

ATLANTIC TRAWL GEAR TAKE REDUCTION TEAM MEETING

April 25 – 26, 2007

Baltimore, MD

Draft Meeting Summary

ATTENDEES

See participant list in Attachment A.

DAY 1 – WEDNESDAY, APRIL 25

WELCOME & INTRODUCTIONS

David Gouveia, National Marine Fisheries Service (NMFS), welcomed participants to the second Atlantic Trawl Gear Take Reduction Team (ATGTRT) meeting and gave an overview of the meeting purpose and objectives. See agenda in Attachment B.

Meeting Purpose

The objective of the ATGTRT is to reduce the serious injury and mortality (bycatch) of long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), white-sided dolphins (*Lagenorhynchus acutus*) and common dolphins (*Delphinus delphis*) in several trawl gear fisheries in the Atlantic Ocean. Mr. Gouveia noted that purpose of the meeting was to review and discuss data and management questions; and review and discuss options for a draft Take Reduction Plan (TRP).

Agenda Revision and Ground Rules

Robin Roberts, RESOLVE, meeting facilitator, began by reviewing the agenda and proposed meeting structure. Members decided to postpone discussion of the NOAA General Council guidance concerning the MMPA requirements applicable to the ATGTRT, as well as the discussion of future meetings, to later in the afternoon to allow additional time for late arriving TRT members to participate in the discussions. Mr. Roberts then reviewed ground rules intended to guide the group's interactions.

RESPONSE TO ACTION ITEMS/ATGTRT REQUESTS

Mark Minton, NMFS, reported on the status of recommendations and action items that had been identified at the September 2006 ATGTRT Meeting.

New Members

At the September 2006 meeting, the TRT requested NMFS consider adding state representatives to the TRT. In response to this request, NMFS appointed representatives from the State of Massachusetts and the State of Maine as members of the TRT. This decision was made based on fishing effort by state and by species that are involved in fisheries with the highest bycatch rates. Massachusetts and Maine were represented by Erin Burke (as an alternate for Dan McKiernan) and Terry Stockwell, respectively. Also in response to the TRT's recommendation, NMFS appointed Regina Asmutis-Sylvia, from the Whale and Dolphin Conservation Society, to the TRT as a representative of the conservation community.

Canadian Management Measures

At the TRT's request, NMFS reviewed marine mammal management issues in Canada. The statute authority in Canada is the Fisheries Act and the Species at Risk Act (SARA), and activities regulated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Information on the Fisheries Act, SARA, and COSEWIC is available online.

- COSEWIC: http://www.cosewic.gc.ca/eng/sct0/index_e.cfm
- Fisheries Act: <http://laws.justice.gc.ca/en/showtdm/cs/F-14//en>
- Species at Risk Act (SARA) <http://laws.justice.gc.ca/en/showtdm/cs/F-14//en>

Currently, there are no management measures in place for stocks covered by the ATGTRP.

NMFS, specifically the Northeast Regional Office (NERO) and the Northeast Fisheries Science Center (NEC) have been working with their Canadian counterparts in the Maritime Region, the Canadian Department of Fisheries and Oceans (DFO). NMFS representatives sit on a U.S.-Canada Steering Committee that explores trans-boundary issues related to protected species including marine mammals, sea turtles and fish stocks that occur in U.S. and Canadian waters. The Committee is comprised of a Steering Committee and several workgroups (e.g., the Species of Risk Working Group) comprised of NERO and DFO policy and science staffs that discuss trans-boundary science and conservation efforts for species that occur in both U.S. and Canadian waters

Canada's process includes the development of recovery strategies, action plans and management plans that are similar to plans developed under the U.S. Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). With the newly-implemented SARA, Canadian officials are becoming more interested in learning about NMFS and the TRT process. Canada does not currently have any marine mammal management measures in place, but they have taken steps to develop outreach and education within the industry. They have also established a subgroup to explore methods for including management measures in recovery plans.

In response to questions from TRT members, Mr. Gouveia added that:

- The Species at Risk Working Group has discussed improving the sharing of data between the U.S. and Canada.
- Canada does not have a policy definition for strategic stocks; the working group examines all transboundary species whether or not they are considered strategic in the U.S.
- The current NMFS U.S. Stock Assessment Report (SAR) include waters up to the Gulf of St. Lawrence, so some of the population estimates for long-finned pilot whales include those found in Canadian waters.
- Even though NMFS is working with the Canadians to address marine mammal interactions with commercial fishing gear, they are still primarily concerned with bycatch of marine mammals by U.S. vessels in U.S. waters.
- Terry Stockwell, Maine Department of Marine Resources, encouraged Mr. Gouveia to broaden the dialogue of the working group to include relevant U.S. states and industry because Maine is closely tied to Canada. Mr. Gouveia responded that, at this time, the working group is comprised of representatives of the two federal governments only. Mr. Gouveia noted that one Committee workgroup has industry representatives; however, that

is the only group that involves additional stakeholders and that it includes industry representatives from the New England Fishery Management Council and industry representatives from Canada.

List of Fisheries Revision

At the September 2006 ATGTRT meeting, members asked NMFS to reevaluate the classification of the mid-water trawl fishery as a Category I fishery based on levels of bycatch. At that meeting, NMFS noted that the tier analysis that supported the mid-water trawl fishery's elevation to Category I was based on the average takes over the most recent five year period. During this period one of the years utilized for the mid-water trawl fishery elevation included an increase in marine mammal bycatch that seemed to drive the fisheries Category I classification. Because the increase in marine mammal takes that resulted in the elevation of the mid-Atlantic mid-water trawl fishery to Category I is no longer part of the 5-year average considered in the tier-analysis, the TRT requested NMFS re-evaluate the classification of the mid-Atlantic mid-water trawl fishery as a Category I fishery. Mr. Minton reported that the tier analysis resulted in a reclassification of the mid-water trawl fishery to Category II in the MMPA List of Fisheries (LOF) for 2007.

At the September 2006 meeting, TRT members also requested that NMFS alter the timing of the MMPA LOF to better reflect its connection to the SARs, and to more clearly show which stocks are driving a fishery's categorization. NMFS responded that a new timeline for publishing the MMPA LOF was established that will create a better timeframe for public review and comment. The timeline calls for publishing a proposed and final LOF at the same times each year (on or about June 1 or July 1 for a proposed LOF, and November 1 for a final) and a comment period extended from 30 days to 60 days. NMFS aims to release a proposed 2008 LOF for review and comment in July 2007.

Observer Manual Update Process

Mr. Minton reported that, in October 2006, an annual observer program/manual review meeting was held in Woods Hole, Massachusetts. The purpose of the meeting was to review and update the Observer Training Manual, data logs and sampling procedure, as appropriate. At the meeting, participants reviewed and discussed several observer logs and addressed specific questions posed by observer program staff. Some of the discussion centered on potential ways the Observer Program could adjust sampling procedures to gather information to better inform the TRT's efforts to develop better management measures.

As part of the annual Observer Program review, NMFS routinely seeks the input and expertise of members of the fishing industry to ensure the accuracy and efficacy of the data, including fishing vessel and gear-based information collected by observers.

Amy Van Atten, NMFS, reviewed additional aspects of the Observer Program that have been updated and improved.

- Logs have been redesigned to disaggregate bottom trawl, mid-water and pair trawl, twin trawl and scallop trawl.
- Gear Log Changes
 - Added net name, net type and net builder

- Added bridle length
- Changed ground cable length to fathoms
- Added 3 additional liner size measurements
- Expanded description and options for fishing circle, sweep gear, excluder devices, separator panels and escape outlets
- Haul Log Changes
 - Added two additional times to capture a haul event, for a total of four times
 - Added number of turns the vessel makes during a haul
 - Added vertical opening, horizontal opening and door spread to net descriptions

Due to these changes, and based in part on feedback from the TRT at the September 2006 meeting, NMFS sent a memo to observers reminding them of their regular duties. The memo specifically stressed the importance of communication with captains and crew, tagging animals, collecting DNA samples from takes, getting body temperatures of takes when possible, and recording probation status. The Observer Program also has scheduled additional refresher trainings to address changes to the program, and updated the curriculum for their three-week observer training program accordingly.

Additionally, NMFS is working with Canada on data collection and sharing, and plans to attend the International Fisheries Observer Program Meeting in May, 2007, in Canada.

A proposed 2007 Observer Program sea day schedule was distributed to the group. The final schedule will be determined based on NMFS funding.

In response to questions from members, Ms. Van Atten clarified that:

- Observers do track the number of turns a boat makes by using a vessel's GPS equipment, carrying their own GPS equipment, or asking the captain for the number of turns he generally makes when fishing.
- NMFS has updated the list of biological samples for mortality estimates for pilot whales.
- At the September 2006 meeting NMFS indicated that it would convene a team of veterinarians to review observer comments on reports of marine mammal takes and provide a list of injuries for observers to record, so that serious injury determinations can be accurately made in the future. To address this, NMFS has convened two work groups; one for sea turtles, which began in early April, 2007, and one for marine mammals. NMFS is convening the Serious Injury Technical Workshop in September, 2007, to discuss serious injury determinations for marine mammals. Copies of the meeting summary were made available to TRT members. Ms. Van Atten added that veterinarians always review observer comments, and look specifically at the types of marine mammal injuries to assess whether the injury is serious (i.e., is likely to lead to mortality).

Rick Marks, Roberston, Monagle & Eastaugh, noted that he has concerns about some of the observer comments relating to serious injury mortalities and how those records affect mortality estimates. Ms. Van Atten and Mr. Marks are working to arrange a time to meet to review the records.

- NMFS clarified that the yellow highlights in the Observer Program sea day schedule are days that count towards a court order requiring NMFS to cover five percent of the

Northeast groundfish fisheries. There are fewer sea days for the Mid-Atlantic region due to lower funding levels for that region. Although the FY07 funds have not yet been appropriated to the programs, Ms. Van Atten does not anticipate any major changes to the proposed 2007 sea day schedule.

Review of Remaining Action Items

Mr. Minton distributed a table of remaining action items from the September 2006 meeting. The table lists the responsible party for completion of the action item (e.g., NMFS, industry, ATGTRT) and whether that item is considered a short-term or long-term task.

PRESENTATION 1: GEAR MODELS

Presenter: David Beutel, University of Rhode Island Fisheries Center

Mr. Beutel provided a presentation on ground fish nets and squid nets, the purpose of which was for team members to reach a common level of understanding about the design and operation of the gear. Mr. Beutel began by describing the characteristics of a ground fish net.

Discussion and Observations on Presentation 1: Gear Models

TRT members asked Mr. Beutel clarifying questions, and some fishermen at the table joined in to provide their perspective on the operation of the nets, as well as marine mammal behavior around the nets, based on their experience at sea. The following issues were discussed and clarified:

- The average tow speed of a ground fish bottom trawl for is about 3-4 knots, while a mid-water trawl is slight faster at 2.5 – 4.5 knots.
- There is probably not a proxy for determining how high nets open, however the vertical opening depends on several factors such as; length of legs, number of kites and number of floats. For example, if the legs of a system are shortened, the net can only go a certain height no matter how many kites or floats are used. The Observer Program is trying to collect information on the height of nets.
- The tow time of day depends on the fishery. For the squid fishery, towing is mostly in the daytime. Night fishing nets are generally the same as ground fish nets, but it depends on the fishery. Many fishermen feel however, that time on the fishing ground is so limited that some boats tow night and day just to catch as much as they can.
- One team member asked whether fishermen can detect dolphins on their fish-finders. One fisherman replied that he does not see many dolphins at night, while another remarked that he has seen more dolphin activity at night than in the daytime. Both agreed that when dolphins are present they will come right up to the side of the boat.
- The radius and speed of a turn a vessel makes can affect the opening of the net. Some fishermen bring the doors up to make a turn, and then will redeploy the system to begin another tow. Other fishermen will make a slow turn and keep the doors down throughout.
- Escape panels have been field tested in squid nets, and when placed in the juncture of the extension and the upper belly of the net, it has appeared that the escape panels did not reduce the catch of the targeted species. Placing escape panels farther back in the net has been problematic, so moving the opening towards the mouth of the net might be a better option to test.

- The squid net is a shallow, large mesh net so it generally reduces takes. Increasing the mesh size might further reduce takes.
- For ground fish nets, when a fisherman is hauling back the first thing hauled up are the doors, and that immediately collapses the net. Since observer comments on the behavior of marine mammals indicates they may be feeding during a haul back, one meeting participant questioned whether the net configuration was more or less apt to cause entanglement. One fisherman at the table acknowledged that he has seen marine mammals swimming in and out of the range of the net during haul backs. Another fisherman suggested that dolphins might get in the mouth of the net to feed, become disoriented about where they are, and swim to the back of net instead of out the front.

PRESENTATION 2: UPDATE ON ABUNDANCE ESTIMATES AND PBR

Presenter: Dr. Debi Palka, Northeast Fisheries Science Center

In her presentation, Dr. Debi Palka summarized updated abundance estimates and PBR data that had been analyzed based on information requests from the TRT at the September 2006 meeting. Dr. Palka presented new PBR data for white-sided dolphin, harbor porpoise, and minke whales, explaining how updated abundance estimates for those species were used to determine the new PBR. Abundance estimates, and therefore also PBR, were not updated for common dolphin, and pilot whales because the data for those species was collected in 2004 and is still considered current.

Dr. Palka explained to TRT members that abundance estimates, the estimated productivity rate of that stock and a “recovery factor” are the components used in calculating PBR. To update PBR, abundance estimates were first updated with new data collected from July – August 2006, using aerial surveys. Several factors were recorded during aerial surveys including weather and sightings by marine mammal species, group size, swim angle, perpendicular distance, and cue. Maps of the coast were presented to show where aerial surveys had been conducted in the summers of 1995, 1998, 1999, 2002, 2004 and 2006. Sightings of common dolphin, pilot whales and white-sided dolphin, and the average temperature of the water were recorded.

Dr. Palka concluded her presentation with general results. She stated that the data show the density of white-sided dolphin, harbor porpoise and minke whales has been fluctuating over the years. The NEC is working on how to account for the inter-annual variability of these species. Some possible factors could be randomness of the data, aerial surveys that did not include the entire habitat of the species, population growth of the species, and/or the presence of predators.

Discussion and Observations on Presentation 2: Update on Abundance Estimates and PBR

TRT members asked questions on future surveying and the accuracy of different survey methods; the separation of pilot whales into two stocks; and the factors used to calculate PBR. The following items were discussed:

- NEC has acquired a new ship and plans to do shipboard surveys from July – August 2007 in the Gulf of Maine region. NEC will focus their surveys efforts on cold water species and push to complete abundance estimates for marine mammals in northern waters. NEC will also be coordinating with Canada, Russia, Iceland and Norway to determine who is

researching what in an attempt to collect and analyze data that show distributions of the different species in northern waters. Aerial surveys will take place during the same time period in southern coastal waters where NEC will be focusing on sea turtle abundance estimates.

- The probability of detecting an animal or group of animals during a survey is factored into abundance estimates largely to account for observers, not animal behavior patterns (e.g. a sighting could be missed because the animal was hidden behind a swell, the observer was scanning other parts of the water when the animal surfaced, or the animal could have been diving at the time the observer scanned that piece of water). NEC is researching a method that would adjust the probability of observing an animal by using dive times for the species. The probability of detecting animals during aerial surveys is lower than for ship board surveys, so more sightings are detected from shipboard surveys, and therefore, the variance of shipboard abundance estimates are lower than that from aerial surveys. Thus, it is hoped that the data from the upcoming 2007 ship and plane survey will result in lower variance estimates. NEC hopes to run shipboard surveys on the same tracks as aerial surveys to compare the two.
- Dr. Palka clarified that genetics data shows there are two separate stocks of pilot whales which mix in some areas in the summer. Currently, these data are being explored to determine if sea surface temperature or some other factor relates to the locations of the two stocks. The results of this investigation could provide a way to create abundance estimates for the two separate stocks.
- Some members asked whether or not there are also two separate stocks of white-sided dolphin, and whether a separate stock will emerge if the southern stock moves north into Canadian waters. Also, if the stocks move to Canada how will takes be recorded and incorporated into population estimates and PBR? Dr. Palka noted that we are estimating abundance of white-sided dolphins in U.S. and Canadian waters south of the Gulf of St. Lawrence. Also SAR guidelines instruct NEC that if Canada has takes in the same stock those takes would be added to the SAR the same as any take occurring in the U.S.
- Another member questioned the use of minimum population estimates to determine PBR, as opposed to the use of a calculated “best” estimate of the stock population. The concern was that using the lowest estimate of stock population, especially when the population estimates for mammals like white-sided dolphin can vary greatly between years, lowers PBR and creates great variations in PBR from year to year. This member felt that using a minimum estimate for PBR is overly cautious, and stressed the significant effects variations in PBR have on the fishing industry. Dr. Palka responded that using the minimum population estimate is required by the MMPA on the principle that this minimum population estimates provides a reasonable assurance that the true stock size is equal to greater than the minimum population estimate.
- One member asked why the same default value of 0.04 was used for the estimated productivity rate of common dolphins, pilot whales, white-sided dolphin, harbor porpoise, and minke whales in the current PBR estimates. Dr. Palka explained that researchers do not have all the species-specific data required to calculate the estimated productivity rate for each species; therefore they use modeling to estimate what the potential growth rate of the species could be, and the model determined the same “default” rate of 0.04 for each of the species. If species-specific data becomes available,

then the estimated productivity rate will be calculated and used in place of a default value.

- Another member asked for clarity on the 0.5 recovery factor value that was used to determine PBR. Dr. Palka explained that the recovery factor is the value that will allow a declining population to return to a healthy stock. Endangered species are given a recovery factor of 0.1, while 0.5 is a default value for those populations that are either thriving or where the population is unknown. SAR guidelines require an adjustment of the recovery factor if a population begins to decline.

PRESENTATION 3: 2003 – 2005 MID-WATER TRAWL MARINE MAMMAL BYCATCH ESTIMATES

Presenter: Dr. Debi Palka, Northeast Fisheries Science Center

Dr. Palka presented results on bycatch estimates in the mid-water trawl fisheries for each year between 2003 – 2005, including an average over the three years, for both white-sided dolphin and pilot whales. There were separate estimates for each year, species, and location in the Northeast and Mid-Atlantic region because different areas have different bycatch rates. In addition to the results, Dr. Palka also described the steps taken to calculate the estimates, along with a model that was used to identify significant factors that may influence bycatch rates.

Total bycatch estimates are the product of the estimated bycatch rate (number of marine mammal mortalities observed per unit of fishing effort (defined as days fished)) and total days fished for the entire fishery, where days fished is the amount of time the net is in the water. The bycatch rate information for this calculation was obtained through Observer Program data, and the fishing effort information was taken from Vessel Trip Reporting (VTR) data. Several variables representing gear characteristics and fishing practices that were recorded in the observer data were found to be statistically correlated with the bycatch rate. The most significant predictors of bycatch were latitude and depth of the water column, and presence or absence of a kite panel in the trawl. For both single and paired mid-water trawls, total bycatch from 2003 – 2005 was highest in water 51-125 fathoms (306-750 ft; 93-229 m) and at a latitude of 39 – 40 degrees. Additionally, the highest bycatch rate was found in paired trawls.

Discussion and Observations on Presentation 3: Mid-water Trawl Marine Mammal Bycatch Estimates

While the data presented indicates pair trawls with kites are correlated with the largest bycatch rate, several fishermen did not believe that there are any pair trawls that use kites. Data from the Observer Program provided information on pair trawls with kites, so there was confusion about the accuracy of this reporting. One member suggested that observers could be confusing kites with transducer panels. The TRT agreed that additional investigation is needed on whether there are indeed kites in the pair trawl fishery.

PRESENTATION 4: MARINE MAMMAL MORTALITY FROM BOTTOM TRAWL GEAR 2001 – 2005

Presenter: Marjorie Rossman, Northeast Fisheries Science Center

Ms. Rossman presented on marine mammal mortality in bottom trawl fisheries using data from 2000 – 2005. Modeling from 2000 – 2005 data were utilized to describe the type of fishing effort

in areas where bycatch is high for pilot whales, white-sided dolphin and common dolphin. The model fit the observer data very well, suggesting that the model selected was a good predictor of factors correlated to bycatch. After adding 2005 data, the significant predictors remained the same from the previous analysis with one new additional predictor for pilot whales. These predictors are:

- Statistical area
- Target fish species
- Sea surface temperature (SST)
- Bottom depth
- Bottom slope
- Vessel horse power (VHP)

Ms. Rossman then presented combinations of characteristics that correlate to bycatch for each species. The main results from the study are as follows:

Pilot whales: Estimated total mortality was highest in areas with shallow slope, by vessels with small vessel horse power (VHP), and where the fishing effort was on squids in the Mid-Atlantic region in comparison to all species “other” than squid in the Northeast region..

White-sided dolphin: Estimated total mortality was highest in Northeast areas with low to mid sea surface temperature (SST), at deep depths. Fishing effort in these areas was dominated by the monkfish fishery.. Additionally, most observed takes of white-sided dolphins occurred in statistical areas 521 and 522 in March and April.

Common dolphin: Estimated total mortality was highest in statistical areas 622 and 627 in the Mid-Atlantic region. Fishing effort in these areas was dominated by fluke, illex, loligo and “other” species.

Preliminary 2006 data for bottom trawl fisheries show two observed pilot whale takes, four white-sided dolphin takes and fifteen common dolphin takes. In the mid-water trawl fishery there were zero observed takes for pilot whales and common dolphins, and three white-sided dolphin takes.

Discussion and Observations on Presentation 4: Marine Mammal Mortality from Bottom Trawl Gear 2001 – 2005

Ms. Rossman stated that the data from 2000-2005 did not include kites. She did not learn until this meeting that kites were being used in the bottom trawl fishery. Observer Program logs presently do not collect data on kites for bottom trawls, but Ms. Rossman will work with Ms. Van Atten to address this.

PRESENTATION 5: FACTORS THAT MAY BE CORRELATED TO THE BYCATCH RATE

Presenter: Dr. Debi Palka, Northeast Fisheries Science Center

The bycatch models presented by Dr. Palka and Ms. Rossman were intended to quantify potential bycatch reduction plans. Dr. Palka explained how the observer data in the model can be used to identify gear characteristics, fishing practices, or environmental factors that are correlated to the bycatch rate of marine mammals. The data can then be modified to “simulate”

the predicted number of marine mammal mortalities that could be avoided if potential gear modifications had been in place.

Results showed variables that were most highly correlated to bycatch in the mid-water trawl and bottom trawl fisheries. Dr. Palka encouraged TRT members to begin thinking about the causes for these factors and potential mitigation measures to address them.

Discussion and Observations on Presentation 5: Factors That May Be Correlated to the Bycatch Rate

Dr. Palka responded to clarifying questions from TRT members with the following:

- Some of the factors that correlated to mid-water trawl bycatch related to net design, specifically net design listed as 4 seam, unequal and another listed as 4 seam, equal. Dr. Palka explained that both designs referred to paired mid-water trawls.
- The presence of an “x” by some factors in the charts indicates that the bycatch rate level was calculated from a small sample of observed hauls. This could be interpreted in two ways; 1) there are not enough observed hauls to show a reliable relationship and therefore the factor should be ignored, or 2) the relationship is so strong that a large number of hauls are not needed to show a significant relationship. One member commented that these factors may not have enough observed hauls because few fishermen are incorporating them into their fishing practices (i.e. they are not using certain net designs or fishing at certain latitudes). Therefore, it would be worthwhile to begin mitigation measures around these factors that fewer fishermen are involved in and result in a high number of takes. This way mitigation measures would have less of an impact on the fishing industry.

Mr. Gouveia encouraged members to think overnight about the data presented and how it could be used to support possible mitigation measures.

NOAA GENERAL COUNCIL GUIDANCE ON SETTLEMENT AGREEMENT: ATGTRT RESPONSIBILITIES PURSUANT TO THE MMPA

The Team revisited this agenda item after postponing it during the morning session. At the September 2006 meeting, TRT members requested guidance from NOAA’s General Council (GC) on several issues: 1) timeline and requirements under the MMPA for development of a TRP for marine mammal stocks that are non-strategic; 2) the TRT’s responsibility for considering common dolphins since the serious injury and mortality of that species is near the Zero Mortality Rate Goal (ZMRG), or the insignificance threshold, defined as 10% of the stock’s PBR level; and 3) how and why white-sided dolphins were added to the TRT’s purview.

Mr. Gouveia summarized a memo from the GC responding to the TRT’s questions, noting that guidance on the TRT’s responsibility for common dolphin, and the reasoning for including white-sided dolphins in the TRT was fairly straightforward. For common dolphins, the GC guidance memo stated that, “The estimate for common dolphin bycatch presented at the TRT meeting in September 2006, was 12% of PBR. While this is not at/below the 10% insignificance threshold, it is close. How much or whether to try to further reduce this rate of bycatch, taking

into account the statutory considerations of ‘economics of the fishery (and) the availability of existing technology’, relegates this decision to the area of NMFS’ and the TRT’s discretion.” For white-sided dolphin, the GC stated that the species was added into the TRT’s purview because they appear as bycatch in the trawl fisheries covered by the ATGTRT, and that, “section 118(f)(6)(B) of the MMPA allows NMFS to request a TRT to address multiple stocks within a region or fishery if it determines that doing so would facilitate the development and implementation of a TRP.

Mr. Gouveia acknowledged that the first issue – the timeline and requirements for developing a TRP for non-strategic stocks in Category II fisheries – may be less straightforward than the other two issues. The GC guidance memo indicates that there is no timeline within the MMPA requiring the ATGTRT to submit a draft TRP because all the fisheries affected by the ATGTRT are Category II fisheries and none of the stocks under the ATGTRP are strategic at this time. Mr. Gouveia explained that the guidance memo was only recently released and NMFS staff has not had time to clarify some of the legal questions prompted by the memo. Additionally, legal counsel was not available for the TRT meeting due to conflicting obligations and responsibilities.

Mr. Gouveia continued that although the GC guidance memo indicates that there is no timeline within the MMPA requiring the TRT to submit a draft TRP, NMFS feels that the TRT should move forward and make the best effort possible to meet the 11 month obligation to develop a TRP, a commitment that members agreed to at the first meeting in September 2006. NMFS has already expended energy and resources to meeting the 11 month commitment, and would like to maintain momentum on this process.

Mr. Gouveia then asked the TRT for their thoughts on NMFS’ proposal to continue moving forward in the 11 month timeframe to develop a TRP, given guidance from NOAA GC that the timeline no longer applies. He reinforced that TRPs generally include sections on outreach and education efforts, in addition to management measures that are implementable over a period of time. In an effort to push the process forward, NMFS staff developed a strawman TRP to help aid the group’s discussion of potential TRP elements.

TRT members expressed differing opinions on whether to recommit to an 11 month timeline for developing a TRP. Generally, fishing industry representatives felt that there is not enough data with which to develop management measures, and industry cannot afford another layer of legally mandated management measures unless they are clearly warranted by data. They also felt strongly that efforts should be directed towards species with serious injury and mortality rates above PBR, and were not ready to commit to developing a TRP that may legally bind them to reach ZMRG in five years for these marine mammal stocks and Category II fisheries.

Representatives from environmental groups believed that given the inter-annual variability of the stock of white-sided dolphins it is just a matter of time before the serious injury and mortality rate will exceed PBR, at which time the MMPA will require a TRP within 6 months. Also, pilot whale abundance estimates will soon be separated for the two species, at which time both long-finned and short-finned pilot whales may become strategic stocks. These team members encouraged the TRT to be proactive and develop a TRP. One NGO representative suggested that interpretations of the MMPA suggest that engaging in a TRP would actually provide the industry

with more time before management measures are required. It was underscored that a TRT works within an 11 month timeframe to develop a plan to get to ZMRG in five years, whereas outside of a TRP process the MMPA can be interpreted to state that NMFS should already have achieved ZMRG for all marine mammal stocks by April, 2001.

While unable to agree on whether to develop a TRP within the 11 month timeframe, TRT members did agree that developing a research plan would maintain progress towards obtaining the ultimate goal of reducing the serious injury and mortality of marine mammals in Atlantic trawl fisheries. The group discussed whether or not a research plan could be integrated into a TRP, or whether the research plan should be a stand-alone statement from the TRT. They discussed the following differences between a TRP research plan and a stand-alone research plan:

- NMFS would have an obligation to implement a research plan as part of a TRP.
- If NMFS is determined to develop a TRP at this time, then TRT members should use the opportunity to be involved in the development.

NGO representatives suggested developing a TRP with only the research plan section, including caveats that management issues are not intended to be part of the TRP because there is currently not enough data to warrant their development. Industry representatives were reluctant to enter into a TRP process, even if only to develop a research component, without knowing whether they then would be legally bound to reach ZMRG within five years. They were strongly opposed to “starting the clock” on such a five year mandate, especially when the stocks are not strategic.

One issue raised by a member was that developing a stand-alone plan with research recommendations apart from a TRP might trigger requirements of the Federal Advisory Committee Act (FACA). While TRTs are exempt from FACA because they are a de facto advisory committee, this member believed strongly that the TRT’s development of recommendations - other than within the context of a TRP - would raise questions about FACA compliance.

At the conclusion of Day 1, the group decided to focus Day 2’s discussion on a research plan, and revisit the idea of folding a research plan into a TRP or drafting a stand-alone plan that would avoid triggering a commitment of getting to ZMRG in five years.

Members requested an opportunity on Day 2 to look again at slides presented by Dr. Palka and Ms. Rossman. Members were also encouraged to work with Dr. Palka and Ms. Rossman so that they could have the slides queued up for the start of Day 2.

DAY 2 – THURSDAY, APRIL 26

WELCOME AND AGENDA REVIEW

Mr. Roberts welcomed the group and reviewed the second day’s agenda. Team members requested an opportunity to ask additional questions on data analyses related to bycatch for white-sided dolphin and common dolphin. This item was added to the beginning of the day’s agenda.

PRESENTATION & GROUP DISCUSSION: KEY SLIDES RELEVANT TO BYCATCH OF WHITE-SIDED AND COMMON DOLPHIN BYCATCH IN BOTTOM TRAWLS

Presenters: Dr. Deb Palka and Marjorie Rossman, Northeast Fisheries Science Center

At the request of members, Dr. Palka and Ms. Rossman presented information from Day 1's presentations that highlighted areas with high rates of bycatch for white-sided dolphin and common dolphin in the bottom trawl fishery. They summarized that available information useful to the group in developing a research plan could be:

- A list of takes from 2000 – 2004 and additional 2005 data, with associated time/area/vessel/gear characteristics in finer details and organized by individual take;
- Graphs of variables and their correlation to bycatch; and
- Observer Program tables of comments associated with bycatch and location of animals in the net (from September 2006 meeting).

TRT members were then given an opportunity to review the data and ask additional clarification questions. The following items were discussed:

- For collecting data on white-sided dolphin, the vessel size is large enough that having research vessels working side by side with fishing vessels during haul-in could be dangerous.
- The fishing seasons are different for *Illex* (June/July) and *Loligo* (winter months). They may both be relevant for bycatch but the fishing effort occurs at different times of the year.
- One member wondered whether less bycatch is recorded in the Mid-Atlantic region because there is less observer effort there. Based on her knowledge, Sue Barco, Virginia Aquarium & Marine Science Center, stated that significantly more marine mammal carcasses were recovered in the last few years in Mid-Atlantic areas where vessel effort is indicated. Perhaps there are interactions going on in those areas, but because of low observer coverage they are not being recorded. Amy Van Atten confirmed that observer effort is higher in the Northeast than the Mid-Atlantic; however Ms. Rossman located data showing that the observer coverage in that area was not especially low when reviewed at an annual level. Having coverage summarized by seasons would reveal where there may be holes in coverage at critical times of the year with respect to marine mammal bycatch in relation to fishing effort.
- Regarding the maps charting fishing effort and takes, fishermen reinforced that takes are occurring in the areas where fishing effort is highest (where all the fish and all the gear are). Similarly, takes occur right up against fixed gear closure areas because that is where the majority of the fishing effort is concentrated. Through the Observer Program, observers are placed on vessels by fleet sector, which is identified through a combination of factors such as single vs. multi-day trips, geographic area, port sailed, mesh size, etc. Observer coverage is designed to cover 5% of sea days and to allow for 30% C.V. on fish and marine mammal bycatch estimates. Observer coverage is also targeted at 30% of the U.S./Canada Management Area and Regular B-Day Program fisheries and 10% of most scallop fisheries (through the Industry Funded Scallop Program). There is mobility for observers to move through Mid-Atlantic and Northeast waters, and in and out of geographic areas.

ATGTRT DISCUSSION OF RESEARCH PLAN

After revisiting some key data, TRT members were ready to begin discussing a research plan.

Industry members and environmental representatives had caucused during the evening of Day 1 and the morning of Day 2, and each group prepared components of a research plan. Industry began by presenting their plan to the full TRT.

Rick Marks described the industry research plan as an “Atlantic Trawl Take Evaluation Reduction Development Strategy.” Their proposal was not intended for consideration as a TRP under MMPA requirements because the best available science indicates the marine mammal stocks are non-strategic. The strategy included three components:

- Areas for education and outreach;
- Areas where NMFS research and data collection are needed; and
- A three-tiered research plan outlined for industry and other partners to transition from observing interactions, to experimenting with gear modifications, to presenting results of research efforts to the TRT.

Industry members envisioned two subgroups representing all stakeholders within the TRT: one to develop education and outreach strategies, and one to develop the research and gear mitigation components. The industry strategy also stressed some essential caveats for the research plan, including funding support, a request for PBR exclusion for mortalities during fishing gear research, confidentiality protection for videographed research, streamlining of the Exempted Fishing Permit (EFP) process and no loss of sea days for vessel participation in research efforts. These caveats were needed to ensure that fishermen would be willing to participate in research activities by being protected from the financial and legal implications of a take occurring during a research project. The full industry strategy is included in the meeting summary as Attachment C.

Elizabeth Griffin, Oceana, followed with the environmental community’s research plan that identified additional research needs related to marine mammal behavior in and around gear, stock structures, the relationship between predictors and bycatch rates, bycatch charts that include target species, and various increases in observer coverage. Ms. Griffin also highlighted several areas of agreement between the environmental and industry plans. The complete environmental NGO research plan is included in the meeting summary as Attachment D.

The TRT then had a comprehensive discussion about the two plans, their similarities and differences, and how members could work towards developing a strategy that the whole Team could agree to. Highlights from those discussions include:

TRP or no TRP: Industry members felt very strongly that any research plan the TRT may develop should be a stand-alone recommendation to NMFS. Fishermen questioned the need for a TRT entirely, given that stocks are non-strategic and the affected fisheries are all Category II, and were not willing to talk about more than a stand-alone research plan.

Environmental NGO representatives reiterated that the inter-annual variability of stocks and pending separate abundance estimates for pilot whales will likely result in one or more stocks exceeding PBR in the near future. They recommended being proactive in developing a TRP in the event that stocks become strategic again.

While there was not consensus around whether a TRP should be developed, both sectors agreed that it was beneficial to move forward by developing a research plan.

Confidentiality protection: Industry stressed that it would be impossible to convince fishermen to participate in field research if they could not guarantee confidentiality protection of video materials. The same confidentiality is protected through industry-only workshops relating to gear research and fishing practices. Environmental NGO representatives appreciated the need to protect fishing practices, but explained that video footage, documenting operational gear and marine mammal behavior and interactions with gear, would be beneficial to the entire TRT. Seeing how marine mammals interact with gear could help members understand the need for certain gear modifications, the effectiveness of such modifications, and the potential effectiveness of any recommended management measures the Team will provide NMFS.

PBR exclusion: Industry members requested PBR exclusion for marine mammal mortalities that may occur during gear research. Since some research may be conducted in times and areas where it is expected there will be high levels of interactions between marine mammals and gear, which could result in a take, industry members requested adequate legal coverage to protect fishermen. For clarity, environmental NGO representatives wanted to highlight that any authorization would only apply to NMFS-sanctioned experiments. The exclusion was further clarified to mean that takes observed during experiments would count against PBR, but would not be extrapolated to the entire fishery beyond the experimental fishing effort. There was discussion among the group about how takes apply to stock assessments and count for PBR; NMFS stated that they would explore various options for accounting for takes occurring during research.

Consensus Research Strategy

After a lengthy discussion, including the items described above, the TRT finalized a consensus research strategy to present to NMFS. The strategy states the following:

The Atlantic Trawl Take Reduction Team (ATGTRT) recommends, by consensus, the following strategies for Atlantic Trawl Fisheries. The ATGTRT does not intend for these recommendations to be considered as a TRP for the purposes of the MMPA at this time.

Education & Outreach:

- *Operate this as an Education & Outreach Subgroup so we can include all stakeholders to inform captains/crewmen/company owners on this process.*
- *2-sided laminated placard for captains and crews to reference while at sea, that provides the following information:*
 - o *Make fishermen aware of hotspots (statistical area, time, etc. . .) where observers have seen elevated interaction with marine mammals – so they can be informed of voluntary measures (i.e. reduce the number of turns and tow times while fishing at*

night). The Subgroup should determine whether this is applicable for bottom trawl operations.

- Encourage recording and reporting of sighting of marine mammals and behavior in and around fishing operations. Hopefully these data can eventually move beyond the level of anecdotal information to become part of assessment processes.

NMFS Assistance:

- *Develop species identification placard.*
- *Clarify takes between pair- and single- mid-water trawls and various bottom trawl fisheries.*
- *Resolve white-sided dolphin assessment uncertainty – why is there so much variation in the white-sided dolphin abundance estimates and determine stock structure?*
- *Elucidate fishery characteristics (i.e. revenue valuation, trawl and trip volumes, etc. . .) of trawl fisheries. Document the social and economic value of the trawl fisheries before mitigation.*
- *Observer program to clarify kite v. transducer panel in the pair-trawl fishery. Additional investigation is needed on whether there are kites in the pair trawl fishery (observer confusion? Given different names by captains?). Why do the pair trawls labeled this way have higher bycatch rates?*
- *Update Pilot Whale abundance estimates with 2006 survey data. Determine if this is applicable to other stocks.*
- *Generate maps from Maine to the North Carolina/South Carolina border that encompass all of the closures and gear modification areas affecting these trawl fisheries (MMPA, National Marine & Horseshoe Crab Sanctuaries, Magnuson, etc).*
- *Convene Industry/NMFS workshop to help differentiate the various bottom trawl fisheries in New England and the Mid-Atlantic, based on fishing practices.*
- *Add info on kites to bottom trawl observer logs.*
- *Provide more observer coverage in the Mid-Atlantic.*
- *For mid-water trawl, between 38 – 39 lat, more observer coverage is needed to see if the elevated bycatch rate there really exists or is just due to very low coverage.*
- *More observer coverage is needed in 622 and 627 for bottom trawls, to see what is going on there.*

Research & Gear Mitigation

- *Operate this as a Research & Gear Mitigation Subgroup so we can include all stakeholders.*
- *Convene Industry Workshop to build on the 2006 workshop in Atlantic City, NJ which reviewed the characteristics of trawl fisheries with takes, and early field research.*
- *Phased Research Plan:*
 - *Step 1*
 - *Industry video of normal trawl operations.*
 - *Industry video and sonar of mammals interacting with gear (in consultation with NEFSC, SEFSC – Pascagoula Lab, industry consultants, etc).*
 - *Step 2*
 - *Field experimentation with various excluder devices and other gear modifications (w/ NEFSC, SEFSC – Pascagoula Lab, industry consultants, etc. . .).*
 - *Observations of fishing practice modifications.*

- *Step 3*
 - *Industry and partners bring results of research to Research & Gear Mitigation Subgroup to discuss the information and how to move forward.*

Caveats and needs that apply to the Research & Gear Mitigation component of the Strategy:

- *Funding for video equipment, vessel use, lost revenues*
- *Marine mammal takes occurring in NMFS-sanctioned experiments not be extrapolated into the fishery. [NMFS will investigate various options against takes counting for PBR.]*
- *NMFS reviews videos and provides confidentiality protection for video materials.*
- *Expediently process necessary permits.*
- *No loss of days at sea for vessel participation.*

Other Research Recommendations

- *Additional information is needed on the annual distribution of these marine mammals. General research on seasonal overlap of the mammals and the fisheries will be helpful.*
- *NMFS work expeditiously to differentiate pilot whales and takes by species.*
- *Why is there a correlation between vessel horsepower and vessel bycatch? NMFS can analyze the data they have to see why vessel horsepower is important (size of boat, speed, size of net, noise, etc). It would also be good to brainstorm with industry to get their thoughts on this.*
- *Review observer data to look for correlations in regards to marine mammal takes, diet and discards.*

PUBLIC COMMENT

Erika Zollett, a graduate student at the University of New Hampshire, is researching Atlantic white-sided dolphin interactions with bottom trawl fisheries. Using Observer Program data and aerial surveys throughout the year, she is analyzing seasonal, spatial, and temporal variation of bycatch and sightings. Her research will investigate fishermen data, and will try to analyze it quantitatively. She also plans to identify potential mitigation measures and analyze the impacts of fishing closures on the industry.

MEETING WRAP-UP AND NEXT STEPS

ATGTRT SUBGROUPS:

After agreeing to the research strategy, some TRT members volunteered to participate in two subgroups to begin working on the recommendations in the research plan; an Education & Outreach Subgroup, and a Research & Gear Mitigation Subgroup. Mark Minton will coordinate the subgroups, which will convene (via conference call most likely) in the near future and as often as needed thereafter. Subgroup rosters are attached to the meeting summary in Attachment E.

NEXT ATGTRT MEETING:

Due to budgetary restrictions, the next full TRT meeting will take place via conference call in mid – late July 2007 to give NMFS time to begin working on several of the requests outlined in the Team’s research strategy. The meeting’s agenda items would include a status report from NMFS and from the subgroups, as well as other agenda items to help maintain momentum on the research strategy. At future meetings NMFS will also try to provide updated information on bycatch rates compared to each stock’s PBR level.

In conclusion, Mr. Gouveia thanked members for taking the time to attend the meeting and contributing to the productive discussions. Mr. Minton noted that all the updated presentations and meeting documents will be posted on the ATGTRT website at http://www.nero.noaa.gov/prot_res/atgtrp/ .

**ATLANTIC TRAWL GEAR TAKE REDUCTION TEAM
LIST OF ATTENDEES**

Conservation/Environmental NGOs

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**ATLANTIC TRAWL GEAR TAKE REDUCTION TEAM MEETING
PROPOSED AGENDA**

**April 25 – 26, 2007
Baltimore, MD**

Meeting Objectives:

- Introduce TRT members, new members and team support staff;
 - Review goal of the TRT process and roles of TRT members;
 - Present and discuss data and management questions; and
 - Review and discuss options for a draft Take Reduction Plan
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Day 1, Wednesday, April 25th (9:00 AM – 6:00 PM)

BACKGROUND/MANDATE(S)

9:00 – 9:30 Greetings and Agenda Review (RESOLVE, NERO)

- 1) Opening comments
- 2) Introductions
- 3) Review agenda
- 4) Review meeting purpose
 - a) *Reduce interactions between commercial fisheries and pilot whales, common dolphins and Atlantic white-sided dolphins*
- 5) Review goal of the TRT process and roles of TRT members
- 6) Review groundrules

9:30 – 11:00 Response to Action Items/ATGTRT Requests (NERO)

- 1) New Team Members
- 2) NOAA GC Guidance on Settlement Agreement: TRT Responsibilities pursuant to MMPA
- 3) Next Meeting
- 4) LOF revision – Reclassification of Mid-Atlantic Midwater Trawl from Category I to II, result of Tier Analysis
- 5) Canadian Management Measures
- 6) Observer Manual Update Process
- 7) Review of Remaining Action Items

11:00 – 11:15 Break

REVIEW OF DATA

11:15 – 12:00 Presentation: Gear Models – Team Discussion

- 1) Dave Beutel (URI)

- 12:00 – 1:00** **Presentation: Updated Analysis (NEC)**
 1) Updated Abundance Estimates (Deb Palka)
 2) Updated Mortality Estimate (Mid-water trawl)
- 1:00 – 2:00** **Lunch** (*on your own*)
- 2:00 – 3:00** **Presentation: Updated Analysis** (*continued*)
 3) Updated Mortality Estimate (Bottom-trawl)(Marjorie Rossman)
- 3:00 – 3:30** **Presentation: Summary of Abundance, Takes, Significant Variables**
 (NEC)

MANAGEMENT QUESTIONS

- 3:30 – 4:30** **Presentation and Discussion: Draft Take Reduction Plan Elements –**
 potential management measures (NERO)
 1) Discussion of Elements of TRP
 2) Presentation of TRP Strawman
 3) Prioritization of TRP Sections
- 4:30 – 4:45** **Break**
- 4:45 – 5:45** **Continued Discussion: Draft TRP Elements**
- 5:45 – 6:00** **Wrap Up (All)**
 1) Discuss and agree on approach to tomorrow’s agenda
- 6:00** **Adjourn Day 1**
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Day 2, Thursday, April 26th (9:00 AM – 3:00 PM)

- 9:00 – 12:30** **Continued Discussion: Draft TRP Elements**
(including break)
- 12:30 – 1:30** **Lunch** (*on your own*)
- 1:30 – 3:00** **Next Steps & Wrap Up**
 1) Establish Workgroups (e.g., Research Workgroup, Education and
 Outreach)
 2) Approach to Future Meetings

PROPOSED INDUSTRY RESEARCH STRATEGY

ATLANTIC TRAWL TAKE EVALUATION REDUCTION DEVELOPMENT STRATEGY

The TRT agrees by consensus on the following strategy for Atlantic Trawl Fisheries. The TRT does not intend for this to be considered as a TRP for the purposes of the MMPA based on the fact that the best available science indicates the mammal stocks are non strategic.

Education/Outreach:

- Operate this as TRT Subgroup so we can include all stakeholders to inform captains/crewmen/company owners on this process.
- 2-sided laminated placard for captains and crew section to reference while at sea, that provides info:
 - o Make fishermen aware of hotspots (statistical area, time, etc. . .) where observers have seen elevated interaction with marine mammals – so they can voluntarily reduce the number of turns and tow times while fishing at night with MWT and Pair trawls. The industry intends for the Subgroup to determine whether this is applicable for bottom trawl operations
 - o Encourage recording and reporting of sighting of marine mammals and behavior around fishing operations. Hopefully these data can eventually move beyond the level of anecdotal information to become part of the assessment process.

NMFS Assistance:

- Species ID placard
- Clarify takes between pair- and single- MWT and various bottom trawl fisheries.
- Resolve WSD assessment uncertainty.
- Elucidate fishery characteristics (ie. revenue valuation, trawl and trip volumes, etc. . .) of trawl fisheries.
- Observer program to clarify kite v. transducer panel in the pair-trawl fishery.
- Add Pilot Whale 2006 survey data to current analyses.
- Need NMFS to generate a comprehensive map from ME to NC/SC border that encompasses all of the closures affecting these trawl fisheries (MMPA, National Marine & Horseshoe Crab Sanctuaries, Magnuson, etc).
- Workshop to help differentiate the various bottom trawl fisheries in New England and the MID.

Research & Gear Mitigation:

- Convene 2nd Workshop to build on the 2006 workshop in Atlantic City, NJ which reviewed the characteristics of trawl fisheries with takes, and early field research.
- Tiered research plan
 - o Tier 1
 - Industry video of normal trawl operations.
 - Industry video if mammals interacting with gear (in consultation with NEFSC, SEFSC – Pascagoula Lab, industry consultants, etc).

- Tier 2
 - Field experimentation with various excluder devices (w/ NEFSC, SEFSC – Pascagoula Lab, industry consultants, etc. . .).
- Tier 3
 - Industry and partners brings results of research to TRT Research subgroup to discuss the information and how to move forward.

Caveats and needs that apply to the Research & Gear Mitigation component of the Strategy:

- Funding for video equipment, vessel use, lost revenues
- PBR exclusion for mammal mortality
- Confidentiality protection for video materials
- Streamline EFP process
- No loss of days at sea for vessel participation

PROPOSED ENVIRONMENTAL COMMUNITY RESEARCH PLAN

1. As previously noted, it is extremely important for NMFS to split pilot whales in to short-finned and long-finned. This will have a major impact on PBR levels.
2. It is also important to determine why there is so much variation in the annual WSD abundance estimates and determine stock structure.
3. Video monitoring work is extremely important in determining what the marine mammals are doing in and around the net. This work needs to continue.
4. Explore the relationship between vessel horsepower and vessel bycatch. NMFS can analyze the data they have to see why vessel horsepower is important (size of boat, speed, size of net, noise, etc). It would also be good to brainstorm with industry to get there thoughts on this.
5. Voluntary measures for reducing bycatch should be developed and distributed to the industry.
6. Charts of key areas of bycatch, were done looking at species landed but lots of fish were discarded so it is difficult to tell what the target species and gear were. Redoing the charts using the target species rather than landed species would be more informative.
7. Additional information is needed on the annual distribution of these marine mammals. General research on seasonal overlap of the mammals and the fisheries will be helpful.
8. Additional investigation is needed on whether there are kites in the pair trawl fishery (observer confusion? different names by captains?). Why do the pair trawls labeled this way have higher bycatch rates?
9. Add info on kites to bottom trawl observer logs.
10. Weed more observer coverage in the mid-Atlantic in general.
11. Mid-water trawl – between 38 – 39 lat, we'd like to see more observer coverage to see if the high bycatch rate there really exists or is just due to very low coverage.
12. More observer coverage is needed in 622 and 627 for bottom trawls, to see what is going on there.

ATGTRT SUBGROUP ROSTERS

EDUCATION & OUTREACH SUBGROUP

1. Melissa Andersen
2. Dave Beutel
3. Erin Burke
4. Glenn Delaney
5. Greg DiDomenico
6. Pat Fiorelli
7. Mike Genovese
8. Glenn Goodwin
9. Elizabeth Griffin
10. Jeff Kaelin
11. Rick Marks
12. Mark Minton
13. Rich Seagraves

NMFS Staff:

14. Amy Van Atten

RESEARCH & GEAR MITIGATION SUBGROUP

1. Dave Beutel
2. Erin Burke
3. Glenn Delaney
4. Greg DiDomenico
5. Pat Fiorelli
6. Mike Genovese
7. Glenn Goodwin
8. Elizabeth Griffin
9. Shaun Heena
10. Jeff Kaelin
11. Rick Marks
12. Bill McLellan
13. Mark Minton
14. Rich Seagraves
15. Terry Stockwell
16. Sharon Young

NMFS Staff:

17. John Higgins
18. John Kenney
19. Henry Milliken
20. Deb Palka
21. Marjorie Rossman
22. Glenn Salvador
23. Amy Van Atten