Minutes
Atlantic SRG Meeting
07-08 February 2017, Narragansett, RI

07 Feb

SRG members present: Bob Kenney (Chair), Sharon Young, Michael Moore, Doug Nowacek, Chris Clark, Erin Summers, Randy Wells, Jim Gilbert.

Other on-site attendees: Dee Allen (MMC), Dave Gouveia (GARFO), Sean Hayes (NEFSC), David Laist (MMC), Mridula Srinivasan (NMFS S&T), Debi Palka (NEFSC), Shannon Bettridge (NMFS OPR), Lance Garrison (SEFSC), Patricia Rosel (SEFSC), Beth Josephson (NEFSC), Marjorie Lyssikatos (only in afternoon).

On phone: Andy Read (SRG), Trent McDonald (SRG), Kathy Foley (SEFSC), Jessica Powell (SERO), Laura Engleby (SERO), Lisa Lierheimer (NMFS OPR), Paula Moreno (Independent Advisory Team), Allison Rosner (GARFO).

Welcome and Introductions
Chairman Bob Kenney opened the meeting and made general announcements about housekeeping details and documents. Introductions were made around the room. Doug Nowacek asked if there are other documents for the right whale talk. Kenney answered that there is just the Pace et al. draft manuscript, but pointed out that there is a right whale meeting coming up in the near future (March).

Report on process/progress for SRG member turnover
Shannon Bettridge thanked everyone – and especially Bob Kenney – for their assistance with this year's SRG membership review. She pointed out that as a result of the review, NMFS has asked Jack, Michael and Jim to serve a second 3-year membership term, and they have graciously agreed. We have also added Erin Summers to the group this year – welcome Erin! The process was initiated later in the year than wanted, so appointments were made later than ideal. NMFS will begin the 2017 membership review this spring so as to give us more lead time for the appointments and to give members more notice. Some of the delays were a result of new vetting requirements. The DOC ethics law and programs division requires us to conduct a fairly rigorous review of all Special Government Employees. We thank Michael, Jack, Jim, and Erin for their patience with this. We will need to go through this process for all future appointments and reappointments. This includes:

- Financial disclosure form to check for conflicts of interest
- A signed statement that nominees are not registered lobbyists or foreign agents
- (More steps on the part of NOAA)

Jim Gilbert expressed concern that the Department of Commerce's Code of Ethics brings up issues of potential conflict regarding being paid for lecturing. Bettridge said she would check with attorneys on this. Later that morning Jason Foreman, a lawyer for NMFS Protected Species,

called in to the meeting and was able to provide clarification on teaching and receiving payment for teaching. He apologized on behalf of the DOC for any confusion in the Code of Ethics. He explained that there is a major exception to that rule, and that is if the course is offered through a regular institution. The rule is trying to keep people from profiting from being on the SRG. SRG members can still talk about stock assessment reports or NOAA policy and receive honorariums as long as the SAR/policy discussion is not a major part of the talk. He said a good opportunity to receive clarification on any such legal issues as they came up would be to call the NOAA lawyer of the day.

Bettridge mentioned that her office had prepared and distributed a new member orientation packet which includes: MMPA, GAMMS, TOR, and a new FAQs document. The FAQ document is general, and is geared toward all three SRGs (and doesn't get into regional group norms or processes). NMFS would welcome any comments or suggestions on this.

Sharon Young asked who is up next for review. She said it is unclear to her what constitutes a conflict of interest, and in her position she comments constantly on policy. Bettridge didn't think it would be an issue but clarified that if there is a conflict of interest, members can recuse themselves from the discussion. Kenney said the next people up for review are Andy, Doug, Sharon and himself.

Regional Office Updates

Greater Atlantic Regional Fisheries Office Update

David Gouveia, GARFO, provided updates on the large whale and harbor porpoise take reduction teams; large whale entanglements; and marine mammal strandings.

Atlantic Large Whale Take Reduction Team (Large Whale Team)

As background, Gouveia reminded the group that in 2015, NMFS and the Large Whale Team developed a phased plan for updating its co-occurrence model that is used to determine areas where high gear use and right whale and humpback SPUE overlap. This phased approach was intended to address shortcomings in the co-occurrence model that were noted during the development of the vertical line rulemaking and peer review of the model. Phase 1 was to gain a better understanding of and standardize gear location and characterization; Phase 2 was to gain a better understanding of whale distribution by incorporating opportunistic and passive acoustic data into the model; and Phase 3 was to develop options to refocus what the model 'does' (i.e., shift from a "reactive" model to a more "predictive" model). To address Phase 1, Gouveia stated that NMFS convened a monitoring work group meeting of the Large Whale Team on May 17-18, 2016. The purpose of the meeting was to improve fishing effort data availability to support the further development and implementation of the Plan. The intent of this phase was to decrease the variability of the effort data and develop a more comprehensive and consistent set of effort data. The monitoring group's role was to help brainstorm ideas on how to improve the current reporting mechanisms and collection of fishing effort data. The monitoring group discussed

several ways to improve the collection of gear characterization and fishing effort data, including reporting and permit requirements under the Large Whale Plan. This information was shared with the full Large Whale Team at its November 29, 2016 annual check-in webinar. In addition to sharing the information discussed at the May monitoring group meeting, NMFS staff provided updates on large whale SI/M, entanglements, abundance, and enforcement actions.

Gouveia also noted that NMFS will be convening the full Large Whale Team for an in-person meeting April 25-27, 2017, in Providence, RI. At this meeting, NMFS plans to discuss the outcome of the March 2017 Right Whale Workshop on right whale abundance, trends, and threats; continue discussions on reporting mechanisms started at the May work group meeting; discuss how to combine efforts with the Atlantic States Marine Fisheries Commission reporting requirement; provide details of entanglement cases and gear analysis; discuss presentations from partners about research on gear modifications; and discuss an exemption request for access into the Massachusetts Bay Restricted Area. He also noted that staff from the Canada's Department of Fisheries and Oceans will also be attending the meeting.

Harbor Porpoise Take Reduction Team (Harbor Porpoise Team)

Gouveia stated that the Harbor Porpoise Team convened on November 20, 2016 for its annual check-in webinar. The Harbor Porpoise Team was provided updates on 2015 bycatch estimates, abundance, and enforcement actions. He stated that the total estimated bycatch was at approximately 307 which is the lowest estimate in quite some time. The 5-year mean bycatch has been decreasing since 2010. Compliance remains high though members on the Harbor Porpoise Team suggested that with observed shifts in effort to Southern New England (targeting monkfish) and with 73% of observed bycatch coming from this region perhaps there should be an emphasis on compliance in Southern New England. It was also noted that a presentation was provided by one of the Groundfish Sector Managers which showed an increase in the purchase of new LED pingers that has increased compliance and proof of pinger functionality. The Sector Manager described working with a pinger manufacturer to ensure that the high failure rate found in previous versions of pingers was corrected. By all accounts, this issue has been successfully remedied. Since 2010 this Sector has distributed nearly 8,000 pingers to active gillnetters, including 6,300 LED pingers (which came out a few years after Sector initial pinger distribution efforts). NMFS will continue to monitor bycatch and compliance and provide updates at the annual webinar in November 2017.

Atlantic Large Whale Disentanglement Updates

Gouveia provided an update on 2015 large whale entanglements. He reported that there were 36 new confirmed entanglements (as of January 19, 2017). Of the 36, the species included: 4 right whales; 25 humpback whales (one deceased); 6 minke whales (two deceased); and 1 fin whale. He further noted that 22 of the 36 whales either have been disentangled completely; later shed the gear with/without disentanglement; have been partially disentangled with what is believed to

be non-life threatening gear remaining; or had a non-life threatening entanglement. Of the 22, the species included: 2 right whales; 17 humpback whales; and 3 minke whales.

For 2016, Gouveia reported that there were 50 new confirmed entanglements (as of January 19, 2017). Of the 50, the species included: 7 right whales (2 deceased); 31 humpback whales (1 deceased); 5 minke whales (4 deceased); 5 finback whales; 1 sei whale; and 1 unknown whale. Additionally, he noted that 25 of the 50 whales have been disentangled completely; later shed the gear with/without disentanglement; have been partially disentangled with what is believed to be non-life threatening gear remaining; or had a non-life threatening entanglement. Of the 25, the species included: 21 humpback whales; 1 minke whale; and 3 fin whales.

Marine Mammal Health & Stranding Response

A summary of the coverage area challenges was provided. Gouveia noted that there continues to be no stranding response coverage for Northshore Massachusetts, Martha's Vineyard, and Nantucket. These areas were previously covered by the New England Aquarium but a shift in their priorities resulted in a void for these areas. As such, there is no formal coverage in these areas by a Stranding Member organization. NMFS has been actively seeking new stranding partnerships for these areas, but little interest to date. Although there is no formal stranding organization covering these areas, Gouveia noted that basic level A data are being collected in these areas by NMFS through phone and email correspondence from former stranding volunteers. It was also noted that NMFS staff does reach out to other Stranding Network members when cases arise that result in rehabilitation or relocation.

Several recent stranding agreement changes were noted. Specifically, the Marine Education, Research & Rehabilitation Institute received a Provisional Stranding Agreement for dead/live response for the State of Delaware. The Riverhead Foundation for Marine Research and Preservation received a Provisional Stranding Agreement amendment for live pinniped and cetacean response. Finally, it was also reported that a new organization operating in Long Island, New York, Atlantic Marine Conservation Society, received a Provisional Stranding Agreement for dead and large whale response in New York.

A table was provided that showed the Prescott Grant funds awarded to Northeast stranding network partners for 2015 and 2016 and requested funding for 2017. For 2015 Prescott Grant Funding Received, 13 proposals were submitted of which 6 received funding totaling $563,953. Awards ranged from $15,000 to $150,000. For 2016, 13 proposals were submitted of which 8 received funding totaling $620,761. Awards ranged from $45,000 to $100,000. Gouveia also reported that in 2017, NMFS received 11 proposals requesting funding for Prescott Grant funds totaling $1,089,518. Funding requests ranged from $18,000 to $195,000.

Gouveia provided a summary of the 2015 and 2016 cetacean and pinniped strandings. It was reported that there were 967 cetacean and pinniped strandings in 2015 and 820 in 2016. It was also noted that NMFS / Stranding Network documented an increase of annual humpback whale

stranding events throughout 2016. With respect to the increased humpback mortalities, Gouveia noted that a UME consultation package was provided to the UME Working Group. The UME Working Group recommended monitoring rates of humpback strandings and prioritization of sample analysis for biotoxin and morbillivirus through the end of 2016. A re-evaluation would then occur should humpback stranding rates remain elevated. An updated consultation document for UME Working Group review is being revised for February submission.

Finally, a stranded juvenile humpback event in Moriches Bay on Long Island, NY, was noted. This was a live stranding event that occurred during the Thanksgiving holiday that eventually resulted in a euthanasia situation. It was highly publicized and very controversial. This event garnered a large amount of public interest, resulting in Congressional and State Representative inquiries. A debrief meeting with stakeholders identified the need for a Long Island Sound Large Whale Plan to be developed to incorporate into the LIS Area Contingency Plan for emergency responses.

Southeast Regional Office Update

Laura Engleby and Jessica Powell presented updates from the Southeast Regional Office (SERO) on the bottlenose dolphin and pelagic longline take reduction plans, stranding response, Bryde's whales, the right whale calving season, the black sea bass pot fishery, and the DWH NRDA.

Bottlenose Dolphin Take Reduction Team
The next Bottlenose Dolphin Take Reduction Team in-person meeting is scheduled for December 2017. It will consist of informational updates on abundance, trends, and bycatch, and information on observer coverage. The SERO published a request for proposals through North Carolina Sea Grant and awarded a project to estimate abundance and distribution of bottlenose dolphins in the Indian River Lagoon. Expected project completion date is August 2017.

Pelagic Longline Take Reduction Team
The Pelagic Longline TRP was implemented six years ago, but it has not reached its goal and PBR is likely to be exceeded for short-finned pilot whales. The Team met in 2016 and sought to amend the plan. The goal is to put out a proposed rule and have a TRT meeting during the public comment period.

Stranding Response
There are no ongoing UMEs in the Southeast at this time. There were three mass stranding events in 2016, including a spinner dolphin mass stranding (n=11) in Florida Bay in September 2016, a pilot whale mass stranding (n=33) on the Gulf of Mexico side of the Florida Keys in November 2016, and a large false killer whale mass stranding (n=95) in a remote area of the western Everglades.

Bryde's Whale Update
The final proposed rule to list Bryde's whales as endangered published in December 2016. The comment period was extended to February 22, 2017. More than 100,000 public comments have been received so far.

Young asked why the deadline for public comment on the Gulf of Mexico Bryde's whale was extended. Engleby explained that the Navy had asked for the extension.

Right Whales

This has been a very slow calving season, with only three mother-calf pairs and one adult males. The survey teams have been searching farther north and offshore, and the LIMPET tagging project is on hold. "Ruffian" was sighted entangled, a telemetry buoy was attached, and he was disentangled; the end of the gear was a 135-pound conical trap.

Black Sea Bass Fishery

Powell provided an update of the South Atlantic Fishery Management Council's Regulatory Amendment 16. This Amendment modified the existing seasonal prohibition (Nov 1-Apr 30) for commercial black sea bass pots that was intended to protect North Atlantic right whales. This Amendment also required additional gear marking for commercial black sea bass pots. After considering a co-occurrence model overlaying seasonal whale distribution and fishing effort, the South Atlantic Fishery Management Council chose alternative 11 which is thought to have low relative risk of entanglement of whales from black sea bass pots when compared to other alternatives considered. The Biological Opinion for the corresponding rulemaking became effective on 1 Dec 2016 and continued authorization of the South Atlantic snapper-grouper fishery. The final rule for this amendment was published on 29 Dec 2016. The reduced size of the prohibited fishing area became effective immediately, however, the enhanced gear markings are currently delayed to 21 March 21 2017 as a result of a White House memo entitled "Regulatory Freeze Pending Review" (20 Jan 2017).

Nowacek asked for clarification on the black sea bass pot fishery - are pots left unattended? Powell said no, the fishermen stay within a couple of miles from the pots once they set them.

NRDA

Engleby indicated there are three ongoing NRDA cases in the Southeast Region right now. She provided a description of the restoration initiatives for the DWH NRDA and the governance structure for handling those funds. The DWH NRDA provides $144,000,000 over 15 years for marine mammals as well as some funds for monitoring and adaptive management.

Read asked if NMFS could tell the SRG what restoration projects could be expected. Engleby explained that the PDARP lays out some of the potential projects and that any projects that are identified need to go through public review and all trustees must agree to each project. A detailed version of actions is being drafted. An example would be decreasing bycatch in the shrimp industry or better characterization of the soundscape in the Gulf of Mexico. The funding is not meant to replace anything that the agency is already doing. Clark said he didn't think it is enough money to do much. Engleby said one of the challenges ahead is how to strategically leverage the funds in order to maximize return. Engleby also described an effort to design an action plan for dolphins and whales in the Gulf to inform and guide management, research, and restoration and monitoring in accordance with the MMPA, ESA, NEPA, OPA and RESTORE acts. An overarching plan with the Marine Mammal Commision as a partner to articulate priorities in the Gulf and facilitate collaborations is in development. The process is ongoing. The final action

plan will be distributed and communicated broadly.

GAMMS III uncertainties

Josephson and Rosel discussed how the new GAMMS III guidelines call for the addition of language on the uncertainties associated with many of the SAR sections, but that SAR authors were unclear on how to implement these guidelines in a consistent way and would appreciate guidance from the SRG. Samples of trial language were presented from some of the new draft SARs. Young and others thought it was not helpful to keep repeating the word 'uncertainty', though Moore said he appreciated some of the new additional language. Read was of the opinion that we should try to focus on only the key points of uncertainty. McDonald said there is a distinction between unknowns and uncertainties. The unknowns are more important. We could have a table to list unknowns where no data have been collected. The point was also made that there is a distinction between key uncertainties and uncertainties around key factors. The important uncertainties to include would be those that would change the status of the stock. Wells thought 'key information gaps' might be a better way to describe this. Hayes asked if other regions are struggling with this. Bettridge scanned some of the Pacific SARs and they did not seem to focus much on this. It was agreed that NMFS would rewrite these sections and scale back on repeating obvious uncertainties, or variances included in the estimates, only focusing on the most important uncertainties. Revised drafts will be recirculated to the SRG.

AMAPPS/GOMAPPS updates

<u>AMAPPS</u>

Palka gave a short presentation of 2016 accomplishments and future plans for the AMAPPS project. Large-scale aerial and ship surveys in summer 2016 will generate new abundance estimates for many SARs.

Nowacek remarked that there are a couple of different ongoing density modeling efforts — how does BOEM decide which to use? Palka said that most of Duke's models use an older time series, up to 2009. But that is a general question that needs to be addressed. Now that Duke is redoing the models they are using newer data. Moore asked why there is still no abundance trend in most SARs, as that is a critical piece of stock assessment. Garrison replied that until this year NMFS has not had enough comparable data to do trends for most stocks. The Duke models are climatologies so there is no trend. We need now to put the inter-annual trend into the model. That is the next step in the iteration. Moore said the trend needs to be understood. Palka said the SAR framework is not set up to put a lot into trends, since they are not part of the PBR calculation. There are also a lot of statistical issues to make the varying surveys over the years comparable. Moore said trend is a good way to figure out if your assumption about PBR is valid. Gilbert said trends don't give any information about how many animals from each stock are allowed to be taken, which is what the SAR does. Moore asked whether the basic assumptions of what goes into the PBR model are giving us enough information to predict the trajectory of the stock. Read agreed that trend is important. Palka concurred that NMFS definitely wants to produce trends. Young said that in a number of instances where we have longitudinal data, the PBR is informative. PBR predicts if you are going to have a problem. Palka added that trend analysis might pull out information on abundance variability in certain stocks. Wells pointed out

that the SRG recommended trend analysis last year. Read, going back to the question about the duplication of the modeling efforts, wondered if modeling is the best use of NMFS staff time, especially serving up the modeling results on the web. Nowacek said the data should be on OBIS. Palka said the intention was to analyze the data first. We are also trying to get abundance estimates. Since Duke is using a long time series, those models can't be used for abundance. It is not exactly duplication. Garrison said he didn't know what Roberts' group mission is right now. The Navy and BOEM are funding their estimates. At the time AMAPPS was created the product that NMFS was tasked with was density mapping. NMFS is now in those discussions in regard to GOMAPPS. The information NMFS needs for the SARs may or may not map with the products that Roberts is putting out. Nowacek thought maybe going forward the focus should be on coordination.

GOMAPPS

Garrison gave a quick update on GOMAPPS. There will be a bird component. USGS will be funded for turtle tagging. The GOMAPPS plan includes an aerial survey this summer, a vessel survey in summer 2018 and 2019, and aerial surveys in winter 2018 and winter 2019. Vessel surveys will conduct some trawling in conjunction with the EK60. Interagency agreements are in the works. All surveys are limited to US EEZ.

Atlantic Tursiops SAR Updates

Garrison opened this discussion by stating that the text of seven bottlenose dolphin SARs was reviewed and rewritten for clarity and consistency, as well as to address the new GAMMS III requirements for description of uncertainties. NMFS has developed new abundance estimates for the 5 coastal stocks which are derived from 2016 surveys with an updated logistic regression model to differentiate coastal from offshore morphotype animals. A trend analysis was conducted based on surveys from 2002, 2004, 2010, 2011, and 2016. Garrison discussed the approach used for the trend analysis and asked for feedback from the SRG. He also asked if the SRG agreed with the approach of using only the 2016 estimate for Nbest and PBR calculations. The SRG agreed that the 2016 estimate was most appropriate. Additional work that is planned includes exploration of unimodal distance function models to address left-truncation, derivation of stock-specific estimates from spatial models for comparison, exploration of ways to use habitat information to define stock boundaries from year to year, and trend analysis within spatial models.

McDonald said the stocks might be easier to manage if certain ones of them were combined. Garrison replied that originally NMFS had a winter North Carolina management area, using a spatial approach even though it was known to contain multiple stocks. That approach was not considered precautionary enough; stocks should not be combined when mortality is not uniformly distributed across the area of the combined stocks. McDonald agreed. Currently, where there are good reasons to believe there are multiple stocks, we have tended to treat them separately. McDonald said there is a good separation in the data, but that doesn't necessarily mean there is good separation in reality. Garrison agreed that is an assumption. McDonald pointed out that south of Cape Hatteras depth was included as a continuous covariate. That could be done in the north too, and could also include latitude. Garrison said he did conduct those analyses, and it did not make much difference in the predicted probabilities in the area of

overlap. Survey data across multiple years indicate that there is strong spatial separation between the coastal and offshore stocks north of Cape Hatteras. McDonald also asked about left truncation and whether unimodal models had been tried. He also asked what was done with the observations between the trackline and the left truncation distance. Garrison said they were discarded and that this does not create a negative bias because the strip width is adjusted to account for the truncation, but the approach does result in loss of data which likely increases uncertainty and could result in bias (positive or negative). McDonald said he would suggest trying unimodal distance functions. Garrison said he would further explore this approach; however, there are several different methods in the literature that would need to be evaluated, and there a recently published method that is designed for two-team surveys that would need to be adapted to the current analysis. Kenney wondered if the Twin Otter had bubble windows when the comparative surveys with AT-11 were flown. He said that might be good to look at. Read asked if the model assumes that there are no estuarine animals. Garrison said yes, there may be some animals close to shore, but noted that the estuarine populations and the number of estuarine animals in nearshore coastal waters are small relative to the population of coastal animals, so we would expect that bias to be small.

McDonald asked for further explanation on the use of the parametric bootstrap for the distance function. Garrison said that there are times when bootstrap resampling of the transects results in insufficient numbers of sightings to re-fit the distance function, resulting in failures in the estimation and/or excessive variation, so parametric bootstrapping was used for efficiency. McDonald said he tends to favor the other form of bootstrapping. Young asked if is it likely that there will be a difference in the outcome. Garrison explained that the primary difference would be wider confidence limits in the final estimate. McDonald agreed and said that the point estimates should be identical. However, the left truncation issue could change the estimates substantially.

Moore said the modelled trend is a useful metric of recoverability (looking at the dip in abundance vs. dead animals on beach). McDonald asked why two years of data were lumped in the trend analyses. Garrison said that was done because we are primarily interested in long-term trends and it would provide more precise estimates and therefore increase the power of between year comparisons. The assumption was that the population size should not change significantly between the paired years (e.g., 2002/2004 and 2010/2011). McDonald wondered if there would be any harm in using the 5 years in a regression as a better way to view the problem than successive Z-tests. McDonald said when you average you get more precision, but a regression test is a better way and he wondered if corrections had been made for experiment-wise alpha value due to repeated testing? Garrison said he had not adjusted the alpha value and would explore both regression methods and other approaches that may improve the assessment of trend.

Read said it would be good to put more effort into trying to understand the movement of the coastal animals. He is not convinced we understand those completely. Garrison agreed that directed telemetry studies would be a significant move forward. Read asked what the genetic differences between the southern and northern migratory stocks were. Rosel said that has not been tested. Gilbert agreed that the biggest problem is stock boundaries. He suggested that NMFS write one SAR for the bottlenose dolphins stocks in the western North Atlantic. The Alaska harbor seal SAR would be an example of that combined stock approach. Garrison said we

have gone back and forth on a single report vs. 5 reports. The bigger challenge is identification of key pieces of information we need to collect in order to better delineate stocks. Read said the effects of the UME on the migratory coastal stocks concern him. Garrison agreed.

Marjorie Lyssikatos (NEFSC) presented information on mortality from the Mid-Atlantic gillnet fishery, including a brief summary of bycatch estimation for the time period 2001 through 2013.

McDonald asked what NMFS does about bycatch cases in areas where there is stock overlap. Lyssikatos explained that presently takes are assigned to stock(s) based on geographic location and season. Kenney asked if takes are ever assigned based on a genetic sample. Rosel said NMFS is close to being able to do that, but we rarely get a sample.

McDonald asked if there are any stock assignment cells colored based on no data and which ones have the most data. Garrison said no cells have no data, but we have the most data from the Northern Migratory stock. The next most data rich is the NNCES stock and after that the SNCES stock. The Southern Migratory stock has the least data with only 2 tagged animals and, in fact, the May-August cells for that stock do not really have direct data. McDonald asked whose head would explode if we assigned fractional dolphins to these stocks? If we had data, you are not necessarily opposed? Garrison said no. Read said in some of these areas we can do better than min/max. He asked what happens if there is a change in fishing or management practices under the pooled ratio method. Lyssikatos said she would not pool if there was a significant change in fishing practice over a given time period. Read said it was not clear to him what would constitute a change in fishing practices. He said he was not that comfortable with pooling. Summers said even when there is not a regulatory change, fishing practices might change year to year, or a regulatory change may prompt other shifts. There was some discussion of whether weighting an average is condoned in GAMMS. Lyssikatos said she is not weighting individual averages, just the average between methods. Garrison said NMFS is a little concerned with taking average of averages and weighting that. Kenney said he could see the gillnet fishermen wanting to go with the annual method because the numbers are lower. However, the CVs are higher. Lyssikatos said the problem with that method is in years with no bycatch. Those are not true zeros, since there are strandings that are fishery interactions.

Discussion of the annual process of reviewing bycatch estimates/SI determinations/SARs
Josephson and Rosel presented several flow charts of the process that SARs and their supporting documents go through, from data collection to the finished products, with all the multiple review steps. They wanted to highlight how difficult it can be to have all the supporting documents timed right to be cited in the SAR. The early review step, where some of the draft supporting methodology papers were reviewed by the SRG in November, helped with this, but some of the parts of the process are still tight and/or inconsistent.

Moore said he had been having thoughts about the review process and the fact that, unlike in a journal paper review process, there is not much accountability by the authors to incorporate SRG suggestions and the SRG reviewers do not have rejection power. Palka said she was not sure if it is supposed to be like a peer review journal, or just advice to the agency. Bettridge pointed out that edits are documented in track changes, and in the meeting minutes and so should be visible. Moore said it would enhance the role of the peer review if there was an SRG editor. Read said if

he was reviewing the McDonald et al. (2017) paper on estimation of bottlenose dolphin abundance for a journal he would have rejected it. He doesn't feel like the SRG has the final rejection power. Since there is an implied SRG endorsement of the SAR downstream he would like to see revisions come back to the SRG. Moore said as a journal editor if he saw a stock assessment report without a trend he would reject it. Bettridge said the SRG's review is considered a review prior to public comment. An opportunity to check if a comment was incorporated is to look at the public comment draft. Palka said that, at least this year with the substantial changes being made in uncertainty discussion, NMFS can send the revised SARs back to the SRG. Bettridge said NMFS could annotate the meeting minutes, or could specifically have authors respond to any comments not taken. She said NMFS wants to be responsive and would be open to working on a feedback loop. She will relay this concern to the other SRGs. Hayes commented that one difference between the SRG and journal peer review is that with journal peer review there is the potential for rejection of the manuscript, whereas in the SAR situation NMFS has a legal obligation to come out with a product.

Day 2 SRG meeting 2017

SRG members present: Bob Kenney (Chair), Sharon Young, Michael Moore, Chris Clark, Erin Summers, Randy Wells, Jim Gilbert, Jack Lawson, Doug Nowacek.

Other on-site attendees: Dee Allen (MMC), Dave Gouveia (GARFO), Sean Hayes (NEFSC), David Laist (MMC), Mridula Srinivasan (NMFS S&T), Debi Palka (NEFSC), Shannon Bettridge (NMFS OPR), Lance Garrison (SEFSC), Patricia Rosel (SEFCS), Beth Josephson (NEFSC), Tim Cole (NEFSC), Allison Henry (NEFSC), Peter Corkeron (NEFSC), Richard Pace (NEFSC), Kimberly Murray (NEFSC).

On phone: Andy Read (SRG), Trent McDonald (SRG), Kathy Foley (SEFSC), Jessica Powell (SERO), Laura Engleby (SERO), Lisa Lierheimer (NMFS OPR), Paula Moreno (Independent Advisory Team)…???

DWH mortality estimation

Garrison summarized the population models that were used to generate mortality estimates resulting from the DWH oil spill. The age /stage structured population models included exposed and unexposed cohorts and included an initial elevated mortality level for the first three years and then ramped down over time for the exposed population. They also included a parameter for longer-term reduction in reproductive success for the exposed population. The main question for the SRG is how the DWH mortality estimates are best incorporated into the SARs. Three different options were described: 1) include in the SARs only the model estimates of the maximum population decline and time to recovery absent restoration and not count an actual estimated number of dead against PBR; 2) Extract the number of excess mortalities from the population models and create a running 5-year average of excess mortality to count against PBR estimated from a pre-spill abundance estimate until a new survey/abundance estimate and PBR are obtained; 3) use the estimated excess mortalities and a modeled abundance estimate , i.e. a predicted abundance as part of the model output, so that abundance could be updated annually to match the time frame of the excess mortality estimates. The modeled abundance estimate would be used to calculate PBR for the appropriate 5-year window until a new survey and abundance estimate are obtained. Garrison pointed out, however, that we've never used a modeled output before and this would be a unique case. Garrison indicated that the preferred choice was option #2.

Lawson asked whether the model would be updated every year or run as a static model from 5 years. Garrison said NMFS has plans to update the models, but that wouldn't happen for a few years. The PDARP will not be revisited.

Nowacek asked when the abundance would be updated. Garrison replied that the estimate for the summer 2017 survey would likely be in the SARs in 2 years. Bettridge asked what would be used if not the modeled excess mortality. Garrison said if the excess mortality is not used, then no DWH mortalities would be included at all against PBR. Fishery interaction and stranding

mortalities would be included but nothing from DWH. Rosel said there are some stocks where the maximum estimated population decline due to DWH is over 50%, and that the GAMMS III guidelines state if evidence of over 50% decline, you should say in SAR this population is likely below OSP, but this is not an OSP determination, and no ramifications to stock.

To do the OSP determination (i.e., as a depleted stock) would take a while. Garrison said if the stock is above PBR as a result of DWH mortality it could prompt a TRT to mitigate fishery takes. Gilbert said the predicted abundance could be used to calculate PBR. Garrison said that is the most internally consistent to the models but there is some deviation between the baseline abundance estimates in the PDARP and those in the SAR. For example, the Bryde's whale estimate used in the PDARP was 26 as opposed to 33 in the SAR. The PDARP estimate used all available survey data (including data collected in 2003, 2004, and 2007) while the SAR estimate uses only the most recent (2009) Gulf-wide survey. Gilbert said that since the models have been accepted as currency for the restoration that gives NMFS justification to use them. Rosel said option 2 is what NMFS proposed this year in the 3 Gulf of Mexico SAR drafts. Bettridge said that, if used, the modeled abundance estimates would be in the SARs for 2 years, with the 2019 SAR using a new abundance number? Garrison said yes, but clarified that the estuarine stocks will not have new abundance estimates for 2019, only the shelf and oceanic stocks.

Clark asked about already depleted stocks. Bettridge said if a stock is already depleted there are some things we cannot do, i.e., no waivers, and scientific research restrictions. That would also have implications for Section 118 TRTs. Clark said he was not asking about bureaucracy, but just common sense. The stock would still be depleted and so this is just an exercise. Bettridge said it would most likely trigger a TRT. Engleby said isn't it also likely to trigger a conservation/recovery plan? Bettridge said if it is a listed species there will be a recovery plan and maybe critical habitat. Gilbert asked if there would be some bottlenose dolphin stocks that would be depleted. Garrison said yes, there are a few. Gilbert asked how they go from depleted to non-depleted. Bettridge said that would depend on how the stock achieved its depleted status. Rosel said not all DWH-affected stocks are strategic. Kenney said he thought alternative 2 makes more sense, but it is not his area of expertise. McDonald said he agreed with the second option. He asked what model would be used. Garrison replied that it would be the Schwacke et al. (2017) model for estuarine and coastal stocks, and the Caswell-like stage structured model in the PDARP for the offshore stocks. McDonald said he would be more comfortable with surveys, but is comfortable with those models. It might set a bad precedent to go with modeled abundance. Garrison said we will let the SRG think about it, but we have to decide what goes in SARs. Kenney said that option #2 is consistent with what is done for other stocks—i.e., using a mortality estimate against an older abundance estimate, we are always trailing behind.

NEFSC updates

Tim Cole, Peter Corkeron, and Kimberly Murray presented updates on research in 2016 as well as plans for 2017. Corkeron led an in-depth discussion on the status of North Atlantic Right

Whales.

Right Whale Aerial Surveys

Cole made a presentation of 2016 right whale aerial survey flights and sightings. He said that for the near future the team will need to be more strategic in allocating flight time to try to find the whales. Lawson asked if reduction in effort is planned or due to funding constraints. Cole replied that it is a combination of funding limitations and competition with other programs. Nowacek wondered how, since we don't know where whales are, they will be found by spending less time in the air. Moore said there are advances in using satellite imagery using algorithms to search images. Corkeron said that in those studies researchers are looking at humpbacks in areas where there are about 30,000 humpbacks. The cost of getting the satellite imagery over the scale we need makes the plane look really cheap. Cole said NEFSC has been working with people to explore using satellite imagery, but it will take a while. Lawson asked if the right whale aerial surveys collect high-resolution video. Cole replied that we do not have that capability right now and that the use of a belly camera right now is precluded by the use of a sonobouy chute. Lawson also asked if the NEFSC team was planning on coming to Canada again. Cole said they would like to but have to balance that with our other responsibilities. Lawson was interested in talking more about collaborations.

Gouveia asked Lawson if there have been any changes to Canadian survey methodology or frequencies. Lawson replied that they just finished a big survey, and that these surveys are infrequent. He said Transport Canada is willing to work with DFO and report sightings. Gouveia asked how that sighting information gets incorporated. Lawson said DFO distributes sightings to the right whale network right away. Gouveia asked if there had been any discussion on having dedicated right whale surveys. Lawson replied that DFO has an annual rotating survey fund that is not dedicated to right whales, but could be used for right whale surveys. Gouveia said his interest is in how his office (GARFO) can help establish something more formal in Canada. Moore commented that this discussion reminded him of the whaling scientists all saying the whales are not dead they are just someplace else.

Clark asked how NMFS was going to apply the typical mark-recapture techniques for estimating population size when you are spending 90% of your time just looking around. Pace replied that the thing about having an unstructured trapping grid is that it introduces heterogeneity. We are still "catching" right whales. It is a much higher frequency than most mark-recapture projects. The worst we have seen so far is a 60% recapture rate. He said his hypothesis is that whales are still going to the same places but their residency times are shorter. Clark said that allayed his concern about sampling strategy and analytic strategy.

Laist asked if the Agency has been considering using drones to expand the survey range. Garrison replied that the cost per hour and availability of the long-range capable drones is out of our capability.

McDonald asked Pace if the capture histories are collapsed across space. When Pace answered in the affirmative McDonald went on to ask if any spatial models had been tried.

Pace replied that it is not at all clear whether or not including a spatial component would improve the overall precision of the estimate or reduce bias as is the usual case with spatial mark-recapture estimates. The chief concern is that there are so many distant patches surveyed for right whales, mostly in sequence to their migration patterns, that the number of parameters may become unwieldy.

Exploring the Biological Underpinnings of current North Atlantic Right Whale Decline

Corkeron presented background information on the biology of NARW. He presented graphs showing calving times series for NARW and two populations of Southern Right Whales (SRW), demonstrating that the NARW have always been recovering slower than SRW. He also presented data from recent photogrammetric projects that indicate NARW are in poorer body condition than SRW, which goes some way to explain the poor calf production of NARW. He then presented the results of recent publications demonstrating that the population consequences of entanglement related morbidity on NARW may be more substantial than previously appreciated.

Clark said we have evidence of the rope used for lobster gear getting stronger, but he wondered if we also have a trend in the number of lines in the water. Corkeron said the scarring rate has been increasing since 2010/2011. He said when the New England Aquarium stopped seeing whales in the Bay of Fundy, NEFSC started getting concerned. Nowacek asked if anybody has looked at photos of animals at other plateau periods. Moore said those are all subsumed in Schick's paper. Laist asked if anyone has tried to look at pictures of the animals in the early to mid-2000's. Corkeron said there is work done by the New England Aquarium showing decline through 2009. Laist wondered how health of the animals looked when they were doing well. Corkeron said there is published literature that answers that question, for instance Rolland et al. (Schick model). Corkeron was concerned how many bad years would the research community need to convince themselves that the decline is more than just a cycle. Corkeron said since we have now had 6 years of low production, that is no longer stochasticity. Moore pointed out there there are also some papers by Carolyn Miller that look at body condition of southern hemisphere whales. The only really valid habitat in which to compare these data is the calving habitat. Summers asked if there is effort being put into characterizing changes in habitat characteristics. Corkeron said yes, there are some interesting questions about the quality and range of *Calanus*. What is happening right now in the Gulf of St. Lawrence is really wacky. There is interbreeding between *Calanus* species. These animals are adapted to periods of poor recruitment. The problem is the intensive anthropogenic mortality on top of that. That is something that we can do something more about. Moore said the entanglement cost is also on recruitment because females can't get fat enough to reproduce. If the whales are having to look harder to find food there are increasing encounter rates with gear. Lawson asked why females have higher mortality rates than males. Nowacek theorized that it is because they more coastal, and therefore near more gear.

Kenney said it would be good to do a comparison with southern rights; maybe the energetic cost of reproduction shortens their lives. Hayes said there has been a time shift (30 days later) in the *Calanus* population, and there is less diapause now.

Moore said the SRG has a draft of recommendations that may be useful. He took full credit for first drafting the letter to NMFS last year and apologized for any hurt that was imposed. However, he does see an urgent need to take new measures to prevent mortality. We have run out of time. He suggested ropeless fishing as an option. He said the GAMMS and SI guidelines need to be rewritten to take into consideration more sub-lethal population effects of entanglement. Pace pointed out that the actual fecundity was lower than the default and NMFS could not change Rmax. Read agreed with Pace saying there is no point in messing around with that. Moore hoped that the stress and drag effects could be taken into consideration in the mortality & SI calculations. Pace suggested inclusion of those data in a fecundity model. Bettridge asked if the desired GAMMS change would apply to all stocks, or just right whales. Moore said it could be applied wherever we have enough information. Young said the guidelines already stipulate that other stressors should be discussed. Laist said the reproductive success of animals that are and are not entangled could be compared. Moore said another problem is that there is a significant percentage of adult females that have never calved. That population will only increase. We have focused heavily on mortality and serious injury when half the problem is the dearth of new calves. Moore said the determination process is now very conservative and transparent and we should not lose that, but there is a vacuum that we have not encompassed. Clark asked if there is any evidence that anything we have done has helped right whales. Kenney said we are not going to fix the problem by tweaking the SAR. Regulatory changes have to come from the Take Reduction Team. Summers said the question of "where the entanglement occurs" is not a clear one. Moore countered that risk exists wherever there is rope in the water column and right whales might go. Summers said we have talked about the need to scrap the co-occurrence model because of changes in whale behavior. Gouveia said a problem is that NMFS only regulates the US fishery. We will have to take this recommendation and sell it to the team. We are in a tough climate as it is. We will take anything you can give us to show efficacy of what we have been doing. But it is not fair to say that it is the failure of regulatory efforts since the regulations are not applied throughout the habitat. Moore said it is not a US problem or a Canadian problem—it is a right whale habitat problem. It is a rope problem. There are still entanglements happening in US waters. Young cautioned that the SRG is stepping into take reduction territory. As an SRG we have been told in the past that that is not our role. There is a sense of frustration and desperation but we need to make a recommendation that the Agency pursue funding while being careful about advocating a specific solution. We can point out the problem, and urge research, etc. But to advocate for ropeless fishing is stepping into the forum of a TRT. Laist said the fundamental problem the SRG needs to point out is that entanglement remains too high. You don't need to mention a particular type of action. Clark said we could just throw up our hands. Kenney agreed with Young that it is beyond the purview of the SRG to suggest specific solutions. Wells agreed that the TRT is the stakeholder group to bring all those

perspectives together. Nowaek said he understands the hesitation to call out ropeless fishing because it is not an off-the-shelf solution, but incremental solutions are not being effective. Wells suggested just stating that opportunities for entanglement need to be eliminated. Corkeron said in 9 years of watching animals at the Head of the Bight (Australia), he only saw one animal with any scars or evidence of entanglement.

Pace said right whale mortality has been constant for 26 years. Mortality may be double that of Southern right whales because of anthropogenic events. Laist added that in the last 5 years the ratio of vessel strike to entanglement has changed.

Hayes asked if the distribution of fishing effort has changed recently, since that is the other half of the equation. Summers said it has, especially offshore, but a lot of those data are not being captured. The majority of fishing is still happening very close to shore. Bettridge added that the offshore fishery has more flexibility as to where they go. Summers said there hasn't been a good assessment of the amount of gear done for a while.

Kenney asked what the chance of the Pace et al. paper being published before the finalization of the SAR is.

Caribbean Humpback Acoustic Monitoring Project (CHAMP)

Corkeron also gave a short presentation on the Caribbean Humpback Acoustic Monitoring Project. Recent data suggest that West Indies humpback whales may comprise more than one breeding population, contrary to our current understanding. Individual humpback whales from the southeast Caribbean whales show quite different patterns of movement and distribution than those from the Dominican Republic and Puerto Rico. The pattern of re-sighting from the southeast Caribbean shows a very strong bias to feeding areas in the eastern North Atlantic (especially Iceland, northern Norway and Ireland), with very few re-sightings to western Atlantic feeding grounds. This is in striking contrast to what is seen in the Dominican Republic (where individuals migrate to waters off North America and Greenland), but very similar to migratory movements of individual whales observed in the Cape Verde Islands. Photographically identified individual humpback whales have also been observed alternating between these southeast Caribbean waters and the Cape Verde Islands, and return. In contrast, no individual humpbacks from Cape Verdes have been documented in the Dominican Republic.

These new findings raise management challenges, especially given the recent change of humpback whales' listing status under the Endangered Species Act (ESA). The aim of the CHAMP project is to work with colleagues in Caribbean countries to collect data to better understand the distribution and population biology of humpback whales in the southeast Caribbean. In late 2016, we deployed small archival passive acoustic recorders to record the presence of humpback whales at selected sites in French and Dutch territories in the Caribbean. Recorders will be retrieved in 2017.

Clark asked if there is evidence of late calving. Corkeron said yes. He said the herring in northern Norway are there in February. Clark said there are also humpbacks that stay in northern waters all year. Corkeron said the first thing to look at is occurrence, then song structure.

Lawson mentioned that DFO Canada is getting five gliders, with plans to run one up to the Tail of the Bank and Flemish Cap. Laist said there is a big source of copepods in Davis Strait area. Lawson said DFO is looking at chlorophyll in the habitat models.

NEFSC Seal Research

Murray (NEFSC) gave an update on NEFSC seal research with respect to gray seal abundance trends, influenza research, bycatch, and gray/harbor seal diet research.

Gilbert asked about the status of developing a gray seal pup production estimate. Murray explained that NEFSC's 2016 survey counts and molt staging had been given to DFO to incorporate into their model. Young said, given the constraints on the Agency's budget, some thought needs to be given to resource allocation. She would hate to see endangered populations stinted in an effort to tighten up CVs on species that are doing well. Murray clarified that so far none of this seal research has been done with base funding. Bettridge said NMFS is looking at priority-based resourcing and looking at all priorities at the national level. Young said she is glad to hear that. Gilbert wondered if that was also looking at east vs west coast. He thought pinniped programs on the west coast were generally better funded. Beattridge answered affirmatively. Moore pointed out that the population increases of the gray seals are driving a fairly strong lobby toward reopening the Marine Mammal Protection Act. It could be the wedge that drives something with wider impacts. Bettridge agreed that there is a growing lobby. She said that is not the only interest group that has been wanting to reopen the MMPA. Young said fishermen and native tribes on the west coast have been saying that seals and sea lions have recovered enough. Bettridge said this is is where OSP analyses come in. Laake has done an OSP analysis for California sea lions and he did not find they are over OSP. Hayes said NMFS is also going to be under pressure to evaluate threats to listed fish species.

SEFSC updates

In 2016 the SEFSC conducted a summer AMAPPS ship survey and summer and winter AMAPPS aerial surveys. Photo-identification mark-recapture surveys were conducted in Biscayne Bay, FL, Terrebonne and Timbalier Bays, LA, and Galveston Bay, TX, the latter in collaboration with the Texas Marine Mammal Stranding Network. The SEFSC also participated in a photo-identification mark-recapture survey in St. Andrew Bay, FL in conjunction with NOS Charleston. Small boat scouting surveys were conducted in Sabine Lake, LA, Lower Laguna Madre, TX and east Matagorda Bay, TX to examine the habitats and look bottlenose dolphins in preparation for possible photo-identification mark-recapture surveys in those areas. Small boat biopsy effort was conducted in Terrebonne and Timbalier Bays and off the coast of Pensacola, FL. Finally, right whale tagging in the Southeast did not occur this past winter.

Nowacek asked if right whale LIMPET tagging was being discussed for winter 2017-2018. Garrison said this was on hold this year awaiting new tag designs. Nowacek said part of the discussion is what do you do with a compromised animal (like Ruffian). Garrison said he doubted that NMFS would put a tag on a compromised animal. There is discussion of holding a workshop to discuss tagging and animal health,and we expect that question could be discussed there. Moore said the entire right whale population may be compromised.

Wells asked if the SEC is involved in the Barataria Bay health assessment? Rosel said a few people might attend.

Gulf of Mexico 'Bryde's' whale update

Last year NMFS submitted a proposal for 3 surveys dedicated to Gulf of Mexico Bryde's whale research. Announcement for the funding is expected in the Spring 2017. Soldevilla (SEFSC) has gotten funding to deploy 5 acoustic buoys in the western Gulf of Mexico. These are expected to be recovered in May or early June 2017. The goal is to search for presence of Bryde's whales in similar habitat. Corkeron and Rosel are writing an IUCN Red List assessment. They will pull in Randy Reeves on this too. Corkeron added that if any SRG members want to be an assessor, send Randy an email.

Corkeron asked, since this stock has been listed as strategic since 2011, if there has been any talk of a TRT. Rosel said the reason it was strategic was a ship strike. Corkeron said there was a fishery take in 2002. Corkeron noted that given the abundance estimate, the PBR says you can only lose 1 animal every 33 years. So any take in 33 years renders the stock over PBR.

Young said she would pick and choose very carefully before we pull fisheries into a TRT, as the data are older. She would be hesitant as an advocate (wearing advocate hat, not SRG hat). Rosel wondered if fishery involved in the earlier take had even been identified. If there is no specific fishery to regulate, there is not much we can do. Young said she is usually one to rise to protect any species, but is not sure this is one to pick at this time. Corkeron said this is a species going extinct on our watch.

Nowacek wondered if there is any reason to believe the listing process won't be complete by the end of the year. Young said there is cause to worry as she believed that the oil and gas industry lawyers have some powerful arguments.

Small and threatened stocks

Rosel presented a spreadsheet she has been working on in response to the request from the SRG at the 2016 meeting for a list of stocks that are small and have limited information. The request was prompted by the fact that some members of the SRG felt that they could have been made more aware of the predicament of the Gulf of Mexico Bryde's whale. She said she could use more guidance as to what would be most helpful to the SRG. The difficulty comes in defining

"small." For the discussion today mostly stocks with abundance estimates less than 500 are in the spreadsheet, with red flags for ones she felt were in particular bad shape.

Lawson wondered if it might be helpful to have a column for trend. Rosel said trends for all are unknown. There was some discussion on how to focus research on these small stocks. Nowacek suggested sending dedicated surveys to the Bryde's whale area. Garrison stated if the grant proposal is funded , the SEFSC will be doing that. McDonald wondered, outside of line-transect, what is the best way to collect information on these small stocks. Garrison said an option would be genetic capture-mark-recapture. McDonald asked how far along is the science toward an acoustic abundance study for Bryde's whales. Clark said cue rates are still being worked on. Garrison said that is one of the objectives of the proposed SEFSC cruises. Clark added that it would be nice to confirm the bottom-mounted recorder data with acoustic tag data. Garrison said there was one tag on for 72 hours and it provided visual verification of the previously recorded calls. Clark asked where those data are. Garrison said that the position and dive information from the tag is being published in a paper by Soldevilla et al., which has been submitted. Analysis of the acoustic data is ongoing.

McDonald said it seems like small stocks are major information gaps. It would be nice to do mark-recapture studies for all of them but that would be costly. A wide-ranging set of acoustic monitors would have potential. A network of acoustic listening devices in the Gulf would be helpful, though note that most small stocks are in bay, sound and estuarine waters not in coastal or offshore waters. Garrison said a BOEM program for offshore devices has been awarded (to HDR). GOMAPPS will coordinate with that group to some extent. McDonald asked about high-resolution aerial surveys, are there any in the Gulf? Garrison said there are some funded in Atlantic but he didn't know of any in the Gulf. Garrison said acoustic studies are good for some species but there remain significant challenges in defining who you are hearing. Clark said Cornell never fully processed the western recorders for Bryde's whales. They are working with Texas A&M to get some funding to recover recordings done in the 90s. Those are the earliest data and might be a good data point to add to the stack. Rosel thought Soldevilla would be interested.

Rosel asked what the next steps are for this small stocks table. Gilbert said the SRG could make a recommendation to direct resources toward these small stocks. Lawson suggested adding information on threats. Some context is important because some of these stocks will never be large. He gave as an example the case of fresh water harbor seals in Canada whose stock is very small but they are not listed as endangered as the population has been very stable. Rosel said some of the stocks she had identified have been impacted by DWH. Corkeron said survival rates could be another metric to add. Wells thought maybe the SRG should try to prioritize the list. Kenney said any appropriate NE stocks should be added. Rosel noted that killer, sei and blue whales from the NE are considered for this list.

SAR review

Fin Whale – Kenney had some editorial and wording suggestions. He also pointed out that the mortality total should not include the Canadian mortalities outside the survey area which contributed to the abundance estimate. Clark said he was suggesting some additional acoustic information. Young had some editorial comments. She said that the trend section mentions a long survey interval but the report should say what that interval is. She had problems with much of the added uncertainty language and didn't think it added anything. Clark asked about stock delineation. Pace said NMFS is using the IWC designations. Palka said it would be good to actually know where appropriate stock boundaries are.

Humpback Whale – Moore expressed concern about lumping the entire Caribbean stock. Pace said the SAR does not cover the Caribbean Stock, just the Gulf of Maine stock. Bettridge said that comes back to efforts to try to align stocks with DPSs. Young said she would argue that would be appropriate to have the stock covered be the WNA rather than Gulf of Maine. Implication of paper should be discussed. Moore pointed out that the population trend is dire if you read the numbers. It should be explained that the abundance numbers are not comparable. If the change in abundance estimates is not explained then the consequences of collapse should be discussed. Perhaps the recovery factor should be changed. Pace said we don't have any other scientific information we can use besides the 335 abundance estimate, but the SRG can propose different recovery factors. Moore would like to propose that recovery factor be changed to 0.1. Bettridge said the GAMMS guidelines do allow for adjustment of the Fr based on SRG recommendation. Kenney said the SAR should say we know the estimate is biased low. Moore said the SARs also never talk about recruitment. That should be a generic question for the SAR process. Pace explained that NMFS is trying to get money for him to work with Jooke Robbins to get the Mark Recapture data. Palka added that when we do the 2016 estimates, the estimate will go up to about 1,300. McDonald asked if we have humpback estimates from the 2016 AMAPPS surveys, why are they not in this SAR? Palka explained that they have not been published. Gilbert asked if it might be possible to delay the SAR. Bettridge said in the Alaska and Pacific regions there are some areas where there are estimates based on partial surveys. It does give an Nmin. Summers said even if you put in language to explain the estimate drop, you still have a stock that is over PBR. Kenney said none of the regulations will change. Gouveia said there is a bad perception when the stock is over PBR. Corkeron pointed out that the other half of the equation is the estimate of mortality which we know is biased low but the concerns being expressed regarding bias in the abundance estimate are not raised for mortality. Moore said where there is uncertainty there should be conservatism. Gilbert said the SAR should acknowledge that the number is biased low. The SRG can recommend we go back to using the old number. Palka said there is an availability bias correction factor available now, but we did not have it for that estimate. Kenney said his inclination would be not to change numbers, but to give caveats and to remove the "near collapse" language. McDonald wondered if it would be possible to analyze the 2004-2006-2010-2011 aerial surveys for humpback trend information. Pace said mark-recapture data exists that would be much better for that. The agency just doesn't have the funds to do that right now. That dataset is ongoing and extends back 15 years. Moore

said the SRG should recommend that analysis be done.

Young commented that there is old information in the distribution and range section. There are some new citable things. Stranding has been increasing in the mid-Atlantic. She is hoping the agency looks to define the stock differently. The trend section cites a rate of 3.1% per year, while Stevick (2003) and the biological review team used a rate of 2% per year. The report should cite Robbins when referencing the mark-recapture work. There is a math error under annual human-caused mortality. A percentage could be taken from the van der Hoop paper for lost animals due to decomposition.

Minke Whale – Kenney pointed out an addition error in the mortality section. Lawson had minor editorial comments. Clark said there was a lot of emerging and existing data on minke whale acoustics in the Caribbean that could be added. Young said the substantial difference between the current and prior estimates should be explained.

White-sided dolphin – Lawson said the statement about hunting off Greenland should be taken out. Moore complained about the absence of trend analysis. Young did not like the use of the word 'uncertainty' three times in the PBR section. She also suggested calculating the proportion of animals in US waters. In the section on herring weirs, there was no year mentioned for the live entrapped animal. She thought the uncertainty language was overkill—the average person reading will think you don't know anything. Summers said in the bycatch table there is a place where there were no observed takes, but the non-zero mortality. Text on each fishery is redundant.

Harbor porpoise – Young suggested some rewording be done on the population size section. She suggested that the reference to documented ecosystem changes in the Gulf of Maine should have a citation. She asked for track changes to be a single color. She said there is no estimate for last reported 5-year period for Bay of Fundy sink gillnet. Read said the low observer coverage in the mid-Atlantic is a big issue but the Scotian Shelf boundary uncertainty is trivial. He said variance would be a better term to use in the discussion of population size and it might be useful to mention other surveys that use availability bias. He also did not like the use of old Bay of Fundy sink gillnet numbers. He suggested this would be a good report in which to include a habitat section.

Right Whale – Kenney said he had some minor edits. NMFS should think about what to do if the Pace et al. manuscript is not published in time for the final SAR. Wells pointed out that the population size numbers in the paper do not match those in the SAR. Moore wondered why the map did not depict data through 2015. He recommended adding references to the Rolland et al. (2016) paper and van der Hoop's drag from fishing gear paper. Moore and Young both had some additional serious injury and mortality cases they thought should be included. Henry and Josephson suggested that the best time for reviewers to add in additional cases for consideration was when they reviewed the SI&M manuscript in November. That paper has to be finalized in

advance of the SRG version of the draft SAR in order for it to reach publication status before public comment period. Young said it might be good to make a strong comment in the text about the general condition of the population. Clark said he will provide the authors some updates on right whale acoustics.

Gray seal – Gilbert recommended, based on the fact that the only major update other than new bycatch estimates and an in press DFO publication that may not be published in time, that this SAR not be updated this year (though in later communications NMFS OPR indicated it should be updated as there was new mortality to report). Kenney had a nomenclature point – the subspecies now should be *atlantica* (Olsen et al 2016). Rosel concurred, saying that the process is that any new nomenclature recommendation must be first be published, and then approved by committee. This change is official. Rosel will put all official changes in the SMM newsletter. Among other comments, Young recommended a reference be added with stranding information (Moore paper 2010), and that the statement about bycatch being biased low should be reworded.

Harbor seal – Gilbert also recommend this SAR not be updated. Summers commented that pupping has been creeping earlier and pups can now be seen in April. Young wondered if some of the points made in the Johnston 2015 paper about species shifts at haulouts should be added to the section on stock definition and distribution. She also thought that the language about "long survey interval" in the trend section should be clarified with the actual interval.

Harp seal – Lawson said Table 1 mixes model with survey estimates. The 2008 number is a model number and should be left out. He also had some suggested revisions for the bycatch table.

Bryde's whale – Nowacek asked if the 2003 fishery interaction was in a known fishery. Garrison replied that it could not be assigned to a fishery.

Barataria Bay bottlenose dolphin – Read said he had been trying to sort out how the abundance estimate was generated. McDonald said figures 1 and 2 in McDonald et al. (2017) show the study area which was not all of Barataria Bay so density estimates were derived in the study box and then expanded to habitat outside the box based on modeled salinity in the bay and the average salinity recorded in the tag data. Read was concerned that there could be major differences in density inside the box vs. outside. McDonald said they had to do that because they had no information on density of animals outside the box. Read said he was troubled by that approach and didn't think we have done this before in SARs. McDonald asked how density has been extrapolated in the past. Garrison said he couldn't think of a case where we have extrapolated outside the survey area. Read thought it was a bad precedent to set. McDonald protested that we do know there are dolphins out there. Rosel asked if it was easy to just obtain the estimate from density inside the box. McDonald said it would be easy and Read suggested that is what should be done. McDonald agreed with Read that the best scenario would have been to survey the entire bay. Garrison said if an estimate for just the survey box was published in the

SAR, it would conflict with the estimate published in the PDARP and be a gross underestimate of the abundance. Read said the habitat is heterogeneous. Wells said he thought it would be a problem if there was no explanation about a discrepancy between this and the other published estimates. Garrison agreed to revisit and reevaluate the approach, including the possibility of limiting the estimate to the survey box.

Wells said in the current max productivity rate section it should be acknowledged that there were impacts on reproductive rates from the Deepwater Horizon spill, with two relevant papers that should be cited. Also, he had a question about how mortality and serious injury were scored for the hook and line/rod and reel fishery. Garrison explained that SEFSC had looked closely at each and worked with the Regional Office. Wells said NMFS should have a protocol. McDonald wondered if it might be useful to assess trends in density, as there are 10 surveys across the DWH years. A regression model could be fit to those estimates.

MS Sound bottlenose dolphin – Wells said that map should be revised because it is difficult to distinguish the outer stock boundary from the island. He also noted that the self -imposed moratorium on dolphin capture was all US waters. Same comment as Barataria Bay SAR concerning reproductive impacts. McDonald suggested a trend analysis be done using the 3 mark-recapture surveys conducted for the NRDA. Rosel asked: how do you interpret a trend if they just moved to a different part of the bay/sound? McDonald agreed and rescinded suggestion to do the trends analysis. Wells noted there is no shrimp trawl observer coverage in inshore waters and wondered whether an SRG recommendation to increase observer coverage would be helpful. Rosel sought input on how the the shrimp trawl mortality estimates were treated. The states do not parse out effort by bay, just by state or even a larger area. So the shrimp trawl mortality estimates per stock will be overestimates. Is that the right thing to be doing? Read said the truth is that the mortality is unknown for each stock, particularly since no skimmer trawl bycatch estimates in state waters are available. He suggested the state-level mortality estimates be listed for the stock and state that if all that mortality happened to one stock then the stock would be over PBR (or not over PBR). Garrison asked: so status quo for now, but more language saying it is a max and don't count against PBR? Read stated that seemed to be the best approach.

Risso's dolphin – Nowacek and Young had comments about the added uncertainty language.

Common dolphin – Kenney and Young had mainly editorial comments. Young asked why the mid-water trawl expanded estimate had not been generated. She said there is some text about the pelagic longline fishery that should not be there. She said she did not find the status uncertainty discussion helpful.

Northern Migratory Coastal bottlenose dolphin – McDonald made some suggestions for redoing the trend analysis. Read noted that dolphins are present now year-round off Chesapeake Bay (Englhaupt et al. 2016). The northern range is extending. He agreed it is appropriate to use the 2016 abundance estimate.

Read asked about the statement that says stranded animals with evidence of gear but no attached gear are not counted against PBR. Foley stated animals stranded in gear are counted against PBR, but not the animals with marks and that this has been done consistently over time. Read felt that it was too conservative that there was "probably" a decline in abundance in this stock and he thought it should say there is a decline. Garrison says it was written as a probability statement. Read suggested using the words "statistically significant decline." Rosel stated that if the trend analysis is redone with all 5 data points this text will have to be revised.

Southern Migratory Coastal bottlenose dolphin – Read stated that the text describing the stock boundary is addressed adequately and reiterated we really don't know the boundaries very well. He added that one unquantified source of uncertainty is mixing with the NNCES stock. He noted the row for gillnet fishery info is missing here. Foley replied that is because we do not have that report yet.

NNCES & SNCES bottlenose dolphins – Moore said the SARs were well-written and had no comments. Read had some suggested language changes. He said there are inconsistencies on how strandings are dealt with. Foley said there is consistency but additional language could be added to clarify. Read said Table 1 is confusing. Rosel stated they would look at adding more cross talk between the text and the table. Wells had no comments. Young will send in comments

SC/GA Coastal bottlenose dolphin - Wells asked that the text be more explicit about how a given stranding is ascribed solely to a given stock and to check that for all seven *Tursiops* SARs.

NFL Coastal bottlenose dolphin – Wells said it was another well written report and he had just a few editorial comments. The commercial shrimp fishery is not listed in the fishery information section. Is it a potential threat? It should be added in. There were no comments from Gilbert or Powell.

CFL Coastal bottlenose dolphin – Wells raised a question about the southern stock boundary on the map and that it was different from a map shown yesterday in a slide. Rosel explained that the stock boundary is correct in the SAR. The map shown in the presentation was the aerial survey area rather than the stock area. No comments from Gilbert, Powell.

Venue, timing and structure of 2018 meeting

Wells offered Sarasota. That seemed to meet with everyone's approval.