

# ATLANTIC SCIENTIFIC REVIEW GROUP

9-10 May 1996  
Charleston, SC  
Meeting Summary

The Atlantic SRG Meeting convened on 9 May at the NOAA Laboratory in Charleston SC. Gordon Waring of the NEFSC served as NMFS liaison to the SRG in the place of Ben Blaylock who is recovering from illness. SRG members attending were: Solange Brault, James Gilbert, Mike Harris, Bob Kenney, Jim Mead, Andy Read, Randall Wells, Graham Worthy. In addition, Tom Eagle (NMFS), Paul Wade (NMFS), Barb Taylor (NMFS), Gordon Waring (NMFS), Doug Beach (NMFS), Kathy Wang (NMFS), Larry Hansen (NMFS), Keith Mullen (NMFS), Jim Kraus (USFWS), Ed Trippel (DFO Canada) and Sharon Young (HSUS) attended the meeting. Andy Read served as spokesperson and the chair rotated throughout the meeting. Jim Gilbert, Mike Harris, and Dan Odell served as rapporteurs. Larry Hansen introduced Dr. Sylvia Galloway, Director of the Charleston Laboratory, who welcomed the SRG to Charleston.

## 1. Adoption of Agenda

The draft agenda was reviewed and accepted with the addition of three items: a review of SEFSC survey plans for *Tursiops*, a review of recent developments impacting the Florida manatee, and a review and discussion of the draft report on the southeastern shark gill net observer program.

Before the SRG addressed its agenda, there was discussion of several items of general interest. Doug Beach asked how input from the SRG, (i.e. changes in recovery factors or  $N_{min}$ ) would be provided to the NMFS. Paul Wade explained that the SRGs serve in an advisory role to the NMFS in developing stock assessments. He further indicated that the intent of the MMPA Amendments was for the SRGs to provide rigorous peer review and that the advice of SRGs is treated as such by the NMFS. In other words, NMFS should follow the advice and recommendations of the SRG or be prepared to defend why the recommendations were not followed. Andy Read noted that at the current meeting, the SRG was concentrating on stocks for which there was evidence of takes in excess of the PBR level.

## 2. Review of the 3-5 April PBR Workshop

Solange Brault gave an overview of the PBR Workshop held 3-5 April 1996 in Seattle. The three-day workshop included NMFS and FWS scientists, representatives from NMFS regional offices and representatives from each of the three SRGs. The goal of the workshop was to review the stock assessment process and find out what had worked and what had not worked in the three regions. The workshop was useful in identifying how each region had approached specific problems. Alaska differs from the other two regions because of special circumstances in harvests and management. There were few differences between the approaches adopted by the Pacific and Atlantic SRGs. A specific example of differences among the SRGs in reviewing stock assessments was the treatment of animals which were released from fishing gear. The Atlantic SRG recommended that all mammals released be considered as mortality for the purpose of estimating takes. In contrast, the Alaska SRG recommended that all released animals be considered alive and not included in mortality estimates. The difference in treatment of released animals can partly be explained by the difference in species that were released. The Alaska group was focused on pinnipeds which have been documented to survive release from gill nets, whereas the Atlantic SRG was concerned with release of cetaceans from longlines and there are no data to suggest that these animals survive. This discussion pointed out that no consideration had been given to the term "serious mortality" and how this should be defined or used with regard to stock assessments.

Paul Wade then summarized his views on the results of the workshop. Importantly, the consensus of the workshop was that no major changes are needed in the basic method for calculating PBR. The question of stock identification was recognized as a continuing problem and recommendations were made to change the definition to match the methodology used in stock assessments. In addition, Barb Taylor has been conducting simulations to evaluate the risk to stocks of errors in stock definition. Paul Wade read the first draft of the revised definition of a marine mammal stock which is: "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature. The two primary management objectives of the MMPA are to restore and maintain stocks within their OSP and maintain stocks as functioning elements of the ecosystem. Therefore, stocks must be identified in a manner that is consistent with these goals. Therefore, a stock is a management unit that identifies, ideally, a demographically isolated biological population, but it is recognized that, in practice, stocks may often fall short of this ideal because of a lack of information, or because of political boundaries."

Andy Read asked about the term "political boundaries" and a discussion ensued regarding the use of political boundaries to define stocks. It was pointed out by Barb Taylor that, in the Pacific, stock geographical ranges for stock assessments were not based on political boundaries. Instead, PBR was apportioned for various areas based on the amount of time that the stock spent in each area. Paul Wade suggested Hawaiian stocks as an example of the use of political boundaries in defining stocks for assessments.

Gordon Waring noted that DNA analysis of tissue samples from marine mammals taken in fisheries had shown species identifications of beaked whales and offshore dolphins were often incorrect. The SRG agreed that a field guide was needed for identification of beaked whales and that observers should collect biopsy samples and voucher specimens whenever possible. Gordon Waring asked if fishery takes based on identifications recorded in fishermen's logbooks should be used to calculate kill levels and the SRG agreed that this should not be done.

The workshop also raised the issue of what should be done with abundance estimates over time (currently these are decreased 10% per year for 5 years). An alternate plan is that  $N_{min}$  could be considered unknown for stocks which had abundance surveys older than 8 years. This would not mean that a stock's status as strategic or not strategic would change unless other data were available. It takes 8 years for a stock at carrying capacity to become depleted at a 10% annual decline.

Paul Wade noted that efforts were underway to standardize the selection of recovery factors for use in the PBR equation. This issue arises in setting PBR for certain whales which, although listed as endangered under the Endangered Species Act, may be more abundant than other unlisted species. Andy Read stated that the SRG would want to comment on any proposed changes to recovery factors.

Under the 1994 amendments to the MMPA there is a mandate to include marine mammal habitat issues in the stock assessment process. These should be included in the stock assessments when information is available. In some cases it would be appropriate to include a section in the SAR on habitat.

Paul Wade reviewed the discussions at the PBR Workshop on defining ZMRG. NMFS had prepared a proposed rule to define ZMRG as 10% of PBR. In cases where a stock of marine mammals is taken by more than one fishery, the ZMRG for each fishery would be 1% of PBR. This proposed rule was not issued because NMFS determined that 1% of PBR was too restrictive and would be unattainable. As an alternative, a new proposed rule would define ZMRG on a case by case basis. Solange Brault added that

there had been considerable discussion of this issue at the PBR workshop. Paul Wade noted that all agree that the ZMRG should be less than PBR; however, 1% of PBR may be too restrictive. Andy Read stated that the intent of ZMRG was to reduce mortality to the lowest possible rate for fisheries. Sharon Young added that the goal of ZMRG was no unnecessary mortality. She asked who would make the decisions to set ZMRGs on a case by case basis. Paul Wade responded that these points were well taken but that some definition of the goal was needed. NMFS interpreted the "rate" in ZMRG to mean that it would be some proportion of PBR and not absolute zero. He noted that the goal had been in the MMPA since 1972 but had not been very useful in addressing mammal/fishery interactions. A definition based on a biological reference point would allow the ZMRG to be used in evaluating status of stocks. The SRG agreed that an alternative definition and formula for ZMRG is needed.

### 3. Status of Take Reduction Teams

Doug Beach reported on the status of the Offshore Cetacean Take Reduction Team. The members of the team have been selected and the team will meet for the first time 29-30 May in Boston, MA. The goal is to have progress on a plan by October. Kathy Wang reported on the Large Whale Take Reduction Team. The list of team members is being reviewed, but final selections have not yet been made. The Mid-Atlantic Coastal Team is on hold pending review of the recent data for the Mid-Atlantic coastal stock complex of bottlenose dolphins.

Barb Taylor reported on the Pacific Offshore Team. A large-scale "pinger" experiment is planned for the offshore gill net fishery in July. The species taken in this fishery include beaked whales and sperm whales. Much contention arose at meetings of this team with regard to a proposed "cap" or limit on additional effort in this fishery. Little other real progress has been made to reduce current levels of mortality except for a reduction in the depth of the headrope. There are not enough data on distribution and abundance of the species of concern to plan time or area closures to reduce take. Paul Wade noted that Jay Barlow (SWFSC) had conducted experiments to develop correction factors for the proportion of animals that are below the surface and not available for counting during aerial or shipboard surveys. These surveys may affect the need for take reduction teams to address some species which are deep diving and currently have low PBRs because of negatively biased estimates of abundance. Barb Taylor reviewed these SWFSC experiments from a cruise in the Gulf of California. The cruise had two components: acoustic detection, and a behavioral study to obtain dive times from visual observations. The acoustic survey was unsuccessful as only one brief recording of *Ziphius* was obtained. No recordings were obtained of *Kogia* or *Mesoplodon* even though conditions were excellent and these species were abundant during much of the cruise. However, the behavioral studies were very successful and dive time information was obtained for many species. *Kogia* and *Physeter* were almost too abundant for these studies because of problems in identifying groups. Preliminary data suggest that most of the species studied spend about 10% of their time at the surface. It is important to model the behavior of the observers to be able to use visual observations to calculate dive times. Larry Hansen asked about the calculation of variances for dive times. The PBR guidelines state that any correction factors used must have estimates of variation in order to be included in the stock abundance estimates. There was some discussion as to whether the appropriate variances could be calculated for the dive time data collected by the SWFSC.

Jim Gilbert reviewed the progress of the Gulf of Maine Harbor Porpoise Take Reduction Team, who have had three meetings. The Team is evaluating some type of time/area closures and the use of pingers. Sharon Young noted that it had been a very difficult process. Andy Read stated that an experimental fishery conducted this spring using pingers on Jeffreys Ledge had been remarkably unsuccessful. It is possible that pingers may be unsuccessful in reducing bycatches in some times and areas but not in

others because their effect is mediated through the behavior of prey. For example, pingers may reduce by-catch of harbor porpoise when herring are abundant by deterring herring away from nets. Other prey species may not be able to hear the high frequency (10 kHz) sounds produced by the prey species. There was some discussion about the role that Canada had played in the Take Reduction Team process. A Canadian representative (Jerry Conway) sits as an observer on this Take Reduction Team. Doug Beach noted that formal discussions between U.S. and Canada occur at the GOMAC (Gulf of Maine Advisory Council) a regular meeting of the Regional Directors of States and Provinces around the Gulf of Maine.

#### 4. Status of NMFS FY96 Budget

Paul Wade reviewed the annual process that is being developed for research plan submittal and review by NMFS.

March	-	Request for Proposals Is Issued
1 July	-	Proposals Due at NMFS Headquarters for initial screening
mid-August	-	Proposals sent out to review groups
September	-	Review Group Meets to rank Proposals

NMFS is currently working on a three-year plan for FY 97, 98, and 99. During the current budget year, existing projects will be continued. Most proposed projects are underway and will be accomplished without serious impact from the budget delays that occurred this winter in Washington. The SEFSC was supposed to undergo a research review prior to submittal of the FY97 Budget. This review has been delayed and may occur in August. As a result of the budget delays, the NEFSC has not been able to fund some planned contract work. Funds that should now be available include Right Whales, Survey of Drift Gill Net Fishery, Harbor Porpoise Cluster Analysis, and Oceanographic Study of the Gulf of Maine.

Doug Beach stated that disentanglement funds were available from the FY95 Budget and that this work had been continued without a break in service. The Northeast Region has requested funds for Cooperative Agreements with States but the status of this request is not known.

Andy Read remarked that perhaps the SRG should recommend that NMFS provide adequate staff to accomplish the goals of the MMPA. Paul Wade stated that he would submit the SRGs' recommendations at the fall budget meeting and that these recommendations could be used to support appropriate center research. Jim Kraus noted that the NBS budget cut the Sirenia Project by 24% and that the status of the budget was still unsure. Discussion ensued of the recent manatee mortality in southwestern Florida and the cost associated with investigating this event. The consensus of the SRG was that adequate support should be provided to NMFS and also to the FWS and States for responding to unusual mortality events such as the manatee die off in Florida. Therefore, the Atlantic SRG recommends that NMFS and FWS pursue funding of the Marine mammal Protection Act: Title IV - Marine Mammal Health and Stranding Response. The Atlantic SRG recognizes that unusual mortality events such as the manatee mortality this year in southwest Florida place great burdens on local offices of State and Federal Resource Agencies and others. Title IV includes provisions for establishing a fund to compensate persons and agencies for costs incurred in responding to unusual mortality events. This fund should be established and made available for such events so that prompt and effective responses can be made and extraordinary costs can be reimbursed to agencies involved in the response.

## 5. Update on Gulf of Maine Harbor Porpoise Assessment

Debra Palka updated the SRG on the 1995 harbor porpoise abundance estimate in the GOM and compared to previous estimates.

Year	Estimate	CV (%)	95% CL
1991	37,500	29	26,700 - 86,000
1992	67,500	23	32,900 - 104,600
1995	74,000	20	40,900 - 109,100

Discussion centered on why 1991 was different. The methodology used in all three surveys was essentially the same and the estimates of  $g(0)$  were similar. The 1995 survey incorporated both shipboard and aerial surveys allocating effort. The  $g(0)$  for the aircraft was similar to that observed in other studies of harbor porpoise. The encounter rates were slightly higher in 1995 than in other years. The estimates for different sub areas are:

Area	1991	1992	1995
High (Grand Manan)	16,900	24,500	18,100
Intermediate (Maine Coast)	17,000	31,900	46,200
Low	600	2,300	2,100
Inshore	3,000	8,800	7,600
Totals	37,500	67,500	74,000

The difference in the estimate of total abundance was primarily due to a difference in the estimate in the intermediate area. This area may have been warmer in 1991 than in other years. The NEFSC has noted that when water temperatures were greater than 15-16 C, harbor porpoise were not seen in the area.

There was considerable discussion of how to calculate a new PBR for harbor porpoise, given the 1995 survey. Some argued that the differences among the estimates could be due to sampling error, while others believed it might have been a different available population, perhaps due to oceanographic factors. Experience with surveys of other species, i.e. gray whales, has shown that CV of individual annual estimates may be too precise. The next survey will not be until 1998. A discussion of how to weight the various estimates in a combined estimate ensued. If weighted by the inverse of the CV, the combined estimate is 54,300, with CV of 14% and 95% CI of 41,300 to 71,360. This would raise PBR from 403 to around 483. It was noted that two of the three point estimates of abundance were outside the 95% CI for the combined estimate, but that the 0.5 recovery factor could adjust for under-estimating the CV. Another possibility is to perform a combined bootstrap estimate to define a median estimate and a CI. As a result of the discussions, the SRG agreed that the resulting PBR for harbor porpoise will be higher than that listed in the SAR and that the revised PBR should be used in application of the Take Reduction Task Force recommendations. The SRG also agreed that more general guidelines need to be made regarding procedure for calculating PBR with multi-year data.

The bycatch estimates for harbor porpoises in New England are:

1990 2,900

1991	2,000
1992	1,200
1993	1,400
1994	2,000 (with some time and area closures)

The bycatch estimate for 1995 is expected to be less than values for previous years. These estimates are derived by extrapolating from the observed take rate to a total estimate using weigh-out data from the groundfish gillnet fishery as an indirect measure of fishing effort. Gillnet effort will be restricted further this year to conserve groundfish stocks, and more fishermen are switching to gillnet fisheries for dogfish and monkfish if they can be certified as taking less than 5% groundfish.

Ed Trippel (DFO-Canada) presented information on the take of harbor porpoises in the Bay of Fundy. In 1993 there were 424 taken and in 1994 101 porpoises were taken. In 1995, Memorial University monitored the fishery, but observer coverage in September was poor. The fishery was closed from July 21 to September 1 1995 because a quarterly groundfish quota had been reached. It was believed that the take in 1995 would be less than in 1994. In 1996, the fishery will be operated on a monthly quota basis. There will be a pinger test again in the Bay of Fundy next summer. In last summer's test, herring and pollock catches were down on nets with pingers. These pingers were and made the floatline heavy. Since pollock are generally caught in the top of the net, adding additional floats near the pinger would solve the problem of reduced pollock catch. DFO plans to have 40-60 % observer coverage next year.

The SRG recognized that some part of the PBR should be allocated to Canadian takes. Discussion of how to allocate PBR between the US and Canada ensued. Given that the goal of the Canadian Harbour Porpoise Conservation Plan is to take no more than 110 animals, should this take should be subtracted from the PBR allocation to US fisheries? Some guidelines might be derived from west coast experiences; where, if the stock is migratory, the allocation of PBR is based on fraction of time in US waters; if the stock is not migratory, the allocation is based on the estimate of the stock size residing in US waters. The SRG did not decide on how to approach this partitioning with Gulf of Maine harbor porpoise.

The group expressed interest in obtaining take information from Canadian fisheries so that it can be included in the revised stock assessment report.

## **6. Update on SEFSC Bottlenose Dolphin Stock Assessments**

Larry Hansen presented a summary of the SEFSC assessment of Bottlenosed Dolphin Stocks. The various data and photo identification sets that exist for Atlantic stocks will be combined and used as a reference set to identify individuals from known stocks from which biopsy samples should be obtained. These will be used to define a model of stock structure, as will a variety of other studies.

Approximately 60% of the dolphins that strand in North Carolina have some evidence of fishery interaction, as compared to 30% last year and 9% before. The SEFSC does intend to monitor more of the fisheries potentially interacting with marine mammals in this area. Effort will be made to identify when and where interactions are occurring, to evaluate dolphin behavior around nets, and to obtain additional life history data.

In addition to the off-shore form, skull morphometrics suggests there may be as many as three coastal stocks. The genetics information from biopsies may be able to help define the existence and distribution of these stocks, but the SRG cautioned the need to obtain samples from known areas and not depend on

collections from stranded animals. The 1996-97 shipboard survey may be used to accomplish this task as well as estimate population sizes. This survey will be coordinated with a similar survey by the NEFSC. The SRG stressed that the two groups use a common survey methodology, including attempting to estimate  $g(0)$ . The SRG **recommends** that all groups of bottlenose dolphins encountered during surveys be biopsied. In the Gulf of Mexico, there is an aerial survey planned for one of three sections of the Gulf. In addition, site-specific studies in Texas, the Mississippi Sound, and at Sarasota will continue. These studies include photo identification, and documentation of site fidelity, and residency.

There appears to be at least three stocks of bottlenose dolphins in the Gulf, including an off-shore form to the continental shelf, and in-shore form, and a third about 20 miles off the coast that moves parallel to the coast. DDT levels in some Texas strandings and some satellite tagging indicates movement into and from Mexican waters.

The SRG noted the unknown impact of some gillnet fisheries on bottlenose dolphins and made special note of the lack of knowledge about the nature and extent of coastal gillnetting in Louisiana and North Carolina. There are also poorly documented shad gillnet fisheries in South Carolina and shad-sturgeon gillnet fisheries in Georgia. The SRG **recommended** that these and any other gillnet fishery that have the potential to interact with marine mammals should be classified or reclassified as a Category II fishery under the Marine Mammal Protection Act, unless there is information to suggest otherwise. It was further noted that more effort should be made to educate stranding network participants to identify physical signs of entanglement in stranded dolphins and porpoises.

Larry Hansen provided the SRG with an update of the SEFSC bottlenose dolphin health assessment program. A report detailing the movements of animals from the Beaufort project in July 1995 was completed by A.J. Read and colleagues. Analyses of contaminants is underway and preliminary results indicate that some residue levels were higher in North Carolina dolphins than from animals in Matagorda Bay, Texas. Research plans for 1996 were uncertain.

#### **7. Update on Unusual Mortality Event of Manatees in SW Florida**

Jim Kraus provided the SRG with an update on the status of manatees in Florida. Recent field counts of manatees during synoptic aerial surveys yielded the highest counts on record. The previous high was 1856 and 2639 is the new high count, which represents a minimum population estimate. The large numbers of dead manatees lead to the declaration of an unusual marine mammal mortality event. Since Jan 1, there had been 260 documented deaths of manatees in Florida. The USFWS has added extra funds and effort to get special permits to facilitate carcass salvage work.

Jim Kraus also provided a review of manatee entanglements and fisheries interactions, primarily with crab and lobster fisheries. This work is still in a preliminary stage. The SRG appreciated the work of the USFWS on this and related issues and hoped that the FWS and NMFS could publish stock assessments jointly in the future.

A revised recovery plan for the Florida manatee has been approved but not yet printed. The status of a recovery plan for the Antillean manatee is unknown.

#### **8. Status of the Florida East Coast Shark Gill Net Fishery**

The SRG noted the existence of a large mesh gill net fishery off the coasts of Northeastern Florida and Georgia and expressed interest in the possible interactions between this fishery and marine mammal stocks in the area. A preliminary report describing the fishery was circulated by Kathy Wang to the SRG. This report noted that no marine mammal entanglements had been documented in 52 observed sets. The SRG noted that this lack of marine mammal takes was highly unusual for a large mesh coastal gill net fishery. Andy Read suggested that this indicated either an unusual circumstance in which the fishery, for some reason, was not taking marine mammals, or a failure of the observer scheme to document takes. The SRG **strongly recommended** that the NMFS further evaluate the potential for incidental takes by this fishery, including the possibility of deploying observers from alternative platforms such as small boats, where they could watch the haulback with an unobstructed view.

#### **9. Review of preliminary abundance estimates from NEFSC 1995 summary surveys of strategic stocks**

Gordon Waring reviewed the methodology and results of historic survey effort, including studies of beaked whale habitat and approach techniques for identification of beaked whales. Data analyses of the July 95 shelf edge survey data are not yet complete, but should be ready in October. Several species of the genus *Mesoplodon* have been identified during surveys, but the species have been lumped for analyses. Andy Read noted that information is required on the location of beaked whale sightings relative to observed takes in the pelagic drift net fishery.

There was some discussion of the distribution of common dolphins in the years 1990-94. The distribution of sightings and distribution of takes are in the same general locations. Barb Taylor noted that photos of common dolphins at sea may show morphological differences that are useful for stock separation and identification. Larry Hansen asked about the status of genetic analysis of skin samples from common dolphins and Andy Read replied that a large number of samples in storage awaiting analysis.

The SRG noted the trans-boundary nature of common dolphins and other strategic stocks that are taken in the pelagic drift net, longline and pair trawl fisheries and the complications that this poses for assessment. Andy Read suggested that inquiries be made to Canadian fisheries officials to determine whether or not takes of these species occur in Canadian waters. Gordon Waring noted that in 1997 marine mammal surveys will co-operate with Canadian biologists.

Gordon Waring presented the 1996 study plan for monitoring of bycatch for the Pair Trawl and Drift Net fisheries. For two weeks in June a research vessel will be used in a fine-scale line transect survey along the edge of the continental shelf in the area of DN operations. Photographs will also be taken. In the next two weeks, the research vessel will be used to pick up bycatch from driftnet vessels for necropsy. Finally, two weeks will be devoted to a second survey and photographic effort from the research vessel. Gordon Waring also showed an example of satellite data of sea temperature for the time of the 1995 surveys. The NEFSC is using these to evaluate the effects of temperature and warm current rings on the distribution of marine mammals.

The SRG **recommended** that surveys for pelagic strategic stocks incorporate biopsy sampling whenever possible to facilitate stock identification and that further co-operation between NMFS Science Centers be undertaken to improve the efficiency of these surveys, given the existing pool of experienced observers and biologists available for such work.

#### **10. Review of Stock Definitions Relative to PBR Workshop Guidelines**

Barb Taylor reviewed current marine mammal stock definitions, with particular reference to the recent PBR workshop. These guidelines attempt to account for the possibility of errors in stock definition and the potential for erroneous stock assessments should such errors in stock definition occur. Barb Taylor also demonstrated some of these guidelines in a computer exercise using the California stock of harbor porpoises as an example. There are still uncertainties regarding management objectives and stocks, such as: should a stock be maintained over the full extent of its range or is it appropriate to maintain a stock in a reduced portion of its range. The SRG had limited time for discussion and came to no resolution on these issues.

#### **11. Demonstration of PBR Analysis - Computer Modeling Exercise**

Paul Wade then demonstrated a computer exercise to illustrate the PBR process and some of the modeling work that had gone into the formulation of this approach. He also reviewed the revised timetable for the preparation and review of stock assessments. 1:15

#### **12. Review of NMFS Progress on Previous SRG Recommendations**

The SRG then reviewed progress that had been made on recommendations made at its previous two meetings. The SRG believes that this is a useful exercise that will ensure that its voice is being heard by the agencies responsible for assessing marine mammal stocks. In general, the SRG's recommendations had either been acted upon or there was sufficient justification for delay or inaction. Outstanding issues include:

- (1) No progress has been made on a recovery plan for Antillean manatees
- (2) No take reduction teams has been implemented for the coastal migratory stock of bottlenose dolphins, due to a lack of information on the stock structure, abundance and incidental mortality of these animals. Further information is urgently required for this depleted stock.
- (3) No resolution of the issue of live releases from fishing gear, particularly longlines. Experiments or observations are required to determine the fate of animals that are released alive, but injured, from these fisheries.
- (4) The definition of ZMRG remains uncertain.
- (5) There is still a need for improved identification of many species, particularly beaked whales, pilot whales and common dolphins, by observers aboard fishing vessels.
- (6) There has been insufficient co-operation between the US and Canada on the management of trans-boundary stocks.
- (7) More information is required on the incidental takes of marine mammals in mid-water and demersal trawl fisheries for forage species, such as mackerel, butterfish, herring and squid.
- (8) The application of correction factors has not been uniform, particularly in regard to deep-diving species.
- (9) There is a lack of assessments for certain cetaceans in the Atlantic waters of the SE US.

(10) Data analysis for mortality estimation of harbor porpoises in the Gulf of Maine has been extremely slow, which has hampered stock assessments and the work of the Harbor Porpoise Take Reduction Team. This delay is a serious and continuing concern of the SRG. A letter from Andy Read, on behalf of the SRG, has been circulated to the NE Regional Director of the NMFS asking for an increase in human resources to rectify this problem.

### **13. New Research Recommendations**

The SRG then reviewed its previous recommendations for research and generated a prioritized list of projects that would be helpful to NMFS/OPR in its allocation of assessment funds for FY 97. The SRG notes that many other important research projects are always planned and funded or already underway - this list only includes new projects.

#### **13.1 Stock Assessment**

- (1) Resolution of the stock identification of bottlenose dolphins, particularly of the coastal migratory stock complex on the Atlantic coast. The SRG recommends that this issue be resolved through the combination of a variety of techniques, including photographic identification, genetics, and telemetry.
- (2) Improve understanding of the species and stock identity of pelagic cetaceans, particularly beaked whales, common dolphins, and pilot whales, to facilitate identification both at sea and in bycatches.
- (3) Improve estimation of  $g(0)$ , the proportion of animals that are missed during line transect surveys, particularly for deep-diving species.
- (4) Improve understanding of the stock structure of harbor porpoises impacted by incidental catches in the Gulf of Maine and mid-Atlantic regions.
- (5) Investigate stock structure of sperm whales in the North Atlantic.
- (6) Estimate abundance of bottlenose dolphins and pilot whales in waters of the US Caribbean Sea.

#### **13.2 Mortality Estimation**

- (1) Improve estimates of fishing effort for most fisheries in the Atlantic and Gulf of Mexico that interact with marine mammal stocks.
- (2) Estimate incidental catches of marine mammals for the mixed coastal gillnet fishery of the Atlantic coast, using data from strandings wherever possible, and investigating the possibility of alternative observational techniques.
- (3) Further information is needed on fishing practices and incidental catches in the large mesh shark drift gillnet fishery in Georgia and Florida.
- (4) Estimates of incidental catches need to be refined for the Atlantic trawl fisheries for squid, mackerel, herring and butterfish.
- (5) Increased efforts should be made to standardize the collection and reporting of information on fisheries interactions from stranded cetaceans.
- (6) Increased efforts should be made to detect strandings in areas not currently observed with any frequency, such as the shores of Louisiana.

#### **13.3 Bycatch Reduction**

- (1) Harbor porpoise bycatch mitigation measures, such as pingers, should be examined in greater detail.
- (2) Gear modification research should be conducted to identify current fishing techniques and practices that have a low probability of bycatch.
- (3) Research should be done to determine why certain vessels are taking beaked whales and other pelagic cetaceans at higher or lower rates than are others.

(4) The concept of individual bycatch "quotas" or other means of allocating PBR within and among fisheries should be explored.

#### **13.4 Recovery and Conservation Plans**

- (1) The recovery plan for the Antillean manatee should be updated, incorporating NBS information collected since 1986.
- (2) Estimate abundance of North Atlantic right whales using photo-identification mark-recapture techniques.
- (3) Conduct demographic analyses of North Atlantic right whales to determine which factors are limiting recovery.
- (4) Expand survey areas for North Atlantic right whales outside known critical habitat.
- (5) Conduct forensic analyses of stranded right whales to determine cause(s) of mortality.

#### **13.5 Long-term Research Needs**

1. Indirect human-induced mortality and the effects of environmental contaminants on reproduction for coastal bottlenose dolphins need to be investigated in more detail. Health assessment research may be able to quantify the effects of some contaminants on sensitive response parameters such as immunological function. In this way, bottlenose dolphins can serve as a useful ecosystem model.
2. Observer collection of life history samples (reproductive tracts, mammarys, jaws, stomachs) should be improved, and these samples should be processed expeditiously. It would be best for whole carcasses to be recovered. The ETP sample collection should be explored as a model.
3. Site-specific population monitoring of bottlenose dolphins at long-term research sites should be continued to provide the means for assessing changes in key populations, and because they provide models for understanding the processes of coastal dolphin populations. In some cases these population monitoring studies are linked to health assessment monitoring programs, as described and ranked above.
4. Surveys of expanding pinniped populations should be conducted to monitor the growth of these stocks to help anticipate habitat and fisheries-related issues that may develop as a result of this expansion.

#### **14 Other Business**

CVs of two potential additions to the SRG were circulated at the meeting and the SRG will indicate their preference for one of these individuals to the NMFS prior to the next meeting. The next meeting of the SRG will be held in Portland, ME during October.