Atlantic SRG meeting
Sarasota, Florida
February 5-9, 2018

Day 1: Tuesday, 06 February 2018

Present: Patricia Rosel (SEFSC), Keith Mullin (SEFSC), Jim Gilbert (SRG), Sean Hayes (NEFSC), Randy Wells (SRG), Michael Moore (SRG), Bob Kenney (SRG), Genny Nesslage (SRG), Sharon Young (SRG), Jack Lawson (SRG), Shannon Bettridge (OPR), Beth Josephson (NEFSC), Buddy Powell (SRG), Richard Pace (NEFSC), Trent McDonald (SRG), Chris Clark (SRG), Peter Corkeron (NEFSC), Lance Garrison (SEFSC), Stacey Horstman (SER), Jessica Powell (SER), Patrice McCarron (Maine Lobstermen's Assoc.), Mridula Srinivasan (S&T), KB Langtimm (USGS), Jim Valade (FWS), Peter Thomas (MMC), Danielle Palmer (GARFO), Kristy Long (OPR), Dee Allen (MMC), Erin Fougeres (SER), Lisa Lierheimer (OPR), Andy Read (SRG)
On phone: Kathy Foley (SEFSC), Debra Palka, others.

Welcome and introductions (Gilbert, Hayes, Wells)

Chairman James Gilbert welcomed everybody and called the meeting to order at 9:00am. Randall Wells, as Sarasota host, also welcomed the group and went over some housekeeping details. Sean Hayes, SRG liaison for the region, made announcements about reimbursements, etc. Everyone in the room and on the phone introduced themselves. Gilbert welcomed Genny Nesslage, the newest SRG member, and announced that Young, Kenney, and Read had been re-appointed. Nesslage presented a summary of her background.

Report on process/progress for SRG member turnover (Bettridge)

Bettridge reported on the SRG member renewal process. Under the Terms of Reference (TOR) members serve 3-year terms, with up to 3 consecutive terms allowed. Gilbert asked about the status of the Pacific SRG. Bettridge explained that the majority of the Pacific SRG had been there more than 20 years. When NMFS indicated that based on the TOR they were planning to appoint 2 new people and not reappoint 1, a number of members resigned. There still are 4 existing original members, so with the 2 new members this year, the total is 6. NMFS will be searching for new members. The Alaska SRG has had the most turnover in recent years. They

have 2 new appointees this year. The next Atlantic members up for review are Read, Powell, Clark and McDonald.

Bettridge announced that there is a new membership orientation packet. She will make this available to all members and members/staff are encouraged to suggest any ideas for improvement.

Manatee Updates (USFWS & USGS)

Gilbert said he reached out to other SRGs about their relations with FWS and USGS, and they said they have good relations and the SRG gives feedback on their plans.

Jim Valade (USFWS) presented updates on manatees, including SARs, reclassification, and next steps. Both the Florida and Antillean subspecies have recently been reclassified from endangered to threatened. Young commented that the status of the Florida subspecies is different from the Antillean. FWS had said they could not consider them separately because they had not been proposed or petitioned for review separately. USFWS is revising recovery plans. Kenney asked which stock included manatees from Mexico to Brazil, and Valade answered they are mostly considered Antillean. Powell wondered, since the reclassification was driven by the litigation, if there is additional litigation asking USFWS to reconsider and Valade answered there was not. Gilbert noted that the announcement for reclassification came out April 4 and the core biological model for the Florida subspecies was published April 11. Langtimm (USGS) said she was a member of the team that developed the model, and USGS provides research support to USFWS, but USFWS alone sets policy. The model and report took time to move through the USGS bureau approval process; as a result, it was not published simultaneously with the Service ruling. The ruling process was driven by litigation deadlines, and there were public review periods prior to status review. Valade said the USFWS would not have moved in the direction they did without assurances that the data supported it. Langtimm said she worked on the 2007 Core Biological Model (CBM) and a second model in 2012. The Service was ready to move forward at that point to make a ruling, but sequestration put it on hold. Litigation to force a ruling came later, and a new update to the CBM was required. Young mentioned that there have been cases where the Service is bound by deadline and we can go back to the court and ask for more time. This has been troubling from a public process point of view

Valade said the USFWS has draft SARs for both subspecies of manatees, currently going through internal review by the Service but does not know the timeline. The new SARs use PBR calculations for threatened as opposed to endangered species. The new PBR for the Florida subspecies is 98 animals based on the published abundance estimates for 2011-2012 (Martin et al. 2015). Wells commented that boat mortality for last year was greater than PBR. Valade said the USFWS does not count non-fishery sources of anthropogenic mortality against PBR. Members discussed that under the MMPA only fishery mortality has a forcing mechanism, and existing boating protections would not go away with reclassification. Valade explained that the

USFWS has agreements with the State and both agencies can enforce all regulations, which is not anticipated to change. Powell observed that uplisting again might be difficult. Young highlighted that FWS actions regarding otters and polar bears are delayed in other regions.

Gilbert and Valade discussed lack of MMPA and SRG coverage on USFWS websites and suggested Diane Bowen, the USFWS National Marine Mammal Coordinator as a contact. Powell asked about the manatee regulatory status is, and Valade said that particular action is finished. Young said the charge of the SRG is limited, reviewing SARs and making recommendations. She expressed concerns about the USFWS meeting its statutory obligation to get SARs out on time and how the SRG can help them release SARS on time. There was general concern that the SARs are not being released on time nor updated enough. One suggestion was an educational process to explain to the public and Service the different objectives and metrics reported in the status assessments with SARs for the MMPA, USFWS 5-year status reviews for the ESA, and USGS-FWRI population projection models. The group suggested that the SARs are a mechanism for the agencies to speak with one voice. Valade said there are some opportunities for SRG input into direction of FWS research objectives. Also, the Service could possibly lean on the SRG a bit more to advise on recovery plans, species status assessments and other documents. Recovery plans are supposed to be done every 5 years and the last one was 2001. McDonald asked if there is any thought of presenting the manatee as an umbrella species for future research to address remaining recovery issues. Langtimm said the USGS is developing landscape scale, multi-species research proposals dealing with habitat issues, which include the manatee, especially in the Gulf of Mexico.

Regional Office and UME updates

GARFO updates

Danielle Palmer (GARFO) presented on GARFO updates. NMFS issued a 5-year review for North Atlantic right whales in October of 2017. Short term recommendations currently underway include: 1) expanding the regional Right Whale Recovery Program, 2) identifying methods to measure the effectiveness of the Atlantic Large Whale Take Reduction Team, 3) convening a bilateral work group with Canada to focus on addressing science and management gaps and 4) reinitiating the consultations for several fisheries Biological Opinions under the Endangered Species Act. Long-term recommendations include: 1) developing a strategy for understanding the energetic stressors on right whales including the effect of chronic, sub lethal entanglement on overall and reproductive health and the effects of changes in environmental conditions and prey availability, 2) developing a long-term, cross-regional plan for monitoring right whale population trends and habitat use, 3) prioritizing funding for a combination of acoustic, aerial, and shipboard surveys of right whales that can be used to understand right whale presence in near real time, 4) evaluating the effectiveness of the Atlantic Large Whale Take Reduction Plan and the Ship Speed Rule to determine whether it may be necessary to modify or extend these protections for right whales, and 5) analyzing the effects of commercial fishing on right whales.

Palmer also provided updates on the Large Whale Take Reduction Team (TRT), specifically the 2 TRT subgroups formed in February to address the feasibility of ropeless fishing gear, and reduced breaking strength rope and new gear markings. A brief overview of strandings in the region was presented, with special note that not all of the 2017 cases have been entered in the stranding database.

SERO Updates

Stacey Horstman and Erin Fougeres said the Natural Resources Damage Assessment is still ongoing. There are 4 active cases, including *Deepwater Horizon* (DWH), with restoration plans for states and open oceans. Plans have to be reviewed for environmental compliance with the MMPA and other laws.

The Southeast Region is developing a Marine Mammal Action Plan in coordination with the Marine Mammal Commission. The purpose of this action plan is to communicate and prioritize data gaps, threats and uncertainties for marine mammals in the Gulf of Mexico and associated actions to address them. A draft of this plan should be complete in the next few months. The draft will be reviewed by all federal partners, then released for public comment. It will be a living document.

There have been 2 meetings of the bottlenose dolphin TRT (one in person and the other by webinar) because PBR is still exceeded for two North Carolina estuary stocks. Both regulatory and nonregulatory recommendations have been discussed.

Fougeres described plans for Mississippi River diversions, part of a coastal restoration project which would bring fresh water and sediment into Barataria Bay, Louisiana. NMFS is working on assessing impacts of this to resident bottlenose dolphin stocks and how to permit the activity. The project is a high priority for the state of Louisiana. Garrison said there are major concerns regarding the influx of fresh water. EcoSim/EcoPath models have been done. NMFS is developing a science plan to include what data collection is needed to support the permitting process, and working out a monitoring program for pre-, during, and post-construction. Capture-mark-recapture work is needed as well as more genetic work. Garrison said NMFS should have a well-developed science plan this time next year so we can provide it to the SRG. Bettridge clarified that NMFS will not slow or stop the permitting process due to the science plan. Moore asked why slowing the permitting process down to wait for the science to catch up would be considered a bad thing. Bettridge said there are some ambitious timelines with this project and Garrison added that the land loss is perceived as a crisis. Wells commented that people have been interpreting the Barataria Bay dolphin distribution incorrectly. McDonald asked about the timeframe for the project, and Fougeres said construction is due to start in 2021, with the goal to be operational in 5 or 6 years. Garrison commented that baseline data are needed starting this summer. Fougeres said most of the science will be completed with BP settlement funds.

Fauquier (NMFS/OPR, over the phone) presented on the 5 Unusual Mortality Events (UMEs) currently under investigation. These include manatees in Indian River Lagoon (2013-2018), Guadalupe fur seals in California (2015-2018), humpback whales in the Atlantic (2016-2018), North Atlantic right whales in the Atlantic (2017-2018), and minke whales in the Atlantic (2017-2018). Clark asked if all the animals involved in the Atlantic large whale UMEs were adults. Fauquier said in all 3 species it was a mix of age classes. Moore said the Virginia right whale was short for its age. Lawson said DFO can add at least 4 minke whales in the Gulf of St. Lawrence and another 2 in Newfoundland. Fauquier said neither the minke nor the humpback UMEs are currently joint UMEs with Canada but that could change.

Recovering pinniped populations (NEFSC)

Hayes gave a short presentation on a rising issue at the NEFSC and other areas - increasing pinniped populations. Recovering populations are seen as successfully achieving MMPA goals, but conflicts are taking place with fisheries, ecosystem impacts, public/private land use, etc. Gilbert said all species of seals in the northeast should not be lumped together because harbor seal populations may not be increasing. Hayes pointed out that there can be problems when there is competition between recovering and non-recovering species. Some people from/near Nantucket want MMPA protections removed for pinnipeds. Lawson said another fishing issue is parasites. McDonald said it sounds like pupping colonies are concentrated in only a few areas, but Gilbert replied that these areas have been expanding. Gilbert and Summers agreed that seal population increases are not a major issue in Maine.

Protected Species Climate Vulnerability Assessment (S&T)

Matt Lettrich (NMFS S&T, on the phone) presented some of the goals and methodologies for the ongoing assessment of marine mammal climate vulnerability. Lettrich said he briefed the joint SRG meeting in 2016 while this program was under development. The program is currently in full scale application. The goal is to determine which stocks are most vulnerable and why, and to identify missing information. A team of 42 experts are currently scoring 108 individual stocks from the Atlantic, Gulf of Mexico and Caribbean regions. Implementation of this process for the Pacific and the Arctic regions will come next. Summers asked if this is just tracking direct impacts or does it include indirect effects. Lettrich replied that experts established criteria and applied them to each stock. We can account for indirect effects in narratives or with some latitude in scoring. Clark asked if there is assessment of magnitude of climate response or just direction. Lettrich replied that for now assessment includes mostly direction.

Format of bycatch reports (NEFSC)

Debra Palka (on the phone) explained that NEFSC was interested in some feedback from the SRG on the format of bycatch reports. The 2 basic models we have been using are a full analysis and write-up each year, or only a summary of the new data and results of analysis. Gilbert stated that the short version is acceptable if there is a published paper explaining the methodology. With this approach, Palka said NEFSC can spend more time doing investigative work and questioned the need for yearly reports.

Review of serious injury determinations (SEFSC/NEFSC/SER/GARFO)

Josephson introduced the topic, stating that the NEFSC was interested in getting feedback from the SRG about whether to include disentangled pinnipeds as part of the serious injury review process, which previously had only included bycaught animals observed by fishery observers. McDonald asked about coverage by electronic monitoring (EM). Observer coverage is low and a 15-20% coverage range would be an improvement. Kristy Long replied that there are still hurdles to combining the EM data with human observer data. Brett Alger from NMFS gave a presentation on EM later in the meeting. Bettridge said OPR has initiated a review of the SI policy and the timeline is TBD.

Gulf of Mexico (Bryde's) whale updates (SER)

Horstman (SER) reported that the final determination for ESA-listing is in clearance process. NMFS missed a deadline to list so they received a notice of intent to sue from NRDC. Rosel added that NMFS updated the Biological Important Area last year. Read asked if we know the taxonomic identity. Rosel said we are going to try to exhume the 2009 animal that was hit by a ship and if the skull is in sufficient condition it would serve as the holotype. Nuclear markers are being researched as well.

OPR updates

Bettridge noted new staffing changes with the new administration. There is a new Secretary of Commerce, a new head of NOAA, and a new head of NOAA Fisheries. Meanwhile, there are career people in roles that are not yet filled politically. The reality is that things slow down with any administration change, as new staff are coming up to speed and learning about our programs. GARFO has new regional administrator. The SE Center Director position is vacant. There are a number of vacancies in OPR. As far as budget goes, we are on a Continuing Resolution that is expiring February 8 at midnight. The new List of Fisheries is publishing this

week. Some notable projects going on at OPR include the North Atlantic right whale working groups, in which high level administrators are interested and engaged; development of a non-lethal marine mammal deterrence rule (see below); four ongoing UMEs; and the Marine Mammal Research Plan for the Mississippi River diversion project. Hayes said there has been positive feedback for Dr. Fauquier from the field on how she is handling these UMEs.

Long said she has been working on a proposed rule for non-lethal marine mammal deterrents. The analysis has been challenging as there are minimal publications about impacts to animals. NMFS might release a proposed rule this fall or not long afterwards.

Read anticipates that NMFS is going to permit seismic activities in the coming month. Bettridge said if the SRG is interested, NMFS could invite a person to discuss this issue. Read said the SRG is interested in the mitigation measures that would be required if seismic activities are permitted.

GoMMAPPS/AMAPPS update (NEFSC/SEFCS)

Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS)

Keith Mullin presented on GoMMAPPS objectives, plans and ongoing work. The objectives of this Bureau of Ocean Energy Management (BOEM)-supported project are to collect broad-scale information on distribution and abundance of marine mammals in the Gulf of Mexico and from that information to develop seasonally- and spatially-explicit density estimates for priority species in order to inform management decisions and to update NMFS stock assessments. Sixty days have been scheduled for aerial surveys in summer of 2017, winter of 2018 and fall of 2018. Another approximately 60 days will be spent on shipboard surveys during the same time periods. In addition to visual teams on these shipboard surveys, acoustic, oceanographic, seabird and plankton data will be collected, as well as opportunistic biopsy sampling. QA/QC of the completed summer 2017 data is ongoing, as are the winter 2018 surveys. Read asked when the SEFSC will biopsy sample. Garrison said they have a list of priority species. They will biopsy from the bow of the ship when they can, but launching the RHIB to biopsy is a low priority since that takes additional crew and conflicts with the spatial requirements for the abundance estimate. Moore asked if they will take into consideration the responsiveness of animals to the EK60. Garrison said they have been only turning on the EK60 at night and that has made a big difference. Garrison said aerial effort will be similar to what was done in2011/2012 for DWH. Garrison said his understanding is that the Duke team is not working on updating the Gulf of Mexico models. The Roberts models are more long-term than the NMFS models. Clark asked if detection probabilities via acoustics will be developed as well as sighting detection probabilities. Garrison said NMFS wants to integrate those together better. Garrison said the final report will come out in 2020. Read said given the scope of the surveys, satellite tagging and biopsying

should be more of a priority. Garrison said beaked whales have mostly been acoustically id'd to species. Garrison said the array being used is the same array that the other centers use. Clark said that array configuration makes it hard to distinguish species. Garrison noted that sonobuoys were deployed on the ends of each line. Moore asked if there is discussion about satellite-tagging Bryde's whales. Garrison said there is a proposal for a study that will use limpet tags, and Clark said we have acoustic data from DWH in that area. Garrison said Soldevilla is interested in reconstructing those data. Clark asked about the implication of the Bryde's whale sighting in the western Gulf of Mexico. Rosel said connectivity is important. Corkeron asked if and Mullin said SEFSC has started a catalog for the Gulf of Mexico whale. Garrison suggested the SEFSC will want to do some mark-recapture work. Rosel said the animal in the western Gulf was not an animal they have sampled in the east. Garrison mentioned there are 3 cruises scheduled that are directed at Bryde's whales. Discussion of need for a publication to establish basis for properly naming this stock.

Atlantic Marine Assessment Program for Protected Species (AMAPPS)

Palka made a short presentation on accomplishments and plans for the AMAPPS project. She said NMFS is finishing up with the second phase of the project and is starting to plan for a third. AMAPPS I was from 2010-2014 and AMAPPS II covers the years 2015-2019. It is a collaborative effort between NMFS (SEFSC and NEFSC), USFWS, BOEM, the US Navy, and others. There are no 2018 surveys planned. Read asked about the timeline for abundance estimates derived from the 2016 survey. Palka replied that hopefully in the next month or 2 NMFS can combine our data with DFO survey data and derive abundance estimates derived from the 2016 survey. There may be a possibility for an intersessional SRG review. Read asked if BOEM will continue to fund this project. Palka said BOEM hasn't made any promises but they have expressed their desire to continue. Garrison said the same hold true for GoMMAPPS.

Day 2: Wednesday, 07 February 2018

North Atlantic Right Whale issues (NEFSC/GARFO)

Same people as day 1, minus Valade and Langtimm.
Diane Borgaard, Kathy Foley, Tim Cole and at least one other person on phone.

Corkeron discussed that the focus of aerial survey work changed in 2017 to be directed toward the highest capture rate areas, with the objective being to collect photo IDs. Flights off New England totaled 95 hours in 2017 in April and May, and 152 hours in Canada in June and July. Complementing this work was vessel, glider, and sonobuoy work in the Gulf of St. Lawrence. 112 individuals were identified in the Gulf of St. Lawrence, including the mortalities. Similar work is planned for 2018, with the addition of working with the USCG to join HC-144 flights.

Corkeron presented updates on NEFSC acoustic work for right whales as well as other projects. The real time buoy near Nomans is now discontinued. The conversation covered how to integrate data from acoustic and visual modalities and use them to assess the status of stocks. Discussion included that NARW population is based on mark recapture data and that surveys are for capturing photo ids to be fed into the mark recapture model.

Moore reported on the photogrammetry and respiratory microbiome research he has been involved with. The photogrammetry paper is almost finished

Discussion continued about NARW distribution and habitat. NARWs have been present in the Gulf of St. Lawrence since at least 2010. For 5-8 years, leading up to 2010, high numbers of NARW traveled to the southeast calving grounds. Since 2010-2011, there has been a steep change in the number of NARWs traveling to the southeast. In the Southern Ocean, many right whales travel to calving grounds. Since 2010/11 that pattern has changed for the NARW, and it has been a steep change, not a gradual one. A new model shows an important difference in abundance and mortality by sex. Female mortality is 150% that of males. Morbidity is a problem as well, including the non-lethal energetic cost of dragging gear. In 2015 the estimate was ~100 reproductive females in the species.

Discussion included concerns that capture probability may have declined with changes in habitat use. Pace explained that the NARW abundance estimation model accounts for variable average capture rates per year, different capture rates between sexes, and individual catchability. Annual mean capture probability matches the number of individuals seen relative to population size. There are three factors used to account for catchability: 1) By sex rate, 2) annual fluctuation, 3) individuals are allowed to have their own parameter. The most recent year of analysis was 2016. About 1/3 of animals that disappeared are known to be dead. Garrison said the actual proportion of the population that you are estimating is small. A participant mentioned that NARWs have never been below PBR in observed mortality, and that PBR should not even be discussed. The population is female productivity driven. Garrison said people have been arguing for a long time that PBR is not applicable. Read said they should be managed under ESA. Gilbert said the grizzly bear population is driven by the number of sows with cubs each year. That is a good index for status of population. That would raise more flags than being over PBR. Rosel said the consensus is that the population is in decline, with a trajectory possibly parallel to that of monk seals. The SRG discussed whether PBR can be undetermined instead of zero. Read said it is better to show that we are 5x over PBR. Bettridge clarified that the MMPA directs us to report a PBR, so undetermined would be inconsistent with the statute. Nesslage said it would be good to include a table in the SAR of how long right whales have been above PBR.

The survival rate is vague because all the capture data have been used regardless of when in a whale year it occurs. All animals will not spend the same amount of time in each of the habitats.

SRG members discussed if it would be helpful to put a figure of observed versus estimated deaths in the SAR and whether the estimated value of mortalities should be the value used in the SAR. Pace said that the bycatch estimate would be available by the 2019 SAR.

Moore reported results from his photogrammetry work with right whales. He said trends are toward lower growth rates and poorer body condition. Read said body condition would be a shorter response, but if total length and skeletal growth is affected this suggests a longer-term ecological (including anthropogenic) problem.

Moore reported on the recent ropeless fishing workshop. Garrison asked if incentives were discussed, beyond the choice between fishing and not fishing. Moore said they laid out a 3-phased scenario. Read said it can be possible to open closed areas to people trying out experimental fishing. Moore said they have established a website - ropeless.org - and will hold a ropeless consortium on the day before the North Atlantic right whale consortium. Read asked about the golden crab fishery. Moore explained that they operate in 1,000-2,000 feet of water in the Gulf Stream and just grapple for their traps. There is a significant floating line between traps. It is valuable to know that this technique can work.

Moore presented data from Morin (GARFO) on the percentage of entanglements removed from whales that were from groundlines vs endlines. He said this information shows it was worth requiring sinking groundline. Summers indicated there is anecdotal information to suggest that endlines got stronger when sinking groundlines were introduced.

SEFSC updates

Mullin gave a presentation about 2017 and planned 2018 SEFSC fieldwork which included AMMAPs GoMMAps aerial and vessel surveys, RESTORE funded Bryde's whale cruises, CARMMHA funded biopsy effort led by SEFSC and participation in 2 live capture events, and a recently concluded photo-ID mark-recapture abundance survey for the southern North Carolina Estuarine System Stock. Garrison talked about the NOAA RESTORE program targeting Bryde's whales. Scripps Institution of Oceanography and Florida International University are partners. There will be 3 cruises. Passive acoustics, active acoustics for prey studies, biopsy sampling, and tagging will be included. At least 5 or so limpet tags, + suction cup Accusound tags, and camera tags. An end user working group has been established and had a workshop in November 2017. These are the first Bryde's whale-focused studies ever. The goal of the working group is to raise general awareness. The group is considering the right whale consortium as a model for their organization and is starting the conversation about what would be included in a restoration plan. Based on anecdotal observations at the Biennial, there is little awareness of the Gulf of Mexico whale.

There was some discussion about the Mississippi River diversion project. Peter Thomas said MMC submitted a letter into the NEPA process that summarized impacts to Barataria Bay dolphins from the diversion project.

Wells introduced the CARMMHA project, a GoMRI-VI funded consortium project to advance marine mammal health assessment tools and methodologies. The program includes tagging, developing and testing new health assessment techniques, looking at trophic relationships using stable isotopes and fatty acids, and, immunological studies with the ultimate goal of expanding the toolbox for health assessments. There is also a subgroup working on updating and improving the population models used to estimate the population-level impacts of the *Deepwater Horizon* oil spill on cetacean populations in the Gulf of Mexico.

Presenters estimated that photo-id mark-recapture abundance estimate work done in North Carolina will be included in the 2019 SAR

NEFSC updates

Corkeron already had covered some of the NEFSC updates at the beginning of the NARW discussion, including updates on right whale aerial surveys and the array of acoustic research at the NEFSC.

Hayes discussed the pinniped research program at NEFSC. One of the new projects involves acoustic (Vemco) tagging of gray seal pups. Researchers are hoping these, combined with a few satellite tags, will contribute to understanding of habitat use, and inform the departure record component of the pup production model. Diet studies are ongoing, with stomach content analysis by Wenzel and fatty acid analysis of blubber by Lyssikatos. This work is aimed at contributing to a larger energetic model of where gray seals fit in the food web and address the question: Are pinnipeds groundfish consumers or competitors? Lawson said pinniped research should also consider parasites, as the impact of those on fisheries is important.

Right whale discussion continued - Canadian efforts

Lawson explained that in Canada right whales are regulated as a species at risk under SARA. Lawson said the slow zone was the DFO's rule and it is monitored by AIS with most help from Transport Canada but some from DFO. Moore said the 40' shipping container 70% submerged is the perfect whale model for the USCG drift model. Lawson reported that the snow crab fishery closed 2 weeks earlier than in a regular year. In 2018 ice breakers may be used to allow snow crab fishermen to put out traps earlier so they can catch their quotas early next year. Powell asked if any of the gear was identifiable. Lawson said some was crab pot, one of which was a very old pot. Summers pointed out that some of the entangled whales were anchored in the gear, which is not usual in the US. Lawson said ropes used in the snow crab fishery are up to 5/8" diameter. He said it is a very lucrative fishery, with entry to bid for a license priced at $400,000. Powell asked if there were any ship-struck animals found after the rule went into effect. Lawson said yes there were some ship-struck animals found after the voluntary rule was in place and after the fishery was closed. Moore noted that most of the blunt trauma didn't break bones, so it was probably not large boats that struck the NARWs. Lawson said DFO

occasionally gets reports from oil supply boats that say they hit something. Lawson commented that AIS and VMS use is not universal but fairly common. DFO is working on getting more effective collection and dissemination of data. There have also been at least 4 dead fin whales and several minke whales. Lawson said Mingan Islands, and DFO are analyzing the calving interval data. Lawson reported the snow crab fishery is much more than 5 years old, maybe starting ~1992. Corkeron mentioned there is some evidence that the snow crab has been filling the ecological niche of cod. Buddy pointed out that the US has a pool of trained observers, and Lawson said that by April 1 we will theoretically have a twin otter up in the air. There is a plan to look at some acoustic recorders retroactively and still deciding if recorders will be left out year-round. DFO is working with fishers to deploy and retrieve acoustic recorders. Lawson estimated that old acoustic data will be analyzed and published in reports starting next fall. Lawson said they have had NARW detections as early as April, which is why we want aircraft in the air by April 1. Lawson stated the DFO is still trying to decide what the threshold or trigger is for management action. There is some pressure to come up with very precautionary thresholds. Discussing with experts during the bilateral discussions could be productive. Pace mentioned there are some simple analyses for number of whales to trigger SAMs and DAMs. Lawson said one thought was seasonal implementation of slow zone. Corkeron said when NMFS flew in 2015 they looked at when diapausing *Calanus* advect with tide. Whales were found where the *Calanus* information was predicted. He said right whale occurrence in the Gulf of St. Lawrence is not totally unusual, just moderately unusual. Moore reflected that the DFO scrambled incredibly well in response to the NARW crisis. Lawson said it just happened that we were ready to go.

Hayes presented a PowerPoint presentation outlining recent steps in right whale management including the effectiveness working group. McCarron said the value reported for the Canadian lobster fishery is too big, and must include some value-added products.

Electronic Monitoring

Brett Alger (Electronic Technologies National Coordinator, NMFS S&T) via teleconference presented on electronic monitoring (EM). He explained that the electronic technology policy directive of 2013 provided the guidance for fishery-dependent data collection via vessel monitoring systems (VMS), electronic monitoring, and electronic reporting (ER). Systems can be closed (on-board control center records video for download on return to port), semi-closed (a satellite-modem reports system status with hourly updates), or open (the fleet owner, supply chain, and fishery authorities can receive communications in real time or near-real time). The open system is where the technology is headed but progress still needs to be made. EM has been considered and piloted in the Gulf of Mexico since 2014, but EM is not being considered in the Region as much as other Regions. Hurdles to widespread use have been in data collection (species id, weight estimation), in cost and logistics (including data transmission and automation of image processing), video access and ownership, and in development of regulations for ever-changing technologies. The Alaska Fisheries Science Center and Northeast Fisheries Science Center, along with a few other programs, have started a joint project on building a national image library and image analysis processing tools. Alger explained that most of the people

pursuing EM are using models where the video is held by a third party. Monetization is less about the actual video and more that they can label themselves into some new bin that makes their catch more valuable (i.e., fully monitored, fully transparent). McDonald expressed disappointment that the technology is not in use in the Atlantic. Alger said there are some applications in New England but not in the Southeast. Alger said the specific application in New England is for New England groundfish. Industry participants only want to pay for the specific things that benefit them (e.g., discards of groundfish species). Moore suggested that maybe the government should be paying for it because it is their job to protect the species. Alger said NMFS may pay for systems and data processing in certain situations. Using EM for protected species has pros and cons depending on the specific question being asked - it could entail a second system or additional video review (i.e., funding) to capture rare events. Read said he was interested in more information on the use of EM in the bluefin tuna fishery. Alger said a number of years ago they implemented EM across the fishery, which includes 110-115 boats running cameras on every trip. They are doing 3-year review on the project this year. McDonald claimed that sine observer coverage is abysmal, if these systems are on the vessels anyway, they should be analyzed for marine mammal interactions.

Stock Assessment Reports

North Atlantic Right Whale

There were minimal comments on the SAR other than concern regarding alarming trends regarding declining NARW numbers and that the graph Young mentioned should be added to the SAR. Some members were concerned about the lag in SAR publication and that literature was cited from 2017 but that no information from 2017 was included in the SAR. Another person commented that the reference to Wart should be 2012 not 2013. A comment was made regarding the PBR section. There was concern that the minimum NARW population size is lower than stated (maybe 434 instead of 435) if we use updated information. One suggestion mentioned that there is a statistically based estimate that can be used when we know the other is faulty. This approach is based on GAMMS guidance that statistically based information is better than non-statistically based information. There is concern that the true number of mortalities will not be reported in the 2018 SAR and therefore that the current situation facing NARWs will not be reported and/or that NMFS could provide a conflicting number if we reported mortalities in the most recent year. Moore wondered why the SAR couldn't include a footnote that references the recent year. Read agreed, saying this report needs to say something about the current situation. It was mentioned that although the GAMMS guidance is to use the 5-year period something could possibly be added. Young suggested at least putting the 2017 mortalities in the narrative. Some of those have been attributed to a cause. Pace said he would reference the Canada report. Young said there was an unidentified whale seen in Roseway Basin in 2014 that was coded red by the NEAq and suggested that the Agency review that case. She remarked that it is difficult to work on overlapping SARs (2017 SAR in public comment

period, 2018 SAR in SRG draft) and that the SRG should make recommendations that publications of SARs shouldn't overlap in the future.

A number of SRG members were concerned that the 2018 SARs do not acknowledge the historical and current distribution of whales and mortalities, especially sightings and mortalities in the Gulf of St. Lawrence. Nesslage commented that the use of the credible interval is not consistent and questioned if the SRG considers if the Nmin is lower than credible interval. There was discussion on which values to use as credible interval or a low point estimate. A participant pointed out that the GAMMS show that other approaches may be used to calculate Nmin. One suggestion was to use the minimum count as Nmin. There was discussion that Read it is assumed that the direct count is biased low and that is why the model was seen as a positive approach. Others mentioned that the population size paragraph notes that the population contains 434-464 animals, but that there may be some mathematical translation errors.

Gulf of Mexico Bottlenose Dolphin - Terrebonne and Timablier Bay

McDonald said the capture-recapture estimator is changed. The real utility of this model will be when the winter 2017 data are added. Garrison explained the primary reason they chose that model is that it can directly incorporate non-distinct fins into the estimate and that the ZiPNE model handles low capture probabilities and individual heterogeneity better. Garrison said they can explore the spatial model when the winter 2017 data is available. Rosel replied that the decision to not apply the shrimp trawl mortality to estuaries was an SRG recommendation from last year, and noted that the SAR still indicates the mortality exists. Gilbert suggested using the terminology "unknown" instead of "0." Rosel said NMFS did not include this stock in the damage assessment for DWH due to insufficient data. McDonald said he would encourage the partitioning of takes. He also suggested taking the Human Interaction (HI) proportion of examined carcasses and apply it to the unexamined cases. Rosel said the HI are not all fishing interactions. It is a big stretch to assume that fresh carcasses are a random sample of all strandings, especially in a location like Terrebonne/Timbalier Bay. Rosel said this stock had been strategic because the abundance estimate was small, or likely small, since one or 2 mortalities would exceed PBR. Now the abundance is not as small. She wondered if DWH impacts warrant strategic status. Garrison said the argument for assuming it is a strategic stock is that there could be some shrimp bycatch, and there may be some DWH impact and habitat issues. Bettridge said the statute classifies a stock as strategic if: it is ESA listed or MMPA depleted; the level of direct human-caused mortality exceeds PBR; or it is declining and likely to be listed as threatened under the ESA. This stock does not meet any of these criteria. We can say we have cause for concern and that if all the shrimp trawl mortality in Louisiana inshore waters occurred in this bay it would be over PBR. Long said there could be consequences for the fishing industry if it were deemed strategic, so we need to be clear whether it does or does not meet the statutory criteria.

Gulf of Mexico Bottlenose Dolphin - Bays, Sounds and Estuaries

Members glad some of these stocks are getting their own reports. Some members wonder if. "Now that more animals have been born, should those in the larger BSE SAR be removed from discussion?" Gilbert agreed that stocks can be taken out of the group if they have their own SAR. There was a suggestion for the St. Joe Bay stock to be updated based on publication of a new paper, Balmer et al., which presents significant new data regarding the St. Joe Bay stock. Wells suggested that the Barataria Bay years to recovery post DWH be added to the Habitat Issues Discussion Section. Young pointed out that there are a couple of citations that are not in the bibliography. She expressed concern that the Agency really should have updated the Barataria Bay SAR. Garrison said this is related to the discussion on update triggers – there is no new abundance or mortality information, only new literature, so maybe that would not trigger an update anyway. However, all the 2017 references are in the 2017 SAR update so it did actually contain all the recent publications. McDonald said if we surveyed the eastern side of Barataria Bay that would trigger a new SAR.

Gulf of Mexico Bottlenose Dolphin - West Bay

Read had only editorial comments. McDonald said his comments were also only minor and was wary of a CV of .03. Garrison said the capture rate was 93%. They saw 37 identifiable individuals. The estimate was based on the other 12. Rosel said it should be determined if the stock is strategic. This stock does not meet the criteria but has low numbers. Clark had no comments. Wells had only editorial comments.

Rough-toothed dolphin

Powell questioned the calculation of the abundance using an average of surveys between 2011 and 2016. Garrison said one survey alone is inadequate. Wells said it is confusing as to which sightings go into the estimate. Read said we have a catalog of 50 animals. He is uncomfortable with averaging in a zero year. Moore said we don't have any evidence that the Atlantic and Gulf of Mexico stocks are different. Rosel said the sample size to make a comparison is inadequate. Garrison said the default is to separate by basin. Read agreed that that approach is reasonable and precautionary. Moore added that the stock is not worldwide because it is confined to warm waters.

Day 3: Thursday, 08 February 2018

Humpback Whale

Young commented that personal communication references should be minimized, especially in abundance estimations. She agreed that there are difficulties in trend analysis, but argued that analysis should be based on something other than personal communications. Pace explained that Robbins has a grant to develop the data and is working with NMFS on the mark recapture

data. Young said it is confusing as to where the Nmin in the PBR section comes from. Pace said 896 should be the Nmin. There is no confidence interval on that because it is a count. Read and Kenney both mentioned that we never cited anything for the right whale abundance number so there is precedent for not having a citation. Young said there is no mention of the ongoing UME.

Moore made the point that strandings have no core support for generating a standardized report. There should be more support for carcass recovery and stranding reporting. Stranding responders are a de facto observer program for large whales. Members suggested that the Agency could make resources available for this. Moore said species other than right whales require data. Kenney said stranding responders in Rhode Island were constrained to only photographs and measured a stranded humpback there because they had no money to dispose of the carcass. One commenter said NMFS has been flat budgeted for years, so there isn't much discretion, funding is very tight, and he respects the priority of the program but choices come down to taking away plane time versus other needs. Moore said stranding networks should be recognized as part of that obligation for the observer program. Hayes said it is worth having an internal dialog on this. Long said she would be happy to raise it. Read said the larger issue is that the stranding program is not well enough funded to do the work they need to do.

Moore said having a concurrent UME and delisting is contradictory. An abundance analysis similar to what has been done for right whales should be done for humpbacks. Pace said he is working on this issue with Robbins, exploring several approaches. The Gulf of Maine stock is less susceptible to the influence of Canada so it will be interesting to compare humpbacks to the right whale case in looking at efficacy of rules. Bettridge asked about when the abundance analysis will show up in a SAR. Pace said it should be in the 2019 SAR.

Clark questioned the assumption that the Gulf of Maine stock is a distinct entity. Males are coming into the Gulf of Maine. Kenney said there is no evidence of that. Read said it is a human construct to designate a management unit, and the trickier part is the mid-Atlantic. Corkeron said the DPS is an ESA construct not an MMPA construct.

Summers pointed out a few errors/typos. She said table 1 has the Nbest of 335 and that there is a statement about mortality being 7 times PBR that needs to be updated.

Short-finned pilot whale

Moore said the methodology between body counts and genetics and the methodology behind the analysis is unclear. Garrison said the details are in the reference document, but if the SAR needs more detail we can add something. Read said all the animals off Hatteras were shortfins. Wells said the figure needs more isobaths. He commented that it was great to see the trend analysis. Read said if we are going to do a habitat analysis on distribution, it still would be good to ground truth species identification on surveys. He asked about understanding of the population structure. We need to do systematic matching between catalogs. We have a lot of tag data. Rosel said she is not willing to say that the Gulf of Mexico and Atlantic are not the

same stock. There are good biogeographic breaks. Read said that relates to putting some satellite tags on pilot whales as part of the GoMAPPS project. Rosel said the stumbling block is that the sample size in the Gulf is small. Bettridge said the statute does not articulate how new stocks should be designated. The Agency has been inconsistent, but is working on internal policy. Clark wondered if it would be important for the SRG to point out the implications. Nesslage pointed out typos in Nmin and PBR. Garrison said to note that the stock became non-strategic but there is an argument for averaging.

Hooded Seal

Lawson said he had a few editorial comments related to Canadian mortality and an incorrect statement about lumpfish take. Since there are no lumpfish fishery anymore (or few), no takes should be included in the Canadian mortality section. Read wondered if we should be keeping an eye on variability in sea ice and questioned whether the stock is really increasing still. Summers had nothing substantial to add. Bettridge asked why there is no distribution map for this species. Hayes said the distribution is all offshore. Lawson asked whether there had been any reports of hooded seals depredating on longlines in the US. Nesslage asked about the Nmin, she had come up with a different calculation. Murray suggested going over that together later to compare. Nesslage agreed to talk offline.

Harp Seal

Lawson wondered if the SAR could allude to impending estimates – there is a new estimate coming out in the fall of 2018, based on the March 2017 survey. Also for lumpfish, take is greatly reduced, and probably not worth discussing. Gilbert said we should not consider harp seals extra-limital. We consistently see in them in the stranding data. Nesslage said if you are using 60% for Nmin you should report what that is.

Gray Seal

McDonald said he is struggling with how we come up with the population size. There is some inconsistency between 4.1 and 4.3. There is a different ratio for Nbest and Nmin but that might need to be changed. It should both be 4.3. A participant wondered why we can't count the adults. It seems that the uncertainty that would have to go into survival rates is high and so it would be better to be able to count adults. Hayes commented it would be expensive. Lawson said DFO has good survival numbers because we have a branding program. McDonald said he would be interested in how they came up with those confidence intervals. Putting a confidence interval on a backwards propagated Leslie interval can be a problem. He said he is having trouble with uncorrected pup counts, would be good to get those corrected. Murray said NEFSC thinks the 6K is close. Murray explained that in 2016 we had 3 surveys. The pup number is still a raw count but we think it is good. McDonald said it might be nice for the casual reader to have an expanded methodology section about how the count correction takes place.

He said trend analysis must be done once the counts are corrected. He also suggested we modify the table format. Lawson and Gilbert had only minor editorial comments.

Harbor seal

Gilbert said the SAR should indicated that a trend analysis is not possible for this stock. Summers asked for clarification about the reason we think the pups were higher in abundance. Gilbert said that is explained in the paper. Read said there is some evidence of harbor seal population declines in places where gray seals are increasing. He suggested some mention be made of the Johnston et al. paper.

Fin whale

Summers said there are not many sightings in the Gulf of St. Lawrence on the map, it could use more recent data. Clark had editorial comments and some stock versus population questions, since fin whales moving in and out of this area. He said they blacken the acoustic horizon. Nesslage asked how the CVs were added. Pace said they are assumed to be independent.

Minke whale

Moore said that there are tag track data that would be valuable to include when they are available. He pointed out that SI&M records from 2016 are missing from the table. Summer had only editorial comments.

Long-finned pilot whale

Summers said the longfin/shortfin split model should be applied to the old data. Garrison said that has been done for 2004 survey and could be done for 1998. That would help in the trend analysis. McDonald wanted more of an explanation for why no trend analysis was performed. Summers said there is an error in status of stock. After some discussion of migration, McDonald said the fact that month is in the model makes him feel better. He wondered if the probability of a short-fin is different than the probability of a long-fin. Garrison said that would be hard to get at. The model considers it as just a binary choice.

Risso’s dolphin

Read said we don’t know anything about population structure of this species. The abundance estimate is old. Moore said we have good track data. Read said he has tag data on Movebank. Nesslage said the mid-Atlantic bottom trawl pinger paragraph should be deleted.

Common dolphin

Gilbert had only editorial comments. Read asked when the new abundance estimate would be available. Lawson said that would be ready this fall. Read commented on the large bycatch in mid-Atlantic bottom trawl. The species is not far below PBR. Kenney had only editorial comments. Lawson said Canada has a fair amount of common dolphin takes in the monkfish fishery.

White-sided dolphin

Young asked Lawson if there is more information on Canadian bycatch. Lawson said the DFO is starting some call-in surveys. There will be more information coming out. Read said the way the 2011 survey is dealt with is different in this SAR than in others.

Harbor porpoise

Powell asked about decomposed animals in bottom trawls and was told that animals with decomposition status inconsistent with the duration of the tow were not attributed to the fishery. Read asked when Canadian bycatch data would be available. Lawson said it is coming. Young had nothing to add. Nesslage said there is acoustic data from the mid-Atlantic that should be included (Wingfield et al. 2017).

Other reports for review

Hook and line Tursiops – Gilbert – did not notice any errors.
Large whale SI determinations – there is no category for obvious bruising. SRG will take another 2 weeks to review SI

2019 meeting venue and timing

Read offered the Duke Marine Lab in Beaufort, NC for next year's meeting, possibly Feb 20-22. Powell, Clark, McDonald, and Read will be up for renewal. Summers agreed to be the next chair.