Atlantic SRG meeting February 24, 2016

3:30 pm start.

On phone: Kathy Foley (SEFSC), Rich Seagraves (SRG), Paula Moreno (IAT), and John Brandon (IAT).

In room: Trent McDonald (SRG), Debra Palka (NEFSC), Lance Garrison (SEFSC), Keith Mullin (SEFSC), Patricia Rosel (SEFSC), David Laist (MMC), Bob Kenney (SRG), Randy Wells (SRG), Peter Corkeron (NEFSC), Jim Valade (USFWS), Jim Gilbert (SRG), Buddy Powell (SRG), Sharon Young (SRG), Chris Clark (SRG), Laura Engleby (SERO), Mike Asaro (GARFO), Richard Merrick (S&T), Lisa White (F/PR), Diane Bowen (USFWS), and Nancy Young (F/PR).

Acting chairperson Randy Wells welcomed everybody. New SRG members Trent McDonald and Chris Clark and new liaison Peter Corkeron summarized their backgrounds and credentials.

Finalize Agenda

Gilbert asked if Pace wanted input from the SRG about the gray seal model. Palka said yes, and it was decided that it would be discussed during the SAR discussion or under plans for pinniped assessments. Asaro said he doesn't need as much time as he has on agenda.

Manatees

Jim Valade (USFWS) explained that the Service was petitioned by the Pacific Legal Foundation on behalf of an organization called Save Crystal River to conduct a status review of the West Indian Manatee. USFWS just came out with a 12-month finding on January 8 this year, proposing to downlist the species from 'endangered' to 'threatened'. This was based on a status review that included an ESA 5-factor threats analysis which relied upon numerous sources of information. The status review considered the status of the species throughout its range, including both the Florida and Antillean subspecies.

The Manatee Core Biological Model (CBM) used to assess the Florida subspecies concluded that the likelihood of the Florida manatee sub-population dropping below 4,000 individuals was less than 2%. The model runs used data through winter 2008/2009 and did not include significant mortality events that occurred between and including 2010 and 2013. The Service's preference would have been to delay publication of the 12-month finding until these events could be evaluated. Despite this, the petitioner notified the Service on two occasions that it intended to sue the agency for failure to publish its finding in a timely manner and the Service was compelled to publish in advance of an analysis.

The finding is currently in a 90-day public comment period. Final action will likely be in 2017. The Service also tried unsuccessfully to evaluate the status of the two subspecies separately. Gilbert said the SRG should note that there were significant cold-weather events since the time period used in the model. The carrying capacity calculated may be inappropriate. The CBM, published by Runge *et al.* (2015), has caveats at the end. SRG members believed that there may be a lot of reasons why this proposal to reclassify might not be appropriate based on the best research. Valade said the USFWS will have a new updated model this summer. It will be significant new information that will be considered in the process before final action is taken. Gilbert asked for a copy of the new model and Valade said he will get the SRG a post-publication copy of it.

Wells apologized for lateness of the SRG recommendation letter from last year's meeting and asked if that was being considered as part of the public comment. Valade indicated that the SRG's comment letter will be considered as an official comment. Wells asked if it would be worth submitting another document

for public comment. Valade said if the SRG has anything new that would be helpful. Gilbert said he could draft something. Kenney asked about the Antillean manatee data. Valade said they used the UNEP plan and updates as background for that. Laist asked if there was a requirement that the Service needs to make a decision on the stock as a whole. Valade said they were required to do that because that was what the petitioner requested. Valade explained that the final finding does not need to be the same as the 12-month finding. Any comment received needs to be accompanied with substantial new information in order to trigger reconsideration. A letter from the SRG that says USFWS needs to consider the 2 subspecies independently would be important. Powell asked about the time constraints. Valade said the final decision will come out sometime in 2017. Young pointed out that the public is being asked to comment on a report from 2012 and the best new scientific information will not be available until after the public comment period. She thought it would take a simple FOIA to show that the information is already available in USFWS. Valade said they do not have that yet. That will be available in the summer and will be shared with the SRG. He explained that federal protections will remain the same even if the species is downlisted since they are also protected under the MMPA. Young said not all manatee protection zones are Federal. Wells remembered that there had been an effort to try to downlist at the State level a while back. Valade said yes, that did not go through. The State would have to take a separate action if they want to reclassify. Powell said the State would move somewhat in lockstep with the Feds.

McDonald asked if there have been any population surveys. Valade said yes and no. Benchmark surveys are flown at warm water sites during the coldest time of year but the surveys are not quantified. A lot of people say these surveys have no validity. However, a first quantified estimate has recently been done (Martin *et al.* 2015). McDonald said he was just wondering if there is a trend. It is nice to actually have some count data. Wells said until now there has been no way to statistically use the counts as an abundance estimate. Powell explained that manatees move in and out of warm water refuges so the counts can be highly variable. Merrick said that is not very different from the case with pinnipeds and we use those count numbers. Valade said the State of Florida is going to fly another survey this year. Mullin asked where the future actions of Florida power companies come in. (That is, the eventual closure of Florida's power plants used by wintering manatees.) Valade said that this is a huge issue and that it's the primary reason that the Service is recommending downlisting and not delisting. It is a priority issue for USFWS. Garrison said Julian also has a model with projections of power plant closures. Powell added that natural sources of warm water are also diminishing and disappearing. Valade said that part of the overall plan is to either restore or provide access to some springs.

Valade said the USFWS will be working on manatee SARs for Florida and for Puerto Rico this year. Drafts will be available next January. Young said they can be sent to the SRG any time of year. Valade said they are awaiting the updated core biological model.

Valade presented recent numbers on Florida manatee mortalities and rescues, saying that 2015 was a fairly typical year. Total mortality for the 2011 – 2015 five year period was 2,474 deaths, including 463 human-related deaths. Watercraft collisions accounted for 398 deaths. Mullin asked about carcass recovery rates. Valade said some go undetected but recovery rates are thought to be pretty high. Powell agreed and also pointed out that watercraft mortality has stabilized. Palka asked about the "other" mortality category. Valade said those are mostly cases where cause of death could not be determined. Laist said the Commission is concerned about the increasing frequency and severity of spikes in mortality due to natural factors (red tide and cold events) and how that gets factored into the Runge model. Wells asked if Runge will be projecting into the future and if the model takes those mortality events into consideration. Valade said yes. Merrick asked if the Service declares an Unusual Mortality Event (UME) when the spikes occur. Valade said that the red tide-related death events are considered to be repeat events, so UMEs are not triggered. The Indian River Lagoon (IRL) event has been declared a UME, with no cause yet determined.

McDonald did some calculations and pointed out that the 2013 mortalities were ~15% of the population. He also calculated that human takes are way over PBR. Valade said that's correct. Corkeron asked if the Service has done the calculation of how many animals must be dying based on the estimate of adult survivorship. Valade said the USGS and their state partners are working on that. Corkeron asked if this type of red tide mortality happened elsewhere in the world and if we can make any inference about this having any anthropogenic signal to it. Valade said pollution has not been directly correlated but may cause the events to persist longer than they would have. Powell said there has been another algal bloom in Brevard County for a few years that killed seagrass, and therefore could be an indirect cause of mortality. Mullin asked if it is the older animals that are more affected by brevitoxin. Valade said it affects pretty much all age classes except calves. Powell said he has heard that some animals develop increased sensitivity to the toxin.

Laist said the Commission looked at the 5-year period between 2009 and 2013 to see if mortality exceeded recovery and what is the range of effects if you project the increasing spikes into the future. He does not think the model is capturing the range of possible effects. Valade said USFWS has received assurances from the modelers that the new versions will better address fluctuations. The modellers convened an expert group on red tides to inform that part of the model. Young said the Runge 2015 paper says the model would not incorporate system change. Valade said he thinks it will this time.Merrick said the models should at least explore system change as a scenario.

There were 77 manatee rescues in 2015, including two entangled manatees.

Adjourn 5:12.

Atlantic SRG meeting February 25, 2016

8:20 am start.

On phone: Chris Clark (SRG), Michael Moore (SRG), David Gouveia (GARFO), Erin Fougeres (SERO), Kate Swail (GARFO), Allison Rosner (GARFO), Kathy Foley (SEFSC), Rich Seagraves (SRG), Paula Moreno (IAT), and Francine Kershaw (NRDC)

In room: Trent McDonald (SRG), Debra Palka (NEFSC), Lance Garrison (SEFSC), Keith Mullin (SEFSC), Patricia Rosel (SEFSC), Bob Kenney (SRG), Randy Wells (SRG), Sharon Young (SRG), Peter Corkeron (NEFSC), Jim Gilbert (SRG), Buddy Powell (SRG), Laura Engleby (SERO), Mike Asaro (GARFO), Shannon Bettridge (FPR), Nichole LeBoeuf (FPR), Jim Caretta (SWSFC), David Laist (MMC), Jim Valade (FWS).

Modeling density estimates for abundance (Garrison)

Garrison started off with a discussion of visual survey methods, spatial models, and trend analysis. He wanted to address the status of NMFS survey data and the potential for trend analysis with the existing data. Due to inconsistencies in methods and analyses across years, many of the abundance estimates in the SARs are not directly comparable. Therefore, to produce trends, NMFS would need to conduct a reanalysis of all the data.

Historical surveys in the Gulf of Mexico were all in spring. Line-transect surveys were piggybacked onto plankton surveys and thus were not designed specifically to estimate marine mammal abundance and the same tracks were followed every year. In 2003, 2004, and 2009 the ship surveys were in oceanic waters, and line-transect surveys designed to estimate marine mammal abundance. The data collection was the same over all these surveys, but the survey design was different. These surveys do not have g(0) correction. The aerial data are similar. Prior to 2011/2012 no single aerial survey covered the entire Gulf shelf waters in one year. The most recent aerial survey data are comprehensive, 2 teams and cover coastal and shelf waters throughout the Gulf. The surveys in the Atlantic have been more similar, with surveys in 2004, 2011, and 2016 with consistent design and 2 teams. There was a coast-wide survey in the summer of 1998, but it was broadscale and uniform, not stratified and there was little effort in the shelf break region where cetaceans are quite common. Aerial surveys in the Northeast were also relatively consistent, using g(0) methods (circle-back or 2-team) since 2004 and Southeast had aerial surveys in 2002 and 2004. Since 2011, seasonal surveys have been conducted and there are now at least 2 in every season and the Southeast 2004 survey also had consistent methodology as well. The Northeast has more of a time series but at the moment NEFSC and SEFSC do not have anybody focused on doing trend analysis.

Gilbert asked what the problem is with design issues. Garrison said tracklines were not always distributed across bathymetry. Gilbert wondered if stratification could rectify that. Garrison, said yes, but an assumption of Distance analysis is that transect lines are oriented across bathymetry. With model-based approaches one could deal with data gaps. Clark asked when NOAA is going to abandon the paradigm that animals are uniformly distributed. Garrison clarified that it is not the assumption that they are

distributed uniformly in space, but rather that they are expected to be uniformly distributed relative to the ship. Within the survey strip there is the assumption of no avoidance or attraction. It is not a violation that animals are patchy in space. Moore said he sees trend as one of the most important pieces of information. Wells asked if Garrison was confident from this point forward that NMFS will have the data points necessary for trend analysis. Garrison said yes. Wells asked what NMFS would need for an SRG recommendation. Garrison said it is simply a question of balancing resources. We have limited analytic support within our program but AMAPPS and GOMMAPPS are ways of addressing that. Palka said trend analysis is something NMFS is planning on doing.

Clark asked for clarification on when old data can and can't be used. Garrison explained that data that go into Nmin, and therefore PBR calculations, cannot be any older than 8 years. That does not pertain to analysis of trends. Palka clarified that using older data to help get a new estimate is still valid. Laist asked if the NE and SE are on same page as far as trend analysis and when will it be in the SARs. Palka said that, for the Atlantic, it would be best if it included 2016 data so it would be available in the following year. Corkeron added that it has to be published first. Palka said a review of the density modeling by the SRG is needed. Young said the SRG review can happen in an inter-sessional period. Garrison said that is still several years out. Palka said the current abundance estimate can come out faster than the trend. Kenney said he took Jeff Moore's analysis as more of a way to smooth out abundance estimates than to generate trends. Garrison said the two go hand in hand. McDonald said in principle, if these abundance estimates are unbiased you just use them, but figuring out if they are unbiased is tricky. Garrison said that will be addressed shortly with discussion of g(0). Palka said NMFS has also looked at availability bias correction factors. McDonald said if all surveys were done the same way we can still analyze the trend if the biases are the same. Garrison said that will be looked at through post-stratification. It seems the habitat models are a way to reduce the differences in bias. McDonald made a suggestion to try blocking off survey sections to analyze trend in each section and then combine them- a random effects mixed model approach. That would remove site to site variation. He encouraged NMFS to take a look at coverage and to run a random effects model on blocks. The response would be the population size in each block. Garrison said inter-annual variation in abundance effects are addressed by habitat models as well.

Garrison explained that the Gulf of Mexico oceanic stocks are the only place where g(0) corrections have not been applied and g(0) values have not been taken from literature. The next Gulf of Mexico ship survey (2017) will have 2 teams and estimate g(0). Corkeron said aerial work is more likely to be constrained by availability bias than shipboard work. The best available proxy would be to take the modeled g(0) correction for the Atlantic and apply that to the Gulf of Mexico. The Gulf of Mexico 2009 abundance estimates will be expired next year so Garrison said a question for the SRG is should we refine the older estimates with g(0) corrections. Wells asked if there is much communication between NMFS science centers on this type of methodological question. Should the SRG encourage more communication between science centers? Palka agreed that would be good but NMFS does try that periodically but after a time the individual science centers go their separate ways. Garrison said the fish side of NMFS does more share sessions. We have not had a lot of national meeting about methods lately. Palka said some folks from other centers did provide comments during the AMAPPS planning. Laist asked if this would be a joint SRG recommendation. Bettridge offered to pass along the recommendation to the other SRG chairs for consideration as a joint recommendation.

Bettridge said the NOAA Office of Science and Technology holds annual workshops for fish stock assessment. They are now planning for toward the end of the fiscal year for marine mammals in coordination with FPR. Steve Brown is lead and S&T is funding the workshop.

McDonald said the Barlow method chops up transect lines into segments. That does require a lot of kilometers of transect but NMFS seems to be there.

Rosel asked what the SRG recommendation would be to do g(0) corrections for the Gulf of Mexico. McDonald said he would prioritize the Barlow method. Next would be to apply to the Atlantic. Palka asked how we would go about looking at conflictions between variability in density and weather. Garrison said habitat models are the only way.

There was discussion about the fact that the most recent spatial models are the Roberts et al. Duke models. They are presented as new and best available information. There may be problems with conflicts between SAR abundance estimates and "new" Duke models. The Duke models are long-term average abundances or densities having taken all historic survey data for the Northeast and Southeast and proxies from the literature for g(0). It is important to realize they are not new data, though they are new models. The density estimates cross stock boundaries and are not always separated into individual species. These inconsistencies are not always apparent to the casual viewer. These were reviewed by NMFS and were rejected the first time around and Duke subsequently spent a year revising. AMAPPS data will be added to the model. Clark wondered whether this would just be considered part of the smorgasbord of best available science. Garrison said the question is which are the best numbers and which are best for calculation of PBR. Palka said they were not designed for development of PBR but for spatial management. Garrison said they are really nice models; the issue is that we will not want to pull these numbers into a SAR. When AMAPPS density models are available they will be able to be used for Atlantic SAR abundance estimates.

Laist asked if including old data would run into problems with climate change. Garrison responded by saying that incorporating temporal trends would be a way to deal with this problem. Variables put out by climate models could be used as predictors. Corkeron said using model-based numbers for the SAR introduces a whole new range of uncertainty issues and conceptual issues. Garrison said there are ways to do that. The habitat models represent more aspects of the uncertainty than current methods.

Clark said there are differences between the Duke density model results and the NOAA density model results so people may cherry-pick what they want to use. Garrison said this had been discussed in CetMap meetings. Eventually in a NMFS repository there will be a list of the best products for use and the appropriate uses of each. Palka added that every model has pros and cons and we may need to combine things. Clark said we need words to qualify the products we come out with. Wells asked Clark if he would like to take the lead in developing a brief recommendation on how to deal with this issue. Clark said you may not even want to call them 'competing' models. Wells said putting it into the recommendation letter would probably be a good thing to do.

Overview of North Atlantic right whale critical habitat (Asaro)

Asaro said the final right whale critical habitat rule was just published last month and goes into effect February 26. The revised expanded critical habitat designation is roughly 29,763 square nautical miles (nm^2). The area includes northeast feeding areas in the Gulf of Maine/Georges Bank region (Unit 1) and calving grounds from North Carolina to Florida (Unit 2). Unit 1 covers approximately 21,334 nm^2 while Unit 2 covers approximately 8,429 nm^2. NMFS received public comments asking that the area immediately south of the proposed critical calving habitat off the coast of Florida in Unit 2 be included in the final critical habitat designation and it was included in the final designation. The area in question was part of the original 1994 critical habitat. After additional review this area was included in the final designation of critical habitat in Unit 2. NMFS was unable to identify areas associated with right whale migration and therefore did not include any migratory critical habitat as part of the revised designation. Based on NMFS' analysis of the best available scientific information, it is not possible to identify physical or biological features that define migratory habitat for North Atlantic right whales that meet the statutory definition of critical habitat under the ESA. This action does not impose any new restrictions for commercial fishing operations.

Physical and biological features of Unit 1 were defined as: 1) Late stage *C. finmarchicus* in dense aggregations in the Gulf of Maine and Georges Bank region; and 2) Diapausing *C. finmarchicus* in aggregations in the Gulf of Maine and Georges Bank region; 3) The physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate *C. finmarchicus* for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes; and 4) Low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing *C. finmarchicus* to aggregate passively below the convective layer so that the copepods are retained in the basins.

Physical and biological features of Unit 2 were defined as the essential features of right whale calving habitat include a combination of physical oceanographic features, including calm sea surface conditions, sea surface temperatures (7°C to 17°C), and water depths of 6 to 28 meters.

The designation provides notice to Federal agencies and the public that a listed species needs these areas for its conservation and that any Federal action that may affect critical habitat is subject to the consultation requirements of section 7 of the Endangered Species Act. Depending on the planned action, additional conservation measures to protect the critical habitat may or may not be necessary. Based on past consultation history, NMFS identified six categories of activities that may affect the critical habitat: 1) National Pollution Discharge Elimination System (NPDES) permitting (Unit 1); 2) Oil spill response (Unit 1); 3) Dredging and spoil disposal (Unit 2); 4) Marine construction permitting, construction and operation of energy facilities (Unit 2); and 5) Authorization of sand mining or disposal on the Outer Continental Shelf (OCS) (Unit 2).

NMFS has also identified four new (i.e., not previously consulted on) categories of federal activities that may occur in the future and, if they do occur, may affect the essential features. These potential activities are: 1) Oil and gas exploration and development activities (Unit 1 & 2); 2) Directed copepod fisheries (Unit 1); 3) Offshore alternative energy development activities (Unit 2); and 4) Marine aquaculture (Unit 2).

Wells pointed out that military activity was not listed as a concern. Asaro said the Navy consults on their activities. Moore said he was also not seeing fishing or shipping listed as impacts. Engleby said fisheries and shipping are addressed through species under section 7 activities. The Critical Habitat just addresses threats to habitat. Young said the fact that there is critical habitat there is another hook to hang effects of activities on animals. Corkeron said there would be an argument for bivalve aquaculture to have an effect on copepod abundance. Young said she didn't think that the fact that aquaculture may compete for plankton resources had been considered.

UME and strandings updates

GARFO- Mike Asaro presented a basic update on the Northeast region stranding updates and the 2013-2015 Mid-Atlantic bottlenose dolphin UME. The UME was closed Dec 2015. Young commented that there are lots more photos of pinnipeds with gear on them to whom no one responds. Gilbert asked what fraction of animals responded to are mortalities.

Wells asked if there are plans to obtain new Atlantic abundance estimates for bottlenose dolphins. Garrison answered that they will be flying as Atlantic survey in December 2016. Palka said the Northeast is also flying in the fall of 2016. Corkeron asked if other animals will still be checked for morbillivirus. Rosel said they can only test live or fresh carcasses. Wells asked what tissues are required for the testing. Rosel said they are trying to develop testing from skin, but now it is fresh blood from live animals or internal tissues obtained from full necropsy (spinal fluid, brain, other organs).

Southeast (Erin Fougères) – There were two open UMEs in the Southeast US in 2015: (1) the 2013-2015 Mid-Atlantic bottlenose dolphin UME (discussed by GARFO), and (2) the 2010-2015 northern Gulf of Mexico cetacean UME (NGUME). The NGUME is the largest die-off of cetaceans in the Gulf of Mexico, involving —1,513 cetacean strandings from February 1, 2010 through February 14, 2016, under the current spatial and temporal boundaries of the UME. Eighty-five percent of the strandings have been bottlenose dolphins, with —94% of all animals stranded dead. —The NGUME overlaps with the DWH oil spill response area and the Natural Resource Damage Assessment.

Modeling was done to evaluate clusters of strandings in the NGUME and four clusters were identified through June of 2013: (1) a pre-spill cluster lasting from March - May 2010 in Western Mississippi and the Lake Pontchartrain region of LA (attributed to mortalities of dolphins living in marginal habitat, low salinity, and unusually cold water temperatures), (2) a large and prolonged cluster of strandings in Barataria Bay, LA from Aug. 2010 – Dec. 2011, (3) a cluster of strandings in MS and AL in 2011, which included a high prevalence of perinatal mortalities, and (4) high mortalities in some NGUME locations in early 2013. Modeling also found that there was an overall increase in strandings of non-bottlenose dolphin species after the spill.

The highest and most prolonged increases in mortalities overlapped with the footprint of the DWH oil spill. Findings included a higher prevalence of primary bacterial pneumonia and thin adrenal cortices in non-perinate dolphins and a high prevalence of atelectasis, fetal distress, and in utero pneumonia in perinatal dolphins. These results contributed to the assessment of marine mammal injuries following the DWH spill and integrated well with findings from live animal health assessments in the area. Since July 2014, strandings in the area have decreased to below or near average. The Working Group for Marine Mammal Unusual Mortality Events has been consulted for closure of the NGUME and formal closure has been approved, with closure memos pending.

The Southeast Region also discussed several other key events from the year (2015). These included an averted mass stranding of pygmy killer whales (April 7, 2015 south of Sarasota, FL), monitoring a severely injured boat struck dolphin ("babyface" - Johns Pass, FL), a live stranded sei whale in Galveston, TX (December 22, 2015), and elevated bottlenose dolphin strandings in the panhandle of Florida through Mississippi coincident with a red tide bloom (Nov. 2015 – Jan. 2016).

Take Reduction Plan Updates

Bottlenose Dolphin Take Reduction Plan

Stacey Horstman (SERO, on phone) summarized the Bottlenose Dolphin Take Reduction Plan. The team held a webinar in November to provide updates on the mid-Atlantic bottlenose dolphin UME, to present data on recent observed takes, to discuss regulatory and non-regulatory measures, and to plan the next in-person meeting. The central team discussions and concerns arising at that meeting were impacts of the UME on affected stocks and efforts to assess those, as well as fishery impacts to NC estuarine stocks and the ability to observe these takes at existing coverage levels, and assign them to stock. Completion of several research priority projects is expected this spring. These projects include research to review and mine the enhanced mid-Atlantic bottlenose dolphin catalog to further refine the distribution of NC stocks; photo-id and abundance surveys to better understand the range, boundaries, and abundance of the SNCES stock; and biopsy sampling to improve understanding of stock structure. There is a forthcoming request for proposals with the NC SeaGrant and competitive proposals for both the bottlenose dolphin and the pelagic longline take reduction plan research priorities. The next team meeting is anticipated for early 2017, at which updates will include SNCES surveys and an abundance estimate, aerial surveys and associated abundance estimates for all coastal stocks, updated gillnet mortality estimates for 2011—2015, updated stranding data analysis for 2011—2015 and the overall level of observer coverage and fishing effort to accompany any gillnet mortality estimate.

Pelagic Longline Take Reduction Plan (PLTRP)

Erin Fougères (SERO, on phone) summarized the Pelagic Longline Take Reduction Plan (PLTRP). It is now 6.5 years past implementation of the final rule and ZMRG has not been achieved. The 2010-2014 average estimated serious injury and mortality for short-finned pilot whales is 192, well above the PBR of 159. The bycatch rate for 2014 is consistent with that observed over the last several years. The elevated rate is also a result of the removal of the 2009 year from the 5-year average. Pilot whale bycatch is intermittently observed in quarters 1 and 2. Observer coverage is typically low (< 10 sets), so if pilot whale takes are observed, then the estimated rate is quite high. Bycatch is more consistent in the 3rd and 4th quarters. Since 2011, bycatch rates in these two quarters have been elevated relative to the previous 5 years, but not historically high or showing evidence of trend. The team met in December to discuss amendments to the current PLTRP. Consensus recommendations from that meeting included terminal gear requirements and mainline length and setting requirements. The team recommended the Agency repeal the Cape Hatteras Special Research Area and any associated call-in requirement under the PLTRP. Non-regulatory recommendations included creating a "Safe Handling and Release Work Group", and modifying observer forms and protocols to increase the amount and types of data collected from bycatch. The next step will be to draft a proposed rule implementing the new consensus recommendations and amending the PLTRP. This proposed rule is expected to be completed in December of 2016. Young asked why it is taking so long to develop the rule, saying the delay is discouraging. Fougères explained that some of the delay was related to the economic analysis as well as to limits on staff time. Engleby said the rule-making process has just become more and more complex over time.

Atlantic Large Whale Take Reduction Plan (ALWTRP)

Asaro (GARFO) gave a recap of the 2014 vertical line rule that was developed as part of the ALWTRP process. Now multiple team members have requested exemptions or modifications to the plan. A webinar in November provided the team with draft 2015 stock assessment numbers and updates on entanglements in 2015. The 3 phases for the vertical line model (improve gear data, improve SPUE data, use model outside of whale world) were also introduced at the November webinar. Young pointed out that bycatch is now below PBR but the fleet has also shrunk quite a bit. There is not uniform satisfaction among scientists on the co-occurrence model. Gear modifications are being proposed outside of the TRP process. There are active efforts by the fishery to get back into those closed areas. Serious injury and mortality does not appear to have changed in the wake of the plan.

Harbor Porpoise Take Reduction Plan (HPTRP)

Asaro explained that we are now in the monitoring phase of the final rule which was published on October 4, 2013. Monitoring involves NMFS examination of observer data regarding pingers on observed hauls and providing the Office of Law Enforcement (OLE) with those data, while working with OLE on enforcement efforts. An annual webinar was held in November 2015.

Atlantic Trawl Gear Take Reduction Plan (ATGTRP)

Asaro explained that non-regulatory measures developed by the ATGTRP have been in place since 2008. Monitoring is ongoing to see if the continuation of the Plan is warranted in the future.

Gulf of Mexico Bryde's Whale

Rosel reported that the Gulf of Mexico Bryde's whale is undergoing a status review. This was initiated because NMFS received a petition in 2014 to list the stock as an endangered distinct population segment (DPS) under the ESA and to define critical habitat. Gilbert asked when we will see it listed. Engleby said NMFS is moving at a good pace to get the status review done and the finding out. Bettridge pointed out that USFWS does status reviews differently - NMFS tends to have teams do the status review. Clark

asked when the 2015 SARS are coming out. Bettridge replied that those would hopefully be out in the next month or two.

Corkeron said the only known anthropogenic extinction of a large whale was the Atlantic gray whale in ~1700. Now we are looking at another. How did we get here? This is important to examine so we don't end up in this situation with another species. He wondered how the Bryde's whale SAR had been viewed in the past. Young said until the 2014 paper came out she was not aware the population was being considered a separate unit. The SARs did not make it clear to her that these animals were separate from other Bryde's whales. If the agency was aware before 2014 it would have been good to alert the SRG. Wells agreed that the red flags just weren't there for him either. He was not aware that this population was not just a small portion of a larger group. Young said if there are other small populations like this she would like someone to make clear the information and concern. Laist said it is due to the power of genetics. It is easy to know that an animal in a separate ocean basin is a separate species. He did not think we knew that it was distinct until the genetics information came out. Rosel said she had presented this before the paper was written. Corkeron added that there had been a stranding in 2002 that was noted to be very different from other Bryde's whales.

Bettridge said there is an added section of the new GAMMS that may address this in the future. Engleby said this was not even a strategic stock. Corkeron said he wondered if NMFS thinks it is it ok to lose a stock or 2. Palka said it just means we need to do more research. Laist said he thought we actually moved pretty fast to start recognition under the ESA for the Bryde's whale. Corkeron pointed out that nothing is happening on the water. Garrison said it is part of a larger problem of being able to estimate impacts on smaller stocks. Rosel suggested maybe any time you have a very small population, those SARs should be on the top of the list. Engleby asked what the mechanism would be to elevate those in attention. Palka remembered that Barb Taylor had said years ago that small populations have a high probability of suffering before we even know it. Garrison said designating a stock as strategic because of lack of information is something we have gone back and forth on. Maybe we need to have a category of concern outside of strategic. Garrison said, for example, maybe the Gulf of Mexico killer whale stock is thought to be small because we don't effectively survey them. The larger problem is how to flag these. Mullin said the main difference is that the Bryde's whales are always in the same place and the killer whales are widely distributed in the oceanic Gulf of Mexico. Corkeron said this is a really interesting distinct clade. There seems to be a mismatch in the process. Mullin pointed out that this came up at the SE program review, but maybe he just hasn't been emphatic enough over the years to get people to take notice of the Bryde's whale. Bettridge said having an ESA listing makes a big difference. Garrison said the ship struck Bryde's whale got a lot of attention. Young said, that like many others, her attention is just spread so thinly across a variety of marine issues that personally she needs a prod to focus on something that may be a problem she and others mays not be aware of. Corkeron said if protecting this stock is important, the Agency needs to reallocate some effort. Palka said we need to get better at knowing the genetic structure of almost all species. Laist added that we didn't realize the full differentiation of many species. Gilbert said there is a step that has to happen before you go out and biopsy. There is an exercise to go through SARs to see which are small populations. Rosel said the Gulf of Mexico Bryde's whales were listed as strategic in the 2012 SAR, but that didn't help and they seem to have fallen through the cracks. Mullin pointed out that Gulf of Mexico Fraser's dolphin sightings are even rarer. Garrison said some of the bottlenose dolphin stocks are very small and face threats. Rosel said we still don't have an estimate of the shelf population of Atlantic spotted dolphins in the Atlantic and they may be small, though Garrison clarified they have a fairly large abundance estimate. Wells wondered if it would be a reasonable approach for NMFS to identify which stocks are small or suspected to be small and give a list to the SRG? Clark said we still have a very real situation in the Gulf of Mexico, and he would not assume that these whales only appear in the Gulf where people see them. Garrison said we have had strandings and anecdotal sightings that are outside the box. It is possible that there are whales at a low density in the western Gulf and we need to get some more effort, either acoustic effort or otherwise, to capture these.

Rosel said the transboundary area has never really been surveyed. Clark wondered, now that we know about this population, what are we collectively going to do about it? Wells said he didn't know if it is the SRGs role to propose management action. Laist suggested maybe the best way to figure out where they go in the Gulf is to tag them. Garrison said we would not like to put an implantable tag on one, but as that technology improves we may consider that. GoMMAPPS may include a focus on shelf-break associated animals in general. The agency is still in discussions about that. Wells thought it might be good to have an SRG recommendation to do more research on Bryde's whales. A recommendation that the southwestern part of the Gulf be surveyed or international collaboration for surveys as part of GoMAPPS be pursued might be helpful. Another important question is whether that is actually useful habitat. Clark pointed out that for about $15,000, acoustic data from that area could be analyzed.

SEFSC fieldwork

Mullin presented a summary of 2015 SEFSC ship surveys (summer in the Gulf of Mexico), aerial surveys (AMAPPS winter aerial survey of shelf waters from Long Island to Key West), and capture-recapture surveys (Biscayne Bay FL, St. Andrew Bay FL, West Bay TX). Three right whales were tagged with LIMPET tags. Health assessment follow-ups were conducted in Barataria Bay. Planned fieldwork for 2016 includes AMAPPS summer ship and aerial surveys and capture-recapture surveys in Biscayne Bay FL, St. Andrew Bay FL, and Galveston Bay TX. McDonald asked how long before abundance estimates will be generated from those surveys. Mullin responded saying the photo analysis of West Bay is pretty much complete. Garrison added that the estimates are on a relatively fast track.

To a question about Caribbean assessments Mullin replied that the SEFSC has no current plans for research in the Caribbean. All SEFSC fieldwork is a result of collaborations with external funders. There are currently no external funders for the Caribbean. There is one person collecting biopsies of bottlenose dolphins along the south coast of Puerto Rico but we need to do large scale abundance and distribution surveys. He asked the group for advice on what area would be meaningful to survey. What would it mean if we just surveyed a little box around the US Caribbean? Laist wondered if it would be useful to use passive acoustics. Corkeron said the Park Service is putting out a PA recorder off of St. John, USVI. Garrison said ship time in the Caribbean was in the proposal for funding that was not funded. Mullin said the population of sperm whales off Dominica has been declining at approximately 4% /year so the Office of Science and Technology and SERO have been in negotiations to support a workshop about this. Corkeron pointed out that there is also French work going on in the surrounding islands. Wells asked the SRG how important they think it is that we bring information on U.S. waters in the Caribbean up to date. Young said that, because we have Tursiops estimates in the Gulf that are more than 25 years old, she thinks surveying those stocks should be a priority. Engleby said the Specially Protected Areas and Wildlife (SPAW) program of the United Nations Environment Programme has a threats identification component with suggested actions. Powell said we don't know very much. Rosel said we do know that many of these unassessed Gulf populations do face significant threats. McDonald said it bothers him tremendously that there are stocks that are unassessed, including those in the Caribbean. What NMFS is doing currently is only getting just so far. We need to think outside the box and do something different. Corkeron said NEFSC just got some funds to do some humpback whale work with partners in the French and Dutch Caribbean. Clark asked if there was a sister program between Stellwagen and Samana Bay. Engleby wondered why that doesn't include Puerto Rico. It would be good to leverage partners in Puerto Rico because every year there are issues with humpbacks there.

Corkeron said in the proposed ESA listing rule for humpback whales there is one DPS in the Caribbean. In the Atlantic there is another breeding population in Cape Verdes. From photo-id we know that there are animals in the southwestern Caribbean that go to Norway and not to the Gulf of Maine. Others do go to the Gulf of Maine.I It is not a simple split but something along spatio-temporal lines. We need sampling in all seasons to clarify this stock identity issue. We are putting out passive acoustic recorders to see if the animals are in the southwestern Caribbean in Jan/Feb/March. The goal is to work with researchers down

there and work on capacity building. McDonald asked if it is possible to tag the humpbacks. Corkeron said we want to crawl before we walk. Mullin asked if NMFS had 120 days to survey in the Caribbean the standard way, where should they survey? McDonald said there appears to be a wall because all maps stop at the EEZ. Rosel said there can be a case for going outside the EEZ, especially if we knew the threats. Palka said in the NE we don't stop surveying at the EEZ. McDonald said radio-telemetry is invaluable. Corkeron noted that in the Caribbean there are marine protected areas with no-take zones. Animals in the MPA could be used as controls to try to get at impacts; all you need for that is photo-id data. Powell said NOAA has particular interest in joint scientific exchanges with Cuba. There is a big push to come up with initiatives. Mullin said SEFSC is interested in looking into that more. Powell offered help in facilitation of that. Rosel said to assess Puerto Rico we are looking at up to 20 species; what sort of prioritization is recommended by the SRG? Wells said there is a mandate to update SARs for all US waters. We should look at the Caribbean as well as strongly support surveying the southern Gulf of Mexico.

NEFSC Fieldwork

Corkeron summarized 2015 large whale research at NEFSC as well as plans for 2016 research, even though there is still no budget for 2016. There were a total of 94 aerial surveys in 2015, as well as a shipboard right whale cruise on the Gordon Gunter in May 2015. Contracts and grants continued, with a new 3-year contract going into effect for catalog maintenance, a new 5-year contract for the sightings database, and several CINAR grants (effects of drag from fishing gear entanglements and UAV measurement of respiratory microbiomes and photogrammetry). Research in 2016 will include continuation of the right whale aerial survey program as well as another May right whale cruise on the Gordon Gunter. NEFSC has also proposed to start running a small field program with collaborators in the southeast Caribbean to assess whether the humpback whales occurring in the southeast Caribbean are a separate breeding aggregation from those breeding farther to the north. This would involve a mix of classical fieldwork (photo-ID, biopsy) and passive acoustic recordings. McDonald asked if photo-id pictures would be taken of all marine mammals. Corkeron replied that the target species would be humpback whales but other species could be photographed. McDonald wondered if it would it be valuable to alter survey design to get all species. Corkeron explained that the primary aim is to develop and build on local resources.

Palka presented an update on the Atlantic Marine Assessment Program for Protected Species (AMAPPS) program. In the summer of 2016 the NEFSC and SEFSC will be conducting shipboard and aerial surveys with the primary goal of getting data for new abundance estimates that will be reported in the SARs. The NEFSC will be using the NOAA ship Henry B. Bigelow during 22 Jun - 25 Aug 2016 in 3 legs and will be using the NOAA Twin Otter during 15 Aug - 30 Sep 2016. The survey area and protocols will be similar to that done in previous summer abundance surveys. The ship will be covering the deeper waters from the 100m depth contour to the EEZ and Gulf Stream. The plane will be covering the inshore waters. Two team survey protocols will be used on both the plane and ship. Palka asked for SRG input on using same tracklines ever year. McDonald said a compromise would be to go back to the same lines, but rotate new ones in.

The AMAPPS program is also scheduled to conduct aerial surveys during the fall 2016 and spring 2017. The NEFSC has asked for the plane during mid October to the end of November 2016 and during June - July 2017. The survey area and protocols will be similar to previous surveys. The two team data collection method will be used in waters from the shore to the 2000 m depth contour in waters north of New Jersey. Habitat spatial density models using the generalized additive modeling technique have been developed for about 17 species (or species groups). These will be finalized shortly. DTAG dive data are being summarized and used to correct the visual line transect data for availability bias. Future plans are to further explore the hierarchical Bayesian modeling framework; investigate trend analyses; incorporate new sightings data into the models; get more tag data for more species and to get more spatially explicit

dive time corrections; consider ensemble methods to get model weighted abundance estimates; and investigate trophic relationships.

Corkeron presented updates on passive acoustic work at the NEFSC. In April 2015, 3 high frequency recording packages (HARPs) were deployed off the Northeast US shelf break. These will be replaced by 8 HARPs in April 2016 to do pre-seismic activity monitoring of the long term presence of marine mammals.. Working together with Duke University NMFS plans to cover the whole U.S. east coast line. In October 2015, a 3 year long effort consisting of 5 lines (Nantucket, Cape Hatteras, Cape Fear, Savannah and Georgia) of Cornell marine autonomous recording units (32 units total) were deployed along the US coast. The aim is to monitor changes in migratory movements in baleen whales. The mid Atlantic is covered by existing BOEM and NY State projects (hence the gap in sampling). A glider was deployed in the Great South Channel and 2 real time monitoring buoys have been active since early 2015 to assess the efficacy of using these tools for assessing baleen whale presence. Results from these can be found at http://dcs.whoi.edu/. A glider has also been used to monitor and locate cod spawning grounds in Massachusetts Bay. Long term NOAA Noise Reference Station recorders continue to collect data in the Stellwagen Bank National Marine Sanctuary and by the seamounts off Georges Bank.

Archival acoustic data from 2006 to present continues to be worked up for right, fin, sei, blue and humpback whale presence. Right whale analyses will be finished by the summer. A manuscript on how communication space differs between species and call types is being finalized for an Endangered Species Research special issue. A manuscript was accepted on acoustic ecology policy for the NOAA Ocean Noise Framework in the same issue. Manuscripts from AMAPPS work on how beaked whales demonstrate responses to echosounders and new approach for 3D localization and depth calculation of beaked whales are being written up. A post-doc, Jenni Stanley, is working jointly with SBNMS/NEFSC on invertebrate and fish acoustics and effects of noise.

Laist asked if NEFSC had any thoughts about inshore Maine for passive acoustics. Clark said there have been many attempts to get funding for more deployments in the Gulf of Maine. If you are a lobsterman you don't want to know that right whales come closer than 5 miles offshore. Young said she understands the industry's hesitation to find out more about what is happening but it wouldn't seem that the lobster industry is out there preventing NMFS from deploying buoys. Do we have any idea why these projects are not being funded? Clark said he has applied for section 6 funding but most proposals have been rejected. Corkeron said most of NEFSC acoustic work is not funded by NMFS. Laist asked what the management question is that is driving the placement of buoys offshore. Corkeron said that is partly because we need the photo-ids for the abundance estimate.

Seal research in 2016 will be focused on analyzing data collected on gray seal abundance and pinniped bycatch. With regards to abundance, counts from aerial surveys during molt surveys conducted prior to 2016 have been completed; NEFSC is currently working on a manuscript reporting estimates of minimum abundance and a decadal trend based on seasonal availability at haul-out sites in Massachusetts. In January 2016, a Twin Otter surveyed all of the gray seal breeding sites in Massachusetts and Maine - these data will be used in collaboration with DFO Canada to estimate total gray seal pup production this year over the entire range of the stock. In addition to the manned aircraft, seals were surveyed on Muskeget Island with a fixed-wing and rotary drone and these images will be used in conjunction with those from the Twin Otter to compare optimal platforms for surveying seals from an operational, scientific, and economic perspective. In addition, images from the rotary drone, which flew over Muskeget 3 different times during the breeding season, captured different pup stages in time throughout the season and will help inform the pup production model.

Gilbert said the SRG needs to make a recommendation for more work on seals. Annual human-caused mortality is approaching PBR if you use abundance in U.S. waters only. McDonald said both those numbers have error around them. Garrison said to some extent PBR incorporates uncertainty.

Gilbert added that he thought there is some value in the seal density model. Mullin asked about killer whale sightings. Kenney said they used to be more plentiful in the northeast in the old days but there were also more bluefin tuna.

Update on *Deepwater Horizon* injury quantification (Garrison)

Garrison summarized the injury quantification process used for the DWH NRDA for estuarine, coastal and oceanic cetaceans as described in the final PDARP (Programmatic Damage Assessment and Restoration Plan) and in the DWH NRDA Marine Mammal Technical Working Group Report final report entitled "Models and Analyses for the Quantification of Injury to Gulf of Mexico Cetaceans from the Deepwater Horizon Oil Spill."

Wells said the injury quantification process would have benefited from updated SARs. Garrison agreed, saying baselines would have been good. Wells asked if NMFS higher-ups realize the extra effort put in due to lack of baselines. McDonald said if we had had photo-id data from Barataria Bay back 10 or 15 years it would have made his life easier. Wells added that there were some cases where there were photo-id data that had disappeared with students, and that has been corrected. Garrison said standardized survey effort would be important for stranding data, with effort data. Young asked about why the abundance numbers Garrison had just presented were not in the SARs. Garrison said all the information in the PDARP just got finalized this month, so NMFS didn't include it in the 2016 draft SARs which were drafted last fall. There are a number of outstanding questions about which of these estimates can be included in the SARs. They should be ready for the 2017 SARs. Young said all these declines have management implications. Rosel said she thought maybe we should change the recovery factor for some of these stocks. Garrison said NMFS will have new abundance estimates for the oceanic stocks in 2018. Young asked how NMFS is addressing or incorporating in abundance estimates the fact that one may not be able to detect a decline of 20% i. Engleby said there are efforts to come up with metrics to measure restoration. Corkeron said it looked like recoveries were predicated on the fact that there was no more impact of the spill on these populations. Garrison explained that the models contained a chronic effect factor continuing for 10 years. Moore said that is not a marine mammal question, it is really a biogeochemical question. If you look at the data from Wild Harbor the impact will be around for decades. Garrison said it is part of the framework to be able to respond to impacts that happen in the future but was not incorporated into the injury assessment.

Update on *Deepwater Horizon* restoration planning (Engleby)

Engleby presented an update on the status of the draft Programmatic Damage Assessment and Restoration Plan.

Corkeron said he was thrilled to see a discussion of resilience and asked what NMFS sees as the differences in managing for resilience. Garrison said the easiest button to push is to improve reproductive capability. Corkeron pointed to quite a large body of literature for managing for resilience. McDonald said it is all about habitat. Engleby said a problem is that we don't know about all of the threats. Laist asked, whether monitoring that is built in to the plan would cover surveys, tagging, etc. Rosel replied that the monitoring only covers monitoring of the restoration. Corkeron asked if there was thought of having control areas that you are not restoring in order to be able to measure success. Garrison said the goal is to have science-driven design. Rosel wondered if the restoration efforts focused on non-marine mammals would impact marine mammals and if that would be monitored. Engelby said that is an

important point and one that can be both negative and positive. There is a whole chapter on environmental compliance.

Garrison wondered what the planning process is going to be – especially in the open ocean. Engleby replied that it is very unclear. Are we going to be relied upon to help other people do their work? Gilbert asked if any of the restoration funds could be used for re-evaluating any of the assumptions that went into the impact assessment. Moreno said she would think one potential option would be to collaborate with academia and NGOs on the ground who do marine mammal research. She has been trying to encourage Mississippi to do the monitoring. She asked Engleby if there was a mechanism for the scientific community to provide input in development of plans. Are state and federal agencies working together on these plans? Engleby said the governance chapter outlines how this is going to go. It has not been all sorted out yet. Trustee Implementation Groups will form standard operating procedures, but it is still in a development phase. Engleby said she is optimistic about building partnerships with the States. McDonald said he was involved in the Exxon Valdez and the restoration plan for that was much more nebulous.

Atlantic SRG meeting February 26, 2016

8:10 am start.

On phone: Chris Clark (SRG), Michael Moore (SRG), David Gouveia (GARFO), Erin Fougeres (SERO), Kate Swails (GARFO), Allison Rosner (GARFO), Kathy Foley (SEFSC), Rich Seagraves (SRG), Doug Nowecek (SRG), Andy Read (SRG), Jason Forman, Paula Moreno (AIT), Stacey Horstman (SERO), Allison Rosner (GARFO)

In room: Trent McDonald (SRG), Debra Palka (NEFSC), Lance Garrison (SEFSC), Keith Mullin (SEFSC), Patricia Rosel (SEFSC), Bob Kenney (SRG), Randy Wells (SRG), Peter Corkeron (NEFSC), Jim Gilbert (SRG), Buddy Powell (SRG), Sharon Young (SRG), Laura Engleby (SERO), Shannon Bettridge (FPR), Nicole LeBoeuf (FPR), David Laist (MMC), Kristy Long (FPR), Richard Merrick (S&T), Lisa White (FPR), James Powell (FPR)

Shannon Bettridge spoke briefly at the beginning of the meeting to remind the SRG to talk about the membership and chair. There has been only one review cycle so far and, because there were 2 openings, nobody needed to step down. The SRG needs to be divided into 3 groups with group A ending their first term this year. This could be done through a separate phone call if necessary. The new people would come on before the next meeting. There is a big role for the chairman. She reiterated that NMFS appreciates the work of the SRGs and looks forward to the recommendations. She added that the final 2015 SAR is expected to be out soon. NMFS is working very hard to get back on schedule with the reports.

Stock Assessment Report Reviews

North Atlantic Right Whale

Kenney said that other than comments on the new methodology he had just editorial changes. There are still some inconsistencies. Read asked for a summary of where things stand with regard to what is going to happen to the document. Corkeron said the directive has been that when there are major analytical changes they need to be published in some refereed form prior to incorporation in a SAR. New references to the model will be removed from the 2016 report. It will go back to the way it was done before, with minimum number alive reported for Nmin. The SAR will be rewritten and a revised version sent back to the SRG for comment. The minimum number alive will show a substantial decline. Read said he agreed that there had not been sufficient review of the modeling approach to include the model in this SAR. It does, however, look like we are past an inflection point. We need to highlight the fact that we may have gone into a negative population trend. Corkeron said NMFS saw this coming and Pace came up with a new way to look at the data to demonstrate this, but just ran out of time. In the future this will just take several years to incorporate into a SAR. Merrick said the analysis is still important but not as part of the SAR. The sooner NMFS can get the SRG involved in reviewing the model approach the better. McDonald said he thought the Jolly-Seber approach is the right way to go, either that or a spatial Jolly-Seber. That said he has some issues with the current model and would be happy to get on the phone with Corkeron and Pace to iron those out. Kenney said this is a stock where a habitat issues section is desperately needed.

Moore raised a point about the earlier discussion of enlarged critical habitat. He said he doesn't understand how fixed gear is not implicated as impacting the habitat. Moore stated that fixed lobster gear

does modify habitat. Gouveia said he understands what Moore is saying, but disagreed with Moore's assertion that fixed lobster gear modifies right whale critical habitat. Gouveia explained that, as part of an ESA Section 7 consultation, NMFS must evaluate both the impacts to the ESA listed species itself and its critical habitat. When evaluating impacts to critical habitat areas, NMFS evaluates impacts that affect the physical and biological features that were identified by NMFS when it designated the critical habitat. Likewise, NMFS also evaluates the impacts to the species itself. In this example, Gouveia pointed out that NMFS determined that fixed lobster gear did not affect the physical and biological features associated with right whale critical habitat in the northeast, but that it did have an effect on the species itself. The impact to the species is addressed through the Atlantic Large Whale Take Reduction Plan.

Moore and Young also noted that aquaculture impacts should have been considered in the northeast when establishing critical habitat. Gouveia stated that aquaculture activities were identified as a potential habitat impact in the Southeast. In the northeast (Unit 1) the agency couldn't find any evidence that aquaculture would have an impact on the physical and biological features associated with the northeast critical habitat area. As new information does come up NMFS will take that into consideration as part of the section 7 consultations. Young said she believes that, unless scientific research can be cited showing the volume of copepods removed by a certain acreage of aquaculture, that aspect can't be used in habitat designation. Gouveia agreed and said that NMFS couldn't find enough information to support such an impact.

Nowacek questioned why obstructing large whales in these critical habitat areas by aquaculture and fishing gear would not be considered. Gouveia explained that if the obstruction affects the physical and biological features associated with critical habitat it is dealt with under critical habitat; if the obstruction affects the animals directly then we deal with that under the large whale plan for commercial fishing operations and through ESA for non-fishery activities. Nowacek further questioned why the former right whale critical habitat area had regulations to prevent fishing activities. Gouveia stated that NMFS kept the closure areas and gear modifications in the former critical habitat areas in Massachusetts Bay and Great South Channel because of those direct fishery impacts to the high aggregations of right whales that are historically seen in these areas. That is an impact to the species, not the critical habitat component of it.

Clark asked how or whether acoustics can be used in definition of critical habitat. Gouveia said that acoustic impacts could be considered in defining critical habitat, depending on how acoustics affect the physical and biological features used to designate the critical habitat. He noted that NMFS considered acoustic impacts in developing critical habitat on the west coast because it had an impact on the identified physical and biological features used to identify critical habitat. However, as NMFS did our analysis for North Atlantic right whales, we could not find a direct acoustic impact to our physical and biological features used for right whale critical habitat. Nowacek asked what makes the west coast different from the east. Gouveia said it was because the species being considered (southern resident killer whales) [Note: Gouveia mistakenly referred to southern resident killer whales but meant Cook Inlet beluga whales] for critical habitat was in enclosed bays on the west coast and that the acoustics were thought to affect the biological features of that area. NMFS agrees that acoustics is a big impact on the species. We just didn't have enough to go by to see how it impacts the physical and biological features of their critical habitat. Once we learn more about acoustic impacts we can consider this information in our consultation process. Corkeron listed several papers published on right whales and acoustic stress and asked what more would be required. Nowacek said a lot is known about impact of noise to bowheads. How has that information not been brought in? Gouveia reiterated that this was an issue of impacts to critical habitat versus impacts directly to the species. LeBoeuf said as NMFS finds out more about how acoustics are impacting animals we need to be strategic about how we move forward. It may or not matter if we treat it as an impact to the habitat or directly to the species. We should do a better job at figuring out what bin indirect threats go into. Wells asked if it would be helpful if the SRG made a recommendation to pursue this. Gouveia said until you can show us that it affects the physical and biological aspects of the habitat we can't really consider it as part of the critical habitat discussion. We don't consider that acoustics affect

the critical habitat at this time. Nowacek asked if acoustic issues for southern resident killer whales (Note: should have been talking about Cook Inlet beluga whales) were considered as impacts on the habitat or as impacts on the species. Gouveia said he believes that they were considered as impacts on the habitat, because of echolocation feeding behavior and the nature of the enclosed areas where the whales feed. Clark said the ASRG should pursue this. Nowacek and Clark agreed to put together a brief recommendation.

Young called attention to the section on population size that said that matching for 2013 was not complete. Corkeron said that's why you will be getting 2012 numbers, though 2013 is mostly complete. Young asked why discussion of inter-calving intervals is no longer in the SAR. This draft acknowledges that interannual variability exists but the new table is only recruitment. Corkeron said the argument for that was that recruitment is a better measurement than calving interval. He agreed that calving interval is easier to understand, so if the SRG feels that is important NMFS can include that. Young had some specific comments on tables and serious injuries or mortality of specific whales that might be missing. Also, the footnotes to the table have a reference to see Henry et al. in prep, so this is not a published document. It was pointed out that the serious injury determination manuscript has been waiting for SRG review. There was some discussion of serious injury determination review by the SRG. Wells said that is one of the things the SRG are going to try to do more intersessionally.

Gouveia asked how the new GAMMS requirements will impact the right whale SAR, in particular the section on transboundary stocks. How is that going to be implemented? Does it have implications for the new model? Corkeron said the Jolly-Seber model only applies to abundance. Were we to parse out takes that would have to be a separate publication, though he is not sure how NMFS is going to manage putting out a refereed publication on that as well.

Humpback Whale

Young pointed out that there are more recent Stevick papers regarding potential breeding in the Caribbean that could be cited in the section on stock definition and range. Also, to add to the discussion of the use of mid-Atlantic habitat there is a Navy document that updates Barco. She suggested that the number cited for maximum net productivity is not really well below Zerbini's range. She had a few suggestions for additions of humpbacks to the serious injury and mortality table. Moore said most of his comments were minor except for the fact that he feels like a broken record and that we are not having any impact on the stock status. PBR is substantially exceeded. Clark asked where we will see the entrance of a climate change discussion in these reports. Wells said his understanding is that here will be more attention to having a habitat section for each stock in the future.

Fin Whale

Young said she had nothing substantive except to point out that this stock is over PBR due to entanglement. Kenney noted that the Canadian survey estimates have dropped out, so abundance for this stock dropped way down. However, the SAR is still counting all mortalities in areas not included in the abundance estimate. He felt that,f the Canadian portion of the abundance estimate is dropped out, then we need to drop out the Canadian SI&M. The sei and minke whale SARs have the same issue. Young said if the Canadian mortalities and serious injuries drop out of the table, they at least need to be mentioned elsewhere. Kenny said they could be left in the table but excluded from the total calculation. Kenney also pointed out that while the table does partition US and Canadian takes, the summary paragraph of the mortality section does not.

Sei Whale

Kenny said actually all mortalities here are attributed to the US so nothing needs to be removed from the table. The reporting of old abundance numbers vs. "please see appendix IV for earlier estimates" is not consistent. Rosel said in some of the SE stocks if an old estimate is all that exists, we leave it in the text.

Minke Whale

Kenney pointed out that this SAR is another with the mismatch between the geographical extent of abundance and mortality. Lawson had commented that it was odd that the TNASS estimate was not mentioned and thought there should be some explanation of the big change in abundance. It was discussed that it could be mentioned that the historical surveys are in the appendix and that the drop in abundance is due to change in survey area. Clark asked about the absence of utilizing acoustic records for occurrence. Is using acoustics on the lunatic fringe? Corkeron said as long as the research is published it can be used. Clark said there is a winter distribution of minke whale in the West Indies. There is a deep ocean component as well. Clark and Gagnon would be a good reference to include for that.

White-sided dolphin

Powell presented Lawson's comments. Lawson had inserted some Canadian mortality text on ice entrapment. Moore said he would like to see a brief discussion on changes in species composition of strandings. This would apply to white-sided dolphins, pilot whales and common dolphins. He is not aware of any publications on this but the data is in the stranding database.

Harbor porpoise

Young said the wording of "a ruling to reduce harbor porpoise..." should be changed from "a ruling" to "a take reduction plan".

Risso's dolphin

No substantive comments.

Common dolphin

Powell had nothing substantive. Moore had a comment about the lack of trend analysis. Wells said there has been extensive discussion about trend analysis and this will be done. Young said this is another stock where the TNASS estimate dropped out. Also, strandings were way up in 2012. Was that related to anything? Kenney said there will be a paper submitted that will show that the increase in strandings was related to the North Atlantic Oscillation. Powell read Nowacek's comments. Nowacek questioned whether the SARs are trying to include Canada in every stock that is appropriate. He also wondered why fishery interactions in the stranding data were not included in the fishery mortality section as takes from an unidentified fishery. Palka said this is a valid issue to consider. The SRG has told NMFS in the past not to include stranding mortalities or serious injuries in the total calculation if they are in areas where there is observed coverage.

Long-finned pilot whale

Young pointed out that in the section on spatial distribution there are citations to NMFS unpublished data. Garrison said we need to create a pathway for creating a published paper for both long-finned and short-finned pilot whales. He commented that it is appropriate to not be including the Canadian abundance estimate because our bycatch estimate only covers US waters. Kenny said that is consistent with what GAMMS 3 is going to say. Corkeron asked if actual estimates of abundance will be published. Garrison said yes. There was a question from Nowacek about the species split and mixture area. Garrison said the statement about mix was from the model, not direct sampling or field identification. That can be made

clearer. Moore agreed that the methodology should be published in a report and continued to be used. Biopsy work should continue. Garrison said NMFS is talking about incorporating pilot whale biopsy work into upcoming surveys. Observers do still collect samples from pelagic longline catches.

Short-finned pilot whale

Nowacek had commented that stock structure, including connectivity between Atlantic and Gulf, needs to be revisited. Garrison said NMFS is at a preliminary stage with Read's results. Rosel said genetic matches have been shown between the Gulf and the mid-Atlantic. Garrison added that this is a stock that tends to bounce around PBR in a cyclic pattern. This is an issue with the way the SAR averages takes over 5 years and could be a justification for using larger running averages. This is a point of discussion at the TRT meetings. Wells suggested adding a line of text identifying the cycle. Garrison thought maybe the way to go would be to use a model.

Offshore bottlenose dolphin

Wells and Nowacek had no substantive comments. Young said there is confusing language in the section on pelagic longline. Also, this needs a habitat section. Wells thought there could be a comment to clarify that this stock range extends beyond the EEZ.

Dwarf and pygmy sperm whales

Gilbert and Kenney had just editorial comments. Young asked if something could be added about why these are being considered as separate stocks from their counterparts in the Gulf of Mexico. Rosel explained that the separation of many stocks was done dating from the original assumption that all species in both oceans were 2 stocks.

Northern migratory bottlenose dolphin

McDonald said he was surprised that the stock polygons were not on the maps. He thought this SAR needed a complete rewrite and that NMFS and the SRG should be embarrassed about the state of this document. Corkeron said he has wanted to do major rewriting of other SARs but the track changes requirement has been an impediment. LeBoeuf said there are 2 different things you want to track and one is substantive changes suggested by the group. Garrison wondered if it would be appropriate to have a separate document that points out the substantive changes.

Read's review pointed out that there seems to be contradictory information in the Annual Human-Caused M&SI section for mid-Atlantic gillnet background. One take seems to have been removed. He also asked if the morbillivirus UME had been closed and if so, the SAR should say so. He wondered if we know anything more about which stocks were affected by the UME and asked about plans for updating the abundance of this stock given the mortality experienced during the UME. Most of these comments applied to the Southern Migratory stock as well.

McDonald said the 4 Atlantic bottlenose dolphin stocks that he reviewed should be combined into one document. There is a lot of repeated information and cut and paste. Young pointed out that there is a precedent for combining stocks into one SAR. Gilbert added that the Pacific harbor seals are 12 stocks in one SAR. Garrison argued that that goes beyond these 4 reports. Palka said there are pros and cons to both approaches (combining vs. separate SARs). Wells agreed, but thought that losing track of the original intent of the reports is not something he wants to do. Rosel said there has been a desire for each to stand alone because these stocks are involved in a TRT. LeBoeuf said there is value and utility in having 1 piece of paper or 1 report for each stock. People care about certain individual stocks and may not care about others.

Southern migratory bottlenose dolphin

Most of McDonald's comments above applied to this stock as well. He thought the Table 2 here was better than that for the Northern stock, but the bad table was still included as table 3. Read commented that under "Stock Definition and Range" the text should read "Members of this stock make use of coastal waters" rather than " Members of this stock are thought to make use of coastal waters". There are extensive sighting histories of many animals from this stock that include records from coastal waters. Also, since we know that there is spatial overlap between this stock and the SNCES stock the statement "It is probable that there is spatial overlap between these 2 estuarine stocks" should be amended.

Northern North Carolina estuarine bottlenose dolphin

McDonald said Gorgone et al. was gray literature. Garrison argued that it has been reviewed and is available on the web as a NOAA tech memo. Read had some general comments regarding the NC estuarine stocks. He asked, given that it is likely that mortality exceeds PBR, what changes to observer programs are planned to better capture the true level of mortality and assignment of individual takes to stock? Also what steps are being taken to coordinate with the NC DMF which has an extensive observer program to monitor estuarine gillnets and when will the TRT reconvene to consider additional mitigation measures?

Southern North Carolina estuarine bottlenose dolphin

McDonald was concerned that this stock had no abundance estimate and no PBR. He argued that using "undetermined" for a PBR value did not seem consistent with the law. Another more general comment he made was that he does not like the use of CV's. Confidence Interval (CI) is much easier to explain. Also, the N_{min}s used throughout the SARs should really be called N_{20}. Garrison explained that the procedure for calculating N_{min} is set in the GAMMS. McDonald's comments on the mortality numbers in these 4 reports were 1) "max $\geq$ x" makes no sense", 2) "min=0" misrepresents the situation unless every fishing trip, every haul was monitored, 3) "max=1" seems extremely unlikely (need upper limit on CI of maximum), 4) if 2.45% of trips were monitored, wouldn't one death inflate to ~41?, 5) there is no explanation of how "minimum" and "maximum" were calculated (if they are necessary, CI should be placed on both min and max), and 6) it would be better to just report one mortality estimate with a CI. Additional general comments put forward by McDonald were 1) a technical appendix is needed, 2) SARs should be combined into a single volume, 3) maps of fishing areas and fishery/mammal interactions should be provided. He made recommendations on the best methods and analysis for several study components (telemetry and analysis following Amstrup et al. 2005 for range determination, not aerial and photo-id locations; photo-id and spatial capture-recapture analysis for determination of population size, not aerial line-transect; and an observer program with >5% coverage and GLM analysis for anthropogenic mortality, not analysis of strandings). Allocation of mortalities to stocks should be done the way it is for polar bears (Amstrup et al. 2005, 2005) and mortality estimates should be tested against PBR. Many of these comments applied to all the Atlantic SARs.

Garrison explained that part of the impetus for updating these 4 SARs this year was because of the TRT. The regional office wanted updated mortality estimates. NMFS can't address all of McDonald's comments in the next 2 months and several of them are not changes that can be made without discussion with HQ as some of the recommendations are changes to the GAMMS guidelines. If the SRG recommendation is that these reports don't go forward, they shouldn't go forward. Horstman said the regional office might be ok to wait till summer for the update of mortality. Garrison said all estimates would have to go through peer review. Young said there was data and management information that were provided to the harbor porpoise TRT that did not go through peer review. Horstman said the team will also be looking for the updated abundance estimates. Young said the team isn't going to be convened until after the SRG meeting next year. Horstman said one of the target windows is before the SRG

meeting. Garrison said his feeling was to withdraw these drafts. McDonald said he understood the reality of the situation. Withdrawal would be the best approach, but he would accept it if not revised this year as long as it is revised before next year.

Some general comments from Seagraves were also presented. He also supported combination of the 4 stocks into one report. Dates of latest updates and surveys should be included. He would also like to see a common description of the problem of assigning mortalities to stock and some qualitative assessment of the problem's severity by stock. He mentioned that the UME deserved more attention, including some comparison to earlier UMEs as well as an assessment of the UME's impact on the trajectory of the populations. He also thought additional discussion on the efficacy of the TRP was needed. To this point, Rosel countered that she didn't think the SAR was the right place for a discussion on efficacy of management as the SARs are science-directed documents rather than policy and management-based documents.

Harbor seal

Lawson had only editorial comments. Gilbert said the distribution map should not include the aerial sightings. He and Corkeron had a discussion about the citation of the Johnston et al. paper, with Gilbert having reservations about using it to support population conclusions and Corkeron saying he has a problem with discarding refereed literature that we don't like.

Gray Seal

Lawson had only editorial comments. Gilbert pointed out the fact that all the Maine pup counts have not yet been counted and argued that these data need to be counted and written up. It was agreed that the new abundance model would not be included in this report, as it has not been published yet. Gilbert said he would like to see the revised versions of both harbor and gray seal SARs.

Rough-toothed dolphin

Wells had only editorial comments and Powell had none.

Gulf of Mexico Bay Sound and Estuary bottlenose dolphin

Wells pointed out that the DWH work can now be released so this SAR will be seeing significant changes in the next revision. He is loath to make a lot of changes now. Young hoped NMFS would consider putting the new estimates in this SAR, as well as including the Lane et al. 2015 publication about reproductive failure. Mullin said when NMFS wrote these drafts this info was not available. What is the onus on the agency to keep adding things? Young said if you add this now, it will make the report better. Wells said he would be willing to wait till next year to see the new estimates. The Sarasota estimate is needed but he has only a white paper of the methodology that has not been technically peer-reviewed. Palka asked if the SEFSC could publish it as a tech memo. Garrison said it was possible, and then it would go through a defined IQA process. Rosel said that might be difficult because there are no NMFS scientists as authors on that white paper; Garrison noted that for the *Steno* paper they just added a NMFS person on as a co-author so it could go through SEFSC review as a Center reference document. Garrison said he would check with SEFSC Directorate to see whether it is possible to publish, as Center reference documents, documents that do not contain NMFS staff as a co-author. Wells said there needs to be a process in place. McDonald said he has no problem with publishing a peer-reviewed paper for the initial methodology and then just using the tech memo process to publish updated numbers if nothing changes in the methodology. He said the BSE estimates are based on unpublished data. Garrison said those studies are in the list that can be turned into tech reports fairly quickly.

Appendix III

Nobody on the SRG had reviewed this. It is amended for this year. As was agreed last year, the document includes links to fishery fact pages instead of describing each fishery. Josephson asked for SRG guidance on whether this appendix should still include maps of the fisheries with bycatch. The SRG agreed that the maps should remain.

Moreno (on phone) interjected that they have prepared a webinar on the work her team has done. Wells asked her to please put the information into an email and send it to Corkeron.

Foley (on phone) asked Wells about the 2014 serious injury determination report the SEFSC had posted along with its SARs for SRG review. Wells said no one had reviewed this document, but that the SRG would be review the serious injury reports that still needed review.

Wells thanked everybody and the SRG went into executive session.