is used is in fishery classification, so as long as there’s no fishery incidental take, there are no obvious problems with calling the PBR “undefined”.

Kelly noted that the use of terms such as “undefined” runs the risk of using terms that a casual reader wouldn’t understand unless they were actually here having this discussion. Barrett-Lennard pointed out that there is really an error in the formula for PBR, because it doesn’t handle situations where a population is declining. Kelly responded that this came up with respect to the Steller sea lion SARs. When the assumption that humans are driving the dynamics of a population is violated, the PBR system does not work. If humans were driving the dynamics of the population, then you could take up to the PBR level and not affect recovery. However, humans are NOT driving the system, something else is in control, so the PBR system does not work.

Matkin commented that the Kodiak area sea otter estimate changed a lot, and asked whether the SAR states the reason for the change. Burn indicated that there was a problem with some computer software so an estimate was 4000 animals off; there has not be a major decline at Kodiak, unlike what was previously presented. Matkin responded that this is more consistent with what he has heard from the fishermen. Burn added that the FWS will be working with Tim Tinker regarding maximum likelihood modeling.

Lowry noted that, now that the southwest sea otter population is are listed, the SAR will have to be revised annually. Eagle responded that the SAR will have to be reviewed annually, but not necessarily revised.

Kelly asked whether there was any update on the Bodkin/Esslinger report for the southeast population surveys. Burn indicated that within USGS, there are a series of in-house reports called “open file reports” , and the Bodkin/Esslinger report is considered one of these and is currently under review. Abundance estimates in the draft haven’t changed.

Polar bears

Schleibe provided an overview of the proposed listing of polar bears under the ESA. He noted that a final decision must be made by 9 January 2008. In the course of the listing process, the USGS will be taking a critical look at climate information. They are doing specific briefings with the North Slope Borough (NSB), Alaska Oil and Gas Association (AOGA), and conservation organizations. It is likely that their basis for a finding would hinge on loss of habitat, and the fact that existing regulatory mechanisms are inadequate to protect habitat. Supplementary documents are available on the USGS website.

Kelly questioned whether the website states what the USGS will do if polar bears are listed. Schleibe indicated that the website does not do this. . . and this is what they get asked most frequently. Schleibe responded that guesses about management at this point would be speculation.

Kelly asked about the implication of the polar bear listing to the status of ice associated seals. Bengtson noted that there has been no discussion about listing in NMML, but plenty of concern about the fate of the seals that are dependent on ice or ice-influenced ecosystems. Bengtson is working to get funds for a large “Loss of Sea Ice” program at the AFSC. Bengtson believes the impacts are going to be extreme, and is trying to generate interest and funds to study the seals.

Kelly asked whether NMFS wait for a petition before listing the ice seals. Bengtson replied that NMML is not waiting for a petition, but are aware that the agency may be petitioned. NMML tries to get money to do studies, to educate the managers, and to help folks outside the agency understand the gravity of the situation. Eagle added that nobody in PR is moving forward to list ice seals, and in order to really do a good job of assessing all species, NMFS would need \$100M more to conduct assessments.

Kelly wondered whether the listing is going to be a net benefit to the conservation of polar bears. Schleibe responded that it is important to be optimistic and think that there will be a conservation benefit if the bears are listed; he thinks that a listing would raise public awareness about changes in the Arctic. He added that the U.S. has the potential to lose some of our nation's natural history. Schleibe does not think that things are hopeless, and is convinced that we can make positive changes that will conserve and protect polar bears.

Matkin noted that, last year there was discussion about Chukotka Peninsula polar bear harvest, and asked whether anything had changed. Schleibe responded that Congress has passed implementing legislation for the bilateral treaty and the legislation should be signed soon. One SRG member commented that the Chukotka Peninsula harvest had declined in recent years.

Lowry noted that in March, the Marine Mammal Commission is sponsoring a workshop on ringed seal and beluga whale monitoring. Although many people will say that it's way too late to collect baseline information, the MMC hopes to provide a place to start.

Schleibe is working to update the SARs for the polar bears, and probably will not include new estimates for the southern Beaufort Sea stock until next year.

The following individuals agreed to review the FWS SARs:

- SW otter SAR – Wynne and Lowry
- SC otter SAR – Matkin and Barrett-Lennard
- SE otter SAR – Kelly and Straley

Gauvin asked whether the computer glitch with the model for the south central otter abundance could have happened with any of the other abundance estimates. Schleibe indicated that this has been ruled out.

Gauvin asked how to move away from having the agency only receive funds when they get a petition to list a species under the ESA. He added that, because of this pattern, there is a perception on the part of some in the fishing industry that the NGOs and the agency are in cahoots on the petitions. Kelly responded that there is a perception from the NGOs that the industry tells the agency what to do.

Hills asked whether it is important to talk about pushing new initiatives, like the Loss of Sea Ice study, to support broad based studies on changes in the Bering Sea. Bengtson responded that changes in the Bering Sea have already happened and will continue to happen. Bengtson is

trying to increase attention because no studies will be done unless resources are allocated. He predicts that ribbon seals will be extinct in 50 years due to the changes in the Bering Sea.

Kelly asked, if statements about extinction in 50 years can be made, why the agency is not moving to list the species. Bengtson responded that for the agency to take steps under the ESA, we would have to conduct a status review. At this time, the information on ribbon seals is so poor that we would not have anything to write about. It is not clear that a status review can be written based on what we don't know.

Lowry commented that there probably is a benefit to listing of polar bears, but it is not clear that listing ice seals will benefit ice seals. He added that he is not saying that there's not problems with ice seals, just that nobody knows anything about ice seals so it may not fly. Suydam responded that the difference between the polar bear and ice seal situation is that there are data for polar bears; there are no data for ice seals, only some supposition about impacts of climate changes. The SRG should state that data on ice seals are urgently needed. Mansfield noted that the agency could list ice seals as "species of special concern". While the agency could do a status review, if there is little information, this process could backfire because there's insufficient data to justify a decision. Kelly noted that the FWS is basing a proposed listing in part on loss of habitat. This rationale could also be used for bearded or ringed seals.

Kelly asked if we find ourselves in a situation where some charismatic species like polar bears get \$140M for research and other important species, such as ice seals, receive nothing. This may be the political reality of a listing decision.

Bengtson stated that the agency will not be putting the species on a list of special concern. NMFS has a comanagement agreement with the ice seal committee, and listing would have some bearing on Alaska Native use. NMFS would have to weigh carefully what we would be trying to achieve by listing.

Lowry pointed out that the SRG did not comment on the listing of Cook Inlet beluga under the ESA because this is a management action. Lowry would be surprised if the SRG recommended that ice seals be listed under the ESA. As a reminder, when funds started flowing for Steller sea lions, a lot of money was spent on studies on fish. Presumably, if funds were provided for polar bear research, there would be funds for ice seals. It is better to make specific recommendations about science instead of making broad recommendations about species in general.

Barret-Lennard reminded the group that the SRG had drafted an ice seal letter that was never sent, and suggested that the letter be dusted off and reconsidered. Lowry responded that the letter recommended that the agency work with the ice seal committee; since this has been happening, he's not sure it's still relevant.

Kelly noted that, if you look at what NMML has done recently on ice seals, it really dwarfs what had been done for the previous years. At a minimum, funds should be provided to NMML to continue their recent efforts.

The SRG requested that a copy of the Loss of Sea Ice proposal be made available¹.

North Pacific right whale update

Phil Clapham provided an update on the North Pacific right whale status. He stated that this is arguably the most endangered population in the world, very likely numbers under 100 whales. The population has very low observed reproduction and the calving grounds are unknown. In 2006, there was no funding and no field work conducted.

However, there were a few important events:

- Critical habitat was designated in response to a petition from the Center for Biological Diversity
- The Marine Conservation Alliance worked cooperatively with NMML to develop and distribute a flier to mariners which shows how to identify right whales and indicates that sightings should be called in to NMML
 - A couple of fishing vessels have called in sightings
- Wade et al publication on satellite tagged whale and the large aggregation seen in 2005

Clapham indicated that they recently discovered additional illegal Soviet catches of 372 whales taken in the 1960s. In interviews, Doroshenko said that right whales were so densely aggregated that the catchers didn't have to go very far from the factory ship to catch right whales, and estimated that they killed 100% of the whales they saw. Researchers suspect that they happened across dense aggregations and managed to wipe out the vast majority of the population. Ivanchenko has translated the catch reports from the Russian whaling expeditions.

Hills asked if Clapham can provide additional information on the Russian catches, as it is difficult to tell from the tech memo where the catches occurred. Clapham indicated that additional information will not be added to the tech memo.

Clapham summarized future right whale research plans. MMS may be about to open the North Aleutian Basin (aka Bristol Bay) to oil and gas lease sales. North Pacific right whale critical habitat overlaps with the North Aleutian Basin lease sale area. NMML has proposed to MMS that we conduct a multifaceted study involving acoustics, shipboard/aerial surveys, multidisciplinary oceanographic and tagging techniques pioneered by Woods Hole Oceanographic Institution. They would also conduct an entanglement risk analysis (no known entanglement problems, but little effort) and have the New England Aquarium set up an entanglement database.

Angliss noted that MMS is very aware that potential impacts of a lease sale on right whales is a major issue, thus the heightened interest in collecting a lot of information on right whales as soon as possible.

Hills asked whether MMS will have to do a section 7 for the critical habitat. Mansfield responded that there would have to be a section 7 on the lease sale. Angliss added that, typically,

¹ The LOSI implementation plan was published as a NOAA Administrative Report and can be found at: <http://www.afsc.noaa.gov/HEPR/LOSI.php>.

section 7s find “no impact” of a lease sale, since the federal action is simply a sale. The argument is typically made that the impact does not occur until the activities start.

Straley asked about the impacts of the snail pot fishery on right whales. She hears that this fishery operates inside critical habitat, specifically along the 165 line of longitude in August. Angliss indicated that she looked up information on this fishery a few years ago and it does exist, but only involves a few operators (1 or 2).

Straley asked how many pictures of the tail stocks does NMFS have. Clapham responded that we do not have many. We may not expect to have many entanglements around the tail stock: in the North Atlantic, right whales seem to pick up gear on mouth/head, not the tail.

An SRG member questioned how many right whales there are. Wade indicated that there are three catalogs – aerial, vessel, and genetics. All catalogs provide a count of about 20 animals. A rough mark-recapture analysis was conducted that provided an estimate of 42.

Straley noted that she has given the right whale poster to a bunch of fishermen from Yakutat so they’re on the lookout for right whales in the Gulf.

Wynne questioned whether there have been sightings off California (Wynne noted that she had seen a right whale from the LaJolla laboratory). Clapham indicated that there have been – and also a sighting off Washington State. However, there is no evidence that these areas were important right whale habitat in the past.

Gauvin added that the Marine Conservation Alliance is doing an assessment of the spatial and temporal aspects of the fishery to see where there is overlap of the fishery with right whales. He is looking into gear modifications already tried in New England to see what changes could be made to gear in Alaska. He also noted that crab rationalization may result in changing fishing effort to overlap more with right whales.

Killer whale update

Wade provided an update on recent NMML transient killer whale research in western Alaska thru 2006.

- Results of the DART surveys were published in Marine Biology. Abundance was estimated using a line transect approach.
- Mark-recapture study for “clustered” transients is being led by Durban, but has many collaborators. The abundance for 2001-03 is ~370 (283-515) from the Kenai Peninsula to the west. Matkin noted that most of the animals were found west of the Shumagin Islands. Although there are many dots on the map near the Kenai Peninsula, it’s because people see the same two groups repeatedly.
- Genetics results indicate that there seem to be new haplotypes in the central Aleutians; the transients found at the Pribilofs are similar to the transients in the western Aleutians. Barrett-Lennard commented that GAT 1 has shown up in a biopsy from an animal seen off California.

- So far, studies have not documented transients moving from the central to western Aleutians; this has been surprising.
- Some tagging of males has been conducted; the tags do not leave a large scar. Andrews has had attachments of up to 2 mo. One whale was tagged at Kiska in June, went ½ way to Hawaii by mid-July and was foraging in the “transition zone”. Animals in the Pribilofs and in western Aleutians seem to have scars from cookie cutter sharks, which are only found in the transition zone (note – there was considerable debate about how well we actually know the range of cookie cutter sharks, so it is possible that the killer whales could have received the scars north of the transition zone).

The following provides an update on resident killer whale studies:

- The recent Zerbini et al paper indicates an abundance of 991 (379-2585).
- Fernbach & Waite are conducting a lot of research on residents for NMML; Ellifret is working for the North Gulf Oceanic Society. Wade expects that there will be ~2000 residents in the joint NMML-NGOS catalog.
- There are dramatic genetic differences between residents in the central & western Aleutians.

In summary, Wade noted that the transient catalog will be in good shape by next year and that the resident catalog is lagging behind. A paper on genetics should be ready to submit by next fall. . .but will not be published that fast. The northern resident population estimate should be up to date in the new catalog.

Gauvin commented that in the sea lion committee work, they recently learned that calls of transients are different than calls of residents. He asked why NMML isn't using acoustics to look at killer whale types. Wade responded that this has been done by Ford, Nyusten & Hildebrand, and NMML has plans to do this in 2007.

Gauvin noted that fishermen are really open to cooperative research opportunities and may offer to place the acoustic buoys for right whales or killer whales. Wade responded that, in the past, he has had some issues with fishermen being really excited about helping out, then it doesn't work out. Also, sometimes NMFS needs to have our technicians on board to set up the acoustics equipment, which doesn't mesh well with a joint commercial fishing/research mission.

Barrett-Lennard commented that there was recently a workshop on depredation of commercial fish catch by killer whales and sperm whales. He said the workshop was terrific and that they would be producing a symposium report.

Angliss reported that M. Dahlheim could not be at the meeting but provided the following update of her work in Southeast Alaska:

- A paper on killer whale seasonal distribution in Southeast Alaska will be published in the J. of Biogeography.
- A paper on offshore killer whale counts, movement patterns, feeding ecology in AK, WA, OR, and CA is about to be submitted.

- A paper on transient killer whale abundance and predation rates, with a focus on Southeast Alaska, has been submitted for publication.

The overall PBR process

Some SRG members again raised the issue that the PBR process does not seem to work very well to help conserve marine mammals in Alaska. Not only are abundance estimates developed sufficiently frequently, but we have poor information on fishery take levels in most fisheries and are unlikely to get better information. Lowry noted that there seem to be two camps. One camp is interested in getting rid of PBR levels because they can't be calculated regularly and should not be relied upon. Another camp likes the PBR system because it's a good metric; this camp likes the idea of comparing things other than fishery take to PBR, such as the number of animals impacted by sounds.

Lowry added that he was in the room when the PBR concept was developed, and it was very interesting to see a bunch of people no statistics background come up with a numerical suggestion. Maybe it's time to revisit the PBR approach through a series of workshops to see if there is a better approach.

Kelly mentioned that it would be really good to have a list of stocks that are declining with some assessment of whether they're declining due to human activity or something else. Right now, the PBR system is not doing what it's supposed to be doing, and that is distracting.

Eagle reminded the group that the beauty of the PBR system is that it's simple to apply. Wade noted that, although the AK SRG may not see the success of the PBR system in Alaska, it has been very effective in the Atlantic and Pacific, where Take Reduction Teams were convened to reduce marine mammal takes below a particular level.

Bengtson added that, in considering Lowry's concerns, there are a few components. There are many stocks for which we have poor information on abundance. There are other stocks for which we have no information on mortality. These problems can be solved with additional resources. Yet, Lowry's suggestion is that we spend the money to work with fishermen to reduce takes rather than to fill these gaps. However, for those stocks where we do have data, the PBR level can be a benchmark for reference and help prioritize conservation actions. Bengtson asked whether Lowry agrees that there are some good things, and whether he thinks the money is being misdirected.

Lowry responded that big population declines in Alaska are occurring for populations where the PBR level is not being exceeded. People look for cases where the PBR level is exceeded, and if the level isn't exceeded, people move on and assume there is no conservation problem. Lowry brought up Taylor's recent paper: although we have baseline information on many populations, it's essentially useless for looking at trends in abundance.

Kelly noted that he particularly liked the addition of the table in the end of the draft Steller sea lion SARs that list the threats to the population and some examples of literature. It is very helpful to have the manager's view of what is causing the decline of the stock.

Wade noted that some of the SRG's concerns could be addressed by carefully expanding the habitat concerns section of the SARs and questioned whether there wasn't a nationwide effort to update the habitat concerns sections. Angliss responded that there has not been a coordinated nationwide effort, but that the AK SRG has requested these sections be updated and that this had been passed along to the various SAR authors. Updates were made to some SARs.

Mansfield commented that, when estimating take, there is a big difference between federal and state fisheries. We get good numbers of marine mammal take in federal fisheries, but almost NO information on state fisheries. Wynne added that this is where the east coast & Alaska are very different. On the east coast, there are big state drift gillnet fisheries that kill a lot of marine mammals and the fisheries are subject to observer programs.

Straley commented that there is a high fear factor in the Gulf of Alaska longline fleet because anything they report about marine mammal take will be held up negatively by the press. In particular, because there is no PBR level for sperm whales, the fishery is very concerned that any take will look very bad. Wade noted that it would only take one field season to get a PBR level for sperm whales, so it could be very easy to fix this perceived problem.

Wynne pointed out that the goal of the PBR system was to develop a mechanism that would help the agency ignore management of takes of California sea lions and focus on management of takes of an endangered species. Unfortunately, Alaska doesn't really fit nicely into the system.

Lowry commented that it would be good for marine mammal conservation to have reasonably accurate abundance and mortality information for all marine mammal stocks. The legislation should have had some kind of screening that assessed whether fisheries were impacting a stock, and if so, then a PBR level would be calculated. Marine mammal stocks that were not impacted by fisheries would be managed in some other way. Kelly added that we do need a change in legislation, because we are forced to think about commercial fisheries impacts to Alaska marine mammals when it's really environmental change in Alaska that is the problem.

Bengtson questioned again whether the SRG believes that a lot of marine mammal research money is being misused, and are NMFS scientists being forced to do things they don't want to do just to meet the needs of the PBR process? Kelly noted that there are a lot of efforts to do ecological studies on pinnipeds, and efforts in other parts of Alaska to focus on a mythical fisheries problem. Eagle and Wade objected strongly to the latter statement, and indicated that there is solid information that there are problems with harbor porpoise and Dall's porpoise takes in Southeast Alaska (really? Dall's?! confirm!). Wade noted that the Region/Center are working together to try to address fishery takes in Southeast Alaska. Now that Dahlheim has some data on long-term trends, it is motivating people to take a look at causes of the decline.

Barrett-Lennard questioned whether Bengtson feels that scientists are forced to do too much feeding of the PBR system. Bengtson responded that he does not feel that we are being forced to spend money in a certain way because the PBR process requires us to do it. However, our funds are completely insufficient to collect the information we need. NMML currently has no

discretionary money, so cannot fund harbor porpoise surveys because we cannot move funds from one place to another.

Kelly stated concerns about NMML not being able to pursue urgently needed research because NMML is constrained to studying Steller sea lions instead of ice seals, or Cook Inlet beluga instead of harbor porpoise. If the professionals don't have the discretion to move funds around so that the real issues can be studied, that is a problem. Kelly added that the focus on human take is making NMML non-leaders in marine mammal science and ecology because we are directed to study very focused things. If you pick up the SARs, you would erroneously think that commercial fishery take in Alaska is a big issue.

Bengtson noted that NMML cannot do a lot of the research that we are supposed to do. We have no abundance estimates for many species. As national stewards, we are supposed to be collecting information on these animals. For decades, we have had no information on many species. Sometimes, as a result of lawsuits or new initiatives we get new money. The Marine Mammal Commission should try to get \$20M to dole out every year for critical research needs. There are no other places to get funds. NMML has not been successful in getting funds from NSF or the NPRB to fulfill our basic legislative mandates.

Membership and follow up tasks

The SRG identified a need for someone with expertise on population dynamics and in the subsistence harvest, particularly on the North Slope. Angliss will look into two possible additions. As Hills is stepping down after this meeting, Kelly will offer the chair position to Mathews. If Mathews says no, Suydam will be offered the position.

Kelly pointed out that there were several members of the SRG who have been on the SRG since it's inception and have not yet held the position of chair. He reminded the members that everyone should expect to take a turn in this important role.

Wynne will finish drafting the letter on the AKR observer program.

Lowry will review the ice seal letter to assess whether it's still relevant.

Gauvin is interested in stepping down; however, the SRG asked him to find someone else from the commercial fishing community who has the time and the ability to really contribute in a productive way.

Discussion of draft SARs for 2007

Harbor seal update

Population estimates

Current estimates in 2006 SAR are based on 1996-2000, use GAM regression (Generalized Additive Model), and have a negative binomial variance.

New draft estimates will include 1998-2002 surveys, will use Generalized Linear Model (GLM) regression, and over-dispersed Poisson variance. Both negative binomial and Poisson variances have been used frequently in the statistical literature. Not a lot of guidance re. which to use.

	New estimate	
GOA	42777	45975
BS	31315	21612
SE	75412 (9113)	112391
Total	149503 (CV = 0.12)	Many fewer

The most recent estimate is about 30K smaller than the last estimate. However, Boveng is here to convince us that this is the best estimate. The change in the abundance is caused by an improvement in the analytical methods, not a decline in the population.

Statistics discussion. Both Poisson and negative binomial have been used to correct for environmental factors that affect numbers of animals hauled out. There are no conclusions in the scientific literature about which is preferable under what circumstances. VerHoef started digging around in the math to figure out why there are differences between using the two approaches; they turn out to be quite different in how they give relative weights to harbor seal sites of different size. When you use a negative binomial function, you get unusual modeled relationships between haulout size and covariates. Particularly for sites with small numbers of animals, the negative binomial provided unrealistically high results for seals by date. In reality, large sites really should be weighted more heavily because they will really drive the analysis.

Gauvin questioned what is meant by a “date effect”. Boveng responded that the number of harbor seals on shore is highly variable and is affected by tide, time of day, date, weather, and disturbance. To deal with this, you either survey during the optimum time for all conditions (almost impossible to do) or you survey repeatedly, keep track of the conditions, and use regressions to assess the effect of date, tide, weather, etc. Then, you use the statistical model to adjust the counts to a standard set of conditions.

Gauvin further questioned whether one would expect the variance to be greater for a small site. Boveng responded that, actually, the relationship between variance and haulout size is that variance goes up when haulout size goes up.

Barrett-Lennard asked whether there was a specific haulout correction for tidal height. Boveng responded that the analysis doesn’t work like that; you have to adjust for all conditions simultaneously and then correct for seals not present to be counted.

Kelly noted that we know that the Southeast Alaska harbor seal population has been declining for a decade, and asked how do we tease out differences between old estimates and new estimates when the counts are so drastically different. Boveng responded that we could go back and reanalyze the old data set using the new analytical approach. VerHoef added that there was really just one data set in SE that resulted in really different estimates between old and new estimates. Kelly and Lowry commented that they recalled from old Loughlin and Withrow reports that there was one day of SE Alaska surveys where there was a very large spike in

sightings in a series of sequential surveys. This may have affected the data. Boveng added that there may be some regional differences in variability. For instance, the analysis shows that wind was much more of a factor in the Bering Sea than in other areas.

Gauvin asked whether correction factors were developed over a range of conditions. Boveng responded that correction factors were developed over a small range of conditions and two different studies. There is still an issue about uncertainties in the correction factors.

Boveng summarized the following issues and challenges for the harbor seal abundance estimates.

- NMML has a backlog of harbor seal aerial survey data and analyses; NMML is getting the surveys done, but data analysis has not been happening. It has taken a long time to develop the analytical process. In the last year, NMML made huge strides. New tools and techniques have helped.
- NMML has recently found that rotating surveys around the state in a non-random way is not optimal and has implications for the statistics.
- NMML is keenly interested in better integration with ADF&G trend surveys.
- Surveys are expensive! NMML is asking questions about ways to gain efficiencies, so that funds are available to do harbor seal research on something other than abundance surveys.

Improving harbor seal monitoring

VerHoef provided a summary of what NMML is doing to try to improve Alaska harbor seal monitoring. NMML hopes to combine trend and abundance objectives and to combine organizational efforts with those of ADF&G. He is looking into sampling areas, not individual sites, and distributing the sampling both spatially and temporally. Using this approach, a survey would cover selected haulout sites in the entire state every year.

Kelly noted that it is hard to make a decision about a logistic tradeoff between regions vs full state sampling without a sense of how much gain there is in pursuing this kind of plan. VerHoef will do a simulation to see how well this will work. Lowry noted that there have always been questions about how well the trend routes reflect what is happening, and liked getting around this problem by surveying the whole state.

Gauvin questioned how do you know how big to make the grid area to consider a “cell”. VerHoef responded that they developed every grid by hand based on what they knew about the area; for instance, if harbor seals are known to move around near a river mouth, include the whole river mouth as a cell. In drawing the grid, they ensured that areas weren’t too small because it would be hard to analyze; and weren’t too big because you want your covariates to be the same in an area.

In general, the survey should. . .

- Sample in proportion to abundance; sample big sites more often
- Sampling in covariate space – for instance, sample a couple of times over several days instead of sampling only early/late in the season

- Get lots of data on covariates; spread out the information in space and time
- Create a master database for trends and abundance

Kelly questioned whether NMFS has to cobble files together to make a population estimate. VerHoef responded that this was the case; he must call Gray Pendleton to get files because there is no common database. Kelly suggested that the SRG should make a recommendation about pursuing a master database for harbor seal counts.

Bengtson mentioned that the creation of joint databases is actually a very big job, and while NMML is getting better at this over time, there is still much improvement required.

Harbor seal stock structure and boundaries

In response to the SRGs interest in having NMFS use the best available science to separate stocks of harbor seals in Alaska, Boveng provided the following timeline of events:

- August 2003 – Publication of SWFSC admin report on harbor seal stocks. NMML and the SWFSC had been discussing this work for a long time and had presented the information in the admin report to the SRG at previous meetings.
- October 2004 – independent scientific reviews of genetics analysis (CIE & AIBS); unanimous in support for the conclusion that the current stock structure is too coarse and does not reflect the actual genetic and demographic structure of the population. Pretty clear support for having demographically independent units, but difficult to decide where to put the boundaries.
- March 2005 – Co-management meeting. Co-managers agreed that the next step should be that everyone should bring information to the table over the summer of 2005 and put the information on a map. Relevant information included genetics, movement of tagged seals, traditional tribal boundaries.
- September 2005 – Co-management meeting. NMFS showed a provisional proposal developed using the information compiled over the summer. When tribal boundaries coincided with differences between genetic groupings, drew boundaries there.
- October 2005 – Marine Mammal Commission meeting and ANHSC 10th anniversary celebration.
- February 2006 – presented provisional stocks at Southeast Alaska marine mammal hunter’s workshop. Various communities were considering harvest management plans.
- May 2006 – Co-management meeting. NMFS had hoped to have an informational meeting to the community of Hoonah, but weren’t able to schedule it last spring due to conflicts, or last fall due to budget restrictions.

At this point, NMFS is still intending to fulfill the requests for additional outreach to communities to move this along. Boveng added that outreach to Hoonah is key; members of the community have had a lot of concerns and people haven’t been able to come to other meetings.

Kookesh provided a message from the ANHSC: they have a real problem with the boundaries because they only have samples from Glacier Bay but they’re determining a bigger boundary for

the stock. Kookesh noted that Hoonah has had regulatory problems since statehood and reemphasized that NMFS must go to this community.

Lowry questioned whether Hoonah hunts a lot of seals, and whether the hunters get genetics samples. Kookesh responded that they do a lot of hunting, and they do get a lot of samples. He added that, as cruise ships have been increasing, harbor seals have been decreasing, and harbor seal harvest has been declining. Lowry asked whether anyone knows from which stock Hoonah has been harvesting. Boveng responded that this is unknown; there are new samples being processed, but not recent update on actual analysis since the publication of the admin report in 2003. Lowry responded that, if the community wants to know the genetics of their catch, then NMFS should try very hard to get this information. Boveng committed that he heard a very clear statement about what Hoonah is interested in and can certainly work towards this.

Later in the meeting, Kookesh reported that he spoke to Reidel (ANHSC) about their perspective on what samples are needed for harbor seals in order to bring closure to the stock issue. He reported that the ANHSC stated that they need need more samples from Hoonah, Pelican, Cordova, and Juneau. Kelly noted that there have been no previous conversations or documents indicating that there are data gaps in these areas; this issue must be discussed further.

Steller sea lion genetics; is there a third Steller sea lion stock?

There was a general discussion about whether nuclear or mitochondrial genetics results are reproduceable. Nuclear data is very reproduceable because you're actually doing sequencing; microsatellite data are difficult to repeat because you're only looking at the size of a gene fragment, and many things may affect fragment size.

Kelly questioned what is needed to resolve the issue of whether there is a 3rd stock. Bickham responded that he has hypothesized that there is a 3rd stock based on mitochondrial haplotype frequencies. Differences between populations are likely due to sequestration following the creation of glacial refugia. However, even though the the genetic data are saying that there is a separation. . .the separation may be sufficiently small to not be that important to managers. Kelly asked whether there is gene flow between the putative Asian population and the western stock. Bickham replied that there is very likely to be somewhat substantial gene flow between the two areas. Specifically, Bickham estimates that there is interchange on the order of 10%, but dispersal is more males than females. There is much less interchange between western and eastern stocks, like 2 animals per generation.

There was also discussion about new differences found between samples analyzed by O'Corry-Crowe on either side of Samalga Pass. Bickham noted that Samalga Pass seems to be a barrier – even if it doesn't look a physical barrier to us. In addition, Bickhams' previously published mitochondrial data show some differentiation between central western stock and western western stock.

The following are the differences between groups of Steller sea lions, in order of relative degree of difference:

1. Eastern-Western stocks are very differentiated
2. Western-Asian groups differentiated, but less so
3. Animals in the central western area vs in the western western area are differentiated but even less so

Barrett-Lennard asked whether there is any reason to believe that there would be a nuclear discontinuity between eastern and western stocks. Bickham noted that he thought that a nuclear discontinuity would be found, but that resolution was too poor. He is currently trying to look at some additional genes on the Y chromosome to provide another way to understand what is going on.

RECOMMENDATIONS (and responsible parties)

The SRG closed with the following list of recommendations; responsible parties were identified for each action item.

- 1) F/PR1 should compile annual reports of research mortalities and provide those for inclusion in the SARs. Lowry
- 2) NMFS should set up a system to collect & report incidences of fisheries research takes. Wynne
- 3) Write a letter encouraging NMFS to proceed with identification of harbor seal stocks. Kelly
- 4) The SRG noted concerns about the PBR process. Alaska has lots of stocks and lots of issues, but few problems with direct take by commercial fisheries, so the PBR approach doesn't really work. SRG decided that the ideas expressed at the not really mature enough to make a recommendation.
- 5) Sea ice & global change. This should be a feature item for the next meeting.
- 6) NMML funding. Good starts made on a lot of projects. Must keep important projects going. No clear recommendation from SRG identified.
- 7) "Atta boy" for harbor seal researchers for considering new survey designs.
- 8) Would be good to develop a master database for harbor seals so there is adequate exchange of information on pv. No clear recommendation from SRG identified.
- 9) Write a letter to NMFS stating that Steller sea lion permits are critical for collecting information on vital rates; these are urgently needed to understand dynamics of population. Gauvin
- 10) Encourage identification of gear in stranding/entanglements. Wynne will make sure it's in the letter already drafted to the AKR.
- 11) Serious injury workshop should be held! Lowry – convinced that NMFS understands this is a priority and will hold it as soon as we're able.

Next meeting

Eagle stated that all SRGs are now interested in a convening a joint meeting. A target week would be the 2nd week of January 2008².

² Joint SRG meeting to be held Jan 8-10, 2008, Monterey, CA.

Appendix 1: Draft agenda

**AKSRG meeting
11-12 January 2007**

Thursday 11 January 2007

All times account for both a presentation AND related discussion

- 8:30am Introduction & updates
- Letters from SRG to NMFS (Eagle)
 - Serious injury workhop (Eagle)
 - MMPA reauthorization (Eagle)
- 9:00am Update on NMML's budget & preliminary research plans for 2007 (Bengtson)
- 9:30am Long-term plans for obtaining abundance information (Wade/Bengtson)
- 10am SPLASH updates on abundance estimates, movements, genetics, stock structure (Clapham/Wade)
- 11:00am Updates on new cetacean research
- North Pacific right whales (Clapham)
 - AK killer whales (Wade/Dahlheim)
- 12:00-1pm Lunch
- 1pm FWS species
- Polar bear listing
 - Sea otter SARs
- 4:30pm CLOSED SESSION – discussion about membership

Friday 12 January 2007

- 8:30am Discussion of comments on NMFS SARs
- 10:30am Harbor seal abundance update (Boveng, VerHoef)
- New range-wide estimate
 - Possible changes in abundance survey design
 - Update on comangement recommendations regarding stock structure
- 12:30-1:30pm Lunch

- 1:30pm Steller sea lion stock structure, other issues (discussion)
- 2:00pm List of Fisheries – what data are used, what years are used, and what animals are included in the list of species injured/killed? (Angliss)
- 2:30pm Assessing serious injury (Straley – discussion?)
- 3:30pm Wrapup
- 5:00pm End

Appendix 2: Participants in the Alaska SRG meeting

SRG members

Robert Suydam, NSB
Sue Hills, University of Alaska – Fairbanks, Chair
Lance Barrett-Lennard, UBC
Brendan Kelly, University of Alaska - Fairbanks
Jan Straley, University of Alaska - Southeast
Lloyd Lowry
Craig Matkin, North Gulf Oceanic Society
Kate Wynne, University of Alaska
John Gauvin,
Robyn Angliss, NMML, Executive Secretary

Observers/Presenters

John Bengtson, NMML
Phil Clapham, NMML
Bridget Mansfield, AKR
Jay VerHoef, NMML
Peter Boveng, NMML
Yulia Ivashchenko
Matt Kookesh, Alaska Native Harbor Seal Commission