

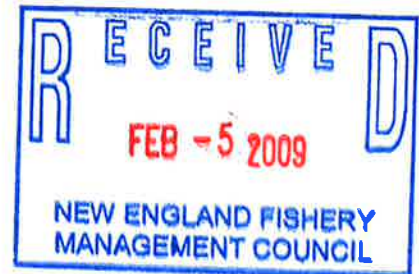
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UNITED STATES DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 NORTHEAST REGION
 55 Great Republic Drive
 Gloucester, MA 01930-2276

FEB - 5 2009

Paul Howard, Executive Director
 New England Fishery Management Council
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 Newburyport, MA 01950-2866



Dear Paul,

Thank you for your letter of November 26, 2008, regarding the work of the New England Fishery Management Council (Council) on Reasonable and Prudent Measure number 1 (hereafter referred to as the March 2008 RPM), and the accompanying Term and Condition (T/C) from the March 14, 2008, Atlantic Sea Scallop Biological Opinion (Scallop Opinion). I have reviewed the Council's recommendations in light of the regulatory and statutory requirements. I have determined that implementation of the March 2008 RPM and T/C would cause more than a minor change to the scallop fishery and are not reasonable and prudent. NMFS has amended the Scallop Opinion ITS by removing the March 2008 RPM and T/C and replacing these with a new RPM and T/C (attached). As described below, the new RPM and T/C are similar but not identical to the Council's recommended RPM and T/C. Further information to explain my determinations follows.

The regulatory and statutory requirements for RPMs were described in my letter to you of August 1, 2008. For ease of reference, they are briefly restated here. Section 7(b)(4) of the Endangered Species Act (ESA) requires the Secretary to specify in an Incidental Take Statement (ITS) "the impact of such incidental taking on the species" and "those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact." The regulatory text at 50 CFR 402.02 defines RPMs as "those actions the Director believes necessary or appropriate to minimize the impacts, *i.e.*, *amount or extent of take*," (emphasis added), and 50 CFR 402.14(i)(2) indicates that RPMs "along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes."

The regulations define actions for which Section 7 consultation is necessary, in part, as "all activities or programs of any kind authorized, funded or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas" (50 CFR 402.02). In the case of the Scallop Opinion, the action that was the subject of the consultation was the continued authorization of the Atlantic sea scallop fishery (scallop fishery). The Scallop Opinion considered effects of the scallop fishery on four ESA-listed sea turtle species. Therefore, based on the regulatory and statutory requirements, the RPMs and accompanying terms and conditions for the Scallop Opinion must minimize impacts to these turtle species while causing no more than a minor change to the basic design, location, scope, duration, or timing of the scallop fishery.



NOAA Fisheries Service (NMFS) considers the basic design, location, scope, and duration of the scallop fishery as follows. The basic design of the fishery is as a limited access fishery managed under a rotational area management scheme (RAM). The fishery operates year round in U.S. Atlantic waters from Maine to northern North Carolina on aggregations of scallops called "beds". Landings from Georges Bank and the Mid-Atlantic dominate the fishery, primarily from depths of 30-100m. Scallop landings are not constant throughout the year; seasonal peaks in landings are evident. There are 347 limited access scallop vessels as such vessels are defined in the regulations, which account for the vast majority of scallop landings in the fishery.

In keeping with the intent to limit the scope of the RPM to current scallop fishery management practices, the March 2008 RPM used existing measures of effort for the fishery – Days-at-Sea (DAS) and access area trips. As described in the August 1, 2008, letter to the Council, the RPM provided the option of a 50% reduction in the baseline effort for June through October or the option of a 30% reduction in the baseline effort for May through November. Two options were provided in the event that the 50% reduction for June through October resulted in a number of trips that was less than the total number of limited access scallop vessels. Such an event, if it were to occur, would mean that each vessel would have to use less than one trip for the time period, effectively shutting them out of the fishery for that time period or having to change how the fishery was managed in order to account for taking a fraction of a trip. Therefore, NMFS advised that requiring each limited access scallop vessel to use less than one Mid-Atlantic access area trip during the time period would cause more than a minor change to the scallop fishery.

As you know, the Council's analyses used two approaches for determining whether the March 2008 RPM and T/C were reasonable and prudent. The first approach was based on the guidance from NMFS that if the number of access area trips that could be used in June through October was less than the number of limited access scallop vessels, the overall effect of the measure was that it would cause more than a minor change to the fishery. The analysis did clearly show that the total number of trips for Mid-Atlantic access area trips was too low to enable each limited access scallop vessel to use one trip during June through October or May through November in the specified Mid-Atlantic area. However, it is also clear from Table 1 of the Council's response that not all of the limited access vessels used at least one trip during either time period for 2004-2007.

For the second approach, a model was used to examine the effects of effort shifts in the fishery as a result of implementation of the March 2008 RPM and T/C. One of the assumptions used in the model was that the seasonal composition of effort in the Mid-Atlantic for 2010 was equal to the average percentage distribution of effort during 2004-2007: 42% for June-October and 48% during November to May (Council letter page 14). However, in 2007, for example, only 100 of 900 Mid-Atlantic access area trips total were taken during June through October (Council letter page 10) --- approximately 11% of the total. If fewer trips are taken in June through October or May through November then what is assumed for the model, the effects of effort shifts on fishing mortality, and scallop landings will also be less than suggested by the model. In other words, changes in scallop fishing mortality, decreases in scallop landings, and increases in the number of small scallops landed may not occur to the extent predicted by the model given year to year changes that are not clearly reflected in the average. In addition, even when it was assumed that the seasonal composition of effort in the Mid-Atlantic for 2010 would be 42% for June-October

and 48% during November to May, the changes in fishing mortality suggested by the model were within ranges previously experienced by the fishery. Finally, concerns for safety-at-sea are not limited to cold weather months. The risk of hurricanes in the summer and fall also pose a safety concern when scallop fishing occurs in those months, particularly in Mid-Atlantic waters. Therefore, the effects of effort shifts on safety-at-sea must be considered bearing in mind the likelihood of weather hazards in all months of the year. For these reasons, my staff further evaluated the information used by the Council and determined the following.

First, Appendix 3 of the Council's response provides information that helps to demonstrate the complexity of management for the scallop fishery as well as the differences between open area DAS used and access area trips used for the baseline period (2004-2007). The March 2008 RPM and T/C assumes that fishing effort in access areas and open areas is somewhat consistent from year to year and thus includes a requirement to limit effort starting in the scallop 2010 fishing year based on an average level of fishing effort for 2004-2007. However, although open area DAS-used is fairly consistent from year to year, the number of Mid-Atlantic access area trips used has been highly variable from year to year. As pointed out in Appendix 3 of the Council's response, other than the Hudson Canyon Access Area (HCAA) carry-over trips, no Mid-Atlantic access area trips were allocated for 2006. In 2004, 2005, 2006, and 2007, the scallop fleet took 595, 271, 33, and 85 access area trips, respectively, in the June through October period in the HCAA. In 2007, 103 Elephant Trunk trips were taken between June and October of 2007. This variation indicates that trip-use is highly dependent on fishing conditions and management actions and should not be represented by an average. I agree with the conclusion provided in Appendix 3 that this variation in trip-use also makes it difficult to apply a meaningful limitation in future years based on an average across several years.

Since it is biased low by three years of low trip activity, the average constrains the scallop fleet to very restrictive limitations on Mid-Atlantic access area trips in future years. As the Council concludes, this could shift effort into periods that may impact future yields and overall status and value of the scallop resource. The use of the average number of trips taken to limit future effort levels may also adversely impact the Council's and NMFS's ability to manage the fishery consistent with RAM. RAM adjusts the allocation of fishing time as the resource increases in closed areas, is harvested in access areas, and finally, returns to the level that makes it appropriate to redefine the area as part of the open area. The goal of RAM is to increase fishing efficiency and improve overall yield from the scallop resource. With excessive constraint on effort based on an average that is biased low as noted above, RAM may not be able to achieve its goals of improving efficiency and yield. Ensuring that RAM works to improve efficiency (i.e., reduced gear time in the water) also helps to reduce sea turtle interactions when the operation of the gear and sea turtle distribution overlap. Further evaluation of the information used by the Council, therefore, leads us to conclude that the use of average number of 2004-2007 Mid-Atlantic access area trips used in either June through October or May through November for implementing the March 2008 RPM as described in the T/C would cause more than a minor change to the scallop fishery.

The Council's first analysis did show that using an average of the total 2004-2007 open area DAS-used in the specified Mid-Atlantic area would provide enough days for each limited access vessel to take one open area trip in May through November. As described above, unlike Mid-

Atlantic access area trips used, open area DAS-used for 2004-2007 was fairly consistent from year to year. However, the use of an average for open area DAS that must be applied to the May through November periods of all future years likewise presents the difficulty of not being responsive to changing conditions in the scallop fishery. Open areas suitable for scallop fishing are more limited than may be perceived given the size of the scallop management area. The management area for the Scallop FMP is defined in the FMP as the range of the sea scallop resource along the U.S. Atlantic Coast. Scallops range from Newfoundland to North Carolina along the continental shelf of North America. However, given the scallops depth and temperature preferences, scallop aggregations are found in only a portion of the management area. As pointed out in Appendix 3, where open area effort occurs fluctuates depending on where catch rates are higher in open areas. Bycatch of other managed species, RAM and closures or restrictions on scallop fishing for other reasons (i.e., habitat, conservation of other managed species) can also affect where and when open area scallop fishing occurs. In some years, the allocation of open area DAS to limited access scallop vessels may be low enough such that each vessel is able to use at least one open area trip in May through November, and the remainder of its open area DAS from December through April. However, in other years when the allocation of open area DAS is higher, vessels may be so constrained by being able to use only one open area trip from May to November, that it would be difficult for the vessels to use all of their remaining open area DAS from December through April in Mid-Atlantic waters or from May through November by shifting to open areas of Georges Bank. The Council's analysis assessed the anticipated effect of the RPM and T/C on the use of open area DAS for June through October and May through November of the 2010 scallop fishing year. The extent to which open area fishing will be affected in future years by the RPM and T/C is unpredictable given management changes to the scallop fishery, and changes in other factors influencing where or when fishing occurs. Further evaluation of the information used by the Council, therefore, leads us to conclude that the use of average number of 2004-2007 Mid-Atlantic open area DAS used in either June through October or May through November for implementing the March 2008 RPM as described in the T/C would cause more than a minor change to the scallop fishery.

Specifying a certain percentage reduction in effort, whether that effort is characterized in terms of an average or not and whether it is effort for access area trips or open area DAS, reduces the agency's ability to implement an RPM that will consistently cause no more than a minor change in the fishery. As stated in the August 1, 2008, letter to the Council, management of the scallop fishery is complex with periodic changes in management measures relative to rotational area management, and uncertainty in factors affecting operation of the fishery in the future (i.e., fuel costs, scallop market price, abundance of the scallop resource, changes to the Magnuson-Stevens Act). The variation in number of Mid-Atlantic area trips used for 2004-2007 demonstrates how much fishing effort can vary from year to year. A 50% or 30% reduction in effort for part of the fishing year may be reasonable and prudent in some years (i.e., when the total number of allocated access area trips for Mid-Atlantic waters is low, or when other factors -- fuel prices, scallop market price, etc.-- influence when and where fishing occurs), but may not be reasonable and prudent in other years (i.e., when most or all of the allocated access area trips must be used in Mid-Atlantic waters, or when other factors influence when and where fishing occurs). At such times, implementation of the March 2008 RPM and its T/C could result in more than minor changes to the scallop fishery as a result of, amongst other reasons, increases in fishing mortality, increases in bycatch of other managed species, and/or reducing safety-at-sea by requiring more

trips to be taken in months when weather conditions are less favorable. Adhering to specific, unchanging reductions in effort for selected time periods will reduce NMFS and the Council's ability to respond to changing conditions in the scallop fishery. Therefore, the use of specific percentage reductions as part of the T/C for the March 2008 RPM could result in more than minor changes to the fishery in some years. The years in which more than minor changes could occur or the factors that would cause such a result are unpredictable given the complexity of the fishery, the number of variables which influence when and where scallop fishermen fish, and the variation in these variables from year to year.

For these reasons, I have concluded that the March 2008 RPM and the T/C to implement it are not reasonable and prudent. NMFS has amended the Scallop Opinion ITS by removing the March 2008 RPM and T/C and replacing these with a new RPM and T/C that better satisfies the regulatory and statutory requirements (see Attachment A). As described below, the new RPM and T/C is similar but not identical to that which was recommended by the Council.

Compared to the March 2008 RPM and T/C, the Council's recommended RPM and T/C would:

- retain limits on effort as the means by which to minimize impacts to turtles from the continued operation of the scallop fishery;
- retain the geographic area that will be affected by the RPM and T/C;
- provide greater flexibility for implementing the RPM and T/C by omitting any reference to the specific way in which effort should be measured (e.g., average open area DAS used and average access area trips taken for 2004-2007);
- provide greater flexibility for implementing the RPM and T/C by omitting the specific percentage that effort must be limited during any time period;
- provide the flexibility to expand the time period that is subject to the measures implementing the RPM and T/C;
- add the phrase "and/or its impacts on sea turtles" to the RPM;
- add a sentence referring to impacts to fishing mortality; and,
- change the deadline for implementation of the T/C from "no later than the 2010 scallop fishing year", to "no later than 2010".

Retaining limits on effort as the means by which to minimize impacts to sea turtles from the operation of the scallop fishery is consistent with the intent of the March 2008 RPM. As described in the August 1, 2008, letter to the Council, NMFS considered two basic approaches for identifying RPMs for the scallop fishery: (1) Minimize the severity (mortalities/serious injuries) of sea turtle interactions with scallop fishing gear (e.g., by modifying gear or requiring the use of gear that has a lower risk of mortality for sea turtles) or (2) minimize the number of interactions that could occur. NMFS was unable to identify any specific new scallop fishing gear that would also entail only a minor change to the fishery. NMFS did identify that reducing scallop fishing effort in times and in areas where sea turtles also occurred would be a suitable RPM provided the requirement was also "reasonable and prudent."

Retaining the geographic area as defined in the current T/C is also appropriate, and consistent with the March 2008 RPM. The greatest area of overlap in the distribution of scallop fishing gear and sea turtles is in Mid-Atlantic waters below the northern boundaries of statistical areas 612, 613, 533, 534, and 541-543. This geographic area does not include all parts of the scallop

management area where turtle interactions with scallop fishing gear are known to have occurred. However, expanding the geographic scope of the RPM and T/C to include all parts of the scallop management area where sea turtle captures in scallop fishing gear are known to have occurred would cause more than a minor change to the fishery by restricting effort on both Georges Bank and in Mid-Atlantic waters where nearly all of scallop landings are obtained. In addition, expanding the geographic area is unlikely to provide any additional benefit to sea turtles given the rarity of sea turtle interactions with scallop fishing gear outside of the geographic scope of the RPM and T/C as currently defined. Of the 95 non-decomposed sea turtles documented to have been captured within or upon scallop fishing gear as of March 14, 2008, only two turtles were captured in scallop fishing gear fished outside of the geographic area defined by in the RPM and T/C.

Omitting a specific measure of effort (e.g., open area DAS and access area trips) provides greater flexibility in the RPM so that it will minimize impacts to sea turtles while causing no more than a minor change to the scallop fishery. Omitting any reference to open area DAS and access area trips may, however, be misunderstood to mean that the RPM and T/C is applicable to both limited access scallop vessels and limited access general category scallop vessels. The agency's use of open area DAS and access area trips in the March 2008 RPM and T/C made it clear that the RPM was intended for limited access scallop vessels, only. The PDT's analyses likewise considered effort by limited access scallop vessels, only. For example, the PDT's first analysis refers to the full-time equivalent limited access vessels (Council letter page 11). The seasonal composition of days fished used for the PDT's second analytical approach excludes trips with less than 400 pounds (Council letter, Table 4, page II-7). Therefore, the new RPM and T/C omit reference to any specific measure of effort in order to provide flexibility for identifying specific measures to implement the RPM in future years, but does include the phrase "by Limited access scallop vessels as such vessels are defined in the regulations (50 CFR 648.2)" to make clear that NMFS is not required under this RPM and T/C to implement measures affecting effort of the general category vessels.

Although the Council's recommended RPM and T/C omit specific time periods within which effort should be limited, the T/C does provide "the periods in which turtle takes have occurred" as a frame of reference. This approach provides the flexibility to expand the time period affected by the measures implementing the RPM and T/C based on new information for when sea turtle takes have occurred. Given the seasonal presence of sea turtles in Mid-Atlantic waters, it is likely that sea turtle distribution overlaps with scallop fishing activity from May through November. As described in the Scallop Opinion, observed turtle captures in or upon scallop fishing gear have occurred in the months of June through October.

The Council's recommended RPM would further change the March 2008 RPM from limits on effort, alone, to effort "and/or its impact on sea turtles." However, the Council's recommended T/C refers only to limiting effort. Therefore, the new RPM does not include the phrase "and/or its impacts on sea turtles". The phrase is redundant to the stated purpose of an RPM as described in the regulations (50 CFR 402.02), and the Scallop Opinion provides four additional RPMs describing actions that NMFS must take to minimize the impact of the scallop fishery on sea turtles by means other than affecting fishing effort (i.e., gear modifications).

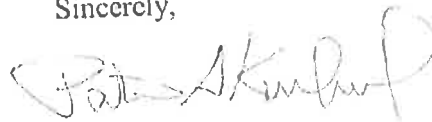
The Council's recommended T/C adds the sentence, "Restrictions on fishing effort described above shall be limited to a level that will not result in more than a minor impact on fishing mortality or the fishery." The action, as defined by the regulations (50 CFR 402.02) is the fishery authorized by NMFS and not fishing mortality specifically. In addition, there are many factors that could be used in future analyses of the impact of proposed measures on the fishery, including fishing mortality. However, there are many reasons that fishing mortality may vary over time so it would be inappropriate to specify this as the sole factor that would be used as the basis of future impact determinations. Therefore, the new T/C does not include "fishing mortality or" in the sentence.

The Council's recommended T/C states the deadline for implementation of the T/C as "no later than 2010", while the existing T/C provides the deadline as "no later than the 2010 scallop fishing year". The new RPM retains the original language since the scallop fishing year begins March 1 rather than January 1, and the current management measures implemented under Framework Adjustment 19 are in effect through February 28, 2010.

Finally, the two additional RPMs recommended by the Council do not meet the statutory and regulatory requirements for RPMs since neither minimizes the impacts to sea turtles directly or indirectly (i.e., by providing information to minimize impacts to sea turtles). Further, the Council provided no rationale for these two additional RPMs in its November 26, 2008, letter. In addition, with respect to the first proposed additional RPM, scallop distribution and abundance data is considered by the PDT in the framework process to identify new rotational closed areas, access areas, and to revise allocations in existing access areas as part of overall revisions to area rotation measures. In developing new area rotation measures, the Council and NMFS are responsible for ensuring that the new measures achieve all of the objectives of the FMP, including continued compliance with the ESA. Therefore, this proposed additional RPM would be duplicative and would not provide any additional benefits to the work that would be on-going in the framework process. For these reasons, the two additional RPMs have not been added to the ITS of the Scallop Opinion.

I appreciate the work of the Council and Council staff on this important issue. Please feel free to contact me with any questions.

Sincerely,



Patricia A. Kurkul
Regional Administrator

Attachment

9.0 INCIDENTAL TAKE STATEMENT (as amended, February 5, 2009)

Section 9 of the Endangered Species Act and Federal regulations pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, unless a special exemption has been granted. Take is defined as “to harass, harm, pursue, hunt, shoot, capture, or collect, or to attempt to engage in any such conduct.” Incidental take is defined as take that is incidental to, and not the purpose of, the execution of an otherwise lawful activity. Under the terms of Sections 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement (ITS).

When a proposed NMFS action is found to be consistent with section 7(a)(2) of the ESA, section 7(b)(4) of the ESA requires NMFS to issue a statement specifying the impact of incidental taking, if any. It also states that reasonable and prudent measures necessary to minimize impacts of any incidental take be provided along with implementing terms and conditions. The measures described below are non-discretionary and must therefore be undertaken in order for the exemption in section 7(o)(2) to apply. Failure to implement the terms and conditions through enforceable measures, may result in a lapse of the protective coverage section of 7(o)(2).

Anticipated Amount or Extent of Incidental Take

Based on data from observer reports for the scallop fishery, and the distribution and abundance of turtles in the action area, NMFS anticipates that the continued implementation of the Scallop FMP, may result in the taking of sea turtles as follows:

- for scallop *dredge* gear, NMFS anticipates the **biennial** take of up to 929 loggerheads of which up to 595 will be lethal takes (includes serious injuries), as well as the annual take of 1 leatherback sea turtle (non-lethal), 2 Kemp’s ridley sea turtles (lethal or non-lethal), and 2 green sea turtles (lethal or non-lethal); and,
- for scallop *trawl* gear, NMFS anticipates the annual take of up to 154 loggerhead sea turtles of which up to 20 will be lethal takes, as well as 1 leatherback, 1 Kemp’s ridley, and 1 green sea turtle, all of which may be lethal or non-lethal takes.

The number of loggerhead sea turtles expected to be killed or suffer serious injuries as a result of interactions with scallop dredge gear is based on data collected in the 2003 fishing year, prior to the use of chain mats. Therefore, while the estimated 595 loggerhead takes, biennially, resulting in immediate death or serious injury is based on the best currently available information, it is also likely a worst case scenario.

Anticipated Impact of Incidental Take

NMFS has concluded that the continued operation of the scallop fishery may adversely affect but is not likely to jeopardize loggerhead, leatherback, Kemp's ridley or green sea turtles. Nevertheless, NMFS must take action to minimize these takes. The following Reasonable and Prudent Measures (RPMs) have been identified as ways to minimize sea turtle interactions with the scallop fishery now and to generate the information necessary in the future to continue to minimize incidental takes. These measures are non-discretionary and must be implemented by NMFS. Many of these measures were included as RPMs with the September 18, 2006 Opinion. They are repeated here because they still meet the criteria for an RPM and reflect work in progress to minimize the taking of sea turtles in scallop dredge and/or scallop trawl gear.

Reasonable and Prudent Measures

NMFS has determined that the following reasonable and prudent measures are necessary or appropriate to minimize impacts of incidental take of sea turtles:

1. NMFS must limit the amount of allocated scallop fishing effort by "Limited access scallop vessels" as such vessels are defined in the regulations (50 CFR 648.2), that can be used in the area and during the time of year when sea turtle distribution overlaps with scallop fishing activity. **(amended February 5, 2009)**
2. NMFS must continue to investigate and implement, as appropriate, gear modifications for scallop dredge and trawl gear to reduce the capture of sea turtles and/or the severity of the interactions that occur.
3. NMFS must review available data to determine whether there are areas (*i.e.*, "hot spots") within the action area where sea turtle interactions with scallop dredge and/or trawl gear are more likely to occur.
4. NMFS must quantify the extent to which chain mats reduce the number of serious injuries/deaths of sea turtles that interact with scallop dredge gear.
5. NMFS must determine (a) the extent to which sea turtle interactions with scallop dredge gear occur on the bottom vs. within the water column and (b) the effect on sea turtles of being struck by the scallop dredge.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, and regulations issued pursuant to section 4(d), NMFS must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To comply with 1 above, no later than the 2010 scallop fishing year, NMFS must limit the amount of allocated limited access scallop fishing effort that can be used in waters south of the northern boundaries of statistical areas 612, 613, 533, 534, 541-543 during the periods in which turtle takes have occurred. Restrictions on fishing effort described

above shall be limited to a level that will not result in more than a minor impact on the fishery. (amended February 5, 2009)

2. To comply with 2 above, NMFS must continue to investigate modifications of scallop trawl and dredge gear. Within a reasonable amount of time following completion of an experimental gear trial from or by any source, NMFS must review all data collected from the experimental gear trials, determine the next appropriate course of action (*e.g.*, expanded gear testing, further gear modification, rulemaking to require the gear modification), and initiate action based on the determination. The goal of this RPM is ultimately to require modification of fishing gear used in the scallop fishery operating under the Atlantic Sea Scallop FMP within a reasonable timeframe following sound research that demonstrates that the gear modification is reasonable and feasible and will help to minimize the number and/or severity of sea turtle interactions with scallop fishing gear.
3. To comply with 3 above, NMFS must review all data available on the observed take of sea turtles in the scallop fishery and other suitable information (*i.e.*, data on observed turtle interactions for other fisheries or fishery surveys in the area where the scallop fishery operates) to assess whether there is sufficient information to identify "hot spots" within the action area. Within a reasonable amount of time after completing the review, if NMFS determines that "hot spots" do exist, NMFS must take appropriate action to reduce sea turtle interactions and/or their impacts within any identified hot spot.
4. To comply with 4 above, NMFS must use available and appropriate technologies (*e.*, underwater video as part of an experiment using scallop dredge gear in either the natural or controlled environment, computer modeling, etc.) to quantify the extent to which chain mats reduce the number of serious injuries/deaths of sea turtles that interact with scallop dredge gear. This information is necessary to better determine the extent to which chain mats do reduce injuries leading to death for sea turtles and may result in further modifications of the fishery to ensure sea turtle interactions and/or interactions causing death are minimized. Initiate study no later than fiscal year 2009.
5. To comply with 5 above, NMFS must use available and appropriate technologies to better determine where (on the bottom or in the water column) and how sea turtle interactions with scallop dredge gear are occurring. Such information is necessary to assess whether further gear modifications in the scallop dredge fishery will actually provide a benefit to sea turtles by either reducing the number of interactions or the number of interactions causing mortal injuries. Initiate study no later than fiscal year 2009.

Monitoring

NMFS must continue to monitor levels of sea turtle bycatch in the scallop fishery. Observer coverage has been used as the principal means to estimate sea turtle bycatch in the scallop fishery and to monitor incidental take levels provided in biological opinions for the scallop fishery. NMFS will continue to use observer coverage to monitor sea turtle bycatch in trawl gear and sea turtle bycatch in scallop dredge gear when that gear is used in areas or at times when chain mats are not required.

The use of chain mats on scallop dredge gear is expected to greatly reduce the likelihood that turtles struck by or incidentally swimming into scallop dredge gear would enter the dredge bag (NMFS 2006b). Therefore, given that scallop dredge vessels are required to use chain mats on scallop dredge gear when fishing in Mid-Atlantic waters south of 41° 9.0'N from the shoreline to the outer boundary of the EEZ during the period of May 1 through November 30 each year (71 FR 50361, August 25, 2006), injuries to sea turtles that occur as a result of the turtle being struck by the dredge gear underwater will continue to occur but will not be observed unless the turtle is small enough to pass between the chains and enter the dredge bag or is otherwise caught on the dredge frame and carried to the surface. This also means that observer coverage of scallop dredge vessels will be less effective in monitoring takes of sea turtles in the dredge component of the scallop fishery.

NMFS' NERO has considered the use of underwater video on scallop dredge vessels to monitor sea turtle interactions with the gear. However, based on the information currently available as well as the previous use of this technology in studies of turtle interactions with scallop dredge gear, the use of underwater video monitoring for monitoring the take of sea turtles in scallop dredge gear is infeasible (Memo from N. Thompson, NEFSC to P. Kurkul, NERO, October 16, 2007). NMFS' NERO has also considered whether chains mats should be removed from scallop dredge gear during some observed trips to assess the number of turtle interactions that were occurring when chain mats were on the gear. However, NMFS' NERO has also determined that this is not a feasible method for monitoring the sea turtle interactions with the dredge component of the scallop fishery given that the removal of the chains will likely increase the number of sea turtle deaths in comparison to the number that would have occurred if chains were present, and it is uncertain whether the take estimates generated from non-chain mat modified dredges will correctly estimate takes in chain mat equipped dredges since the dredges may perform differently based on the presence of absence of the chain mat (Memo from N. Thompson, NEFSC to P. Kurkul, NERO, October 16, 2007).

As described in the September 18, 2006 Opinion on the continued authorization of the scallop fishery under the FMP, NMFS' NERO requested guidance from the NEFSC on methods to monitor sea turtle takes (*e.g.*, capture) in the dredge component of the scallop fishery in the event that the chain mat rule was approved and implemented. In response to this request, the NEFSC provided information on fishery dependent and fishery independent approaches considered by the NEFSC for monitoring interactions between sea turtles and scallop dredge gear and the reasonableness of each approach. The NEFSC concluded, however, that none of the approaches could provide a "scientifically accurate and robust" take estimate and, as such, the NEFSC could not support or recommend any one of these approaches. Based on information provided by the NEFSC, NERO concluded that a method does not currently exist for enumerating sea turtles taken by chain mat equipped scallop dredge gear which meets the NEFSC's definition of a scientifically robust and accurate take estimate and the guiding principles for the preparation of biological opinions provided in the Final ESA Section 7 Handbook developed jointly by the FWS and NMFS. In the absence of a method for enumerating most takes to monitor the ITS on the scallop fishery as a whole, NMFS will, therefore, use dredge hours as a surrogate measure of actual takes, and find that the ITS provided with this Opinion has been exceeded when the fishery operates in a manner that, based on the best available information, would reasonably likely result in greater sea turtle interactions with scallop dredge gear than what is estimated to have occurred in 2003 and 2004. Given that the likelihood of sea turtle interactions with scallop dredge gear is higher in Mid-Atlantic waters as compared to waters further north (*e.g.*, Georges

Bank) and given that sea turtle interactions with scallop dredge gear are likely only from May through November each year, NMFS will monitor sea turtle interactions with scallop dredge gear by:

- using “dredge hour” as the measure of scallop fishing effort for the purpose of monitoring sea turtle interactions with scallop dredge gear;
- using the average of the total number of dredge hours for Mid-Atlantic waters during the period of May through November 2003 and May through November 2004 as the benchmark against which the 2-year running average of dredge hours for each subsequent May through November period of each scallop fishing year will be compared; and,
- consider the ITS provided with this Opinion to have been exceeded if the 2-year running average of dredge hours in Mid-Atlantic waters (as far south as Cape Hatteras, NC) during the period of May through November of any scallop fishing year is greater than the average of the total number of dredge hours for Mid-Atlantic waters (as far south as Cape Hatteras, NC) during the same period of 2003 and 2004.