Bottlenose
Dolphin Take Reduction Team Webinar Meeting
Wednesday, September 27, 2017: 10:00 am-1:00 pm ET

Key Outcomes Memorandum

BACKGROUND:

The National Marine Fisheries Service (NMFS) Southeast Regional Office convened a meeting of the Bottlenose Dolphin Take Reduction Team (Team) via webinar on September 27, 2017. The purpose of the meeting was to provide an opportunity for ongoing discussions in support of the Bottlenose Dolphin Take Reduction Plan (BDTRP). Primary meeting objectives included the following:

- Provide updates on Team membership changes
- Provide updates on the Mid-Atlantic Bottlenose Dolphin Unusual Mortality Event
- Provide updates on research pertinent to the BDTRP
- Begin planning for the December in-person Team meeting

PARTICIPATION AND MEETING MATERIALS:

The following 30 of the Team's 43 members or alternates participated in the meeting: Lindsey Aubert, Sammy Corbettt, Tara Cox, Jane Davenport, Laura Engleby, Lewis Gillingham, Mike Greco, Sonny Gwin, Kenny Heath, Dennis Heinemann, Jimmy Hull, Raymond King, Kristy Long, Chris McDonough, Bill McLellan, Red Munden, Pete Nixon, Tom Pitchford, Andy Read, Meghan Rickard, Joe Speight, Mark Swingle, Courtney Vail, Leonard Voss, Randy Wells, Rob West, Angel Willey, David Woolman, Joe Warren, and Sharon Young. Additionally, the following representatives participated in the meeting as the appointed Team members recently stepped down and the membership replacement process is in progress: Lindsey Aubart, Dennis Heinemann, and Chris McDonough. Two Team alternates participated in addition to their representing members: Alex Costidis and Katie McHugh.

The meeting was organized and managed by NMFS' Team coordinator, Stacey Horstman with the Southeast Regional Office. Scott McCreary with CONCUR and Bennett Brooks with the Consensus Building Institute facilitated the meeting. The following staff from NMFS Southeast and Greater Atlantic Regional Offices, Fisheries Science Centers, and headquarters also participated in the call: Barbie Byrd, Deborah Fauquier, Lance Garrison, Kara Gibbons, Kristen Gustafson, Marjorie Lyssikatos, Amy Martins, Keith Mullin, Deb Palka, Johanna Pedersen, Stephanie Petrus, Patty Rosel, Jessica Powell and Melissa Soldevilla. Katie Moore with the U.S. Coast Guard also participated, as did Kim Urian, a presenter with Duke University. The following observers also participated on the call: Chris Batsavage, Sara Blachman, Jacob Boyd, Chip Collier, Ann-Marie Jacoby, Katie Moore, Paula Moreno, Kara Shervanick, Vicky Thayer, Danielle Waples, and graduate students from Savannah State University.

Prior to the call, the agency circulated to the Team an agenda, as well as several background meeting documents (BDTRT Doc# 09-27-17 a-e) and a presentation. Copies of all meeting materials can be obtained by contacting S. Horstman at 727-824-5312 or via email at stacey.horstman@noaa.gov.

KEY OUTCOMES

S. Horstman welcomed participants to the meeting, noting the importance of interim Team discussions to take stock of updates relevant to the BDTRP's implementation and monitoring, as well as to begin preparing for the upcoming December in-person meeting. She also highlighted recent changes in Team membership and noted the need to reschedule the planned new member orientation (postponed due to Hurricane Irma). S. McCreary and B. Brooks reviewed the agenda and meeting protocols.

The meeting focused on several key topics (agenda enclosed). Below is a brief summary of the primary topics discussed, Team comments and next steps.

Mid-Atlantic Bottlenose Dolphin Unusual Mortality Event Update (UME)

Several presenters provided updates on the 2013-2015 Mid-Atlantic bottlenose dolphin UME, summarizing the following: current understanding about stocks and associated demographics involved in the outbreak; current understanding of affected coastal stocks' post-UME abundance estimates; and next steps to inform understanding of the UME's impact on the surviving population. Key presentation points included the following:

- Deb Fauquier with NMFS Office of Protected Resources provided an overview of the UME event, reviewing the timeframe of the UME occurrence (July 2013-March 2015), location (New York to central Florida) and the known stocks impacted to-date (10 distinct stocks), as well as the cause (dolphin morbillivirus, or DMV) and number of bottlenose dolphins stranded during the event (approximately 1,650). She also provided data on the demographics of those stocks impacted, noting that a study of teeth drawn from stranded animals suggests the event impacted fewer older animals (e.g., either because they had immunity from an earlier outbreak or were no longer alive). Tagging and health capture data from Georgia stocks also suggests coastal stocks had a higher exposure to the virus than estuarine stocks.

- Kim Urian with Duke University provided an update on her work to determine the stock identity of bottlenose dolphins that stranded during the UME and tested positive for DMV by matching their dorsal fin photos to the Mid-Atlantic Bottlenose Dolphin Catalog (MABDC). Based on her review of dorsal fin photos to-date, K. Urian was able to match 11 (of 52) DMV+ animals. These matches suggest that at least some estuarine dolphins (3 of 11 were confirmed Northern North Carolina Estuarine Stock, or NNCES) were impacted by the UME, a finding of concern given that these stocks are small and also affected by mortality in fisheries. Future work will focus on completing comparisons of DMV+ stranded animal fins to the MABDC. Additional future work may include evaluating and comparing stock identity of DMV negative animals, comparing dorsal fin

images from the end of the UME timeframe, and photo-ID of animals biopsied during the UME in Virginia and South Carolina.

- Patty Rosel with the NMFS Southeast Fisheries Science Center provided an update on her efforts to investigate which of the estuarine, coastal and migratory stocks may have been impacted by the UME event using genetic assignment tests. The question to address was: Among these potential source stocks, which one is *most likely* to be the population of origin for a given stranded individual? After reviewing the methods (comparing the genetic makeup of stranded animals at multiple genetic markers to the genetic makeup for known stocks at the same markers), P. Rosel presented a summary of preliminary findings, including: (1) the majority of DMV+ strandings that were examined (n=141) appear to have originated from coastal stocks; and (2) there is evidence of some estuarine dolphin DMV+ strandings, including NNCES and Southern North Carolina Estuarine Stock (SNCES) (). Future studies will focus on improving the sampling of the potential source population to increase confidence in stock assignments of stranded animals. There is also interest in testing northern and central Florida DMV+ strandings, but that will require field sample collection in coastal waters of Florida..

- Lance Garrison with the NMFS Southeast Fisheries Science Center presented the latest information on efforts to understand large-scale trends in the coastal stocks' population size correlated with the 2013-2015 UME, drawing on data from aerial surveys conducted during the summers of 2002, 2004, 2010, 2011, and 2016. Key results included: (1) there is evidence for a decline in coast-wide abundance of coastal morphotype bottlenose dolphins between 2011-2016 (from 49,039 to 19,470); (2) there are observed declines in individual stock sizes, but limited power to detect statistically significant differences; and (3) factors such as inter-annual variation in distribution make it difficult to interpret stock-specific changes in abundance. L. Garrison noted that additional surveys in the next few years are expected to help verify and sharpen the understanding of the apparent decline. L. Garrison noted that the agency will be using 2016 abundance estimate only (rather than an average from 2010, 2011, and 2016) in the 2017 stock assessment report because of the evidence for trends in population size associated with the Unusual Mortality Event. The new abundance estimates and associated PBRs are to be presented at the in-person meeting.

- D. Fauquier wrapped up the UME presentations by summarizing the stocks confirmed for DMV+ stranded animals (n=10 stocks) by evidence type: photo identification, genetics and/or health assessments. The confirmed stocks include: Northern and Southern Migratory, Eastern Gulf of Mexico, South Carolina-Georgia coastal, NNCES, SNCES, South Carolina Estuarine, Georgia Estuarine, Jacksonville Estuarine, and the Indian River Lagoon Estuarine. D. Fauquier noted the heightened risk for the smaller estuarine stocks. She also identified the gaps and next steps for research needs, including the importance of collecting information and addressing data gaps that can help better explain the extent of impacts to stocks and their recovery from the UME. Specifically, the need for the forthcoming updated abundance estimates for the SNCES and Indian River Lagoon Estuarine stocks; more baseline genetic data for Southern Migratory and Northern and

Central Florida coastal stocks; and additional data to model the impacts to stock (e.g. stranding probabilities, spatial, habitat, distribution and stock movement data).

In addition to a number of clarifying questions, Team members sought confirmation that updated abundance estimates and an updated PBR (potential biological removal) figure for the coastal stocks will be provided at the December in-person meeting. There was also interest in understanding the probability that a stranded animal (i.e., DMV+) will be discovered versus sinking and, therefore, not discovered. L. Garrison noted one study published by Randy Wells suggests a 30% recovery rate for estuarine dolphins that is a reasonable proxy for estuarine animals. Based on work done in the Gulf of Mexico, animals that spend the majority of their time farther from shore would be expected to have a significantly lower recovery rate.

BDTRP-Related Research Updates

The meeting included several updates on research efforts, some that were triggered by past Team discussions and recommendations. Below is a summary of the presentations and key discussion points.

- ***Stock Identity of Stranded Bottlenose Dolphins with Evidence of Fishery Interactions.*** K. Urian provided an update on her work to identify stranded bottlenose dolphins with evidence of fishery interactions in Virginia, North Carolina and South Carolina to stock by matching dorsal fin images to the MABDC. This project was in response to a 2009 BDTRT consensus recommendation. Her presentation included the following key points: (1) of the 104 dorsal fin images from fishery interaction strandings during 1996-2016, 6 were matched to the MABDC with 5 being matched to estuarine stocks in North and South Carolina; many others likely came from the more populated and less photographed migratory and coastal stocks; (2) 22 dorsal fin images of observed takes resulted in no matches to the MABDC, however only 6 of these were from fisheries that occurred in the range of stocks for this project and none were distinctive for matching; (3) regional variations influence the likelihood of matching stranded fins to the catalog (e.g., dolphins involved in summertime bycatch in waters off Virginia are often decomposed and difficult to identify); (4) the matching is highly time and labor intensive, but based on matches made to date, they can be useful to inform management; (5) there may be value in training observers to get high quality dorsal fin images; and (6) an updated protocol for sharing images to foster near-real time matching of observed takes and strandings with evidence of fishery interactions was generated.

  In addition to some clarifying questions, Team member comments centered on underscoring the important work of the stranding network because strandings data contributes to much of what is known about fisheries interactions. As well, concerns were voiced that sustained funding is essential and therefore continued budget cuts may jeopardize future stranding network efforts. Team members also raised past discussions on ensuring that stranding networks could retain observed take carcasses and that this was still a viable effort.

- ***Enhancing Knowledge of Stock Structure of Bottlenose Dolphins in the mid-Atlantic Region.*** K. Urian provided a summary of her efforts to refine the understanding of bottlenose dolphin stock structure in the mid-Atlantic region by conducting systematic

matching of the updated MABDC. This work was in response to a 2013 BDTRT priority research recommendation. Key conclusions centered on the following: (1) confirmation of the general stock structure boundaries described in the latest Stock Assessment Reports (SARs), with refinements to our understanding of stock boundaries and areas of mixing; (2) the northern range of the NNCES stock should be considered to extend seasonally into the upper Chesapeake Bay; (3) the NNCES and SNCES stocks overlap in all seasons and show evidence of mixing in coastal water off Cape Lookout, estuarine waters near Beaufort, and during spring and summer months in lower Pamlico Sound; (4) the southern boundary of the SNCES should be considered to extend to North Inlet or Winyah Bay, South Carolina; and (5) the Northern Migratory and NNCES overlap in all seasons, while Northern Migratory and SNCES overlap in all seasons except summer. K. Urian noted that more work is needed to: (1) estimate the seasonal distances from shore; (2) match Southern Migratory dolphins to the MABDC to determine the southern boundary and overlap with other stocks; (3) improve resolution of the Northern Migratory stock's seasonal movements; and (4) investigate stock identity of dolphins in the Chesapeake Bay.

Given the importance of the animals in North Carolina, one Team member requested an explanation from the NOAA Southeast Fisheries Science Center or its Director by the December meeting as to why the Beaufort Lab is not contributing photos to the MABDC. There were no other questions or comments.

- ***Differential Risk of Bottlenose Dolphin Bycatch in North Carolina.*** Barbie Byrd, a Riverside Technology contractor to NMFS, presented a summary of work undertaken by NMFS's Beaufort Lab to examine bottlenose dolphin strandings in North Carolina to identify differential risk factors of bycatch. The analysis, which compared 191 strandings with evidence of fishery interactions to 170 with no signs of human or fishery interaction, yielded the following findings: (1) older calves and subadults appear to have a greater bycatch risk; (2) bycatch risk is equal for males and females; (3) bycatch risk is greater in spring than summer; (4) bycatch risk does not appear to vary by habitat or area (i.e., coast v. estuary), but overall levels of strandings are different; and (5) bycatch risk between May 2006 and 2012 showed a slight but insignificant increase from two earlier periods (1997-November 2000 or November 2000-May 2006).

  Additionally, B. Byrd provided a brief update on recent presentations and other studies being undertaken by the Beaufort Lab. She noted that a recent project to understand the extent to which "group characteristics be used to assign sympatric estuarine and coastal stocks of bottlenose dolphins in North Carolina" is expected to be completed by the December Team meeting.

  Team member posed a series of clarifying questions and comments. One Team member clarified that even though the quota for spiny dogfish has been increasing, the potential for a subsequent increase in fishing effort is unlikely given the lack of a viable market and no interest among processors. Another Team member asked whether there were other active fisheries with higher bycatch rates than the spiny dogfish fishery. It was noted that the examined strandings with signs of fishery interaction included all potential fishery gear types

not just gillnet-related, but it is thought that gillnets are the primary contributor to the interactions.

Planning for December In-Person Meeting

S. Horstman reminded Team members of the timing, location and focus for the December 5-7, 217, in-person meeting, emphasizing the need for Team members to come prepared to identify consensus recommendations to reduce bottlenose dolphin bycatch below PBR (given that the final draft gillnet mortality estimates for 2011-15 show that bycatch estimates for the NNCES stock are exceeding PBR and strandings data indicate that bycatch for SNCES is close to or exceeding PBR). S. Horstman also reviewed the data and analyses the Agency hopes to provide during the December meeting to support Team deliberations and requested feedback from Team members on additional data and analysis needs. There were no suggestions on additional data or analyses needed to support deliberations during the December meeting.

Team members posed several clarifying questions and comments centered on the following:

- Confirming that updated NNCES and SNCES abundance estimates will be provided. S. Horstman noted the NNCES estimates are current (in 2016 SAR based on 2013 surveys); SNCES will have a new abundance survey in January-February 2018; and a survey for the Indian River Lagoon is in progress.
- Seeking to understand the depleted status for any of the relevant stocks. Patty Rosel noted that all coastal stocks are already listed as depleted.

Public Comment

One member of the public sought to better understand the potential to apply Gulf of Mexico models developed to estimate Deepwater Horizon impacts to calculate recovery rates for bottlenose dolphins and whether this would be presented in December. L. Garrison said the model is potentially transferrable if there is sufficient data to support the model calculations, but there are no plans to present such data in December.

Next Steps

Team deliberations generated the following suggested next steps:

- S. Horstman to resend an earlier email with December meeting logistics.
- Team members are asked to review the list of data and analyses provided in BDTRT Doc# 09-27-17e to be prepared for the in-person meeting and suggest any additional candidate information requests.
- Follow up with the Beaufort Lab (and Southeast Fisheries Science Center Director, as needed) to explore the potential for the Lab to contribute photos to the MABDC.
- S. Horstman will reschedule the new member orientation cancelled due to Hurricane Irma.
- S. McCreary and B. Brooks are to prepare and distribute for Team comment a draft discussion summary synthesizing webinar meeting key discussion points and next steps. A final version will be posted on the Team website.

Questions or comments regarding this meeting summary should be directed to S. McCreary, B. Brooks or S. Horstman. S. McCreary and B. Brooks can be reached at 510-649-8008 and 212-678-0078, respectively; S. Horstman at 727-824-5312.

Bottlenose Dolphin Take Reduction Team Webinar
Wednesday, September 27, 2017: 10:00 am-1:00 pm ET

Agenda

Purpose: *To provide an opportunity for ongoing discussions in support of the Bottlenose Dolphin Take Reduction Plan (BDTRP) implementation and monitoring*

Objectives:
- *Provide updates on Team membership changes*
- *Provide updates on the Mid-Atlantic Bottlenose Dolphin Unusual Mortality Event*
- *Provide updates on research pertinent to the BDTRP*
- *Begin planning for the December in-person Team meeting*

10:00am **Welcome and Introductions**
- Meeting purpose and objectives (SERO & CONCUR)
- Meeting agenda and webinar discussion protocols (CONCUR)
- Review recent membership changes (Stacey Horstman)

10:15am **Mid-Atlantic Bottlenose Dolphin Unusual Mortality Event Update**
- Provide an update on the Mid-Atlantic Unusual Mortality Event (2013-2015) for bottlenose dolphins in the Northeast and Southeast, including:
    - Current understanding about the stocks and associated demographics involved in the outbreak *(D. Fauquier, K. Urian, P. Rosel)*
    - Current understanding of affected coastal stocks' abundance estimates post-UME *(L. Garrison)*
    - Next steps to inform understanding of the UME's impact on the surviving population *(D. Fauquier)*
- Opportunity for Team Q&A

11:30am **BDTRP-Related Research Updates**
- *Stock Identity of Stranded Bottlenose Dolphins with Evidence of Fisheries Interactions in Virginia, North Carolina, and South Carolina (1996-2011)* (K. Urian) - BDTRT Doc# 09-27-17 a and b
- *Enhancing Knowledge of Stock Structure of Bottlenose Dolphins in the mid-Atlantic Region* (K. Urian) - BDTRT Doc# 09-27-17 c
- *Differential Risk of Bottlenose Dolphin (Tursiops truncatus) Bycatch in North Carolina, USA* (B. Byrd) - BDTRT Doc# 09-27-17 d
- Opportunity for Team Q&A

12:30pm **Planning for December In-Person Meeting**

- Discuss timing, location and focus for meeting
- Agency meeting goal
- Consider research and information needs to support productive Team deliberations - BDTRT Doc# 09-27-17 e

12:50pm **Public Comment**

1:00pm **Adjourn**