

# **Atlantic Large Whale Take Reduction Team Meeting**

Virginia Beach, VA  
December 6-8, 2006

## **Draft Meeting Summary**

### **Overview**

The National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA) convened a meeting of the Atlantic Large Whale Take Reduction Team (TRT) on December 6-8, 2006. The purposes of the meeting were to:

- Update ALWTRT members on ALWTRP-related issues (i.e. gear research and whale conservation activities and research)
- Update ALWTRT members on the ALWTRP FEIS and final rule
- Discuss research and development, and management issues related to low profile groundline
- Discuss vertical line research and reducing risk associated with vertical line
- Discuss timing and locations for future ALWTRT meeting (i.e. Regional Subgroup vs. Full TRT)

### **Day 1, December 6, 2006**

#### **1. Welcome and Introductions**

Robin Roberts, RESOLVE facilitator, welcomed participants to the meeting, ran through the meeting agenda for the coming 2 ½ days (See Attachment A: Meeting Agenda), and outlined the groundrules for the meeting. TRT members, alternates and observers then introduced themselves. (See Attachment B: List of Attendees.) Mr. Roberts reviewed the materials distributed to the team in mailings sent prior to the meeting, explaining that some additional materials not included in the advance mailings were now available as handouts at the meeting. (See Attachment C: Table of Contents of Two Mailings and Meeting Handouts.)

[A list of presentations provided at the meeting is included as Attachment D. These documents are also available upon request from NMFS.]

Mary A. Colligan, Assistant Regional Administrator for Protected Resources, NMFS/Northeast Region, thanked participants for attending the meeting and expressing their commitment to this process. Ms. Colligan acknowledged that the Final Environmental Impact Statement (FEIS) is not yet public. She recognized that the FEIS impacts to varying degrees the discussions planned for the meeting, but expressed her hope that TRT members could provide much needed feedback on such major topics as the status report, low profile groundlines and vertical line reduction strategies.

Ms. Colligan concluded by outlining the following process for completing the FEIS: Once the FEIS is released there will be a public comment period of a minimum of 30 days. Following the comment period, NMFS will prepare a Record of Decision (ROD) which will summarize the public comments and recommend a final agency action. The final rule will be promulgated after the ROD has been prepared.

In response to a member's question, Ms. Colligan noted that NMFS is currently under a Continuing Resolution and once the fiscal year 2007 budget is in place NMFS will begin planning for the next ALWTRT meeting.

## **2. Follow-Up on Issues from the 2005 ALWTRT Meeting**

### **c. Progress Report**

Diane Borggaard, NMFS, noted that NMFS will continue to issue yearly Progress Reports which will include updates on large whale issues not included in the Status Report (e.g. not directly related to the ALWTRP), which the Agency believes the team should be made aware of. The information contained in the distributed Progress Report includes updates on 2005 and 2006 activities and issues. [The version that was mailed to TRT members in advance of the meeting did not include an update on the Southeast Implementation Team (SEIT); that update was made available as a handout on Day 1 of the meeting.]

David Gouveia, NMFS, provided a verbal update on three activities that were not included in the Progress Report. Since the last ALWTRT meeting in April 2005, NMFS has participated in a Marine Mammal Commission (MMC) Right Whale program review and two Government Accountability Office (GAO) audits. The final reports from these reviews are not yet finalized, but Mr. Gouveia summarized the intent and progress of each. The first GAO audit began in August of 2005 and was completed in March 2006. It was set in motion by a request from Congress to examine NMFS' recovery and reporting efforts. GAO staff chose to look specifically at recovery and reporting efforts for right whales and Steller's sea lions in part because there are recovery plans for those species, and because these species receive a significant amount of Federal funding. The U.S. Fish and Wildlife Service is also involved in this effort. The outcome of the reports was a general overview of recovery and reporting efforts for each of the species, and largely for right whales.

The second GAO audit is currently ongoing and was requested by the House Subcommittee on Fisheries and Coast Guard to examine efforts to protect large whales and the economic impact of those efforts. It is possible that the GAO report will be available in April 2007, however GAO staff are still scoping out questions for the review.

NMFS also participated in a Marine Mammal Commission (MMC) Right Whale program review in March 2006. MMC was charged with assessing the cost effectiveness of current marine mammal conservation programs and engaged NMFS in the form of a

workshop to address background information on right whales. MMC was completing the report, which should be ready for Congressional review, at the time of this meeting.

In response to questions from TRT members, Mr. Gouveia noted that the current GAO audit will not affect NMFS' operations under the ALWTRP amendment and rule. He added that if the GAO report finds that there are deficiencies in the rule, NMFS will work to address them. Once completed, the GAO report should be publicly available.

Ms. Borggaard then asked team members if they had any comments or questions on the Progress Report. One member questioned how the Potential Biological Removal (PBR) estimate takes into consideration entangled whales that are not recovered. For example, how will a mortality be accounted for if the whale is entangled far offshore and is unable to be recovered? Dr. Richard Pace, III, NMFS, explained that a stock assessment is prepared by accounting for animals that are seriously injured or killed and noting when there is strong evidence of mortality from commercial shipping or fisheries. Animals are not attributed to a ship or fishery interaction if there is not strong evidence that these were the sources of mortality (including those animals sighted offshore when a source of mortality cannot be detected during flyovers).

NMFS staff added that the agency had published a technical revision in April 2003 in the *Federal Register* to reflect the genetic distinctiveness between North Atlantic and North Pacific right whales. This technical revision revised the taxonomic nomenclature of the two species as follows: the North Atlantic right whale (*Eubalaena glacialis*) and the North Pacific right whale (*Eubalaena japonica*) in recognition of the genetic distinctness of right whales in the North Atlantic and North Pacific Oceans. NMFS subsequently determined that the technical revision was both procedurally and substantively flawed because the agency had not followed the procedural requirements of Endangered Species Act (ESA) Section 4. Specifically, NMFS concluded that it had not provided public notice or an opportunity for comment. In addition, the final rule did not comply with the ESA's substantive requirements of conducting a status review of the species to determine whether the species was endangered or threatened because of one or more of the five factors identified in section 4(a)(1) of the ESA. Subsequently, the technical revision was withdrawn and NMFS initiated a comprehensive status review of right whales in the northern hemisphere under the ESA. NMFS anticipates publishing a listing determination in the near future in the *Federal Register*.

#### **d. Review of Status Report Outline**

Diane Borggaard presented the Status Report, reminding TRT members that this document was requested at the 2004 ALWTRT meeting and was presented in outline form at the 2005 meeting. The goal of the report is to provide for the TRT, on an annual basis, a summary of the status of species that are managed by the ALWTRP, and a measure of effectiveness of the plan. The 2006 meeting is the first time the report has been presented in a more complete form. NMFS asked for guidance specifically from State agencies on filling information gaps in the fishery management plan section and in

updating information on emerging fisheries. Additionally, NMFS asked for feedback on both the content and format to guide the development of future reports.

NMFS plans to expand upon the elements in this report for the next meeting, including further developing the Monitoring and Conclusion sections, in order to examine the effectiveness of the ALWTRP on an annual basis.

One TRT member asked if NMFS intends to prioritize the list of research gaps such as on page 22 of the Status Report, and if they intend to ask the TRT for feedback on the items. NMFS responded that the TRT can offer guidance to the Agency in a number of ways related to research. For example, the Conclusion section of the Status Report should highlight immediate future research needs, so TRT members can comment on which research priorities to include there. Most importantly at this time, the Agency seeks TRT comment on low profile groundline and vertical line research gaps.

In response to another member's question, NMFS noted that a portion of the information they are hoping to include and expand upon are compliance rates, as these rates are not currently included for all enforcement areas. The Agency also noted the establishment of joint enforcement agreements with states, for example, Maine, that allow State Marine Patrols to enforce some Federal regulations in State and Federal waters. This State-Federal partnership was established, in part, to augment the Coast Guard's limited ability to pull gear due to its other duties and enforcement responsibilities. NMFS has also increased its educational outreach to the Coast Guard to ensure that the efforts they do put into enforcement are fully informed. NMFS has dedicated time and effort to the issue of enforcement through increased training efforts and by targeting areas of high risk. Cooperation between NMFS, State agencies, and the Coast Guard has, in NMFS opinion, been very successful.

NMFS has also focused on examining the penalties of non-compliance and is exploring adjusting the penalty schedule and joint enforcement agreements under the Marine Mammal Protection Act (MMPA) to mesh better with the Endangered Species Act (ESA). NMFS is also attempting to facilitate more decisive legal action by increasing collaboration between Federal and State attorneys that should make legal cases as solid as possible.

Members discussed the accuracy of the compliance rates currently included in the Status Report. One member noted that Maine's compliance rate is determined by the Marine Patrol, who calculated that 98% of their boardings found gear to be in compliance. Other New England fishing representatives stated that the fishermen they know are all in compliance. Still, other members suggested additional validation of the compliance rates was warranted.

#### **e. Report on Gear and Whale Research Matrices**

NMFS recognized that coordination between science and management is critical to addressing entanglement issues. NMFS had previously collected suggestions from TRT

meetings and other forums on the needed whale and gear research and compiled those suggestions into two matrices. The *Whale Research Needs and the Atlantic Large Whale Take Reduction Plan* matrix (4.m. in meeting notebook) is intended to identify and prioritize research needs (based on management needs) regarding aspects of large whale behavior. The *Gear Research Needs and the Atlantic Large Whale Take Reduction Plan* matrix (6.f. in meeting notebook) is intended to identify and prioritize research needs related to reducing risk associated with vertical lines and groundlines.

Ms. Borggaard pointed out that comments received from TRT members during the 2005 ALWTRT meeting were incorporated into the matrices. NMFS intends to update the two matrices on an annual basis and make the documents available on the ALWTRT website. Ms. Borggaard concluded by encouraging members to contact her with any feedback they may have on the revised matrices.

### **3. Update on Issues Related to Southeast Gillnet Fisheries**

Barb Zoodsma, NMFS/Southeast Region, provided an update on Southeast gillnet fishery issues as they relate to the ALWTRP. She reported that on January 22, 2006, a dead right whale calf was found off the coast of Florida. NMFS determined that the mortality was ultimately a result of a gillnet entanglement occurring within the Southeast U.S. Restricted Area during the restricted period. Consequently, NMFS issued a temporary rule on February 16, 2006, that prohibited gillnetting in the Southeast U.S. Restricted Area from February 16 through March 31, 2006.

In consideration of potential future management measures, NMFS organized a meeting of the ALWTRT “Southeast Subgroup” (i.e. a gillnet-related subset of the Mid/South Atlantic Subgroup) in April 2006. The primary objectives of the meeting were to:

- Update the group on the right whale mortality in January, applicable ALWTRP regulations, 2006 temporary rule, and requirements for subsequent years.
- Provide Southeast-specific information on right whales and current Southeast gillnet fishing
- Provide a forum for the group to identify, discuss and recommend management measures to NMFS for reducing risk of gillnet fishing activities to right whales in the Southeast U.S. Restricted Area in the future.

The group was able to reach consensus and agree to: 1) use the 29° N lat. as a management boundary within the Southeast U.S. Restricted Area, and 2) close the area within the Southeast U.S. Restricted Area south of 29° N lat. to gillnetting with the following exemptions:

From November 15 – December 31, and March 1 – 31 (underlying assumption is that existing restricted period of November 15 to March 31 would be retained):

- Codify Spanish mackerel regulations within the ALWTRP
- No setting within three nautical miles (nmi) of whales
- Remove gear if a whale moves into the area
- No night fishing

January 1 – Feb 28:

- Area closed

Existing ALWTRP shark strikenet provisions will be allowed.

Many proposals were provided for the area north of 29° N lat., but no consensus was reached. The summary from this meeting was sent to TRT members and is posted on the NMFS website.

On November 15, 2006, NMFS published a Notice of Proposed Rulemaking detailing permanent management measures being proposed for the Southeast U.S. Restricted Area. NMFS proposes to expand the Southeast U.S. Restricted Area to include waters within 35 nmi of the South Carolina coast, prohibit gillnet fishing and possession in the expanded Restricted Area, with specific exemptions, and separate restricted periods for north and south of the 29° N lat. The restricted area was expanded to include the coast of South Carolina because NMFS' sightings database showed the majority of right whale mother/calf pairs are located in the area from Florida to South Carolina. The public comment period for the rule closes on December 15, 2006. To send comments to NMFS e-mail them to [sewhalerule.comments@noaa.gov](mailto:sewhalerule.comments@noaa.gov). NMFS will consider the comments and develop a final rule which will not likely be in effect until early 2007.

An Emergency Rule was published simultaneously with the Proposed Rule and was put in place to temporarily prohibit gillnet fishing and possession of gear in the core right whale calving area until the final, permanent rule can be implemented. NMFS found an emergency rule necessary to prevent a significant risk to the well being of endangered right whales from entanglement in gillnet gear in the core right whale calving area during the upcoming calving season. The emergency rule is effective November 15, 2006, through April 15, 2007, or until the proposed rule is implemented.

One TRT member who attended the Southeast Subgroup meeting recalled his impression of the process. He stated that because of the right whale mortality the gillnet industry attended the meeting in "survival mode." He pointed out that industry representatives agreed to the closure (with exemptions) south of 29° N lat., without anticipating the negative financial hardship that closures from the Highly Migratory Species Fishery Management Plan have recently placed on the fishery. An opening would create an opportunity for a fishery south of 29° N lat.. This member emphasized that there are many management measures pulling on the commercial fishing industry, and questioned whether one right whale mortality should be able to close an entire fishery. He asked for the ability to fish south of 29° N lat. due to low right whale sightings.

Another member asked for a listing of the number and scope of gillnet fisheries in the area that are affected by the rule; he felt it is important to understand the entire economic impact of the closure. Ms. Zoodsma responded that NMFS staff was highly motivated to identify all affected fisheries and considered these in the Environmental Assessment that was prepared for the action. At the Southeast Subgroup meeting the group considered the Southeastern U.S. Atlantic Shark Gillnet Fishery and the Southeast Atlantic gillnet fishery. They also examined State regulations to determine smaller fisheries in state

waters that may be impacted. The states adjacent to the action area already substantially restrict or prohibit gillnetting in state oceanic waters.

Many industry representatives remarked that after the Southeast Subgroup meeting it was their expectation that the Proposed Rule would be out by the end of July 2006. Instead, they were informed of the closure, through an emergency action notice, one day before the proposed and emergency rules were published. Several members, including State and industry representatives, asked NMFS to provide more advance notice in the future. They recommended at least 2-3 days notice in advance of a closure to allow for removal of gear from the water, and suggested that NMFS use radio announcements to notify fishermen of emergency closures.

Industry representatives expressed frustration with the continued emphasis on entanglements, rather than ship strikes, as a leading cause of whale mortalities. One suggestion was that to fully protect right whales the southeast restricted area should be a complete sanctuary, free of all gear and boat activity. NMFS explained that it has published a draft Proposed Rule to protect right whales from ship strikes, and has recommended shipping lanes that will reduce strikes, but there remains a need to better address strikes by recreational vessels. NMFS also clarified that if a right whale is killed by allowable gear in the southeast restricted area during the restricted period then ALWTRP regulations will trigger a closure; similar triggers for ship strikes do not exist.

Industry representatives were also concerned that the Southeast closure may set a precedent, and questioned whether similar incidents of mortality, where gear was not found on the whale, would result in a closure. There was significant concern from the industry representatives that a fishery could be closed when no gear was recovered from the whale. NMFS staff responded that to trigger a closure under the ALWTRP it must be determined that a serious injury or mortality of a right whale occurred as a result of an entanglement by lobster or gillnet gear allowed to be used in those areas and times specified in the regulations (e.g. Southeast U.S. Restricted Area from November 15 through March 31) unless NMFS revises the restricted period or other measures are implemented as specified in the regulations. NMFS staff noted that the actual gear does not need to be recovered to determine that the mortality was caused by an entanglement. Representatives from the science community added that there are ways to analyze an animal even if no gear is recovered. Necropsy reports, in addition to scarring evidence, can provide additional information for mortality determinations.

One suggestion to reduce future closures was for fishermen to encourage their colleagues to comply with regulations, or call NMFS enforcement with information about non-compliant individuals. The response from one industry representative was that reports to enforcement are not always answered in a timely manner, perhaps because of the large case loads enforcement officers have.

Another suggestion was to design a Dynamic Area Management (DAM) zone in the area, as an alternative to the emergency rule. NMFS staff responded that DAMs have so far only focused on, and been designed for, the New England region only to protect feeding

aggregations of right whales, and it is not part of the regulations to implement them in other regions. Some scientists also asked that NMFS review the area south of 29° N lat. in light of industry comments.

NMFS staff reinforced that, for the purpose of this TRT meeting, it was not appropriate to use the meeting as a public hearing venue to amend or comment on the Southeast proposed rule given that the agency had not advertised this meeting agenda as a vehicle for NMFS to receive comments on the proposed rule. Further, since the agency was in the midst of rulemaking it could not amend what was already proposed. If NMFS had accepted comment it would not have been fair for the public who did not know NMFS would be accepting comments on this rule. Therefore NMFS felt, the best avenue for commenting on and affecting the southeast rule would be for individuals to submit written comments to NMFS by December 15, 2006.

#### **4. Report on Whale and Gear Research**

##### **a. Maine Department of Marine Research Ongoing Studies on Low Profile Groundlines and Vertical Lines**

Erin Summers (formerly Erin Estrada), Maine Department of Marine Resources (MEDMR), reported on Experimental Low Profile Groundline Research and Development in Maine Coastal Waters. The goal of the project was to respond to risk reduction criteria identified by the TRT by developing, field testing, and documenting groundline modifications that would lower groundline profiles while maintaining the operational requirements of the Maine lobster industry. MEDMR tested four types of low-profile rope in three separate studies to test average groundline arc heights. The three studies were: a statewide survey using depth loggers, regional low profile comparisons, and an operational feasibility study of low profile line (currently on-going for the 2006-2007 fishing season).

Conclusions from these field tests show that:

- Specific gravities (provided by the manufacturer) of the Polysteel lines are heavier than the NMFS definition of sink line.
- All low-profile lines have significantly different average arc heights than floating line in all areas and depth zones – up to 95% arc height reduction.
- All Polysteel lines did not have average arc heights significantly different than sink line.
- Low profile lines are not affected by regional tidal differences (stayed between 0-1 meter average arc height, while float ran .25-13 meters)
- Chafing, hang-downs and durability make lines operationally infeasible in the Eastern zones of Maine.

MEDMR has planned the following future studies to refine their conclusions:

- Continued field testing of 2006 products for operational feasibility.
- Strength testing and development of specific gravity of all low-profile lines, used and unused samples.



- Overlaying areas of high fishing activity and historic whale sightings to determine hotspots of concentration for further research
- CTD survey to determine if and where large whale prey may aggregate

In response to several clarifying questions from members, Ms. Summers added that:

- In studying average arc heights the groundlines were all a standard 10 fathoms long and were sampled at 10-minute intervals.
- Estimated gravities were based on what the manufacturer listed. An additional component of the project will be to have the ropes independently tested to determine actual specific gravities and incorporate that into the results.

One member cautioned that he has seen whale behavior studies in Cape Cod Bay indicating that putting lines close to the bottom, as opposed to right on the bottom, is most dangerous for whales. Therefore, lowering the arc height significantly could put whales at a greater risk than if sinking line was used in certain habitats. The group discussed the current level of uncertainty surrounding whale behavior on the bottom of the ocean, especially in the rocky-bottom habitats where the MEDMR studies were conducted.

Another member reminded the team that a reduction in arc profile of 95% does not necessarily equal a 95% reduction of risk for entanglement.

Ms. Summers then presented an overview of another project MEDMR is conducting on vertical lines. The goal of the project is to collaborate with the Maine lobster industry to establish baseline information on the spatial and temporal patterns of vertical lines and gear configurations throughout Maine's coastal waters. During the summer of 2006, MEDMR sent out a survey to all fishermen who held both a State and Federal lobster license to document the density and patterns of vertical lines used regionally throughout the year. The average response rate from the surveys was 17.3% (with good regional coverage) which allowed MEDMR to conclude the following:

- The lobster fishery is seasonal in nature – largely occurring in the summer with the majority of vertical lines existing less than 3 miles from shore.
- Trap configuration varies by distance from shore – fishing within 3 miles uses singles, pairs and triples, while areas greater than 3 miles are more likely to have longer trawls. (State regulations may play a large role in the number of traps per trawl.)

Future directions for MEDMR's vertical line report include:

- Outreach, collaborative workshops resulting in the testing and recommendation of vertical line risk reduction measures.
- Overlaying vertical line densities with historic whale sightings to document areas of high risk and target those areas for field testing and implementation.
- Direct foraging studies.

In response to one member's question MEDMR staff added that restricting the number of traps per trawl was a self-imposed State regulation by the fishing industry to handle congestion issues, standardize lobster fishery practices, and resolve gear conflict.

Some members noted the importance of collecting whale density information to correlate with trap density information. One member suggested that [www.marineGIS.org](http://www.marineGIS.org) might be a useful resource for reviewing whale sightings and survey data.

#### **b. Massachusetts Department of Marine Fisheries Current Gear Research**

Erin Burke reported on Massachusetts Division of Marine Fisheries' (MADMF) gear research studies in 2006 – 2007. MADMF is focusing on three projects; improving the durability of non-buoyant groundline; ghost gear removal in Cape Cod Bay; and the use of sonar to verify compliance with their upcoming floating line ban. Massachusetts is expanding their year-round floating groundline prohibition from Cape Cod Bay to all of the state's waters beginning on January 1, 2007.

##### Improving the durability of non-buoyant line

Fishermen have experienced problems with durability, hang-downs, rope failure and the shorter life span of non-buoyant line so MADMF tested the durability of a number of ropes in a laboratory simulation. In 2005, the Agency partnered with Tension Technical Institute (TTI), a rope testing and engineering firm, to identify specific causes of wear in a number of ropes. The final report from this project is available on the MADMF website.

The engineers conducted a visual and microscopic analysis of used line from MADMF's line-testing machine as well as used line from fishermen. They found that most damage to the ropes was caused from external abrasion (the hauling system) and internal strand-on-strand abrasion. Sediment does also play a role, although it was not found to be a significant factor in damaging the analyzed ropes. The engineers were also able to recommend a number of "ideal" rope specifications.

MADMF is planning additional groundline research to:

- Test polyurethane treatments on the line-testing machine to see if they help reduce external abrasion.
- Run the machine without sediment and water to isolate mechanical wear.
- Construct rope that meets all of TTI's specifications for durability and run it through simulations.
- Send field-tested rope samples to TTI for analysis.
- Adjust coating and diameter of fairlead sheave and hauling block to reduce rope wear.
- Develop rope pamphlet to inform fishermen of factors affecting durability.

##### Ghost gear removal in Cape Cod Bay

The project is funded by NOAA's Marine Debris Program and is intended to remove abandoned or non-compliant gear from the Cape Cod Bay Critical Habitat. Previous

work in the Cape Cod Bay occurred 1998 – 2003, and cooperative efforts with fishermen and the Massachusetts Environmental Police will resume January 2007.

#### Compliance with Floating Groundline Ban

MADMF is developing a tool to assist MA Environmental Police with enforcing the expanded floating groundline ban, beginning January 1, 2007. Sonar will be used to visualize floating and sinking groundline. Testing will compare the effectiveness of multi-beam sonar versus single beam sonar.

In response to one member's comments Ms. Burke stated that MADMF will attempt to return all ghost gear that is recovered.

### **c. Humpback Whale Research in Stellwagen Bank National Marine Sanctuary**

Dr. David Wiley, Stellwagen Bank National Marine Sanctuary, reported on new research describing the underwater behavior of humpback whales in the sanctuary. Dr. Wiley's study found that humpbacks work the bottom of the ocean at certain periods of the day and use most, if not all, of the water column when foraging. The high frequency of loops and turns that humpbacks exhibited in the water column would indicate a vulnerability to vertical lines, and a high vulnerability to groundlines. Therefore, employment of sinking or neutrally buoyant groundline should help reduce entanglements.

In response to questions from members, Dr. Wiley noted that researchers had not found food sources in the area to indicate whether whales were foraging because they were unable to follow the tagged whale and test for prey at the same time.

Several members were concerned that the researchers had been unable to correlate whale diving depths with the actual depth of the ocean bottom. They felt that identifying where on the bottom whales are is important to understanding how to reduce the risk of entanglements. Dr. Wiley responded that he was certain whales are on the bottom; however it would be difficult to get more precision out of the data to determine whether whales are directly on the ocean bottom or within ~1 meter of the bottom.

Another member pushed to identify an estimated percentage of time that whales spend in different parts of the water column. Having this information could help policy-makers determine in which parts of the water column to reduce risk from rope.

More on Dr. Wiley's research can be found by contacting him at [dwiley@noaa.gov](mailto:dwiley@noaa.gov).

## **5. Overview and Discussion of Low-Profile Groundlines**

### **a. Summary of Fall 2005 Low-Profile Workshops**

Robin Roberts, RESOLVE, presented a summary of the five NMFS-sponsored low-profile groundline workshops that took place in Fall 2005. The workshops resulted from

TRT interest at past meetings, and, although the knowledge of large whale ecology (including foraging and diving behavior), prey, habitat and oceanography was uncertain, NMFS wanted to present information and hear stakeholder input on the use of low profile groundline as a means of reducing risk of whale entanglements in fishing gear.

At each of the regional (Maine, New Hampshire, New Jersey, Virginia and North Carolina) workshops attendees discussed the concept of low profile groundlines, specifically with respect to:

- Areas where low profile groundlines should be considered;
- A potential proxy height for low profile groundline;
- Techniques to modify groundline;
- Gear marking options for low profile areas;
- Potential contingency plans in the event that an entanglement occurs in low profile groundline.

Stakeholders at the workshops discussed each of the objectives, raising questions and concerns, but looking at ways to move forward. In the end, a list of high priority research needs was developed around whale behavior data, sighting data, gear mapping/risk assessment, prey distribution, bottom mapping, and some specific fisheries. A summary of the low profile workshops was prepared by RESOLVE and included in the ALWTRT meeting materials.

#### **b. Discussion of Low Profile Groundlines**

Dave Gouveia reminded TRT members that originally in the ALWTRP Environmental Impact Statement (EIS) NMFS rejected including low profile groundlines because the Agency did not have enough information to create a suite of options for implementation. During the EIS public comment period, however, NMFS staff recognized the need to follow up on suggestions for deploying low profile groundlines, and organized the Fall 2005 workshops as a way to move forward. He underscored that NMFS does not necessarily intend to make a rule for low profile, or to amend the current rule, but is interested in hearing members' concerns about the operational feasibility (gear technology studies) and risk reduction (whale behavior studies) of low profile groundlines. Detailed information from members will help the Agency prioritize research, and determine whether, and if so how, to move ahead.

TRT members discussed NMFS' questions and the scientific/conservation community stressed that management decisions cannot be made until whale behavior questions related to low profile are answered (i.e. how do whales forage on rocky bottom, are low profile groundlines risk averse?). Whale behavior needs to be further understood because there is current information in some habitats indicating that low profile groundline is not risk averse and that it may in fact be more dangerous for whales foraging close to the ocean bottom in these areas. Additionally, one member pointed out that any low profile groundline amendment to the current ALWTRP rule may require a separate environmental analysis and rule-making process.

Industry representatives acknowledged that sinking line might be feasible in some areas, but reminded the group that it is not operationally feasible in other areas (including but not limited to rocky bottom areas in Downeast Maine and offshore, as well as areas around Cape Hatteras). They reminded the group that progress is being made by industry, and the technology continues to develop to allow for the deployment of low profile groundlines. Industry representatives also asked for a degree of certainty in management decisions to avoid altering fishing regulations after fishermen have made significant investments to comply with current regulations. For example, they noted that there is uncertainty as to whether whales forage close to the bottom in all habitats.

TRT members grappled with determining the enforceability of low profile groundlines. For some members, a line either sinks and lies on the bottom, or it floats a certain distance above the ground based on its buoyancy – low profile line therefore would be less buoyant floating line. These members wondered how enforceable low profile groundlines can be if they are neither strictly sinking nor floating line. Enforcement is a critical factor for low profile, which can be addressed, in part, through appropriate gear marking techniques. Some members commented that progress has been made towards the development of low profile groundline (e.g. MEDMR) and believe an enforceable line can be developed.

At the close of Day 1 some industry and state representatives decided to caucus together to develop a position on the low profile questions posed by NMFS. Some scientists and conservationists also decided to caucus and prepare a position statement for NMFS.

## **5. Public Comment**

No individuals provided public comments at this time.

## **Day 2, December 7, 2006**

### **1. Welcome and Review Agenda**

Mr. Roberts reviewed the agenda and the team decided to start the day by reviewing reports from the two caucus groups.

### **2. Report Outs on Low Profile Groundline by Caucus Groups**

#### **a. Industry/State Group**

Terry Stockwell, MEDMR, provided an overview of the work the industry/state caucus group had done. He noted that the group members recognized that each state/region will have specific comments to provide to NMFS on the low profile issue focusing on areas characterized by rocky tile, rocky ledge, coral, wreck and canyon. However, the group developed a template for industry representatives to use in submitting their detailed comments on low profile groundlines. The template included the following categories:

- Areas - identify areas where low profile groundlines should be considered;
- Rationale - provide a rationale/justification for areas to deploy low profile;
- Height - recommend a specific gravity or height for low profile (i.e. less than or equal to 1 meter above the bottom);
- Implementation - outline a timetable for implementation;
- Gear marking - suggest gear marking options;
- Alternate gear modifications - suggest alternate gear modifications to lower existing floating rope;
- Contingency plan - identify a contingency plan if whales do become entangled in low profile groundlines.

Mr. Stockwell then highlighted comments specific to Maine, and plans to send those on to NMFS. Other states intend to send similar information to NMFS by the end of January. The group also suggested that State agencies work with NMFS to prioritize whale behavior research in their areas.

Other TRT members highlighted the following additional subject areas to add to the template:

- Enforceability – explain how low profile groundlines should be enforced;
- Research priorities - suggest direction NMFS should take in prioritizing research.
- Fishing effort – size of the areas and the fishing effort in these areas in order to help quantify risk.

In response, Mr. Gouveia stressed that the more detailed the comments are the more helpful they will be to the Agency. He also stated that detailed information justifying certain areas for low profile groundline use would be particularly helpful.

Industry representatives agreed to the developed template (See Attachment E) and some State agencies also agreed to either the template or the *concept* of the template. Members suggested that industry members use the template to funnel their specific information to their State agencies where possible which, in turn, should pass it on to NMFS. In coordination with NMFS, states and industry agreed to submit their comments by January 31, 2007. NMFS noted that they would also accept comments after January 31, if new information became available as they do not have a timeline for implementing any low profile groundline policy, and stressed again the importance of submitting detailed comments justifying areas of consideration for low profile groundlines. NMFS noted that they will share all proposals received with the TRT.

#### **b. Scientist/Conservationist Group**

Bob Kenney, University of Rhode Island, provided an overview of the work the scientific/conservation caucus group had done. He reported that there are indeed some areas where sinking line creates operational difficulty and that low profile groundline in those areas may be warranted. However, he emphasized that information is not currently available to determine whether low profile groundlines are risk averse, and in some areas current information indicates that low profile groundline is not risk averse. This information is an important consideration given that the PBR for Atlantic right whales is zero. The group recommended prioritizing and conducting research to develop criteria to determine what areas qualify for low profile groundline use. One member noted the example of a fisherman successfully fishing sinking line in the Grand Manan Channel of Maine and recommended research to determine whether alternatives to sinking line are necessary. [Another member responded that this fisherman is unique to the area.] While research is underway, the group supports implementation of sinking line and monitoring for entanglements.

#### A statement from Conservationists and Science Groups was submitted:

- The statement is made on behalf of 14 conservation and science groups at the ALWTRT meeting in Virginia Beach;
- Takes of both right whales and humpbacks are over PBR and PBR for right whales is zero;
- While we are open to alternatives to sinking rope in certain areas, at this time there is no available information that would allow an evaluation of whether low profile gear is risk averse;
- Additional research is needed to determine the risk to whales posed by non-sinking line (i.e. water column use by right whales relative to distribution of prey in various bottom types);
- Research should be prioritized for areas that the industry would like to see exempted from sinking line requirements;
- Until data are available to demonstrate that risk averse methods other than sinking groundline are available, we are committed to supporting implementation of sinking line and monitoring entanglement rates.

NMFS staff asked the scientists and conservationists to explain, in their individual comments, methods for determining whether low profile groundlines are risk averse.

### **3. Overview and Discussion of Vertical Lines**

#### **a. NMFS Response to Vertical Line Requests**

Diane Borggaard reported on the actions NMFS has taken to follow up on vertical line requests from the 2005 ALWTRT meeting. She noted that at past meetings, NMFS has received support from TRT members to move forward on researching options for reducing the risk of vertical lines in the water column. Consequently, NMFS staff developed a white paper identifying research needs for exploring the vertical line issue, and they contracted with Amy Knowlton, New England Aquarium, to study entanglements related to vertical lines, as well as partnered with the MMC to convene a gear workshop to discuss vertical line issues. NMFS also contracted with Industrial Economics, Incorporated (IEc) to develop a model to estimate the spatial and temporal distribution of vertical line in order to access the relative risk to large whales.

The *Working Draft of a Strategy to Reduce Large Whale Entanglement Risk Associated with Vertical Lines* was included in the meeting binder. Since the 2005 ALWTRT meeting the research matrices have been updated after considering TRT members' comments, and the working draft strategy now includes new reports on the above mentioned study and meeting as appendices.

Following up on vertical line requests from ALWTRT members in 2005, NMFS and others are working to address requests relating to the following:

- Baseline information on vertical lines, by state, where possible;
- Baseline information on fisheries, by state including federal waters;
- Information and analysis of whale behavior and entanglements;

Although progress has been made on many of these issues (e.g. NMFS Northeast Fishery Observer Program forms for trap/pot and gillnet will be modified to include additional elements related to vertical line characteristics based on the 2005 TRT information request), additional information is needed. For example, assistance from state agency TRT members to provide information on state fisheries (see further discussion below).

At this time, NMFS found it impractical to address the following requests:

- Identify the strength and type of gear that a whale can break free from (request too complex as many factors and not enough information at this time to determine; however, lines with various breaking strengths traditionally used in the gillnet and trap/pot fishery have been recovered);
- Bring recovered gear to TRT meetings (not practical, but gear is available in Rhode Island through John Kenney, NMFS Gear Team.)



Ms. Borggaard concluded that input on these requests, including further refinement, would be very helpful in moving forward on researching the vertical line issue.

### **b. Vertical Line Analysis Model: Preliminary Design and Findings**

IEc consultant group provided a presentation on the model they have been developing for NMFS to answer spatial and temporal questions related to vertical line use on the Atlantic coast. The model is designed to show information on vessel activity and vertical line use, such as where fisheries operate, concentrations of vertical line activity, and eventually the overlap between vertical line activity and whale activity. The presentation highlighted the model's design and preliminary findings, as well as data gaps.

The model is designed to include the American lobster, gillnet and other trap/pot fisheries, examine all waters covered by the ALWTRP, and currently focuses on a time period from 2000 through 2004. Using both GIS and database software, the model will ultimately be able to estimate, for each month and location, the number of active vessels and the number of vertical lines, indicating co-occurrence of whale sightings and fishing activity. Preliminary results are reported in vertical line-days and can be displayed on regional maps or in graphs comparing activity across months and years.

Next steps for IEC are to fill in gaps in vessel activity data and refine some model assumptions, primarily addressing data gaps in state-permitted activity. IEC asked for assistance from the TRT on filling data gaps and on refining model vessel inputs (i.e. parameters for number of traps per vessel, and seasonal variation in gear fished and/or gear configurations). Questionnaires were distributed to TRT members in order to solicit data for use in the analysis (See Attachment G). Completed questionnaires should be faxed or e-mailed to Diane Borggaard, National Marine Fisheries Service, Fax: (978) 281-9394, Phone: (978) 281-9300 x6503, E-mail: [Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov). It was suggested that industry representatives funnel their specific data for the vertical line analysis to their State agencies for IEC to collect wherever possible.

Responding to clarifying questions from TRT members, IEC added that:

- The goal for the model is to create a tool to overlay areas of vertical line concentration with whale distribution and sightings.
- Model vessel determinations are re-determined for each month.
- To avoid over-counting vessel trips that occur in more than one location vessels are apportioned.
- Industry should funnel their specific data for the vertical line analysis to State agencies for IEC to collect wherever possible.

Members also commented on the model's design and preliminary results. Key points included:

- There are significant limitations to the current data and the data for regional vessel activity does need to be refined.
- For the Northeast, it would be helpful to have an overlay indicating lobster management areas.

- It would also be helpful to add color-coding for the different fisheries in vertical line estimates.
- Groundtruth data by coordinating with management experts and stock assessment reports.
- Overlaying whale sighting information will be a very important component of the model.

### **c. Large Whale Distribution Data**

Dr. Richard Pace, III, NMFS, presented on the current knowledge of whale distribution along the Atlantic coast. He noted that many surveys describe whale occurrences, but few of those surveys meet the standard to inform inferences about the probability of whale occurrence and whale distribution along the coast.

Using aerial survey data, NMFS researchers investigated current whale distribution data to determine how accurately whale density estimates can be produced in different regions along the Atlantic coast. They concluded that whale distribution data is fairly well-informed in the Northeast U.S., poorly informed between 40° 30' and 32° N lat. (although recent surveys from South Carolina to Chesapeake Bay), extremely well informed in a portion of the Southeast U.S. during part of the year (primarily calving season), and there is little to no distribution information on whales south of 29° 30' N lat.

Dr. Pace explained how historical data and data from aerial surveys can be modeled to look at general whale use in an area in a particular month. The model is not a true risk assessment model, but can be used by policy-makers to estimate co-occurrence of whales and gear.

Following the presentation, members had an opportunity to ask Dr. Pace questions. Key points in the discussion included:

- The model does not include opportunistic sighting data; some members recommended determining a way to incorporate anecdotal data into distribution estimates.
- The model is good at identifying “hot spots” of whale distribution, but is not as good at identifying those locations where likelihood of whale appearances are low.
- Incorporating future shifts in whale distribution is a difficult issue to deal with in this model.
- There may be a seasonal component affecting whether whales are sighted during aerial surveys.

### **d. Group Discussion of Vertical Lines**

In order to maintain NMFS’ momentum on vertical line research, the Agency outlined a number of issues for TRT members to consider. During a general group discussion, the following opinions from various members were noted:

- Currently, it is unknown how significant a risk vertical lines are to whales.

- However, conservation representatives reminded that the risk of vertical lines will prevent reaching a zero PBR for right whales.
- Industry is unable to operate without vertical lines, largely due to safety considerations and the risk of losing gear.

The *Working Draft of A Strategy to Reduce Large Whale Entanglement Risk Associated with Vertical Lines* provides a table (Table 2) of gear modifications and recommendations for research aimed at reducing risks associated with vertical lines. The gear research table groups the options into surface system of the buoy line, buoy line, and reducing the number of vertical line. The group decided to focus their discussion by addressing each modification in the table that was designated a priority of five or greater for each category. NMFS determined the priorities for each item based on a variety of factors listed in the table.

The group began by discussing a weak line with groundline extension modification option, outlined in Amy Knowlton's gear modification review (Appendix D in the *Working Draft*) that was not included in the table. Ms. Knowlton explained that her gear modification option includes a vertical line with a breaking strength of ~1,000 lbs or less. The groundline is extended between the first and second pot (to equal the length of the vertical line) so that the weak vertical line is only hauling the weight of first pot to the surface. She later outlined the modification further for the group (See Attachment H).

Industry representatives questioned the operational feasibility of the modification (esp. over deep water and rocky habitats), but were open to testing and possibly considering it as part of a suite of options in some areas. Dan McKiernan, MADMF, offered to see if fishermen in the Cape Cod Bay will field test the option. Although this option was not originally included in the matrix based on the various operational issues discussed, NMFS agreed to add the option to the matrix and will consider the various TRT comments when determining the priority as well as other rankings.

Another member noted that there are some areas where the risk of entanglement is higher for whales and fishing effort is also lower. He suggested that in the absence of feasible modifications one option for reducing entanglement in vertical lines is to expand closure areas (e.g. all critical habitats and SAMs) to exclude fishing gear with vertical lines during the times that whales are most likely to occur in the area.

The group continued to review options in the table beginning with those that related to the surface system of the buoy line, again, concentrating on those modifications with a priority of five or higher. TRT members may have asked for clarification regarding the higher priority options, but did not have specific comments on every option. Those that they did discuss, and key comments related to them, include:

- *Composition of the buoy line*: Some members felt that NMFS should determine a percentage requirement for sinking line and floating line (e.g. 1/3 float line with 2/3 sink line) as long as no float line was allowed on the surface. Other members suggested that fishermen be able to determine the best percentages for their particular area, as long as there is no float line on the surface. These members

- noted that in some areas fishermen operationally need 1/2 float line with 1/2 sink line, whereas in other areas fishermen need 1/3 sink line with 2/3 float line.
- *Thwartable Bottom Link*: The group supported further development of this option.
  - *Lipid Soluble rope*: The group was unsure of either the operational feasibility or risk reduction of this option.
  - *Time Tension Line*: Various stakeholders supported further development of this option. However, safety and operational issues were raised that would need to be addressed.
  - *Electric rope*: NMFS will continue to study the feasibility of this option.
  - *Eliminating knots in the vicinity of a weak link*: Some industry members expressed support for the concept of this option.
  - *Visible rope*: From prior testing, industry has found this not to be operationally feasible. One scientist noted that this option could possibly act as an attractant to humpback whales.

#### **4. Public Comment**

No individuals provided public comments at this time.

## **Day 3, December 8, 2006**

### **1. Agenda Review**

Mr. Roberts reviewed, and the team adopted, the agenda for Day 3. The meeting opened by continuing the discussion of gear modification options within the *Working Draft of A Strategy to Reduce Large Whale Entanglement Risk Associated with Vertical Lines*, Table 2.

### **2. Discussion of Vertical Lines (continued)**

Diane Borggaard asked members if there were any options for reducing the risk of vertical lines with a priority lower than five that they wanted to discuss. The group then explored those gear modification options in the table that relate to reducing the number of vertical lines, again focusing on those options with a priority of 5 or higher. TRT members were also asked to provide comments on lower priority options.

Key comments relating to these options include:

- *Stiff rope*: One member suggested stiff rope should be given a higher priority because it has shown to be less susceptible to entanglements. Industry representatives did not support stiff rope because of operational and serious safety issues when the rope is on deck. In response, the member that asked for the discussion of this modification suggested that further development could focus on a more feasible version of stiff rope (i.e. rope that is stiff in water and slack in air).
- *Acoustic Release, Galvanic Time Release (GTR), Mechanical Time Release (MTR)*: Industry representatives felt strongly that these three options were not operationally feasible, and should not be placed with such a high priority, primarily because of gear conflicts between mobile and fixed gear, as well as between fixed gear, resulting in the loss of fixed gear. One member asked NMFS to report back in the future as to whether the gear conflict problems that would arise from these gear modifications could be resolved through the fishery management process. One scientist suggested acoustic releases be experimentally used only in critical areas for extremely specific purposes.
- *Increase the number of pots per trawl*: Fishermen cannot always increase traps per trawl because of the topography of the ocean bottom, vessel size, and other factors. A suggested alternative to regulation was to institute a type of credit-trading system requiring specific endline reduction without specifying number of pots per trawl. Ideally, this would allow fishermen to determine the best way of reducing endlines and also demonstrate their risk reduction efforts.
- *Elimination of one vertical endline*: Industry representatives believe this is not an operationally feasible option because fisherman cannot predict which endline they will need to use to pull up traps (depending on weather, tides, etc.). Additionally, if only one endline is used the boundary of their fishing area may not be well marked and could result in loss of gear.

- While not in the table, some industry representatives voiced their support for tended gear options (i.e. credit for bringing gear home at the end of the day). One scientist said that he would only support tended gear options if they showed a true increase in risk reduction.

### **3. Complete Discussion of Meeting Topics & New Issues of Importance**

#### **a. Status Report**

Diane Borggaard again asked for feedback and questions on the Status Report, and gear and whale matrices. She added that members could send their individual comments directly to her after the meeting.

Key comments made during the discussion include:

- It would be beneficial to research gear and whale behavior simultaneously.
- It is not practical to study all whales in all habitats; therefore research needs to make some generalizations about whale behavior. However, one scientist noted that there are significant differences between whale species (foraging behavior and prey species), therefore, one species may not always be an effective proxy for another.
- Members were interested in augmenting Dave Wiley’s humpback whale research to characterize whale behavior within a meter of the ocean bottom.
- Additional research should include rope recycling projects.
- Research should explore additional ways to modify gillnets. Following this comment it was noted that one fisherman who has been investigating other modifications, specifically using 600lb net panel weak links, is finding after two years that the weak links are starting to fail. NMFS and other members also responded that the EIS and proposed rule did consider additional gear modifications for gillnet (e.g. sinking and neutrally buoyant groundline).

Many members believed that scarring and necropsy reports are important to determine ALWTRP progress. However, these members expressed frustration at the limited funding available for this type of work. Maintaining funding for scarring data and necropsy reports will be essential. The group developed the following consensus language:

*The TRT is strongly concerned that federal budget cuts, especially for right whale research, will be detrimental to our efforts. These limitations include minimizing the questions that we can answer regarding the applicability and safety of proposed fishing gear (e.g. low profile groundline), losing opportunities to obtain carcasses for necropsy, determining entanglement rates and trends, and lowering research coverage that can detect and aid in the disentanglement of whales.*

#### **b. Massachusetts Litigation**

Dan McKiernan, MADMF, reported on the status of the federal case of Richard Strahan v. the Commonwealth of Massachusetts. A three-day hearing for a preliminary injunction was concluded in the District Court in Boston. Strahan requested the Court to

enjoin the Commonwealth from issuing commercial licenses for fixed gear fisheries, notably lobster traps and gillnets; shut down the Massachusetts fisheries claiming the gear entangles endangered whales, and that is a violation of the Endangered Species Act (ESA); and prevent the Commonwealth from licensing fishing unless the gears are “whale safe” meaning that the gear does not cause a single death or serious injury of a listed species of endangered whale.

### **c. NOAA enforcement**

Stuart Cory, NOAA enforcement, stressed that enforcement agents strive for compliance, and anyone can call the hotline, 800-863-1964, to report a violation. The enforcement process may take time, but that is sometimes necessary for agents to provide information that will bring people into compliance.

The group discussed the following issues:

- Fishermen appreciate follow-through from enforcement agents; conversely, fishermen are encouraged to contact agents directly for updates on their case.
- Anonymity is very important in the fishing community. Enforcement agents always try to protect informants as much as possible; however at a certain point in the process it may not always be possible to maintain complete anonymity.
- Failing to report an entanglement is as much a violation as non-compliance.

### **d. Southeast Gillnet Fisheries Rule**

Barb Zoodsma reminded members that they can submit comments on the Southeast Gillnet Rule to [sewhalerule.comments@noaa.gov](mailto:sewhalerule.comments@noaa.gov) by December 15, 2006.

## **5. Next Steps**

Throughout the meeting several next steps were developed. They include:

- a. Vertical Line Questionnaire.** This questionnaire was handed out at the meeting and the information obtained will be used in NMFS’ Vertical Line Analysis Model. As discussed at the meeting, NMFS hopes that state fishery management agencies coordinate with their fishery representatives to develop this information. As discussed at the meeting, some fishery representatives offered to complete the questionnaire on behalf of their state fishery representatives. NMFS encourages state fishery representatives and industry to coordinate where possible. The questionnaire can be found in Attachment G.

Members are requested to fill out this questionnaire and return it to Diane Borggaard by e-mail ([Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov)), fax (978-281-9394) or mail (NMFS Northeast Regional Office, One Blackburn Dr., Gloucester, MA 01930) by February 9, 2007.

- b. Low Profile Groundline Proposals.** ALWTRT members agreed to provide low

profile groundline proposals to NMFS for further consideration. During the meeting, some conservation group and marine mammal scientist members met to discuss and draft text regarding their thoughts on low profile groundlines.

Some industry and state fishery management representatives discussed a template for consideration when developing a proposal for low profile groundlines. An electronic version of the template can be found at Attachment E. As discussed at the meeting, NMFS will share all proposals it receives with the full ALWTRT.

Interested members should provide their proposals to Diane Borggaard by e-mail ([Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov)), fax (978-281-9394) or mail (NMFS Northeast Regional Office, One Blackburn Dr., Gloucester, MA 01930) by January 31, 2007.

- c. Whale Research Needs and the Atlantic Large Whale Take Reduction Plan.** (Working Draft Matrix, November 2006). This matrix is included in your TRT notebooks as item 4.m. and was discussed at the meeting.

If you have additional comments on this matrix, please provide them to Diane Borggaard by e-mail ([Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov)), fax (978-281-9394) or mail (NMFS Northeast Regional Office, One Blackburn Dr., Gloucester, MA 01930) by January 31, 2007.

- d. Gear Research Needs and the Atlantic Large Whale Take Reduction Plan.** (Working Draft Matrix, November 2006). This matrix is in your TRT notebooks as item 6.f. and was discussed at the meeting.

If you have additional comments on this matrix, please provide them to John Kenney by e-mail ([John.F.Kenney@noaa.gov](mailto:John.F.Kenney@noaa.gov)), fax (401-294-0253), or mail (NMFS NER Fisheries Engineering Group, P.O. Box 1692, North Kingstown, RI, 02852) by January 31, 2007.

- e. Status Report and Progress Report.** These are included in your TRT notebooks as 2.f. and 2.g., and supplements to both reports were provided at the TRT meeting.

If you have additional comments on these reports, please provide them to Diane Borggaard by e-mail ([Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov)), fax (978-281-9394) or mail (NMFS Northeast Regional Office, One Blackburn Dr., Gloucester, MA 01930) by January 31, 2007. As discussed at the meeting, NMFS is looking for feedback from state fishery representatives as to the best way to obtain fishery information to include in Status Reports. At this point, NMFS plans on sending requests to state fishery representatives on the TRT for this information in advance of meetings to include in future status reports.



- f. Meeting Summary.** The meeting summary will be released for your review and comment on January 31, 2007.
- g. Next Meeting.** The next ALWTRT meeting will be determined once Congress has provided NMFS with a FY07 budget.

**List of Attachments**

- Attachment A: List of Attendees, Atlantic Large Whale Take Reduction Team Meeting  
Attachment B: Meeting Agenda; December 6-8, 2006  
Attachment C: Table of Contents of Two Mailings and Meeting Handouts  
Attachment D: List of Presentations (*in chronological order*)  
Attachment E: Industry Template Regarding Low Profile Groundline Deployment as presented to the Atlantic Large Whale Take Reduction Team Meeting December 2006  
Attachment F: Vertical Line Analysis Model Distributed at the ALWTRT Meeting  
Attachment G: Vertical Line Questionnaire Distributed at the ALWTRT Meeting  
Attachment H: Weak Line with Groundline Extension Gear Modification Option

**List of Meeting Attendees****ALWTRT Members/Alternates**

Regina Asmutis-Silvia	Bob Kenney	Tom Pitchford
Mike Baker	Amy Knowlton	Billy Reid
Diane Borggaard (NMFS)	David Laist	Arthur Sawyer
Tom Burgess	Scott Landry	Rich Seagraves
Erin Burke	Kristy Long (NMFS)	Bonnie Spinazzola
Gordon Colvin	Bill Mackintosh	Terry Stockwell
Sarah Cotnior	Charles "Stormy" Mayo	Mark Swingle
Greg DiDomenico	Patrice McCarron	Stuart Tolley
Cindy Driscoll, DVM	Dan McKiernan	Sierra Weaver
Jack Finn	Nicole Mihnovets	Mason Weinrich
Colleen Giannini	Fentress "Red" Munden	David Wiley
Lewis Gillingham	Mike Myrick	Sharon Young
Sonny Gwin	Bob Nudd	Barb Zoodsma (NMFS)
Julia Hathaway	Melissa Paine	
Chris Hickman	Larry Pieper	

**NMFS Staff**

Shannon Bettridge	Meggan Engelke-Ros	Richard Pace, III
Mary Colligan	David Gouveia	Allison Rosner
Kevin Collins	David Hilton	Glenn Salvador
Stuart Cory	John Kenney	Nancy Young
Laura Engleby	Holly Morin	

**RESOLVE Staff**

Robin Roberts	Bruce Stedman	Madeleine West
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**Others**

Justin Jaynes  
Greg Krutzikowsky  
LCDR EJ Marohn

Katie Moore  
Bruce Skud  
Erin Summers

Michael Waterson

**Atlantic Large Whale Take Reduction Team Meeting  
December 6-8, 2006**

**Sheraton Oceanfront Hotel**  
36<sup>th</sup> Street & Atlantic Avenue  
Virginia Beach, VA 23451

**AGENDA**

**Meeting Purposes:**

- Update ALWTRT members on ALWTRP-related issues (i.e. gear research and whale conservation activities and research)
- Update ALWTRT members on the ALWTRP FEIS and final rule
- Discuss research and development, and management issues related to low profile groundline
- Discuss vertical line research and reducing risk associated with vertical line
- Discuss timing and locations for future ALWTRT meeting (i.e. Regional Subgroup vs. Full TRT)

**DAY 1 (Wednesday, December 6<sup>th</sup>):**

- 8:30-9:00am**      **WELCOME, INTRODUCTIONS AND GETTING ORGANIZED** (*NMFS and Facilitator*)
- Review meeting purpose and round robin greeting
  - Opening comments
  - Review and agree on agenda and ground rules
- 9:00-11:00**      **FOLLOW UP ON ISSUES FROM 2005 ALWTRT MEETING** (*NMFS Staff and others*)  
(*with break*)
- Progress Report (question and answer period on large whale issues not included in the Status Report) and Matrices (gear and whale)
  - Status Report (discuss content, and question and answer period)
- 11:00-12:00**      **UPDATE ON ISSUES RELATED TO SOUTHEAST GILLNET FISHERIES**  
(*NMFS and Facilitator*)
- 2006 Temporary Rule and April Subgroup Meeting
  - Update on rulemaking
- 12:00-1:15pm**      **LUNCH**

**1:15-2:30**      **REPORT ON WHALE AND GEAR RESEARCH** (*State Agency and Federal Representatives*)

- Whale and gear research (MEDMR, MADMF, SBNMS)
- Questions on presentations

**2:30-5:45**      **OVERVIEW AND DISCUSSION OF LOW-PROFILE GROUNDLINES**  
(*with break*)      (*NMFS and Facilitator*)

*Objective: Review issues surrounding low profile, and discuss next steps.*

**ALWTRP PRINCIPLE: “Reduce profiles of all groundlines”**

- Overview of low profile workshops
- Discussion of issues and options related to groundline profiles (e.g. updated research and development activities)

**REVIEW OF NMFS’ QUESTIONS TO THE TRT**

(*Full TRT or breakout group discussions?*)

- Should areas be considered for usage of low-profile groundlines?
- If so, consider the following:
  - Where are the areas?
  - What is the appropriate height for groundline profiles above the ocean bottom (based primarily on bottom type; whale behavior also considered)?
  - What techniques can be employed to modify groundlines?
  - How should gear be marked in low profile areas?
  - How will the contingency plan be structured to address an entanglement event in a low profile area?

**5:45-6:00**      **OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**

**6:00**              **ADJOURN; OPTIONAL EVENING SESSION**

**DAY 2 (Thursday, December 7<sup>th</sup>):**

- 8:00-8:15am**     **WELCOME AND REVIEW AGENDA FOR THE DAY** (*Facilitator*)
- 8:15-8:30**     **OPTIONAL RECAP OF DAY 1 LOW PROFILE GROUNDLINE DISCUSSIONS**  
(*Facilitator*)  
*Objective: Review and clarify summary of previous day's discussion*
- 8:30-12:00pm**     **OVERVIEW AND DISCUSSION ON VERTICAL LINES** (*NMFS and*  
(*with break*)     *Facilitator*)  
Presentation and Discussion  
*Objective: Review and discuss issues surrounding vertical lines and next steps*
- ALWTRP PRINCIPLE:** “Reduce risk associated with vertical lines”
- NMFS’ working draft of a Vertical Line Strategy
  - ALWTRT vertical line requests from the 2005 meeting
  - Vertical line analysis efforts
    - Fishing effort
    - Whale distribution
- 12:00-1:15pm**     **LUNCH**
- 1:15-5:45**     **CONTINUE VERTICAL LINE PRESENTATIONS AND DISCUSSION FROM**  
(*with break*)     **MORNING**  
**SESSION (if necessary)**
- REVIEW OF NMFS QUESTIONS TO THE TRT**  
(*Full TRT or breakout group discussions?*)
- What do we know about the risk associated with vertical lines related to gear and whales?
  - What don’t we know?
  - How do we fill any data gaps?
  - What are the appropriate management options to address risk associated with vertical lines?
  - What are the next steps (e.g. rule making, further research)?
- 5:45-6:00**     **OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**
- 6:00**     **ADJOURN; OPTIONAL EVENING SESSION**

**DAY 3 (FRIDAY, DECEMBER 8<sup>th</sup>):**

- 8:00-8:15am**      **WELCOME AND REVIEW AGENDA FOR THE DAY** (*Facilitator*)
- 8:15-8:30**            **OPTIONAL RECAP OF DAY 2 VERTICAL LINE DISCUSSIONS** (*Facilitator*)  
*Objective: Review and clarify summary of previous day's discussion*
- 8:30-10:45**        **COMPLETE DISCUSSION OF MEETING TOPICS & NEW ISSUES OF IMPORTANCE** (*Facilitator*)  
*Objective: Dedicated time for continuing discussion of meeting topics and addressing new topics of importance that arose during the meeting*
- Meeting topics (e.g. Status Report)?
  - New issues?
- 10:45-11:45**      **NEXT STEPS** (*NMFS and Facilitator*)
- What will be done with the product from this meeting?
  - Recap of meeting and review next steps
  - Discuss next ALWTRT meeting(s)
    - Regional or full (to discuss the vertical line strategy in more detail and any other issues identified at this meeting)?
    - Recommended dates and locations?
- 11:45-12:00pm**      **OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**
- 12:00**                **ADJOURN**

ALWTRT Meeting Materials  
December 6-8, 2006

**1. General Meeting Information**

- a. Draft Agenda
- b. Ground Rules
- c. TRT Member Roster
- d. Regional TRT Subgroup Roster
- e. RESOLVE Facilitator Biographies

**2. 2005 ALWTRT Meeting and Follow-Up/Associated Materials**

- a. ALWTRT Meeting Summaries
  - Southeast Subgroup Meeting - April 11-12, 2006.
  - Take Reduction Team Meeting - April 25-27, 2005.
- b. Process for Allowing Gear Modifications under the ALWTRP
- c. Gear Marking Options from NMFS 2003 ALWTRP DEIS Scoping Document
- d. 2005 Low Profile Groundline Workshop Summary
- e. Working Draft of Vertical Line Strategy (*NOTE: new material has been added to this working draft [e.g. new reports as appendixes]*)
- f. Draft Status Report
- g. Draft Progress Report on Related Large Whale Issues

**3. ALWTRP Rulemaking Documents**

- a. Southeast Temporary Rule (2/16/06)
  - Environmental Assessment (EA) (11/15/06)
- b. Southeast Emergency Rule (11/15/06)
- c. Southeast Proposed Rule (11/15/06)
- d. Southeast Finding of No Significant Action (FONSI) (11/15/06)
- e. Summary of Vertical Line and Low Profile Comments Received on DEIS and Proposed Rule \*\*
- f. ALWTRP FEIS Outreach Document \*\*
- g. ALWTRP FEIS Notice of Availability (NOA) \*\*
- h. FEIS Permit Holder Letter \*\*

**4. Large Whale Research/Information**

- a. 2006 Draft Stock Assessment Report
  - North Atlantic Right Whale
  - Humpback Whale
  - Fin Whale
  - Minke Whale
- b. 2005 Stock Assessment Reports
  - North Atlantic Right Whale
  - Humpback Whale



- Fin Whale
- Minke Whale
- c. Cole, T.; Hartley, D.; and Garron, M. 2006. Mortality and Serious Injury Determinations for Baleen Whale Stocks along the Eastern Seaboard of the United States, 2000-2004. *Northeast Fisheries Science Center (NEFSC) Reference Document 06-04*.
- d. Cole, T.; Hartley, D.; and Merrick, R. 2005. Mortality and Serious Injury Determinations for Large Whale Stocks along the Eastern Seaboard of the United States, 1999-2003. *Northeast Fisheries Science Center (NEFSC) Reference Document 05-08*.
- e. Niemyer, M.; Cole, T.; Christman, C.; Duley, P.; and Nelson, M. North Atlantic Right Whale Sighting Survey (NARWSS) and Sighting Advisory System (SAS): 2005 Results Summary.
- f. Burke, E. and McKiernan, D. 2006. Massachusetts Division of Marine Fisheries Right Whale Conservation Program: 2005 Projects and Accomplishments.
- g. Baumgartner, M.F. and Mate B.R. 2005. Summer and Fall Habitat of North Atlantic Right Whales (*Eubalaena glacialis*) Inferred from Satellite Telemetry. *Canadian Journal of Fisheries and Aquatic Sciences*. 62: 527-543.
- h. Keller, C.A.; Brooks, W.B.; Slay, C.K; Taylor, C.R.; and Zoodsma, B.J. 2006. North Atlantic Right Whale Distribution in Relation to Sea-Surface Temperature in the Southeastern United States Calving Grounds. *Marine Mammal Science*. 22(2): 426-445.
- i. Merrick, R. L. 2005. Seasonal Management Areas to Reduce Ship Strikes of Northern Right Whales in the Gulf of Maine. *NEFSC Reference Document 05-19*.
- j. Silber, G.K. and Bettridge, S. 2006. United States' Actions to Reduce the Threat of Ship Collisions with North Atlantic Right Whales. Prepared for the International Whaling Committee's Working Group on Ship Strikes and presented at the International Whaling Commission's Conservation Committee.
- k. Kennedy, A. and Robbins, J. 2005. A Tool for Identifying Areas of Humpback Whale Entanglement Risk in the Gulf of Maine. Poster Presentation. 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals. San Diego, CA.
- l. Maine Department of Marine Resources (MDMR) Research Report (2006)
  - Experimental Low-Profile Groundline Research and Development in Maine Coastal Waters
  - Maine Lobster Fishery Endline Analysis
- m. NMFS Draft Large Whale Research Matrix
- n. Humpback Whale Foraging Workshop Summary \*\*

## 5. Large Whale Entanglements

- a. 2004 Entanglement and Ship Strike Report

- b. 2005 & 2006 (to date) Preliminary Large Whale Entanglement and Ship Strike Summary
- c. Johnson, A.; Salvador, G.; Kenney, J.; Robbins, J.; Kraus, S.; Landry, S.; and Clapham, P. 2005. Fishing Gear Involved in Entanglements of Right and Humpback Whales. *Marine Mammal Science*. 21(4): 635-645.
- d. Ledwell, W. and Huntington, J. 2006. Whale, leatherback sea turtles and basking shark entrapments in fishing gear in Newfoundland and Labrador and a summary of the Whale Release and Strandings Program during 2005. A report to the Department of Fisheries and Oceans, St. John's, Newfoundland, Canada.
- e. Bycatch Communication Network Newsletters (March and August 2006)
- f. Excerpts of Reports Included in the FY04 Performance Report on the Consortium for Wildlife Bycatch Reduction. Submitted to NMFS by the New England Aquarium: April 2006
  - Consortium for Wildlife Bycatch Reduction FY04 Highlights
  - Matrix of Bycatch Reduction Techniques
  - Report from Better Gear Subcontractor Gear Research
  - Report from UNH Subcontractor Gear and Whale Model Research
  - Main Lobstermen's Association Report to Wildlife Bycatch Reduction Consortium on 2005 Experimental Rope Deployment
  - Abstract from a Master's Thesis titled "Characterization of Weak Rope through the Design and Construction of a Portable Tensile Testing Machine". Glenn McGillicuddy. University of New Hampshire. December 2005. (for more information about this report, please contact Tim Werner, Director of the Consortium for Wildlife Bycatch Reduction, (617) 226-2137, or twerner@neaq.org)
- g. Werner et al. 2006. Fishing Techniques to Reduce the Bycatch of Threatened Marine Animals. *Marine Technology Society Journal*. 40(3): 50-68.
- h. Summary of NMFS Gear Analyses (1997-2004)

## 6. Gear Research

- a. Tension Technology International, Inc. April 2006. Non-Buoyant Lobster Line Specification. Prepared for Massachusetts Division of Marine Fisheries.
- b. Tension Technology International, Inc. May 2006. Analysis of Non-Buoyant Lobster Lines: New, Used and Machine Tested (Visual Examination, Microscopic Examination, Rope and Yarn Strength Testing, Scanning Electron Microscopy). Prepared for Massachusetts Division of Marine Fisheries and Atlantic Offshore Lobstermen's Association.
- c. Gulf of Maine Lobster Foundation (GOMLF) Summary on the Bottom Line Project; Maine's Voluntary Poly Groundline Exchange Program
- d. 2006 NMFS Gear Research Supplement
- e. Thorpe & Beresoff. 2006. Use of Weak Links during the 2005 Spot (*Leistomus xanthurus*) Gillnet Fishery in Southeastern North Carolina.
- f. NMFS Draft Gear Research Matrix

7. **NMFS/NFWF Funding Opportunities and Funded Projects**
  - a. Right Whale Research Program
  - b. Atlantic Coast States Cooperative Planning for Right Whale Recovery Program
  
8. **List of Fisheries (LOF)/ Marine Mammal Authorization Program (MMAP) & Fisheries Information**
  - a. MMAP 2006 Permit Holder Letters
    - NERO (12/6/05)
    - SERO (3/16/06)
  - b. General Information about the MMAP
  - c. Marine Mammal Protection Act (MMPA) LOF Information Sheet
  - d. 2005 MMAP LOF I & II Definitions (3/3/06)
  - e. 2006 Final LOF
  
9. **Fisheries Information (e.g. Observer Programs)**
  - a. The Directed Shark Gillnet Fishery: Catch and Bycatch, 2005
  
  
10. **Rulemaking Process Information**
  - a. National Environmental Protection Act (NEPA) Information Guide
  - b. Data Quality Act (DQA) Summary
  
  
11. **Miscellaneous**
  - a. Revised Recovery Plan for North Atlantic Right Whales
    - Notice of Availability (06/02/05)
    - News Release (06/01/05)
  - b. Draft Recovery Plan for Fin Whales
  - c. Marine Mammal and Sea Turtle Protection Guidelines for Recreational Fishermen and Boaters (NERO)
  - d. Help Prevent Entanglement: Protecting Marine Mammals and Sea Turtles: A Guide for Recreational Fishermen- for SE Region (06/27/05)
  - e. Stevenson, D.; Chiarella, L.; Stephan, D.; Reid, R.; Wilhelm, K.; McCarthy, J.; and Pentony, M. 2004 Characterization of the Fishing Practices and Marine Benthic Ecosystems of the Northeast U.S. Shelf and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat. *NOAA Tech. Memo. NMFS-NE-181.*

\*\* To be provided in a future mailing or at TRT meeting upon availability

**The following materials were also provided to members at the meeting:**

1. Distribution of Vertical Lines from the Maine Lobster Fishery (can be viewed on-line at <http://www.maine.gov/dmr/index.htm>)
2. Vertical Line Inputs questionnaire – accompanies IEc Vertical Line Analysis Model Presentation

**Additional Materials Available Upon Request**

**DAM Program Activities**

- November 5 DAM Permit Holder Letters (11/13/06)
- Federal Register Notice (11/16/2006)
- May 5 DAM Permit Holder Letter (05/12/06)
- Federal Register Notice (05/17/06)
- April 22 DAM Permit Holder Letter (05/03/06)
- Federal Register Notice (05/08/06)
- March 24 Inshore-DAM Permit Holder Letter (04/03/06)
- Federal Register Notice (04/06/06)
- March 24 Offshore-DAM Permit Holder Letter (04/03/06)
- Federal Register Notice (04/06/06)
- February 23 DAM Permit Holder Letter (extension) (02/24/06)
- Federal Register Notice (03/06/06)
- February 2 DAM Permit Holder Letter (02/08/06)
- Federal Register Notice (02/13/06)
- January 29 DAM Permit Holder Letter (02/03/06)
- Federal Register Notice (02/08/06)
- January 24 DAM Permit Holder Letter (01/30/06)
- Federal Register Notice (02/01/06)
- January 2 DAM Permit Holder Letter (01/09/06)
- Federal Register Notice (01/12/06)
- July 24 DAM Permit Holder Letter (07/29/05)
- Federal Register Notice (08/02/05)
- July 12 DAM Permit Holder Letter (07/21/05)
- Federal Register Notice (07/26/05)
- May 4 DAM Permit Holder Letter (05/10/05)
- Federal Register Notice (05/13/05)
- April 5 DAM Permit Holder Letter (04/15/05)
- Federal Register Notice (04/20/05)

**List of Fisheries/ Marine Mammal Authorization Program**

- 2005 Environmental Assessment on the LOF
- 2005 Final LOF
- 2006 Proposed LOF

**List of Presentations** (*in chronological order*)

1. Update on Southeast Gillnet Fisheries, Barb Zoodsma, NMFS
2. Experimental Low Profile Groundline Research, Erin Summers, MEDMR
3. Endangered Whales and Gear Research, Erin Burke, MADMF
4. Summary of 2005 Low Profile Workshops, Robin Roberts, RESOLVE
5. Summary of 2005 Vertical Line Requests, Diane Borggaard, NMFS
6. Vertical Line Analysis Model: Preliminary Design and Findings, IEC
7. Large Whale Distribution Data, Richard M. Pace, III, NMFS

**Industry Template  
Regarding Low Profile Groundline Deployment  
as presented to the  
Atlantic Large Whale Take Reduction Team Meeting  
December 2006**

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1. In what **areas** should low profile groundlines be allowed?
2. What is the **rationale/justification** for allowing groundlines in these areas?
3. What is the appropriate **height** for low profile groundlines in these areas?
4. What is the **timetable** for deploying low profile groundlines in these areas?
5. What kind of **gear marking system** should be used for low profile groundlines in these areas?
6. What type of **gear modifications** are needed to lower groundline profiles in these areas?
7. What is the **contingency plan** for addressing low profile groundlines that result in entanglements?
8. How will **enforcement** considerations be included?
9. What is the most important kind of **research** that should be conducted on whale behavior and gear modification?

**FOR ALWTRT REVIEW AND CONSIDERATION  
BEFORE THE DECEMBER 2006 ALWTRT MEETING**

**MODEL FOR ASSESSING  
VERTICAL LINE USE BY FIXED GEAR FISHERIES**

A continuing concern in the evolution of the ALWTRP is the risk of entanglement in vertical line; e.g., buoy lines associated with lobster trap/pot gear, other trap/pot gear, or gillnet gear. As noted in the working draft of NMFS' Vertical Line Strategy presented at the 2005 TRT meeting, NMFS is working to characterize the amount of vertical line used by various fisheries, as well as trends in the use of such line. This information will provide a foundation for further development of the Vertical Line Strategy and analysis of management measures that might be considered to reduce the risks of entanglement in vertical line.

A key element in NMFS' vertical line research effort is development of a GIS-based model to analyze geographic and temporal variations in fishing effort. With assistance from Industrial Economics, Incorporated, we are preparing a preliminary model that estimates the amount of vertical line in the water and the spatial distribution of this line over the period from 2000 through 2004. Subsequent versions of the model will integrate whale sightings information to help identify areas and times at which whales are likely to be present and vertical line is likely to be concentrated. In all cases, the model will provide dynamic results, allowing the user to modify assumptions and view the impact of these changes in map form.

During the December 2006 meeting, we will present an overview of the modeling methods and interim results. We will also discuss a plan for future meetings to seek input from TRT members to inform the development of the model. In particular, we will be seeking information on two key topics:

- ◆ **Variations in the Number of Vertical Lines Fished by Vessels:** The model defines numerous vessel groups that vary in terms of fishing location, species sought, gear fished, and gear configuration (e.g., number of end lines fished per trawl). We are seeking input on the following parameters:
  - Variations in the number of traps typically fished by different size vessels (lobster and other trap/pot);
  - The number of traps typically fished per trawl for vessels operating in different locations (lobster and other trap/pot);
  - Variation in the intensity with which gear is fished, i.e., what percent of a vessel's full complement of gear is actively used in different months of the year (lobster and other trap/pot as well as gillnet).

These parameters play a central role in estimating the number of vertical lines in the water at any given time.

- ◆ **Effort in State Waters:** While NMFS maintains data indicating where federally-permitted vessels concentrate their fishing effort, fishing activity by state-permitted vessels that do not report to NMFS is difficult to characterize geographically. We have identified some states



## Attachment F

(e.g., Massachusetts) with effort surveys that specify the location of fishing effort. However, we welcome suggestions on:

- Data from other states that would allow us to estimate the number of active vessels that are permitted to operate only in state waters; and
- Methodologies for characterizing the distribution of fishing effort within state waters.

We hope that highlighting some of these issues now will make for a more productive discussion in December. If you have any questions regarding this inquiry, please contact Diane Borggaard ([Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov); 978-281-9300 ext. 6503).

**ATLANTIC LARGE WHALE TAKE REDUCTION TEAM REQUEST  
DECEMBER 2006**

**VERTICAL LINE ANALYSIS MODEL  
INPUTS AND ASSUMPTIONS**

This information package is designed to solicit data for use in NMFS' Vertical Line Analysis Model. The estimates of vertical line generated by the model are dependent upon a variety of gear configuration assumptions that may vary geographically and over time. Key parameters for lobster and other trap/pot vessels include the following:

- The total number of traps fished by a typical lobster or other trap/pot (OTP) vessel in the designated region;
- Seasonal variation in the number of traps fished;
- The typical number of traps per trawl;
- Seasonal variation in the number of traps per trawl;
- The number of endlines attached to each trawl; and
- Seasonal variation in the number of endlines attached to each trawl.

For gillnet vessels, key parameters include the following:

- The total number of strings fished by a typical gillnet vessel in the designated region;
- Seasonal variation in the number of strings fished;
- The number of end/surface lines attached to each string; and
- Seasonal variation in the number of endlines attached to each string.

Refinement of these assumptions will yield more accurate and reliable estimates of vertical line use.

Over the next two months, we ask that state fishery management agencies coordinate with their fishery representatives to develop this information. We are available to provide clarification on the information needed and anticipate participating in meetings or conversations with each of the state agencies to coordinate on this process.

The attached forms provide suggestions for structuring your state's input. Please complete a separate form for each fishery and geographic area that you specify. Completed forms can be faxed to:

Diane Borggaard  
National Marine Fisheries Service  
Fax: 978-281-9394  
Phone: 978-281-9300 x6503

Alternatively, an electronic version of the form can be requested from Diane Borggaard at [Diane.Borggaard@noaa.gov](mailto:Diane.Borggaard@noaa.gov) and submitted via e-mail.

**LOBSTER AND OTHER TRAP/POT VESSEL GEAR CONFIGURATION:  
ASSUMPTIONS FOR VERTICAL LINE ANALYSIS MODEL**

1. Fishery:  Lobster  
 Other Trap/Pot: \_\_\_\_\_ (*specify target species*)

2. Geographic Area: \_\_\_\_\_  
 \_\_\_\_\_

(Note: You may specify a geographic area of any size or type. Examples include “Maine Lobster Zone C,” “Massachusetts state waters north of Boston,” or “Buzzards Bay.” Please complete a separate form for each geographic area.)

3. Number of traps fished and typical configuration (by month):

<b>MONTH</b>	<b>TOTAL TRAPS FISHED PER VESSEL</b>	<b>NUMBER OF TRAPS PER TRAWL</b>	<b>NUMBER OF ENDLINES (1 or 2)</b>
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

4. Has the information in #3 varied over the last five years? If so, how?  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Other relevant gear configuration information for this area: \_\_\_\_\_  
 \_\_\_\_\_

6. We may need to clarify your suggestions. Please provide the following contact information:

Name: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

**GILLNET VESSEL GEAR CONFIGURATION:  
ASSUMPTIONS FOR VERTICAL LINE ANALYSIS MODEL**

1. Geographic Area: \_\_\_\_\_  
\_\_\_\_\_

(Note: You may specify a geographic area of any size or type. Examples include “North Carolina nearshore waters,” “Mid-Atlantic Gillnet Waters,” or “Nantucket Sound.” Please complete a separate form for each geographic area.)

2. Number of strings fished and typical configuration (by month):

<b>MONTH</b>	<b>TOTAL STRINGS FISHED PER VESSEL</b>	<b>NUMBER OF ENDLINES PER STRING</b>
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

3. Has the information in #2 varied over the last five years? If so, how?  
\_\_\_\_\_  
\_\_\_\_\_

4. Do fishermen in this area typically return to port with their nets or let gear soak between trips? \_\_\_\_\_  
\_\_\_\_\_

5. Other relevant gear configuration information for this area: \_\_\_\_\_  
\_\_\_\_\_

6. We may need to clarify your suggestions. Please provide the following contact information:

Name: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

**Amy Knowlton's Description of Weak Line Strategy**  
As presented at the 2006 ALWTRT Meeting

**Modification**

Weak line with groundline extension

**Description**

Vertical line w/breaking strength of ~1,000 lbs or less. Extend groundline between first and second pot so that vertical line is only hauling the weight of first pot to the surface.

**What it does**

The weak line will allow a large whale that hits the vertical line to break free from the bottom gear quickly and prevent serious injury from occurring

**Is the technology available**

Yes, weak line can be made at lowered breaking strengths at the same diameters presently used in fisheries.

**Status of research**

Several years in development, some field testing completed. 600 lb weak line has failed for some fishermen.

**Biological Effectiveness Research**

Need an evaluation to assess the degree of risk reduction provided by releasing the whale free of the bottom gear but still entangled in the endline. Could review historical entanglement interactions (pre 1992 when line was weaker and post 1992 when line became stronger) to see if any trends in severity are seen in scarring data. Effectiveness can be monitored by marking this gear clearly to see if it shows up on whales and when it does show up on whales, how severe the injury is.

**Gear Research Needs**

The technique to make weak line exists.

**Safety Issues**

??

**How practical is it from an operational standpoint measure on a scale of 1 to 10? (10 is high)**

??

**How effective as a risk reduction measure on a scale of 1 to 10**

8

**Estimated time and cost from the biological perspective**

??

**Implementation:**

**How to accomplish**

**Potential Funding source**

**Recommendation**

**Priority**

10?