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Bottlenose Dolphin Take Reduction Team

A Summary of the Ninth Meeting

Hilton Wilmington Riverside Hotel
Wilmington, North Carolina
September 9-11, 2009

Prepared by The Keystone Center

November 25, 2009

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Bottlenose Dolphin Take Reduction Team Meeting
September 9-11, 2009
Wilmington, North Carolina
Meeting Summary[1]

Summary

The Bottlenose Dolphin Take Reduction Team (BDTRT) met September 9-11, 2009 in Wilmington, North Carolina to: (1) review revisions to the bottlenose dolphin stock structure and mortality estimates for the Western North Atlantic coastal stock and newly defined Bay, Sound and Estuary stocks; and (2) evaluate the current Bottlenose Dolphin Take Reduction Plan (BDTRP)[2]. The last BDTRT meeting was held in Annapolis, Maryland June 19-20, 2007.

To achieve the meeting goals, a substantial portion of the session involved providing the BDTRT with updates (agenda appended as Attachment 1). Specifically, the meeting included a review of:

- Take reduction plans – the BDTRP and the Harbor Porpoise Take Reduction Plan update
- North Carolina stocks – structure; abundance and mortality estimates; Potential Biological Removal (PBR); human-caused mortalities and non-observed fishery mortalities; past observed takes; observer coverage; observer compliance information; and stranding data for North Carolina and Virginia;
- Gear research updates;
- Fishery updates on the North Carolina Inshore gillnet fishery; North Carolina Atlantic Ocean striped bass beach seine fishery; spiny dogfish fishery; Virginia pound net fishery; and mid-Atlantic menhaden purse seine fishery; and
- Remaining stocks – structure; mortality and abundance estimate where applicable; human caused and non-observed fishery moralities; and standing data.

The BDTRT considered potential alternative mitigation measures for the Northern North Carolina Estuarine Stock (NNCES) because the best available data indicated a likelihood that mortalities were approaching or over PBR level.

Working first in subgroups and then in plenary, the BDTRT reached several areas of consensus for regulatory and non-regulatory recommendations (see Key Meeting Outcomes below) relating to, among other things: 1) Virginia pound net fishery; 2) medium mesh gillnet nighttime restrictions in NC during the winter; 3) establishment of a VA Pound Net working group; 4) research priorities; and 5) Recommend that all states develop a program to remove derelict gear.

During the course of the meeting, team members raised questions and made recommendations regarding the information and data presented, particularly as related to the North Carolina stocks.

[1] Prepared by The Keystone Center. This memorandum summarizes the highlights and key outcomes from the September 2009 Bottlenose Dolphin Take Reduction Team meeting. It is not intended to be a transcript of the meeting.

[2] Published April 26, 2006 (71 FR 24776); effective May 26, 2006.

For other (non-North Carolina) stocks, there was less available information which resulted in fewer definitive recommendations.

Key Meeting Outcomes

At the meeting, the BDTRT discussed and reached consensus on the following regulatory and non-regulatory recommendations:

<u>*Regulatory*</u>

(1) *Virginia pound net fishery – adopt a modified leader.*

- Extend the modified leader requirements, consistent with sea turtle leader design (50 CFR 223.206), east of Regulation Area 1 to incorporate the portion of Regulated Area 2 out through the Chesapeake Bay mouth and along Virginia coastal waters, east of the Chesapeake Bay Bridge tunnel. Regulation Area 1 would include all waters east of the Chesapeake Bay Bridge Tunnel and into the coastal waters of Virginia, north the Maryland/Virginia line and south to the Virginia/North Carolina line.
- Extend the time requirements for the modified leaders to year round.
- Change the definition of "inshore pound net" from what is defined in sea turtle regulations to a pound net with a leader starting from 10' horizontally from mean low water and ending at king post at 12' or less at mean low water (depth) to ensure the king post-stake does not extend beyond 12' MLW. The offshore definition will remain the same as for the sea turtle regulations (see 50 CFR 222.102).
- Ensure consistency between the regulations for sea turtles under the Endangered Species Act and any forthcoming dolphin regulations under the Marine Mammal Protection Act pertaining to Virginia Pound Nets.
- Include the same pound net inspections and certifications as for the federal sea turtle regulations [50 CFR 223.206(d) (10) (vii)] or help ensure compliance and facilitate enforcement.

(2) *Medium mesh night time gillnet fishing restriction in NC*

- Adopt permanent restriction for NC during the winter by removing the sunset clause.

<u>*Non-Regulatory*</u>

(3) *Form a Virginia working group to:*

- Further refine BDTRT consensus recommendations pertaining to the Virginia pound net fishery to inform rule making.
- Develop proposals for pound net gear research.
- Develop clarification on gear similar to pound nets (i.e., loopholes).
- Discuss how to address pound nets that straddle inshore/offshore definitions.
- Identify how many pound nets are inshore nets that would be affected if offshore were defined as greater than 12' and whether fishermen would change the length of net to fit under the definition or change gear type.

(4) *Communication*

- NMFS to send a letter to fishermen informing them that it is proceeding with rulemaking. This allows fishermen to prepare for anticipated rule changes.
- NMFS to send a letter to the Virginia Marine Resources Commission to inform them of the BDTRT's recommendations pertaining to the VA Pound Net fishery.

(5) *Research*

Although several research recommendations were agreed to by the BDTRT (see Appendices 2 and 3), the following three recommendations were voted (in order of most votes) by the BDTRT to be the priority for funding:

- Determine the stock identity of bottlenose dolphin observed takes, or strandings, with evidence of fisheries interaction by matching dorsal fin images to Mid-Atlantic Bottlenose Dolphin Catalog or obtaining genetic samples (required to be provided by observers).
- Obtain reliable abundance estimates per stock to ensure PBR is accurately determined and in order to place animals in the correct stock.
- Refine the understanding of the distribution of the NNCES stock in: (1) Pamlico Sound during the summer using genetics; and (2) ocean waters, especially where there is an overlap with other stocks and observed takes can be applied to more than one stock.

(6) *Observer Program*

- Enhance observer documentation of dorsal fin photos and collection of biopsy samples from observed takes. If possible, collection of the whole carcass should be the priority for observed Tursiops takes to maximize data collection. The local stranding networks can help coordinate carcass collection. The USCG may be an asset to help tow in the carcass if the fisherman's vessel is too small.
- Provide observer coverage for the inshore Spanish Mackerel fishery (i.e. Pamlico Sound) and more information about the fishery characteristics.

(7) *Monitoring and Evaluating Effectiveness*

- Enforcement is important for compliance and there should be coordination with the state's and other federal entities to ensure adequate enforcement, especially for regulations pertaining to the VA pound net fishery.
- Outreach and education to fishermen is important for all forthcoming regulations, especially any regulations pertaining to the VA pound net fishery.
- Consider fishermen work groups to facilitate outreach about how/where dolphins are interacting with nets and discuss the importance of reporting all marine mammal interactions with gear (David Hilton, NMFS is interested); topics such as:
    1. Bringing caresses or biological data.
    2. Ascertain whether the end of nets is where the problems are prevalent.
    3. Incentives for self reporting to learn more about where dolphins are interacting with nets – not double counting/adding to PBR .

(8) *Blue Crab Trap/Pot Fishery*

- Establish a four-tiered approach to better characterize, understand, and potentially mitigate interactions in the crab pot fishery:
    1. Characterize various aspects of the fishery, including the following:
        - What is the extent of vertical lines in the water?

    - Determine various gear marking requirements, including differences between commercial and recreational fisheries.
    - Better understand the effort of commercial and recreational crab pot fishing in each state.
  2. Catalog and document all trap/pot modifications that are being used in different areas.
  3. Conduct a technology transfer workshop among fishermen to discuss the various trap/pot modifications and additional ideas.
  4. Explore regulating the most successful recommendations to mitigate interactions.
- Recommend all states develop programs to remove derelict trap/pot gear.

(9) *Estuarine Waters (N.C.) – No new regulations, but suggest the area should be included in the geographic scope of the plan.*

(10) *Other*

- A minimum and maximum scenario was presented for where mortality estimates are relative to PBR. What would we do if we are at the worst case scenario (maximum) for the NNCES? NC Department of Marine Fisheries has the option to issue proclamations for real-time regulations and closure and would be happy to help in this way. The team also recommended NMFS immediately convene the BDTRT either via conference call or in-person meeting if we are over PBR for the NNCES.
- Consider a gear research exemption in the BDTRP for stocks below ZMRG.

(11) *Comments*

- Reconcile practices related to illegal feeding and discarding that attract dolphins. Identify current regulatory discard regulations per state and perhaps consider "exemptions" in discards.
- Concern was expressed about the number of research takes.
- Concern was expressed about the challenge of addressing small stocks where one take could exceed PBR.

I. Meeting Goals, Participants, and Procedural Matters

A. Purpose
  1. Review revisions to the bottlenose dolphin stock structure and mortality estimates for the Western North Atlantic coastal stock and newly defined Bay, Sound, and Estuary stocks; and evaluate current BDTRP conservation measures given new stocks; and
  2. Review current information on all stocks and determine needs to meet the plan's short- and long-term goals for each stock.

B. Meeting Goals
  1. Review and discuss revised stock structure for the Western North Atlantic coastal bottlenose stock and newly defined Bay, Sound, and Estuary stocks, as well as associated abundance estimates, PBRs, and mortality estimates;
  2. Evaluate mitigation measures for the NNCES to ensure the short-term goal is being met;

3. For remaining stocks, evaluate to determine the need for additional conservation measures for stocks lacking abundance and mortality estimates but data indicate potential concerns, as well as stocks with abundance and mortality estimates to determine the need for additional mitigation measures for meeting the long-term goal;
4. Review and revise scope of BDTRP as needed given new information; and
5. Identify mechanisms for continuing to monitor and assess effectiveness of the BDTRP.

C. Meeting Participants

BDTRT members attending the ninth meeting included: Melissa Andersen, Mike Baker, David Beresoff, Paul Biermann, Dean Cain, David Cupka, Dr. Joseph DeAlteris, Steve Early, Laura Engleby, Joey Frost, Lewis Gillingham, Mike Greco, Chris Hickman, Raymond King, Jessica Koelsch, David Laist, William McLellan, Fentress "Red" Munden, Tom Pitchford, Dr. Andrew Read, Joe Speight, Mark Swingle, Robert West, David Woolman, Sharon Young and Nina Young.

Alternates attending the meeting included: Doug Haymans (Alternate for A. G. Woodward), Beth Lowell (Alternate for Elizabeth Griffin), and Brian Balmer (Alternate for Randy Wells)

Presenters and facilitators were: Sue Barco, Diane Borggaard, Barbie Byrd, Lance Garrison, Lewis Gillingham, Stacey Horstman, Red Munden, Debi Palka, Patricia Rosel, Marjorie Rossman, Melissa Andersen, Blake Price, and Danielle Waples. The meeting facilitators were Doug Thompson, Jody Erikson and Amber Brummer.

Observers who registered at the meeting were: Laura Bagge, Sue Barco, Diane Borggaard, Erin Cummings, Barbie Byrd, Meagan Dimphy-Daly, Annie Gorgone, Caitlin Kielhorn, Ryan McAlarney, Katie Moore, Anne Ney, Debi Palka, Marina Piscitelli, Jessica Powell, Blake Price, Patricia Rosel, Glenn Salvador, Craig Tenbrink, Vicky Thayer, Kim Uran, Amy VanAtten, Nikki Vollmer, Danielle Waples, Joe Wilson, Shep Grimes, Nina Young, and Kenny Heath.

No public comments were provided at the meeting during the formal public comment period. Observers did provide comments to the BDTRT during discussions.

D. Meeting Materials

Each BDTRT member received via mail one week prior to the meeting a tabbed three-ring binder of meeting materials. All meeting materials can be found on the password protected team web site.

E. Meeting Guidelines

The meeting facilitators reviewed meeting guidelines (ground rules) that reflected a condensed and simplified version of what had been in use at previous BDTRT meetings. These were:

- *During the Meeting:*
  - Listen to understand.
  - Share the floor.

- Seek to address not only your interests but those of others.
- Feel free to explore without committing.
- Respect meeting and agenda timeframes.
- Be hard on the problem and soft on the people.
- Acknowledge the past but do not rehash it.
- Use microphones.
- Turn off gadgets not necessary for the meeting.
- Let expertise inform, not constrain ("beginners mind").

- *After the Meeting.*
  - The BDTRT owns the meeting summaries and will respond promptly to the draft.
  - The final meeting summary will speak for the BDTRT; facilitators will speak for the process; individual members may speak for themselves. A contact list of BDTRT members will be provided.

The BDTRT endorsed these meeting guidelines for purposes of this meeting.

II. Overview of BDTRP and Related Emerging Challenges and Harbor Porpoise TRPs

A. Harbor Porpoise TRP

Diane Borggaard, NMFS, overviewed the status of the Harbor Porpoise Take Reduction Plan (HPTRP) to provide the BDTRT with how another TRT is grappling with similar issues as the BDTRT. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Harbor Porpoise Take Reduction Plan (HPTRP)."

- *Key points:*
  - Problem: Exceeding PBR due to take occurring outside HPTRP managed areas, documented non-compliance.
  - HPTRT responded by making recommendations – expanded area, closures, gear modifications.
  - States are working in concert with these efforts.
  - NMFS rule-making on recommendations.

- *Questions and discussion points:*

  Q: Can you clarify what you mean by "hanging gillnet?"

  A: Putting more twine in the net might capture more or fewer mammals and fish. Preliminary report has been prepared and suggests that location of the net (one third vs. half way) yield similar results. Initial thought was that nets hung halfway resulted in more mammal interaction but later results were not conclusive.

B. BDTRP Overview

Stacey Horstman, NMFS, presented an overview of the final BDTRP – the short and long-term goals, geographic scope – to provide a foundation for some of the discussion

topics during the meeting and some elements of the plan that may need to be changed based on data updates. She also presented issues that have emerged since the June 2007 BDTRT meeting, such as illegal feeding and the implications for serious injury and mortality to dolphins. This presentation was to orient the BDTRT and bring it up-to-date. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Overview of BDTRP".

- *Key points:*
  - Goals: Mirror the MMPA. Short-term – reduce serious injury and mortality to below PBR within 6 months; long-term – reduce serious injury and mortality within 5 years to insignificant levels approaching zero.
  - Scope: Tidal and marine waters within 6.5 nautical miles from shore; New York/Jersey border to Cape Hatteras, North Carolina, and within 14.6 nautical miles from shore at Cape Hatteras to fisheries management council demarcation between the Atlantic Ocean and the Gulf of Mexico.
  - Regulated waters: Areas where there is greatest potential for specific gear types to cause serious injury and mortality with that stock in that area and time – three nautical miles off shore or the first bridge over any embayment, harbor, or inlet from NJ through VA, or other specified boundaries (see BDTRP for actual boundaries); 3 nautical miles of shore of 72 COLREGS for North Carolina; 14.6 nautical miles of shore of the 72 COLREGS for South Carolina, Georgia and Florida.
  - Conservation Measure: Affects 9 category I and II fisheries and regulates 3 of these fisheries – mid-Atlantic gillnet, Southeastern U.S. Atlantic shark gillnet and Southeast Atlantic gillnet fisheries; and non-regulatory – Atlantic Blue crab pot/trap fishery.
  - Monitoring: Observer program, stranded animals, biological data and compliance monitoring.

- *Emerging Challenges Related to BDTRP – Illegal Feeding:*
  - Illegal feeding can cause harm. Feeding in the wild is as a take and illegal under the MMPA. Occurring most often in tourist destination areas coupled with dolphin viewing operations, but now seeing/hearing significantly more reports of commercial and recreational fishermen feeding.
  - The challenge arises from the link between feeding and conditioning dolphins to people and boats, leading to increased depredation and predation and potential for more mortality and serious injury.
  - Current NMFS outreach/education is predominately to the commercial dolphin tour operators and general public.
  - TRT's help is needed with outreach and education to fishermen.

- *Questions and discussion points:*
  Q: Any other steps for enforcement?
  A: Enforcement is getting stepped up to deal with the issue.

  Q. How clear is the illegal feeding?

A. Often quite clear—human hands putting food and the like into the dolphin's mouth. This is of concern to commercial fisheries as well because it can lead to dolphins more likely to interact with gear.

Comment: There is no PBR for recreational fisheries. Commercial operations should not be held accountable for problems caused by recreational activity.

Q. Regulatory discards are a problem. Doing right by the dolphins is not doing right by state law. Is there any way to reconcile? Can we discard elsewhere?
A. This idea may have merit.

III. Structure and Abundance Estimates for North Carolina Stocks

Lance Garrison, Southeast Fisheries Science Center, presented updates about the current understanding of the North Carolina stocks and the rationale for the new stock designations and seasonal overlap between stocks. He also presented abundance estimates where the data leads in terms of PBR considerations. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Bottlenose Dolphin Stocks in North Carolina Waters: Distribution and Abundance."

- *Key points:*
  - Four stocks overlapping in North Carolina: Northern North Carolina Estuarine stock (NNCES), Southern North Carolina Estuarine stock (SNCES), Northern Migratory stock (NM), and Southern Migratory stock (SM).
  - Overlap: Stocks overlap in most areas and for much of the year:
    - SM, NM, and NNCES occupy coastal waters from Cape Lookout to Cape Hatteras;
    - SNCES and NNCES overlap in Neuse River and near Beaufort from May-August;
    - NM and NNCES stocks overlap in coastal waters from Cape Hatteras to Cape Lookout from Jan-Feb;
    - SM and SNCES overlap near Cape Fear from Nov-Feb;
    - Boundary between the SNCES and NNCES varies seasonally
  - NNCES is the most complicated stock as the animals stay close to shore and mix with other stocks. NNCES animals occupy Pamlico Sound and coastal waters from New River to VA Beach. NNCES movement into coastal waters during winter months confirmed by photo-identification matches and stable isotope studies of stranded animals. Stock movement into VA Beach confirmed from tagged animal and consistent with photo-identification.
  - NNCES stock moves within 1km of shore in coastal waters and overlaps with the SM and NM during certain times of year. The SNCES stock moves within 3km from shore in coastal waters, and the SM stock is further from shore when the SNCES is in coastal waters during the fall and winter.
  - July and August is the greatest degree of separation between stocks and offers the best time and area for abundance estimates.

- To assign observed mortalities and attribute effort given overlap, strata were defined and stocks were indicated as present during bi-monthly periods for each strata. Stocks were identified as potentially impacted by observed mortalities in each strata and minimum and maximum possible mortality was evaluated for each stock.
- NNCES minimum and maximum estimate of PBR: Minimum PBR=8, maximum=12. Presented the minimum and maximum PBRs based on assumptions, and these can be compared to the minimum and maximum possible mortality using same assumptions.

- *Questions and discussion points:*

Q: Why not use the 2004 data?
A: There is no correction for visual bias and something anomalous was going on that year—it is inconsistent with all the other data and the magnitude of difference is so large.

Q. When will the next survey take place?
A. No time soon, unfortunately; we lack the resources at present.

Q. When freeze branded, was a genetic sample taken?
A. Yes and they have been worked up. It is difficult, however, to assign to a specific stock through genetic markers.

Comment: I think the degree of complexity well reflects what we see and it makes for a messy management problem. A lot of additional information could help test/refine these conjectures, such as photo-ID records.

Q. Is there any merit to mark and recapture?
A. For migratory stock, aerial surveys are best. For estuarine animals, tag and capture is the only option—not a closed stock but one where the animals move in and out.

Q. This seems messy and leads back to the issue of plans for another estimate. Are you giving us numbers not with the SAR so we have something to look at? Were the northern migratory and southern migratory estimates in our books?
A. Yes to the first question, and the coastal SARs are currently not updated this year.

Q. Making a lot of leaps of faith; why can't we make those leaps with the 2004 data?
A. We have concerns with that 2004 survey—even though it is the most recent, we don't think it's more accurate.

Q. What can you say about further offshore morphotype?
A. Because it is well offshore, it is not that relevant to this NNCES. Because the abundance is fairly high and few fisheries affect that population, there is less concern.

Q. How much genetic mixing is occurring with these stocks?

A. We have looked at samples from SNC—used freeze branded samples from the SNCES and the NM stock. We took the extremes and see that those are clearly distinct and not interbreeding. As we move into those stocks in closer proximity, it is more difficult to estimate the level of interbreeding. We need a biopsy study in Pamlico Sound in the summer only.

Q. Do food sources and water temperature that separates these stocks?
A. It seems likely although we cannot be positive.

Q. Fishermen report that there are more dolphins than in the past. Making new rules based on this weak data is going to be a tough swallow and will draw a bead on NC fishermen.
A. I'm not sure I would characterize the data as "weak." There are a lot of lines of information and they point to large and small stocks. The point is what to do in the face of uncertainty. The data is not so poor that we should not do anything, better than for most stocks. It is easier to exceed PBR on small stocks and that creates the management challenge.

IV. Mortality Estimates for North Carolina Stocks

A. Mortality estimates for North Carolina stocks

Marjorie Rossman, Northeast Fisheries Science Center, presented information about mortality estimates and PBR conclusions for North Carolina stocks. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Coastal Bottlenose Dolphin Bycatch Mortality Estimation 2002-2008."

- *Key points:*
  - Mortality Table Results: three models were averaged to yield a minimum and maximum prediction.
  - Method: results were an average of three methods – annual ratio estimator, pooled ratio estimator and generalized linear model.
  - Averaging models accounts for uncertainty with approach and each has their own pros/cons and assumptions.
  - Data: for each model, different observer data sets were used to reflect pre-BDTRP and post-BDTRP fishing practices.
  - Uncertainty in dealing with overlapping stocks; therefore, used a matrix of observed takes for each model to determine potential overlap of observed takes in each strata and determined a minimum and maximum possible mortality.
  - Results: NNCES stock in the maximum scenario (18.99 mortalities) exceeds PBR vs. minimum scenario (2.39); all other stocks are below PBR for both minimum and maximum scenarios.

- *Questions and discussion points:*

Q: The only stock that is an issue is the NNCES, so if we take the average, it is right at PBR. However, what do we do with the reality that mortality is based on new and recent information while PBR is based on old information?
A: It is a quandary the TRT will need to address.

Comment: Averaging, while tempting, is not a good way to make determinations in this instance. The minimum/maximum approach shows the uncertainty and averaging only masks the uncertainty. Two animals taken in Northern North Carolina, if taken from one stock will impact PBR differently than if the mortalities were assigned to different stocks.

Q: Are we making efforts to get genetic samples from all observed takes?
A: Yes, and all available samples have been analyzed but we are not yet in the position where we can take an individual and assign to stocks – stocks are closely related and the methodology is just not there yet.

Comment: It is important to note the successes of the plan for other stocks – where we have met ZMRG.

Q: Why were spiny dogfish and large mesh turtle hauls removed from the calculations?
A: The estimate was 2002 and beyond and during that time the spiny dogfish fishery was closed.

Q: What if the spiny dogfish fishery returns?
A: NMFS and the TRT will have to deal with that in the future. The fishery is back in 2009 and we will need to account for its return.

Q: For NNCES, what critical pieces of information are necessary to resolve issues to know if PBR is way above or below?
A: Any behavioral differences between the groups will help parse out understanding about which stocks are interacting with the gear. We need to know how these two different groups are using the habitat with the caveat that we cannot parse out a mortality estimate 1 km from shore.

Comment: It would not be difficult to look at the distribution of NNCES and SM animal to apportion the probability of takes.

A: We have support for a pretty strong hypothesis, so directed studies are a potential.

Q: It is as likely as not to be the maximum or minimum scenario. How do we know? Is there any photo-ID done on these animals?
A: There are no dorsal fin photos of observed takes.

Comment: It is important to get the carcass to accurately assign to a stock.

Comment: Note difficulty of low PBR's and low takes to estimate mortality. We need to think about a different way to estimate mortality.

A. Human-Caused Mortalities and Non-Observed Fishery Mortalities

Lance Garrison presented information on human-caused mortalities and non-observed fishery mortalities for North Carolina stocks. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Bottlenose Dolphin Stocks in North Carolina Waters: Additional Mortality."

- *Key points:*
  - Concerned about the Virginia beach and inshore areas where stocks overlap substantially.
  - Total of 36 non-observed fishery-related mortality and serious injury were attributed to the following: beach gillnet, pound net (VA), blue crab pot, other pot, research, possible beach gillnet, unknown pot type, and possible recreational gear.
  - VA pound net had the most with 20 mortalities.
  - The following are minimum (total = 2, annual average = 0.2) and maximum (total = 17, annual average = 1.9) human-caused and non-observed fishery mortality in NNCES:
    - VA pound net: minimum = 0, maximum = 13
    - Other pot type: minimum = 0, maximum = 1
    - Research: minimum = 1, maximum = 3
    - Possible recreational gear: minimum = 1, maximum = 0
  - Total minimum and maximum mortality for the NNCES including observed takes and non-observed: minimum = 2.41, maximum = 20.89.

- *Questions and discussion points:*

Q: Could some of the trap pot issues be recreational pots? If so, 100% should not go against commercial fishermen.

A: Yes, it could be recreational gear. Where possible we identify commercial versus recreational pot gear.

Comment: The whale TRT pushed for gear identification to clarify which gear caused the take – commercial or recreational.

Q: From stranding data, how many are known versus unknown that have interacted with fisheries?

A: All photos of stranded animal dorsal fins are photographed and sent to the Mid-Atlantic Catalog. Only a small number are known.

Comment: There is a need to push for gear specific identification for commercial vs. recreational gear. This is not hard to do.

Q: Is this the first time stranding data has been used for bottlenose dolphins? Is this a policy change?

A: This is common with large whales, and we are clearly justified to add these. It is a process that is in flux.

V. Data Review for the Northern North Carolina Estuarine Stock (NNCES)

A. Review of NNCES Stock Observed Takes, Observed Coverage, and Compliance Information

Debi Palka, Northeast Fisheries Science Center, presented information on observer coverage, takes and compliance for North Carolina stocks. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Observed takes, observer coverage and compliance in the NNCES stock." and reference meeting material, titled "Investigation into the level of compliance to the TRP and sea turtle regulations."

- *Key points:*
  - Observed takes: Two NNCES observed takes post-TRP.
  - Percent annual observer coverage increased from an average 1% (not including coverage in the Pamlico Sound estuary) from 2002-2005 to an average 3% from 2006-2008.
  - Methods and Data: Observed hauls were examined from May 2006-2008 to determine the percent compliance of observed hauls in each management unit and for regulatory measures in those management units.
  - Results: Overall, most observed hauls were in compliance.
    - For large mesh gillnet restrictions in Northern NC, compliance increased from 75% in 2006 to 100% in 2008.
    - For small mesh gillnet restrictions in Northern NC, there was 85% compliance with the gear length restriction. The two observed takes were in this area and used small mesh gear at the upper end of the allowable length.
    - For regulations prohibiting large mesh gillnet fishing in Northern and Southern NC, there were no observed hauls, which was interpreted as 100% compliance because observers were in ports observing hauls with small mesh gillnets.
    - For some other areas and restrictions, there were no or too few observed hauls to determine compliance.

- *Questions and discussion points:*

  Q: Why were there no results for small mesh for southern NC?
  A: There were no regulations for small mesh for southern NC.

  Q: Were there any indications of non-compliance?
  A: The only non-compliance observed was small mesh fishermen with nets that were too long or in violation of a restriction of nighttime fishing with tie-down requirements.

  Q: Were the two observed takes in compliance areas?

A: Yes, the takes were in compliance but at the cut-off for the gear length requirement. There were no takes in non-compliance areas.

B. Review Stranding Data for North Carolina and Virginia

Barbie Byrd, NMFS, presented information on stranding data for North Carolina and Virginia. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Bottlenose Dolphin Strandings in North Carolina and Virginia January 2002 - April 2009" and reference meeting material, titled "Bottlenose Dolphin Strandings from New Jersey to Florida, January 2002 – April 2009."

- *Key points:*
  - Data: provided by NE and SE stranding data from Jan 2002-April 2009.
  - Methods – mined and broken down by:
    - Pre BDTP (Jan 2002-May 2006)
    - Post-BDTRP (June 2006-April 2009)
    - Divided into human interactions (HI) categories
    - HI fishery interactions (FI) assigned gear/fishery type categories (known if gear/fishery if gear attached; lesions consistent with a specific fishery; and unknown gear/fishery)
    - Does not include animals entangled in research gear
  - Results:
    - North Carolina and Virginia had the highest overall HI FI (human interaction fishery interaction) stranding
    - NC monthly average for HI/FI had spikes in January, May, and October post-plan
    - NC – total 75 HI/FI strandings
      - 75% (n=56) located on ocean side of North Carolina
      - 21% (n=16) sound side
      - 4% (n=3) unknown
    - NC - pre-plan HI/FI= 53; post plan HI/FI = 22, with 5% beach-anchored gillnet, 95% FI unknown
    - VA monthly average for HI/FI had spikes in June and July
    - VA – total 119 HI/FI strandings
      - pre-plan = 84, with 17 attributed to the VA pound net fishery and 19 with twisted twine consistent to the VA pound net
      - post plan = 35; 18 with twisted twine consistent with VA pound nets, 9 attributed to pound nets, 3 attributed to gear consistent with hook-line fishery, 3 were FI unknown, 1 was attributed to gillnet, and 1 attributed to trap/pot fishery

- *Questions and discussion points:*

Q: I'm a little confused if the strandings are "unknown" but fisheries related, versus hook and line related?

A: Most evidence would suggest that at least in North Carolina that the gillnet fisheries are implicated but did not want to assign to a specific fishery unless certain (e.g., gear was still on the animal).

C. Review of Fisheries Operating in the NNCES and Mid-Atlantic Menhaden Purse Seine Fishery

Stacey Horstman, NMFS, presented information on the Category I and II fisheries operating in the NNCES; and reviewed the Mid-Atlantic Menhaden Purse Seine Fishery, one of seven category I or II fisheries operating in the NNCES. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Category I and II Fisheries Operating within the NNCES."

- *Key points:*
  - 1 Category I and 6 Category II fisheries operating in the area occupied by the NNCES.
  - The mid-Atlantic menhaden purse seine fishery was uplisted to category II based on analogy with Gulf of Mexico Menhaden purse seine. Uplisting means it will be an affected fishery under BDTRP and monitored via observer coverage.
  - Location: generally in Chesapeake Bay, also seaward from New Jersey to North Carolina.
  - Gear: 13 total commercial vessels; bar mesh net 3/4to 7/8 inches (1-3/4 inch stretched mesh); 1000-1400 feet length; 65-90 feet deep; nylon fiber nets.
  - Method: purse deployed over school vertically; 35-45 minute for deployment to purse closed; each vessel sets up to 5 times a day.
  - Effort: during daylight; year-round with concentrated effort from May-November, peaks May-September VA northward and Cape Lookout and Cape Fear November-December.

D. Review of North Carolina Inshore Gillnet Fishery

Blake Price, NCDMF, presented information on North Carolina inshore gillnet fishery and the Pamlico Sound Gillnet Restricted Area (PSGNRA). You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "North Carolina Division of Marine Fisheries Commercial Observer Program Overview" and reference meeting materials titled "Characterization of North Carolina's Inshore Gillnet and Seine Net Fisheries."

- *Key points:*
  - NC state observes the Pamlico Sound Gillnet Restricted Area (PSGNRA); started in 1999 with section 10 permit since 2000. Annual coverage of PSGNRA since 2000.
  - Observation summary: fisheries covered are large (>/= to 5 inch stretch) and small (< 5 inch stretch) mesh during all seasons. Far more large mesh trips than small mesh ones. Most trips close to shore, in shallow waters.
  - For 2004-2009 PSGNRA, almost two million yards of large mesh net observed for coverage between <1%-12%; about 200,000 yards of small mesh gear observed for coverage of <1%.
  - Dolphins have been reported in vicinity and around nets, but no interactions observed. The type of gear used—smaller mesh, lighter, monofilament—may help explain the lack of interactions.

- *Questions and discussion points:*
  Q: Can you say a little more about the alternative platform observer program?
  A: The state and NMFS have worked out short term gear restrictions, mandatory observer coverage and a shot length of 200 yards. However, these short term responses have not appeared to reduce the problem sufficiently as we are still seeing interactions notwithstanding those gear restrictions. We have been discussing with fishermen the idea of gillnet gear such as a low profile net.

  Q: It is interesting that you get out there and document in Pamlico Sound in the face of a full closure. Why is that not possible for our issues?
  A: I appreciate that comment although I have to say that this is an unusual and well-delineated geographic area. We had a problem with sea turtle interactions and also had readily available ways to reduce concerns while preserving an economically viable fishery.

  Q: What kind of mortality occurs with sea turtle interactions?
  A: About 25%.

  Q. Does your mesh size cover a lot of fisheries?
  A: Yes, never observed a sea turtle take in small mesh—only large mesh nets.

E. Review of North Carolina Atlantic Ocean Striped Bass Beach Seine Fishery

Red Munden, NCDMF, presented information on North Carolina Atlantic striped bass beach seine fishery. Please reference meeting material, titled "North Carolina Atlantic Ocean Striped Bass Beach Seine Fishery – Winter 2008/2009."

- *Key points:*
  - Proclamation set quota at 160,160 pounds/year and required use of multifilament or multifiber webbing; set warp line length, mesh size range, net depth, and twine size; and a time limit of 4 hours from launch to retrieval of a beach seine.
  - Daily limits were set at 250 fish per beach seine operation.
  - North Carolina receives a share of the striped bass quota—480,000 pounds to be divided evenly among the beach seine, gillnet and trawl fisheries; if one sector has not used its entire quota, it can be transferred.
  - Although North Carolina opened the season several times between December 2008 – March 2009 but few striped bass were landed because large schools of fish had not migrated south of Chesapeake Bay – Prelim NC Trip Ticket Data indicate 4,500 pounds of fish landed.

- *Questions and discussion points:*
  Q: What is the recreational quota on striped bass?
  A: There is no quota but a limit of two/day.

  Q: Did you have 100% observer coverage on the beach seine?
  A: No, NMFS allocates a percentage of sea days for observation of fishery.

Q: How much enforcement takes place on the striped bass fishery?
A: Quite intensive—virtually everyone has his own state enforcement officer.

Q: Will NCDMF's new rules result in a reduction of effort in the beach seine fishery with use of multi-filament webbing?
A: Some thinking that it may make sense to go to a limited access fishery to set the number of participants. At present, some fishermen have both gear types and will switch gear types when the quota for one type is reached.

F. Review of Spiny Dogfish Fishery

Red Munden, NCDMF, presented information on the spiny dogfish fishery in North Carolina. Please reference meeting material, titled "North Carolina Spiny Dogfish Fishery January 2009."

- *Key points:*
  - Problematic fishery for North Carolina and Virginia as both states lie on the southern edge of the range. While16% of harvest quota is now allocated to North Carolina (almost 1.3 million pounds for 2008/2009 fishing year), the New England states historically fished most of the quota.
  - North Carolina proclamation sets daily possession limit at 3,000 pound per fishing operation and prohibits gill nets greater than 7 inches stretched mesh.
  - All North Carolina fishing occurred in state waters due to federal closure provisions.
  - Eighteen day season results: 1.4 million pounds caught; 9-71 vessels out on any one day.
  - North Carolina 2009/2910 quota will be reduced 147,000 pounds due to current year exceedance.

- *Questions and discussion points:*
  Q: Any idea how many nets or how much soak time to catch 3,000 pounds?
  A: Fishermen might carry two 300 pound nets but seldom set both at once. The amount of gear set for spiny dogfish is a fraction of what it was before the closure.

  Q: Can the fish be transferred?
  A: Yes.

  Q: What is the average price?
  A: Fifteen cents a pound.

  Q: Where do they fish?
  A: All up and down the coast.

  Q: Is there a preference to fish in state or federal waters?
  A: Most of the current landings are inside state waters.

  Q: How does the observer program deal with multiple efforts?

A: Whatever boat they are on is what effort they observed.

Comment: This is a high volume/low price fishery that involves mainly day sets for a couple of hours. There is not even 25% of the fleet left, and no influx to drive fishery to what it was. Currently, there are only a couple of hours of fishing, and the fishery will be what it was.

Comment: There have been no observed bottlenose dolphin interactions this year.

G. Pingers in Spanish Mackerel Gillnet

Danielle Wables, Duke University, presented information on the pinger research results in the Spanish mackerel gillnet fishery. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "A pilot study to test the efficacy of pingers as a deterrent to bottlenose dolphins in the Spanish mackerel gillnet fishery" and reference meeting material, titled "A pilot study to test the efficacy of pingers as a deterrent to bottlenose dolphins in the Spanish mackerel gillnet fishery."

- *Key points:*
  - Used louder pingers during 2009 testing (70 kHz at 145dB, originally used 10 kHz 132 dB).
  - No significant difference in catch between experimental and control.
  - Fewer instances of dolphins approaching active nets.
  - Both 70 kHz and 10 kHz pingers did not prevent dolphin depredation.

- *Questions and discussion points:*
  Q: Did fishermen turn off the depth finders? Depth finders also make a loud noise.
  A: No, they did not turn them off during the test.

  Q: What is the depth of water?
  A: Shallow (8-12 ft) and offshore (16-20 ft).

H. Modified Leaders in VA Pound Net Fishery

Sue Barco, Virginia Aquarium, presented information on modified leaders on pound net gear in VA. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "The VA Pound Net Fishery: Interactions with bottlenose dolphins - solving the problem" and reference meeting material, titled "Do alternative leaders affect fish catch in pound nets at the mouth of Chesapeake Bay?"

- *Key points:*
  - Leader part of the fish trap is the major problem for dolphins. Highest densities of dolphins strand in vicinity of pound nets.
  - Used the same modified leader design as currently required for sea turtle conservation and evaluated the effect of modified leader on finfish catch for nets at Cape Henry.

- Catch data results showed experimental leaders had greater than or similar catches compared to control nets, and non-target species were reduced (i.e., rays).
- VA turtle rule stipulate the use of new modified leaders.
- Continued monitoring is needed to confirm hypothesis that dolphin interactions will be reduced in the modified leader nets.

- *Questions and discussion points:*

Q: Does the ratio of vertical hedge to mesh have to be the same from net to shore?
A: Vertical hedge is not required for inshore nets. After a certain depth you are able to have all mesh.

Q: Were there any documented interactions in the experimental leader?
A: No, but this was not what we were testing.

Q: There is still lot of unknown causes of death (regarding stranding data)?
A: Yes, we were very conservative in assigning cause of death.

Comment: Need to use acoustics to ensure whether the dolphins are being caught deeper down in the water/net.

Q: Do turtles get into the pound head with the modified leader?
A: Very few.

Comment: Industry will need time to modify the gear.

I. Review of Virginia pound net fishery

Lewis Gillingham, VMRC, presented information on the VA pound net fishery; referencing material titled "Virginia Pound Nets 2009."

- *Key points:*
  - VA pound nets are regulated by: 1) Code/legislation (possible change once a year; does not often change); 2) VA Marine Fisheries Commission (possible change every three months); and 3) Federal regulations for protected species.
  - Federal review of modified leaders must be done 48 hours before setting.
  - VMRC regulates gear requiring pound nets to be a (1) maximum length of 1200 ft; (2) minimum mesh size of 2 inches stretched: and (3) no more than 1/4 the width across any water body, and unlawful to place within 300 yards of fixed gear.
  - VMRC limits the sale of pound net licenses.

- *Questions and discussion points:*

Q: In NC, are pound net locations grandfathered?
A: No, it is similar to VA – reapply each year for the specific location in question.

VI. Mitigation Discussion for NNCES

A. Review current BDTRP regulatory measures pertinent to the NNCES

Stacey Horstman, NMFS, presented the regulatory measures related to NNCES, for small, medium and large mesh nets. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "BDTRP Regulations Pertaining to the NNCES."

- *Key points:*
  - Small Mesh – fishing prohibited for nets over 1000 ft in Northern NC state waters; May 1 – October 31.
  - Medium Mesh: (1) No night fishing November 1- April 30 in Northern and Southern NC state waters; (2) No night fishing for anchored nets unless remain within a half nautical mile from gear, June 1- October 31 in Virginia, Maryland, Delaware, and New Jersey state waters.
  - Large Mesh: (1) No fishing; April 15 – December 15 in Northern and Southern NC state waters; (2) No night fishing for anchored nets unless remain within a half nautical mile from gear, June 1- October 31 in Virginia, Maryland, Delaware, and New Jersey state waters; (3) No fishing without tie downs, December 16 – April 14 in Northern NC state waters; and 4. No night fishing, December 16 – April 14 in Southern NC state waters.
  - Gaps in regulations for the NNCES: (1) Small mesh gillnets – New River to Cape Lookout (southern end) and NC border to mouth of Chesapeake Bay (northern end); 2. VA pound nets - NC border to mouth of Chesapeake Bay (northern end_.
  - Point for discussion: Medium mesh regulation ending (renew sunset, make permanent, remove).

- *Questions and discussion points:*

  Q: What are the fisheries for small, medium, and large mesh nets and the level of effort involved now?

  A: It varies, depending upon the species, time of year and the weather. Medium mesh is dogfish, king and Spanish mackerel, and striped bass. Effort dropped 75% in last 5 years. Large mesh is mostly monkfish with only about 10 days per year. Small mesh is flounder, blue fish, whiting, Spanish mackerel, and smooth dogs. There are only about 8-10 boats.

  Q: Can you recall how 1000 feet was arrived at as a maximum net length?

  A: The thinking was that smaller lengths might reduce entanglements although nothing magical about the 1000 foot length. In general, there was a correlation of incidents with larger nets and entanglements toward the end of the net. The old net lengths were typical 1200-1400 ft.

  Q: Did the reduction in length work?

  A: Difficult to tell. Two recent takes were in net lengths about 900ft.

Comment: The dolphins may be becoming net-wise—it is learned behavior. It seems nets are attacked more often by the animals with xenos. It may be that the estuarine animals are more net-wise than the migratory stock.

Comment: These are useful comments about depredation. We do not know if the animals doing the depredating are the same ones being caught or not. We suspect not, however, we are not sure and learning what animals get caught is important.

Comment: The animals know my boat and know when I am setting net. The pinger annoys them but they have learned to deal with it. It is marketed as a deterrent and in fact is one.

B. Potential Variables That May Assist With Mitigation

Debi Palka, NMFS, presented information on the factors related to bycatch in the NNCES stock. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Factors related to high bycatch in the NNCES stock."

- *Key points:*
  - Using statistics to help experts think about potential gear modifications; looking for statistical correlations or patterns that emerge from the data.
  - Method: Generalized Additive Model regression to determine gear characteristics or fishing practices that are statistically correlated with bycatch rates.
  - Data: all hauls after TRP and hauls pre-BDTRP that did not target spiny dogfish nor confirm with TRP and sea turtle regulations.
  - 3 hauls with observed takes; 3359 observed hauls; and 794 observed trips.
  - Results: variables most highly correlated with bycatch rate (in order):
    - Depth of water (5'-10'), gear length (900'-1000'), water temperature (21.6-31 °C), soak duration (3-6 hrs) and month (September-November).
    - Questions as to whether these can be used to develop bycatch reduction measures; reduce bycatch estimate, be economically feasible, and easy to enforce.

- *Questions and discussion points:*

Q: I cannot help but wince when effort is referred to in terms of metric tons as that does not directly correlate to gear in the water.
A: We can use other measures such as length of net x soak duration x height for effort and results are the same.

Q: I agree that you have it for observer data but when you go to the state information it refers to landings, not unit of effort, correct?
A: Yes, correct.

Q: How does September have a higher correlation?
A: It doesn't, just a higher bycatch rate.

C. Discussion, Consensus Recommendations and Next Steps (Note – this is for information pertaining to the stocks in North Carolina; participants had about 2 hours to address questions).

Participants divided (predetermined) into four groups and addressed the following questions:

1. What additional recommendations, either regulatory or non-regulatory and/or modifications to the plan are necessary to reach the short-term goal?
2. Are there additional gear modifications/regulations to help reduce interactions with dolphins and small mesh gillnet gear?
3. Given that the new stock structure includes estuarine waters, should the inshore waters of North Carolina be regulated under the plan? If so, in what way should they be included?
4. To help reduce and prevent dolphin interactions with VA pound nets, should modified leaders be required in those areas of Chesapeake Bay where their use is not currently required? If so, should these be required year-round in Chesapeake Bay?
5. Regarding the medium mesh restrictions in NC, should the new sunset clause date of May 26, 2012 be extended again for a certain time period, allowed to expire, or extended indefinitely?

a. *Small group report outs*

i. *Group 1*

- Need a regulatory requirement for small mesh in NNCES (Q1-3).
- Questions 1 and 2:
  - For gaps in small mesh regulations in the southern and northern extent of the NNCES, do not think it is worthwhile to extend small mesh regulations to either end based on current gear lengths used in those areas (VA beach area is 1200 ft; Southern NNCES is 1200 ft).
  - Scenarios PBRs – either we are under or way over – need to know what we would do if we are at the maximum scenario.
  - Research:
    - Investigate which animals are taken by documenting dorsal fins from observed takes and strandings – use dorsal fin and biological data to assign stock.
    - Dedicated research during the summer of NNCES to better define distribution of stock.
- Question 3:
  - Observe Spanish mackerel inshore, Pamlico Sound.
- Question 4:
  - Extend the modification requirements to year round and similar areas other groups discussed.
  - Include certifications requirements as in turtle regulations.
  - Include provision for potentially similar gear (loop-hole).
- Question 5:

- Medium mesh regulation should be permanent – it has conservation benefits.

ii. Group 2

- Question 1 and 2– no real consensus but several points that merit discussion:
  - Possibly extend small mesh restriction to November because of 1995 take.
  - Move nets based on water temperature (as done in Hawaii); notify fishermen of change in water temperature.
  - Discard any illegal feeding issues – regulatory discard issues needs to be looked into.
  - Bring carcasses to Bill McLellan.
  - Incentives for self reporting – will not count against PBR but will provide more information.
- Question 3:
  - Not enough information to clearly identify the problem for inshore.
  - Trap/pot takes do occur inshore and warrant more discussion.
- Question 4:
  - Need research on modified leaders for dolphins (currently all research is for turtles).
  - Extend the modified leader requirements off Cape Henry and would need to change the 12' mesh rule.
  - Include all waters east of Chesapeake Bay bridge Tunnel because there is some indication that pound nets are moving outside the mouth of the bay
  - Extend time from March – November for dolphins.
  - NMFS send a letter to fishermen in advance notice of proposed rulemaking so they can start getting ready.
- Question 5:
  - Drop the sunset provision and keep medium net regulation indefinitely.
  - Research:
    - Continue genetic research.
    - Discard research (feeding) – attracts dolphins; some regulations say discard immediately – do we want to change this to disconnect the haul from dolphins?
    - How do different stocks work/depredate gear? Do some interact more aggressively with gear (i.e. migratory vs. estuarine)?
    - Develop real reproductive rate/growth rate for dolphins.
    - Work with ECU acoustics to track dolphins.

iii. Group 3

- Question 1 and 2: No regulatory recommendations but gear modification and research recommendations.
  - Reliable abundance estimate for estuarine stocks to ensure PBR is adequately assigned.
  - More reliable genetics to assign to determine stocks.
  - Ensure photo-ID records are incorporated into the Mid-Atlantic catalog to see where/when stock is in estuarine waters.

- Stop net fishery (similar to leader) look at modifications or gear additions to acoustically deter dolphins.
- Need more information from observer program and fishermen to find out where dolphins are entangled in nets.
- Give carcasses to Bill McLellan or Sue Barco.

- Question 3:
  - No change for inshore.
- Question 4:
  - Extend modified leaders to east of bay bridge tunnel area and other VA waters – regulation areas 1 and 2 (east of 1).
  - Time: May – Nov – when dolphins are consistently in the area.
  - Ensure current deep water is included in rule (deep = 12' at mean low water or greater (depth); any leader line or pole in more than 12' of mean low water:
    - 12' – net fishermen said most problems have occurred in more than 12'.
    - Less than 12' - there is no research to show impact in less than 12' of water; could use lower number if research shows a problem.
    - Intent – change definition of "inshore" and not "deep shore."
    - Concern – 12' number without research/evidence for that number.
  - Ensure turtle and dolphin rule are the same 12' (turtle is 10').
  - Need more research (sonar) to determine if interactions in bottom third of net.
  - Eastern shore, how many pound nets are inshore nets that would be affected if deepwater were defined as >12'; would they rather change length of net to fit under definition or adapt in some different way?
  - Information on where in the gear the animals are caught (top 1/3, bottom 1/3, etc.).
  - Outreach to fishermen on any impending rulemaking.
  - Enforcement is important for any compliance whether it be by VMRC of OLE – need an MOU to ensure it occurs.
- Question 5:
  - Extend medium mesh requirement.

iv. Group 4

- Question 1:
  - More abundance work with genetics, satellite tags, etc.
  - Animal recovery is important, especially for observed takes. At a minimum, need to photo-ID and genetic data from observer program.
- Question 2:
  - No specific regulations for small mesh net fishery, which is mainly Spanish mackerel. Not currently enough information to recommend anything.
  - Continue pinger research if it shows promise.
- Question 3:
  - Include inshore in plan, but no regulations.

- More information about what fisheries are taking place inshore, and more observer coverage.

- Question 4:
  - Recommend modified leaders for offshore nets be used and all year or March – November (effectively the same thing for when the fishery is active).
  - Required east of Chesapeake Bay Bridge.
  - Not for inshore nets because there is not enough information.
  - Gear modification has not been tested for dolphins and need to test if it will be effective – good to test east of the Bay Tunnel because there is nothing there now and it is historically a high take area.
  - Cover the areas best for dolphins' not just duplicate turtle rule.
- Question 5:
  - Extend the date for medium mesh net restrictions but no consensus on date or permanent removal of sunset clause.

b. *Consensus Recommendations*[3]

Participants discussed, edited and built agreement around a document synthesized from the small group report outs. Below are the consensus agreements: (See appendix 2 for copy of the beginning synthesis).

i. *Virginia Pound Net Fishery*

1. Adopt a modified leader for Virginia Pound Net Fishery
   - Extend the modified leader requirements (consistent with sea turtle leader design) east of Regulation Area 1 to incorporate the portion of area Regulation Area 2 out through the Chesapeake bay mouth and along Virginia coastal waters, east of the Chesapeake Bay Bridge tunnel.
   - Extend the time requirements for the modified leaders to year round.
   - Change the definition of "inshore pound net" from what is defined in sea turtle regulations to a pound net with a leader starting from 10' horizontally from mean low water and ending at king post at 12' or less at mean low water (depth) to ensure the king post-stake does not extend beyond 12' MLW. The offshore definition will remain the same as for the sea turtle regulations (see 50 CFR 222.102).
   - Ensure consistency between the regulations for sea turtles under the Endangered Species Act and any forthcoming dolphin regulations under the Marine Mammal Protection Act pertaining to Virginia Pound Nets.
   - Include the same pound net inspections and certifications as for the federal sea turtle regulations [50 CFR 223.206(d) (10) (vii)] or help ensure compliance and facilitate enforcement.
2. Form a Virginia Working Group
   - Further refine BDTRT consensus recommendations pertaining to the Virginia pound net fishery to inform rule making.
   - Develop proposals for pound net gear research.
   - Develop clarification on gear similar to pound nets (i.e., loop-holes).

[3] See September 24, 2009 letter from National Marine Fisheries Service to the Virginia Marine Resources Commission.

- Discuss how to address pound nets that straddle in/offshore definitions.
- Identify how many pound nets are inshore nets that would be affected if offshore were defined as greater than 12' and identify whether fishermen would change the net length to fit under the definition or change gear type.

3. NMFS to send a letter to fishermen informing them that it is proceeding with rulemaking. This allows fishermen to prepare for anticipated rule changes.
4. NMFS to send a letter to the Virginia Marine Resources Commission to inform them of the BDTRT's recommendations pertaining to the VA Pound Net fishery.

ii. Medium Mesh Restriction - Adopt permanent restrictions on medium mesh night time fishing (i.e., remove the sunset clause)

iii. Priority Research – TRT identified the following priority research priorities

1. Determine the stock identity of bottlenose dolphin observed takes, or strandings, with evidence of fisheries interaction by matching dorsal fin images to Mid-Atlantic Bottlenose Dolphin Catalog or obtaining genetic samples (required to be provided by observers).
2. Obtain reliable abundance estimates per stock to ensure PBR is adequately assigned, to know what animal is from what stock.
3. Refine the understanding of the distribution of the NNCES stock in ocean waters particularly with respect to the distribution of past takes or overlap with other stocks (including summer locations).

iv. Estuarine Waters (N.C.) – No new regulations, but suggest the area should be included in the geographic scope of the plan

vi. Other Issues Considered but No Action at this Time

- Consider gear research exemption in the BDTRP for stocks below zero mortality rate goals (ZMRG).
- No extension of the small mesh net length restriction from Cape Lookout to Virginia border from October to November, nor adding restrictions from New River to Cape Lookout and the NC/VA border to the VA beach area.
- A minimum and maximum scenario was presented for where mortality estimates are relative to PBR. What would we do if we are at the worst case scenario (maximum) for the NNCES? NC Department of Marine Fisheries has the option to issue proclamations for real-time regulations and closure and would be happy to help in this way. The team also recommended NMFS immediately convene the BDTRT either via conference call or in-person meeting if we are over PBR for the NNCES.

vii. Observer Program/Mortality Monitoring

- Enhance observer documentation of dorsal fin photos and collection of biopsy samples from observed takes. If possible, collection of the whole carcass should be the priority for observed Tursiops takes to maximize data collection. The USCG may be an asset to help tow in the carcass if the fisherman's vessel is too small.

- Provide observer coverage for the inshore Spanish Mackerel fishery (i.e. Pamlico Sound) and more information about the fishery characteristics.

viii. Monitoring evaluating effectiveness

- Enforcement is important for compliance and there should be coordination with the state's and other federal entities to ensure adequate enforcement, especially for regulations pertaining to the VA pound net fishery.
- Outreach to fishermen is important for all forthcoming regulations, especially regulations pertaining to the VA pound net fishery.
- Consider fishermen work groups to facilitate outreach about how/where dolphins are interacting with nets and discuss the importance of reporting all marine mammal interactions with gear (David Hilton, NMFS is interested), such as:
  - Bringing caresses or biological data.
  - Ascertain whether the end of nets is where the problems are prevalent.
  - Incentives for self reporting to learn about how/where dolphins are interacting with nets – not double counting/adding to PBR (if accounted for in observer).

c. *<u>Research Recommendations (Note – these are in addition to the research priorities listed above)</u>*

i. Gear Research -

- Examine information available from documented pound net/dolphin interactions (water depth at location of entanglement; horizontal and vertical location of entanglement in the leader), and from depth profiles of existing inshore pound nets (as defined by the turtle rule), to: 1) determine if inshore nets pose an entanglement risk for dolphins; and 2) determine if there is a correlation between water depth and dolphin interactions.
- Stop net fishery - explore mitigation options for the North Carolina stop net fishery, including pingers.

ii. Stock Structure

- Cluster analysis of Photo ID catalogue to compare animal movement with new stock structure now proposed.
- Understand what is happening in deeper water fisheries in Pamlico Sound
- Genetic research relative to assist with eventually being able to assign an individual animal to a specific stock.
- Are there acoustic keys to distinguishing between stocks? (It was noted that this topic might be of lower priority as it may involve high effort/ low yield).
- Dolphin behavior – How do different stocks (i.e., migratory vs. estuarine) work the gear? Are some stocks more aggressive, more gear-wise?

iii. Stock Assessment - Growth Rates - Figure out growth population for dolphins – should be more precise than the 4%, not just average/assign same to each *(Again noted that this might be another high effort low yield topic and thus of lower priori).*

d. *<u>Other issues</u>*

- Reconcile practices related to illegal feeding and discarding that attract dolphins. Identify current regulatory discard regulations per state and perhaps consider "exemptions" in discards.
- Concern was expressed about the number of research takes.
- Concern was expressed about the challenge of addressing small stocks where one take could exceed PBR.

VII. Stock Structure, Mortality and Abundance Estimate for Remaining Stocks

A. Updated Stock Structure and Abundance and Mortality Estimates for Remaining Stock and Human-caused Mortalities and Non-observer Fishery Mortalities.

Patricia Rosel, NMFS, presented an update about abundance and mortality estimates for the remaining stocks. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Stock Structure, Abundance and Mortality for Coastal Bottlenose Dolphin Stocks South of North Carolina."

- *Key points:*
  - Nine new stocks:
    - Six estuarine stocks – (1) Charleston Estuarine System stock; (2) Southern South Carolina/Northern Georgia Estuarine System stock; (3) Southern Georgia Estuarine System stock; (4) Jacksonville Estuarine System stock; (5) Indian River Lagoon System stock; (6) Biscayne Bay, Florida stock.
    - Three coastal stocks: (1) South Carolina/Georgia Coastal stock; (2) Northern Florida Coastal stock; and (3) Central Florida Costal stock.
  - Abundance estimates:
    - Unknown for estuarine stocks
    - Coastal Stocks: South Carolina/Georgia Coastal-7948(0.29), Northern Florida-3064(0.24), and Central Florida- 6317(0.26)
  - PBR:
    - Unknown for estuarine stocks
    - Coastal Stocks: South Carolina/GeorgiaCoastal-63, Northern Florida-25, Central Florida-51
  - Mortality: Indian River Lagoon has the highest annual mortality for FI stranding (31), with a mean annual mortality of 4.43.

- *Questions and discussion points:*

  Q: Gillnets are outlawed in Florida so was the trammel net interaction due to illegal fishing or something else?

  A: That jumped out at us at NMFS too. We are checking with FWC.

  Q: What was the basis for designating the 3 coastal stocks as strategic?

  A: Because of the 1997-1998 die-off.

Comment: It should be flagged that some of these takes result from research activities. Need to look for ways to minimize research takes in vulnerable populations.

VIII. Data Review for Remaining Stocks

A. Stranding Data

Barbie Byrd, NMFS, presented information on the stranding data from the remaining stocks. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Bottlenose Dolphin Strandings in New Jersey, Delaware, Maryland, South Carolina, Georgia, and Florida" and reference meeting material, titled "Bottlenose Dolphin Strandings from New Jersey to Florida, January 2002 – April 2009."

- *Key points:*
  - HI FI strandings before/after the plan for remaining states:
    - NJ = 5 pre-plan with monthly average of 0.09 and 4 post plan with monthly average of 0.11; Three of 4 post plan were from gear consistent with hook and line and trap/pot.
    - DE = 4 pre-plan and 0 post-plan.
    - Maryland = 3 pre-plan and 2 post-plan; strandings post-plan were FI unknown.
    - SC = 16pre-plan and 3 post-plan; 2 of 3 post-plan were attributed to gear consistent with trap/pot and 1 FI unknown.
    - GA = 5pre-plan and 1 post-plan with cause attributed to the blue crab pot.
    - FL = 40 pre-plan with monthly average of 0.75 and 33 post-plan with monthly average of 0.94; post plan cause was mostly attributed to gear consistent with hook and line fishery (n=21), gear consistent with trap pot fishery (n=5), trap pot fishery (n=1), stone crab fishery (n=1), blue crab fishery (n=1), and trammel net (ne1).
  - Most causes for post plan implementation have been hook and line, trap/pot, and FI unknown.

- *Questions and discussion points:*

  Q: There are two categories of hook and line gear. Why is one recreational?

  A: Sent to gear analysis group and confirmed that it was definitely recreational hook and line. Further analysis is needed to confirm other gear and that it is recreational for certain, so we were being conservative.

  Q: It seems like a significant number of recreational fishery takes. Who regulates?

  A: Those are illegal takes as they have no exemptions. But not regulated through §118 of the MMPA.

B. Dolphin/Crab Pot Fishery Interaction Studies in South Carolina

Stacey Horstman read Wayne McFee's, NOAA/NOS/CCEHBR, presentation on the crab pot fishery. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Dolphin/Crab Pot Fishery Interaction Studies in South Carolina."

- *Key points:*
  - 2 studies currently ongoing: (1) focal follows of bottlenose dolphins around crab pot buoy lines; and (2) acoustic detection of bottlenose dolphins around crab pots.
  - Current results for focal follows study: 635 sightings and 16% within 20m of the buoys; "tugging" on the line occurred over 5 sighting periods; tail whacking also observer – need to explore social aspects of crab pots.
  - Current results for acoustic detection study: 8 deployments with 4 at each site; one full week of land-based observations; inconsistencies with recorders and battery life created challenges and appreciate any suggestions; data is being analyzed by Ismail software.

- *Questions and discussion points:*
  Q: Why is the line attached to the top of the pot? Fishermen input is needed to get it right.
  A: Will pass along these thoughts to Wayne McFee.

IX. Discussion of Remaining Stocks

Participants divided into four working groups and addressed the following questions related to stocks south of North Carolina (*Note- participants only had about 20 minutes to address questions due to time limitations)*:

1. Are the current non-regulatory gear modification measures sufficient for the crab pot fishery given the addition of new Bay, Sound, and Estuary stocks? If not, how should they be modified? Should regulated waters be expanded to include estuarine waters for the use of crab pot gear?
2. For the coastal stocks with abundance and mortality estimates, are the current regulations sufficient to rely upon to ensure the long-term goal is met? If not, how should they be modified in either timing or content?
3. Given the lack of data for the new Bay, Sound, and Estuary stocks and the pressures to these small stocks, are there any research recommendations, either biological or gear-related, that should be conducted?

A. Small group report out
   a. Group 1
      - Don't know enough to offer clear recommendations.
      - Research and characterization for blue crab fishery:
        - Characterization of vertical lines in the water.
        - Risk assessment – how many lines in the water is derelict gear a problem? FL and NC have gear cleanups but GA and Sc do not. What is state's role?

- Dolphin research:
  - Abundance and stock estimate – better delineation.
  - Assign mortality for stocks.
- Gear markings for recreation and commercial trap pots.
- Reduce lines in the water – decrease buoys.

b. Group 2 (focused on question 1): How much recreational and derelict gear is there?

- Four Step Plan:
  - Catalog trap modifications in different areas.
  - Technology transfer workshops between fishermen.
  - Research on promising methods.
  - Regulate promising methods.
- Estuarine waters should be included under the plan.

c. Group 3 (focused on question 3)

- Research:
  - Mine existing stranding data to differentiate trap pot interactions between recreational and commercial.
  - Quantify the difference between bait wells and no bait wells and potential reduction in bycatch.
- Concern about high impact of one take on stocks of small size.
- Require gear marking for commercial and recreation (even if require commercial to be marked and unmarked is recreation).

d. Group 4

- Not enough information to answer questions; need more information on stock structure.
- Research:
  - Population assessments on stocks with photo-ID and mark-recapture studies.
  - Entanglement causes – swim through/around lines or depredation.
  - Fishery information – from inshore to open water (where and what).

B. Consensus Recommendations

Participants started discussion and built agreement from a synthesis of small group report outs (see appendix 3 for copy of the beginning synthesis); specific to blue crab trap/pot fishery.

- Establish a four-Tiered approach to better characterize, understand, and potentially mitigate interactions in the crab pot fishery:
  1. Characterize various aspects of the fishery, including the following:
     - What is the extent of vertical lines in the water?
     - Determine various gear marking requirements, including differences between commercial and recreational fisheries.
     - Better understand the effort of commercial and recreational crab pot fishing in each state.

2. Catalog and document all trap/pot modifications that are being used in different areas.
3. Conduct a technology transfer workshop among fishermen to discuss the various trap/pot modifications and additional ideas.
4. Explore regulating the most successful recommendations to mitigate interactions.

- Recommend all states develop programs to remove derelict trap/pot gear.

C. Research
- Enhance stock assessments to better assign mortality.
- Conduct mark recapture abundance estimates for estuarine stocks.
- Investigate whether dolphins depredating/pot tipping are the ones becoming entangled.
- Mine existing data and enhance capability to better determine whether crab pot gear is recreational or commercial.
- Quantify differences between gear that has inverted bait wells and gear that does not—what is the effect on bycatch?

D. Characterization - More information is needed regarding many aspects of the crab trap fishery
- What is the extent of vertical line in the water?
- Characterize gear marking, including differentiating between commercial and recreational fisheries.
- Better understand effort of commercial and recreational crab pot fishery.

E. Other
- Concern expressed about the number of research takes.
- Concern also expressed regarding the challenge of addressing small stocks where one take could exceed PBR. (e.g., pot fishery, see below).

X. Discussion of Consensus Document

A. Stock Structure Issues

The TRT discussed the draft consensus document developed the previous day. Key questions and issues raised included:

Comment: Priority will be to establish working group[4] for VA to address outstanding questions on regulations and consistency; one rulemaking for TRP to amend medium mesh and pound net; new NEPA analysis (likely EA) as one done for first rule is outdated. Time frame: 1-2 yrs.

[4] Initial workgroup volunteers: Sue Barco; Joe DeAlteris; Lewis Gillingham; David Laist; Mark Swingle; Sharon Young; Red Munden, and Kenny Heath

Q. Clarify inshore waters. First bridge or embayment? Will this extend plan into all NC estuary waters, how far upstream.
A: Circling back. Geographic area of plan based on distribution/ range of coastal morphotype, distinction is area of effect of plan would go into inshore area of plan, considering estuarine stock/ fishing gear effects. Regulated waters first bridge to 3 NM; now stocks going inshore considering the affects inshore.

Q: Inshore means inshore up on the beach? Shouldn't it say inshore estuarine waters? Inshore means under the beach.
A: We're meaning estuarine waters. Need clarification. Inshore vs. inner shore.

Comment: Be clear that the only regulatory change being contemplated almost does nothing in terms of the NNCES mortality estimates. If it's 19 per year, we're way over PBR; we may not be anywhere near meeting short-term let alone long-term goal. We don't even have any reasonable ideas about what regulatory changes might be. Virginia pound net is a good regulation but it may be more around the edges, not heart of matter.

Comment. Not much more we can offer with pingers as mitigation for gillnet gear.

Comment: Pingers sound like deterrent devices, we're adding more noise to the sea, don't think it's a good thing especially if widely adopted.

Comment: If dolphins are not aware of consistency of net at end and becoming entangled, maybe put pinger at end of net in hopes that they would avoid that corner as they lead down the net. Something has to awaken them to changes at end of net.

Comment: It may make sense to assemble a group of experienced fishermen together to discuss ideas about what works/what doesn't and see what can be done to solve problems.

B. Research Issues

Comment: Acoustics and growth rates, high effort, low yield, take off altogether. No reason to leave things on list where they are unrealistic. Growth rates require 10 years statistical data. As for acoustics, people will do it anyway for fun, but can take off priority list.

Q: Have we dorsal fin photos collected from observed takes?
A: We requested photos be provided. There are photos, but no dorsal fin photos. For 13 of 18 there were photos; sometimes animal doesn't even come on board and we cannot get photos.

Comment: Carcass collection should be first priority. Can we provide incentives to the fishermen?

Comment: What is likelihood enough fishermen could just call stranding network to notify them about a carcass and allow better recovery chances? Perhaps the

fisherman's working group suggested earlier could think about how to improve carcass-collected information.

Comment: Fishermen group great idea. Invite stranding folks.

Comment: Regarding ways to prevent illegal feeding of dolphins and attracting to boats, NMFS should begin by changing its own regulations from possession to landings; states would follow suit. Language of possession versus landing of regulatory discards.

Comment: Regarding illegal feeding, there are two distinct problems. One is commercial where fishermen must discard as soon as possible during operations subject to season, size and catch limit. Let fishermen know to discard undersized catch/bycatch at o different site, where possible, to avoid dolphins. On the recreational side, direct feeding occurs in some cases contributing to more dolphin interactions.

XI. Measuring and Assessing Effectiveness

A. GAO recommendation

Melissa Andersen, NMFS, presented information on the GAO recommendations. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: GAO Recommendations.

- *Key points:*
  - Tasks: Identify marine mammal stocks; establish TRTs for those stocks; meet deadlines for teams convened; and evaluate effectiveness of take reduction regulations.
  - GAO Recommendations to Congress: Direct NMFS to report on factors that affect its ability to meet requirements; amend MMPA to add fisheries that cause at least occasional incidental mortality or serious injury; and amend MMPA to ensure deadlines give adequate time to publish proposed and final TRPs and implement regulations.
  - GAO Recommendation to NMFS: Develop a comprehensive strategy for assessing effectiveness of each TRP and implement regulations for monitoring and analyzing rate of compliance with TRP measures.

- *Questions and comments:*
  Comment: One of the conclusions of GAO report is that a primary reason NMFS has not met TRT mandates is lack of scientific information and a lack of resources. It would be more useful to have more balanced presentation of limitations and successes/ accomplishments. Two things. 1) recognize limitations, 2) agency should convey to GAO what NMFS can and can't do or risk receiving no support for more observer coverage, FTEs, etc.

Summary of Changes to BDTRP

Stacey Horstman, NMFS, presented information on changes to BDTRP. You may find the presentation on the BDTRT website http://www.keystone.org/BDTRT/, or by clicking on the title: "Summarize Changes and Outcomes to BDTRP."

- *Key points:*
  - Geographic area: Add within the shoreline out to the Continental Shelf Break from Cape Hatteras, North Carolina.
  - Category II: add Mid-Atlantic Menhaden Purse Seine to affected fisheries under the BDTRP.
  - Coastal Morphotype - 13 new strategic stocks:
    - Bay, Sound, & Estuary: (1) NNCES; (2) SNCES; (3) Charleston Estuarine; (4) Northern Georgia/Southern South Carolina Estuarine; (5) S.GA Estuarine; (6) Jacksonville Estuarine; (7) Indian River Lagoon Estuarine; and(8) Biscayne Bay ;
    - Coastal :(9) Northern Migratory; (10) Southern Migratory; (11) SC/GA Coastal, (12) N.FL Coastal; and (13) Central Florida Coastal.

- *Questions and comments:*
  Q: Does the mid-Atlantic menhaden purse seine include into Chesapeake?
  A: Yes.

  Q: Mistake on southeast Atlantic gillnet?
  A: Sorry, should be shark gillnet.

B. Review Previous Monitoring Efforts for BDTRT

Stacey Horstman, NMFS, presented information on monitoring efforts. To see a list of questions asked during the meetings go to Monitoring Questions and reference meeting material, titled "Accomplishments toward Monitoring and Evaluating the Effectiveness of the BDTRP."

- *Key points:*
  - Serious injury and mortality monitored through observer and stranding programs; biological data; and compliance monitoring
  - Effectiveness is evaluated by monitoring the rate of serious injury and mortality of dolphins relative to short- and long-term goal
  - Main accomplishments:
    - Observer program – NC alt plat program; pulsed effort in northern NC; and additional striped bass coverage;
    - Stranding program – dedicated HI training workshops; collaboration with experts and network members on FI strandings and cause; and mining stranding data to document trends in FIs;
    - Biological data – new stock structure; new approach to estimate mortality; and evaluation alternate methods of measuring fishing effort;
    - Increasing compliance monitoring – heavy outreach campaign; enforcement training; trends in compliance with observer data.

- *Questions and discussion points:*
  Comment: Overarching first part, second more specific. 1) Adequate observer program to document observed takes; 2) Better/ adequate stranding response and 3) Gear analysis program to mine info from removed gear (recreational/ commercial type). Those are necessary elements to monitor how many/ when and what is killing dolphins.

C. Identify and Discuss Development of a Monitoring Strategy for the BDTRP

In plenary, participants discussed how to evaluate the BDTRP's effectiveness; what success looks like and what are the indicators. The following questions guided the discussion.

- *What are necessary elements and components to a comprehensive monitoring strategy?*
- *What are additional ways to continue to monitor and evaluate the effectiveness of the BDTRP?*
- *How should we evaluate the BDTRP's effectiveness given multiple stocks with multiple PBRs?*
- *Would more frequent updates on the status of effectiveness, outside of TRT meetings, be helpful or useful to assess effectiveness?*

- *Questions and comments:*
  Q: It is helpful to know how much money is needed for more and better information and better observer coverage, research, etc. We are meeting with OMB on Monday for NMFS/NOAA.
  A: During GAO audit, we were honest with funding limitations. Turned out to be helpful to NMFS because we received some funding for TRTs.

  Comment: Appreciate all the efforts to enforce and monitor the plan. We also need documentation of what occurs and a report on actions and results, especially in context of national compliance efforts and recommendations from GAO. Need a requirement for annual summary of federal/state enforcement efforts, regulatory provisions by area/fishery, and reports on observer program.

  Comment: NMFS should not have to waste their time on providing reports to the team. Updates at team meetings suffice.

  Comment: First we need adequate observer coverage to document observed takes. Second, better/adequate stranding coverage. Third, gear analysis program to mine information from removed gear. Those are necessary elements to monitor how many/when and what is killing dolphins.

  Comment: Gear analysis, completely unimpressed with what we get. In a recent case we had everything--pot, buoy--sent it but get no helpful response.

Comment: Monitoring elements are laid out explicitly under section 118 (how to do SARS, etc.) It is fundamental to have enough resources to do SAR as laid out under MMPA. Plus, an adequate observer program should be included within that.

Comment: False to say monitoring plan distinct from stock assessment plan. Moreover, within NMFS have stock assessment improvement plan policy document, resources, etc. Don't hide that a key limitation is lack of resources to do adequate stock assessments.

Comment: Exactly. We need to focus on bottlenose stocks with 2 unique aspects: (1) overlapping stocks is a very difficult process; and (2) small stock sizes is a problem. This complicate work and need to engage people on those limitations and how to better monitor.

Comment: You are effective if you know we're under PBR; we don't know, so we are not effective. We are not under ZMRG.

XII. Public Comment

There were no official comments provided during the Public Comment period. Several observers provided input during the earlier discussions.

Appendix 1: Agenda for the BDTRT Meeting

Bottlenose Dolphin Take Reduction Team
2009 Meeting
September 9-11, 2009
Wilmington, NC

Agenda

Meeting Purposes

1. Review revisions to the bottlenose dolphin stock structure and mortality estimates for the Western North Atlantic coastal and newly defined Bay, Sound, and Estuary stocks; and evaluate current BDTRP conservation measures given new stocks; and
2. Review current information on all stocks and determine needs to meet the plan's short- and long-term goals for each stock.

Meeting Goals

6. Review and discuss revised stock structure for the Western North Atlantic coastal bottlenose stock and newly defined Bay, Sound, and Estuary stocks, as well as associated abundance estimates, PBRs, and mortality estimates;
7. Evaluate mitigation measures for the Northern North Carolina Estuarine Stock to ensure the short-term goal is being met;
8. For remaining stocks, evaluate to determine the need for additional conservation measures for stocks lacking abundance and mortality estimates but data indicate potential concerns, as well as stocks with abundance and mortality estimates to determine the need for additional mitigation measures for meeting the long-term goal;
9. Review and revise scope of BDTRP as needed given new information; and
10. Identify mechanisms for continuing to monitor and assess effectiveness of the BDTRP.

Wednesday, September 9, 2009

8:30 a.m. Welcome and Introductions
Keystone

8:45 a.m. Getting Started
- Meeting purpose, objectives, and agenda
  Keystone
- Meeting guidelines

9:00 a.m. BDTRP Overview and Other TRPs
- Harbor Porpoise Take Reduction Plan Update — Borggaard
- Overview of existing BDTRP and framing discussions topics — Horstman

9:30 a.m. Structure and Abundance for North Carolina Stocks
Objective: Review and discuss revisions to the coastal and new bay, sound, and estuary bottlenose dolphin stocks overlapping in North Carolina waters, which includes the Northern and Southern Migratory stocks, and Northern and Southern North Carolina Estuarine stocks.
- Structure of North Carolina stocks — Garrison
- Abundance estimates and PBR for North Carolina stocks — Garrison
- Questions

10:45 a.m.	Break	
11:00 a.m.	Mortality Estimates for North Carolina Stocks *Objective: Review and discuss mortality estimates and causes of non-observed mortality for the coastal and new bay, sound, and estuary bottlenose dolphin stocks overlapping in North Carolina waters, which includes the Northern and Southern Migratory stocks, and Northern and Southern North Carolina Estuarine stocks.* • Mortality estimates for North Carolina stocks • Human-caused mortalities and non-observed fishery mortalities • Questions	 Rossman Garrison
12:15 p.m.	Lunch *Participants have seventy-five minutes for lunch. There are several restaurants within walking distance of the hotel, as well as a restaurant in the hotel. A list of nearby restaurants will be provided at the meeting*	
1:30 p.m.	Data Review for the Northern North Carolina Estuarine Stock (NNCES) *Objective: Review and discuss additional data and information for the NNCES for mitigation discussions to reduce mortality.* • Review observed takes, observer coverage, and compliance information • Review stranding data for North Carolina and Virginia • Review fisheries and gear operating within the NNCES: o North Carolina Inshore Gillnet fishery o North Carolina Beach Seine fishery o Spiny Dogfish fishery o VA Pound Net Fishery	 Rossman/Palka Byrd Horstman Price Munden Munden Gillingham
3:30 p.m.	Break	
3:45 p.m.	Data Review for the NNCES, Cont'd • Gear research presentations: o Pingers in the Spanish Mackerel gillnet fishery o Modified Leaders in Virginia pound net fishery	 Read Barco/Swingle
4:15 p.m.	Mitigation Discussions for the NNCES *Objective: Review and discuss potential mitigation and conservation measures for the NNCES to reduce mortality estimates below PBR.* • Review current BDTRP regulatory measures pertinent to the NNCES • Review potential variables that may assist with mitigation • Identify and introduce potential discussion questions • Break-out groups: discuss questions and potential mitigation measures	 Horstman Rossman Keystone
5:15 p.m.	Summary	
5:30 p.m.	Adjourn for the Day	

Thursday, September 10, 2009

8:00 a.m.	Housekeeping for BDTRT • Day one review and day two preview	Keystone

8:30 a.m.	Mitigation Discussions for the NNCES, Cont'd • Continue group discussion from yesterday	Keystone
10:30 a.m.	Break	
10:45 a.m.	Mitigation Discussions for the NNCES, Cont'd • Continue group discussion from yesterday	Keystone
11:15 a.m.	Stock Structure, Mortality and Abundance Estimates for Remaining Stocks *Objective: Review stock structure and available mortality and abundance estimates for the remaining coastal and new bays, sound, and estuary stocks.* • Updated stock structure and abundance and mortality estimates for remaining stocks • Human-caused mortalities and non-observed fishery mortalities • Questions	 Rosel Rosel
12:00 p.m.	Lunch *Participants have 75 minutes for lunch. There are several restaurants within walking distance of the hotel, as well as a restaurant in the hotel. A list of nearby restaurants will be provided at the meeting.*	
1:15 p.m.	Data Review for Remaining Stocks *Objective: Review and discuss available and pertinent information for remaining stocks relevant for conservation discussions.* • Stranding data • Fisheries and gear • Crab pot fishery research	 Byrd Horstman McFee
2:30 p.m.	Discussions for Remaining Stocks *Objective: Review and discuss conservation measures for remaining stocks.* • Review current BDTRP regulations associated with remaining stocks • Identify and introduce potential discussion questions • Break-out groups: discuss questions and potential mitigation measures • Plenary: report out from break out group discussions	 Horstman Keystone
3:15 p.m.	Break	
3:30 p.m.	Discussions for Remaining Stocks, Cont'd	
4:30 p.m.	Summary	Keystone
5:00 p.m.	Public Comment	
5:30 p.m.	Adjourn for the Day	

Friday, September 11, 2009

8:30 a.m.	Housekeeping for BDTRT • Day one and two review; preview of day three • Feedback on travel, meeting location, and meeting timing	Keystone

9:00 a.m.	Summarize Outcomes and Changes to BDTRP *Objective: Review and summarize outcomes and changes to the BDTRP from data changes and team discussions.* • Discuss and Review BDTRP geographic scope based on stock structure information, regulatory waters, affected fisheries and stocks	Horstman/Keystone
9:30 a.m.	Measuring and Assessing Effectiveness of the BDTRP *Objective: Discuss components of monitoring strategy for the BDTRP that will determine if the plan is effective at meeting its short- and long-term goals using the best available information.*	
	• GAO recommendation	Andersen
	• Review previous monitoring efforts for the BDTRP	Horstman
	• Identify and discuss development of a monitoring strategy for the BDTRP	Keystone
10:30 a.m.	Break	
10:45 a.m.	Measuring and Assessing Effectiveness of the BDTRP, Cont'd	
12:00 p.m.	Summary, Meeting Outcomes, and Next Steps	Keystone
12:30 p.m.	Adjourn	

Appendix 2: NNCES Synthesis: Start for Discussion and Agreement Building

Synthesis of Break-Out Groups for NNCES Stock – 09-10-09

REGULATORY

TENTATIVE CONSENSUS

VA Pound Net

- Extend modified leader requirements (consistent with sea turtle leader design) east of Regulation Area 1 to incorporate the portion of area Regulated Area 2 out through the Chesapeake bay mouth and along Virginia coastal waters, east of the Chesapeake Bay Bridge tunnel
- Time requirement is year round
- Change definition of inshore from what is defined in sea turtle regulations to starting from 10' horizontally from mean low water and ending at less than 12' at mean low water (depth). The offshore definition will remain the same the sea turtle
- Turtle and dolphin regulations should be consistent
- To help ensure compliance and facilitate enforcement, include same certifications as in turtle rule

Medium Mesh Restrictions/Sunset Clause (N.C.)

- Require night time fishing restriction in N.C. to be permanent (i.e., remove sunset clause)

Inshore Waters (N.C)

- No new regulations but some suggestion that area should be included in the area considered under the plan.

OUTSTANDING ISSUE

Small Mesh Net Length Restriction

- Should the length restriction be extended from Cape Lookout to Virginia border from October to November (based on 1995 and fisheries interactions post plan implementation)?

ACTIONS/NEXT STEPS

- Clarification that VA pound net regulations will be made through TRT process
- Consideration of Team letter to MRC recommending consistency with state and federal regulations
- Form a VA working group to:
    - further refine TRT consensus recommendation for rule making and
    - developing proposals for gear research
    - develop further clarification on gear that is similar to pound nets
    - Discussion on how to address nets that straddle inshore/offshore
    - How many pound nets are inshore nets that would be affected if offshore was defined as >12'; would they rather change length of net to fit under definition or would change gear type

NON-REGULATORY

RESEARCH

1. Gear Research
    - Examine information available from documented pound net/dolphin interactions (water depth at location of entanglement; horizontal and vertical location of entanglement in the leader), and from depth profiles of existing inshore pound nets (as defined by the turtle rule), to
        - determine if inshore nets pose an entanglement risk for dolphins.
        - determine if there is a correlation between water depth and dolphin interactions.
    - Pinger research for gillnet gear should continue if it is showing more promise

2. Stock Structure
    - Obtain information on the stock identity BD observed taken or stranded with evidence of fisheries interaction by matching dorsal fin images to the Mid-Atlantic BD Catalog or obtaining genetic samples (Require to provided by observers)
    - Cluster analysis of Photo ID catalogue to compare animal movement with new stock structure now proposed
    - Understand what is happening in deeper water fisheries in Pamlico Sound Genetic research relative to eventually being able to assign an individual animal to a specific stock
    - Are there acoustic keys to distinguishing between stocks?
    - Dolphin Behavior - How do different stocks (i.e., migratory vs. estuarine) work the gear? More aggressive? More gear-wise
    - Stop net fishery - explore mitigation options for the NC Stop Net Fishery, including pingers

3. Stock Assessment
    - Growth Rates - Figure out growth population for dolphins – should be more precise than the 4%, not just average/assign same to each
    - Abundance Estimate - reliable abundance estimate per stock to ensure PBR is adequately assigned to know what animal is what stock – for all stocks
    - NNCES Distribution – refine our understanding of the distribution of the NNCES stock in ocean waters, particularly with respect to the distribution of past take or overlap with other stocks

4. Observer Program/Mortality Monitoring
    - Observer effort – want more on how pulse observer effort is working/not
    - Enhance observer documentation of dorsal fins photos and collection of biopsy sample

5. Monitoring and evaluating effectiveness
    - Observer Coverage - Provide observer coverage for inshore/Spanish mackerel fishery (i.e., Pamlico Sound) - more information inshore about what's going on
    - Enforcement -Enforcement is important to follow up for compliance…need an MOU to make sure it takes place, especially in VA pound net modified leaders
    - Education:

- Outreach to fishermen is key
- Conduct outreach to fishermen to make them aware of the increase risk of by catch associated with increase in water temperature and line length.
- Incentives for self reporting to learn about how/where dolphins are interacting with nets – not double counting/adding to PBR (if accounted for in observer)

OTHER

- Reconciling practices related to illegal feeding and discarding that attract dolphins. Regulatory Discard research to address the dolphin "feeding" concern. Look at current regulatory discard regulations per state and perhaps consider "exemptions" in discards.
- Consider a gear research exemption in the BDTRP for stocks below ZMRG
- NMFS needs to send a letter to fishermen that they are doing rulemaking so fishermen can start getting ready when they (i.e., outreach to fishermen about any forthcoming proposed rules)
- Scenarios PBRs - what would we do if we are at the worse case scenario (maximum) for the NNCES?

Appendix 3: Remaining Stock Synthesis: Start for Discussion and Agreement Building

Synthesis of Break-Out Groups for Remaining Stocks – 09-11-09

Research Recommendations

- Enhance stock assessments to better assign mortality
- Conduct mark recapture abundance estimates for estuarine stocks
- Investigate whether dolphins are depredating/pot tipping are the ones becoming entangled
- Mine existing data and enhance capability to better determine whether crab pot gear is recreational or commercial
- Quantify differences between gear that has inverted bait wells and gear that does not—what is the effect on bycatch?

Characterization

More information is needed regarding many aspects of the crab trap fishery.

- What is the extent of vertical line in the water?
- Characterize gear marking, including differentiating between commercial and recreational fisheries
- Better understand effort of commercial and recreational crab pot fishery

Derelict Gear

Derelict gear may present risk to bottlenose dolphins. Recommend states of GA and SC address derelict gear, similar to FL and NC.

Other

Concern expressed about the number of research takes.
Concern also expressed regarding the challenge of addressing small stocks where one take could exceed PBR.

Four-tiered approach:

(1) Catalog all trap modification—what are people using in different areas?
(2) Conduct a technology transfer workshops among fishermen
(3) Potentially explore regulating most successful recommendations
(4) (note, this included a reference to derelict gear and differentiating between commercial and recreational fishing effort, which are addressed above)

Geographic Area

Tentative consensus recommendation: Bay sound and estuarine areas should be within the geographic area of the BDTRP