MEMORANDUM

Date: January 29, 2015
To: Council
From: Kiley Dancy, Staff
Subject: February Council Meeting Deep Sea Corals Amendment Discussion

The Council is scheduled to review public hearing comments and select preferred alternatives for the deep sea corals amendment on Wednesday, February 11 from 1:00-5:00 p.m. The following materials are enclosed for the Council’s consideration:

1. Fishery Management Action Team (FMAT) January 20th call summary, with comments and recommendations on the amendment.
2. Compiled public hearing and written comments collected during the public comment period.
3. Final revised Public Information Document (PID) containing the range of alternatives and supporting analyses.
The FMAT met via webinar at 1:30 p.m. on Tuesday, January 20, 2015 to discuss recommendations for the MAFMC’s Deep Sea Corals Amendment. The following summarizes FMAT guidance and recommendations for the Council’s selection of preferred alternatives, as well as additional comments and clarifications regarding some questions and concerns that the FMAT has received during the public hearing process.

### Broad coral zone designation

Regarding the alternatives in the document for broad coral zone designation, the FMAT noted the following for the Council to consider:

- The additional coral protections gained by moving from a deeper broad zone (400 or 500 meters) to a shallower broad zone (200 or 300 meters) may not be enough to justify the increased negative economic impacts to the affected fisheries given that the 400m and 500m broad zones would cover 97% and 93% respectively of high/very high coral likelihood areas. If the Council’s intention is to “freeze the footprint” of current fishing effort in the broad zones, it appears that besides red crab fishing, most fishing effort drops off by 400 meters. For coral impacts in broad zones, see Table 21 in the Public Information Document (PID), as well as description of the coverage of suitable habitat for each proposed broad zone on page 68. For economic impacts in broad zones, see section 7.3 of the PID.

- The FMAT discussed the depth profiles of recent research expeditions and noted that there were few recent dives conducted at depths less than 500 meters. However, there are a few exceptions. For example, in Wilmington Canyon, high coral abundance and diversity was observed at depths of approximately 300 meters. This indicates that discrete zones would be particularly important in some areas if the Council chose a deeper broad zone alternative and also wished to provide increased protection in canyon areas with high coral abundance. In general, the FMAT felt there was not enough recent information to draw additional conclusions about the protection value for corals at shallower depths.

- In response to public hearing comments regarding broad zone depth contours not having been finalized (since they need to be translated into enforceable points and lines on a map), the FMAT agreed that the Council and public should have an understanding of how the depth contours will be approximated. The FMAT decided that Council staff would create a boundary (or methodology for creating a boundary) to approximate the various depth contours, and that the FMAT would review that product via email. The FMAT also suggested that Council members and advisors could provide input on specific areas along the shelf break where it is more critical that the lines be better defined (i.e., more complex).

### Broad coral zone management measures

- In terms of management measures within a potential broad zone, the FMAT noted that restricting all bottom tending-gear is more proactive and more in line with the purpose and need of the amendment as well as the “freeze the footprint” approach. Given that gear types beyond trawling can have an impact on corals, the FMAT recommended that the “freeze the footprint” approach include all bottom tending gear types, with exceptions as discussed below.

- For exemption sub-alternatives (applicable only if “prohibit all bottom-tending gear;” alternative 2B, is selected), the FMAT recommended the following:
If the Council selects a 400 or 500 meter broad zone as a preferred alternative, there does not appear to be a strong case for exempting the golden tilefish bottom longline fishery according to the fishery effort information analyzed in the PID. If a shallower broad zone (200 or 300 meters) is chosen, there would be some justification for exempting the golden tilefish fishery under the “freeze the footprint” principle. The FMAT also noted the relatively small amount of tilefish longlining activity that appears to be occurring beyond 300 meters (see Figure 33; Tables 34 and 43 in PID).

For all potential broad zones, the FMAT agreed that an exemption for the red crab trap fishery is justified. Almost all fishing activity for red crab occurs deeper than 550 meters, and thus would be severely impacted by any of the proposed broad zones. The red crab fishery is a limited access fishery consisting of only four vessels.

- The FMAT supports requiring VMS for all vessels fishing within broad zones, in order to enforce any restrictions.

**Discrete coral zone designations**

- The FMAT noted that the map for Wilmington Canyon and North Heyes-South Wilmington Canyons was inadvertently left out of the PID. It is provided here in Figure 1.

- The FMAT noted that if the Council designates a broad coral zone, this would simplify prioritization of discrete zones, given that significant portions of the proposed discrete zone areas would be covered by a broad zone. If a broad zone is designated, the FMAT recommends that the Council prioritize the five canyons that significantly incise the shelf/slope break and extend into shallower water on the shelf, and consider them separately from the other 14 discrete zones that are in deeper water on the continental slope. These areas include Wilmington, Norfolk, Baltimore, Hudson, and Washington Canyons.

- In the absence of a broad zone, prioritization of discrete zones is more difficult. However, the FMAT agreed that the previously mentioned five canyons that incise the shelf still stand out as being higher priorities for coral protection. The number of coral observations (recent and historic) in these canyons is generally higher (with the exception of Hudson Canyon), as is the total amount of suitable habitat. There are a good number of recent observations of corals in Wilmington, Norfolk, Baltimore, Hudson, and Washington Canyons. The FMAT indicated a preference for prioritizing canyons with high total area of high/very high habitat suitability, and thus considered the Mey-Lindenkohl and Warr-Phoenix slope areas to be additional priority candidates for discrete zone protection in the absence of a broad zone alternative.

- The FMAT considered the question of how much area of high habitat suitability falls within the discrete broad zones but outside of the proposed broad zones, given that the broad zone areas overlap much of the proposed discrete zone areas. The FMAT felt it was important to take a closer look at the locations and extent of discrete areas and suitable coral habitat falling outside broad zones to better inform the Council in choosing broad and discrete alternatives. Tables 1 and 2 provide the total area and area of high habitat suitability for each discrete zone extending beyond each of the proposed broad zones, and these areas are also mapped in Figures 2-9.

**Discrete zone management measures**

The FMAT did not come to an agreement on a recommendation for gear restrictions to be applied within discrete zones. Because these areas are not proposed under the “freeze the footprint” objective and are associated with more fishing effort in the heads of the canyons, the FMAT indicated that this decision should be based on the Council’s priorities for balancing tradeoffs. Additionally, different canyon areas have more or less importance for different gear types and fisheries, which the Council could consider when specifying management measures.

**Framework provisions**

The FMAT supports the proposed framework alternatives in the document (alternatives 5B through 5E). These alternatives would simplify any future modifications to deep sea coral measures.
Vessel Monitoring Systems requirement for *Illex* squid vessels

The FMAT supports the proposed requirement for *Illex* squid moratorium vessels to use VMS.

Additional Comments

Questions and concerns have been raised about the following issues during the public hearing process, as well as through inquiries directed to the FMAT:

- Questions regarding the inputs and outputs associated with the habitat suitability model produced by NOAA’s Northeast Fisheries Science Center (NEFSC) and the National Ocean Service’s National Centers for Coastal and Ocean Science (NOS/NCCOS)\(^1\)
- Questions about the validity and accuracy of the historical deep sea coral database maintained by NOAA’s Deep Sea Coral Research and Technology Program (DSCRTP)
- Provisions for “haulback zones” for squid trawlers in key areas where gear is deployed and retrieved
- Transit provisions for any potential deep sea coral zones

The following section provides some additional background information, clarifying comments, or suggestions regarding these issues.

Habitat Suitability Model

The deep sea corals habitat suitability model is a MaxEnt model.\(^2\) This approach takes known deep sea coral locations (from the DSCRTP historical database), and combines this data with environmental predictor inputs such as depth, slope, temperature, substrate type, and many more variables to generate predictive models of deep sea coral distribution. The model developers selected this type of model because of its usefulness for data sets that are presence-only. The project description and links to the full digital data package can be found at: [http://coastalscience.noaa.gov/projects/detail?key=35](http://coastalscience.noaa.gov/projects/detail?key=35).

The FMAT notes that the model has performed well in initial groundtruthing, and represents the best relevant scientific information available to the Council at this time since it incorporates established factors supporting coral presence. Historical coral records, including from observer data, are limited, and much of the region has not been explored for the presence of deep sea corals. Where coral presence is suspected but not confirmed, the best tool for determining where corals are likely to be located is a predictive model. The project page for the model states that: “The distribution of deep-sea coral is poorly understood because of the logistical difficulty and expense of surveying the deep ocean. Predictive modeling of deep-sea coral habitats is essential for supporting conservation planning and for targeting areas for future mapping and exploration. Modeling can also lead to insights into the environmental factors driving the distribution of deep-sea corals, helping to build our knowledge base of how these unique ecosystems function.”

The habitat suitability model has been internally reviewed by NCCOS and NEFSC to meet technical standards for data quality, and detailed metadata have been produced and made publicly available as part of the full data package (see link above). The model output package was subsequently provided to the NOAA Coastal Services Center/Bureau of Ocean Energy Management’s Multipurpose Marine Cadastre, where it underwent another review.

---


process with internal and external reviewers. The model description and results are being prepared for submission to a journal in the near future.³

Preliminary data indicate that the habitat suitability model has performed extremely well when field-tested during recent research expeditions. That is, a subset of locations that the model has predicted as highly likely to contain suitable deep sea coral habitat has been explored using towed cameras and Remotely Operated Vehicles, and most of these tested sites were found to contain deep sea corals and/or suitable habitat. This process, referred to as “groundtruthing,” was conducted on recent expeditions on both the Bigelow and on the Okeanos Explorer. Groundtruthing results are incomplete and have not been peer reviewed; however, preliminary results indicate strong model performance in predicting areas with high habitat suitability for deep sea corals. Some research dives have also tested areas where the model predicted low habitat suitability, and found few or no corals. A technical memo and/or peer-reviewed journal article on these groundtruthing efforts is expected in 2016.

As new information becomes available from recent deep sea research expeditions, the predictive habitat suitability model will be improved by incorporating this information over the next few years. There are also plans to improve the spatial resolution of the model (from the current 370 meter grid cell size to 25 meters). The Council may choose to consider new information as it becomes available and potentially modify any designated measures for deep sea corals.

Deep sea coral historical database

There are two main types of deep-sea coral data for the northeast and mid-Atlantic regions: geo-referenced presence records and non-geo-referenced presence records (i.e., “observations”). There is also a small amount of deep-sea coral density or abundance data, but it is too problematic to be useful. Coral geo-referenced presence data from Maine to Cape Hatteras was derived from the Cold-water Coral Geographic Database (CoWCoG)⁴ developed by the USGS with support from NOAA’s DSCRTP. The geodatabase consolidates the known locations of deep-sea corals from this area, with records from the late 1800s to the present coming from previous peer-reviewed databases, museum archives, field surveys, deep-sea coral data mining projects, and historical and recent literature. As an example: the Watling et al. (2003) database obtained records of alcyonacean coral occurrences from a variety of sources, including Verrill, Deichmann,⁷ Hecker and collaborators,⁸⁹¹⁰ Yale Peabody museum collections, the NEFSC benthic database of identified coral taxa,¹¹ and observations from recent National Undersea


Research Center (NURC) field studies. The geodatabase has been vetted and has undergone quality assurance/quality control by the authors and the DSCRTP; for details on the sources of the geo-referenced presence records in the database, see Packer et al. (2007) and Packer et al. (in review). The habitat suitability model was run using additionally vetted and corrected georeferenced records from the historical database (e.g., taxonomies were recertified, questionable entries were removed). Although some of the older records may have positional inaccuracies due to more imprecise navigation techniques used at the time of observation, the habitat suitability upon which the proposed alternatives are based has a fairly broad resolution (370 meter grid cell size), lessening the effects of any minor positional inaccuracies in the underlying data.

**Haulback zones**

The “Considered but Rejected” section of the PID describes the previous FMAT recommendation that comments be solicited during the public hearing process regarding the issue of haulback zones. Haulback zones would be areas in and around the proposed discrete zones where vessel operators would be permitted to set and retrieve their gear, if that gear is off the seafloor and not actively fishing. Trawl gear can extend significantly behind a vessel, and thus a vessel may need to drift or move into and around a discrete coral zone in order to set or haul their gear for fishing just outside of a designated area.

To date, several public comments received on this issue have indicated a need for development of haulback zones, but there have been no specific proposals on how these would be designated or enforced.

**Transit Provisions**

Transit provisions would lessen the impact of the discrete areas on vessels (otherwise vessels would be required to transit around them), but these provisions complicate enforcement of area-based management. The Council could also consider VMS declarations for transiting. Current regulations specify the following definition for gears that are not available for immediate use, which is often included when allowing for transit:

*Not available for immediate use* means that the gear is not being used for fishing and is stowed in conformance with one of the following methods:

1. Nets—(i) Below-deck stowage. (A) The net is stored below the main working deck from which it is deployed and retrieved;  
   (B) The net is fan-folded (flaked) and bound around its circumference.  
   (ii) On-deck stowage. (A) The net is fan-folded (flaked) and bound around its circumference;  
   (B) The net is securely fastened to the deck or rail of the vessel; and  
   (C) The towing wires, including the leg wires, are detached from the net.  
   (iii) On-reel stowage. (A) The net is on the net reel;  
   (B) The codend of the net is removed from the net and stored below deck; and  
   (C) The entire surface of the net is covered and securely bound by:
   1. Canvas of other similar opaque material; or
   2. A highly visible orange or yellow mesh material that is not capable of catching fish or being utilized as fishing gear. An example of highly visible orange or yellow mesh includes but is not limited to the orange fence material commonly used to enclose construction sites.

---

Figure 1: Wilmington and North Heyes-South Wilmington Canyons (two separate proposed discrete zones under alternative 3B).
### Table 1: Total area and total area of high habitat suitability falling within proposed discrete zones (Alt 3B) but outside proposed broad zones.

<table>
<thead>
<tr>
<th>Location</th>
<th>Total area (km²) falling outside 200 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 200 m broad zone</th>
<th>Total area (km²) falling outside 300 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 300 m broad zone</th>
<th>Total area (km²) falling outside 400 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 400 m broad zone</th>
<th>Total area (km²) falling outside 500 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 500 m broad zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Canyon</td>
<td>0.1</td>
<td>0.0</td>
<td>8.1</td>
<td>0.0</td>
<td>20.4</td>
<td>1.5</td>
<td>36.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Ryan-McMaster Canyons</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>2.5</td>
<td>0.1</td>
<td>27.3</td>
<td>5.5</td>
</tr>
<tr>
<td>Emery-Uchupi Canyons</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
<td>0.0</td>
<td>5.1</td>
<td>0.1</td>
<td>18.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Jones-Babylon Canyons</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>5.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>29.7</td>
<td>0.1</td>
<td>80.7</td>
<td>5.2</td>
<td>132.5</td>
<td>31.1</td>
<td>178.8</td>
<td>66.9</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope</td>
<td>34.2</td>
<td>7.7</td>
<td>101.4</td>
<td>12.4</td>
<td>201.7</td>
<td>25.5</td>
<td>301.7</td>
<td>62.6</td>
</tr>
<tr>
<td>Spencer Canyon</td>
<td>0.9</td>
<td>0.0</td>
<td>8.6</td>
<td>0.0</td>
<td>17.3</td>
<td>0.7</td>
<td>23.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Wilmington Canyon</td>
<td>24.8</td>
<td>1.9</td>
<td>49.8</td>
<td>12.0</td>
<td>71.5</td>
<td>30.1</td>
<td>89.1</td>
<td>50.1</td>
</tr>
<tr>
<td>North Heyes-South Wilmington Canyons</td>
<td>0.0</td>
<td>0.0</td>
<td>1.3</td>
<td>0.0</td>
<td>5.2</td>
<td>0.1</td>
<td>11.8</td>
<td>0.5</td>
</tr>
<tr>
<td>South Vries Canyon</td>
<td>1.6</td>
<td>0.0</td>
<td>7.7</td>
<td>0.0</td>
<td>12.4</td>
<td>0.0</td>
<td>16.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>26.0</td>
<td>2.8</td>
<td>47.4</td>
<td>8.6</td>
<td>65.2</td>
<td>20.0</td>
<td>79.0</td>
<td>33.4</td>
</tr>
<tr>
<td>Warr-Phoenix Canyon Complex</td>
<td>0.4</td>
<td>0.0</td>
<td>4.5</td>
<td>1.0</td>
<td>17.5</td>
<td>2.2</td>
<td>33.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Acomac-Leonard Canyons</td>
<td>12.3</td>
<td>4.7</td>
<td>25.9</td>
<td>12.8</td>
<td>47.0</td>
<td>20.2</td>
<td>65.5</td>
<td>24.7</td>
</tr>
<tr>
<td>Washington Canyon</td>
<td>8.5</td>
<td>0.0</td>
<td>19.9</td>
<td>1.6</td>
<td>30.2</td>
<td>7.8</td>
<td>38.7</td>
<td>14.2</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>41.6</td>
<td>10.1</td>
<td>62.3</td>
<td>21.0</td>
<td>80.8</td>
<td>36.3</td>
<td>93.4</td>
<td>47.9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>180.2</strong></td>
<td><strong>27.3</strong></td>
<td><strong>417.8</strong></td>
<td><strong>74.7</strong></td>
<td><strong>709.9</strong></td>
<td><strong>175.7</strong></td>
<td><strong>1018.8</strong></td>
<td><strong>317.1</strong></td>
</tr>
</tbody>
</table>

### Table 2: Total area and area of high habitat suitability falling within advisor-proposed discrete zones (Alt 3B-1) but outside proposed broad zones.

<table>
<thead>
<tr>
<th>Location</th>
<th>Area (km²) falling outside 200 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 200 m broad zone</th>
<th>Area (km²) falling outside 300 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 300 m broad zone</th>
<th>Area (km²) falling outside 400 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 400 m broad zone</th>
<th>Area (km²) falling outside 500 meter broad zone</th>
<th>Area (km²) of high/very high habitat suitability outside 500 m broad zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mey-Lindenkohl Slope Straight</td>
<td>7.1</td>
<td>0/0</td>
<td>30.0</td>
<td>3.5</td>
<td>56.6</td>
<td>6.5</td>
<td>100.4</td>
<td>16.2</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope Depth-based</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>46.0</td>
<td>19.6</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>1.7</td>
<td>0.0</td>
<td>10.8</td>
<td>2.3</td>
<td>20.6</td>
<td>10.5</td>
<td>29.9</td>
<td>20.8</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>4.6</td>
<td>0.2</td>
<td>18.4</td>
<td>8.8</td>
<td>35.0</td>
<td>10.5</td>
<td>46.6</td>
<td>35.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>13.5</strong></td>
<td><strong>0.2</strong></td>
<td><strong>59.2</strong></td>
<td><strong>14.7</strong></td>
<td><strong>112.2</strong></td>
<td><strong>27.5</strong></td>
<td><strong>222.8</strong></td>
<td><strong>91.6</strong></td>
</tr>
</tbody>
</table>
Figure 2: Proposed discrete areas falling outside the 200 meter broad zone.
**Figure 3:** Advisor-proposed discrete areas falling outside the 200 meter broad zone.
Figure 4: Proposed discrete areas falling outside the 300 meter broad zone.
Figure 5: Advisor-proposed discrete areas falling outside the 300 meter broad zone.
Figure 6: Proposed discrete areas falling outside of the 400 meter broad zone.
Figure 7: Advisor-proposed discrete areas falling outside the 400 meter broad zone.
Figure 8: Proposed discrete area falling outside the 500 meter broad zone.
Figure 9: Advisor-proposed discrete areas falling outside the 500 meter broad zone.
DEEP SEA CORALS AMENDMENT
TO THE MID-ATLANTIC FISHERY MANAGEMENT COUNCIL’S
ATLANTIC MACKEREL, SQUID, AND BUTTERFISH
FISHERY MANAGEMENT PLAN

Measures to Protect Deep Sea Corals from Impacts of Fishing Gear

Written and Public Hearing Comments
JANUARY 2015

CONTENTS
INTRODUCTION .........................................................................................................................2
PUBLIC HEARING COMMENTS .............................................................................................3
WRITTEN COMMENTS ...........................................................................................................25
INTRODUCTION

The Mid-Atlantic Fishery Management Council (MAFMC or Council) initiated the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan in 2012 to consider measures to protect deep sea corals from the impacts of fishing gear. After reviewing initial scoping comments from the public, the Council developed a range of alternatives and associated analyses. In January 2015, a final Public Information Document for this amendment was made available to the public, and the Council held a series of public hearings. In addition, written comments were accepted until January 28, 2015. Compiled hearing comments and written comments are provided in this document for the Council’s consideration. More information and additional background documents, including the Public Information Document, can be found on the Council’s website at: http://www.mafmc.org/actions/msb/am16.

Six public hearings were held from January 12 through January 20, 2015 (Table 1). A total of approximately 80 people attended the public hearings, and 34 provided public comments.

Table 1: Deep sea corals amendment public hearing schedule, January 2015.

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, January 12, 7 p.m.</td>
<td>Hyatt Place Long Island/East End, Riverhead, NY</td>
</tr>
<tr>
<td>Tuesday, January 13, 7 p.m.</td>
<td>The Grand Hotel, Cape May, NJ</td>
</tr>
<tr>
<td>Wednesday, January 14, 7 p.m.</td>
<td>Washington Marriott at Metro Center, Washington, DC</td>
</tr>
<tr>
<td>Thursday, January 15, 7 p.m.</td>
<td>Hilton Virginia Beach Oceanfront, Virginia Beach, VA</td>
</tr>
<tr>
<td>Friday, January 16, 7 p.m.</td>
<td>Ocean Pines Library, Berlin, MD</td>
</tr>
<tr>
<td>Tuesday, January 20, 7 p.m.</td>
<td>Internet webinar</td>
</tr>
</tbody>
</table>

The Council received a total of 120,035 written comments from a variety of individuals and organizations. These comments included 119,974 comments consisting of signed or modified form letters, petition signatures, or other signatures to several sets of identical comments. In addition, the Council received 44 unique comments from individuals, and 17 unique comments from organizations, groups of organizations, or government entities.

Note that due to the large volume of comments received, not all individual signatures and additional comments from form letters and petitions are included in this document. However, all comments and signatures for each letter are available on the Council’s website. This document contains at least one example letter indicating the number of copies or signatures received.
Hank Lackner – F/V Jason and Danielle

I target deepwater illex, loligo, sea bass, scup, monkfish, whiting, dogfish, skates, and anything else in deep water. I recently watched a show on the Discovery Channel where hardworking guys were mowing down thousand year old trees in some of the most pristine areas in America, in quest of personal profit. This is appalling and the exact opposite of what occurs in our waters. Offshore trawlers tow where there’s nothing but fish. Our fishermen are highly trained professionals who are acutely aware of the ecosystem, and conscientiously tow around coral and other sensitive habitat. Meanwhile, fishermen are being crucified by certain other businesses and NGOs. This amendment seems to be a last ditch attempt to halt a group of professionals second to none. Is it a coincidence that the Mid-Atlantic has the best performing fisheries in U.S.? Of course not – the fishermen here deserve a lot of credit.

I’m 100% opposed to the broad zones. I’m in favor of any alternative that keeps things status quo, but a second choice would be something like Alternative 3B-1 for industry created and modified discrete zones. Most coral observations presented by the Service are obsolete and unverified at best. Most sightings were from the 1960s and 1970s and we don’t know how the data was collected. If this is to be used, a strong
argument could be made to make any discrete areas outside of 600 meters. The best available science says coral is very deep.

The industry is willing to do almost anything necessary to avoid coral, but they will not give up bottom. Coral is already protected by hard bottom, steep slopes and extremely deep water. This amendment seems to have been fast-tracked without proper analysis. In fact, the Advisory Panel was promised a second meeting, and has not been given the chance. The industry should be given further opportunities to revise boundaries. The Coast Guard has said that lines can be quite complex.

The objective of this amendment should be not only to protect coral but also to sustain the fishing industry as we know it. There should also be some allowances made for setting/hauling along the canyon edges. The economic analysis done by Council should be thrown out the window. It was done with VTRs, which are imprecise. They were told that the economic analysis would be redone and presented to industry, and that has not happened.

No one user group should be singled out. The lobster industry, red crab fishery, and sport fishing vessels anchoring in canyon heads can be devastating. The recreational sector was excluded from this amendment without doing any analysis. If the Council is truly concerned about coral habitat, it would redirect efforts where they’re truly needed.

It should be noted that industry has never reached out to the Council to such an extent during the development of an amendment. What does it take for fishermen to gain credibility in this process?

The alternatives in this amendment are way beyond the goals and objectives of this Council. Some of these alternatives can completely close mid-Atlantic fishing as we know it. Lastly, final action cannot take place in February. The amendment is not ready.

Eric Reid – Seafreeze Shoreside; MAFMC Mackerel, Squid, and Butterfish Advisory Panel

I’m offended that the Advisory Panel has been left out of this process. I would like to voice my concern with the potential direction Council may take given the range of alternatives proposed in this document. The broad zone alternatives, 1B through 1E, and 2B through 2D, threaten the future of fishing both commercial and recreational in the mid-Atlantic region. These alternatives also go outside the objectives and goals of the very Council that proposes them. The pace that this amendment is taking is counterproductive, is not in the best interest of all stakeholders.

There is little or no science or industry-generated data – recent data, not before 2002 or 1874. There’s no data that would justify the potential closure of huge broad swaths of ocean fishing. Your counterparts at the New England Council have already rejected some portions of this broad approach. The U.S. Coast Guard states categorically that it feels it is “challenging and doubtful” to enforce such big areas. As for the precautionary nature of this broad zone methodology, to protect corals from future fishing, your previous actions to protect unmanaged forage species already goes a long way to protect corals in the future. This broad zone approach represents total disregard of the strategic goals and objectives of this Council. I do not expect you to turn a blind eye to the science, management, and governance you profess to follow by adopting any of the broad zone alternatives.

Both NOAA and industry have provided information to support the existence of areas with a high degree of natural protection for corals. These include habitat where little or no fishing effort takes places - extreme depths, hard bottom, high slopes that already shelter much current and potential habitat. It would be counterproductive to ignore the data and science available to this Council in adopting future management
strategies at such a fast pace. You have to take time, because this document is not up to snuff and that’s not fair to anybody – not to industry, not to corals, not to the rest of the stakeholders.

The Advisory Panel for MSB has not been given sufficient opportunity to provide input on the development of this amendment. The designation of discrete coral zones has the strongest basis in fact from which this Council can develop fair and equitable protections for all user groups and the corals themselves. If you look in the Public Information Document on Table 25, inside of 1,000 m, there’s less than 1% corals. Outside of 1,000 it’s a little bit more problematic. This data supports the development of discrete zones with input from all stakeholders and a depth contour of no less than 500 meters to provide adequate protection for corals, sponges, existing fishery operations and communities.

Critical data being used to develop this amendment is outdated, including information on coral encounters, economic analysis, and fishing effort. The pace at which the Council is pursuing this amendment must be slowed in order to develop a more effective amendment. The Advisory Panel must be allowed to provide critical input to produce educated document.

At this point, I cannot support anything other than alternative 3B-1, to be modified by the industry and user groups that actually have the knowledge of those areas. History has proved that the only people who know what’s going on out there is the fishing community.

**Greg DiDomenico – Garden State Seafood Association**

The data used to develop this amendment are inconsistent with the Information Quality Guidelines from the Office of Management and Budget. It’s inconsistent with NOAA’s Data Quality Act. We feel strongly that it does not meet performance standards for data used by the agency, and is not of the quality, utility, or integrity that would justify potential management actions. In addition, it has not been accessible for affected persons to obtain access and review. I say that from my observations of the last ten years and ten amendments to the squid, mackerel, and butterfish FMP. We’ve been through this before, and I do not think that this particular amendment nor what’s contained in it, nor its analyses really are what is consistent with what we’ve seen in the past. In a lot of ways, this amendment can be more potentially harmful to us than the previous ten.

The habitat suitability model is old, it’s inaccurate, and it’s from unknown sources. It’s a presence only model, not an absence-presence model. It presumes that everywhere below a certain depth ranges, these sub-orders of corals exist. I would much rather see a percentage based analysis for the areas where there were no corals. The habitat suitability index also presumes that habitat is the same as it was 50 years ago. To think that is foolish. It presumes that habitat is suitable – that organisms will recruit to full grown deep sea corals. There’s no way of telling the ages of these organisms, there’s no way of telling if settling larvae will recruit to an adult organism.

Let me read a few things that describe the data used for the habitat suitability index, based on direct correspondence with some of the people in charge of this database. We’re talking about the national deep coral geodatabase. “Records span from 1873 to 2002, and were compiled from journal articles, reports, museum collections, direct communications with original observers, and PIs to obtain unpublished records. Potential accuracy is of variable quality. Positioning methods ranged from sextants, to dead reckoning, to LORAN and GPS. We believe most records to be accurate within a few hundred meters, but some positions may have as much as 600 meters of error or more.” This is important because within those possible inaccuracies are exactly where industry makes a living. If we’re inaccurate about where we draw lines, you’d be taking bread off table of people in those fisheries. It’s unjustifiable, unscientific, and it’s
unfair. I went back through the database, which uses several different surveys over a broad range, but their collection methods to my knowledge are unknown. I’m left with direct communications of observers, but I don’t know who they were.

The other part I don’t understand is that many of these historical records have not been groundtruthed. Many of these areas are well beyond the location of surveys that were done in the last 10 years. So the observations from the 60s and 70s – are those corals still there? I have no idea.

Is the industry to assume that there are sub-orders of corals that are in museum collections? So I have a feeling that the methodology by which they were collected took them out of the bottom of the ocean and put them somewhere in Washington, DC. Maybe researchers took them all in the 60s when they tried to collect them. This type of information makes it very difficult to support the amendment.

From the surveys over the last several years – the data is unfinished. And, they’ve been surveying in deep areas beyond 500 meters. The economic analysis is a very broad analysis. It doesn’t comprehend or estimate the potential loss of income from a single individual. Single individuals are in this fishery – there are very few people that are in these deep water fisheries, especially for illex. How much is the disruption to those vessels that make 30% of their income from one fishery? That’s the type of analysis we’d like to see.

The illex fishery is approximately 17 vessels. It’s not overfished, overfishing is not occurring. The fishing mortality is very light. We rarely catch the quota because it’s a difficult fishery to be in. To make it more difficult by taking areas away is unacceptable. An Advisory Panel meeting 2 years ago in Virginia, and not one since, is not a very prudent way to do this. We’ve come a long way in the last ten years, and a lot of things that the industry has said that is contrary to what the agency has said has come true, and I believe this another one of those instances. Another AP meeting to make some discrete zones or to have some alternatives that accurately reflect both fishing and where coral is, is essential. Having final action in February is both surprising – it’s shocking, it’s in Raleigh where few affected will attend. I would ask that the Council not take final action in February. I cannot support any depth ranges for the broad zones. I can support refining the industry alternatives for discrete areas by convening an MSB AP meeting.

**Emerson Hasbrouck – Cornell Marine Program; Governor’s Appointee to ASMFC; MSB Advisory Panel member**

I have two comments. One, it would be helpful to the public and to the Council to know what the variance is on the output of the model to have some statistical grasp on variability. Second, I would like to offer an additional alternative for consideration. It’s a modification of sub-alternative 3B-1. That would be to develop discrete zones with industry and Advisory Panel input for each of discrete zone canyons under alternative 3B. Specifically only for those areas greater than 500 meters and greater than a 30 degree slope. Further, Council action should be deferred until this activity can take place.

As an AP member I was very encouraged when this issue was brought to the AP. There was some discussion about it and we were informed that there would be continued discussion with the AP as the amendment was developed and unfortunately that has not happened. It was commendable to meet with industry to develop sub-options, so it would be great if the Council could expand on that and take advantage of that relationship and move this forward in a cooperative way. My recommendation for modified discrete areas deeper than 500 meters and greater than 30 degree slope is based on the presentation that Dr. Nizinski gave at the last Council meeting.
Glenn Goodwin – F/V Persistence/Relentless
I have a couple shore based freezer facilities and 3 boats that participate in the illex fishery, 2 of which have been participating for almost 30 years. We employ about 65 people, seasonally that goes up to almost 95. We had to live with tilefish closures, GRAs, lobster pot GRAs -- basically we’ve had a lot of fishing grounds already fenced off. Any broad zone approach for closing down additional fishing area would be economically devastating to our operation. There are no new fisheries that are going to suddenly appear where these corals would be in danger. There are no gears being created that would enable someone to make more money by blasting through corals. This broad brush approach won’t be acceptable to industry. If we need to go along with anything, alternative 3B-1 with some lines put in that we can be a part of creating would be more economically acceptable for our operation.

Raymond Livernois – Town Dock, Narragansett, RI
We have a fleet of about 6 fishing boats. I have to say that considering Magnuson says use the best available science, it seems like science in the document is pretty flawed considering it goes back 150 years. It seems like fishermen avoid most of the corals, because we don’t tear our nets up – we avoid most of that stuff. Boats keep getting pushed into smaller and smaller boxes all the time. The lobstermen have a certain area. When we lose squid, we have to move out in deeper waters and chase monkfish. It sounds like that would be taken away with this, especially if you use a broad brush approach. I don’t see how you can keep kicking fishermen in the ass and expecting us to smile and say this is great. The document seems flawed and needs to be revisited.

Dan Farnham – Blue Water Fisheries
I’m appalled that some of these options are even in the document. If we took the harshest of these options and put them in place right now, half the guys in the room would be out of business. It’s a real slap in the face that they’re even available to comment on. You want to protect corals on the one hand, which is a noble idea, but somehow this got convoluted and into a grab to push commercial fishermen out the door. We as fishermen want to protect corals. All those areas are what we call hangs – we can’t fish there. And the ones in the deep water – we’ve never been out there and won’t be out there.

I agree with Emerson’s comments. I would propose a modified option of 3B-1 and push the depth out to 750 meters. I also question the science – the “best available science” from over a century ago. If NMFS wanted to use that science to manage tilefish, it would be absurd. Same goes for corals. I’m not in favor of broad zones at all, but if broad zones are going to be used, and the discrete zones are going to be used, I really feel that there should be public and industry input to make sure that the depth contours are followed exactly. The tilefish zones were drawn on a napkin at lunchtime – they’re now a legal standard we have to abide by. For any depth contours, industry should be involved with determining those.

I own a dragger and a longliner. If these zones are just to get rid of bottom trawls, there should be no fishing there. When a sport boat anchors in Hudson Canyon – those things are right in what we’re trying to protect now. Their anchors drift along the bottom - they’re doing a controlled drift. If you’re going to do a no-fishing zone, make it no fishing for everybody. There are no proposed exemption options for tilefish gear in the discrete zones, and that should be in there as well.

Hank Lackner – F/V Jason and Danielle (2)
When going to Council meetings the words “buffer zone” come up all the time. Somewhere when we talk about buffer zone - coral doesn’t really need a buffer zone, the fishermen do. These boats need room and flexibility to get around each other. We can be very precise with our technology and draw these lines very
close to coral, giving the boats a buffer zone to get around each other and still not interact with coral. There’s no need for buffer zones for coral – give them to the fishermen.

**Glenn Goodwin – F/V Persistence/Relentless (2)**
The economic analysis or modeling that was done for the economic impacts…some years we caught 80% of what was landed in the illex fishery and I never once had someone from the Science Center ask me anything economically about what was happening in fishery. I don’t know how they came to that conclusion. I realize there’s a lot of people standing around watching someone else work at the Science Center, but I’m pretty sure they don’t have a good handle on how these specific places along the shelf impact the fishing industry> I’ve never heard anyone ask about the economic impact of an area being closed, nor have I ever participated in the process.

**Arnold Leo – Town of East Hampton**
We should really postpone final action. February is coming up much too quickly. Dr. Nizinski is supposedly doing another survey. The data seems to be very much in question – so the more current data that can be accumulated, the better. As has been pointed out, the research so far has indicated the coral is in quite deep water – deeper than 500 meters. It seems as though there’s too much in question about the data, about the effects of the proposals on the fishing industry for there to be final action in February.

**Ali Chase – Natural Resources Defense Council**
We would like to see alternatives 3B and 4B combined for the discrete zones, in order to provide these core areas where we’re seeing the greatest abundance and density of corals the greatest extent of protections. What we’re learning is that every canyon is a little bit different and unique. We need to respect that.

In terms of the broad zones, we are looking for alternatives 1B and 2B combined. In terms of the gear exemptions, they shouldn’t extend beyond the ones that are currently proposed, for red crab and tilefish. We would also like to require the use of electronic Vessel Monitoring Systems, including alternative 6B, in terms of helping with implementation of the measures.

We’ve heard a lot about the model, but the model is the best available science for corals that we have right now. It addresses the reality that we’ve only been able to explore a small percentage of the ocean floor so far. It has been field tested, and it is a good predictor. As we learn more about where corals are, it will be updated. In terms of protecting deep sea coral zones, it’s important to protect them until we show that fishing is not causing an impact. Once they’re gone, it’s hundreds or thousands of years before they come back.

**Annie McClellan – Citizens Campaign for the Environment**
I’d like to thank the Council for taking the initiative to develop this precedent-setting amendment. Citizen’s Campaign urges the Council to develop the strongest conservation measures possible, specifically this amendment should first of all prohibit all bottom tending gear from all the canyon areas, which is alternative 4B, in areas identified as discrete protection zones, alternative 3B. This should be based on the best available science, using NOAA’s national coral habitat model. I would echo Ali’s comments on the model, that it was developed through a highly scientific process and has been field tested.

We request that alternative 4B be modified to include mid-water trawl gear, which is mobile and known to contact the sea floor. We would also like the council adopt a broad coral zone from the 200 meter depth
contour and deeper, broad zone alternative 1B. This would protect corals that fall outside the canyon areas from all bottom tending gear. So alternative 1B and 2B combined would provide the largest conservation benefit by protecting the largest conservation benefit by protecting nearly 1--% of areas predicted to have ancient deep sea corals, while still allowing existing fisheries access to most of their current fishing grounds. We also request that alternative 2B be modified to include mid-water trawl gear.

Lastly, we would like to see the use of electronic VMS required aboard fishing vessels to help ensure effective implementation. Thank you for the opportunity to comment.

Noah Chesnin – Policy Program Manager, New York Seascape Program, Wildlife Conservation Society

Wildlife Conservation Society not only works globally but also locally. We run the New York Aquarium at Coney Island as well as the four zoos in New York City. We see that this work happening at the Council is incredibly important, and we applaud you for using the authority that congress has established for NOAA and the Councils. We are working on the floor of the aquarium and the floor of the Central Park Zoo to raise awareness about this policy decision to inspire visitors to learn about it and to make public comments. In addition to comments that we’ll be submitting, we hope that our visitors will be providing their own comments.

We would encourage the Council to take the strongest possible conservation measures not only in the discrete but also in the broad zones, by prohibiting all gear that scrapes the sea floor, in all of the canyons in alternative 3B. We believe that those are based on the best available science that NOAA has at this point, and the coral model that has been the subject of conversation tonight is strong enough to move forward.

In terms of the broad zones, we would encourage Council to adopt the 200 meter depth contour zone, alternative 1B. This is meant to protect corals that fall outside of the canyons in the inter-canyon zones. The level of protection should be as strong as possible, or alternative 2B. Finally, as a means to enforce these measures, we would recommend that Council adopt the VMS requirements for these fisheries.

John Nolan – F/V Seacapture

I’ve been fishing offshore since 1971. I’ve fished from 40 to 160 fathoms from Hudson Canyon to Veatches. I started tilefishing in 1978, and have been at it ever since. I’ve never seen a piece of coral, ever.

Hank Lackner – F/V Jason and Danielle (3)

I’ve been dragging for 30 years and the only coral ever seen is on the NMFS webpage. We know where the coral is and we do not fish there.
CAPE MAY, NJ

January 13, 2015, 7 p.m.

Andrew Axelsson – Atlantic Cape Fisheries

I would like to thank the Council for the opportunity to make comments in regards to the deep sea corals amendment. My company has significant concerns with ambitious timeline for voting on final action. We are particularly concerned that final action will occur at the February Council meeting prior to the Advisory Panel and Committee fully vetting the potential harm that this amendment may do to our region’s fisheries, including the vibrant squid fisheries that are dependent on access to the offshore shelf break. Final action should take place after the AP and committee fully understand the ramifications associated with current fisheries, and it is our hope that final action will not take place until at least the April Council meeting. Thank you for the opportunity to voice my company’s concerns on the record.

Jonathan Atwood – Offices of Senator Jeff Van Drew and Assemblyman Bob Andrzejczak

First, thank you for the opportunity to comment regarding this very complex but important plan to protect deep sea corals. On behalf of Cape May’s commercial fishing fleets, we look forward to working with the Council and staff throughout this process. Preliminary comments that we are offering are based upon discussions with local fishermen and commercial docks here in Cape May, and we’ll be submitting written comments as well. First, the habitat suitability index which the document uses to project where the coral may be located, we would argue should be peer reviewed by the Council’s Scientific and Statistical Committee in order to determine its usefulness in protecting deep sea coral, while also considering the importance of continuing to provide access to the fisheries that take place along the shelf break.

The existing footprint of fishery should be maintained with this action. Reviewing Table 25 on page 50 of the Public Information Document, doing so would seem to protect the vast majority of deep sea coral known to exist, since most is found deeper than 500 meters. This recommendation follow the objective of NOAA’s strategic plan for deep sea corals, which as stated on page 15 of the Public Information Document, takes a precautionary approach to freeze the footprint of fishing.
Finally, we ask that the Council take ample time to further revise the discrete zone options with additional industry collaboration. Thank you for allowing us to comment.

**Paul Axelsson**

Its oil and natural gas, that’s what they want. They want to push us off that bottom so they can have that oil. We’ve been here since the 40’s towing on it. Obama has just opened up from Hatteras to the Hague Line to research and develop oil and gas. Basically they want to kick us off the bottom and take what we’ve got. What will be left of us? There are not many of us left.

**Lars Axelsson – F/V Flicka and F/V Dyrsten**

I would like to give you bit of history, legacy wise, in my 40 years’ worth of fishing. I’m not happy with what I’m seeing here occurring with the coral. It’s probably the final nail in the coffin for my business. My dad came here in ‘55 with absolutely nothing, from Sweden. I started fishing at 12 and have been full time since I graduated high school. My dad built a legacy here.

A word picture that people on land can understand: the illex fishery on the edge is virtually 100% of our income now, due to regime shifts of mackerel and herring. I had virtually every permit except for scallops, but the Councils over time have made rules and regulations, very small trip limits, that frankly won’t support our boats. We’ve been pigeonholed to the two species of squid and to the pelagic species of herring and mackerel. With this amendment, people on land are using their computer models to put me out of business. That’s not the intent, but in reality that’s what will happen. I have been fishing edge from about 80-175 fathoms, in virtually all the proposed discrete areas, and I myself have never caught a coral. Pictures from research vessels dipping around the canyons is the most coral I’ve ever seen in my life. In my mind’s eye, the research vessel has killed more coral than I have.

We fish a very narrow band. Our tows are like airports, and we have one near most of the proposed discrete zones. Nearly as narrow as a runway is to an airport. Just like an airport, we have threshold numbers where we land and take off. Anywhere outside of that, we could do damage to our 75 to 100 thousand dollars’ worth of equipment. Our nets are tender, they are not meant to be on hard bottom at all. We have, between several advisors, we have plotters with about 30,000 coordinates that represent areas where we cannot tow. For the past 40 years, building on people before and after us, we’ve garnered this information. In essence, coral is already being protected by snag books and plotters. We have electronics on our boats that rival research vessels. We can see bottom contours, kind of bottom, what’s near the bottom. Our gear is often referred to as bottom tending gear. It started as otter trawls back in 50s. Later it was referred to as then flynet, or the Philly Ruhle net. Since then, we have gone to finer nets and bigger diameter frames, and our nets have become semi-pelagic. Even our trawl doors now seldom or never come into contact with the seafloor. This has taken years and hundreds of thousands of dollars’ worth of investment, which in today’s dollars would be millions. We put the Flicka in service in 1998. We should have paid for our boats in 7 years, based on conditions then. The very year we put them in, the illex quota got dropped. Because of precautionary measures.

In the mid-80s, we were told that if we could clean up our act and get less than 4% bycatch, we’d be considered a clean fishery. We geared our boats and did joint ventures…they taught us how to properly catch and handle squid. The cleaner you can catch them, the better they are for market. We didn’t want to mix with other species and bottom dwellers. Squid get virtually destroyed when you catch them with other fish. We would fish responsibly. The Scup GRA was then instated and we were kicked out of those areas. On the inshore of our “airports,” we have an area where we can’t even go, as long as our nets are deployable. Loligo squid is there, but we have been kept out of there for 15 years.
Now another box will be put on our east side. Discrete zones that’ll be in the head of each canyon, so now we’re being boxed. If we’re going to freeze the footprint and allow to fish as normal, we’re going to be, much like an airport with planes flying over the public, flying nets over coral bottom as we land on the threshold of runways. People on land that are making these models do not believe that fishermen can be responsible, they believe they’re out to destroy corals every chance they get. Boats are being boxed in so tightly they can’t do what they’re supposed to do. The NGOs, or Greenpeace people are going to use any means possible to kick fishermen off the edge. With this coral amendment, if you don’t allow us to fish the way we’ve been fishing responsibly for at least 30 years… and the improvements we’ve made in past 5 years have made it better. Our nets no longer plow the bottom like they did 20 years ago. We fly our nets and dance close to the ocean floor. We can’t get that into the heads of the people that have never been out there to do it.

Most people understand the way airports work. A certain length runway is needed for certain size airplanes. What the Council’s proposing is putting discrete zones on north and south ends of our airports. You’re going to put a broad zone east of where we fish. We already have the scup GRA on the inside. So when you draw a line, you take a very productive piece of bottom that will make or break a particular trip.

I represent about 20 families between our two boats, just out to sea, that’s not including shoreside support. The docks can speak to that. Every rule and regulation hinders fishermen. In essence, you’re creating loss of jobs, inadvertently. We’re trying to keep the entrepreneur alive so we can make money and pay our taxes, and yet every new item that comes to bear on the Council’s table is one more thing to take it away from a person that’s got everything tied on the line. Virtually, the illex fishery is much like the red crab and the tilefish fishery is – if you do anything that wouldn’t allow them to continue as they are… Maybe look at it like this. The foreign trawlers were here in 60s. When I fished in the 70s, I went through fleets of Russian and East German trawlers with motherships and feeder vessels, dragging the edge. We couldn’t go there. Based on science, corals are slow-growers. If a foreign vessel cleaned the bottom where we fished in the 80s, would there be coral there today?

Can we go and grow stalks of corn on runway of Atlantic City airport? No. That area of asphalt and concrete is made for airplanes. So why can’t I, which have been fishing since the mid-80s full time on that edge, have that footprint and continue to fish responsibly like we have been? If you don’t allow me to have that footprint as is, anything cut off on either end is directly proportional to my income. When they decided to put in sanctuaries in the mid-80s and 90s – the argument is that if the sanctuary is only a very small percentage of the total ocean area, it doesn’t matter – but that 1/1000th of a percent of the bottom is where I fish. For every part you cut off, you’re increasing my chances of going broke. Because of the hurricanes that went by recently, and the regime shifts of fish, fishing has not been the same in the past 3 or 4 years as it was the previous 15. As an owner of the business, I’m not even able to take out 1% to put in my pocket. Last year I made $15,000. The year before, I made $17,000. That’s what I take home to feed my family. With this coral amendment being fast tracked, I head that the APs were going to be used again, but they were not. I’ve had to restructure loans for my boat. They were supposed to be paid for in 7 years, in 1985. In 2015, they are still not paid for. If the Council does this and draws a line, slams it in to be precautionary… instead of saying, these people have been doing this in the same area for the past 35 or 40 years. That damage, if we did it… I submit that the foreigners did it long before we did. Our hang books, our plotters, and our machines will keep us off the bottom. But if it’s another source of revenue for enforcement to come in and say we crossed that imaginary line… and then we end up in a $200,000 lawsuit.

The data shows we’ve gotten cleaner and cleaner in our fisheries, but are given absolutely zero credit for all of it. If the Council goes ahead and does this, they’ve decided they no longer want an illex fishery.
They’ve a little grace to the tilefish and red crab fisheries. They’re alongside of me, I know what kind of gear they pull. Research vessels can snag coral. If our rigs snag on anything, it’s done, $100,000 down the tubes. You’re making more and more laws, more and more rules. The Council needs to decide whether they want to have the 12 entities running up and down the coast catching illex or not. Or you’re going to do away with one more industry.

**Wayne Reichle – Lund’s Fisheries**

Lund’s fisheries is one of the largest shoreside processors of illex squid on the eastern seaboard. We own and operate 13 fishing vessels, 7 of those have illex permits. We handle from 5 to 25 million lbs. of illex squid annually. It’s the only high volume fishery left in mid-Atlantic, with the exception of menhaden, after the disappearance of the herring and mackerel fisheries over the past few years. It’s a critical part of our business. We’ve worked over past 30 years to produce a superior quality product, and that took a lot of investment. We’ve got tens of millions of dollars invested in our factory to produce the volume of squid that comes in when they are abundant. We’ve got a lot of years in developing markets, and we have a lot of customers that depend on this fishery around the world, as well as the domestic markets for here for bait and a growing market for food.

The Council is trying to fast track this amendment. We ask that the Council back up a bit here. We’re not trying to stall anything, but the industry has reached a hand out here and provided information. We need to back up here and make sure that that information is being looked at to benefit everybody, both the coral and the squid fishermen.

**Greg DiDomenico – Garden State Seafood Association**

We firmly believe that the data used to develop the amendment is inconsistent with the Information Quality Guidelines developed by the Office of Management and Budget, and inconsistent with NOAA’s Data Quality Act. We feel strongly that it does not meet performance standards for data used by the agency, and is not of the quality, utility, or integrity that would justify potential management actions. In addition, it has not been accessible by the affected public. To obtain access to the data and review it has been difficult and in some cases costly to our organization.

The habitat suitability is based on old, inaccurate data, in some cases from unknown sources. I want to read into the record a statement from one of the people who manages the database: “Records span from 1873 to 2002, and were compiled from journal articles, reports, museum collections, direct communications with original observers, and PIs to obtain unpublished records. Potential accuracy is of variable quality. Positioning methods ranged from sextants, dead reckoning, to LORAN and GPS. We believe most records to be accurate within a few hundred meters, but some positions may have as much as 600 meters of error or more.” It’s discouraging that potentially management actions based on this data is going to be potentially harmful to these people in this fishery.

We’ve been through ten amendments to this FMP in ten years. I think that’s unheard of. We’ve made it through based on hard work of staff and good data. In the past, we’ve contributed, come to the table, supported a lot of things, understood when we had to be regulated. This we cannot support.

The habitat suitability model is a presence model only, not presence-absence. It appears that everywhere they looked there was coral. I know that’s not exactly how the model was analyzed, but the little I know about this type of analysis - you have to do presence/absence. There were times when the surveys didn’t find anything. That has to be understood by the public – that everywhere where they did surveys, they didn’t always find something. That issue has skewed the data and the analysis currently in the amendment.
The habitat suitability model also presumes that habitat is as suitable as it was 50 years ago. I doubt it’s the case in these dynamic areas. It also presumes that all these areas that are supposedly suitable, will have one of these organisms settle in and grow to an adult size. That’s a great presumption.

The surveys done in the last five or seven years have primarily been done outside of 500 fathoms, and they did not groundtruth historical observations that are already in the database.

On the economic analysis: the percentages of possible loss to revenue in the document are not representative of the people and the vessels who rely almost fully on the fishery. It can’t be a few percentages or a few hundred thousands of pounds of landings – to Lars, his family, their two vessels, it’s 30%, 40%, or 50% or more of their revenue. I want to remind the Council that the people in the fishery, a lot of people rely on them for safety and livelihood. These guys have to go out and produce in a fishery that’s very difficult. The more that regulations impinge on their ability, the more likely they are to have unprofitable trips – that means someone’s living will be impacted. There are multiple families involved and they need every possible bit of leeway in this amendment.

We are completely opposed to the broad area approach. It is possible to still refine the industry discrete area alternatives, and I would urge the Council to delay final action and to convene an AP meeting as soon as possible.
WASHINGTON, DC

January 14, 2015, 7 p.m.

Alexandra Adams – Natural Resources Defense Council

The deep sea corals amendment is one of the most exciting and precedent setting marine habitat protection initiatives anywhere in the country and we’d like to thank the Council for taking the initiative to protect deep sea corals. Deep sea corals are fragile and slow growing, and one pass of trawl gear can destroy corals that have been growing for hundreds or thousands of years. With this amendment we can protect the deep sea corals and the ecosystems they support before irreversible damage is done. We urge you to adopt the strongest conservation measures possible.

First, prohibit all fishing gear that hits or scrapes the seafloor from all canyons areas, alternative 4B, that have been identified as discrete zones based on the best available science, the NOAA coral habitat model discrete zones, alternative 3B. The NOAA habitat model used to delineate canyon areas was developed through a deliberate, inclusive, and highly science-driven process that has been field tested. Using this model to determine canyon areas will safeguard the highest valuable habitat.

We need 3B and 4B combined to provide canyon areas with the strongest level of protection. We request that alternative 4B be modified to include mid-water trawl gear, which is mobile and has been documented to contact the seafloor.

Second, we urge you adopt a broad coral protection zone with a depth of 200 m and deeper, broad zone alternative 1B, to protect corals that fall outside the canyon areas from all bottom contacting fishing gear, alternative 2B. Alternatives 1B and 2B combined will provide the highest conservation benefit by protecting nearly 100% of the areas predicted to have ancient and fragile deep sea corals, while still allowing current fisheries to access the vast majority of their current fishing grounds.

Alternative 2B should also be modified to include mid-water trawl gear, which is mobile and has been documented to contact the seafloor. Any broad zone gear exemption should not extend beyond those currently proposed as alternatives (alternatives 2B-1 and 2B-2). No further exemptions should be allowed, and those initially proposed exemptions that have been categorized as considered but rejected should remain omitted. If the Council does exempt the red crab and tilefish fisheries, the alternatives should be amended to prevent any increase in impacts. For example, through a significant expansion in the number of vessels or intensity of the footprint of current fishing effort.

Third, we urge the requirement of VMS aboard fishing vessels to help ensure the plan is effectively implemented on the water. Under alternative 6B, squid vessels would be required to install and operate
VMS. Many vessels already have this equipment, and for those that do not, there are funds available to reimburse their purchase. VMS has shown to be highly effective in ensuring compliance with deep sea coral protections, such as in the South Atlantic.

Again, we thank Council for their efforts to protect deep sea coral ecosystems.

**Victoria Bell – Marine Conservation Institute**

Marine ecosystems are essential for human survival, wealth and well-being, and are the earth’s biggest life support system. As a leader in the global movement to protect and recover the integrity of vast ocean areas, Marine Conservation Institute uses the latest science to identify important marine ecosystems around the world and advocate for their protection.

The ocean is vast and assessing what is on the bottom is an expensive and time consuming process. Unlike on land, much of what is on the ocean’s bottom is unknown other than the depth and contours. It would be as if all we know about Yellowstone National Park was its topography, and very little about the trees, plants, or animals that live within.

In order to overcome the lack of visual evidence of important habitats, scientists, like Marine Conservation Institute’s biogeographer John Guinotte, have developed techniques to predict where important benthic marine life is likely to exist. For many areas of ocean, these Predictive Habitat Models are the “best available science” for determining what habitat lies beneath the waves. Unfortunately, many councils are reluctant to use these habitat models regardless of their apparent value. We applaud the Mid-Atlantic Council for being a leader on this issue.

As with the shallow coral reefs people are more familiar with, deep sea corals provide essential habitat for many commercially and recreationally significant fish populations and are host to a vast array of biodiversity of other sorts. Deep sea coral communities in the Mid-Atlantic greatly enhance local biodiversity. Typically at depths greater than 50 meters, these deep sea corals are fragile, slow-growing and are easily damaged by bottom trawling and other bottom tending gear. Unless protected, we stand to lose vital, diverse ecosystems, which not only support the surrounding ocean life but also human livelihoods.

We commend many of the Council’s proposed alternatives. We favor the following: alternative 3B, which calls for designation of discrete zones where corals are present or predicted. Alternative 4B, which calls for the prohibition of all bottom-tending gear such as bottom trawls, bottom longlines, and dredges within these discrete coral zones. We also recommend alternatives that create a broad coral protection zone. Alternative 1B combined with 2B, which calls for the prohibition of all bottom tending gear in these areas, would provide vital protection.

Together, these alternatives will allow for the protection and preservation of regions with known coral habitat and those likely to have coral habitat for current and future generations, while still allowing existing fisheries to carry on in the majority of their current fishing grounds. These are excellent initial steps for the Council to preserve the sensitive deep sea corals, the canyon environments, and contribute to fisheries sustainability.

**Amanda Keledjian – Oceana**

We would like to thank the Council for their hard work on this amendment. Briefly, we support protective measures including both broad and discrete coral zones. At Oceana, we believe these corals are important to protect and thank the Council for their hard work.
**Joseph Gordon – Pew Charitable Trusts**

Would like to thank the Council for the opportunity to comment and for the efforts to consider a bold proposal to protect deep sea corals. Deep sea ocean ecosystems are the earth’s last frontier. Protecting these relatively pristine ecosystems is an investment in the future, not unlike what was done with the national parks, which future generations benefitted from. They’re a sanctuary for ocean wildlife, and they’re also an investment in the future in the sense that they provide ecosystems that are unique and potential benefits to human health that we are only beginning to realize. A single pass from a bottom trawl could damage ecosystems and individual species that live hundreds or thousands of years. These are some of the oldest known organisms on Earth.

We appreciate the Council taking the time now to get out in front of problems and act before destruction happens. So many other places in the world have ecosystems like these that have already been destroyed, but they haven’t off our coast. We support the same measures that many of the speakers before have discussed. There’s a small number of people in the room and coming to hear, but many of our groups represent vast networks of people who care about these issues. We urge the Council members to not discount these comments and names, because these are real people who care, and it is really their public resource. They really want to see these areas protected for future generations.

We support protections for both broad and discrete zones. For the discrete zones, we support alternatives 3B and 4B combined. The canyons are home to the greatest abundance and diversity of deep sea corals and are crucial places to protect. Each canyon’s ecology is different and unique. In Baltimore Canyon, they found corals 15 feet tall, in Block Canyon, 6 feet tall and 10 feet wide. There’s been some criticism about the science and model in some hearings. It’s important to understand that this is different kind of science - we’re talking about areas that no one’s ever been to for the most part. It’s a frontier science. These are millions of dollars in investments in projects that are discovering corals. These cruises have found that the models are fairly accurate. What makes this challenging for Council is that largely, the shallower depths were not studied. Most of these cruises went to much greater depths than the 200-500 meters being considered. We also ask that mid-water trawl gear be included in 4B. In the industry alternative for the canyons, it isn’t consistent with a lot of the most recent research. For example, in Baltimore and Norfolk Canyons, some of the more recently discovered canyons would be excluded.

We support a broad zone at a depth of 200 m and deeper, with prohibition for all bottom contacting fishing gear. So, alternatives 1B and 2B combined.

As far as exemptions, consistent with some other comments made, if the Council were to move forward with 2B-1 and 2B-2, we hope that no additional exemptions be given and that significant thought be given to not allowing those fisheries to expand beyond their current impact on the bottom.

Lastly, we support the requirement for VMS for the illex squid fishery, alternative 6B. We thank the Council for being leaders in a way that future generations and all of us can be proud of. They key now is to protect as much as possible of the remaining, intact deep sea coral habitat.

---

**Greg DiDomenico – Garden State Seafood Association**

Industry is looking for two things: they would like another Advisory Panel meeting to be convened before final action, and they’d like the habitat suitability model to have a full review by the Council’s SSC. We feel strongly that the habitat suitability model is not compliant with the Data Quality Act from NOAA, from the Office of Management and Budget. The data is old, it’s from unknown sources, and it’s inaccurate. Records span from 1873 to 2002 and were compiled from journal articles, reports, museum
collection, direct communications with original observers, and PIs to obtain unpublished records. Positional accuracy is of variable quality. Positioning methods range from sextant, from dead reckoning, to Loran and GPS. We believe most records to be accurate within a few hundred meters, but some records may have as much as 600 meters of error or more.” This is interesting, because we have unknown sources, we have personal direct communications with whom the industry has no idea, we can’t even look it up. The affected industry can’t even figure out the data, the source of the data, or the integrity of the data, or barely even access the data. This is completely out of compliance with the Data Quality Act. It’s also not what the industry is used to from the professionals at the Council and the agency. This fishery and this FMP has been through 10 amendments in 10 years. We’ve gotten through it because industry has come to the table and provided science, provided modifications, and when needed, supported measures that hurt us when the science said so.

This amendment is not of the quality that we’re used to. We think it’s deficient in its social impact analysis and its economic impacts analysis. About the economic impacts – there are illex vessels, which primarily will be affected by this amendment – there are probably 12-17 people in the fishery. They have relatively few permits, but they rely almost 20%, 30%, 50% on one fishery. It’s not a small matter that it’s 3% or 4% of the landings. To the vessel owner and his family, it’s extremely important, and it is bread off of people’s tables. This fishery is not overfished, overfishing is not occurring, it’s lightly exploited, and it provides protein that’s needed throughout the entire world. U.S. vessels like these are feeding people who are poor and needy, and we’re providing that.

It's off-putting to some of the commercial fishermen that the records and the specimens were actually collected and put in a museum. They’re probably not going to grow back. Fishermen have been avoiding these areas for over 40 years. They’re highly technical, and they can’t afford to drag their gear over these areas. They’re not doing it, they’re not going to do it.

I want to re-iterate to the Council members – one of the things the Council will have to come to grips with is that it is a mobile bottom tending prohibition, but there will have to be some acknowledgement that where the line is drawn, fishermen will go over the line. Their gear, as soon as they start to haul back, comes off the bottom, and they are not fishing. That’s going to have to be resolved. This fishery takes place in time and space in an area that’s a quarter mile, maybe a half mile at some points. Fish are there for a very important reason – they get pushed over the side of the continental shelf into shallower areas by currents. Fishermen cannot fish anywhere else – this is where the fish are. People rely on them for safety and livelihood. Consider that when you ask for such extensive closed areas – they harm people and their livelihoods.

Our organization and fishing industry has come to the table in good faith. We acknowledge a need for some protection – we’ve acknowledged needs for bycatch reduction, quotas, etc. We have done them by the letter of the law. We have no fisheries overfished, and we have succeeded in staying in business. This amendment fails in that. For the last 10 years, fishermen from the AP and different companies have come to the table and contributed in a very serious manner with professionalism. We’re only asking for a bit more time to get it correct – not to delay the amendment.

**Rick Marks – On behalf of Garden State Seafood Association and Seafreeze**

Appreciate the Council holding a hearing here. My clients will be submitting more comments in writing. I associate myself with Greg’s comments, but want to emphasize one thing about process. Going from a Public Information Document to a final decision in 30 days without any recent AP activity is concerning from a process standpoint. Having been appointed to the Mid-Atlantic Council in 1997, we worked
through the gear restricted area issue, worked through the monkfish process, and more recently worked through the Atlantic sturgeon ESA process. A more transparent and open process leads to some good things. I would hope that the AP would have an opportunity to meet again and work with you in the process.

It’s important to realize that these are small margin fisheries. Even minor economic impacts can really affect these fisheries. Council has a mandate under the Act to protect the sustainability of the fishing industry as well. I would ask that you consider that as the process goes forward. There will be industry participants interested in working with you to find a path forward under Alt 3B-1, and I hope you can allow that process to go forward in the right kind of time frame to make that happen.
Terra Pascarosa – TerraScapes Environmental Consulting
I’m here on behalf of locals throughout the community here that live in coastal communities, to urge you to adopt the strongest conservation measures: to adopt a broad coral protection zone, to include the discrete protection zones, and prohibit all fishing gear that trawls the sea floor, from all canyon areas. In addition, we support the requirement for the use of electronic Vessel Monitoring Systems on all the fishing vessels as well.

Dan Barshis – Professor of Biology, Old Dominion University
I’m a coral researcher working primarily on tropical corals, but I’m familiar with deep sea corals and used to work for NMFS on the west coast. I support the recommendation to protect these resources, and echo the sentiment that they’re irreplaceable once they’re gone. To answer the question of what happens if we don’t have them, we’re not sure. We know there are benefits in terms of providing structure for fish and maintaining a dynamic bottom for fish habitat, but also applications for pharmaceutical industries and other things that are unexplored to their maximum extent. If we don’t have the resources to even investigate, we’re not sure what we’re going to lose at this point.
Ronnie Gannon
There are currently NOAA videos online that have captured some corals that have been impacted by bottom trawling, and it looks like a desolate landscape that’s been pretty wiped out. I know that we don’t fully know everything to do with it yet, but for the long term we should try to protect our corals. They are a habitat that’s very important for marine life that we’re very dependent on. If we focus on the long term instead of just the short term, we have a lot to protect there.

John Haworth – Virginia Tech Alumni, Environmental Management
In the past with some of our exploitation of resources, we’ve reached out at the surface. We’re getting into deep sea and bottom areas, which ultimately are the foundation for a lot of these fisheries and other ecosystem services that are still being found out. It’s worth considering that these resources may need to be protected to protect our own future and our own values and for our children’s benefits. There may be future benefits we’re not even pursuing yet, like medical research.

Melinda Truslow – TerraScapes Environmental Consulting
These are delicate, fragile, ecosystems, and they are in our back yard. They’re right here off your beach. We don’t know the impact that could occur because of the removal of these corals from deep sea fishing, but we would see the impact that would occur. We would feel that because it’s in our backyard. We need to pass these restrictions to protect them.
Buddy Seigel – Ocean Pines Anglers, Maryland Saltwater Sport Fishermen’s Association

There are large ocean stretches where if structure is not there, there are no fish. When structure is there, the fish will come to it. The best thing we can have is natural sea life. Coral is a big part of it. How do we spread it out and grow it? For me, this is about the more structure you have, the more marine life you have.

Ron Smith - Maryland Saltwater Sport Fishermen’s Association

I believe in this action. I believe the philosophy has always been that once the damage is done, you guys try to make corrections in regards to things like biomass, cutting the fish size down, cutting the season – but nobody’s addressing the problem with habitat. Finally, we’re talking about protecting the habitat that’s out there. But most of the damage is inshore. I’m glad to see you guys are doing something, but it’s the inshore waters that have been just utterly destroyed. We need to work on that, and if we do replace it, make sure it’s not destroyed again.
Thank you for holding hearing via webinar and making it more accessible for people in locations where it was hard to be at a hearing in person. I was asked to write an article for our newsletter about the Council’s action. I was reminded of one of my favorite books by Rachel Carson, *The Sea Around Us*. In it she writes “We can only sense that in the deep and turbulent recesses of the sea are hidden mysteries far greater than any we have solved.” That book was written in 1951, and here we are a few decades later watching live, high definition feeds of those recesses of the ocean. One thing that struck me about the recent Okeanos Explorer expeditions were how the scientists were saying that all of the canyons were diverse, and different, and dramatic, with no two canyons being the same. That’s important to keep in mind when looking at the options in the amendment. Some of the options present a “pick and choose” for the Council, and I think that he whole complex, all 15, warrant protection.

I think it’s commendable that this Council recognizes the importance of protecting habitat for productive fisheries, and has taken this action. I was there when the amendment was started and I appreciate your efficiency in getting this done. There has been a lot of information fed into this process, and I’m impressed that we’re now heading into the final stage.

I want to talk about the options that we support. I want to draw on NOAA 2010 Strategic plan for Deep Sea Coral and Sponge Ecosystems, which is mentioned in the document and put out during scoping. I support the approach and objectives outlined in that document. In particular, the objectives for conservation and management, of protecting areas of known deep sea coral or sponge communities from the impacts of bottom tending fishing gear, and another more precautionary approach to protect areas which may support deep sea coral and sponge communities where fishing gear has not been recently used. Those are objectives from the plan and they’re reflected in the purpose and need of the amendment document and I’m glad they’re there. The Council needs both. That’s one of the issues for comment – I think absolutely you need both discrete and broad zones.

For discrete zones, we support designating all 15 canyon and slope systems as described in the public information document, which is alternative 3B. We would endorse the most stringent protections you could offer for those discrete zones, which is prohibiting all bottom tending gear, or alternative 4B. For the broad zones, they’re designed to be more precautionary in nature. Even so, they still need to work with the discrete zones as a continuous system. A broad zone at the 200 meter contour would certainly envelop all discrete zones and encompass the canyon heads, but I understand that the economic impacts associated would be the greatest. If all the discrete zones were designated and protected, a 300 meter broad zone would be acceptable to us and would still protect a very high percentage of highly suitable coral habitat.
In saying that, there’s caution needed. The distance needed for gear deployment and haulback is an important consideration that the advisors raised, and it’s an issue that needs to be fleshed out. How gear drops when it is deployed could also warrant some additional buffering when a broad zone is selected. Even with the most conservative option of the 200 meter depth contour, you’re still excluding 25% of the historical presence records. There’s tradeoffs with all these alternatives for broad zones.

In terms of regulations within the broad zones, we would support alternative 2B, prohibiting all bottom tending gear, but we think the exemptions for tilefish and red crab are reasonable given the size of these fisheries and their footprint that exists in the broad zone options. We also would want to see alternative 2D put forward, requiring vessels to use VMS in the broad zones. That would entail having the illex moratorium vessels required to use VMS as well, which is alternative 6B.

Finally, the amendment needs to establish an adaptive process. The process should continue to be an adaptive one, as we continue to explore these areas. I support basically the flowchart in NOAA’s strategic plan, which makes a lot of sense. As the unknown areas are explored and new corals discovered, this should trigger expedient action to incorporate those corals into a discrete zone. For this reason, we would support alternatives 5B and 5D.

I know the idea of this amendment is to protect corals, but I’m trying to think of an instance where we’ve realized habitat has been damaged or a fish stock depleted, and we just protect what’s left. There’s certainly nothing wrong with looking at a loftier goal for this amendment of protecting highly suitable habitat, if the corals aren’t there now – maybe not in our generation, but corals could certainly repopulate highly suitable areas. I will be submitting written comments, and I appreciate your time.

**Tom Hoff – Former MAFMC staff member**
Staff has done a very nice job on this. I wish staff and the Council the best of luck in 2015 on finalizing this amendment.

**Daniela Pierro – 8th grader at LREI, the Little Red Schoolhouse, NYC**
I am a part of a social justice group which we call “No Water, No Life” and we’re focusing on water issues, especially coral destruction. Recently, we created a petition on change.org. Its goal was to see how strong public support of the amendment is. We found that many people strongly support the passage of the amendment to conserve corals. We published the petition on Sunday, and in 3 days, the petition has gained over 200 signatures. The people who signed were showing their support for the conservation of deep sea corals and for management measures in both broad and discrete coral zones, and for the 200 meter depth to be implemented, and to prohibit all bottom fishing gear.

The signers of the petition also acknowledged that it was important for these measures to be enforced. We strongly encourage you to pass the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish FMP. We will send in the petition on the 28th to show you the amount of signatures it will have acquired by then. We strongly encourage you to listen to the many voices of the concerned public.
WHAT TOOK YOU 60 YEARS TO TAKE ANY ACTION AT ALL IN THE LEAST LITTLE WAY TO START ANY SUCH PROTECTION. YOU HAVE ALLOWED COMMERCIAL FISH MARAUDERS TO SHOOT DOLPHINS FROM THEIR BOATS, SHOOT WHALES FROM THEIR BOATS, ALLOW FISHING LINE TO KILL WHALES, ETC FOR 60 YERAS OR MORE AND NOT LIFTED A FINGER. NOW YOU HAVE LIFTED A FINGER BUT STILL HAVE NOTHING IN PLACE. ANYONE RESPONSIBLE WONDERS WHY IT TAKES Y6-0 YEARS FOR HTIS CORRUPT AGENCY TO LIFT A FINGER TO PROTECT ANY MARINE SPECIES AT ALL. WE WANT MORE ACTION FOR PROTECTION. ITS A SHAME WE ONLY GET REPRSENTATION AT THESE FISHING COUNCILS FROM THOSE WH PROFIT FROM THE FISHING INDUSTRY. THEY LET IN NOBODY WHO REPRESENTS THE ENVIRONMENT. THOSE FROM THE ENVIRONMETN ARE PRIMARILY BLACBALLED. WHAT A SAD SITUATION FOR A NON REPRSENTIATVE IN FACT GOVT.

From: Quinn, Stephen <Stephen.Quinn@imoutdoors.com>
Sent: Monday, January 05, 2015 10:07 AM
To: Dancy, Kiley
Subject: Deep Sea Corals Amendment Comments

Dear Members of the M-AFMC and other parties,

I am writing to urge the Council to initiate and enforce protections to areas known to contain deep-sea corals, to prevent damage by bottom-fishing gear. These vulnerable organisms are critical pieces of marine ecosystems and have been heavily damaged in some areas. It is vital to fully protect remaining colonies.

Hopefully, vested fishing interests will not oppose these measures, as they are able to shift operations to areas without corals or other vulnerable marine life.

Thanks for the opportunity for comment.

Best wishes,

Steve

- - -

Steve Quinn
1704 S. 7th St.
Brainerd, MN  56401
218-828-3627
<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edward Burke</td>
<td>as a fisherman for 65 years we must stop the impact of fishing nets dragging over coral reefs. All fish breed and grow on these reefs.</td>
</tr>
<tr>
<td>Robert Cavagna</td>
<td>These three fish are the food supply (a good part of it) for all the larger predators in the western Atlantic. Save them, along with the bunker, spearing etc., and you save the fishing industry and the recreational fishing as well. We don't have much time. Since 2000, the fishing off Long Island has declined dramatically. I don't claim to know all the reasons for this, I just know it happened. You can't believe the &quot;Long Island Fisherman&quot; or the newspaper columnists, they are trying to stay in business, so they always tell how wonderful the fishing is.....take my word for it, it's dying a fast death. Do something or it will be to late.</td>
</tr>
<tr>
<td>Ron Smith</td>
<td>It is imperative that we start to protect the deep sea corals in our waters. The long term damage from bottom trawlers has devastated the inshore areas of our coastal waters. The damage to bottom structure due to various fishing methods has already been documented. The fisheries have already suffered, and changed because of this destruction. It is time that our fishery stewards realize that the various fish bio mass's that populate our area need structure for their habitat. We have a chance to be proactive by protecting these very slow growing natural habitats before they are destroyed by draggers or other various fishing methods that affect the bottom condition.</td>
</tr>
<tr>
<td>Alexandra Stote</td>
<td>As an young emerging marine scientist and a seasoned commercial fisherwoman, I find this ammendment to be highly important to improving the overall health of our oceans. I hope you truly consider this petition.</td>
</tr>
<tr>
<td>Name: Robert Ruhle</td>
<td>Email Address: <a href="mailto:robertptcapt@aol.com">robertptcapt@aol.com</a></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>City, State, Zip Code: North Carolina</td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong> As an Illex industry member, as well as an MSB &amp; Ecosystem AP member, i belive that this a manufactured issue. There has been a definite LACK of data showing the areas where Deep water coral exist, and NO data to support that the current fishing practices have any impact on deep water coral at all. There IS a vast amount of data provided by the industry to prove that there is no interaction, as well as the agency's own data from the illex realtime management program going back to the mid 1990s. But these data where not used or even conciderd for the proposed restricted areas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name: Robert Ruhle</th>
<th>Email Address: <a href="mailto:roberthdn@yahoo.com">roberthdn@yahoo.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>City, State, Zip Code: nc</td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong> (cont) I personally gave the agency my own illex tow data at the meeting in Baltimore over 2 yrs ago, and was told as an ap member that we would be having &quot;many more meetings&quot; before the document would be finalized and presented to the councils. To my knowledge, that was the ONLY meeting. The other aspect that i find totally baffling is that the omitting of fixed gear to this action, yes a single lobster or red crab trap has a small impact on the bottom, but apparently you forgot that there are 100s of pots in a &quot;trawl&quot; and 100s of trawls along the shelf edge. How much damage do they inflict to coral when a trawl gets washed over the edge and falls down the slope with miles of warp? As both an industry member and an AP member, i cannot support any aspect of this amendment, but if given no other option 1E would be the only viable choice in order to sustain the domestic harvest of illex.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name: Steven ruhle</th>
<th>Email Address: <a href="mailto:ssruhle@aol.com">ssruhle@aol.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>City, State, Zip Code: nc</td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong> As an illex fisherman , the proposed amendment will effectively destroy this fishery. there is no data to support such an action and plenty of data to the contrary. Clearly the concerns of the industry have fell on deaf ears, its apparent that the ultimate goal is to ban all fishing and destroy a way of life just so somebody can look at a picture on a wall and feel they accomplished something. This just proves that fisheries management in the us is a joke.</td>
<td></td>
</tr>
</tbody>
</table>
Name: Paul Thompson  
Email Address: judyvthompson@comcast.net  
City, State, Zip Code: 59 Acorn Lane, Cape May Court House, NJ 08210  
Comments: I recently attended a hearing concerning the recent and historical findings of Deep Sea Corals and I represented United Boatmen of NJ.

As owners of a passenger fishing boat in Cape May, NJ, we realize the importance of maintaining and preserving a healthy natural habitat.

I have been in the business over 40 years and witnessed many changes. Many changes were regulations and others were improved fishing technology. I have witnessed commercial fisherman fishing smarter and more efficiently. They too realize the importance of maintaining a healthy resource and habitat. They can not afford to fish near hazardous bottom.

After reviewing the document, we see no need to take any action so quickly as the February meeting.

We recommend assessments of known Deep Sea Coral areas periodically. Look for degradation due to bottom trawl activity. Most locations have probably been learned from bottom trawl information. Bottom trawl fisherman avoid these areas. Severe slopes we don’t believe can be fished anyway.

If surveys indicate damage is occurring, take measures at a later date. Right now, the issue is identified and recognized. No action is required at this time, in our opinion.

On behalf of the United Boatmen of New Jersey, we recommend status quo, no action at this time, but continue to do evaluations.

Sincerely,

Paul H. Thompson, Representative of the United Boatmen of NJ  
59 Acorn Lane  
Cape May Court House, NJ 08210  
(609)884-1214

Name: Derek McLaughlin  
Email Address: derekmclau@yahoo.com  
City, State, Zip Code: Port Hueneme, CA  
Comments: None of the fisheries should be allowed to damage coral reefs at any depth anywhere in the world. Please put in strong measures and do what you feel is necessary to stop all damage that fishing is doing to coral ecosystems.
Name: Rachel Skubel  
Email Address: rskubel@gmail.com  
Comments: Regarding the Deep Sea Corals amendment, I fully support the courses of action protecting corals to the highest degree from bottom trawling damage. For both broad and discrete zones, increasing the zones of coral designation, prohibiting all bottom-tending gear, and enabling enforcement via vessel monitoring are commendable, practical ways to improve the ecosystems' outlook in the face of increasing human use and potentially stressful environmental change.

Name: Brian Reckenbeil  
Email Address: breckenbeil@verizon.net  
City, State, Zip Code: Marathon, FL, 33050  
Comments: Protect ALL the corals, not just deep sea ones!

Name: Clinton Edwards  
Email Address: clint@ucsd.edu  
City, State, Zip Code: 92037  
Comments: Fishing over deep sea coral habitat is tantamount to clear cutting a sequoia forest in order to harvest grubs. I know that this sounds like an exaggerated statement, but in fact it is probably conservative. Deep sea corals are known to live as long or longer than the oldest trees on earth.

We long ago realized that the wholesale clear cutting of any area of forest is unacceptable. However, we use the veil of depth to obscure the effects of deep sea fishing. Until large scale evidence that we are not destroying these habitats is available these practices should be severely limited or banned. We can no longer let the absence of data be proof for lack of effects...that is counter intuitive and an assault on basic reason. Loggers have had massive advancements but selective harvest, and this has been proven as we can see large tracts of forest from space with satellites...that is how they figured out their science and enabled a new outlet for their industry. In light of the absence of similar data CONTINUOUS AND HIGHLY RESOLVED data from the deep sea we cannot and should not allow any fishing in these areas.

Name: Manuel Nieve  
Email Address: manuel.nieves1@upr.edu  
Comments: Please do! I could start talking about the ecological, economical, and cultural importance of these ecosystems, but I am sure you know all of this. Do it so that when we give the planet back to our kids they will have something to be proud of.
<table>
<thead>
<tr>
<th>Name</th>
<th>Email Address</th>
<th>City, State, Zip Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Bryan</td>
<td><a href="mailto:drbryan02@yahoo.com">drbryan02@yahoo.com</a></td>
<td>Miami, FL</td>
<td>We know very little about deep water corals, their associated fauna and their larger role in the marine ecosystem. We do know that deep sea trawling kills them, possibly forever destroying an ecosystem that we have just begun to learn about. Please take action to protect these resources from destructive deep water trawling.</td>
</tr>
<tr>
<td>Liz Allyn</td>
<td><a href="mailto:lizallyn@uw.edu">lizallyn@uw.edu</a></td>
<td></td>
<td>This amendment has the potential to go a long way towards protecting the fragile marine environment. Not only will it protect these specific at risk areas, but it could also inspire other areas to adopt similar rules. Thank you for caring about this issue.</td>
</tr>
<tr>
<td>Liv Bly</td>
<td><a href="mailto:Livbly@hotmail.com">Livbly@hotmail.com</a></td>
<td></td>
<td>This amendment is instrumental in the crucial effort to minimize damage to the coral reefs, an entire ecosystem that will be lost entirely in the near future unless mitigation strategies are ramped up. Thank you.</td>
</tr>
<tr>
<td>Alicia Lloyd</td>
<td><a href="mailto:Alicia2lloyd@gmail.com">Alicia2lloyd@gmail.com</a></td>
<td></td>
<td>I agree with the proposed amendment to protect deep sea corals from fishing damage. Ensuring that these areas are agreed by the fishers will assist with compliance to the new rules. The public hearings and stakeholder consultation should help achieve this goal.</td>
</tr>
<tr>
<td>Jennifer Salerno</td>
<td><a href="mailto:jleesalerno@gmail.com">jleesalerno@gmail.com</a></td>
<td>Alexandria, VA, 22314</td>
<td>I'm a coral biologist. It's pretty simple. No corals = no fish. We are currently destroying deep-sea coral habitats before we even have a chance to explore and understand them. These valuable resources need to be managed responsibly.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name</th>
<th>Email Address</th>
<th>City, State, Zip Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tara Dolan</td>
<td><a href="mailto:dolan.tara.e@gmail.com">dolan.tara.e@gmail.com</a></td>
<td>New York, NY</td>
<td>I support the amendment.</td>
</tr>
<tr>
<td>Jacqueline Padilla-Gamino</td>
<td><a href="mailto:jpgamino@csudh.edu">jpgamino@csudh.edu</a></td>
<td></td>
<td>Please protect deep sea coral, they are invaluable ecosystems on Earth and new sources of future discoveries.</td>
</tr>
<tr>
<td>Franziska Elmer</td>
<td><a href="mailto:franziskaelmer@hotmail.com">franziskaelmer@hotmail.com</a></td>
<td></td>
<td>Deep-sea corals and their ecosystems are increasingly recognized as a new frontier in scientific research, from their value as ocean sinks for carbon dioxide to their potential use in biomedical products. Around the world, many similar deep-sea biodiversity hotspots have already been destroyed, and because numerous fish assemblages are expected to shift deeper, away from warming waters, fisheries are expected to follow. The Council's plan will represent the first use of a new discretionary authority specifically designed to protect deep-sea corals under the Magnuson-Stevens Act. The extent to which the plan prioritizes coral conservation will set the course for future actions throughout the nation's waters, and add to the growing global network of deep-sea protected areas.</td>
</tr>
<tr>
<td>Cheryl Morrison</td>
<td><a href="mailto:c.morrison52@yahoo.com">c.morrison52@yahoo.com</a></td>
<td>Charles Town, WV, 25414</td>
<td>I highly support this amendment to protect the deep sea corals in the mid-Atlantic.</td>
</tr>
<tr>
<td>Ari Halperin</td>
<td><a href="mailto:ah1012@nova.edu">ah1012@nova.edu</a></td>
<td>Ft Lauderdale, Florida</td>
<td>Please support the deep sea corals amendment!</td>
</tr>
<tr>
<td>Name</td>
<td>Email Address</td>
<td>City, State, Zip Code</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------</td>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Amanda Hodo</td>
<td><a href="mailto:hodoaman@grinnell.edu">hodoaman@grinnell.edu</a></td>
<td>Bradenton, FL 34210</td>
<td>Help save the corals!</td>
</tr>
</tbody>
</table>
| Iliana Baums | baums@psu.edu         |                       | **I am a scientist working on the population genetic structure and response to oil of the black coral, Leiopathes glaberrima. Like many deep-sea coral species, Leiopathes grows extremely slowly and lives to be several thousand years old. Its intricate branches provide habitat for a myriad of other organisms. Because of their importance in providing habitat to other species and their life history characteristics, it is vital to protect deep-sea corals from direct physical impact that would uproot the colonies or break them. I would thus urge you to implement protective measures that either eliminate physical impact or reduce recurrence to very long time intervals.**
|              |                       |                       | With best regards,                                                        |
|              |                       |                       | Iliana Baums                                                             |
|              |                       |                       | Assoc Prof                                                               |
|              |                       |                       | PSU                                                                      |
| Alex Medina  | a3miller@gmail.com    | Tumon, Guam, 96931    | **Please protect the deep-sea coral species. They are some of the oldest organisms on earth and there is so much we don't know about them yet. It will be very hard to study them if they are all destroyed.**
|              |                       |                       | Thank you for considering future generations.                            |
Name: Bonnie Brady
Email Address: greenfluke@optonline.net
City, State, Zip Code: Montauk, NY 11954
Comments: On behalf of the Long Island Commercial Fishing Association, we support the following alternatives

Re Broad Coral Zone Alternatives, we support 1A- It is our belief that there should be no CPZ- Coral Protection zone. A 98,444 km2 swath of the ocean is called the "smallest" option, when in actuality it is anything but small and is purely to create a future MPA, under the guise of corals.

Over the last five years a total of seven surveys have been conducted to explore the deep canyons in the mid-Atlantic region. Nearly all of these recent surveys have been conducted at depth beyond 500 meters and the observations and data collected from these surveys have yet to be analyzed to their fullest capabilities. There is simply not any analysis to make an appropriate and educated decision.

Why is that? Isn't it possible that the best protection would be in areas where there is not competition between fishing and corals to begin with?

The socio-economic effects to the commercial fishing industry, and the shoreside business coastwide that depend on them, have been a farce, not been fully gathered, interpreted, or reviewed. This is a rush job to get something done without concern for the multitudes of small businesses that depend on that very productive area of the ocean, and have been fishing there for decades. Closing huge, ahem, even the "smallest" swaths may displace some of the fleet, but fishermen tend to fish in specific areas, for specific species. Displacement may bring added effort to other fisheries but without specific limited access permits, they may not happen. Closing an area will more than likely have the effect of shutting businesses.

Fishermen go where the fish are, the areas of the canyons are the prime offshore location for many of the various mid-Atlantic and Northeastern fisheries in the food chain. You cannot just shift effort, their (the species caught in that area) migratory patterns are very specific, based on water temperature. They don't move until temperature tells them to do so. When they do, the fishermen follow them.

Coral, as we know, is very slow growing. Because of its slow growth, rushing through an amendment without all of the appropriate analysis really won't benefit the coral, and will definitely not benefit fishing communities, both of whom, this council has been tasked to protect and balance. There should not be a rush to create/designate areas based on a feeling and without the facts.

Consequently, we also believe Broad Coral Zone restrictions, Alternative 2A is appropriate. Again, fishing which has existed in those areas should not have to worry about losing valuable, prime fishing grounds. Mobile tending bottom gear avoids things like coral, so that nets, which are almost prohibitively expensive ($10-20,000), are not destroyed. There is no need to create a zone, as fishermen consciously avoid them.

Re 2.2 it hard to to craft management measures without appropriate data. The data used to create the Habitat Suitability Index and the analyses contained in Amendment 16 are inconsistent with Information
Quality Guidelines developed by the Office of Management and Budget (OMB) and does not meet the performance standards of NOAA’s Data Quality Act. This data is not of the quality, utility or integrity that would justify potential management alternatives.

In lieu of the lack of appropriate, useful and accurate data, we support for 2.2- 2A, 2.3- 3A, 2.4- 4A, 2.5-5A, 2.6-6A

Any action that the council could take should allow for commercial fishing, in all its forms, to continue in the areas where fishing historically occurs. Fishermen would be more than glad to work with the council and staff to specify the areas that are useful to protect both coral and fishermen. If there are areas of coral growth that can be determined, such as past 500 meters, to not have fisheries prosecuted, that would be the best solution for both the coral and the fishermen, allowing coral to grow (slowly) in an area where historic interaction does not exist.

Sincerely
Bonnie Brady
Long Island Commercial Fishing Association

Name: Peter deFur
Email Address: pldfur@igc.org
City, State, Zip Code: Henrico VA 23238
Comments: January 28, 2015

Re: Deep Sea Coral Amendments to the SMB Fishery Management Plan

The Council is commended for taking up this measure to protect the valuable resources represented by the Deep Sea Corals in the regions of the Mid-Atlantic and for the fisheries under MAFMC management. I heartily support this action now, as I have when the Council began this process several years ago when I sat on the Council.

The goals of protecting the corals and habitats serves the resources and the fisheries. Fisheries will benefit from this protection through maintenance of high quality habitat resources on which commercial (and recreational) fisheries depend.

As the Council knows, Deep Sea Corals are at least among the oldest living resources on the planet, and data from the South Atlantic suggest some of these resources are the oldest living resources on the planet. These corals are slow growing and depend on the limited resources in the sloped areas of the eastern slopes and canyons. Experience and survey indicate that the only effective means of protecting these resources is preventing damage to existing coral systems. And the best way to protect them is by preventing physical damage from fishing activities. Bottom tending gear is the greatest threat to deep sea corals, of all the human, fishery activities. Thus, keeping bottom tending gear out of the deep sea coral habitats is the most effective, if not the only real means available to the Council to protect deep sea corals.
I urge the Council to support the following alternatives as the most protective and practical:
Alternative 1B- a 200 m depth exclusion zone
Alternative 2 B prohibit all bottom tending gear
Alternative 2 D- this provision is largely duplicative of existing requirements
Alternative 3 B- adopt discrete zones in the canyons as high quality coral habitat
Alternative 4 B prohibit bottom tending gear in canyon coral zones
Alternative 5B, 5C and 5D to allow adjustments as new data are available.

These measure provide the maximum protection. The best reason for implementing the maximum protection is that once damaged, the corals are lost for the foreseeable future, owing to the nature of the resource. New data can and may improve the information on boundaries, location of corals and nature of habitat suitability. If it turns out that a different boundary than the 200 m is suitable, then that boundary can be moved, as with the zones around the canyons.

Thank you for the opportunity to participate in the Council process.
Dear Chairman Robins and Members of the Mid-Atlantic Council,

I wish to commend the Mid-Atlantic Fishery Management Council for being the first of the federal councils to use the authority granted under the Magnuson-Stevens Act to protect valuable and fragile deep sea coral communities from the impacts of fishing. I support the implementation of both discrete and broad zones to effectively conserve deep sea corals.

Discrete protection zones around the canyons and slopes where corals have been found or are likely to occur must go beyond "freezing the footprint" of fishing and should rightly eliminate the use of fishing gears that could damage corals, even if the gear has operated in these areas in the past. I urge you to adopt Alternative 3B, designating all 15 canyon systems described in the Public Information Document as discrete coral protection zones. All bottom-tending commercial gears should be prohibited in the discrete zones (Alternative 4B).

Because many areas of the deep Atlantic remain unexplored, a broad zone will prevent the expansion of bottom-tending commercial gears that could damage undocumented deep sea corals. For this purpose, I support establishing a landward broad zone boundary no farther from shore than the 300 meter depth contour (Alternative 1B or 1C), which would encompass 99% or more of highly suitable deep sea coral habitat. Bottom-tending commercial gears should be prohibited from the broad zone with limited exemptions for existing red crab and tilefish fisheries, as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternative 2B with Sub-alternatives 2B-1 and 2B-2). New discoveries of coral communities in the broad zone should trigger expedient action to incorporate these communities into a discrete zone to enhance their protection (Alternative 5D).

Thank you for prioritizing the protection of deep sea coral communities in the Mid-Atlantic and for recognizing the importance of habitat to the future of fishing.

Nancy Smith  
1507 7th St  
Santa Monica, CA 90401

barry holeve  
1731 se 15 st  
# 502  
fl lauderdale, FL 33316

Dean Kelley  
11 Prairieview Ln  
Ormond Beach, FL 32174

Paul Huffard

20 Juniper Road
Darien, CT 06820

simon barrett
24
BALLANCE STREET
BATH, ot BA1 2RP

Stephen Smith
4713 Altha St
Raleigh, NC 27606

Antar Pushkara
85091 Larson Rd

Eugene, OR 97405

phil kline
3924 ingomar st nw
washington, DC 20015

Norman Baker
3789 Lost Moomountain Road
Sequim, WA 98382

Robert Keiser
6131 SW 85 St.
S. Miami, FL 33143
Dear Chairman Robins and Members of the Mid-Atlantic Council,

I am very excited about the Mid-Atlantic Fishery Management Council's progress towards protecting the deep sea coral canyons off the coast. We know little about these canyons, but we do know that they host a delicate, fragile deep water coral ecosystem. I wish to commend the Mid-Atlantic Fishery Management Council for being the first of the federal councils to use the authority granted under the Magnuson-Stevens Act to protect valuable and fragile deep sea coral communities from the impacts of fishing. I support the implementation of both discrete and broad zones to effectively conserve deep sea corals.

Discrete protection zones around the canyons and slopes where corals have been found or are likely to occur must go beyond "freezing the footprint" of fishing and should rightly eliminate the use of fishing gears that could damage corals, even if the gear has operated in these areas in the past. I urge you to adopt Alternative 3B, designating all 15 canyon systems described in the Public Information Document as discrete coral protection zones. All bottom-tending commercial gears should be prohibited in the discrete zones (Alternative 4B).

Because many areas of the deep Atlantic remain unexplored, a broad zone will prevent the expansion of bottom-tending commercial gears that could damage undocumented deep sea corals. For this purpose, I support establishing a landward broad zone boundary no farther from shore than the 300 meter depth contour (Alternative 1B or 1C), which would encompass 99% or more of highly suitable deep sea coral habitat. Bottom-tending commercial gears should be prohibited from the broad zone with limited exemptions for existing red crab and tilefish fisheries, as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternative 2B with Sub-alternatives 2B-1 and 2B-2). New discoveries of coral communities in the broad zone should trigger expedient action to incorporate these communities into a discrete zone to enhance their protection (Alternative 5D).

Thank you for prioritizing the protection of deep sea coral communities in the Mid-Atlantic and for recognizing the importance of habitat to the future of fishing.

Theresa Labriola
1503 Morgensen Road
Mosier, OR 97040
Dear Chairman Robins and Members of the Mid-Atlantic Council,

As an angler and conservationist, I wish to commend the Mid-Atlantic Fishery Management Council for being the first of the federal councils to use the authority granted under the Magnuson-Stevens Act to protect valuable and fragile deep sea coral communities from the impacts of fishing. I support the implementation of both discrete and broad zones to effectively conserve deep sea corals.

Discrete protection zones around the canyons and slopes where corals have been found or are likely to occur must go beyond "freezing the footprint" of fishing and should rightly eliminate the use of fishing gears that could damage corals, even if the gear has operated in these areas in the past. I urge you to adopt Alternative 3B, designating all 15 canyon systems described in the Public Information Document as discrete coral protection zones. All bottom-tending commercial gears should be prohibited in the discrete zones (Alternative 4B).

Because many areas of the deep Atlantic remain unexplored, a broad zone will prevent the expansion of bottom-tending commercial gears that could damage undocumented deep sea corals. For this purpose, I support establishing a landward broad zone boundary no farther from shore than the 300 meter depth contour (Alternative 1B or 1C), which would encompass 99% or more of highly suitable deep sea coral habitat. Bottom-tending commercial gears should be prohibited from the broad zone with limited exemptions for existing red crab and tilefish fisheries, as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternative 2B with Sub-alternatives 2B-1 and 2B-2). New discoveries of coral communities in the broad zone should trigger expedient action to incorporate these communities into a discrete zone to enhance their protection (Alternative 5D).

Thank you for prioritizing the protection of deep sea coral communities in the Mid-Atlantic and for recognizing the importance of habitat to the future of fishing.

Bill Francois
Herran
Paris, ot 75116
Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore,

On behalf of Trawlworks, Inc., which supplies nets, hardware, wire and other gear to the New England and Mid Atlantic fishing fleet, we the undersigned oppose taking action in February on the Deep Sea Corals Amendment. The Amendment as it now stands offers the options of closing huge areas of fishing ground to vessels we supply. This jeopardizes our future as a company.

Most options of the Amendment have not been designed with any industry participation. We request delaying the scheduled Final Action in February until there has been an Advisory Panel meeting to discuss the Alternatives. Currently, we support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. In the future, we could support Sub-alternative 3B-1, after more industry development.

Thank you,

Stephen Taber, Vice President
Peter Klenk
Mary O’Rourke
James Cordice
Richard Boiteau
David Cinquegrana
Kristen Flynn
January 24, 2015

Comments on the Deep Sea Coral Amendment:

All concerned parties,

My name is Hank Lackner, I am the owner and operator of the fishing vessel Jason & Danielle. I fish primarily from Montauk NY and Cape May NJ. My target species are DEEP water squids (both illex and loligo), DEEP water fluke, DEEP water seabass, DEEP water butterfish, DEEP water monkfish as well as DEEP water dogfish and DEEP water whiting. I guess you have got it by now, Every fishery in the Mid Atlantic will/can be effected by this amendment.

I ask each and everyone of you who reads these comments to ask themselves a few very important questions. The first being, Is it the goal and intention of this amendment to protect coral or eliminate fishing as we know it in the mid-atlantic region? One might also ask themselves, has the best available science been used? We might also wonder, if this amendment process were to be slowed down and the advisory panel been used in the proper manner, could we do a far superior job protecting coral while not destroying the footprint of the mid-atlantic trawl fleet. Final question, why was the recreational sector, as well as other sectors left out of this amendment??

Please remember the Mid-Atlantic has the best performing fishery in the USA and that is not by accident!! Did we not rebuild these stocks to harvest them and feed the people of this country?

I would like to open my statements by saying:

1. I am 100% opposed to broad zones. A discrete zone developed by both the AP and industry would be best.
2. Most coral encounters presented by the service are obsolete and unverified at best. In fact we don’t even know how the data was collected. If this is the best available data, a strong argument can be made that any discrete zones should be outside 600meters. The best available science says the coral is very deep, let’s use it!!
3. There is no way we should be generating closed area based upon a coral prediction. I equate that to weather forecast. The industry can not afford to give up any more bottom.
4. Coral is already protected by steep slope hard bottom as well very deep unfished water.
5. This amendment has been fast tracked without proper analysis. In fact the AP was promised at least a second meeting, but it never occurred. The work that was supposed to be accomplished has not been done!!
6. Should the chosen alternative be a discrete zone, the industry must be given a chance to refine it. It should be noted, the USCG, has stated these lines can be quite complex as long as straight lines are connected.
7. The objective of this amendment should not only protect coral, but protect the sustainability of the industry as we see it. FISHING practices must be maintained
8. The economic analysis should be completely disregarded. In fact we were promised a revision that we never got
9. I believe the council should take a long hard look at the impact other user groups can have on deep water corals. The lobster industry, red crab fishery and most importantly the sport/commercial-Party/charter boats can all have devastating impacts on corals. The later groups anchoring practices in the heads of canyons is devastating to corals. NO ONE USER GROUP SHOULD
BE SINGLED OUT!! If the objective is to protect coral, Why don’t you make them prove their gear doesn’t impact coral and include them in any closed areas.

10. FINAL ACTION SHOULD NOT TAKE PLACE IN FEBRUARY..YOU ARE NOT READY!!!!

It should be noted that the industry has never before reached out to the council in such a manner in preparation for an amendment. With that being said, what does it take for mobile gear fisherman to gain credibility within the process.. The alternatives go way beyond the goals and objectives of the council. Some of these alternative could potentially close Mid Atlantic fishing down.. If that is the goal and objective you are on target..

Thanks,

Hank Lackner
The Fishermans Dock Co-op submits these comments on the MAFMC’s proposed Deep Water Corals amendment. Our dock has been in existence since 1952 and is one of the country’s oldest fishing Co-op’s. We are still in existence because of our fishermens ability to adapt to changing fishery migrations, market conditions, and the governments management plans. We have 11 member owned boats and service dozens more throughout the year. Dockside sales average 8 to 12 million a year.

While our boats do very little fishing in the deep waters anymore, we have probably more experience then anybody in fishing those waters. Starting in the mid 1960’s our boats created a deep water lobster trawl fishery in the waters from 50 miles east of the Hudson canyon down past Tom’s canyon. The water we trawled were from 90 to 250 fathoms deep, and by the mid 70’s we had about 20 boats from Point Pleasant working those grounds full and part time. This fishery was the first casualty of the new Magnuson Act. A new England lobster trap company [Prelude] decided to expand its operation into the deep waters west of their traditional grounds and encountered our thriving trawl fishery. After losing thousands of pots due to our boats running them down [we’re supposed to just give up our fishery to a new comer?] Prelude decided to get a little congressional help to protect themselves from the bad draggers who were costing them so much lost gear, so since apparently they had one or possibly two congressmen as investors in Prelude it was easy to pass a law protecting their pots and basically putting our fishery out of business. A few years later when they went bankrupt they left all their pots [thousands] out there to ghost fish, Nice guys. In the 1980’s we created a fishery for both silver hake [whiting] and deep water Blackeye whiting. This fishery took place on the exact same grounds with regular whiting being caught from 80 to 160 fathoms, and blackeye Whiting being caught from 90 to 260 fathoms. None of our boats have fished those waters for whiting in close to 10 years, as the regular Whiting have moved east, and the Black Water whiting just was not plentiful enough to pursue.

My point here is that if you’re are trying to protect coral in that area, if there was any there, it isn’t anymore as it was subjected to extensive trawling over the years. I can say from my own experience that there were very few spots where we actually tore up and knew it was coral. The edges of the Hudson canyon are very sharp, with the east wall being almost impossible to fish deeper then 100 fathoms. The west side we did fish over 200 fathoms although we tried to hold about 150, the turns would force you over the edge in places. We have pretty much given up fishing in the deep [deeper then 150 fathoms] because one, Its plastered by lobster and crab pots, two there is not much financial incentive to fish there, and three it is very difficult to fish there due to the depth.

There are still fisheries we pursue though in the swaller areas of the deep, including Loligo squid, Butterfish, and whiting, and still occasional will fish down to 150 fathoms.
Therefore we are very concerned about some of the proposed management measures and how they can negatively affect our fisheries and income, and how some of the proposed protected areas could possibly be enforced. Therefore we support the no action alternative for the whole plan, as we see no way to enforce depth based protected areas, without just closing off large swaths of prime fishing grounds as NMFS is so prone to do. We do see a possible solution to this problem, and could support the 500 meter alternative along the whole shelf if it did not include the canyon areas. This would close a huge area of the bottom in deep and mostly unfished bottom, but still allow fishing in the canyons which are the prime fishing areas, so the economic impacts would be small. I will temper that statement with the point that there is an Illex squid fishery that works the deep water, and we are not sure how they would be effected by this, and even if their gear fishes the bottom out there or is Mid water. Not including the canyons would recognize the difficulty of trying to enforce a depth based closure and reduce economic impacts of this plan, while still protecting a huge area of bottom from future disruption. I can tell you that it is hard fishing the edges of the canyons, and many of them we can’t fish deeper then 100 fathoms so their very geologic structure protects them from mobile gear. So the point is any areas of the canyons we can fish on we have already extensively fished so you would not save any coral, just cost enormous financial losses on the industry, as there are many fisheries that fish along the top of the edge.

With the still in existence southern gear restricted area, the proposed plan would create a narrow strip between that and the proposed coral plan that could be a nightmare to enforce. Since that GRA does nothing anymore it needs to be eliminated. Now for some nitpicking, This plan is NGO driven to destroy more fishing families in the name of conservation. Unfortunetely the MAFMC is buying into it, as proved by the location of the public hearings. One in NY and NJ, None in North Carolina, one in Virginia, and two in Maryland, where there is no offshore fishery at all. In total there are 3 public hearings within 50 miles of the NGO’s home base of Washington DC, while fishermen from northern NJ, western long island or North Carolina would have to travel 2 or more hours to a meeting. Also no meeting in Rhode Island which has an extensive amount of boats that work that area, besides the New England waters. I will point out what has been the result of the last NGO driven management plan that the MAFMC bought into and that was Dogfish. Sonja Fordham ran a crusade to save a fish that didn’t need saving, whose spawning stock biomass was exactly where it was in an unfished stock in the 1960’s, yet she convinced the council and NMFS that they were on the verge of extinction. Amazingly the stock was rebuilt within a few years of NEFSC claiming it may never recover, or at a minimum not until 2035, and it presently stands at a level 3 or more times higher than it was in the 1960’s the level that should have been used as the baseline of the SSB. What has that huge biomass of hungry mouths done? They have retarded the rebuilding of every species on the atlantic coast, and caused enormous economic damage to our country, yet NMFS and the MAFMC thought what Sonja did was so great that they declared her an environmental hero. Her actions have done more to destroy the balance of the atlantic ecosystem then any other thing with the exception of the foreign fishing fleets decimation of our stocks with the state departments permission.

These same groups that are pushing what would be the largest closed area on the east coast also hypocritically support marine protected areas, where there would be no fishing at all, yet oil companies could drill to their hearts content. I guess they can’t bite the hand that feeds them, which would be the Sunoco Fortune created PEW charitable trusts, who they will tell you have almost none of their 5 billion dollars invested in oil. Unfortunetely none of these environmental frauds seem to be smart enough to realise that the PEW group is not acting out of the goodness of their heart, they are simply using a non profit entity to do their dirty work by greenwashing and disguising their true intentions. Destroy the fishing
industry on the east coast so they can drill for oil. It is not the investment portfolio of the PEW charitable trusts that stands to benefit from the destruction of the fishing industry, it is the Board of Directors of that trust, who are the ones who decide what to fund and why. Let's have them, [who are all mostly Pew family members] release all of their personal investment information so we can see who is really trying to profit from our destruction. I bet that they are personally heavily invested in oil, and gas companies. So council members keep this in mind when these frauds come up with some more brilliant idea's to save the ocean from the bad fishermen.

Thanks,

James Lovgren

BOD Fishermans dock Co-op
January 26th, 2015

Richard Robins  
Mid-Atlantic Fishery Management Council  
800 North State Street  
Suite 201  
Dover, Delaware 19901

Dear Mr. Robins,

I am writing on behalf of the *F/V Lightning Bay* to comment on the proposed Deep Sea Corals Amendment.

Regarding the broad coral zone alternatives, I support Alternative 1A: No Action/Status Quo. I own an offshore dragger that fishes for monkfish in the 100-250 fathom range. We have been pushed into fishing in these depths from the Lobster GRA set in the 70-150 fathom range. Preventing us from fishing in these depths would prevent us from harvesting monkfish. Due to the loss of the summer flounder RSA program we have heavily invested in RSA monkfish days to make up that monetary loss. The closure would render those days useless to us and would effectively result in a huge financial loss. Until more studies have been done in these areas, I cannot support any other of the broad zone alternatives. According to Dr. Nizinski’s research aboard NOAA’s research ship *Okeanos Explorer*, most of the coral they found were in depths over 500 meters. They weren’t finding many corals within the 200-300 meter range at all.

For the discrete coral zones, I support Sub-alternative 3B-1. If discrete zone are going to be formed the fishing industry should be part of the panel that proposes the boundaries for these zones. Buffer zones for the fisherman should be built in as they may be setting or hauling in gear near these boundaries.

If the Agency does choose to adopt closures, I would ask that the closed areas are off limits to ALL activities that could pose a risk to the coral. These activities include but are not limited to: recreational fishing, the crab fishery, the tile fishery, and the oil, mining and wind industry.

I greatly appreciate the opportunity to provide a comment regarding this proposed Amendment.

Sincerely,

Donald Fox owner of *F/V Lightning Bay*
Wednesday, January 28, 2015
Dr. Christopher M. Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

Subject: Protect the Atlantic’s Unexplored Depths and Deep-Sea Corals from Destruction -- Deep Sea Corals Amendment Comments

Dear Chairman Robins and Council Members:

I am encouraged that the Mid-Atlantic Fishery Management Council is taking proactive steps to protect vulnerable and poorly understood deep-sea coral ecosystems. I wish to commend the Mid-Atlantic Fishery Management Council for being the first of the federal councils to use the authority granted under the Magnuson-Stevens Act to protect valuable and fragile deep-sea coral communities from the impacts of fishing. The Council has an opportunity now to “freeze the footprint” of bottom fishing, which would prevent the expansion of fishing into areas that remain largely pristine. Such protections would be in line with the objectives of the National Oceanic and Atmospheric Administration’s Strategic Plan for Deep-Sea Coral and Sponge Ecosystems, and with the Council’s recent efforts to advance ecosystem-based fisheries management.

“Our duty to the whole, including to the unborn generations, bids us to restrain an unprincipled present-day minority from wasting the heritage of these unborn generations. The movement for the conservation of wildlife and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose and method.”

-- Theodore Roosevelt

Deep-water corals live in total darkness. Absent light, these corals lack the symbiotic algae that produce nutrients to feed shallow water coral. Instead, deep water corals feed themselves by capturing passing food. In the mid-Atlantic region, corals were found to favor steep slopes of 30% or more and outcropping peaks—two habitats not conducive for fishing.

“As we peer into society’s future, we—you and I, and our government—must avoid the impulse to live only for today, plundering for our own ease and convenience the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage. We want democracy to survive for all generations to come, not to become the insolvent phantom of tomorrow.”

-- Dwight D. Eisenhower

Deep sea coral communities are considered to be biodiversity hotspots and essential habitats for commercially valuable fish stocks. Yet, until recently, only redfish were frequently seen with specific deep sea corals. It was, therefore, big news that deep sea corals were observed with skate and hake on a recent survey. That these two relatively abundant, commercially valuable fish were seen with corals below 500 feet gives hope for the importance of deep sea coral communities for less numerous ground fish populations.
“Then I say the Earth belongs to each generation during its course, fully and in its own right, no generation can contract debts greater than may be paid during the course of its own existence.”

-- Thomas Jefferson

The most essential fish habitats with corals are the shallower slope waters. That fewer corals are found in waters shallower than 500 feet does not mean that the habitat is not suitable for corals. It may instead be indicative of more trawler and dredging disturbances. Below 200 meters is up on the continental shelf where most of the fishing occurs and slow growing corals have little chance of survival.

For example, across the Atlantic Ocean, Science AAAS reports marine biologist Jason Hall-Spencer of the University of Glasgow, United Kingdom, and two colleagues found large chunks of coral in the catch hauled up by two French vessels fishing off West Ireland. Radiocarbon dating of these fragments indicates the reefs are at least 4500 years old. Although only five of 229 hauls included substantial amounts of coral, Hall-Spencer says the extremely slow-growing coral can't recover from frequent trawling.

“An unwritten compact between the dead, the living and the unborn requires that we leave the unborn something more than…depleted natural resources.”

-- A Washington State Court decision

I urge you to safeguard these ecological treasures now and for future generations by establishing a strong and enduring plan that would serve as an example for similar protections in New England and around the country and the world, where scientists are discovering extensive, beautiful, and previously unknown deep-sea coral gardens.

“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value.”

-- Theodore Roosevelt

I support the implementation of both discrete and broad zones to effectively conserve deep-sea corals. Discrete protection zones around the canyons and slopes where corals have been found or are likely to occur must go beyond “freezing the footprint” of fishing and should eliminate the use of fishing gear that could damage corals, even if the gear has operated in these areas in the past.

“Sustainable development is...development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

-- World Commission on Environment and Development, Our Common Future, 1987

Specifically, please adopt Alternative 3B, designating all 15 canyon systems described in the Public Information Document as discrete coral protection zones. All bottom-tending commercial gear should be prohibited in the discrete zones (Alternative 4B). Because many areas of the deep Atlantic remain unexplored, a broad zone will prevent the expansion of bottom-tending commercial gear that could damage undocumented deep-sea corals. For this purpose, I support establishing a landward broad zone boundary no farther from shore than the 200-meter depth contour (Alternative 1B or 1C), which would encompass 99 percent or more of highly suitable deep-sea coral habitat. There is currently no ground fishing in waters more than 200 meters. Alternative 1B would not diminish currently fished areas and would in essence freeze current fishing zones with no add-ons. The far-away canyon waters over 200 meters have outcropping and are steeply inclined. These are areas not easily fished. Let’s give refuge to
the fish that dwell with deep sea corals and not disturb the ancient marine life that dwells in waters below 200 meters by choosing Alternative 1B.

Bottom-tending commercial gear should be prohibited from the broad zone, with limited exemptions for existing red crab and tilefish fisheries, as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternative 2B with Sub-alternatives 2B-1 and 2B-2). This restriction should include mid-water trawl gear, which has been documented to contact the sea floor. There should be no new exemptions beyond those in Amendment 16, as the risk of opening up these sensitive areas to new fisheries or gear types would undermine the document’s objectives. Safeguarding waters in this “broad zone”—200 meters and seaward—and in the canyons will provide the highest conservation benefit while allowing current fisheries access to the areas upon which they most rely.

“It is our task in our time and in our generation, to hand down undiminished to those who come after us, as was handed down to us by those who went before, the natural wealth and beauty which is ours.”

-- John F. Kennedy

Furthermore, new discoveries of coral communities in the broad zone should trigger expedient action to incorporate these communities into a discrete zone to enhance their protection (Alternative 5D). I also support the use of new technologies—such as vessel monitoring systems—aboard fishing vessels to help ensure the plan is effectively implemented on the water.

“Every man who appreciates the majesty and beauty of the wilderness and of wild life, should strike hands with the farsighted men who wish to preserve our material resources, in the effort to keep our forests and our game beasts, game-birds, and game-fish—indeed, all the living creatures of prairie and woodland and seashore—from wanton destruction. Above all, we should realize that the effort toward this end is essentially a democratic movement.”

-- Theodore Roosevelt

Thank you for prioritizing the protection of deep-sea coral communities in the Mid-Atlantic and for recognizing the importance of habitat to the future of fishing. We are only beginning to learn about these biological communities and their importance to other components of ocean ecosystems, as well as their values to humans. Please pass and implement the strongest possible management measures in Amendment 16 in order to better protect deep sea coral reefs.

“A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

-- Aldo Leopold

Thank you for your consideration of my comments. Please do NOT add my name to your mailing list. I will learn about future developments on this issue from other sources.

Sincerely,

Christopher Lish
Olema, CA
RE: COMMENTS ON DEEP SEA CORAL AMENDMENT

Dear Dr. Moore(Chris) and Kiley,

I would like to thank the Council for moving forward in an effort to protect “Deep Sea Corals.” Having said that, I need to express my concerns regarding the range of alternatives in this document. I feel many, if not most of the alternatives go well beyond the effort to protect “Deep Sea Corals”. In fact, those alternatives would eliminate fishing in the Mid-Atlantic region. All the stocks that managers and industry worked so hard to rebuild would be off limits to the commercial fishing industry. Is that the intent of the Council?

I have been an offshore fisherman since 1970. I lobstered offshore from 1970 - 1977 and then switched over to bottom longlining for Golden Tilefish from 1977 until 2007, when my son took over. In those years, 1970 - 2007, in my 37 years of fishing experience in the Mid-Atlantic region, fishing from 40 fathoms to 170 fathoms, 12 months of the year, I have never seen or come in contact with a piece of coral. While many consider this anecdotal information, my 37 years of fishing observations have been ground truthed by the findings presented by Dr. Martha Nizinski (NMFS National Systematics Laboratory) at the December 2014 Council meeting. Deep Sea Corals can be found in very deep water OUTSIDE of 500 meters.

5.1 BROAD CORAL ZONE DESIGNATION ALTERNATIVES

Alternative 1E: Landward boundary approximating 500 meter depth contour

5.2 RESTRICTIONS WITHIN BROAD CORAL ZONES

No comment at this time.

5.3 DISCRETE CORAL ZONE DESIGNATION ALTERNATIVES

Sub-Alternative 3B-1: Advisor-proposed boundaries for specific canyons

5.4 RESTRICTIONS WITHIN DISCRETE CORAL ZONES

Alternative 4C: Prohibit mobile bottom-tending gear

5.5 FRAMEWORK PROVISIONS TO ALLOW FUTURE MODIFICATIONS TO MANAGEMENT MEASURE

Alternative 5B, Alternative 5C, Alternative 5D and Alternative 5E

Thank you,

John Nolan (Owner)
Dr. Christopher M. Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

REF: COMMENTS ON DEEP SEA CORALS AMENDMENT AT PUBLIC HEARING RIVERHEAD, NY

Dr. Moore,

I would like to voice my concern at the potential direction your Council may take given the range of alternatives proposed in this document. The "Broad Zone Alternatives" (Alternatives 1 B-E and 2B-D) threaten the future of fishing, both commercial and recreational, in the Mid Atlantic region. These Alternatives also go outside the Objectives and Goals of the very Council that proposes them. The fast track pace at which Amendment is taking is counterproductive and is not in the best interest of all stakeholders.

There is little or no scientific or Industry generated data that would justify the potential closure of huge "Broad" swaths of ocean to fishing. Your counterparts at NEFMC have already rejected some portions of this broad approach and the USCG states that it feels it is "challenging" and "doubtful" from an enforcement standpoint.

As for the "precautionary" nature of this broad zone methodology to "protect corals from future fishing", your previous "Action to Protect unmanaged forage species" already goes a long way to protect corals, etc. in the future.

This Broad Zone approach would be a total disregard for the Strategic Goals and Objectives of this Council. I do not expect that you will turn a blind eye to the Science, Management and Governance you profess to follow by adopting any of the Broad Zone Alternatives mentioned above.

With respect to the development of the other Alternatives in the document, I cannot understand why the Council would present options using such out dated information. The majority of the coral observation data is at least 13 years old. In fact, some is from the 1800's. Also, a good portion was taken from anecdotal sources (unpublished) and museum artifacts. Coral locations that where plotted with Sextants and Loran A are not the "best available science". It borders on insulting to think that commercial fishing as we know it is being put at risk by the use of such unreliable data.

The economic data is also questionable. VTR data is only an estimate of the value of the fisheries at stake. To my knowledge, no attempt to gather accurate economic data from key players was made. It certainly appears that a large component of the Industry (shoreside operations and the associated
support industries) has been left out of the economic data. How is it possible that the Council would overlook, or avoid, developing the best available science on such a critical issue?

As a member of the Advisory Panel for MSB, I must also question why the AP has not been consulted in the evolution of this Amendment and the Alternatives it proposes. This group exists for exactly the purpose of assisting the Council in making educated and viable options for public discussion. The Council was sorely remiss in not enlisting the knowledge and experience of the AP in drafting this Amendment. The public must be made aware of this shortfall as well.

Both NOAA and Industry have provided information to support the existence of areas of a high degree of natural protection for corals. These include “habitat where little or no fishing effort takes place”. Extreme depths, severe slope of canyon walls and hard bottom already shelter much of the current or potential coral habitat. Existing historical and current fishing operations prove out the “footprint” that this amendment is so keen to “freeze”. It would be counterproductive to ignore the data and science available to this council in adopting future management strategies.

The Designation of Discrete Coral Zones has the strongest basis in fact for which this Council can develop fair and equitable protection for all user groups and the corals themselves. The Towcam Survey by R/V Henry Bigelow currently shows the basis for “modifying the alternatives as long as sufficient information exists”. Please note Table 25 (attached) and the presence, or lack thereof, of corals and sponges both deeper and shallower than 1050m (574 fathoms). The results show that the presence of corals and sponges shallower than 1050 meters is minimal where their existence deeper than 1050 meters becomes more problematic. Dr. Nizinski made a presentation in December 2014 to the Council that also showed very few coral inside at least 500m. This data supports the development of Discrete Coral Zones, with input from all stakeholders, at a depth contour of no less than 500m that would easily provide adequate protection for corals, sponges, existing fishing operations and the economies and communities that depend on them.

Critical data being used to develop this Amendment is outdated including information on coral encounters, economic analysis and fishing effort. The Industry has provided this Council, in an open and transparent manner, the information and the willingness to develop workable and effective solutions in this matter. Fishermen, fishing gear and modern technology promotes the avoidance of areas that corals prefer. The pace at which the Council is pursuing this Amendment must be revisited in order to develop a more effective Amendment. The Advisory Panel must be allowed to provide input critical to the development of a realistic and viable Alternative.

I am more than willing to work with this Council to develop, and FULLY SUPPORT A MORE DETAILED VERSION OF ALTERNATIVE 3-B-1 using a landward boundary of at least 500m and shelf/canyon wall slope of <30 degrees. This Alternative would maximize the protection of all stakeholders and the corals themselves.

Thank you for the opportunity to comment on this issue.

Kind regards,
Eric Reid, Operations Manager
Eric@SeafreezeLtd.com
in nominal depth.

Please note Towcam Dive #H1279A-04 has been omitted from this calculation due to the high variability.

No. of images with fish fauna: none reported

% images with Sponges: 83%
% images with Corals: 62%
% images with Bottom Vegetation: 0.92%

No. of images on bottom: 6787

**ANALYSIS OF TOTAL TOWS AT NOMINAL DEPTHS LESS THAN 1500 METERS (<574 Fathoms)**
Please note Towcam Dive # H07204A has been omitted from this calculation due to the high variability in nominal depth.

No. of images with fish fauna: none reported

No. of images with sponge: 1.23%

% images with sponges: 1.23%

No. of images with corals: 3.20%

% images with corals: 2.95%

No. of images on bottom: 10.92

ANALYSIS OF TOTAL TOWS AT NOMINAL DEPTH GREATER THAN 1050 METERS (>3440 ft.)

<table>
<thead>
<tr>
<th>Canyon</th>
<th>Date</th>
<th>Camden Location</th>
<th>Dive</th>
<th>No. of Images</th>
<th>No. of Images with sponge</th>
<th>No. of Images with corals</th>
<th>Recovery</th>
<th>Launch</th>
<th>Launch</th>
<th>Lawn</th>
<th>Lawn</th>
<th>No. of lawmakers</th>
<th>Lawmakers present</th>
</tr>
</thead>
<tbody>
<tr>
<td>H07194</td>
<td>03</td>
<td>Hood Canyon Mid</td>
<td>03</td>
<td>1105</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07201</td>
<td>01</td>
<td>Hood Canyon Mid</td>
<td>01</td>
<td>1148</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07202</td>
<td>02</td>
<td>Hood Canyon Mid</td>
<td>02</td>
<td>1169</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07203</td>
<td>03</td>
<td>Hood Canyon Mid</td>
<td>03</td>
<td>1188</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07204</td>
<td>04</td>
<td>Hood Canyon Mid</td>
<td>04</td>
<td>1209</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07205</td>
<td>05</td>
<td>Hood Canyon Mid</td>
<td>05</td>
<td>1230</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07206</td>
<td>06</td>
<td>Hood Canyon Mid</td>
<td>06</td>
<td>1251</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07207</td>
<td>07</td>
<td>Hood Canyon Mid</td>
<td>07</td>
<td>1272</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07208</td>
<td>08</td>
<td>Hood Canyon Mid</td>
<td>08</td>
<td>1293</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07209</td>
<td>09</td>
<td>Hood Canyon Mid</td>
<td>09</td>
<td>1314</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07210</td>
<td>10</td>
<td>Hood Canyon Mid</td>
<td>10</td>
<td>1335</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07211</td>
<td>11</td>
<td>Hood Canyon Mid</td>
<td>11</td>
<td>1356</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07212</td>
<td>12</td>
<td>Hood Canyon Mid</td>
<td>12</td>
<td>1377</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H07213</td>
<td>13</td>
<td>Hood Canyon Mid</td>
<td>13</td>
<td>1398</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Information was logged for each image throughout each dive. Each bottom image was visually screened for hard and soft corals, sponges and fish. fauna presence was noted for each image.
January 12, 2015

Chairman Rick Robins  
Council Members  
Mid-Atlantic Fishery Management Council  
800 N. State St., Suite 201  
Dover, DE 19901

RE: Deep Sea Corals Amendment Comments

I am writing to thank the Mid-Atlantic Fishery Management Council (Council) for considering taking strong steps to protect vulnerable deep-sea coral ecosystems here in the Mid-Atlantic. Just off the Mid-Atlantic Coast, the bottom of the ocean and deep-sea canyons are home to centuries-old corals, colorful sea anemones, and countless fish. But this rich array of life is facing a severe new threat - commercial bottom fishing.

Canyons are coral hotspots and provide important habitat for diverse concentrations of marine life, including sperm whales, tunas, and sharks.

- I urge the Council to protect the discrete coral zones in all fifteen canyons from all bottom fishing gears.
- I urge the Council to take action and restrict the use of all bottom-fishing gear by establishing a broad coral zone below 200 meters.

Protecting both the discrete and broad coral zones is critical because once these fragile and ecologically important coral communities are disturbed it can take centuries for them to recover.

- Finally, I urge the Council to require the use of electronic vessel monitoring systems aboard fishing vessels to ensure the plan is effectively implemented on the water.

We are only beginning to learn about these amazing deep-sea ecosystems and their importance to the healthy functioning of our ocean, as well as their values to humans. These deep canyons at the bottom of the ocean are teeming with creatures like glowing lantern fish, burrowing tilefish, colorful anemones, and deep-sea corals hundreds of years old.

Until now, fishermen were not able to access these deep-sea canyons off the Mid-Atlantic coast with their destructive gear, but recent advances in technology could soon make these formerly untouched waters vulnerable.

In the process known as bottom trawling, commercial fishing boats drag heavy nets along the ocean floor, ripping apart corals and other marine life as they go. And other deep-sea fishing techniques are just as harmful.

Fishing gear such as bottom trawl nets can remove in minutes what took nature centuries to build, leaving barren, scarred mud and rock where rich gardens of corals, sponges, and anemones once thrived. When that happens, the marine wildlife that depend on coral communities are left vulnerable as well. We cannot afford to lose such great biodiversity at the bottom of the ocean.

Now, the Council has the opportunity to become a global leader in the protection of deep sea corals by passing and implementing the strongest possible management measures.

Thank you for your help on behalf of healthy oceans and marine life by regulating destructive practices.

Yours truly,  
J. Capozzelli, New York
Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201  
Dover, DE 19901

January 13, 2015

Re: Deep Sea Corals Amendment

Dear Chairman Robins and Council Members,

I am pleased to see the Mid-Atlantic Fishery Management Council acting proactively to protect vulnerable and poorly understood deep-sea coral ecosystems, and thank you for the opportunity to provide my comments.

Please designate all waters from the proposed 200-meter depth contour to the edge of the U.S. Exclusive Economic Zone and each of the defined canyons as off-limits to all destructive bottom fishing gears. This restriction should include mid-water trawl gear, which has been documented to contact the sea floor. Additionally, I ask that you ensure that no new exemptions are permitted beyond those detailed in Amendment 16. I support the use of new technologies, such as vessel monitoring systems, to help ensure the plan's effective implementation on the water.

Thank you for your consideration. With utmost conviction and sincerity.

Linn D. Barrett

4305 29th Street Road
Greeley, CO  80634
The Council received a total of 22 copies of the letter below (see supplemental briefing materials).

Seafreeze Ltd.
100 Davisville Pier
North Kingstown, R.I. 02852 U.S.A.
Tel: (401) 295-2585 Telex: 325114
FAX: (401) 295-5625

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore,

I am writing to express my deep concern about the possible implementation of the current Deep Sea Corals Amendment. We at Seafreeze Ltd. are entering our 29th year of participation in the Mid Atlantic Illex squid fishery with our vessels the F/V Relentless, F/V Persistence and F/V Prevail. We as a company have pioneered this fishery, developed it markets, and helped successfully manage healthy stock levels. Illex squid represents a large portion of our landings, and therefore revenue.

My job depends on the future successful management of this fishery and its fishing grounds. This Amendment proposes closing huge areas of our historic and current Illex fishing grounds, with little or no industry input, threatening irreversible loss to the Illex fishery. Much of the area that the Amendment proposes for closure is proved by the document itself to contain miniscule or no coral presence. Therefore, devastating economic impact is paired with little or no conservation value. The Council cannot disregard these facts.

A more equitable and practical approach to addressing these issues would be to allow industry professionals to help the Council develop Discrete Coral Zones that both protect known deep water corals while allowing the Illex fishery to continue to operate effectively. I support delaying the scheduled February Final Action until after an Advisory Panel meeting and the incorporation of necessary industry data. I support the NC Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A at this time. In the future, I would support a modified Sub-Alternative 3B-1 developed closely with industry members.

Sincerely,

Benjamin Tozer
F/V Persistence
Relentless
The Council received 2 separate copies of the letter below (both signatures included below).

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore,

I am an employee of Seafreeze Shoreside in Point Judith, RI. At Seafreeze Shoreside we service our own as well as other privately owned vessels by purchasing, selling and freezing Illex squid, Loligo squid, butterfish, mackerel, and monkfish, among others. All of these species are caught in deep water Coral Zones proposed by the Council’s Deep Sea Corals Amendment. Restricting or closing these Zones to mobile bottom tending gear will potentially eliminate the fisheries, businesses and jobs that depend on these fishing grounds.

According to the information found in the Amendment, as well as that in Dr. Nizinski’s own presentation, there is no substantial deep sea coral presence in any depth shallower than 500 meters, and in actual fact shallower than 1050 meters. Yet the Amendment proposes to close areas as shoal as 200 meters. This is not supported in any way by scientific fact. The research also shows that deep sea corals prefer to live in gradients of greater than 30 degrees, in deepwater canyons. Mobile bottom tending gear cannot be used on these steep slopes, ensuring coral protection from gear by virtue of habitat.

However, missing from the Amendment is analysis of accurate fishing ground “habitat”. Human habitat must be given equal consideration as coral habitat. The VTR data contained in the Amendment analysis is incomplete and inaccurate, as can be proven by the detailed tow information logged over time by fishing vessel operators. Yet industry has not been given adequate opportunity to collaborate with the Council in developing Coral Zones that both protect our livelihoods and historic fishing grounds as well as the corals.

I therefore support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A, as well as a delay in Final Action, at this time. In the future I would be willing to support Sub-alternative 3B-1 after extensive industry collaboration and revision, as well as an Advisory Panel meeting.

Sincerely,

_________________________

[Signature]

Sincerely,

_________________________

[Signature]
The Council received a total of 9 copies of the letter below (see supplemental briefing materials).

January 13, 2015

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore,

I am writing as an industry member who stands to be greatly affected by the adoption of the Council's Deep Sea Coral Amendment, but has been completely ignored in the process of its development. I work for Seafreeze Ltd., in North Kingstown, RI. We own and operate the fishing vessels F/V Relentless, F/V Persistence and F/V Prevail. As a company, a large portion of our income is generated by the Illex squid fishery, which operates largely in the areas which the Deep Sea Corals Amendment seeks to close to mobile gear fishing.

My job, alongside many others, has not been considered in the economic analysis put forward in this document. We, the stakeholders in this fishery, have not once been invited to the table to discuss possible economic impacts on our jobs and our future. The economic impact data included in the document is outdated, imprecise and incomplete, despite the fact that accurate industry records and data exist. This Amendment puts my job at stake, and to do so without including any consideration of or opportunity for cooperative industry development is insupportable.

I support delaying the scheduled Council Action in February until there has been an Advisory Panel meeting where industry input and information have been taken into account. I support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. As a secondary choice, I support an industry modified Sub-alternative 3A-1, following an Advisory Panel meeting.

Sincerely,

[Signatures]

[Names]

[Names]
The Council received a total of 8 copies of the letter below (see supplemental briefing materials).

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

January 13, 2015

Dr. Moore,

I am writing as an affected party under the Mid Atlantic Deep Sea Corals Amendment. I work for Seafreeze, the Nation’s number one producer of Illex squid. Our vessels, the F/V Relentless, F/V Persistence and F/V Prevail not only employ crew to catch and process Illex on board, but they also employ numerous individuals shoreside to handle, sell and distribute the catch. In its present state, this Amendment threatens the very existence of a future Illex fishery. Almost every Alternative contained in this document would prevent Illex vessels from operating in the entirety of our fishing grounds, either now and/or in the future. Despite the Amendment’s claim that “some degree of revenue loss is expected to be offset by effort shifts to non-restricted areas”, this is impossible when the restricted areas would encompass virtually the whole fishery.

This Amendment is purportedly designed to protect deep sea corals, yet the proposed coral zones and the coral distribution/abundance data do not coincide. NOAA’s DSCRTP records are outdated, ranging anywhere from 1874 to the 1960s to early 2000s. It is not reasonable to expect that coral presence is the same today as it was hundreds or even tens of years ago, considering ever changing ecological ocean conditions. The current data from the 2012-2013 Tow Cam surveys show less than 1% coral presence in areas shallower than 1050 meters, yet the proposed Coral Zones range anywhere from 200-500 meters. There is no reason for this Council to close productive fishing grounds to protect non-existent corals.

I cannot support any Council action that would be economically detrimental to the Illex fishery, and therefore myself, if there is not sufficient justification for so doing. I believe industry data, both economic and fishery related, need to be incorporated into this Amendment, since we have the most at stake. I support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. As a secondary choice, I support an industry modified Sub-alternative 3B-1, but only after an Advisory Panel meeting and extensive industry input can be obtained. Therefore, I also support delaying Final Action until this can be accomplished.

Sincerely,

[Handwritten signatures]
Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

January 13, 2015

Re: Deep Sea Corals Amendment

Dr. Moore,

I am writing as an affected party under the Mid Atlantic Deep Sea Corals Amendment. I work for Seafreeze Shoreside. Seafreeze Shoreside is one of the East Coast’s foremost facilities for handling Illex squid, Loligo squid, mackerel, butterfish, and other species fished in areas addressed by the Amendment. We service not only Seafreeze vessels but also many other privately owned vessels. Seafreeze Shoreside employs numerous individuals to handle, sell and distribute the catch. We also provide employment to maintenance personnel, office personnel, and help keep others in the fishing industry employed by providing a place for them to unload their catch.

In its present state, this Amendment threatens all of the aforementioned fisheries. Almost every Alternative contained in this document would prevent vessels from operating in the entirety of their fishing grounds, either now and/or in the future. Despite the Amendment’s claim that “some degree of revenue loss is expected to be offset by effort shifts to non-restricted areas”, this is impossible when the restricted areas would encompass virtually all viable fishing areas.

This Amendment is purportedly designed to protect deep sea corals, yet the proposed coral zones and the coral distribution/abundance data do not coincide. NOAA’s DSCRTP records are outdated, ranging anywhere from 1874 to the 1960s to early 2000s. It is not reasonable to expect that coral presence is the same today as it was hundreds or even tens of years ago, considering ever changing ecological ocean conditions. The current data from the 2012-2013 Tow Cam surveys show less than 1% coral presence in areas shallower than 1050 meters, yet the proposed Coral Zones range anywhere from 200-500 meters. There is no reason for this Council to close productive fishing grounds to protect non-existent corals.

I believe industry data, both economic and fishery related, need to be incorporated into this Amendment, since we have the most at stake. I support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. As a secondary choice, I support an industry modified Sub-alternative 3B-1, but only after an Advisory Panel meeting and extensive industry input can be obtained. Therefore, I also support delaying Final Action until this can be accomplished.

Sincerely,

Thomas E. McVey
To whom it may concern at the Mid-Atlantic Fisheries Management Council,

I am writing this letter on behalf of myself, the general public, and many of the concerned staff members, whom I have worked with at Old Dominion University in Norfolk, Virginia as a graduate student. Over my past years of study as a geographer/writer, I have become increasingly interested/concerned about the current state of our world’s one ocean.

With the United Nations Food and Agriculture Organization insisting that two thirds of all the world’s commercial fisheries have collapsed since the 1950s, and that all rates are further accelerating, **NOW** is the time to take aggressive action to conserve marine life and underwater habitat (the way the 1976 Magnuson-Stevens Act originally called for, in addition to further amendments). This will ensure the long-term health and sustainability of fish stocks and the habitat that they are dependent on for survival, as well as the survival of the commercial fishing industry, and most importantly, the public interest in these marine resources.

With that being said the internet map that I have selected and inserted below (from Google Images) addresses concern for the deep sea corals that are found in and around the canyons along the Mid-Atlantic region (and beyond), which you are partly in charge of managing. This also brings me to the proposed Amendment 16.

With strong backing, I please, please, please urge you to take the most aggressive approaches to ensure that these deep sea corals are protected and conserved for current and future generations of humans and marine life alike.  

(Continued =>)
We are now only beginning to understand how significantly important it is to protect these corals, and yet, scientists are still discovering new species and uses for all species. Not protecting these corals before their ever-growing potential is fully understood would be human ignorance, driven by nothing more than short term profits.

It would also be equal to biting the hand that feeds, as they provide habitat and food for many significantly important forms of marine life, including those that are commercially / publically valuable. With deep sea coral communities providing a safe-haven for young forms of marine life to grow, leaving them unprotected and vulnerable to the destructive realities of fishing gear, which drags, scraps, or hits the bottom, would show that we, as a human species have learned nothing from our past mistakes.

If two words could be used to sum up a dark chapter in human history, they would be Atlantic Cod (and many more species too). Though severely overfished before the establishment of the Regional Fishery Management Councils, and not under the management of the MAFMC, the over-exploitation of cod, clearly shows how bottom trawlers can unsustainably exhaust a fishery to the point of collapse, thus leaving nothing in the wake of their nets, but a destroyed bottom habitat that is absent of life.

To repeat these actions by destroying ancient / centuries old coral is disturbing. More disturbing though are internet videos (by NOAA & others) that already capture the destruction of coral communities from trawl gear.

Amongst the many books, academic journal articles, and documentaries that I have read / watched, most suggest that that many of the 8 Regional Fishery Management Councils in the U.S. have fallen victim to private interests. To say the least, I know for a fact that many people would change their opinions significantly if Amendment 16 was put into force.

But this Amendment would only work if destructive fishing gear (that impacts the ocean bottom) were to be banned from all of the canyons where deep sea corals are found, what NOAA calls discrete protection zones. Vessels should also have electronic monitoring systems that should be inspected and ON at all times when fishing. Also, as corals are not only found in canyons, those found outside should be protected too. In order to do so, many scientists suggest that seafloors of 656.17 feet (200 meters) and deeper would be acceptable.

I am currently working on a book that focuses on fisheries. I would like to be able to add in a chapter or section that applauds the MAFMC for strictly taking these conservation measures to promote the long-term health and sustainability of our public / common resources. Please make the right choices. I know you are all capable of doing so.

Thank you for your time and concern about public opinion!  

(From: Ronnie Gannon)
January 16, 2015

Dr. Christopher M. Moore, Executive Director
Kiley Dancy, Fishery Management Specialist
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201,
Dover, Delaware 19901

RE: Deep Sea Corals Amendment Comments.

Dear Dr. Moore and Ms. Dancy:

On behalf of the Great Egg Harbor Watershed Association, and as an active member of the MAFMC Ecosystem Advisory Panel, I offer you the following comments regarding the Deep Sea Corals Amendment to the MSB FMP.

In summary, we support the following management options:

Alternative 1B: Landward boundary approximating 200 meter depth contour
Alternative 2B: Prohibit all bottom-tending gear
Alternative 3B: Designation of Discrete Coral Zones
Alternative 4B: Prohibit all bottom-tending gear
Alternative 5B: Option to modify coral zone boundaries via framework action
Alternative 5C: Option to modify management measures within zones via framework action
Alternative 5D: Option to add additional discrete coral zones via framework action
Alternative 5E: Option to implement special access program via framework action
Alternative 6B: Vessel Monitoring Systems (VMS) requirement for Illex squid moratorium vessels

In recognition of the potential serious adverse impacts to both the deep sea ocean ecosystem and the MSB commercial fishing industry economics from these amendment to protect deep sea corals, we offer the following detailed comments summarizing our rational for our alternative recommendations:

Comment: Recently guided by the Forage Fish White Paper and Ecosystem Approaches to Fisheries Management, the MAFMC took action to “freeze the footprint” for the opening of any new fisheries for unfished forage fish. It was also recognized that the MSB FMP is an existing fishery that has historically taken forage fish without all of the adverse impacts to the ecosystem being known or considered.

Recognizing that there are known and unknown adverse impacts to the ecosystem from the MSB fishery, it is a prudent action to employ the largest designation of Broad Deep Sea Coral Zones to “freeze the footprint” of adverse impacts to the ocean ecosystem. Therefore we recommend the following option:

**Alternative 1B: Landward boundary approximating 200 meter depth contour**

Under this alternative, a broad coral zone would be designated with the landward boundary approximating the 200 meter (~69 fathom) depth contour and extending out to the northern and southern boundaries of the MAFMC management region, and to the edge of the EEZ.

**Comment:** To actually implement the “freeze the footprint” of the MSB in the Broad Deep Sea Coral Zones to the greatest extent practical, we recommend the following option:

**Alternative 2B: Prohibit all bottom-tending gear**

Under this alternative, vessels would be prohibited from using any bottom-tending gear within designated broad coral zones. "Bottom-tending gear" includes any mobile bottom-tending gear (as defined in Alternative 2C below), as well as any stationary or passive gear types that contact the bottom, including bottom longlines, pots and traps, and sink or anchored gill nets.

**Comment:** Given that there was no “look before you leap” considerations given to adverse ecosystem impacts for the startup and investment of the MSB fishery, and that new science and research has now identified a serious potential for adverse ecosystem impacts to deep sea corals and their habitats, we recommend the following option to maximize ecosystem protection:

**Alternative 3B: Designation of Discrete Coral Zones**

Under this alternative, specific submarine canyons and slope areas would be designated as discrete coral zones based on observed coral presence or highly likely coral presence indicated by modeled suitable habitat. Proposed discrete zones are listed in Table 1 as sub-options to this alternative (see also: Figure 3). The Council could select any combination of these specific areas to designate as discrete coral zones.

**Comment:** Once Discrete Coral Zones are established in accord with Alternative 3B, we recommend the following option to maximize their protection:

**Alternative 4B: Prohibit all bottom-tending gear**

Under this alternative, vessels would be prohibited from using any bottom-tending gear within the designated discrete coral zones. This prohibition could include any or all of the discrete coral zones listed in Table 1. "Bottom-tending gear" includes any mobile bottom-tending gear (as defined in Alternative 4C below), as well as any stationary or passive gear types that contact the bottom, including bottom longlines, pots and traps, and sink or anchored gill nets.

**Comment:** Given that additional research is planned or ongoing and many data products will not be available within the planned timeline for this amendment, we agree that modifying the framework provisions of the FMP would allow the Council to modify deep sea coral zones or management measures in response to new information or issues arising after implementation of the amendment. Therefore we support and recommend the following options:
Alternative 5B: Option to modify coral zone boundaries via framework action
This alternative would give the Council the option to modify the boundaries of deep sea coral zones through a framework action.

Alternative 5C: Option to modify management measures within zones via framework action
This alternative would give the Council the option to modify fishing restrictions, exemptions, and other management measures within deep sea coral zones through a framework action.

Alternative 5D: Option to add additional discrete coral zones via framework action
This alternative would allow the Council to add discrete coral zones through a framework action.

Alternative 5E: Option to implement special access program via framework action
This alternative would give the Council the option to design and implement a special access program for commercial fishery operations in deep sea coral zones through a framework action.

Comment: VMS should be required to monitor all commercial fishing activity, so we recommend the adoption of the following alternative:

Alternative 6B: Vessel Monitoring Systems (VMS) requirement for *Illex* squid moratorium vessels
This option would require use of VMS for all *Illex* squid moratorium vessels (regardless of whether fishing activity is occurring within or outside of any potential deep sea coral zones).

As always, we appreciate the opportunity to comment, and we appreciate your continued work to protect the public’s ocean ecosystems and manage for sustainable fisheries.

Very Best Regards,

Fred Akers
January 20, 2015

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Comments for Deep Sea Corals Amendment

Dear Dr. Moore,

We at Ocean State Oil supply considerable amounts of oil to commercial fishing vessels in Rhode Island. This market represents a significant percentage of our annual income. Any Council action preventing these vessels from fishing hurts our business.

The Deep Sea Corals Amendment as written threatens to put the vessels we supply out of business. We cannot support this. We are confident that the Council can work with industry to produce an Alternative that works for everyone. We request that the Council delay Final Action and allow the Advisory Panel and industry members the chance to develop Sub-Alternative 3B-1. If this cannot be done, we can only support No Action Alternatives.

Regards,

Joseph Petrarca
General Manager
Ocean State Oil
123 Ocean State Dr.
North Kingstown, RI 02852
Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dear Dr. Moore,

We at Pray Trucking Inc. transport the catch of Rhode Island vessels catching Illex Squid, Loligo Squid, Mackerel, Butterfish and Herring. Although we do not work directly on fishing vessels, we supply the support services necessary to distribute their catch. Any action that threatens their continuing fishing operations also directly affects us.

The Deep Sea Corals Amendment proposes closures of the most productive areas of deepwater fishing activity. If this occurs, we will have no product to transport. Therefore, we support No Action Alternatives 1A, 2A, 3A, 4A, 5A, and 6A. If the Council is willing to collaborate with industry to produce a workable Sub-Alternative 3B-1, we will support that in the future.

Sincerely,

Ronald Reed
Pray Trucking Inc.
The Council received a total of 9 copies of the letter below (see supplemental briefing materials).

Dr. Christopher Moore, Executive Director  
Mid Atlantic Fisheries Management Council  
800 North State St. Suite 201  
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore,

My name is [Wayne P. Suggs] and I work for [Sacol Inc.]. I transport the catch of Rhode Island vessels catching Illex Squid, Loligo Squid, Mackerel, Butterfish and Herring. Although I do not work directly on fishing vessels, my job depends on these fisheries. I cannot support any Council action that threatens their sustainability or economic viability.

The Deep Sea Corals Amendment proposes closures of the most productive areas of deepwater fishing activity. If this occurs, I will have no product to transport. Therefore, I support No Action Alternatives 1A, 2A, 3A, 4A, 5A, and 6A. If the Council is willing to collaborate with industry to produce a workable Sub-Alternative 3B-1, I will support that in the future.

Sincerely,

[Signature]
January 22, 2015

Christopher M. Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

Dear Councilors,

We urge the Mid-Atlantic Fishery Management Council to protect deep sea corals and to practice responsible ocean stewardship by approving Alternative 1B to protect corals at and below 200 meters.

I recently attended the Mid-Atlantic Fisheries Management Council’s presentation by Dr Nizinski on deep sea corals. In the canyons of the mid-Atlantic region they surveyed for corals below 500 meters. Deep-water corals live in total darkness. Absent light, these corals lack the symbiotic algae that produce nutrients to feed shallow water coral. Instead, deep water corals feed themselves by capturing passing food. In the mid-Atlantic region corals were found to favor steep slopes of 30% or more and outcropping peaks – two habitats not conducive for fishing.

Deep sea coral communities are called biodiversity hotspots. They are considered essential habitats for commercially valuable fish stocks. Yet, only redfish were frequently seen with specific deep sea corals. It was, therefore, big news to learn from Dr. Nizinski that deep sea corals were observed with skate and hake. That these two relatively abundant commercially valuable fish were seen with corals below 500 feet gives hope for the importance of deep sea coral communities for less numerous ground fish populations.

We urge the Mid-Atlantic Fishery Management Council to adopt Alternative 1B – “a broad coral zone would be designated with the landward boundary approximating the 200 meter depth contour. . . .” We believe the most essential fish habitats with corals are the shallower slope waters. That fewer corals are found in waters shallower than 500 feet does not mean that the habitat is not suitable for corals. It may instead be indicative of more trawler and dredging.
disturbances. Below 200 meters is up on the continental shelf where most of the fishing occurs and slow growing corals have little chance of survival.

For example, across the Atlantic Ocean, Science AAAS reports marine biologist Jason Hall-Spencer of the University of Glasgow, United Kingdom, and two colleagues found large chunks of coral in the catch hauled up by two French vessels fishing off West Ireland. Radiocarbon dating of these fragments indicates the reefs are at least 4500 years old. Although only five of 229 hauls included substantial amounts of coral, Hall-Spencer says the extremely slow-growing coral can't recover from frequent trawling.

There is currently no ground fishing in waters more than 200 meters. Alternative 1B would not diminish currently fished areas and would in essence freeze current fishing zones with no add-ons. The far-away canyon waters over 200 meters have outcropping and are steeply inclined. These are areas not easily fished. Let’s give refuge to the fish that dwell with deep sea corals and not disturb the ancient marine life that dwells in waters below 200 meters by choosing Alternative 1B.

Thank you for considerations of our interests and concerns.

Sincerely,

[Signature]

Rob Moir, Ph.D., Director

... and 4,350 individuals with comments
January 25, 2015

Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

RE: Deep Sea Corals Amendment Comments

Dear Dr. Moore:

The Rhode Island Department of Environmental Management wishes to submit comments on the Deep Sea Corals Amendment (hereafter Amendment) currently out for public review. Before outlining the substantive remarks on the Amendment specifically, I wanted to take a moment to express the concern I have over not having had a hearing on this very important amendment in our state, nor was the state even aware of this plan until very recently. The resources impacted by this Amendment may have a very significant impact on the state of RI and its squid and monkfish fisheries, a fact which is even highlighted in your Amendment document in figures 25 – 30. We hope to rectify this situation in the future, and my staff will be reaching out to MAFMC staff to make sure our lines of communication are stronger as we progress in to the future.

At this point, the state of RI (hereafter the State) supports the option noted as sub-alternative 3B-1 in the Amendment document. We support this option for a number of reasons. The State agrees that deep sea corals need special protection as a unique and important habitat, and we believe the goal of the Amendment is a good and important step towards protecting this habitat. We support this option as it appears to be the only alternative to directly incorporate industry input into its development, which the State believes is a critical component to the plan development. The industry members that we have discussed the topic with also support the protection of deep sea corals, but felt that many of the options outlined in the Amendment far exceeded the areas needing closed area status. Given these comments and our review of the information in the Amendment document, we believe that sub-alternative 3B-1 will protect the areas with known high coral abundances based on the most up to date information without severe impacts to the industry prosecuting their fisheries in these offshore areas. As noted on page 44 of the document, the three areas contained in sub-alternative 3B-1 are “the areas of highest coral
observations”, and this is also indicated in table 24, therefore we believe this alternative will provide very good protection to deep sea corals as the science is further developed.

The State is not opposed to further protections in the future as newer information is incorporated into the habitat suitability models, but updating these models with newer information is critical. Position technology has advanced dramatically in the recent past and the advent of drop camera surveys will dramatically improve our understanding of the known areas where corals thrive, thereby allowing us to focus our protections, and not do unneeded damage to our important fishing industries. We support the adoption of sub-alternative 3B-1 with an eye towards continued research and monitoring of deep sea coral habitat, and as new data and modeling procedures are developed, the boundaries of the closed areas could be re-evaluated with future actions.

One additional note to consider as a research recommendation, the effects of ocean acidification should also be considered in the habitat suitability models. Factors like this may confound any efforts we seek to make to protect these organisms, therefore this should be an additional parameter considered in the habitat suitability models. We note that many environmental parameters are already captured and are included in the model, but for deep sea corals, seawater pH is another critical covariate that should be included in the models in the future. This parameter was not noted in the Amendment document as a field of data considered in the current model configuration.

While we support sub-alternative 3B-1, we also hope that before the final boundaries are drawn, the industry, through your existing Advisory Panel, would be consulted so that the lines will not only be meaningful for habitat protection, but also for manageability of fishing operations and clarity for enforcement purposes.

If you have any questions, please feel free to call me at 401.222.4700 x 2409 or at janet.coit@dem.ri.gov or Robert Ballou at 401.222.4700 x 4420 or robert.ballou@dem.ri.gov.

Thank you.

Sincerely,

[Signature]

Janet Coit
Director
January 26, 2015

Dr. Christopher M. Moore, Executive Director  
Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201  
Dover, Delaware 19901  
c/o email: kdancy@mafmc.org

Re: Deep Sea Corals Amendment Comments

On behalf of the Center for Biological Diversity, I am writing to support the Deep Sea Corals Amendment to the Mackerel, Squid, and Butterfish Fishery Management Plan.

Cold water corals are rich and diverse and provide important habitat for fish and other marine life. These corals grow slowly and are very long lived, thus susceptible to natural damage and human activities, with little potential for recovery. Scientists find that any damage occurring now may take many hundreds, if not thousands, of years to recover.

Deep sea corals in the Atlantic are imperiled by fishing that can result in habitat destruction and bycatch. Protecting deep sea corals from damaging bottom gear is an important step in sustainable management of fisheries and the Atlantic marine ecosystem.

I am writing to urge the Council to prohibit all bottom-contact fishing gear in all of the canyon areas (Alternative 4B) that have been identified as “discrete protection zones.” Furthermore, the Council should include a buffer zone protecting seafloors 200 meters and deeper (“broad zone” Alternative 1B). Finally, fishing vessels should be required to use electronic vessel monitoring to enforce the deep sea coral protections.

Thank you for the opportunity to comment on this amendment.

Sincerely,

/s/ Miyoko Sakashita  
Miyoko Sakashita  
Oceans Director
January 27th, 2015

Richard Robins  
Mid-Atlantic Fishery Management Council  
800 North State Street  
Suite 201  
Dover, Delaware 19901

Dear Mr. Robins,

I am writing on behalf of the Town Dock to comment on the proposed Deep Sea Corals Amendment.

Regarding the broad coral zone alternatives, I support Alternative 1A: No Action/Status Quo. As a seafood dealer that owns vessels that fish for monkfish in the 100-250 fathom range, I cannot support any broad zone closures. Our vessels have been pushed into fishing in these depths from the Lobster GRA set in the 70-150 fathom range. Preventing us from fishing in these depths would prevent us from harvesting monkfish. Due to the loss of the summer flounder RSA program our company has heavily invested in RSA monkfish days to make up for that monetary loss. The closure would render those days useless to us and would effectively result in a huge financial loss. One of our vessels also holds an Illex permit. Closing these areas to Illex fishing would be another financial loss that the Town Dock would have to bear.

According to Dr. Nizinski’s research aboard NOAA’s research ship *Okeanos Explorer*, most of the coral they discovered were in depths of over 500 meters. The research showed that not many corals were being found within the 200-300 meter range at all. Until more studies have been done in these areas, I cannot support any other of the broad zone alternatives.

Regarding the discrete coral zone alternatives, I support Sub-Alternative 3B-1. If discrete zone are going to be formed the fishing industry should be part of the panel that proposes the boundaries for these zones. Buffer zones for the fisherman should be built in as they may be setting or hauling in gear near these boundaries. Having the butter zones would prevent unintended violations.

I greatly appreciate the opportunity to provide a comment regarding this proposed Amendment.

Sincerely,

Katie Almeida  
Fishery Policy Analyst

CC  
Ryan Clark  
VP of the Town Dock
January 28, 2015

Mid-Atlantic Fisheries Management Council

Comments for the record – Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan

Please enter the following comments into the record:

It seems that NGO hype is more important than science when dealing with deep sea corals. Even though there is no scientific basis for a 200 meter and deeper ban on trawling.

Your own information says that most if not all deep sea coral is deeper than 500 meters and most likely much deeper. Also it grows on steep slopes that can’t be trawled on. Then NOAA wants to exempt everyone except trawlers. You require lobstermen to use sinking groundline to avoid whales, and then assume that the gear doesn’t move, no one remembers the perfect storm when lobster gear moved extreme distances snagging everything in its path. NO one is saying that recreational and party/charter boats can’t drop their anchors on the steep slopes that contain corals or anchor to lobster gear and drag the pots through coral.

Anyone that knows anything about trawling knows that if you tow across sharp objects you only do it once, your net comes back in shreds it is not something you repeat with nets costing 15 to 50 thousand dollars. The webbing in these nets is 1/16 to ¼ inch in diameter and highly susceptible to damage unlike the ¾ inch groundline of lobster and red crab gear.

I am 100 percent Opposed to broad zones. I am in favor of all alternatives that keep things status quo. Industry created discrete zones being second choice.

Most Coral encounters presented by the service are obsolete and unverified at best. In fact most of the sightings were in the 1990 and 1970’s. We don’t even know how this data was collected. And if this data is used, a strong argument can and will be made to make any discrete areas outside 600 meters...the best available data says the coral is very deep. Let’s use it. Deep sea coral is already protected by hard bottom, steep slopes and extremely deep water.

I can’t help but wonder why this is being pushed forward so hard is it because of oil and gas exploration that is being pushed. 2 articles U.S. Seen Limiting Oil Drilling in Arctic, May Open Atlantic

BY BLOOMBERG ON JANUARY 26, 2015 and U.S. Proposes Opening Atlantic in 5-year Oil, Gas Drilling Plan BY REUTERS ON JANUARY 27, 2015.

There was little outcry from the major NGOs over the Deep Water Horizon accident and even Jane Lubchenco played the severity of the damage down trying to blame fishermen for the damage. How much deep sea coral was smothered by oil in that spill or killed by the dispersants.

It seems this is an NGO plan that needs a win that punishes fishermen after their failed attacks on butterfish and menhaden.

Thank you,

Mark S Phillips
January 27, 2015

Dr. Christopher Moore, Executive Director
Mid Atlantic Fisheries Management Council
800 North State St. Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment

Dr. Moore:

I am writing on behalf of Seafreeze Ltd., to raise concerns that we have with the Council's recently released Public Information Document of the Deep Sea Corals Amendment. We at Seafreeze Ltd. are entering our 29th year of participation in the Mid Atlantic Illex squid, Loligo squid, Butterfish and Mackerel fisheries with our vessels the F/V Relentless, F/V Persistence and F/V Prevail. We are the largest producers of Illex, Butterfish, and Mackerel on the East Coast. We are also the third largest producer of Loligo. We as a company have pioneered these fisheries, developed their markets and helped successfully manage healthy stock levels. The Deep Sea Coral Amendment to the Atlantic Mackerel, Squid and Butterfish FMP threatens to exclude us from the very fisheries we have worked almost thirty years to establish. The majority of Amendment options will permanently close the entire Illex fishery and significant portions of the Loligo, Butterfish and Mackerel fisheries.

We have had difficulty reconciling the document’s proposed action with both the Magnuson Stevens Act (MSA) and the Mid Atlantic Council’s 2014-2018 Strategic Plan. This is especially troubling considering the potential economic and fishery impacts this Amendment will have.

1. The Council’s Public Information Document Does Not Meet the Requirements of MSA Section 303(b).

A. Under Section 303(b) of the MSA, this Deep Sea Corals Amendment is a “discretionary provision”. It is not mandatory, and it has no required timeframe in which to be completed. Therefore, the Council has no legal obligation to move this Amendment through quickly. Yet it appears that by scheduling a Final Action in February, only a month after the Public Information Document has been released, the process of adoption is being fast tracked. This is a problem due to lack of industry participation in developing workable Alternatives, and
the fact that a second Advisory Panel meeting was promised to provide such participation but was never held. Lack of substantive Advisory Panel contribution would appear to be a procedural error on behalf of the Council.

B. Section 303(b)(2)(B) of the MSA reads that discretionary provisions may “designate such zones in areas where deep sea corals are identified...to protect deep sea corals from physical damage from fishing gear or to prevent such loss or damage to such fishing gear from interactions with deep sea corals, after considering long-term sustainable uses of fishery resources in such areas” (italics mine). Most of the Council’s Broad and Discrete Coral Zone Alternatives would permanently shut down the fishing grounds of the East Coast Illex squid fishery, as well as a good portion of the deepwater Loligo, Butterfish, Whiting and Monkfish fisheries, leaving little or no long-term uses of fishery resources in these areas. Areas considered necessary for operation of traditional and current fisheries can easily be identified by industry professionals. However, industry and Advisory Panel members were never solicited by the Council to help determine how prospective Coral Zone Alternatives would impact the “uses of fishery resources in such areas”. Accurate consideration cannot take place without this information.

C. MSA Section 303(b)(2)(B) is clear that designation of coral zones is to only take place in areas “where deep sea corals are identified” (italics mine). This means that if reliable data proving the identification of corals in an area is unavailable, the area cannot be closed as a Coral Zone. This also prohibits a predictive coral habitat model from being used as sole justification for the closure of an area. However, a good portion of the Coral Zones, i.e. 200-400 meter options, have been developed exactly in this manner. We submit that the Council needs to rethink its basis for any Alternatives inside 500 meters.

D. Section 303(b)(2)(C) states that “with respect to any close of an area under this Act that prohibits all fishing, ensure that such closure- (i) is based on the best scientific information available; (ii) includes criteria to assess the conservation benefit of the closed area; (iii) establishes a timetable for review of the closed area’s performance that is consistent with the purposes of the closed area; and (iv) is based on an assessment of the benefits and impacts of the closure...including the benefits and impacts of limiting access to users of the area, overall fishing activity, fishery science, and marine conservation.” It does not appear that the current Amendment meets any of these provisions.

   (i) “Best scientific information available”: Outdated records comprised of magazine articles and museum pieces collected long before the advent of GPS cannot be included in “the best science available” when detailed information collected from recent ROV and Tow Cam surveys exists. This is especially true considering NOAA’s recent focus on warming ocean temperatures and climate change. Temperature and climate change have affected coral habitats since the 1870s and 1960s, rendering any coral presence data collected from such periods as inconclusive in today’s changing oceans.
The Public Hearing Document’s Table 25, which details almost 19,000 recent images of the ocean bottom in question, together with Dr. Nizinski’s December 2014 presentation on deep sea corals, does not support the creation of any Coral Zones in areas shallower than 500 meters due to lack of coral presence. In fact, Table 25 does not support the creation of any Coral Zones inside 1000 meters due to lack of coral presence. Yet, the majority of Coral Zone Alternative options are comprised of areas inside 500 meters. We would then ask the Council how these Alternatives can claim to be based on the “best science available”.

(ii) “Criteria to assess the conservation benefit of the closed area”:

(a) The Public Hearing Document does not contain any such criteria. When most of the Coral Zone lack coral, how do they offer any conservation benefit to coral? What criteria have been used to assess conservation benefit in areas where no coral have been observed or identified? What criteria have been used to compare the conservation benefits of closure to non-closure?

(b) The document repeatedly advocates for the protection of coral from the impacts of fishing gear. It focuses primarily on prohibiting all mobile bottom tending gear because “mobile gears are believed to have the greatest negative impact on corals” (p.4). Closing productive fishing areas vital to mobile bottom tending gear vessels must be based on more than “belief”. Have there been studies to prove that mobile bottom tending gear has any greater impact on corals than other bottom tending gear?

(c) Supporting science indicates that deep sea corals prefer habitats of steep slope, i.e. greater than 30 degrees, overhangs, and outcroppings—areas where mobile bottom tending gear cannot be deployed. This would indicate that coral habitat itself is a conservation measure and prevents damage from mobile bottom tending gear. This requires review.

(iii) There is no “timetable for review of the closed area’s performance” presented as part of the Amendment.

(iv) “Assessment of the benefits and impacts of the closure...including the benefits and impacts of limiting access to the users of the area, overall fishing activity, fishery science, and fishery and marine conservation”: This indicates a weighted assessment of coral protection benefits vs. fishery impacts, particularly impacts on current users of the areas in question. The document does not contain this assessment.

No balance can be found between users of the area and conservation of corals until all options shoaler than 500 meters are removed. Until that depth, no interaction even occurs. At depths of 500 meters or more, a weighted assessment can only take place once industry members are a part of the process, because only accurate industry generated data can identify user impact.
We request that a cost analysis per vessel, per fishery, be completed. A weighted economic assessment cannot detail fishery impacts until the Council, and indeed the public, is aware of a cost analysis per vessel, per fishery. The Public Information Document contains only vague VTR vs. overall fishery revenue analysis. This is not sufficient information. Stakeholders, Council members, and the commenting public need to know the average cost per year to a vessel, i.e. loss of income per fishery, that the various Alternatives would generate, so as to accurately assess the “impacts of the closure”.

We do not need to remind the Council that until MSA standards and mandates are satisfied, this Amendment cannot go to Final Action.


   A. “Communication”: Commits to “engage, inform, and educate stakeholders to promote public awareness and encourage constructive participation in the Council process”; “[i]ncrease stakeholder trust and facilitate greater stakeholder engagement by making the Council process accessible and transparent”; and to “[i]ncrease stakeholder involvement in the development of fishery management actions.” Industry has been willing to work with the Council by providing accurate economic and operational information, and has offered to help develop workable Alternatives, but has been denied that opportunity. With the exception of an underdeveloped Sub-Alternative 3B-1, not one Alternative includes any direct stakeholder input.

   B. “Science”: Commits to ensuring “that the Council’s management decisions are based on timely and accurate scientific data that are analyzed and modeled in a manner that improves management performance and build[s] stakeholder confidence”. See above concerns concerning “best science available”. The Council has assured industry that it will “[s]upport the collection of relevant economic and social data to produce analyses that meets current and future Council needs” and “[e]ncourage effective stakeholder participation in data collection and analysis”. The Council has failed to solicit stakeholders for any economic or social data to meet assessment needs for this Amendment.

   C. “Management: Commits to “[d]evelop fishery management strategies that provide for productive, sustainable fisheries”, and “[d]evelop management strategies that enable efficient operation of commercial...fishing businesses.” Yet almost every Coral Zone Alternative will permanently close several deepwater fisheries, including the entire Atlantic Illex fishery.

   D. “Governance”: “Ensure[s] that the Council’s governance structures and practices fairly represent stakeholder interests”, and “that stakeholder interests are accurately understood and meaningfully considered in the Council process”. Why then has the Council denied the Advisory Panel a second opportunity to convene, and why have stakeholders have been denied opportunity for any meaningful input until this late in the Amendment process?
We respectfully request why the Council would adopt a Strategic Plan to which it does not intend to adhere.

2. Nowhere does the Public Information Document give GPS coordinates for any of the Coral Zone Alternatives. We are being asked to comment on completely undefined closures. As the Council is aware, depth contours are unenforceable. Any Broad or Discrete Coral Zones must be defined by straight lines that are comprised of GPS coordinates. Until these lines are drawn and provided for every Alternative, this document is not only incomplete but entirely spurious. As an industry which lives or dies based on detailed GPS coordinates, we are not even sure what exactly is being proposed. Does the Council plan to decide these monumental details after Final Action? We submit that for the Council to do so would be arbitrary and unauthorized. Therefore, Final Action must be delayed until this work can be completed.

We conclusively request that Final Action be delayed until Coral Zones have been accurately defined, MSA requirements met, industry participation and data incorporated, and an Advisory Panel meeting convened. Until that time, we support No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. Subsequently, we would support an industry refined version of Sub-alternative 3B-1, including no less than a 500 meter landward boundary and a greater than 30 degree slope.

Respectfully,

Meghan Lapp, Fisheries Liaison, Seafreeze Ltd.
Meghan@SeafreezeLtd.com
January 28, 2015

Richard Robins, Chairman
Mid-Atlantic Fishery Management Council
Suite 201, 800 North State St.
Dover, DE 19901

RE: DEEP SEA CORALS AMENDMENT COMMENTS

Dear Chairman Robins and Members of the Mid-Atlantic Council,

Wild Oceans works to advance ecosystem-based fisheries management, recognizing that the future of fishing depends on our ability to maintain resilient ecosystems, especially in light of the imminent threats posed by climate change.¹ The completion of the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid and Butterfish Fishery Management Plan will be a milestone for advancing ecosystem approaches to fisheries management in the Greater Atlantic Region. As a stakeholder organization in the mid-Atlantic, we are pleased to have played a role in the development of the Deep Sea Corals Amendment and to provide recommendations to the Mid-Atlantic Council for the selection of final alternatives. Measures that we strongly support include:

- **Designation of all 15 canyon and slope systems listed in the Public Information Document² as discrete coral protection zones (Alternative 3B).** All bottom-tending gear should be prohibited from operating within the discrete zones with no exemptions (Alternative 4B).

- **A broad coral protection zone that is no farther from shore than the 300 meter depth contour boundary (Alternative 1B or 1C.)** All bottom-tending gear should be prohibited (Alternative 2B) with limited exemptions for red crab and golden tilefish fishery (Sub-alternatives 2B-1 and 2B-2) *as long as these fisheries do not increase their effort or expand their footprint in the zone.*

- **The required use of Vessel Monitoring Systems (VMS) as a condition for allowing vessels to operate within the broad zone (Alternative 2D).** For VMS to be effective in monitoring activity within the broad zone, the Council should extend the requirement to carry VMS to its *Illex* moratorium fleet (Alternative 6B).

- **Framework provisions that would enable the Council to take expedient action to modify zone boundaries or create new discrete zones in response to newly discovered deep sea coral communities that are in need of protection (Alternatives 5B and 5D).**


² See Table 1 on p. 20 of the Deep Sea Corals Amendment Public Information Document.
Rationale supporting our preferred alternatives and additional recommendations (underlined for emphasis) follow.

I. Designate all 15 canyon and slope systems listed in the Public Information Document\(^3\) as discrete coral protection zones (Alternative 3B).

The discrete zone alternatives, drawn tightly around the canyon and slope systems, indicate areas where corals occur or are very likely to occur based on a habitat suitability model that has been validated through direct observation.\(^4\) Because of the difficulties and costs associated with deep water exploration, habitat modeling is a necessary tool for targeting discrete areas that warrant heightened conservation, and the Greater Atlantic Region is fortunate that a robust model has been developed to inform management measures.

Biological diversity is a major factor in maintaining ecosystem resilience.\(^5\) Therefore, the ecology of the biological communities in each canyon and slope system must be taken into account when developing management strategies to protect these vulnerable habitats in perpetuity. To date, each research cruise to the Atlantic’s canyons and slopes has revealed unique biological communities in many of the sites visited, with some coral species like the reef-building *Lophelia pertusa* reported in the mid-Atlantic region for the first time.\(^6\) Summarizing the 2013 NOAA Okeanos Explorer expedition to 12 submarine canyons in the Atlantic, NOAA reports, “Submarine canyons investigated were diverse and dramatic environments, with no two canyons appearing to be exactly alike in geology or biology.”\(^7\)

Because researchers are only just beginning to understand the species composition and ecology of deep water communities in the Atlantic, the canyon and slope systems in the Mid-Atlantic Council’s area of jurisdiction must be protected as a whole (Alternative 3B). Given the state of the current science, the Council must avoid making an uninformed decision to prioritize the protection of some systems over others.

II. A broad coral protection zone should be established that is no farther from shore than the 300 meter depth contour boundary (Alternative 1B or 1C).

Combining discrete protection zones and a broad zone offers the strongest protection for deep sea corals and is consistent with the 2010 NOAA Strategic Plan for Deep Sea Coral and Sponge Ecosystems.\(^8\) NOAA’s strategic plan outlines conservation and management objectives to protect corals where they are known to occur and to apply a precautionary approach to areas that are inadequately surveyed.

---

3 See Table 1 on p. 20 of the Deep Sea Corals Amendment Public Information Document.
4 Images from the 2014 Towed Camera Study and also from the 2012 WHOI TowCam expedition have been used to verify the outputs of the habitat suitability model. Deep Sea Corals Amendment Public Information Document, pp. 50 & 54.
5 Gjerde, K. M. (2006). Ecosystems and biodiversity in deep waters and high seas (No. 178). UNEP/Earthprint; “...loss of diversity can make oceanic ecosystems more vulnerable and less resilient to climate change and other environmental shifts caused by disease, alien invasive species and the cascading effects of overexploitation.”
6 Brooke, S., and Ross, S.W. In press. First observations of the cold-water coral *Lophelia pertusa* in mid-Atlantic canyons of the USA. Deep-Sea Res. II.
The broad zone alternatives constitute the precautionary approach, with the primary objective being to prevent the expansion of bottom-tending gears into inadequately surveyed areas that may be home to deep water coral communities. It is important to note that the broad zone alternatives encompass a significant area of modeled “likely” or “highly likely” deep water coral habitat that is between canyon systems and would not be protected by the discrete zones.\(^9\)

Broad zones and discrete zones should function together as a unified system to be effective. A fragmented network of discrete zones alone would not only exclude valuable habitat and a number of documented coral locations,\(^10\) it would allow the operation and even expansion of destructive bottom-tending gears up to the edge of the discrete zones, weakening protections if the discrete zones are not adequately buffered to address issues with gear haul back and deployment. Geographic fragmentation of coral protection zones could also disrupt the biological connectivity among the canyon and slope systems.

A broad zone landward boundary at the 200 meter depth contour (Alternative 1B) would envelop nearly all the area of the discrete zones and would protect nearly 100% of highly suitable coral habitat.\(^11\) Even this most conservative option excludes 27% of known coral locations, including a disproportionate amount of stony corals and sea pens,\(^12\) which are more often encountered at shallower depths. Another important consideration is that the habitat suitability model produced outputs for Gorgonian and Alcyonacean habitat, so the discrete zone boundaries may well indeed exclude shallower habitat that is highly suitable for stony corals and sea pens.

Goals for the alternatives must also be considered. Broad zones “would limit and prevent expansion of commercial gear use where little or no fishing has historically occurred,” whereas discrete zones “would mainly reduce or eliminate current fishing activities rather than just prevent their expansion.”\(^13\) The Council is challenged to define areas of “little to no fishing” while striking an appropriate balance between conservation and economics. A broad zone landward boundary at the 300 meter depth contour (Alternative 1C) \textit{combined with the designation of all 15 discrete zones} (Alternative 3B) would entail less economic impact while still protecting 99% of highly suitable coral habitat.\(^14\)

Recent expeditions to the canyons have documented a number of impressive coral colonies between 300 and 400 meters in depth. For example, in Wilmington Canyon, researchers found a high abundance, high diversity and high density of corals in depths of 370-520 meters.\(^15\) However, it is important to emphasize that in order to make the best use of limited exploration resources, ROVs and cameras are not typically deployed in shallow areas within the canyons (shallower than 300 meters) so that the cameras can climb through a wide range of depths to


\(^10\) See Table 22 (p. 45) in the Deep Sea Corals Amendment Public Information Document.


\(^12\) A broad zone established at the 200 meter depth contour would exclude 10% of known soft coral and gorgonian locations from protection compared to 38% of stony corals and 27% of sea pens. (See Table 21 on p. 45 of the Deep Sea Corals Amendment Public Information Document.)

\(^13\) Deep Sea Corals Amendment Public Information Document, p.15.

\(^14\) Fishing patterns revealed by examining 14 years of observer records (2000-2013) indicate that 6% of observed bottom trawl hauls in the mid-Atlantic region intersect the 300 meter broad zone compared with 14% of observed hauls intersecting the 200 meter broad zone. See the Deep Sea Corals Amendment Public Information Document, pp. 68 & 78.

record information.\textsuperscript{16} The 300 meter broad zone alone, without discrete zones, would exclude shallower depths at the heads of the canyons which may very well support deep sea coral communities.

III. Bottom-tending gear should be prohibited from both discrete and broad zones, with limited broad zone exemptions for red crab and golden tilefish fisheries as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternatives 4B and 2B with Sub-Alternatives 2B-1 and 2B-2).

While bottom trawling is recognized as the greatest threat to deep sea corals, non-mobile bottom gears can and have damaged corals.\textsuperscript{17} Describing threats to corals, NOAA’s Coral Reef Conservation Program web site explains, “Although not as destructive as bottom trawls and dredges, other types of fishing gear can also have detrimental effects on deep-sea corals. Bottom-set gillnets, bottom-set longlines, pots and traps all impact the seafloor.”\textsuperscript{18} Since discrete zones are designed to protect corals by reducing or eliminating current fishing activities rather than just preventing their expansion, all bottom tending gears should be prohibited from these areas (Alternative 4B).

However, with its narrow focus on the regulatory definitions of “bottom-tending gear” and “mobile bottom-tending gear,” the Deep Sea Corals Amendment alternatives and analyses neglect the potential for mid-water trawls to make contact with the bottom and irreparably damage corals. While the Council purports to be striving for consistency among the New England Council and the South Atlantic Council through the signed Memorandum of Understanding,\textsuperscript{19} there is no discussion of the action taken by the South Atlantic Council to prohibit mid-water trawls from operating in its deep water Coral Habitat Areas of Particular Concern (CHAPCs). The South Atlantic Council’s Comprehensive Ecosystem-Based Amendment 1 for the South Atlantic Region (p. 4-3) provides the following rationale for their action:

\begin{quote}
Mid-water trawls fished with weights in the footrope and chaffing gear in the cod end of the trawls will remove or significantly damage coral and live bottom habitat (Auster and Langton 1999; P. Auster 2009 pers. comm.) Mid-water trawls have been documented to impact benthic habitat (NRC 2002) and are more effective when fished very close to, or even lightly touching, the bottom (Clark et al 2006).
\end{quote}

Alternatives 2B and 4B should be amended to include mid-water trawls in the list of prohibited gears in both the discrete and broad coral protection zones.

The broad zones are intended to protect corals by “freezing the footprint” of fishing. The limited access red crab pot fishery, consisting of only a handful of permitted vessels, is heavily


\textsuperscript{17} Heifetz J, Stone RP, Shotwell SK. (2009). Damage and disturbance to coral and sponge habitat of the Aleutian Archipelago. MEPS 397:295-303.

\textsuperscript{18} http://coralreef.noaa.gov/deepseacorals/threats/

\textsuperscript{19} Memorandum of Understanding Regarding the Management of Deep Sea Corals. Section E encourages Council coordination on deep sea corals issues: “The Councils will seek continuity among coral-related management measures in all three Council regions, especially where there are fisheries that overlap between regions. This may include: Consideration of similar management alternatives in fishery management plans for adjacent regions.”
dependent on fishing within the proposed broad zones, and it is reasonable and consistent with the amendment objectives to allow an exemption for this fishery.

While the golden tilefish fishery is not as dependent on the broad zones for fishing grounds, an estimated 9.3% and 16.5% of trips take place in the 300 meter broad zone and 200 meter broad zone, respectively. The golden tilefish bottom longline fishery currently operates under an Individual Fishing Quota (IFQ) program, with 13 IFQ permits issued after the program was implemented in 2010. Historically, the directed fishery has consisted of a small number of participants.

For both the red crab and tilefish fisheries, the Council should constrain fishing effort in the broad zone to recent levels, establishing a threshold that would trigger action to reduce fishing effort if needed to “freeze the footprint” until areas are investigated for the presence of deep sea corals.

Lobster pots are one of the primary gear types reported with the proposed coral protection zones. Because the lobster fishery is not a federally-managed fishery, alternatives and analyses to reduce the impact of this fishery on deep sea corals are not provided. To ensure that the operation of the lobster fishery does not negate efforts of the Mid-Atlantic Council to protect deep sea corals, the Council should formally request the Atlantic States Marine Fisheries Commission to take complementary action by prohibiting the lobster fishery from operating in the discrete zones and by freezing the fishery’s footprint within the broad zone.

**IV. Require the use of Vessel Monitoring Systems (VMS) as a condition for allowing vessels to operate within the broad zone (Alternative 2D).** For VMS to be effective in monitoring activity within the broad zone, the Council should extend the requirement to carry VMS to its Illex moratorium fleet (Alternative 6B).

Vessel Monitoring Systems (VMS) facilitate the compliance, monitoring and enforcement of area-based management measures and would greatly enhance the effectiveness of coral protection zones. Neither the red crab nor tilefish fishery currently use VMS but should be required to do so as a condition for exemption. To adequately monitor fishing activity near the protection zones, Illex vessels, which operate along the shelf edge, must also use VMS. Amendment 14 to the Atlantic Mackerel, Squid and Butterfish FMP instituted a VMS requirement for mackerel and longfin squid vessels. Because many Illex vessels also fish for mackerel or longfin squid, they already carry VMS, and economic impacts to the fishery would be low.

**V. Framework provisions should enable the Council to take expedient action to modify zone boundaries or create new discrete zones in response to newly discovered deep sea coral communities that are in need of protection (Alternatives 5B and 5D).**

---

20 “These vessels focus effort along the center of a narrow range of depth (from approximately 550 to 750 meters.” Deep Sea Corals Amendment Public Information Document p. 18.

21 See Table 34 in the Deep Sea Corals Amendment Public Information Document, p. 77.


25 MAFMC. (2014). Amendment 14 to the Atlantic mackerel, squid and butterfish fishery management plan and final environmental impact statement.
The Deep Sea Corals Amendment needs to establish an adaptive process that responds efficiently to new information. As new areas of the deep are explored, the discovery of coral communities outside of discrete zones should trigger action to either create a new discrete zone (Alternative 5D) or to modify an existing discrete zone boundary (Alternative 5B), so these corals are afforded the strongest level of protection. Given the wealth of information that has emerged in just the last two years and the many new coral observations that have not yet been recorded in the Deep Sea Coral Research and Technology Program (Program) database, the Council should plan for periodic updates from the Program, and should establish criteria that would trigger a framework adjustment to incorporate new findings into management measures.

While we are not opposed to either Alternative 5C (Option to modify management measures within zones via framework action) or to Alternative 5E (Option to implement special access program via framework action), we caution that these options could potentially weaken coral conservation. We suggest that the Council clarify that framework adjustments must enhance the purpose of the amendment, “to identify and implement measures that reduce, to the extent practicable, impacts of fishing gear on deep sea corals in the Mid-Atlantic region.” Framework adjustments should not be used to relax regulations necessary for the protection of corals. In addition, standards for a limited access program should be created prior to the creation of such a program, and these standards should be used to evaluate a program’s merit and potential costs and benefits before proceeding with a framework action.

Deep sea coral communities are biodiversity hotspots, attracting a wide variety of fish and invertebrates seeking nursery, refuge and feeding habitat. Although the science of deep water corals remains in its infancy, scientists widely recognize their great potential for advancing our knowledge in the fields of climate change, fisheries ecology and medicine, potential that will not be realized unless we take action now to protect these fragile habitats for the future. Recognizing the importance and vulnerability of deep sea coral habitat, the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 authorizes the regional councils to designate protection zones to limit or prohibit fishing in order to protect corals from physical damage. As the first council to draw on this authority, the Mid-Atlantic Council is breaking new ground in fisheries management while moving toward its vision of “healthy and productive marine ecosystems supporting thriving, sustainable marine fisheries that provide the greatest overall benefit to stakeholders.”

Sincerely,

Pam Lyons Gromen
Executive Director

Dear Chair Robins and council members:

I am encouraged that the Mid-Atlantic Fishery Management Council is taking proactive steps to protect vulnerable and poorly understood deep-sea coral ecosystems. Such protections would be in line with the objectives of the National Oceanic and Atmospheric Administration’s Strategic Plan for Deep-Sea Coral and Sponge Ecosystems and with the council’s recent efforts to advance ecosystem-based fisheries management.

Specifically, I urge the council to designate all waters from the proposed 200-meter depth contour to the edge of the U.S. Exclusive Economic Zone and each of the defined canyons as off-limits to all destructive bottom fishing gears. This restriction should include mid-water trawl gear, which has been documented to contact the sea floor. Safeguarding waters from this “broad zone”—200 meters and seaward—and the canyons will provide the highest conservation benefit while allowing current fisheries access to the areas that they most rely upon. No new exemptions should be permitted beyond those detailed in Amendment 16, as the risk of opening up these sensitive areas to new fisheries or gear types would undermine the document’s objectives. Furthermore, I support the use of new technologies, such as vessel monitoring systems, to help ensure the plan’s effective implementation on the water.

I urge you to safeguard these ecological treasures now and for future generations by establishing a strong and enduring plan that would serve as an example for similar protections in New England and around the country and the world, where scientists are discovering extensive, beautiful, and previously unknown deep-sea coral gardens.

We are only beginning to learn about these biological communities and their importance to other components of ocean ecosystems, as well as their values to humans. Please pass and implement the strongest possible management measures in Amendment 16.

Thank you for your consideration.

Sincerely,

(See list of signatories and their personal comments – if applicable – below)
Mid-Atlantic Fishery Management Council

Dear Chair Robins and council members:

I am encouraged that the Mid-Atlantic Fishery Management Council is taking proactive steps to protect vulnerable and poorly understood deep-sea coral ecosystems. Such protections would be in line with the objectives of the National Oceanic and Atmospheric Administration’s Strategic Plan for Deep-Sea Coral and Sponge Ecosystems and with the council’s recent efforts to advance ecosystem-based fisheries management.

Specifically, I urge the council to designate all waters from the proposed 200-meter depth contour to the edge of the U.S. Exclusive Economic Zone and each of the defined canyons as off-limits to all destructive bottom fishing gears. This restriction should include mid-water trawl gear, which has been documented to contact the sea floor. Safeguarding waters from this "broad zone"—200 meters and seaward—and the canyons will provide the highest conservation benefit while allowing current fisheries access to the areas that they most rely upon. No new exemptions should be permitted beyond those detailed in Amendment 16, as the risk of opening up these sensitive areas to new fisheries or gear types would undermine the document’s objectives. Furthermore, I support the use of new technologies, such as vessel monitoring systems, to help ensure the plan’s effective implementation on the water.

I urge you to safeguard these ecological treasures now and for future generations by establishing a strong and enduring plan that would serve as an example for similar protections in New England and around the country and the world, where scientists are discovering extensive, beautiful, and previously unknown deep-sea coral gardens.

We are only beginning to learn about these biological communities and their importance to other components of ocean ecosystems, as well as their values to humans. Please pass and implement the strongest possible management measures in Amendment 16.

Thank you for your consideration.

Mitch Merry
113 Southview Ave
Charles City, IA 50616

646-770-1072
Mid-Atlantic Fishery Management Council
MAFMC

Dear Chairman Robins and Council Members:

I am encouraged that the Mid-Atlantic Fishery Management Council is taking proactive steps to protect vulnerable and poorly understood deep-sea coral ecosystems. The Council has an opportunity to prevent the expansion of fishing into areas that remain largely pristine. Such protections would be in line with the objectives of the National Oceanic and Atmospheric Administration’s Strategic Plan for Deep-Sea Coral and Sponge Ecosystems, and with the Council’s recent efforts to advance ecosystem-based fisheries management.

Specifically, I urge the Council to designate the proposed 200-meter broad zone and each of the defined canyons as off-limits to all destructive bottom fishing gears. This should include mid-water trawl gear, which has been documented to contact the sea floor. Safeguarding the 200-meter broad zone and canyons will provide the highest conservation benefit while allowing current fisheries access to the areas that they most rely upon. There should be no new exemptions beyond those in the document, as the risk of opening up these sensitive areas to new fisheries or gear types would undermine the objectives of Amendment 16. Furthermore, I support the use of new technologies, such as vessel monitoring systems, aboard fishing vessels to help ensure the plan is effectively implemented on the water.

I urge you to safeguard these ecological treasures now and for future generations by establishing a strong and enduring plan to serve as an example for similar protections in New England and around the U.S. and world, where scientists are discovering extensive, beautiful, and previously unknown deep-sea coral gardens.

We are only beginning to learn about these biological communities and their importance to other components of ocean ecosystems, as well as their values to humans. Please pass and implement the strongest possible management measures in Amendment 16.

Thank you for your consideration.

Sincerely,

Devon Brown
465 8th Ave
Salt Lake City, UT 84103
Dear Chairman Robins and Members of the Mid-Atlantic Fishery Management Council,

Please find below the petition comment text to the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan (FMP). A total of 5,076 Oceana supporters signed this petition, endorsing this comment on the Amendment. These signatures are attached to the accompanying email in the file Oceana-Signers_MAFMC_protect-deep-seal-corals.csv.

On their behalf I would like to submit the below comment for your consideration.

Petition comment text:

Dear Chairman Robins and Members of the Mid-Atlantic Fishery Management Council,

I wish to commend the Mid-Atlantic Fishery Management Council for being the first of the federal councils to use the authority granted under the Magnuson-Stevens Act to protect valuable and fragile deep-sea coral communities from the impacts of fishing.

I support the implementation of both discrete and broad zones to effectively conserve deep-sea corals. Discrete protection zones around the canyons and slopes where corals have been found or are likely to occur must go beyond “freezing the footprint” of fishing and should eliminate the use of fishing gears that could damage corals, even if the gear has operated in these areas in the past.

Please adopt Alternative 3B, designating all 15 canyon systems described in the Public Information Document as discrete coral protection zones. All bottom-tending commercial gears should be prohibited in the discrete zones (Alternative 4B). Because many areas of the deep Atlantic remain unexplored, a broad zone will prevent the expansion of bottom-tending commercial gears that could damage undocumented deep-sea corals. For this purpose, I support establishing a landward broad zone boundary no farther from shore than the 300-meter depth contour (Alternative 1B or 1C), which would encompass 99 percent or more of highly suitable deep sea coral habitat. Bottom-tending commercial gears should be prohibited from the broad zone with limited exemptions for existing red crab and tilefish fisheries, as long as these fisheries do not increase their effort or expand their footprint within the zone (Alternative 2B with Sub-alternatives 2B-1 and 2B-2). New discoveries of coral communities in the broad zone should trigger expedient action to incorporate these communities into a discrete zone to enhance their protection (Alternative 5D).

Thank you for prioritizing the protection of deep-sea coral communities in the Mid-Atlantic and for recognizing the importance of habitat to the future of fishing.

Thank you for this opportunity to comment on the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan (FMP).

Alex Gray
Digital Campaigner
Oceana
January 28, 2015

Dr. Christopher M. Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

Appended below are the names of 52,309 individuals who have submitted public comments urging the Mid-Atlantic Fishery Management Council to protect vulnerable deep-sea coral ecosystems. In addition to signing on in support of the following letter, 3,415 individuals of the total number have submitted personalized comments. The personalized comments start on page 2 and end on page 188.

Deep Sea Corals Amendment Comments

Dear Dr. Christopher Moore and staff,

I am encouraged that the Mid-Atlantic Fishery Management Council is taking proactive steps to protect vulnerable and poorly understood deep-sea coral ecosystems. The Council has an opportunity now to "freeze the footprint" of bottom fishing, which would prevent the expansion of fishing into areas that remain largely pristine. Such protections would be in line with the objectives of the National Oceanic and Atmospheric Administration’s Strategic Plan for Deep-Sea Coral and Sponge Ecosystems, and with the Council’s recent efforts to advance ecosystem-based fisheries management.

Specifically, I urge the Council to designate all waters from the proposed 200-meter depth contour to the edge of the U.S. Exclusive Economic Zone and each of the defined canyons as off-limits to all destructive bottom-fishing gears. This should include mid-water trawl gear, which has been documented to contact the sea floor. Safeguarding waters in this "broad zone"—200 meters and seaward—and in the canyons will provide the highest conservation benefit while allowing current fisheries access to the areas they most rely upon. There should be no new exemptions beyond those in the document, as the risk of opening up these sensitive areas to new fisheries or gear types would undermine the objectives of Amendment 16. Furthermore, I support the use of new technologies, such as vessel monitoring systems, aboard fishing vessels to help ensure the plan is effectively implemented on the water.

I urge you to safeguard these ecological treasures now and for future generations by establishing a strong and enduring plan to serve as an example for similar protections in New England and around the United States and the world, where scientists are discovering extensive, beautiful, previously unknown deep-sea coral gardens.

We are only beginning to learn about these biological communities and their importance to other components of ocean ecosystems, as well as their values to humans. Please pass and implement the strongest possible management measures in Amendment 16.

Thank you for your consideration,

The Undersigned
Subject: Please protect ancient corals from destructive deep-sea fishing

Dear Chairman Robins and Council Members:

I am pleased that the Mid-Atlantic Fishery Management Council (Council) is considering taking strong steps to protect vulnerable deep-sea coral ecosystems here in the Mid-Atlantic. I urge you to protect the discrete coral zones in all fifteen canyons from all bottom fishing gears. Canyons are coral hotspots and provide important habitat for diverse concentrations of marine life, including sperm whales, tunas, and sharks.

In addition, I also urge the Council to take action and restrict the use of all bottom fishing gear by establishing a broad coral zone below 200 meters. Protecting both the discrete and broad coral zones is critical because once these fragile and ecologically important coral communities are disturbed it can take centuries for them to recover. Finally, I urge you to require the use of electronic vessel monitoring systems aboard fishing vessels to ensure the plan is effectively implemented on the water.

We are only beginning to learn about these amazing deep-sea ecosystems and their importance to the healthy functioning of our ocean, as well as their values to humans. The Council now has the opportunity to become a global leader in the protection of deep-sea corals by passing and implementing the strongest possible management measures...

Thank you for your consideration.
Wildlife Conservation Society petition - The Council received a total of 772 signatures, collected at the New York Aquarium and Central Park Zoo (see supplemental briefing materials for all signatures).

<table>
<thead>
<tr>
<th>NAME (print)</th>
<th>ADDRESS (street, city, state, zip code)</th>
<th>EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assel</td>
<td>306 West 91st St. NY 10024</td>
<td><a href="mailto:am3926@vanderbilt.edu">am3926@vanderbilt.edu</a></td>
</tr>
<tr>
<td>Simon Matlin</td>
<td>73-40 14th Ave. 6th Floor 10302</td>
<td><a href="mailto:james.matlin@alum.com">james.matlin@alum.com</a></td>
</tr>
<tr>
<td>Diego Canabady</td>
<td>111 E. 61st St. 711, 10021</td>
<td><a href="mailto:diaoq@sunreal.com">diaoq@sunreal.com</a></td>
</tr>
<tr>
<td>Samuel Cabribos</td>
<td>3730 7th Street 77205</td>
<td><a href="mailto:sperezc@centro.com">sperezc@centro.com</a></td>
</tr>
<tr>
<td>Marco Kusters</td>
<td>250 West 57th Street 10019</td>
<td><a href="mailto:marco.kusters@gmail.com">marco.kusters@gmail.com</a></td>
</tr>
<tr>
<td>Maria Ramos</td>
<td>255 N. 25th Ave. 11220</td>
<td><a href="mailto:maria.ramos@gmail.com">maria.ramos@gmail.com</a></td>
</tr>
<tr>
<td>Solomon Scorah</td>
<td>37 West 26th Street 10010</td>
<td><a href="mailto:solomon.scorah@gmail.com">solomon.scorah@gmail.com</a></td>
</tr>
<tr>
<td>Kevin Schulze</td>
<td>1205 Arbor AVE. W. 27726</td>
<td><a href="mailto:kschulze@live.uncc.edu">kschulze@live.uncc.edu</a></td>
</tr>
<tr>
<td>Lur Andrews</td>
<td>5712 W. 9th St. 10001</td>
<td>Germany</td>
</tr>
<tr>
<td>Christ Russo</td>
<td>512 W. 9th St. 85018</td>
<td><a href="mailto:christi@hodmail.com">christi@hodmail.com</a></td>
</tr>
<tr>
<td>Ana Elena Reyes</td>
<td>641 Brook St. 85015</td>
<td><a href="mailto:incioreyes@icloud.com">incioreyes@icloud.com</a></td>
</tr>
<tr>
<td>Carla Thornley</td>
<td>1000 South 100th St. 75015</td>
<td><a href="mailto:carlaenzo@live.com.co">carlaenzo@live.com.co</a></td>
</tr>
<tr>
<td>Lydia Malouf</td>
<td>65 W. 88th Street 10024</td>
<td><a href="mailto:nico@lydiomalouf.com">nico@lydiomalouf.com</a></td>
</tr>
<tr>
<td>Daniel Mullins</td>
<td>333 Longwood Dr. 343 75012</td>
<td><a href="mailto:pmullins739@gmail.com">pmullins739@gmail.com</a></td>
</tr>
<tr>
<td>Logan Snow</td>
<td>925 Redstone Dr. 75017</td>
<td><a href="mailto:logan.snow19@gmail.com">logan.snow19@gmail.com</a></td>
</tr>
</tbody>
</table>
Wildlife Conservation Society drawings - The Council received a total of 117 drawings and messages from children visiting the New York Aquarium and Central Park Zoo (see supplemental briefing materials for all drawings).

DEAR CHAIRMAN ROBINS AND COUNCIL MEMBERS,

I just visited the Central Park Zoo and learned about the beautiful deep sea corals we have in our ocean backyard. Please do everything you can to protect these animals and the places where they live in the Mid-Atlantic.

TELL US WHY YOU CARE ABOUT CORALS: I care because they are beautiful and protect fish.

DRAW A CORAL OR YOUR FAVORITE OCEAN ANIMAL HERE:

NAME: Xolani Bonnet

CITY: NYC  STATE: NY
January 28, 2015

Dr. Christopher M. Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street
Suite 201
Dover, Delaware 19901

Submitted electronically

Re: Deep Sea Corals Amendment Comments

Dear Dr. Moore,

Roughly 80 miles offshore of our most populous coastline, where the continental shelf drops off to the pitch-black abyss of the deep Atlantic Ocean, vivid and fragile cold-water corals – some the size of small trees and taking centuries to grow – take hold on the walls and floors of a series of submarine canyons and the nearby continental slope. These coral communities form the foundation of deep-sea ecosystems, providing food, spawning habitat, and shelter for an array of invertebrate and fish species, and helping to fuel biodiversity hotspots in the canyons and along the shelf break.

Together, we represent 33 ocean conservation groups, coastal businesses, and scientists and thank you and the rest of the Mid-Atlantic Fishery Management Council for your efforts to protect our region’s ecologically valuable deep-sea corals and the marine life they support. This is the moment to act – limited fishing currently occurs in these generally rugged and deep areas. Extremely slow-growing with lifespans in the hundreds – even thousands – of years, deep-sea corals are highly vulnerable to fishing gear interactions. The Deep Sea Corals Amendment offers us an unprecedented opportunity to protect the deep-sea corals, anemones, and sponges, and the valuable hard, structured bottom habitat these organisms grow on, from long-term damage. Deep-sea corals protection would benefit the health of the broader marine ecosystem and the fisheries that rely on it, as well as other economic and social interests, like biotechnological innovation.

We urge you to adopt the strongest conservation measures possible in the Deep Sea Corals Amendment, and support alternatives that would:

- Prohibit all bottom-tending fishing gear (Alternative 4B) from all of the canyon and inter-canyon areas that have been identified by the Council’s technical team as discrete coral protection zones based on the National Oceanic and Atmospheric Administration (NOAA) coral habitat model and slope criteria (Alternative 3B).
• Prohibit bottom-tending gear (Alternative 2B) from a broad coral protection zone with the landward boundary at the 200 meter depth contour (Alternative 1B) in order to protect corals outside of the discrete zones. Any gear exemptions should not extend beyond those currently proposed as alternatives in the public hearing document – for red crab and tilefish – and should seek to limit and reduce harmful impacts from such gear over time.

• Require the use of electronic vessel monitoring systems aboard fishing vessels (Alternative 6B) to help ensure the plan is effectively implemented on the water.

Again, we congratulate the Council on developing one of the most exciting and precedent-setting marine habitat protection initiatives in the country. Our groups appreciate this opportunity to offer our support for alternatives that will protect the region’s deep-sea corals and the marine life they support for future generations.

Sincerely,

Brad Sewell
Senior Attorney
Natural Resources Defense Council

Joseph Gordon
Manager, U.S. Oceans, Northeast
The Pew Charitable Trusts

Gib Brogan
Fisheries Campaign Manager
Oceana

Dr. Merry Camhi
Director, New York Seascape
Wildlife Conservation Society
New York Aquarium

Adrienne Esposito
Executive Director
Citizens Campaign for the Environment

Eric Schwaab
Senior Vice President / Chief Conservation Officer
National Aquarium

Greg Cunningham
Program Director, Clean Energy and Climate Change
Conservation Law Foundation

Rob Weltner
President
Operation SPLASH

W. Mark Swingle
Director of Research & Conservation
Virginia Aquarium & Marine Science Center

Mary M. Hamilton
Executive Director
SandyHook SeaLife Foundation
Dr. Carl Safina
President
The Safina Center

Daniel Barshis, Ph.D.
Assistant Professor of Biology
Old Dominion University

Benjamin Cuker, Ph.D.
Professor of Marine and Environmental Science
Hampton University

Bob Lewis
Executive Director
St. Mary’s River Watershed Association

Arthur H. Kopelman, Ph.D.
President
Coastal Research and Education Society of Long Island

Roger Fleming
Attorney
Earthjustice

John Rumpler
Senior Attorney
Environment America

Ben Steele, Ph.D.
Professor, Department of Natural Sciences
Colby-Sawyer College

Thomas D. Lee, Ph.D.
Associate Professor
Department of Natural Resources & the Environment
University of New Hampshire

Jennifer Rafter
Programs Manager
Maryland Coastal Bays Program

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

Christine Santora
Assistant Director for Policy and Outreach
Institute for Ocean Conservation Science
Stony Brook University

Terra Pascarosa Duff
Environmental Director
TerraScapes and Regional Manager, Moms Clean Air Force Virginia

Brian Winslow
Executive Director
Delaware Nature Society

Renata Rojas
President
Sea Gypsies
Arin Smith
Owner
The Dive Shop

Bob Bak
Board Member
The Scuba Sports Club and
Director
Aquatic Explorers Inc. of Poughkeepsie

Jamie Pollack
Managing Director
Shark Angels

Cliff Diamond
Owner
Empire Divers

Michael Feld
President and Founder
Oceanblue Divers

Michael Mashack
President
Bronx Diver
Re: Deep Sea Corals Amendment Comments

Dear Dr. Moore:

After reviewing the Mid-Atlantic Fishery Management Council (Council) proposed Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan and the proposed measures and information provided in the Council’s January 2015 Public Information Document “Measures to Protect Deep Sea Corals from Impacts of Fishing Gear”, the New York State Department of State (DOS) offers the following suggestions for consideration.

DOS recognizes the value of deep sea corals and sponges as marine life, and the important ecological benefits of preserving and protecting areas where they thrive. We appreciate all the work done by NOAA to explore and map these unique natural areas. We also wish to express gratitude for the Council’s effort planning for management measures designed to afford protection for sensitive deep sea habitats. DOS’s concern, however, is that the proposed measures could apply sweeping restrictions on fishing activities across an extensive geographic area, while opportunities exist to better tailor the measures to focus on discrete areas of documented or suspected significance for corals. Specifically, the measures were developed without the incorporation of available deep sea coral data that have been collected on recent federally-supported expeditions that would directly address the proposed coral zone designations. These expeditions include NOAA’s Deep Sea Coral Research and Technology Program’s cruises aboard the Henry Bigelow that used TowCam, a specialized digital camera system to photograph the seafloor and organisms that were encountered, and NOAA’s Office of Ocean Exploration and Research’s Okeanos Explorer expeditions that collected various data including imagery and video data of organisms. Data analysis currently is underway for some of these data, particularly for the TowCam data collected aboard the Bigelow. Deep sea coral locations, presence, and distribution, plus at least first-order taxonomic identification, will be available following this data analysis. The TowCam data being analyzed from the 2013 and 2014 Bigelow surveys focused on a number of different Mid-Atlantic Canyons, including several currently proposed as discrete zones. The number of TowCam images to be analyzed from data collected for Mid-Atlantic Canyons numbers in the tens of thousands, and potentially will result in a huge quantity of recent, known coral location data points to be added to the NOAA Deep Sea Coral Research and Technology Program records and inform the Council’s deep sea coral broad and discrete zone alternatives.
In keeping with the requirements of the Magnuson-Stevens Act and National Standard 2, "conservation and management measures shall be based upon the best scientific information available" in developing and amending fishery management plans. DOS believes that the Council should strive to incorporate the best available science into development of their proposed range of management measures and the decision-making process regarding the preferred alternative. Both the Council’s decision, and NOAA’s Deep Sea Coral Research and Technology Program’s database and deep sea coral habitat suitability model would benefit greatly from analysis and addition of available data. DOS requests that the Council also formally incorporate existing uncertainty estimates and other information on the model’s performance into consideration of the proposed alternatives.

The proposed measures also would be significantly enhanced by increased input from the fishers affected by the proposed restrictions, to minimize the impact to the fishing industry while achieving optimal coral protection. DOS encourages the Council to build upon prior efforts and collaborate with the Mackerel, Squid, and Butterfish Advisory Panel and other fishers continuously throughout the process.

Allowing for thorough analysis and incorporation of the recently collected deep sea coral data into the Council’s amendment decision-making process, and close coordination and consultation with the fishing community would materially improve the likelihood of achieving the desired protection of sensitive benthic habitats. Integrating these two sources of information would lead to more focused measures within a better defined geographic area. DOS urges the Council to reconsider the current timeline for finalizing its decision and to use the recent deep sea coral data to hone in, with far better confidence, on the discrete locations where corals are most likely to occur, and where protections will result in the greatest ecosystem benefits, to ensure prudent and effective management.

Sincerely,

Gregory Capobianco
Office of Planning and Development
New York State Department of State
First, thank you for allowing someone to read my comments into the meeting record, and I apologize for not being here to present this myself.

I will not belabor my credentials except to say I have spent many years conducting research on marine fishes and their environments from the Gulf of Mexico to the US middle Atlantic. This includes research on deep-sea corals and submarine canyons. Recently, I help co-lead the five year, multidisciplinary investigation of Baltimore and Norfolk canyons and surroundings. This and other recent surveys have significantly improved our understanding of Atlantic submarine canyon, coral and seep communities. Analyses of our Canyons data are nearing completion, and our team can make several summary statements about these ecosystems. Ocean physics, biogeochemistry, and ecology differ in several ways in the canyons compared with the surrounding open slope: 1) Canyons contain strong currents which impact food delivery and the communities. 2) They have generally higher organic matter content in the sediments. 3) Canyon configurations promote complex habitats that support higher fish diversity and different fish communities. This is important as complex habitat is relatively rare in the middle Atlantic. 4) Deep-sea corals are abundant in the canyons and an important part of the habitat complexity. 5) Newly discovered methane seeps near the canyons also provide increased habitat complexity and support increased biodiversity. 6) Canyons differ from one another in various aspects of physics, chemistry and biology. 7) Canyons appear to serve as refugia for some species, like economically important cusk (*Brosme brosme*), which are common in canyons, but not elsewhere. Canyons likely shelter other species, especially those preferring complex habitats (like conger eel, roughies, wreckfish, goosefish, blackbelly rosefish). 8) Canyons, associated coral and other complex habitats enhance trophic pathways that serve not only the bottom community but also the water column communities above. For example, midwater fishes and squid make daily migrations from near surface to bottom providing an important energy conduit.

The list of important discoveries is much longer, but the points to make are that these canyons are very productive, contain important complex habitat, diverse communities, and are important refugia for vulnerable species. Additionally, in both canyons, we observed larger amounts of human generated trash than seen elsewhere at similar depths, and on nearly every dive we encountered lost fishing gear (lines, traps, nets). In some areas this lost gear and trash impacted coral, other habitats and some species.

I strongly encourage the protection of mid-Atlantic canyons from any bottom related disturbances. All major canyons in the region should be included as canyons exhibit a variety of differences. Discrete zones around each canyon including appropriate buffer areas should be the minimum level of protection, but broader zone protection will include many important seep habitats as well as allow for protected migration pathways. I support a shallow depth limit of 200 m (contains important canyon head habitat and communities, like tilefish) and a lower depth limit of at least 1500 m.

I am available at any time to contribute further to this process, if needed.
Comments to the Mid-Atlantic Fishery Management Council

Deep Sea Coral Amendment to the Atlantic Mackerel, Squid and Butterfish Fishery Management Plan: Measures to Protect Deep Sea Corals from Impacts of Fishing Gear

MAFMC members: January 28, 2015

I am writing this letter in support of the Council’s proposed amendment to protect deep sea corals from the impacts of fishing gear.

Background

I am an Associate Research Faculty at the Florida State University Coastal and Marine Lab. Since 1998, my research has focused on the biology and ecology of deep sea corals (stony corals, octocorals, black corals and hydrocorals) in the Gulf of Mexico, southeastern US, Europe and Alaska. I am currently co-Principal Investigator on the Atlantic Deepwater Canyons project, which is a five-year multi-disciplinary project (funded by BOEM/NOAA-OER/USGS) to study sensitive habitats in the mid-Atlantic canyons. Two of the research cruises associated with this project were equipped with sophisticated remotely operated vehicles (ROVs) that allowed us to gather high definition, geo-referenced video and images of benthic communities and make collections for numerous biological, geological and physical oceanography objectives. Prior to these research cruises, coral records in the mid-Atlantic region came primarily from scientific trawling and a few submersible or towed camera cruises in the 1980s and 1990’s. While these provided some information, they do not reflect the wide distribution and abundance of deep sea corals. Our efforts during this project focused on two major canyons in the mid-Atlantic region: Baltimore Canyon and Norfolk Canyon. Over the course of two years, we conducted 18 coral-targeted ROV dives in Baltimore Canyon and 11 in Norfolk Canyon. We found corals during 15 of those dives in Baltimore Canyon and all of the Norfolk Canyon dives. From the ROV dives alone we documented over 2100 records of octocorals and stony corals. The DSCRTP database documented just 635 records for the entire MAFMC region from 200 m depth to the EEZ; of these records 40% were sea pens, which only grow on soft sediment. Within the MAFMC discrete zones, the coral database contains 146 records of octocorals and stony corals. Our 26 ROV dives in just two canyons increased the number of octocoral and soft coral records in the DSCRTP database across all canyons by almost 1500%. Many additional specimens of cup corals, bamboo corals and sea pens were collected during bottom trawls over soft sediment. Other recent expeditions in the area have added even further to the number of coral records. Since the coral records used in the Council’s public information document severely under-reports the true coral abundance, then the benefit of the various alternatives to coral habitat is similarly under represented. Restriction of damaging activities within the canyons will protect vast numbers of corals and their associated communities.

Most of the coral species found in the mid-Atlantic region require hard substrate, so are found within the canyons rather than on the slope; however there are a number of species that colonize soft substrate. These can be very abundant, but little is known of their distribution or any other aspect of their biology. Adoption of protective measures in both broad (slope) and discrete
(canyon) zones is therefore necessary to ensure some level of protection for deep sea corals in the mid-Atlantic region.

It is well-known that some deep sea corals are extremely long lived and grow slowly, but very few species have been studied in detail, and our understanding of reproductive biology, larval dispersal, colonization rates and population connectivity is very sparse. Since we know so little about the vulnerability of these communities and their ability to recover from disturbance, management efforts should be precautionary and apply the highest possible levels of protection.

**Fishing impacts on deep sea corals**

The majority of corals within the canyons are octocorals, with the most common species being the bubblegum coral (*Paragorgia arborea*). This species can become very large (we measured a single colony at 5 m tall) and like other corals were generally found on the rugged walls of the canyons where the currents are accelerated. These large exposed colonies are highly vulnerable to entanglement by trash and fishing gear. There were several observations during the ROV cruises of these and other corals entangled in lines, nets, traps, monofilament and plastic debris. All bottom-tending gear has the potential to entangle, dislodge or break the coral colonies, particularly mobile gear. The impact of bottom trawling on stony coral reefs has been well-documented, but these large tree corals are also vulnerable to other gear such as dredges, bottom longlines and traps. A single trap footprint is small, but some trap fisheries (e.g. red crab) deploy traps in series; on recovery, these traps can drag across the seafloor, potentially causing damage if dragged over coral habitat.

**Broad Zone Alternatives**

*Alternative 1:* The Council Broad coral zones primarily cover soft sediment so are not prime habitat for most deep sea corals; however there are several species of both stony corals and octocorals that can be locally abundant and may provide habitat for other fauna, including fishery species. The abundance, distribution and ecological importance of these soft sediment corals are not well understood, so measures should be applied to protect at least some of their habitat. Hecker (1990) studied faunal distribution on the continental slope of southern New England, and noted a dense filter feeder assemblage on the upper slope between 300 and 700 m depth. According to this data, the optimal broad zone for protection of soft sediment corals is Alternative 1B (200 m and deeper), but Alternative 1C would also protect much of the coral habitat.

*Alternative 2:* A prohibition on all bottom tending gear is the preferred option for coral protection. Red crab traps can potentially cause damage to deep sea corals; however given the operating depth of the fishery (37-42% of revenues come from within the proposed broad zones), it would be a clear hardship to restrict the fishery to the upper slope. For this reason, and because the fishery is currently small, Alternative 2B-1 (exemption of red crab fishery) would be the best option.

**Discrete Zone Alternatives**

*Alternative 3:* Over the past 3 years a number of research cruises have shown that the canyons of this region have large areas of exposed hard substrate that supports extensive and diverse coral and sponge communities. Fishing gear has been observed entangled in the rocky outcrops, and frequently also wrapped around corals. The loss of time, gear and catch are good reasons for the fishing industry to want to avoid this kind of interaction as much as conservation groups, but the

---

difficulty comes from trying to maximize protection, minimize economic impact and generate sensible boundaries in areas that are data-poor and that do not conform to square boxes. The discrete zones in the proposal are based on outputs from NOAA’s predictive habitat model and encompass all areas with high probability of coral presence. This is a precautionary approach to protection, but has created rather complex boundaries which may be confusing to follow and difficult to enforce. I support Alternative 3B, but suggest that the Council work with Law Enforcement, and other stakeholders to see whether the boundaries can be simplified and still maintain adequate protection for deep sea coral habitats.

**Note:** Alternative 1B would encompass the majority of the coral discrete zones without the need for additional boundaries, assuming the regulations for the two areas were the same.

**Alternative 4:** Since these discrete zones contain the most valuable coral habitat and high abundance of coral/sponge communities, the preferred alternative would be prohibition of all bottom-tending gear, which is Alternative 4B. Unlike the broad zone alternative (2B-1), this alternative would also prohibit red crab fishing; however, it seems unlikely that this would be an undue hardship since red crab fishers would probably not deploy traps inside the canyons due to their complex topography. Several of the canyons are fished to some degree, but most fishing is prosecuted on the surrounding slope areas. According to the Council public information document, only 0.6-9% of total revenue (depending on the fishery) comes from within the discrete zones. This level of fishing could presumably be offset by shifting effort into the open zones.

**Alternative 5:** Not qualified to assess

**Alternative 6:** I support the use of VMS as an enforcement tool and although most of the *Illex* vessels already use this system, a fishery wide requirement would allow enforcement of all vessels with little economic impact to the industry. Alternative 6B is therefore the preferred option.

I wish to thank the Council for their pro-active management efforts to protect deep sea coral habitats and hope that together the Council and stakeholders will come to an agreement that will preserve these ecologically important and vulnerable habitats without undue economic burden to the regional fishing industry.

Sincerely

Sandra Brooke Ph.D.
Associate Research Faculty

Florida State University Coastal and Marine Lab
St Teresa, Florida 32358
January 28, 2015

Dr. Christopher M. Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street
Suite 201
Dover, Delaware 19901

Submitted electronically

Re: Deep Sea Corals Amendment Comments

Dear Dr. Moore,

We are submitting 5,837 comment letters from Natural Resources Defense Council members and activists in response to the Mid-Atlantic Fishery Management Council’s Deep Sea Corals Amendment.

Of the 5,837 comments, 5,653 commenters made no edits to the form letter below. An Excel sheet with all form letter responders’ contact information is also attached as DeepSeaCoralsAmendmentComment_unedited.xls. In addition, please find DeepSeaCoralsAmendmentComments_unique.pdf which contains 184 unique comments collected by NRDC.

Please contact me at 212.727.4551 or achase@nrdc.org with any questions regarding this comment submission.

Sincerely,

Alison Chase
Policy Analyst
Natural Resources Defense Council
Dr. Christopher M. Moore  
Executive Director, Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201  
Dover, Delaware 19901

Subject: Deep Sea Corals Amendment Comments

Dear Dr. Christopher M. Moore,

Thank you for the opportunity to help shape your historic effort to protect our ecologically valuable and vulnerable deep-sea corals and the marine life they support.

I urge you to adopt the strongest conservation measures possible and:

* Prohibit all fishing gear that hits or scrapes the seafloor from all of the canyon areas that have been identified by Council staff as discrete protection zones based on the National Oceanic and Atmospheric Administration coral habitat model.

* Adopt a broad coral protection zone with the landward boundary at the 200 meter depth contour to protect corals that fall outside the canyon areas from bottom-contacting fishing gear. Any gear exemptions should not extend beyond those currently proposed as alternatives in the public hearing document--for red crab and tilefish--and should seek to limit and reduce harmful impacts from such gear over time.

* Require the use of electronic vessel monitoring systems aboard fishing vessels to help ensure the plan is effectively implemented on the water.

Together, these measures will protect this unique deep-sea habitat for marine life and for future generations to discover and enjoy.

Sincerely,
Dear Mid-Atlantic Fishery Management Council Members,

I strongly support the historic effort to protect our ecologically valuable and vulnerable deep sea corals and the marine life they support.

I urge you to adopt the strongest conservation measures possible:

- Prohibit all fishing gear that hits or scrapes the seafloor from all of the canyon areas that have been identified by Council staff as discrete protection zones based on the National Oceanic and Atmospheric Administration coral habitat model.

- Adopt a broad coral protection zone with a boundary of 200 meters.

- Require the use of electronic vessel monitoring systems aboard fishing vessels to help ensure that the plan is effectively implemented on the water.

Together, these measures will protect this unique deep sea habitat for marine life and for future generations to discover and enjoy.
Ms. Kiley Dancy  
Mid-Atlantic Fishery Management Council  
800 North State St.  
Suite 201  
Dover, DE 19901  

Dear Ms. Dancy,

I commend your progressive suggestions in the Deep Sea Corals Amendment and your use of protective habitat models for the conservation of deep-sea coral ecosystems.

Specifically, I support alternatives 1B, 2B, 3B, and 4B, the creation of both broad and discrete coral zones in which ALL bottom touching gear is prohibited. As you know, bottom trawlers and sometimes even mid-water trawlers drag heavy nets across the bottom as they seek to catch fish that live on or near the bottom of the ocean. To ensure maximum protection, I also support alternatives 2D and 6B, requiring electronic vessel monitoring on every ship, making enforcement of restricted regions easier.

Using the best available science to determine specific submarine canyons and slope areas as discrete coral protection zones will allow for maximum protection of these slow growing, ancient corals. I applaud the council’s use of predictive habitat modeling to determine areas in which corals are highly likely to be present, especially in places which are difficult and costly to survey.

Designating a broad coral zone with a landward boundary at the 200 meters depth contour which extends to the edge of the exclusive economic zone and prohibiting ALL bottom tending gear in this region will create a protective buffer area while still allowing existing fisheries to carry on in the majority of their current fishing grounds.

I urge you to defend these thriving, yet fragile, ecosystems against current threats. Combined, the above alternatives will secure regions of known or likely coral habitat for current and future generations. Unless protected, we stand to lose vital, diverse ecosystems, which not only support the surrounding ocean life but also human livelihoods.

Thank you for the opportunity to comment.

Sincerely,

Michael Gravitz  
Director of Policy and Legislation  
Marine Conservation Institute
Review of the Public Information Document regarding the proposed Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan  
(MAFMC, January 2015)

Prepared by: 
Dr. Guillermo E. Herrera  
Fisheries Economist¹  
A.B., Biology; M.Sc., Quantitative Ecology & Resource Mgmt.; M.A., Ph.D., Economics  
January 28, 2015

Dr. Christopher M. Moore, Executive Director  
Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201  
Dover, DE 19901  
Attn: Deep Sea Corals Amendment Comments

Dear Dr. Moore and Council Members:

I write to provide comments on the economic analyses in the Mid-Atlantic Fishery Management Council’s ("MAFMC’s") January 2015 Public Information Document ("PID") for the proposed Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. I am a fisheries economist specializing in bioeconomic modeling of multispecies and spatially structured resources – the latter including the theory surrounding the role of marine protected areas in optimal management.

I seek to highlight two significant ways in which the PID reflects a distinct upward bias in its analysis of the economic impact of the proposed closures:

(a) The use of the Vessel Trip Report (VTR) and VTR revenue mapping algorithms systematically overstate the actual intersection between the proposed deep sea coral protection zones and currently fished areas; and

(b) The PID largely ignores – except for a very brief, tangential mention – the likelihood that harvesters will reallocate effort displaced from closed areas so as to substantially offset any lost revenues from the closures.

Consideration of these two factors, on which I elaborate below, demonstrates that the likely costs associated with the proposed closures are significantly lower than those discussed in the PID. Given that the costs (from reduced fishing revenue) of the proposed closures are likely to be much lower than those discussed in the PID, I believe that the benefits of implementing the closures should be all the more compelling to the MAFMC.²

¹ Dr. Herrera is also Associate Professor of Economics, and Chair of the Department of Economics, Bowdoin College, Brunswick, ME. His involvement with the DSC Amendment review process falls outside the scope of his responsibilities in this academic position.

² "Measures in this amendment will be considered in light of their benefit to corals as well as the cost to commercial fisheries." (p. 2, 11 of PID)
(a) Bias in the estimation of fishing conflicts and proposed closures

The PID provides two different sets of estimates of economic impacts of the proposed closures: one based directly on Vessel Trip Report (VTR) point estimates, and one based on the output of the VTR revenue mapping (VTRRM) model, which is intended to refine VTR point estimates using observer data. Both of these estimation techniques exaggerate the spatial correlation between current fishing locations and the discrete and broad zones. Although the PID does acknowledge in the text (on page 71) that the VTRRM model in particular may overestimate revenue losses, it fails to do so forcefully enough, so MAFMC members may overlook it and focus primarily on the PID’s data tables. The PID also neglects to discuss the likely extent of the overestimation.

VTR Point Estimates

I first address the impact estimates generated directly from the VTR point estimates, focusing on impacts on the squid fishing sector, which appears to be the primary sector of concern. The algorithm described in the PID assumes that if the point estimate (the general fishing location required to be reported by the vessel operator) falls within the discrete or the broad protection zone in question, then all of the harvest from that trip should be counted as a loss due to that protection zone. Specifically, Table 34 says that the percentage of catch attributed to each zone “assume[s] that all of the catch from a given trip occurred in the area encompassed by the reported VTR location.”

At this point, it is important to elaborate on what a VTR point estimate represents. A VTR point estimate is the:

... reporting of a single spatial position that looks to represent the totality of fishing conducted on a trip. For reporting purposes these trips are defined as a single statistical area/gear combination, with individuals required to report a new VTR whenever either the gear or statistical area fish changed.3

In other words, a single point estimate is intended to represent the location of multiple hauls, as long as the gear and statistical area do not change. Significantly, “previous studies have identified that the self-reporting underreports these switches in gear and statistical area” (Palmer and Wigley 2007, 2009) and that use of VTRs results in an “upper bound for the actual cost of a management alternative, and likely overestimates the final cost of a management alternative.”4

For it to be reasonable to attribute all the harvest associated with a VTR point estimate to a prospective protection zone, all or at least most of the fishing activity associated with that VTR must occur in the zone. Alternatively, the portion of fishing activity occurring within

3 NEFMC, Omnibus Habitat Amendment 2 Draft EIS-Volume 3, at 192 (October 1, 2014); see also Northeast Fisheries Science Center, Statistically Assessing the Precisions of Self-reported VTR Fishing Locations, NOAA Technical Memorandum NMFS-NE-229, p. 1 (“The precision issue associated with VTR is inherent in the attempt to represent the entirety of a trip’s effort by a single set of latitude and longitudinal points for each gear and statistical area fished, regardless of the length of that trip.”).
4 NEFMC, Omnibus Habitat Amendment 2 Draft EIS-Volume 3, pp. 192, 195.
the zone must be such that its prohibition acts to eliminate all or most of the remaining fishing activity associated with that trip. Neither of these assumptions is valid, based on the information in the PID.

With respect to the broad zones, the observer data in Tables 37-39 shows that the average haul starts at a depth significantly less than the broad zone boundary (e.g., for the 400 m alternative, the average squid haul starts at around 180 m), at least for boundaries 300 m and deeper. Moreover, as the zone boundary increases in depth, fewer hauls intersect with that depth boundary, demonstrating that squid bottom trawling decreases with depth, at least beyond 200 m. Observer data indicates that hauls intersecting these deeper zones primarily take place in shallower waters (recall also that the shelf drops off quickly after 200 m, with slope increasing with depth, meaning the greatest areal extent of bottom is at shallower depths). Even if a protection zone were put in place that precluded the deeper portion of the haul, at least some portion of the haul in shallower waters – and potentially most of it, depending on the specific protection zone – could still occur.

Moreover, there are likely entire hauls associated with the VTR point estimate occurring in shallower waters that would not be precluded by a given closure. For example, if ten hauls were reported under one VTR, and only one of those hauls crossed over into the 400 m zone, the PID would attribute the catch from all ten hauls as catch from the 400 m zone. This would clearly be unreasonable as at least the nine hauls that did not intersect with the 400 m zone would be unaffected by its closure. In the case of the Loligo and Illex shelf break squid fisheries, it is virtually certain that multiple, and potentially many, hauls are represented on each VTR. Both these fisheries appear to be large volume, long trip fisheries. Both are also concentrated in certain statistical areas; for example, 68% of the Illex harvest in 2010 was in statistical area 622.5 One Illex vessel owner described his typical trip as taking five days, with hauls every one to three hours.6

Even in the case of the 200 m broad zone, multiple hauls are generally associated with each VTR and some are likely to occur in whole or in part in shallower waters. These hauls would not be eliminated by virtue of a 200 m protection zone, causing upward bias in the PID estimates of impacts from such a management measure.

Similarly with the discrete zones, Figure 31 (tracks of observed hauls) and Tables 37-39 (observed hauls in different zones) indicate that when a squid haul intersects with a discrete zone, it is usually only for a small portion of the haul and/or during gear deployment/retrieval. For a haul associated with a VTR point estimate that intersects with a discrete zone, it is likely that at least a portion of that haul, and the resulting catch, could still occur. Moreover, as with the broad zones, there will likely be entire hauls associated with the VTR point estimate that would still be possible.

The PID’s use of VTR point data helps explain the inconsistency between the VTR point data and the observer data regarding the relative amount of squid bottom trawling in the different broad zones. According to the observer data, there were approximately 2500 hauls on squid trips that intersected the zones 200 m and deeper (Table 36). Of these,

---

5 MAFMC, Amendment 14 FEIS, p. 256.
6 MAFMC, Amendment 9 FSEIS, at 162.
approximately 250, or 10%, intersected the 500 m zone (Table 39). This relatively low number of trips intersecting the 500 m zone appears consistent with the observer track information provided in Figure 31 and the bathymetric information in Figures 13-24, which shows the 500 m depth to be well off the shelf and down the slope as well as significantly down the canyon walls. By contrast, the VTR point data in Table 34 indicates that trips deeper than 500 m constitute 28% of all trips deeper than 200 m, a much higher percentage than suggested by the observer data. The likely reason for this discrepancy is discussed above: if a trip includes any haul that touches a zone, the entire trip (and, correspondingly, all the revenues from that trip) is attributed to that zone.

VTR Revenue Mapping Model

The VTR Revenue Mapping Model was developed to address the shortcomings of the VTR data, i.e., that the latter fails to show fishing location precisely and therefore provides a poor basis for analyzing impacts of area closures. The PID contains an abbreviated description of the model; a more extensive discussion is available in NOAA Technical Memorandum NMFS-NE-229.\(^7\) In brief, the model integrates VTR information with observer data, which are more precise. The result is a likelihood, or probability distribution, associated with the actual location of a given VTR point estimate. These probability distributions are represented visually on a map as concentric circles, or probability contours around the point, each representing a level of probability that the actual fishing location was within the circle.

But, as the PID recognizes at page 71, the model does not account for directionality, such as based on depth. Rather, it assumes a symmetrical, or “white noise” probability distribution, in which it is equally likely for the actual fishing location to be in any given one direction from the point estimate. This makes the model wholly inadequate for examining shelf break fishing, which is highly directional and dictated by depth and slope. The observer track information in Figure 31 shows this very well; the vast majority of hauls are along the same depth contour. In other words, if you have a VTR point estimate on the edge of a canyon, it is not equally likely (not at all likely, in fact) that the fishing occurred 2 miles into the depths of the canyon as opposed to occurring two miles farther away from the canyon into shallower waters. But this is what the model does; points that are implausible locations of fishing effort are assigned likelihood equal to that of plausible sites.

For the reasons discussed above, Tables 31 and 32 overestimate revenue impacts from the coral zones because they assume positive probability of fishing in locations where there is actually negligible probability of fishing. For example, even though the PID says (p. 18) that the red crab fishery is prosecuted in a “narrow range of depth” from 550 m – 750 m, Table 32 reports that almost 58% of cumulative revenue in this fishery is from fishing at depths 200 m and shallower. Similarly, Table 32 shows very little difference in the revenue impacts to the squid industry between the different broad zone alternatives. The revenue impacts of the 200 m broad zone are only 6% higher than the revenue impacts associated with the 500 m zone. As discussed above, however, this is inconsistent with the observer data, which indicate that a small fraction of the trips that intersected the 200 m zone also intersected the 500 m zone. The small difference in revenue impacts in Table 32 across the different protection zones is likely because only distance, and not depth change, is accounted for in

\(^7\) Available at: [http://www.nefsc.noaa.gov/publications/tm/tm229/](http://www.nefsc.noaa.gov/publications/tm/tm229/).
the VTR model. Figures 25-30 illustrate this problem graphically, although it is not easy to make out in all locations because of the scale of the figures.

To get a more realistic sense of the impacts of the proposed closures, no likelihood should be attributed to areas that are technologically unfishable or economically undesirable. There are modeling techniques that facilitate this kind of analysis; however, additional detailed modeling effort is not necessary to make a decision about the closures. It is enough to acknowledge that the current estimates of revenue losses are significant overstatements. The effort mapping and revenue estimates emerging from the VTR and VTRRM are not just noisy; these techniques make erroneous simplifying assumptions that lead to large upward biases in the estimates of opportunity costs of closures.

**(b) Effort redistribution**

The primary assumption of the PID seems to be that revenue earned in areas considered for closure will be lost from the system: “The potential for revenue losses at gross fleet-wide levels should be proportionate to the relative reduction in areas that can be fished.” (PID, p. 88). However, when an area, or a portion of an area, where fishermen currently fish is closed, fishermen will *not* just cease exerting, or retire, the units of effort they had been exerting in that area. They will instead move to other areas that *are* compatible with the closures, and the resulting net revenues *may not be very far at all* from current net revenues. In short, analysis that assumes rigid, or inflexible, fishing practices leads to an upward – potentially dramatically so – bias in estimate of the opportunity costs of closures.

There is a large literature on the impact of marine protected areas on fishery yields and dynamic efficiency. 8,9 Where closed areas are arbitrarily located – meaning the closures are not specifically designed or located to protect areas of particular importance to a fishery – they tend to be yield-neutral, having neither positive nor negative effect on economic rents from the fishery.10 That is, fishermen can redirect their effort and catch the target just outside the close area’s boundaries.

The areas proposed for closure in the Deep Sea Coral Amendment are – in this way – “arbitrarily located.” The choices for the closures are designed to protect deep sea corals and are largely independent of the location and spatial dynamics of the commercial target (e.g., squid) stocks. The main target species affected by the closures, Illex and Loligo squid, are mobile. As these species are not expected to remain inside the closed areas for very long, we would expect the opportunity costs of closures will be lower than that for sessile species dependent on benthic substrate (such as oysters or urchins) or even many demersal species. Fishermen may increase their intensity of effort in locations outside (even on the

---


edges of) the closures, and the catch per unit effort ("CPUE") from these shifted units of effort will likely come very close to what they would have obtained inside the closed area.

This type of redistribution of effort is sometimes of concern to those proposing marine protected areas. But in the case of the proposed deep sea coral protections, such “fishing the line” behavior is exactly the effort redistribution we would hope for, allowing commercial net revenues to remain roughly the same while achieving coral protection. The PID allows for the possibility of effort redistributions, but only in passing:

“... in general, effort would be expected to shift near/around other areas/canyons not impacted by the proposed measures. This effect would reduce both the negative socio-economic impacts to commercial fishermen and the protections to corals from closing particular areas.” (PID, p. 88)

This kind of effort redistribution does not, however appear to be incorporated into estimates of economic impacts, as the data given (e.g., Tables 31-34) only present displaced revenues.

The correct depiction of the opportunity costs to the squid fisheries of the closures is the difference between current (net) revenues, prior to regulation, and those that would be earned in the next best pattern of fishing effort that would be chosen once an area or set of areas is closed. So the projected loss in net revenues depends on how much worse this next best option is. If the profit surface is very “flat,” i.e., the drop-off in profit between current and 2nd-best profits is small, then fishermen will be largely indifferent to whether they fish in the area slated for closure and somewhere else; the economic (opportunity) cost of the closure will be very close to zero. The net revenue currently arising from the closure itself is only a useful estimate of opportunity costs if the effort cannot be exerted anywhere else in the system, which is very unlikely to be true.

Harvesters would of course prefer to keep fishing where they are currently. But because (a) much less effort is likely actually being exerted in the areas being considered for closure than the current estimation techniques suggest, and because (b) fishermen likely have other locations they can exploit and earn similar levels of profit, the economic costs of the deep sea coral protection zones is likely being significantly overestimated (i.e., the “practicability” of the closures is being underestimated).

Figure 1 shows the disparity between the current assessment of opportunity costs and a more correct estimate that reflects more plausible revenue mapping and net revenue offsetting through effort redistribution.
Figure 1: The relationship between current and improved estimates of the opportunity costs of DSC closures.

How the PID likely overstates the economic opportunity costs of deep sea coral protected zones is highlighted in the following steps showing how economic opportunity costs of an action should be understood:

1) Estimate the extent to which these closures actually impinge upon current fishing practices, because of overlap with currently fished zones or impediments to the deployment of fishing gear to areas proximal to the closures. This step currently utilizes VTR data or the improved revenue-mapping VTR procedure, which overstate these conflicts, as we discuss above.

2) Estimate the gross loss in net revenues resulting from the closure: fishing revenues, less effort costs, for the effort that would be precluded by the closures. One can think of this as the gross cost of the closure to the fishing industry. [Note: It seems that this value is what is currently being used, at least implicitly, as the "opportunity cost" of the closures.]

3) Characterize, at least in a coarse way, the resultant distribution of fishing effort that will arise after the closures are imposed. Fishermen have a strong incentive to maximize profits, so presumably they will, after some searching, find the next best alternative to the areas precluded by the closure. With mobile target species such as squid, it may very well be that what is required is a redistribution of effort in time as well as space, i.e., so as to allow the target species to move out of the closed areas into fishable waters. An easy way to assign the displaced effort units assigns some CPUE that is slightly below that observed in fished areas proximal to the closure.
4) Estimate, as in (2), the net revenues associated with the new distribution (in space and time) of the displaced effort. This can be thought of as the gross benefit arising from the closure (i.e., new net revenue that did not exist prior to the change). [Note: the literature suggests that redistribution of effort in situations like that here where closed areas are “arbitrarily located” may offset completely revenues lost as a result of the closures, set forth in (2) above.]

5) Calculate the net cost of the closure to the fishing industry as the difference between the gross costs and the gross benefits, i.e., the difference (2) – (4) as described above.

In summary, the PID skews upward its estimates of economic opportunity costs of the proposed deep sea coral protections in two significant ways. My hope is that the MAFMC will recognize the bias in both the VTR and VTRRM depictions of the conflicts between fishing and these protections as well as the likelihood of revenue-restoring effort redistributions by fishermen in response to closures. Understanding and accounting for these biases underscores the practicability of the proposed closures for the protection of deep sea corals.

With thanks for your consideration,

Guillermo E. Herrera, M.Sc., Ph.D.
Fisheries Economist
gherrera@bowdoin.edu
January 28, 2015

Dr. Christopher M. Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

Re: Deep Sea Corals Amendment Comments

Dear Dr. Moore:

As you know, we represent the Fisheries Survival Fund ("FSF"). FSF’s participants include over 250 full-time Atlantic scallop limited access permit holders. These are all actively working fishing vessels. FSF respectfully submits these comments regarding the Mid-Atlantic Fishery Management Council’s ("Council’s") consideration of alternatives in its Deep Sea Corals Amendment to the Mackerel, Squid, and Butterfish Fishery Management Plan ("Amendment 16").

The Mid-Atlantic region contains scallop access areas that are critical to the success of the fishery. Because the fishery operates with a combination of “open areas” subject to a days-at-sea regime and controlled “access areas” of high abundance, a constriction of scallop fishing areas not only limits fishing opportunities in that area, but contributes to effort displacement and decreases overall allowable catch levels. FSF therefore strongly urges the Council to closely tailor its management of deep sea corals to protect areas in which such corals are actually documented to occur, while taking existing fishing activity into consideration.

I. Broad Zone Designations Are Unnecessary and Provide No Additional Protection to Corals

In its corals amendment, the Council is considering two major alternatives: the designation of, and restrictions within, either broad or discrete “coral zones” in order to achieve the amendment’s goals of protecting deep sea corals. The record simply does not support the
broad coral zone alternatives, especially in productive fishing grounds near lucrative scallop fishery access areas.

As the amendment acknowledges, there is limited data on where corals actually occur in the Mid-Atlantic. However, in order to develop the most effective possible document alternatives, the Fishery Management Action Team (“FMAT”) reviewed all interactions between deep sea corals and fishing gear recorded in several databases. It then used sophisticated mapping and analyses to predict where corals are occurring and where they are likely to occur based on substrate, depth, and other relevant factors. The discrete zones in Alternative 3 were carefully refined to cover these areas where corals were either observed to be present, or where the habitat is highly likely to support corals. Indeed, the amendment unequivocally states that “the revised discrete zone boundaries were drawn based on the best available scientific information about coral presence and suitable habitat.”\(^1\) The broad zones, in contrast, were simply delineated based on arbitrary depth contours, which do not match data on coral presence and habitat suitability.\(^2\)

Moreover, the scallop fishery poses virtually no risk to deep sea corals. Even within the largest of the broad coral zones under consideration as an alternative, there were no interactions between scallop gear and coral in the 1994-2014 Northeast Fisheries Observer Program database.\(^3\) Scallops typically occur only to a depth of 200 meters, so some scallop beds are likely to be near the boundaries of certain of the coral zones under consideration. However, any scallops growing around that 200 meter line are in areas that are already regularly fished, and there are therefore demonstrably no corals in these areas. The amendment states that “many of the proposed measures are precautionary in nature and are designed to protect corals from future expansion of fishing effort.”\(^4\) The scallop fishery is certainly not exploratory in nature. Rather, information gained in extensive annual dredge and video surveys, the nature of the rotational management program, and mature scallops’ sessile life history clearly limit the fishery’s mobility and render its behavior entirely predictable.

---


\(^2\) “Given the differences across canyon and slope areas, there was additionally no consistent depth contour across proposed areas which would approximate areas of high coral habitat suitability.” Id. at 26-27.

\(^3\) Id. at 51.

\(^4\) Id. at 67.
II. THE COUNCIL MUST CONSIDER PRACTICABILITY WHEN ADOPTING CLOSURES

The Magnuson-Stevens Fishery Management and Conservation Act requires a balanced approach to the designation of deep sea coral zones.5 As with the law’s practicability standards for habitat conservation,6 this means the Council does not hold unlimited discretion to enact closures in the name of precaution and experimentation. A more balanced approach forces consideration of impacts to the fishery in addition to those to protected resources.

Although scallop fishing occurs only in small portions of even the largest closures under consideration in the amendment, that activity is valuable to the fleet. As stated previously, the Mid-Atlantic scallop access areas, particularly the Hudson Canyon area, are immensely important to the prosecution of the fishery. The largest zone under consideration, the 200 meter contour broad designation, would cover an area that generates 0.7% of the fishery’s revenues. The fishery earned approximately $550 million in revenue in 20127—translating to $3.8 million in revenue from the potentially closed area. This is simply too great a loss to impose, based solely on conjecture that is not supported in the record.

Again, we urge the Council to select narrowly-tailored and balanced Amendment 16 alternatives based on the best scientific information available. We appreciate the opportunity to provide these comments. Please do not hesitate to contact us if you have any questions or need additional information.

Sincerely,

David E. Frulla
Andrew E. Minkiewicz
Anne Hawkins
Counsel for Fisheries Survival Fund

---

5 "[Such closure] is based on an assessment of the benefits and impacts of the closure, including its size, in relation to other management measures (either alone or in combination with such measures), including the benefits and impacts of limiting access to: users of the area, overall fishing activity, fishery science, and fishery and marine conservation." 16 U.S.C. § 1853(b)(2)(C)(iv).


7 Public Information Document at 43.
January 28th, 2014

Chris Moore, Ph.D., Executive Director
Mid Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore:

Please accept these comments on behalf of the Garden State Seafood Association (GSSA); GSSA is comprised of commercial fishermen, shore-based processors, commercial dock facilities, seafood markets, restaurants, and various industry support businesses from New Jersey.

Over the past few months a small group of fishing industry members with intimate knowledge of the offshore canyons of the mid-Atlantic has attempted to address the Council’s concerns regarding deep water corals and interpret the public interest, while preserving viable fishing opportunities and maintaining current fishing practices. This group includes the individuals responsible for the vast majority of the illex fishery.

The following comments are a result of careful consideration and numerous deliberations by these individuals. They include both our critique of the Deep Sea Corals Amendment and our suggestions for a path forward.

Issue #1: The data used to create the Habitat Suitability Index (HSI) and the analyses contained in Amendment 16 are inconsistent with Information Quality Guidelines developed by the Office of Management and Budget and do not meet the performance standards of NOAA’s own
Information Quality Guidelines. We feel strongly that the data are not of the quality, utility or integrity that would justify potential management alternatives. In particular, the following statement that refers to the data used in the HSI is troubling:

“These data were extracted from an early prototype of the National Deep Coral Geodatabase on Dec 2, 2011. Records spanned 1873 to 2002 and were compiled from journal articles, reports, museum collections, and direct communications with original observers and PI’s to obtain unpublished records. Positional accuracy is of variable quality; positioning methods ranged from sextants and dead reckoning to LORAN and GPS. We believe most records to be accurate to within a few hundred meters, but some positions may have as much as 600m error or more.” (email communication Brian Kinlan)

**Recommendation #1:** We request that the Council’s Scientific and Statistical Committee conduct a review of the HSI and the analyses contained in the Amendment and perform a Management Strategy Evaluation.

**Issue #2:** Over the last 5 years a total of 7 surveys have been conducted to explore the deep canyons in the mid – Atlantic region. Nearly all of these recent surveys have been conducted at depths beyond 500 meters. Unfortunately, the observations and data collected from these surveys have yet to be analyzed to the fullest extent possible. The failure to analyze these observations and data is inconsistent with the requirements of Sections 301(a)(2) and 303(b)(2)(C)(i) of the Magnuson-Stevens Act that management actions be based upon the “best scientific information available.”

**Recommendation #2:** We request that the Council have full access to these data to consider the potential relevance these surveys might have for management.

**Issue #3:** The charts that depict the proposed closed areas and current fishing effort are of such coarse resolution that the potential impacts to the industry are severely underestimated. In addition, the fishing practices and operational elements of the fishery are misunderstood and largely ignored. The Council needs to consider that: (A) the *illex* trawl fishery is viable only in a tight temporal and spatial paradigm; and (B) profitability is on a very tight margin; such that even subtle management restrictions could make a significant difference on a single vessel. Furthermore, the charts cannot illustrate that in the discrete areas the linear distance between depths of 400 and 500 meters in some areas can be as little as 100 meters. In fact, this small linear distance means that the Council decisions needs to carefully weigh and justify the insignificant conservation impact with unknown benefits versus significant economic consequences.

**Recommendation #3:** We request a meeting of the Squid, Mackerel and Butterfish Advisory Panel to develop alternatives that appropriately account for the operational elements of the trawl fisheries.
**Issue #4:** Section 303(b)(2)(C) of the Magnuson-Stevens Act imposes significant analytical requirements on the Council, including, in Subsection (C)(iv), the requirement that closures be “based on an assessment of the benefits and impacts of the closure, including its size, in relation to other management measures (either alone or in combination with such measures), including the benefits and impacts of limiting access to: users of the area, overall fishing activity, fishery science, and fishery and marine conservation.”

The “Impacts to Deep Sea Corals” 7.2 section of the Public Information Document contains insufficient assessments of the cumulative conservation, economic and social impacts of the closures under consideration. It poorly describes the possibility of effort shifts and assumes incorrectly that vessels will shift to other areas to offset the loss of productive fishing areas. In addition, it does not account for impacts to fisheries under the jurisdiction of the New England Fishery Management Council. Lastly, it estimates protection for the depth alternatives with a 7% difference (from 93% to 100%) between the most severe and least restrictive options. This difference is statistically insignificant and does not justify restrictions shallower than 500 meters.

**Recommendation #4:** We request that a sufficient Impact analysis, consistent with the requirements of the Magnuson-Stevens Act, be conducted and all broad zone alternatives be rejected from the Amendment.

**Issue #5:** Should the Council decide, despite the deficiencies in the current analysis, to move the Amendment forward, we have developed discrete alternatives for the Baltimore, Washington, Wilmington and Norfolk canyons. We created these areas by considering slope, historical records and accommodating the potential needs of industry. These charts are available at the following dropbox website:

https://www.dropbox.com/sh/jlsd5unf8f4da9x/AABpKBylFsywqrsLsTj2kbUfa?dl=0

**Recommendation #5:** We request that the SMB Advisory Panel meet to develop discrete alternatives for the additional canyons not included in our recommendations.

Thank you for your consideration of these comments. We would be happy to provide any additional information you may wish or answer any questions you may have.

Sincerely,

Gregory P. DiDomenico

Gregory P. DiDomenico

Executive Director
Garden State Seafood Association
January 28, 2015

Dr. Christopher M. Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

Re: Deep Sea Corals Amendment Comments

Dear Dr. Moore and Council Members:

Our organizations are pleased to provide these comments on our preferred alternatives for the Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan (“Deep Sea Corals Amendment” or “Amendment”). We congratulate the Mid-Atlantic Fishery Management Council (“Council”) on developing the Amendment, which we consider one of the most exciting and precedent-setting marine habitat protection initiatives anywhere in the country. As you know, the Deep Sea Corals Amendment has been three years in the making—it had the benefit of extensive involvement of the Fishery Management Advisory Team (“FMAT”), was discussed at four prior Council meetings, an advisory panel meeting, and a workshop, and has been the subject of multiple public comment periods, as well as a recent round of public hearings. We look forward to the Council’s consideration of the Amendment and its vote on preferred alternatives for submission to the National Oceanic and Atmospheric Administration (“NOAA”) at your upcoming February meeting.

To sufficiently protect the Mid-Atlantic’s valuable and vulnerable deep sea coral habitat, our groups ask the Council to select the following as preferred alternatives:

- Alternative 1B (Designation of a broad coral zone with the landward boundary approximating the 200 meter depth contour);
- Alternative 2B (Bottom-tending gear prohibition in broad zone);
- Alternative 3B (Designation of discrete coral zones for all 15 canyon/slope areas based on the FMAT-proposed boundaries, not the industry-proposed boundaries);
- Alternative 4B (Bottom-tending gear prohibition in discrete zones); and
- Alternative 6B (Vessel Monitoring System (VMS) requirement for Illex vessels)

With respect to the alternatives for frameworkable actions, we recommend that the Council make clear that such framework adjustments must further the purpose of the Deep Sea Corals Amendment, “to identify and implement measures that reduce, to the extent practicable,
impacts of fishing gear on deep sea corals in the Mid-Atlantic region.”1 Frameworks should not be used to undo or weaken necessary coral protections put in place through this Amendment. This concern specifically applies to Alternative 5B (to modify zone boundaries), Alternative 5C (to modify management measures), and Alternative 5E (to implement special access programs).

Our organizations would also like to direct the Council’s attention to the comment letter provided by Dr. Guillermo Herrera, Associate Professor of Economics and Chair of Economics Department at Bowdoin College and a fisheries economics expert, including on the impacts of spatial management actions. In his letter, Dr. Herrera explains why the economic impact analyses contained in Section 7.3 of the Amendment, and specifically the values in Tables 31, 32, and 34, convey a significantly exaggerated view of the likely impacts of the proposed protection zones, including because (1) the Vessel Trip Report (VTR) revenue mapping model discussed in Section 7.3.1 does not account for the depth-and slope-based nature of bottom trawling at the shelf break, and hence projects the displacement of fishing that would not or was unlikely to occur anyway (i.e., in canyons and at deep depths); (2) the analysis based on VTR point data discussed in Section 7.3.2 attributes all catch from a VTR to a protection zone if the point estimate happens to fall in the zone, even if the catch is primarily from areas outside the zone, as the observer data in Section 7.3.3 demonstrates will usually be the case; and (3) none of the analyses explicitly account for compensating behavior by fishermen in response to implementation of protection zones, such as aggressively pursuing a similar level of catch and revenues by reconfiguring fishing activity. We recommend that the Council take Dr. Herrera’s comments into account in considering the potential economic impacts of the proposed alternatives in the Amendment.

The Value and Vulnerability of Deep Sea Corals

The region’s deep sea coral communities warrant the Council’s special attention and a high level of protection because they are:

- Ecologically important. Deep sea corals, and associated anemones and sponges, form the foundation of deep-sea ecosystems, providing food, spawning habitat, and shelter for an array of invertebrate and fish species, and helping to fuel biodiversity hotspots in the canyons and along the shelf break. Deep sea corals are considered comparable to shallow-water reefs in promoting biodiversity.2 In Baltimore and Norfolk canyons, researchers found coral richness to be positively related to demersal fish diversity and that corals are contribute to highly-complex habitat areas favored by fish.3

1 Amendment at 2.
Beneficial to fisheries. The ecological benefits of deep sea corals extend directly and indirectly to managed species. As noted above, studies have found that deep sea corals provide: spawning habitat and shelter for developing larvae and juveniles; structure for shelter-seeking fishes; and enhanced rates of prey capture. Correlative studies and habitat models have shown that adult fish densities are often higher and average fish size larger around deep sea corals compared to areas devoid of corals. Further, research suggests that “fish larvae shelter around soft corals, [thus creating] a strong argument for classifying those [deep sea corals] as essential fish habitat and as vulnerable marine ecosystems.” According to a recent scientific review, “studies to date indicate that functional values in support of commercial fisheries probably represent the most important service provided by cold-water corals.” In this region, coral communities have been observed to provide habitat for various species of flounders, shrimp, hake, skates, redfish, lobster, eels, tilefish, and crabs, among others. Growth rate and carrying capacity in redfish specifically has been correlated to the extent of available coral habitat. We also note that the complex hardbottom that deep sea corals inhabit is exceedingly rare in the region and considered generally of high value as fish habitat.

Of high scientific interest and social utility. The region’s deep sea coral communities have been a subject of intense NOAA-led scientific study in recent years. New and rare species, new understandings about ecological relationships within these habitats, and new appreciation of these deep sea organisms continue to emerge from these investigations. The public has been highly engaged in these explorations as well—in the summer of 2013, the live video feed from the Okeanos Explorer drew approximately 660,000 viewers. Deep sea coral communities have social utility beyond their ecological importance: they provide a carbon sink, a means to study changing ocean circulation patterns, and contribute to biomedical and biotechnological innovations, such as bone grafting, cancer treatment, pharmaceuticals, and antifoulants.

6 Id. at 355.
Highly vulnerable to disturbance. Deep sea ecosystems are extremely vulnerable to human disturbance. Compared to shallow-water counterparts, deep-water species tend to have a longer lifespan, later sexual maturity, slower growth rates and lower natural mortality, all of which generally make them slow to recover from disturbance. Deep sea corals in particular are both fragile and exceptionally long-lived and slow-growing, on the order of only several millimeters per year. Fishing gear that scrapes along a canyon wall or floor can destroy and damage corals that have been growing for centuries, eliminating these deep sea communities for any ecologically relevant period of time. We also note that addressing fishing impacts will increase the resilience of deep sea coral communities to other disturbances that are not as readily mitigated, including ocean acidification and changing ocean temperatures.

Our Recommendations for Preferred Alternatives

We strongly recommend that the Council implement both discrete and broad coral zones. The discrete zones would provide the highest level of protection to the deep sea coral habitat hotspots in the region’s submarine canyons, with boundaries that extend into shallower known or highly suitable coral habitat areas. The broad coral zone would provide protection for significant known and highly likely coral habitat in inter-canyon areas and assist in maintaining connectivity between these biological communities along the shelf break. Many of these areas, and therefore these coral communities, are not encompassed within any of the discrete zones. This hybrid approach is consistent with the 2010 NOAA “Strategic Plan” for the conservation of deep sea corals and should receive the support of the Council.

(1) The Council should designate a broad coral zone with a landward boundary approximating the 200 meter depth contour (Alternative 1B).

Alternative 1B would provide protection for the greatest number and diversity of known deep sea coral occurrences and the greatest areal extent of modeled suitable coral habitat, protecting nearly 100% of the modeled highly suitable coral habitat. Numerous coral observations have occurred shallower than 300 meters. Stony corals, in particular, are found

15 Amendment at 45, Table 21.
at shallower depths with 44% of stony coral observations in the region shallower than 300 meters.\textsuperscript{16} Thirty-three percent of sea pen observations also occur shallower than 200 meters.\textsuperscript{17} In addition, the coral habitat model, which is discussed more below, predicts suitable habitat to be shallower than 300 meters. Finally, the 200 meter boundary would provide the greatest benefit to fish of economic importance in the region since interactions of corals with these species declines as depth increases.

Moreover, because the discrete zones are based on predicted non-stony coral habitat, these zones cannot be relied on to adequately protect stony corals.\textsuperscript{18} Further, because squid gear can extend a significant distance from the vessel, a 200 meter-based broad zone provides a buffer to protect deep sea corals in the discrete zones from fishing on or close to the discrete zone boundaries, including with respect to gear haul back and deployment.

(2) The Council should prohibit all bottom-tending gear within the broad coral zone (Alternative 2B).

We support a prohibition on all bottom-tending gear within the broad coral zone. Contact with bottom longlines, traps, and gillnets, as well as mobile gear like trawls, can damage or kill fragile corals. Scientists participating in the \textit{Okeanos} expeditions observed track marks that they believed were the result of fishing lines; traps were also a common sight in recent expeditions.\textsuperscript{19} In addition, Alternative 2B would help address the threat that a new fishery, or expansion of an existing fishery, using non-mobile bottom gear would pose to these fragile deep sea habitats.

If any broad zone gear exemptions are considered, they should not extend beyond those currently proposed as alternatives. If the Council chooses to adopt one or both of the listed broad zone exemptions (i.e., Alternative 2B-1 for red crab and Alternative 2B-2 for tilefish), we ask that measures, including improved monitoring, be adopted to prevent any increase in impacts, such as from an expansion in the number of vessels, intensity, and/or footprint of current fishing effort.

(3) The Council should designate the 15 proposed canyon/slope discrete zones based on the FMAT-proposed boundaries (Alternative 3B).

The 15 canyon/slope discrete zones designated by the FMAT are deep sea coral “hotspots,” home to the region’s greatest diversity and abundance of cold-water corals, sponges, and anemones. In investigations from 2012-2014, at least 60 species of coral were identified in the

\textsuperscript{16} Id.
\textsuperscript{17} Id.
\textsuperscript{18} Id. at 19, 53.

5
region’s submarine canyons. It is worth noting that the canyons are also well-known biodiversity hotspots, supporting diverse and abundant populations of invertebrates and fishes as well as sea birds and marine mammals, such as endangered sperm, fin, and right whales. Three hundred and twenty-six species have been identified in the region’s canyons; researchers found 123 fish species in Baltimore and Norfolk Canyons alone.

The discrete zone boundaries are based on the best scientific information available, as required by National Standard 2 of the Magnuson-Stevens Act. The boundaries were developed by the FMAT based on detailed slope data and the NOAA coral habitat model. In setting the boundaries, the FMAT also took into account new coral observations from the last several years of exploration. With respect to the coral habitat model specifically, it was developed over a number of years by scientists and deep sea coral experts through an extensive, cross-NOAA effort, including involvement of researchers from National Centers for Coastal Ocean Science (NCCOS), the National Marine Fisheries Service (NMFS), and the Office of Ocean Exploration and Research (OER). The model predicts coral habitat suitability based on coral observations and environmental and geological predictor variables, including depth, depth change, aspect ratio, rugosity, salinity, oxygen, substrate, temperature, and turbidity. The NOAA coral habitat model addresses the problem that it is impossible to identify all coral communities in the region’s more than two dozen canyons, each hundreds of square miles in size, as well as adjacent slope areas.

The FMAT’s methodology for delineating the discrete zone boundaries is supported by recent field research and empirical data. As stated in the Amendment, “[r]ecent research has indicated that the coral habitat suitability model has been very successful in predicting coral habitat, and additionally has confirmed that areas of slope greater than 30 degrees almost always contain hardbottom habitat and deep sea corals.” In 2012-2014, extensive calibration surveys for the model were conducted in the field in a range of canyons, and the model was considered to have “strong predictive power.” Significant effort has also gone into confirming the geographic and bathymetric information associated with historical coral observations, with

---

22 16 USC § 1851(a)(1).
23 Id. at 19, 53.
24 Id. at 19, 53.
any problems encountered with the museum data considered to be only “minor.”

Ongoing ocean exploration, model refinement, and other new information will continue to shape our understanding of where corals are found and likely to be found, and allow us to modify the boundaries of the discrete zones accordingly. But it is important to take protective steps now to help ensure that we do not lose coral communities that have not yet been documented.

We want to note that the methodology used by the FMAT to delineate the discrete zone boundaries is likely to result in zones that are under-inclusive of suitable coral habitat in several notable ways (the proposed zones are also 12% smaller than those originally developed by the FMAT and considered by the Council in the Amendment’s earlier iterations). The FMAT based the zone boundaries on high and very high suitability classifications, and not the medium suitability classification. As noted above, the FMAT also sought to protect highly suitable habitat for the Gorgonian and Alcyonaceans orders of corals, and not for modeled suitable habitat for stony corals or sea pens. Finally, in developing the boundaries for the discrete zones, the FMAT was constrained by the canyon areas specifically identified by the Council and did not extend zone boundaries to encompass all adjacent slope areas otherwise meeting the habitat suitability and slope criteria. For example, significant highly suitable coral habitat on the north side of South Vries Canyon (Figure 20), to the north and south of Washington Canyon (Figure 23), and to the north and south of Norfolk Canyon (Figure 24) are left out of their respective discrete zones.

The Council considered a depth-based boundary for discrete zones as an option, but appropriately rejected this approach for further analysis in the Amendment. Each canyon has a unique bathymetric shape. Researchers have also found that each canyon has a unique biological identity, with prevalence of different coral species, abundance, colony depth, and a host of other characteristics that vary widely from canyon to canyon. It is impossible, as the FMAT determined, to select a single depth zone or set of depth zones that would not be either significantly over- or under-inclusive of known coral presence and highly suitable habitat across the different canyons. The deeper depth contours (300-500 meters) specifically would cut off certain canyon heads and their shallower portions, excluding these areas from protection zones irrespective of known coral presence and highly suitable habitat and contrary to the best available scientific information.

Our groups oppose the industry-proposed boundaries for Baltimore Canyon, Norfolk Canyon, and the Mey-Lindenkohl Slope (Sub-alternative 3B-1). These boundaries were based on the input of what we understand was one participant in the affected fisheries as to where that participant does or does not fish. Our groups have consistently opposed efforts such as this to revise the discrete zone boundaries in ways that are inconsistent with the NOAA’s coral habitat

---

27 Amendment at 19, 53.
29 Amendment at 26-27.
30 E.g., NOAA, Deep Sea Coral Research and Technology Program 2014 Report to Congress.
model and with the best available science as required by National Standard 2, including with
respect to known coral presence and highly suitable coral habitat, as areas with known corals or
highly suitable habitat would be excluded from the protection zones.

The industry proposed boundaries would fail to protect high value deep sea coral habitat in the
three canyon areas. The Baltimore Canyon, Norfolk Canyon, and the Mey-Lindenkohl Slope
discrete zones are the three discrete zones with the highest numbers of historical coral
records.\footnote{Amendment at 69, Table 29.} For both the Mey-Lindenkohl Slope and Baltimore Canyon, observed coral
occurrences would fall outside the industry boundaries.\footnote{Id.} For all three discrete zones, areas of
high/very high coral suitability and/or high slope would shrink by as much as 32% (in the case of
Baltimore Canyon).\footnote{Id.} In addition, the areas excluded in Baltimore Canyon and Norfolk Canyon
under this alternative include areas where Lophelia coral colonies were recently found.\footnote{Id. at 62, Figure 20, and 66, Figure 24 (showing Lophelia observations, as well as other coral observations, immediately adjacent to industry boundaries).} These
observations of Lophelia, a reef-forming species, were the first in the Mid-Atlantic.\footnote{Brooke, S. and Ross, S.W. 2014. First Observations of the Cold-Water Coral \textit{Lophelia pertusa} in mid-Atlantic Canyons of the USA. \textit{Deep Sea Research Part II: Topical Studies in Oceanography}, 104, 245–251.} In recent
investigations of Norfolk Canyon and Baltimore Canyon, scientists have identified high
abundance of corals in Norfolk Canyon, with 1315 new coral observations, and in Baltimore
Canyon, with 791 new coral observations, including dense areas of \textit{Paragorgia, Anthothela, Primnoa, and Acanthogorgia}.\footnote{Brooke, S. 2014. Exploring Hidden Treasures of the Mid-Atlantic Canyons. Presentation to the Mid-Atlantic Fishery Management Council (August 12, 2014); Amendment at 47.} In Norfolk Canyon, corals were observed on 100% of dives; in
Baltimore Canyon, corals were observed on 83% of dives.\footnote{Brooke, S., Exploring Hidden Treasures of the Mid-Atlantic Canyons.}

(4) The Council should prohibit all bottom-tending gear in discrete zones (Alternative 4B).

The discrete zones encompass the highest value coral habitat and deserve the highest level of
protection. In addition, we recommend that the Council and NOAA include an analysis of the
potential impacts of mid-water trawl gear, which is mobile and has been documented to
contact the sea floor, in the Environmental Assessment that will be developed for this action.\footnote{South Atlantic Fishery Management Council (SAFMC). 2009. Comprehensive Ecosystem-Based Amendment 1 for the South Atlantic Region; New England Fishery Management Council. 2013. Amendment 5 to the Fishery Management Plan for Atlantic Herring including a Final Environmental Impact Statement, Volume I, at ix.} We note that the South Atlantic Fishery Management Council has prohibited mid-water trawls
from operating in the region’s deepwater coral protection areas.\footnote{SAFMC, \textit{Comprehensive Ecosystem-Based Amendment 1}.}
(5) The Council should require the use of VMS for Illex squid vessels (Alternative 6B).

Under Alternative 6B, Illex (shortfin) squid vessels would be required to install and operate VMS, which would greatly assist implementation and enforcement of the protection zones. It is our understanding that VMS has been highly effective in ensuring compliance with deep sea coral protections in the South Atlantic. We note that many of the boats participating in the Illex fishery are already required to use these monitoring devices.⁴⁰

*   *   *

The Deep Sea Corals Amendment represents a historic opportunity to adopt reasonable measures that will protect ecologically-important and highly vulnerable deep sea coral communities in the region. Habitat conservation measures such as those proposed in the Amendment are a vital part of maintaining productive and resilient marine ecosystems, systems capable of providing abundant fish and supporting fisheries and fishing communities. Our groups are excited to see the Council take this step and greatly appreciate the opportunity to provide these comments.

Sincerely,

Bradford H. Sewell  
Fisheries Policy Director & Senior Attorney  
Natural Resources Defense Council

Adrienne Esposito  
Executive Director  
Citizens Campaign for the Environment

Greg Cunningham  
Program Director, Clean Energy and Climate Change  
Conservation Law Foundation

Gib Brogan  
Fisheries Campaign Manager  
Oceana

Merry Camhi, PhD  
Director, New York Seascape  
Wildlife Conservation Society  
New York Aquarium

⁴⁰ Amendment at 5.
January 28, 2015

Dr. Christopher M. Moore  
Executive Director  
Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201,  
Dover, Delaware 19901

Mr. Richard Robins  
Chairman  
Mid-Atlantic Fishery Management Council  
800 North State Street, Suite 201  
Dover, DE 19901

RE: Deep-Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan: Measures to Protect Deep-Sea Corals from Impacts of Fishing Gear

Dear Dr. Moore and Chairman Robins,

We write on behalf of Earthjustice to express our support for the Mid-Atlantic Fishery Management Council’s (Council) development of comprehensive protections for deep-sea corals under the Deep-Sea Corals Amendment (Amendment) to the Mackerel, Squid, and Butterfish Fishery Management Plan (FMP). We are encouraged that the Council intends to protect unique and fragile deep-sea bottom communities that provide ecosystem services for countless fish and invertebrates, including commercially valuable species that depend on these areas as habitat. This Amendment is needed to advance these important policy goals and must be consistent with the Magnuson-Stevens Fishery Conservation and Management Act’s (MSA) requirement to minimize the adverse effects of fishing on habitat to the extent practicable and be based on the best scientific information available. Specifically, the Council should take the following actions:

1. Protect deep-sea coral ecosystems by prohibiting all bottom-tending gear (including mid-water trawls) (Alternative 2B) within the 200-meter broad zone (Alternative 1B);
2. Protect deep-sea corals ecosystems by prohibiting all bottom-tending gear (including mid-water trawls) (Alternative 4B) within each of the 15 designated discrete zones (Alternative 3B);
3. Require the use of Vessel Monitoring Systems on Illex squid vessels to ensure enforceability (Alternative 6B);
4. Prohibit exemptions beyond those analyzed in the draft Amendment (Alternatives 2B-1 and 2B-2) and, if either should pass, amend them to prevent any increase in impacts and/or footprint of current bottom-fishing effort; and,

---

5. Require that a plan be established to effectively monitor and enforce the measures adopted through this Amendment, as well as to inform fishermen who may be affected by them.

Around the world, many similar deep-sea biodiversity hotspots have already been destroyed by bottom fishing. As the oceans warm, numerous fish assemblages are expected to shift deeper, and fisheries are expected to follow, so these places will be of greater importance and at greater risk in the future.

**The Council Has A Legal Requirement To Minimize The Adverse Effects Of Fishing On Habitat To The Extent Practicable Based On The Best Available Science**

Under the MSA, the Council is required to minimize the adverse effects of fishing on habitat using the best available science, and has broad authority to protect important fish habitat in its fishery management plans. The Council has stated that it is doing this Amendment under the MSA’s discretionary provision to designate deep sea coral zones and to prevent physical damage to deep sea corals from fishing gear in those zones. *Id.* § 1853(b)(2)(B). The Council may also use discretionary provisions to protect habitat by closing areas to fishing, limiting the types of fishing, vessels, or gear that can be allowed in designated zones, establishing limitations on the catch, sale, or transport of fish, and prohibiting or limiting the specific types and quantities of fishing gear, vessels or equipment that fishers can use. *See, e.g.,* 16 U.S.C. § 1853 (b)(2)-(5); (12); (14). Discretionary provisions also exist to conserve target and non-target fishery habitats. *Id.* § 1853(b)(12).

The Council has a mandatory duty to “describe and identify essential fish habitat” in each fishery management plan. 16 U.S.C. § 1853(a)(7). “Essential fish habitat” (“EFH”) is broadly defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” 16 U.S.C. § 1802(10). NMFS has interpreted the word “necessary” to mean “the amount of habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem.”

NMFS has also stated that linking EFH to healthy ecosystems is important in order to conserve the habitats of all marine resources which depend on the same ecosystem and that councils should consider the inter-relationships between and among species, as a result. Regulations implementing EFH provisions include detailed requirements the Council must follow when describing and identifying the habitats. Descriptions must clearly state the habitat for each life stage of the managed species and explain the physical, biological, and chemical characteristics of the habitat and how those characteristics influence the use of the habitat. 50 C.F.R. § 600.815(a). Councils must use information from the “best available sources” to describe and identify EFH. *Id.* § 600.815(a)(1)(ii)(B).

---

2 62 Fed. Reg. 66531, 66533 (Dec. 19, 1997); see also 50 C.F.R. 600.815(a)(1)(iv)(E) (“The extent of the EFH should be based on the judgment of the Secretary and the appropriate Council(s) regarding the quantity and quality of habitat that are necessary to maintain a sustainable fishery and the managed species’ contribution to a healthy ecosystem.”).

3 62 Fed. Reg. at 66533; see also 66531 (“Councils should strive to understand the ecological roles (e.g. prey, competitors, trophic links within food webs, nutrient transfer between ecosystems, etc.) played by managed species within their ecosystems. They should protect, conserve, and enhance adequate quantities of EFH to support a fish population that is capable of fulfilling all of those contributions that the managed species makes to maintaining a healthy ecosystem as well as supporting a sustainable fishery.”).
In addition to identifying EFH, the Magnuson-Stevens Act also requires Councils to “minimize to the extent practicable” the adverse effects of fishing on EFH and “identify other actions to encourage the conservation and enhancement” of those habitats. 16 U.S.C. § 1853(a)(7). An “adverse effect” is “any impact which reduces the quality and/or quantity of EFH.” 50 C.F.R. § 600.810(a). Councils “must act to prevent, mitigate, or minimize any adverse effects from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects essential fish habitat in a manner that is more than minimal and not temporary in nature.” 50 C.F.R. § 600.815(a)(2)(ii). Thus, the Council is required to act, to the extent practicable, to prevent, mitigate, or minimize adverse effects from fishing once two things have been established: (1) fishing activity is reducing the quantity or quality of essential fish habitat, thereby causing an adverse effect, and (2) the adverse effect is more than minimal and not temporary in nature.

Once a Council has identified adverse fishing effects that need to be addressed, the Council should identify a range of potential actions and analyze the practicability of potential actions. Id. § 600.815(a)(2)(ii). The Council should adopt any new measures that are necessary and practicable. Id. In deciding whether it is practicable to minimize adverse effects, Councils must consider the nature and extent of the effect on EFH and the long and short-term costs and benefits of potential management measures. Id. § 600.815(a)(2)(iii).

Deep Sea Corals Face Numerous Threats

Deep-sea corals, also known as cold-water corals, face threats from climate change. These corals are long-lived, slow to reproduce, fragile, sessile animals that are generally considered to grow at depths greater than 50 meters, but they have been found deeper than 6,000 meters (~20,000 feet). Some of the corals found in the Mid-Atlantic are likely thousands of years old, placing them among the oldest living animals on the planet. They are known to promote biodiversity and are thought to be comparable in this regard to shallow-water reefs. Studies have shown that even coral rubble promotes higher biodiversity levels than in nearby bottom sediment. It is critically important to protect sensitive areas now because deep-sea corals are slow to recover from disturbance due to their slow growth rates, long lifespans, late sexual maturity, and low natural mortality. As a result, they now face a number of climate change-induced threats like rising ocean temperatures and acidification, as well as natural ones, including underwater geological activity (e.g., landslides), diseases, and strong ocean currents.

In addition to threats from climate change, all three Atlantic Fishery Management Councils have acknowledged that bottom fishing is the primary threat to deep-sea corals in a

---

Memorandum of Understanding (MOU) co-signed in mid-2013, stating that “…bottom tending fishing gear has been known to cause significant disturbance in many locations, and is considered to be the major threat to deep-sea corals in areas where such fishing occurs."\(^9\)

Because corals are slow-growing, immobile, and fragile, they are particularly vulnerable to fishing gears that contact the bottom.\(^10\) When damaged or destroyed, recovery of deep-sea corals and their communities is expected to be slow (decades or centuries), if at all.\(^11\) For example, in the Gulf of Alaska, a single tow of a bottom trawl that landed one metric ton of deep-sea coral showed that the vast majority of corals that were touched but not removed by the gear were still missing nearly all of their branches years after the event.\(^12\)

Bottom fishing disrupts not only corals, but the species that depend on them, too, by limiting the ability of the affected populations to replace themselves, diminishing the long-term natural productivity of habitats, and reducing biodiversity.\(^13\) In one study, scientists found that bottom trawling reduced the diversity and density of other species by 300 percent compared to nearby untrawled areas.\(^14\) Numerous surveys have shed light on the impacts of fishing activity on deep-sea coral communities.\(^15\) Along the Florida continental shelf, for example, “more than 90 percent of Oculina habitat in a reserve off the east coast of Florida has been reduced to unconsolidated rubble…” with evidence of recent trawling activities as a major cause of the damage.\(^16\) And in the Gulf of Maine only a few decades ago, corals were commonly observed among hard-bottom communities, though their distribution is now thought to be greatly reduced, with documented tracks that are consistent with mobile bottom gear.\(^17\)

As catches of groundfish stocks like cod and halibut have declined in the northeastern U.S., fisheries have sought to land other species like monkfish, which were once considered only bycatch, that live in deep waters of the Mid-Atlantic and New England. The Amendment rightly seeks “…to identify and implement measures that reduce, to the extent practicable, impacts of

---


fishing gear on deep-sea corals in the Mid-Atlantic region.”\textsuperscript{18} Several other Councils have advanced deep-sea coral protections in their own jurisdictional waters. For example, in Alaska as of early 2012, the North Pacific Council had protected over 14,000 square miles of habitat from the impact of bottom contact gear.\textsuperscript{19} The South Atlantic Council designated five areas (for a total area of over 23,000 square miles) as Coral Habitat Areas of Particular Concern (HAPC) in 2010,\textsuperscript{20} and has recently expanded those protections by an additional 900 square miles under Coral Amendment 8.\textsuperscript{21}

The Council Must Protect Discrete and Broad Zones

This Amendment contemplates the largest deep-sea coral protections ever conferred in the U.S. Atlantic (>100,000 square kilometers), and to be consistent with the MSA and the goals of the Amendment\textsuperscript{22} it must protect both discrete and broad zones. Deep-sea corals provide habitat for many fish and invertebrates, including commercially valuable species like shrimp, crab,\textsuperscript{23} tilefish, and summer flounder.\textsuperscript{24} Specifically, studies have found that deep-sea corals provide: spawning habitat and shelter for developing larvae and juveniles; structure for shelter-seeking fishes; and, enhanced rates of prey capture.\textsuperscript{25} In the Northwest Atlantic, deep reefs support higher abundances of fish than in the surrounding soft bottoms, likely because corals (and sponges) provide relief, rugosity, and overall enhanced complexity, which is thought to be an important factor for deep-sea fish and habitat associations.\textsuperscript{26} Empirical studies and habitat models have shown that adult fish are often larger and exist at higher densities around deep-sea corals compared to areas devoid of corals.\textsuperscript{27} Recent research suggests that fish larvae shelter in and around soft coral, which may provide a strong argument for designating those corals as essential fish habitat.\textsuperscript{28} One meta-analysis of studies suggests that the “…functional values in


\textsuperscript{19} NOAA (2012). \textit{Habitat Areas of Particular Concern in the Alaska Region}.

\textsuperscript{20} SAFMC (2014). \textit{Deep-Water Corals}.


\textsuperscript{22} PID at p. 12 (“The management goals and objectives, as described in the current FMP are listed below: 1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries; 2. Promote the growth of the U.S. commercial fishery, including the fishery for export; 3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP; 4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy; 5. Increase understanding of the conditions of the stocks and fisheries; 6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.”).


\textsuperscript{24} Mid-Atlantic Regional Council on the Ocean (Sept. 12, 2014). \textit{MARCO Statement on a Course of Action for the Conservation of Mid-Atlantic Submarine Canyons}.


\textsuperscript{26} Ross, S.W., Rhode, M., & A.M. Quattrini (2015, \textit{in press}). Fish Distribution and Habitat Use Within and Near Baltimore and Norfolk Canyons, U.S. Middle Atlantic Slope. \textit{Deep-Sea Research I}.


\textsuperscript{28} \textit{Id.} at p. 355.
support of commercial fisheries probably represent the most important service provided by cold-water corals.”

In order to protect this important marine habitat, the Council must adopt a dual approach that accounts for known deep-sea coral hotspots (largely found in the submarine canyons of the shelf’s edge) as well as those areas in between the canyons where corals are also likely to live or reestablish. The Council should protect every canyon listed in the Amendment as strongly as possible. The Council should also select the 200-meter broad zone, which would protect nearly 100 percent of the areas predicted as having a high or very high likelihood of suitable deep-sea coral habitat, while still allowing current fisheries access to the vast majority of their current fishing grounds. The combination of these discrete and broad zone alternatives will achieve the goals of the Amendment, and raise the bar for stewardship of our ocean resources.

**Earthjustice Supports Prohibiting All Bottom-Tending Gear In The 200-Meter Broad Zone (Alternatives 1A-1E and 2A-2D)**

All bottom-tending gear (Alternative 2B) within the 200-meter broad zone (Alternative 1B) should be prohibited. Although there are numerous observed deep-sea corals and other sensitive fauna that live on the continental shelf in more shallow areas that would not be protected under any of the alternatives currently in the Amendment, we support the landward boundary of the 200-meter broad zone, which will provide essential conservation benefits to areas that are largely pristine. Like terrestrial environments, the deep ocean is “patchy,” with areas of high organism density and other areas more desert-like, with different biological communities adapted to those conditions. Research has shown, however, that “…protection of deep-water corals can be crucial to preserve the biodiversity of surrounding open slopes, and that the protection of dead corals, a so-far almost neglected habitat in terms of biological conservation, can further contribute to the maintenance of a high deep-sea biodiversity.”

Designating the 200-meter broad zone as off-limits to bottom contact gear will protect not only the greatest numbers of observed deep-seas corals compared to the other proposed areas, but also the most hard substrate required for coral attachment.

Managers should also utilize NOAA’s habitat suitability model, because it is a validated method to predict deep-sea coral locations. The agency has invested millions of dollars in developing and testing this deep-sea coral habitat suitability model, using data collected through numerous Federal, State, academic, non-profit organization, and industry efforts for many years. It uses 21st century technology as a tool to predict the distribution of corals on the seafloor. This methodology represents the most advanced deep-sea science available, has been applied and shown to be predictive elsewhere, and has “…already accurately identified previously

undiscovered deep-sea coral habitats.” The predictive validity of NOAA’s model has been confirmed at sea, including during research cruises in 2012-13 in the Mid-Atlantic and Gulf of Maine. Model-generated maps represent the predicted deep-sea coral locations with a spatial resolution of about 350 square meters, an area smaller than a basketball court. The areas of greatest overlap between observed corals and documented fishing effort are those near the landward boundary of this 200-meter broad zone. This best available science indicates that precluding bottom gear within this 200-meter broad zone would protect nearly 100% of the areas with a high or very high likelihood of suitable coral habitat.

As NOAA Fisheries Observer Program data show, there is already some bottom fishing that occurs on the landward edge of this area, but the extent of that fishing is as yet minimal in comparison to the fishing that occurs on the continental slope. The 200-meter broad zone represents a compromise because it does not account for many corals know to occur in more shallow waters, a fact recognized in the MOU, which states that “Deep-sea corals are typically found at depths greater than 50 meters on the continental shelf and slopes, in offshore canyons, and near seamounts.” In its implementation of the South Atlantic’s Comprehensive Ecosystem-Based Amendment 1, NOAA Fisheries recognized the value of protecting deep-water corals for the entire ecosystem: “…the intent of the Deepwater Coral HAPCs is to establish protection, not only for the deepwater coral species themselves, but for the entire deepwater coral ecosystem which encompasses individual coral colonies, deepwater coral reefs and hard live bottom habitats, and interconnected benthic and pelagic systems.”

To avoid the complications of fishing vessels potentially deploying gear in areas likely to have corals along the canyon heads and upper shelf break, the Council should adopt the 200-meter broad zone. This would help to diminish the impact of a vessel drifting into and hauling their gears from within more coral-dense areas. Nevertheless, the Council and NOAA Fisheries should examine closely the implications of gear deployment methods as they relate to coral protection areas. Should the Council approve one of the broad zone alternatives, it will be important to ensure that the boundaries of the chosen area be developed so as to facilitate effective enforcement and monitoring by the Coast Guard and NOAA’s Office of Law Enforcement. The SAFMC did this by drawing the landward boundary of the Stetson/Miami Terrace HAPC by connecting rhumb lines between nearly 200 latitude/longitude points that approximate the 400-meter depth contour. Coast Guard staff have informed the Council that it is possible to enforce protections established using this methodology.

---

38 75 Fed. Reg. 35330-35335, at 35331 (June 22, 2010).
Earthjustice Supports The Protection Of 15 Major Canyons (Discrete Zones) Along The Edge Of The Continental Shelf (Alternatives 3A-3B and 4A-4C)

Each of the 15 major canyons (Alternatives 3B) along the edge of the Mid-Atlantic continental shelf should be protected from all bottom-tending gear (Alternatives 4B). As the gems of the deep Mid-Atlantic, these are the areas where deep-sea corals are in highest abundance and density. With no two canyons exactly alike, their morphologies make them hospitable to corals because they provide substantial rocky substrate to which corals can affix themselves and shelter from strong ocean currents. Many marine organisms inhabit these biologically and geologically diverse places, while others, like tuna, billfish, marine mammals, sea turtles, and seabirds, visit their nutrient-rich waters for sustenance. NOAA has documented a great diversity of fauna, from commercially important fish to chemosynthetic “cold-seep” communities, and observations in 2012 in Baltimore and Norfolk Canyons revealed the coral Lophelia pertusa, a reef-forming coral that creates complex habitat supporting a diverse array of life. Some evidence suggests that the canyons serve as refuges for fishes from trawling and other human impacts, including for cusk, whose numbers have declined so drastically in the western North Atlantic that they have been listed as threatened in Canadian waters.

We urge the Council to protect all 15 habitat model-delineated canyons under Alternatives 3B for the discrete zone boundaries. The current alternatives for protecting the canyons already represent a significant compromise of biologically important areas. There are numerous areas of high-to-very highly suitable coral habitat and high slope that fall outside the boundaries of the canyons. Amendment Figure 19 (above), for example, clearly shows significant area of high and very high habitat suitability and slopes >30 degrees to the northeast and southwest of Spencer Canyon. Other canyons exhibit similar patterns. These findings strongly suggest the need for a dual approach that accounts for coral ecosystems in both the canyons and inter-canyon areas (which are mostly included within the 200-meter broad zone).

Notably, we do not support Sub-alternative 3B-1, which would designate canyon boundaries based on those recommended by one member of the Council’s Mackerel, Squid, Butterfish Advisory Panel after the 2013 Deep-Sea Coral Alternatives Development Workshop. (The methods by which these substitute canyon boundaries were drawn have not been made publicly available to our knowledge.) As NOAA’s Habitat Model shows, the advisor-proposed boundaries poorly account for the extent of high and very high coral habitat suitability of the Mey-Lindenkohl Slope and Baltimore and Norfolk Canyons, particularly in the landward edges of these areas. In comparing the total areas of high and very high coral habitat suitability for each of these three discrete zones, it should be noted that: (1) the total area of the Mey-Lindenkohl Slope would be vastly reduced under Sub-alternative 3B-1 (from 414 square miles to 383 or 318 square miles), failing to capture the areas most critical to corals, which are at the landward edge of the slope, and (2) although the total areas of Baltimore and Norfolk Canyons

---

would remain relatively similar under Sub-alternative 3B-1, the advisor-proposed boundaries would prioritize protection of areas not shown to have high or very high habitat suitability in much deeper (and largely unfished) waters. Additionally, there are corals, including *Lophelia*, that have been observed very near to the edges of the advisor-proposed boundaries. Such proximity to these known corals, as well as extensive areas with high and very high coral habitat suitability, would suggest that the Council should designate and preclude bottom fishing in the NOAA habitat model-derived discrete zones to limit coral interactions.

**Vessel Monitoring System Should Be Required In The Illex Fishery (Alternative 6A-6B)**

Earthjustice supports Alternative 6B requiring the installation of vessel monitoring systems (VMS) for the *Illex* squid fishery, although this alternative is currently in the “considered but rejected” category. Three years after VMS was implemented in the rock shrimp fishery, implemented to protect Florida’s first deep-sea coral area in federal waters, NOAA Fisheries documented 100-percent compliance (no incursions into the protected area) and noted that this measure was both cost-effective and time-saving for enforcement. Here, NOAA Observer Program records demonstrate that the *Illex* squid fishery is the most active fishery within the proposed deep-sea coral protection zones based on documented numbers of hauls, and as such, is among the fisheries most likely to encounter deep-sea corals.

Regardless of which areas are ultimately chosen, VMS would ensure compliance with restrictions on access to deep-sea coral protected areas. Vessel owners with limited access longfin squid and mackerel permits are already required to purchase, install, and operate VMS as of September 1, 2014, and the Council has acknowledged that “…few *Illex* moratorium vessels are not already required to use VMS related to other permits they possess.” The purchase of a VMS system can be subsidized through a fund managed by the Pacific States Marine Fisheries Commission, pending the availability of funds, though Commission staff have indicated that they have historically had sufficient funding available for all those who request it. NOAA budgetary concerns cannot be used as a basis to delay requiring VMS on the remaining vessels in a fishery with fewer than 20 participants, especially when funding is available.

**Exemptions Are Contrary To The Purpose and Need of the Amendment**

We agree with Council staff that an exemption of *Illex* and longfin squid fisheries from the conditions of the broad or discrete zones would be “…contrary to the 'purpose and need’ of

---

50 See Pacific States Marine Fisheries Commission Vessel Monitoring System Reimbursement Program.
the Amendment.\textsuperscript{52} Allowing squid bottom otter trawls – among the more damaging gear types – to continue to fish in (or even expand within) the proposed coral zones would effectively nullify the value of the Amendment.

Given that damage from fishing gear to deep-sea corals is thought to be nearly permanent, we also encourage the Council to proceed with caution should it exempt the deep-sea red crab (Alternative 2B-1) and/or golden tilefish (Alternative 2B-2) fisheries from the proposed broad zones, and amend these alternatives to prevent the expansion of these fisheries including participants, vessels, and intensity. Longline gear has been observed to dislodge corals,\textsuperscript{53} and crab pots are sometimes observed with coral bycatch.\textsuperscript{54} Some NOAA research has shown that coral damage tends to be greater in areas fished with crab pots, fish pots, or longline gear than in unfished areas.\textsuperscript{55} If lost at sea, fixed gears like crab pots can continue to do damage to bottom communities for many years.\textsuperscript{56}

The deep-sea red crab fishery, with four active vessels that landed red crab as of December 2013,\textsuperscript{57} operates entirely within a narrow range of depth (about 550 to 750 meters, according to the PID, although NOAA Fisheries Greater Atlantic Region Office states that the fishery operates between 400 – 600 meters\textsuperscript{58}). If the Council chooses to exempt this fishery, no new participants should receive limited access permits (\textit{i.e.}, no expansion of the fishery) in the future, especially given their relatively high total allowable landings of almost 4 million pounds per year and a lack of trip limits.\textsuperscript{59} However, it is important that these vessels, which do not have specific fishery observer or VMS requirements,\textsuperscript{60} should report any observed deep-sea coral interactions to NOAA through their required Catch Reporting and Vessel Trip Reports. NOAA should provide red crab vessels maps of predicted coral habitat to aid them in avoiding interactions with corals.

Finally, with 141 permitted vessels (plus an additional 25 party/charter vessels) that landed tilefish in fishing year 2013,\textsuperscript{61} the tilefish fishery also has the potential to cause

\textsuperscript{52} MAFMC (Jan. 2015). \textit{Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan: Measures to Protect Deep Sea Corals from Impacts of Fishing Gear: Public Information Document}, Pp. 11-12 (“This amendment contains alternatives that aim to protect corals by restricting fishing in select areas where fishing effort and prime coral habitats overlap, as well as by restricting expansion of effort into less heavily fished areas where corals are known or are highly likely to be present.”), p. 26 (“these exemption alternatives would appear to be contrary to the “purpose and need” of the amendment if they would result in a lack of meaningful action in combination with other alternatives”).


\textsuperscript{58} NOAA Fisheries, Greater Atlantic Region Office (2014). \textit{Atlantic Deep-Sea Red Crab.}

\textsuperscript{59} NOAA Fisheries, Greater Atlantic Region Office (2014). \textit{Atlantic Deep-Sea Red Crab 2014-2016 Final Specifications.}

\textsuperscript{60} NOAA Fisheries, Greater Atlantic Region Office (2014). \textit{Atlantic Deep-Sea Red Crab.}

significant damage to deep-sea coral. Council staff concluded that “…longline effort in these areas tends to be concentrated around the 200-meter depth contour or shallower at the heads of the canyon.”\textsuperscript{62} These vessels, too, have no specific fishery observer or VMS requirements,\textsuperscript{63} and as such, should be required to report any observed deep-sea coral interactions to NOAA through their required Catch Reporting and Vessel Trip Reports. If this fishery shifts into deeper waters their exemptions should be reconsidered.

**Mid-Water Trawl Gear Should Be Prohibited From Fishing In All Of The Designated Coral Protection Zones**

Mid-water trawl (MWT) gear has been documented to contact the seafloor, and as such, should be included among the gear types prohibited from fishing in the designated coral protection zones. The original Amendment discussion document noted that “…mid-water trawls may also impact corals during periodic contact with the bottom…,”\textsuperscript{64} although MWT gear seems to have dropped out of the list of analyzed gear. At the very least, MWT should be further analyzed for potential impacts to deep-sea corals before this Amendment is finalized because this gear has been documented to contact the bottom in the Atlantic herring fishery. See FEIS Amendment 5 to the Atlantic Herring FMP (2013), at p. 225 (“information provided by herring fishermen indicates that the footrope, the belly of the net, and/or the weights do occasionally contact the bottom. Sometimes, when herring are in deep water near the bottom, midwater trawls are intentionally fished close to or in contact with the bottom”) and p.156 (listing groundfish as bycatch species in herring mid-water trawls in Table 12).

Additionally, because the MOU seeks to ensure “continuity among coral-related management measures in all three Council regions, especially where there are fisheries that overlap between regions,” and the SAFMC has already chosen to prohibit MWT gear from its Coral HAPCs,\textsuperscript{65} The MAFMC should also prohibit this gear in the deep coral protected areas in the Mid-Atlantic region. It is unfortunate that the Council has chosen not to prohibit this gear and Earthjustice intends to ask NOAA Fisheries to analyze the potential impacts of MWT gear to deep-sea coral communities during the development of the environmental assessment for this Amendment.

**Future Actions Through Framework Adjustments Should Be Done In A Precautionary Manner (Alternatives 5A-5E)**

Any future framework adjustment under alternatives 5A-5E, should be consistent with the MSA, the goals and objectives of the Amendment, and ensure that the action increases protection of sensitive habitat and does not negatively impact deep-sea corals. The Council must

---


\textsuperscript{63} NOAA Fisheries, Greater Atlantic Region (2014). Golden Tilefish.

\textsuperscript{64} MAFMC (Jan. 2013). Scoping Document for Amendment 16 to the Atlantic MSB FMP: Measures to Protect Deep Sea Corals from Impacts of Fishing Gear.

pursue stewardship consistent with Strategy 15.5 (“Develop management approaches that minimize adverse ecosystem impacts”) of its 2014-2018 Strategic Plan. In that vein, because Council analyses thus far have focused on soft corals and sea fans/whips, future framework action should incorporate stony corals and sea pens into protected areas to account for their roles in supporting deep-sea ecosystems.

Alternative 5B would allow the Council to modify coral zone boundaries, though we feel that the discrete zone boundaries, as drawn, coupled with the 200-meter broad zone, do a sufficient job of protecting what we know to be area of known and likely coral presence. In the event that new observations of deep-sea coral are made in the future, those areas, too, should be protected using boundaries delineated based on the same 0.4-nautical mile buffer as was used to draw the discrete zones. This will help to limit fishery-coral interactions by accounting for: 1) the resolution of the habitat suitability analysis model, and 2) the distances that mobile gear are deployed behind a vessel.

Alternative 5C would allow the Council to modify management measures within zones via framework action. As mentioned previously, we support Alternatives 2B and 4B (to prohibit all bottom-tending gear within the 200-meter broad zone and all discrete zones, respectively). Based on both coral observations and NOAA’s habitat suitability analysis model, there are likely deep-sea corals present in much of the 200-meter broad zone and canyons. Council members should not presume these coral ecosystems have been destroyed based on NOAA expeditions that largely did not survey this more shallow depth range. Future research may focus on these areas, and once that information is available, boundaries could be adjusted, but until then, these areas should be protected.

Alternative 5D would allow the Council to add additional discrete coral zones via framework action. There are numerous smaller, unnamed canyons along the shelf break in the Mid-Atlantic. If future research expeditions yield evidence that these areas are coral (or other deep-sea biological) hotspots, they should be clearly delineated and then made off-limits to any bottom-contacting gear.

Earthjustice agrees with Council staff recommendation to reject a special access program under Alternative 5E because, as noted in the PID, there is no specific objective set forth for such an action.

The Economics Analysis Likely Exaggerates The Economic Consequences

The economic impacts analysis used to implement management measures intended to protect deep-sea corals should be used cautiously. The point data based on vessel trip reports (VTR) is based on nonspecific fishing locations, and despite several workshops and opportunities for data-sharing, there remains an “…absence of spatially explicit fishery effort data for many fisheries.” The VTR-based revenue mapping model, a new and untested tool

provided by NOAA’s Northeast Fisheries Science Center, was used to generate maps that ascribe general fishing locations and effort with revenues, though we find the maps and data products misleading and counter to information from the NOAA Fisheries Observer Program. For example, the model does not account for fishing behaviors related to haul depth, which are provided in Observer Program data (see Amendment Figures 31-33). As a result, model-generated revenue maps (see Figures 25-30) seem to imply that fishing occurs in areas and at depths that are not actually fished, especially in the middle and along the steep edges of the canyons.

Further, the Amendment’s Public Information Document (PID) warns that, “When interpreting the maps, the appropriate interpretation is that most revenues would be contained by the areas of intense color, but it would not be correct to interpret the model as saying high effort definitely occurred in all areas of intense color.” We encourage the Council to review the caveats to these data described on page 71 of the PID (“the model likely overstates effort and revenue dependence in those deeper areas, suggesting that the values (i.e. contributions to overall revenue) in Tables 31 and 32 are overestimates.”). Although we expect other public comments to cover this topic in more detail, based on our understanding, we feel that the economic analyses exaggerate the possible impacts.

**Monitoring, Enforcement, and Education**

In order to monitor and enforce the restrictions in these areas, the Council and NOAA should establish a process that jointly assesses the effectiveness of whatever deep-sea coral zones are designated as off-limits to bottom fishing, and the chosen metrics should be reviewed periodically to make adjustments as necessary. For example, coral bycatch should be identified and reported on annual NOAA Observer Program records and all NEFOP observers should be trained to identify deep-sea corals. In addition, coral interactions should be documented on Vessel Trip Reports, Captain's Daily Fishing Reports, VMS logs, and/or all relevant reports. NOAA should also brief the Council at least once annually with updates on: 1) the effectiveness of coral zone protections; 2) new coral observations and updates to the habitat model; and, 3) new understandings of ecosystem function and value.

Given that the current understanding of gear impacts on bottom communities is poor, NOAA and the Council should support scientific research efforts to assess the impact of deep-sea fishing on target and non-target species and their environment. In addition, because the Amendment seeks to protect deep-sea corals from all damaging bottom gear, NOAA and the Council should coordinate with the Atlantic States Marine Fisheries Commission to discuss the impacts that the lobster fishery – a fishery managed by that body – has on deep-sea corals in the Mid-Atlantic, and consider including them among the gear types that are restricted in the areas protected.

Once implemented, any actions taken to protect deep-sea corals through the Deep-Sea Corals Amendment may reduce commercial fishing effort to some degree, but “…some of this
effort is likely to be displaced to areas outside any implemented coral zones."68 Thus, once the Amendment is in place, it will be essential for the Council and NOAA to communicate clearly to fishermen about the designated deep-sea coral protections. The SAFMC has taken the approach of providing free maps online69 that fishermen can integrate into onboard navigation equipment. These maps are available as shapefiles, tab-delimited coordinates, and Google Earth files, all of which are available for anyone to use/visualize with free software. This approach could work in the Mid-Atlantic region to aid monitoring and enforcement in these protected areas.

Conclusion

To comply with its legal requirements and meet the conservation objectives of this Amendment, the Council should advance the most protective alternatives in this Amendment without delay. This would protect known deep-sea coral hotspots (i.e., the canyons) and “freeze the footprint” of fishing where corals have suffered little or no damage (i.e., in the broad zones). A combination of alternatives 1B, 2B, 3B, 4B, and 6B will achieve these goals and set a standard for stewardship. This approach also complements the Council’s goal of managing fisheries using Ecosystem-Based Fisheries Management (EBFM).70

The three regional councils on the East Coast have all recognized that “…deep-sea coral habitats [are] an important component of the marine ecosystem needed to sustain fishery resources.”71 Designating each named canyon and the 200-meter broad zone as off-limits to bottom-contacting gear is consistent with the law, the goals and objectives of the Amendment, and will set a standard for future action by other Councils such as those contemplated by the Gulf Council and the New England Council. Because ecosystems are cross-jurisdictional, each management body operating with the Northeast Large Marine Ecosystem must approach EBFM in a coordinated fashion in order to succeed.

Based on its Habitat Blueprint,72 Deep-Sea Coral 2014 Report to Congress,73 and Strategic Plan for Deep-Sea Coral and Sponge Ecosystems,74 we expect NOAA will support strong actions taken by the Council to protect deep-sea corals within the region. In the last few years, NOAA and its partners have increased their deep-sea research and exploration programs in the Mid-Atlantic substantially, including the Deep-Sea Coral Research and Technology Program’s fieldwork to locate and characterize corals in the Northeast, and have made a commitment to translating that science into conservation measures.75 The intent of EBFM is to foster a comprehensive approach to managing species within the context of the broader ecosystem. Leaving deep-sea corals and their communities intact under the Deep Sea Corals

69 See SAFMC: Deepwater Coral Habitat Areas of Particular Concern (Coral HAPCs).
70 MAFMC (2014). What is an "Ecosystem Approach" to Fisheries Management?
Amendment is important for other species, including ones we know and depend upon, and promotes EBFM by recognizing that these organisms provide essential ecosystem services.

Thank you for considering these comments.

Roger Fleming
Erica Fuller
Attorneys
Earthjustice

Cc: John Bullard, Regional Administrator GARFO
Support the Deep-Sea Coral Conservation Amendment

There are deep canyons at the bottom of the ocean off the U.S. Mid-Atlantic coast, teeming with marine creatures as well as deep-sea corals that are hundreds of years old. Some of these corals are even thousands of years old; amongst the oldest living creatures on earth. These corals are in danger from commercial fishing.

In a process of commercial fishing known as bottom trawling, boats drag heavy, weighted nets along the ocean floor, destroying corals as they go. Fishing gear like bottom trawl nets destroy in minutes the coral that took nature centuries to build.

When that happens, the marine creatures that depend on coral reefs are left vulnerable as well. Coral reefs provide structure and a habitat for diverse marine life, are nurseries for fish, and are essential for the health of the entire ocean.

40% of coral worldwide have already been destroyed.

The coral off the U.S. Mid-Atlantic coast can easily be saved, if we act NOW.

The Mid-Atlantic Fisheries Management Council, which regulates fishing in these waters, is considering an amendment called the “Deep Sea Corals Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan”. It will protect coral in the following 3 ways:

1. By banning all destructive bottom fishing in the 15 Deep-Sea Canyons on the U.S. Mid-Atlantic coast; home to many deep-sea corals.
2. By banning the use of bottom-fishing gear deeper than 200 meters below sea-level
3. By providing means to enforce these restrictions.

With this amendment, the Council will protect an estimated 73% of documented corals off the Mid-Atlantic coast.

This is our chance to protect deep-sea corals and the marine life that depends on them! Let’s encourage the Council to seize this opportunity become a global leader in the protection of deep-sea coral by passing this amendment and implementing these management measures.
January 28 is the final day for comments, but every signature counts until they make a decision, sending the Council a clear message from those of us who value marine life and deep-sea corals and want to see them protected. Sign this petition to say “NO!” to destructive bottom fishing and show your support for deep-sea coral conservation.

Sign this petition now to show the Council your support for the amendment!

Thank you,

Daniela Pierro
Kiyomi Johnson
Kai Tsurumaki

“No Water, No Life”
To: Mid-Atlantic Fishery Management Council

Date: 29 January 2015

Subject: Consideration of Issues Related to the Deep-Sea Corals Amendment

As background, I am a marine ecologist with a primary focus on questions both fundamental and applied regarding fish habitats and their role in mediating population and community processes. My publication record in the scholarly literature spans 35 years. Since 2001, a significant part of my time has been spent addressing the ecological role of deep sea corals and impacts to coral dominated communities by human activities in the northwest Atlantic region. As the Council deliberates alternatives for the Deep Sea Coral Amendment, I would greatly appreciate your consideration of the following:

1. The modeling work by Brian Kinlan and colleagues, used to predict coral distributions in the management region, is the best available science to serve as a foundation for decision-making:


   Using the most complete data set of coral observations available, coral locations were geographically linked to the underlying physical environment, with the model used to predict where corals from multiple taxonomic groups will occur, within a range of probabilities. There will never be enough funding to survey all the coral via direct observation. The model was then tested with new data. Much as we use population models to predict population size for harvested species of fish, this is the appropriate tool to develop management alternatives for deep sea corals. Of course modifying predictions based on ancillary data and observations is an important step.

2. The utility of using historical data to delineate areas of observed distribution and predict the spatial extent of coral distributions along the continental margin of the northeastern United States is justified along several lines of reasoning. First is the overlap of historic and recent observations in multiple canyons off the northeast. In general, where historic observations exist, recent observations enhance and refine our understanding of local distributions, they do not paint a different picture. These spatial co-occurrences also validate the adequacy of spatial precision of historic coral observations. Next, in the absence of recent surveys in areas where there have been few coral observations, and those existing
observations are from historic surveys, there is little justification to ignore those data solely on the basis of low numbers of coral occurrences. The coral database primarily is composed of presence data, where corals have been observed, not presence-absence data that would include locations where they have not been observed. This issue is sometimes difficult to apply when interpreting coral distribution maps but is critical when considering management alternatives. That is, absence of evidence is not evidence of absence. Here the results of habitat suitability models are much more informative, in the absence of any actual data to the contrary. Finally, I append to this communication a figure and analytical results from a manuscript I am working on with my colleagues that illustrates a high degree of stability in coral communities in an area of Oceanographer Canyon from 1978 to 2013. The example imagery and statistical analysis of transect data indicate community composition across years has not changed significantly.

3. Shallow corals (i.e., in canyon heads starting at approximately 200 m depths) function as habitat for fishes and their prey but that role is diminished at deeper depths and as fish assemblages shift in composition. Noteworthy is that deep sea corals have extremely low resilience and the recovery of coral habitat from spatially extensive impacts, if it occurs, would require time scales beyond anything ecologically relevant to fisheries today. Further, most structure forming corals serve as habitat for a diversity of commensal species throughout their depth ranges and are important components of canyon and slope ecosystems where fisheries do occur.

4. Shallower boundaries for coral conservation designations address our limited understanding of coral reproduction and population connectivity along the continental margin. Corals at depth reproduce and recruit on a schedule that is difficult to determine with sampling. That is, successful reproduction might take place once every two years, every 5 years, or more. Patterns of recruitment are extremely variable. Connectivity along the continental margin and across depths remains to be determined. The extreme longevity and intermittent reproductive output of deep sea corals as a whole suggest that the most successful conservation strategy will be to encompass as much of their distribution across depths and geographic range within the management area.

Thank you, in advance, for your consideration. I would be happy to discuss the details of any of this general guidance.

Sincerely,

Peter J. Auster, PhD
Research Professor Emeritus of Marine Sciences
and
Senior Research Scientist, Sea Research Foundation - Mystic Aquarium
Example images across time at approximately 1100 m on the east wall of Oceanographer Canyon. A quantitative analysis of species composition across all years (i.e., 1978, 1980, 2001, 2005, 2013), using the non-parametric Analysis of Similarities, resulted in no significant differences (ANOSIM, R=0.77, significance= 30.7 %). A resemblance matrix from a series of pairwise tests across years also revealed no significant differences.

Results from: Kilgour, M.J., P.J. Auster, D. Packer and L. Watling. In prep. Variation in seafloor communities across the western New England Seamounts and adjacent submarine canyons: implications for conservation. To be submitted to PLoS. (Contact Peter Auster for information results to be presented in this manuscript.)
Rhode Island Fishermen’s Alliance  
P.O. Box 337  
East Greenwich, RI 02818  

Dr. Christopher Moore, Executive Director  
Mid Atlantic Fisheries Management Council  
800 North State St. Suite 201  
Dover, DE 19901  

Re: Deep Sea Corals Amendment  

January 13, 2015  

Dr. Moore,  

I am writing to express my deep concern at the possible implementation of the Council’s Deep Sea Corals Amendment. According to the Amendment itself, Rhode Island ranks as the East Coast’s number one state for Illex squid, Loligo squid, Scup, and Butterfish revenue. Rhode Island is also one of the top ranking states for Fluke revenue. All of these species are harvested within the proposed Coral Zones. However, Rhode Island and its fishing community have been completely bypassed in the development of this Amendment.  

Data generated by the document includes the fact that less than 1% of recently observed deep sea corals were found in waters shallower than 1050 meters, yet the Amendment offers Coral Zone Alternatives encompassing only waters 200-500 meters and deeper. These areas comprise much of the fishing grounds for the species harvested by federally licensed Rhode Island vessels, and to even consider closing such productive fishing grounds for little to no conservation value is unthinkable. Any data collected by NOAA’s Deep Sea Coral Research and Technology Program must be considered unreliable, as it is largely comprised of outdated data- collected anywhere from 1874 until the early 2000s- from sources such as magazine articles and museum pieces which are neither recent nor provide exact locations of coral.  

What is reliable is the information Rhode Island vessels have not been invited to provide in the development of this Amendment. Although Rhode Island vessels land the majority of the aforementioned species, they have not been consulted for economic impact analyses, fishery information, or data that would be useful in drawing Coral Zone Boundaries that protect both deep sea corals and industry fishing grounds.  

The Alliance and its member vessels are more than willing to work with the Mid Atlantic Council in order to accomplish these goals. Therefore, until an advisory panel meeting can be convened and industry input be is incorporated into this Amendment, the Alliance supports the No Action Alternatives 1A, 2A, 3A, 4A, 5A and 6A. In the future, the Alliance and its member vessels would be willing to support a modified or alternative measures after such collaboration has occurred.  

Sincerely,  

Gerald M Carvalho  
Vice President, RIFA
1.0 EXECUTIVE SUMMARY

Deep sea corals are fragile and slow-growing organisms that serve an important role in unique and diverse deep sea ecosystems. Given recent and historical findings of deep sea corals off the Mid-Atlantic Coast, the Mid-Atlantic Fishery Management Council (MAFMC or Council) initiated this Amendment in 2012 to consider measures to protect deep sea corals from the impacts of fishing gear. After reviewing initial public comments, the Council developed a range of alternatives and associated analyses. The Council currently intends to select from the alternatives described in this document at its February 2015 Council meeting. The Council will consider comments received during public hearings and a written comment period. A list of hearings and instructions for commenting may be found at the Council’s website at www.mafmc.org. During the selection of alternatives, the Council can also modify the alternatives as long as sufficient information and rationale exists to support the final selected options.

The Council will then recommend the selected alternatives to NOAA Fisheries. Assuming the Council recommends some action alternatives, NOAA Fisheries will then publish a proposed rule along with an Environmental Assessment for public comment. After considering public comments on the proposed rule, NOAA Fisheries will publish a final rule with implementation details.

The purpose of this amendment is “to identify and implement measures that reduce, to the extent practicable, impacts of fishing gear on deep sea corals in the Mid-Atlantic region.” The Council recognizes the value of deep sea corals and is exercising its authority under the reauthorized Magnuson-Stevens Act (MSA) to recommend management measures to minimize fishery impacts to deep sea corals in the Mid-Atlantic region. At the same time, the importance and value of commercial fisheries that operate in or near areas of deep sea coral habitat is also recognized by the Council. As such, measures in this amendment will be considered in light of their benefit to corals as well as the cost to commercial fisheries. The information presented in this document is designed to assist the public in commenting on the proposed measures and ultimately to support the Council in achieving an appropriate balance between protecting deep sea corals and minimizing negative economic impacts to fisheries.

Given this approach, this document first provides general background and describes the alternatives. It then describes the environment (including deep sea corals) and the fisheries that may be affected, and concludes with information about how corals and the relevant fisheries may be impacted by the alternatives under consideration. The public is encouraged to comment on both the alternatives and the related analyses.

The range of alternatives includes designations for “deep sea coral zones” in which fishing gear use would be restricted, including potential for both “broad” coral zones and “discrete” coral zones. Broad coral zones would consist of large, less heavily fished areas (especially the deeper broad zones) where measures would limit and prevent the expansion of commercial gear use. Discrete coral zones would consist of smaller areas of known coral presence or highly likely coral habitat. These areas primarily consist of offshore canyons or slope areas along the continental shelf edge.

The range of alternatives proposed in this document is associated with a range of potential impacts, both for deep sea corals and the relevant fisheries (Boxes ES-1 and ES-2). Generally, the more total area that is restricted and the more fishing activity that is restricted, the greater the predicted benefits are for corals. However, as more areas are restricted and more fishing activities are restricted, social and economic impacts to those who fish in these areas is also expected to increase.
Although some combinations of alternatives contained in this document would restrict current fishing activity in areas of high or highly likely coral presence, many of the alternatives, particularly the broad zone alternatives, are primarily precautionary in nature and are intended to protect corals from future expansion of fishing effort. Many deep sea corals exist in areas with some degree of natural protection from fishing gear, i.e., they inhabit areas where little or no fishing effort is currently taking place due to extreme depths or areas of very high seafloor slope. Corals also exist in some areas with hard bottom or structure that fishermen tend to avoid due to the potential for lost or damaged fishing gear. The coral protection zone alternatives proposed in this document would expand protections in and around some of these areas, as well as protect corals from expansion of effort into deeper water or areas of steeper slopes.

Additional alternative sets in this amendment include options to modify the Framework provisions of the Mackerel, Squid, and Butterfish (MSB) Fishery Management Plan (FMP), as well as the option to require use of Vessel Monitoring Systems (VMS) for Illex squid vessels. The impacts of these additional alternatives are expected to be primarily administrative in nature (Box ES-3).

<table>
<thead>
<tr>
<th>Box ES-1. Summary comparison of the differences in Broad Coral Zone Alternatives in this amendment.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Issue</strong></td>
</tr>
<tr>
<td><strong>Broad Coral Zone Designation</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
Box ES-1, continued. Summary comparison of the differences in Broad Coral Zone Alternatives in this amendment.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Alternatives</th>
<th>Main Differences in Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 2A (No action/Status Quo)</td>
<td>No action. Neutral impacts expected (relative to status quo).</td>
</tr>
</tbody>
</table>
| **Broad Coral Zone Restrictions**  | Alternative 2B (Prohibit All Bottom-tending Gear) | **Impacts on Corals:** Greatest positive impacts on corals by reducing potential for gear impacts the most (when compared to alts. 2C or 2D)  
Fishery Economic Impacts: The larger the broad coral zone, the greater the impacts because of the number of historic hauls taken in the areas are greatest; impacts are expected to be greatest under this alternative (when compared to alts. 2C or 2D), because it prohibits the greatest numbers of gears and fisheries in the offshore fishing areas.  
Sub-option 2B-1: Exempt red crab fishery  
Fishery Economic Impacts: The larger the broad coral zone, the greater the impacts; primary gears impacted include bottom otter trawls, sea scallop dredges, crab pots and traps, lobster pots, and bottom longlines. Impacted species excluding red crab would be: longfin squid, Illex squid, sea scallops, summer flounder, silver hake (whiting), golden tilefish, Jonah crab, scup, and black sea bass.  
Sub-option 2B-2: Exempt golden tilefish fishery  
Fishery Economic Impacts: Impacts are similar to 2B-1, exempt the red crab fishery would be impacted, and the golden tilefish fishery would not. |
|                                    | Alternative 2C (Prohibit Mobile Bottom-tending Gear) | **Impacts on Corals:** Smaller positive impacts to corals as just some gears are prohibited, although mobile gears are believed to have the greatest negative impact on corals.  
Fishery Economic Impacts: Impacts similar to alternative 2B but traps, sink gillnets and bottom longlines would not be impacted. |
|                                    | Alternative 2D (Require VMS for Vessels Fishing in Broad Coral Zones) | **Impacts on Corals:** Indirect slight positive impacts likely due to increased ability to enforce gear-restricted coral zones (if gear restriction alternatives are also selected).  
Fishery Economic Impacts: Low fishery economic impacts; many vessels operating in these areas are already required to use VMS. |

Box ES-2. Summary comparison of the differences in Discrete Coral Zone Alternatives under consideration in this amendment.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Alternatives</th>
<th>Main Differences in Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 3A (No action/Status Quo)</td>
<td>No action. Neutral impacts expected (relative to status quo).</td>
</tr>
</tbody>
</table>
| **Discrete Coral Zone Designation** | Alternative 3B (Designation of Discrete Coral Zones) | **Impacts on Corals:** Designation alone affords some additional benefits/attention via potential project consultation by NMFS; Wilmington and Baltimore Canyons have the highest percentages of coral habitat; the Mey-Lindenkohl Slope and Hudson Canyon have the greatest areas of high/very high habitat suitability.  
Fishery Economic Impacts: None (designation alone) |
|                                    | Alternative 4A (No action/Status Quo)             | No action. Neutral impacts expected (relative to status quo).        |
| **Discrete Coral Zone Restrictions** | Alternative 4B (Prohibit All Bottom-tending Gear) | **Impacts on Corals:** Greatest positive impacts on corals by reducing potential for gear impacts the most; impacts depend on the canyons selected. Some degree of coral benefits may be offset by effort shifts into non-restricted areas.  
Fishery Economic Impacts: Depends on total number of discrete zones selected and the economic importance of the selected zones. Hudson Canyon, Wilmington Canyon, and Mey-Lindenkohl Slope are the areas associated with the greatest fishery revenues. Some degree of revenue loss is expected to be offset by effort shifts into non-restricted areas. |
|                                    | Alternative 4C (Prohibit Mobile Bottom-tending Gear) | **Impacts on Corals:** Smaller positive impacts to corals (compared to 4B) as just some gears are prohibited. Depends on the canyons selected (see section 5.0 for Canyon area sizes).  
Fishery Economic Impacts: Smaller fishery impacts as fewer gear types are prohibited. |
Box ES-3. Summary comparison of the differences in Framework and Vessel Monitoring Alternatives under consideration in this amendment.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Alternatives</th>
<th>Main Differences in Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 5B (Modify Zone Boundaries via Framework)</td>
<td>Administrative in nature; some time savings; neutral impacts expected; any proposed action will be analyzed through a separate NEPA process.</td>
</tr>
<tr>
<td></td>
<td>Alternative 5C (Modify Management Measure via Framework)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative 5D (Modify Add Additional Coral Zones via Framework)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative 5E (Implement Special Access Program via Framework)</td>
<td></td>
</tr>
<tr>
<td><strong>Vessel Monitoring Alternatives</strong></td>
<td>Alternative 6A (No action/Status Quo)</td>
<td>No action. Neutral impacts expected.</td>
</tr>
<tr>
<td></td>
<td>Alternative 6B (VMS Requirement for Illex Squid Moratorium Vessels)</td>
<td>Impacts on Corals: No direct impacts on corals; indirect slight positive impacts likely due to increased ability to enforce gear-restricted coral zones. Fishery Economic Impacts: Low; few Illex moratorium vessels are not already required to use VMS related to other permits they possess.</td>
</tr>
</tbody>
</table>

THIS SPACE INTENTIONALLY LEFT BLANK
### 2.0 LIST OF ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACUMEN</td>
<td>Atlantic Canyons Undersea Mapping Expedition</td>
</tr>
<tr>
<td>ASMFC</td>
<td>Atlantic States Marine Fisheries Commission (Commission)</td>
</tr>
<tr>
<td>BOEM</td>
<td>Bureau of Ocean and Energy Management</td>
</tr>
<tr>
<td>CEA</td>
<td>Cumulative Effects Assessment</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>DEIS</td>
<td>Draft Environmental Impact Statement</td>
</tr>
<tr>
<td>DMNH</td>
<td>Delaware Museum of Natural History</td>
</tr>
<tr>
<td>DOC</td>
<td>Department of Commerce</td>
</tr>
<tr>
<td>DSCRTP</td>
<td>Deep Sea Coral Research and Technology Program</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
</tr>
<tr>
<td>EFH</td>
<td>Essential Fish Habitat</td>
</tr>
<tr>
<td>EFP</td>
<td>Exempted Fishing Permit</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>EO</td>
<td>Executive Order</td>
</tr>
<tr>
<td>ESA</td>
<td>Endangered Species Act</td>
</tr>
<tr>
<td>FMAT</td>
<td>Fishery Management Action Team</td>
</tr>
<tr>
<td>FMP</td>
<td>Fishery Management Plan</td>
</tr>
<tr>
<td>FR</td>
<td>Federal Register</td>
</tr>
<tr>
<td>GARFO</td>
<td>Greater Atlantic Regional Fisheries Office (formerly Northeast Regional Office/NERO)</td>
</tr>
<tr>
<td>GRA</td>
<td>Gear restricted area</td>
</tr>
<tr>
<td>IFQ</td>
<td>Individual Fishing Quota</td>
</tr>
<tr>
<td>LAGF</td>
<td>Limited Access General Category</td>
</tr>
<tr>
<td>LOA</td>
<td>Letter of Acknowledgement</td>
</tr>
<tr>
<td>MAFMC</td>
<td>Mid-Atlantic Fishery Management Council (Council)</td>
</tr>
<tr>
<td>MMPA</td>
<td>Marine Mammal Protection Act</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MSA</td>
<td>Magnuson-Stevens Fishery Conservation and Management Act (as currently amended)</td>
</tr>
<tr>
<td>MSB</td>
<td>Mackerel, Squid, and Butterfish</td>
</tr>
<tr>
<td>MT</td>
<td>Metric tons</td>
</tr>
<tr>
<td>NCCOS</td>
<td>National Centers for Coastal Ocean Science</td>
</tr>
<tr>
<td>NEFMC</td>
<td>New England Fishery Management Council</td>
</tr>
<tr>
<td>NEFOP</td>
<td>Northeast Fisheries Observer Program</td>
</tr>
<tr>
<td>NEFSC</td>
<td>Northeast Fisheries Science Center</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>NGOM</td>
<td>Northern Gulf of Maine</td>
</tr>
<tr>
<td>NMFS</td>
<td>National Marine Fisheries Service</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>NOAA OER</td>
<td>NOAA Office of Exploration and Research</td>
</tr>
<tr>
<td>NOS</td>
<td>National Ocean Service</td>
</tr>
<tr>
<td>ROV</td>
<td>Remotely Operated Vehicle</td>
</tr>
<tr>
<td>TAL</td>
<td>Total Allowable Landings</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>USD</td>
<td>U.S. Dollars</td>
</tr>
<tr>
<td>VMS</td>
<td>Vessel Monitoring System</td>
</tr>
<tr>
<td>VTR</td>
<td>Vessel Trip Report</td>
</tr>
<tr>
<td>WHOI</td>
<td>Woods Hole Oceanographic Institution</td>
</tr>
</tbody>
</table>
3.0 CONTENTS, TABLES, AND FIGURES
3.1 TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY ................................................................. 2
2.0 LIST OF ACRONYMS AND ABBREVIATIONS .................................... 6
3.0 CONTENTS, TABLES, AND FIGURES ................................................. 7
3.1 TABLE OF CONTENTS ................................................................. 7
3.2 LIST OF TABLES ................................................................. 7
3.3 LIST OF FIGURES ................................................................. 9
4.0 INTRODUCTION AND BACKGROUND ............................................... 11
4.1 PURPOSE AND NEED FOR ACTION ............................................... 11
4.2 REGULATORY AUTHORITY ........................................................ 12
4.3 FMP HISTORY AND MANAGEMENT OBJECTIVES ........................... 12
4.4 MANAGEMENT UNIT AND SCOPE OF ALTERNATIVES ...................... 13
5.0 MANAGEMENT ALTERNATIVES ....................................................... 15
5.1 BROAD CORAL ZONE DESIGNATION ALTERNATIVES ...................... 16
5.2 RESTRICTIONS WITHIN BROAD CORAL ZONES .............................. 18
5.3 DISCRETE CORAL ZONE DESIGNATION ALTERNATIVES .................. 19
5.4 RESTRICTIONS WITHIN DISCRETE CORAL ZONES ......................... 23
5.5 FRAMEWORK PROVISIONS TO ALLOW FUTURE MODIFICATIONS TO MANAGEMENT MEASURES .................................................. 23
5.6 VESSEL MONITORING ALTERNATIVES ......................................... 24
5.7 CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS ................. 24
6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT .............................. 27
6.1 PHYSICAL ENVIRONMENT ........................................................ 27
6.2 BIOLOGICAL ENVIRONMENT ..................................................... 28
6.3 HUMAN COMMUNITIES AND ECONOMIC ENVIRONMENT ................ 30
7.0 IMPACTS OF THE ALTERNATIVES .................................................. 44
7.1 DEEP SEA CORALS IN THE MID-ATLANTIC ...................................... 44
7.3 FISHERY EFFORT AND ECONOMIC IMPACTS .................................. 70
7.4 SYNTHESIS OF CORAL AND ECONOMIC IMPACTS .......................... 89
APPENDIX A: Criteria for proposed discrete coral zone boundaries ............. 91
APPENDIX B: Coordinates for discrete zone alternatives .......................... 92

3.2 LIST OF TABLES
Table 1: Proposed discrete zones under alternative 3B .................................. 20
Table 2: Advisor-proposed boundaries for Norfolk Canyon, Baltimore Canyon, and the Mey-Lindenskohl Slope (sub-alternative 3B-1) ................................................................. 20
Table 3: 2013 vessel dependence on mackerel (revenue-based) ....................... 31
Table 4: Recent mackerel landings by gear type (mt) ..................................... 31
Table 5: 2013 Vessel dependence on Illex squid (revenue-based) ....................... 32
Table 6: Recent Illex landings by gear type (mt) ........................................... 32
Table 7. Recent numbers of active dealers .................................................. 92
Table 8: 2013 Vessel dependence on Longfin squid (revenue-based) .................................................................33
Table 9: Recent Longfin landings by gear type (mt) ........................................................................................................33
Table 10. Recent numbers of active dealers ............................................................................................................33
Table 11. Recent Longfin squid ex-vessel revenues by port for all ports with at least $200,000 Longfin squid ex-vessel sales combined over last three years ...............................................................33
Table 12: 2013 vessel dependence on butterfish (revenue-based) ........................................................................34
Table 13: Recent butterfish landings by gear type (mt) ..................................................................................................................34
Table 14. Recent numbers of active dealers ..................................................................................................................34
Table 15: Recent butterfish ex-vessel revenues by port for all ports with at least $100,000 butterfish ex-vessel sales combined over last three years ..................................................................................34
Table 16: Landings (million lb) and revenues (millions of US dollars) for summer flounder, scup, and black sea bass, 2008-2013 ..........................................................35
Table 17: Top ports of landing (in lb) for golden tilefish, based on NMFS 2012 - 2013 dealer data. Since this table includes only the “top ports,” it may not include all of the landings for the year .........................................................35
Table 18: Dealer dependence on tilefish, 2009-2013 .......................................................................................................36
Table 19. Red crab price per pound, inflation adjusted price (based on 2010 dollars), Vessel Trip Report (VTR) landings in pounds and estimated revenue, fishing years 2002-2012 ..........................................................................................38
Table 20. Silver hake landings and revenues ................................................................................................................38
Table 21: Deep sea coral presence records within proposed MAFMC broad coral zones, in number (a) and percent (b). Data from DSCRTP database as of June 2013 ...................................................................45
Table 22: Composition of deep sea corals presence records by type within proposed broad and discrete zones. Data from DSCRTP database as of June 2013 ..........................................................45
Table 23: Deep sea coral presence records within the Mid-Atlantic region but NOT within any of the proposed zones. Data from DSCRTP database as of June 2013 .......................................................46
Table 24: Deep sea coral historical presence records by proposed discrete zone ................................................................46
Table 25: Preliminary image survey of NE canyon fauna from TowCam surveys, 2012-2013 ..................................................................................................................50
Table 26: NEFOP records of deep sea interactions in the Northeast region, by coral type and gear type, 1994-2014 ..........................................................................................51
Table 27: NEFOP records of deep sea corals within the Mid-Atlantic Council Region, 1994-2014. NK= not known ..................................................................................................................52
Table 28: Percent of each proposed discrete zone area within each predicted habitat suitability likelihood class (very low, low, medium, high, and very high), and total discrete zone area ..................................................................................................................54
Table 29: Summary of analysis across proposed discrete zones under alternative 3B for coral observations, habitat suitability, and areas of high slope ..................................................................................69
Table 30: Summary of analysis across advisor-proposed discrete zones under sub-alternative 3B-1 for coral observations, habitat suitability, and areas of high slope ..........................................................69
Table 31: VTR model-estimated revenue (USD) by proposed discrete zone, shown as a percentage of coastwide revenues for each species-gear combination, 2007-2012, Maine through North Carolina. BOT = bottom otter trawl; BLL = bottom longline; DRG = dredge ..............................................................................................................72
Table 32: VTR model-estimated cumulative revenue (USD) by proposed broad zone, shown as a percentage of coastwide revenues for each species-gear combination, 2007-2012, Maine through North Carolina. BOT = bottom otter trawl; BLL = bottom longline; DRG = dredge ..............................................................................................................72
Table 33. Percent of VTR catch data with associated location information, 2000-2013 ..........................................................76
Table 34. Fishing activity in potential coral zones based on Vessel Trip Report (VTR) point data, 2000-2013 ..........................................................77
Table 35: All NEFOP observed bottom trawl hauls and trips, by gear type, within the Mid-Atlantic Council region from 2000-2013 ..........................................................................................................................78
Table 36: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 200 meter broad zone alternative, 2000-2013 ..................................................................................79
Table 37: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 300 meter broad zone alternative, 2000-2013 ..................................................................................79
3.3 LIST OF FIGURES

Figure 1: Mid-Atlantic and New England Council regions .................................................................14
Figure 2: Broad coral zone alternatives ..........................................................................................17
Figure 3: Discrete coral zone alternatives ......................................................................................21
Figure 4: Advisor proposed boundaries (sub-alternative 3B-1) .......................................................22
Figure 5. Red Crab Landings 2002-2012 .....................................................................................37
Figure 6. Northern Silver Hake Catch ..........................................................................................39
Figure 7. Southern Silver Hake Catch ..........................................................................................40
Figure 8. Total number of vessels and dependence on small mesh (hake) multispecies fishery ....41
Figure 9. Scallop landings by permit category and fishing year (in lb., dealer data) .................42
Figure 10. Trends in total scallop revenues (left bar, left axis), landings (right bar, left axis) and ex-vessel price (line, right axis) by fishing year (including limited access and general category fisheries, revenues and prices are expressed in 2011 constant prices) ..................................................................................43
Figure 11: Observations of Lophelia pertusa from BOEM cruises in Baltimore and Norfolk Canyons, 2012 and 2013. Source: Brooke and Ross (2013).................................................................47
Figure 12: NEFOP records of deep sea corals in the Mid-Atlantic, 1994-2014 ............................52
Figure 13: Block Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries .............................................................................................................................................55
Figure 14: Ryan and McMaster Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ..................................................................................................................56
Figure 15: Emery and Uchupi Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................57
Figure 16: Jones and Babylon Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................58
Figure 17: Hudson Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................59
Figure 18: Mey-Lindenkohl Slope areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................60
Figure 19: Spencer Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................61
Figure 20: Baltimore Canyon and South Vries Canyons (two separate proposed areas) areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................62
Figure 21: Warr-Phoenix Canyon Complex areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................63
Figure 22: Acomac and Leonard Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................64
Figure 23: Washington Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................65
Figure 24: Norfolk Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries ........................................................................................................................................66
Figure 25: Areas of high cumulative estimated revenue (USD) for red crab caught using pots, 2007-2012, Maine through Virginia. ......................................................................................................................................................73
Figure 26: Areas of high cumulative estimated revenue (USD) for scallops caught using dredge gear, 2007-2012, Maine through Virginia. ...........................................................................................................................................73
Figure 27: Areas of high cumulative estimated revenue (USD) for Illex and longfin squid caught using bottom otter trawls, 2007-2012, Maine through Virginia. .............................................................................................................................................74
Figure 28: Areas of high cumulative estimated revenue (USD) for summer flounder, scup, and black sea bass caught using bottom otter trawl gear, 2007-2012, Maine through Virginia. .....................................................................................................................................................74
Figure 29: Areas of high cumulative estimated revenue (USD) for silver hake (whiting) caught using bottom otter trawl gear, 2007-2012, Maine through Virginia. .....................................................................................................................................................74
Figure 30: Areas of high cumulative estimated revenue (USD) for golden tilefish caught using bottom longline gear, 2007-2012, Maine through Virginia. ........................................................................................................................................................................................................................................................................75
Figure 31: NEFOP observed bottom trawl hauls in the Mid-Atlantic region by gear type, 2000-2013. ..................84
Figure 32: NEFOP observer hauls for gillnet gear in the Mid-Atlantic, 2000-2013, and area of intersection with proposed MAFMC broad coral zones. ........................................................................................................................................................................................................................................................................86
Figure 33: Observed bottom longline hauls in the MAFMC region, 2000-2013. .................................................88
Figure 34: Ranked discrete zones as percentage of coastwide revenue (all gears, species) and coral habitat........90
4.0 INTRODUCTION AND BACKGROUND

Deep sea corals are unique, fragile, slow-growing marine organisms that are valued for their function as habitat for many fish and invertebrates, as well as for a variety of ecosystem and cultural services they provide. These corals occupy deep, largely unexplored offshore areas that include the continental shelf break and marine canyons in the Mid-Atlantic, and are considered to be very vulnerable to human activities such as fishing. When commercial fishing gears, such as trawls or pots, contact the sea floor in areas where deep sea corals occur, they become a potential threat to coral ecosystems through scarring, crushing or complete removal of corals. Deep sea corals can live for hundreds or even thousands or years, and damaged or destroyed deep sea corals may take many years to become re-established, if they are able to do so at all.

Deep sea coral habitats are among the most biologically diverse ecosystems in the deep sea, and may increase the resilience of deep water ecosystems to external shocks. Corals provide habitat for many species of fish and invertebrates including nursery grounds, protection, reproduction, and feeding. Additionally, deep sea corals may sequester atmospheric carbon dioxide, and can serve as long-term indicators of climate change by serving as a record for ocean temperature changes. Corals also offer opportunities for pharmaceutical, engineering, and medical research. Finally, deep sea corals have cultural value, including non-use benefits such as existence value. The general public has seen increasing opportunities in recent years to view and appreciate deep sea ecosystems by engaging virtually in deep sea exploration streamed via the internet.

The Mid-Atlantic Fishery Management Council (Council) recognizes the value of deep sea corals and is exercising its authority under the reauthorized Magnuson-Stevens Act (MSA) to recommend management measures to minimize fishery impacts to deep sea corals in the Mid-Atlantic region. This amendment is a regulatory vehicle initiated by the Council to identify and develop fishery management measures that will limit the negative impacts of commercial fishing on deep sea corals. At the same time, the importance and value of commercial fisheries that operate in or near areas of deep sea coral habitat is recognized by the Council. As such, measures in this amendment will be considered in light of their benefit to corals as well as the cost to commercial fisheries. The information presented in this document is designed to assist the public in commenting on the proposed measures and ultimately to support the Council in achieving an appropriate balance between protecting deep sea corals and minimizing negative economic impacts to fisheries.

4.1 PURPOSE AND NEED FOR ACTION

The purpose of this amendment is to identify and implement measures that reduce, to the extent practicable, impacts of fishing gear on deep sea corals in the Mid-Atlantic region. The measures, or some subset of the measures, developed in the amendment are necessary to protect valued deep sea corals and their dependent ecosystem components while also considering the operational needs and long term sustainability of commercial fisheries.

Deep sea corals are fragile and slow-growing organisms that are highly vulnerable to various types of disturbance of the sea floor, including fishing activities. Corals are valued for their habitat, ecosystem,

---


cultural, and other values, yet remain largely unprotected from human disturbance in the Mid-Atlantic. Research on commercial fishing gear impacts to deep sea corals indicates that fishing gear can damage corals in variety of ways, including scarring, breaking, smothering, or complete destruction. This amendment contains alternatives that aim to protect corals by restricting fishing in select areas where fishing effort and prime coral habitats overlap, as well as by restricting expansion of effort into less heavily fished areas where corals are known or are highly likely to be present.

4.2 REGULATORY AUTHORITY

The range of alternatives in this document is based on application of discretionary provisions related to deep sea corals contained in the 2007 reauthorization of the MSA. These provisions give the Regional Fishery Management Councils the authority to designate zones where, and periods when, fishing may be restricted in order to protect deep sea corals. Under the authority of the MSA, designated deep sea coral zones may include areas beyond known coral locations, if necessary, to ensure their effectiveness. Management measures applied to deep sea coral zones may include restrictions on the location and timing of fishing activity, allowing fishing for only certain vessel types, and/or complete closure to fishing. The Council seeks to balance the exercise of this authority with the management objectives of the Mackerel, Squid, and Butterfish (MSB) Fishery Management Plan (FMP) and the value of potentially affected commercial fisheries.

4.3 FMP HISTORY AND MANAGEMENT OBJECTIVES

Bottom trawls have been consistently identified as the gear type with the greatest potential to negatively affect deep sea corals. Any measures to protect deep sea corals will, therefore, likely include gear restrictions affecting bottom trawl fisheries, especially those operating near areas identified as prime deep sea coral habitat. Among the Council’s management plans, the FMP that directly governs major offshore trawl fisheries operating in areas of likely coral habitat in the Mid-Atlantic is the MSB FMP. As such, measures to protect deep sea corals are being considered through an amendment to this plan. Nevertheless, and as detailed below (Section 4.4) alternatives developed in this amendment are not limited to the activities of the MSB fisheries, and may apply to other federally regulated fishing activities as well.

Management of the MSB fisheries began through the implementation of three separate FMPs (one each for mackerel, squid, and butterfish) in 1978. The plans were merged in 1983. Over time a wide variety of management issues have been addressed including stock rebuilding, habitat conservation, bycatch minimization, and limiting participation in the fisheries. The history of the plan and its amendments can be found at http://www.mafmc.org/fisheries/fmp/msb.

The management goals and objectives, as described in the current FMP are listed below.

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.

---

4.4 MANAGEMENT UNIT AND SCOPE OF ALTERNATIVES

The management unit (fish stock definition) for the MSB FMP is all Atlantic mackerel (*Scomber scombrus*), Longfin squid (*Doryteuthis (Amerigo) pealeii*), Illex squid (*Illex illecebrosus*), and butterfish (*Peprilus triacanthus*) under U.S. jurisdiction in the northwest Atlantic, with a core fishery management area from Maine to North Carolina.

Although gear restrictions are being developed within the MSB FMP, the alternatives listed in this document aim to achieve protection of deep sea corals and are not limited to the activities of the MSB fisheries. Management measures developed under the regulatory authority described in Section 4.2 and implemented via this amendment could be applied to any federally regulated fishing activity within the range of the MSB fisheries, including activity or gears that are not used in these fisheries.

Management measures developed in this amendment would not apply to any species managed solely by the Atlantic States Marine Fisheries Commission (Commission), such as American lobster, unless the Commission takes complementary action.

The Mid-Atlantic Fishery Management Council, the New England Fishery Management Council (NEFMC), and the South Atlantic Fishery Management Council have signed a Memorandum of Understanding (MOU) identifying areas of consensus and common strategy related to conservation of corals and mitigation of the negative impacts of fishery interactions with corals. As per the terms of the MOU, the Mid-Atlantic Fishery Management Council has agreed to develop alternatives applicable only to areas within the Mid-Atlantic Council region boundary as defined in the current regulations (Figure 1). The NEFMC has agreed to develop management measures applicable within the boundaries of their Council region, and the South Atlantic Fishery Management Council will continue to manage deep sea corals via its Coral, Coral Reef and Live/Hardbottom FMP.

To promote continuity and consistency in regional protection of deep sea corals, the alternatives contained in this document were developed with consideration of consistency in approach to deep sea coral protections to that being considered by the NEFMC. The NEFMC began developing deep sea coral alternatives as part of their Essential Fish Habitat Omnibus Amendment 2, which has since been split into a separate Omnibus Deep Sea Corals Amendment.

---

4 For longfin squid there was a scientific name change from *Loligo pealeii* to *Doryteuthis (Amerigo) pealeii*. To avoid confusion, this document will utilize the common name “longfin squid” wherever possible, but this squid is often referred to as “*Loligo*” by interested parties.

5 The full Memorandum of Understanding is available on the Council’s website, at [http://www.mafmc.org/actions/msb/am16](http://www.mafmc.org/actions/msb/am16).


7 For more information, see [http://nefmc.org/habitat/index.html](http://nefmc.org/habitat/index.html).
Figure 1: Mid-Atlantic and New England Council regions.
5.0 MANAGEMENT ALTERNATIVES

This amendment attempts to achieve the Council’s desired deep sea coral protections while considering the social and economic value of potentially affected fisheries. In recognition of the diversity of potential solutions to these two goals, a range of alternative management measures (“alternatives”) has been developed so that each alternative’s effectiveness and practicability can be considered. This approach also complies with the statutory requirements of the National Environmental Policy Act (NEPA) for a consideration of a “range of alternatives” in evaluating the environmental impacts of federal actions. The range of alternatives is presented below.

Deep Sea Coral Zones

In identifying and developing the alternatives, the general approach is to apply the discretionary provisions of the MSA for designating “deep sea coral zones.” Once these zones have been designated, any federally regulated fishing activities within them could then be restricted, and those restrictions could be further modified in the future. Two types of deep sea coral zones are currently envisioned, as described below.

Broad deep sea coral zones would encompass large, mostly unfished and unexplored areas and measures would limit and prevent expansion of commercial gear use where little or no fishing has historically occurred. The concept of these broad coral zones is in line with the “freeze the footprint” approach outlined in NOAA’s Strategic Plan for Deep Sea Corals:

“The expansion of fisheries using mobile bottom-tending gear beyond current areas has the potential to damage additional deep-sea coral and sponge habitats. Potentially, many undocumented and relatively pristine deep-sea coral and sponge ecosystems may exist in unmapped areas untouched, or relatively untouched, by mobile bottom-tending gear. This objective takes a precautionary approach to “freeze the footprint” of fishing that uses mobile bottom-tending gear in order to protect areas likely to support deep-sea coral or sponge ecosystems until research surveys demonstrate that proposed fishing will not cause serious or irreversible damage to such ecosystems in those areas. Special emphasis is placed on mobile bottom-tending gear (e.g., bottom trawling), as this gear is the most damaging to these habitats. This objective applies to areas where use of such gear is allowed or might be allowed in the future. If subsequent surveys identify portions of these areas that do not contain deep-sea corals or sponges, NOAA may recommend that suitable areas be opened for fishing using such gear.”

Discrete deep sea coral zones would consist of smaller areas of known coral presence or highly likely coral habitat. These areas primarily consist of offshore canyons or slope areas along the continental shelf edge. Fishing activity occurs nearby these areas, and to some extent within them. Therefore, restrictions applied to these areas would mainly reduce or eliminate current fishing activities rather than just prevent their expansion.

These two types of deep sea coral zones could be implemented simultaneously. Depending on the alternatives selected by the Council, different types of zones could have different management measures or the same management measures applied within each type of zone. If both broad and discrete zones are

---

implemented and management measures differ between the two types, the more restrictive management measures would apply in any areas of overlap.

Six sets of alternatives are presented below:

1) Designation of broad deep sea coral zones,
2) Restrictions within broad zones,
3) Designation of discrete deep sea coral zones,
4) Restrictions within discrete zones,
5) Framework provisions for future refinements to deep sea coral zone measures,
6) Vessel Monitoring System (VMS) requirements.

5.1 BROAD CORAL ZONE DESIGNATION ALTERNATIVES

Alternative 1A: No Action/Status Quo
Under this alternative, no action would be taken to designate a broad deep sea coral zone. This option is equivalent to the status quo. Several canyons have been closed for tilefish habitat protection, and as was noted in the analysis for those actions, deep sea corals do receive some protection from those closures. In the Mid-Atlantic region, tilefish gear-restricted areas include part of Norfolk Canyon.

Alternative 1B: Landward boundary approximating 200 meter depth contour
Under this alternative, a broad coral zone would be designated with the landward boundary approximating the 200 meter (~610 fathom) depth contour and extending out to the northern and southern boundaries of the MAFMC management region, and to the edge of the EEZ (Figure 2).

Alternative 1C: Landward boundary approximating 300 meter depth contour
Under this alternative, a broad coral zone would be designated with the landward boundary approximating the 300 meter (~164 fathom) depth contour and extending out to the northern and southern boundaries of the MAFMC management region, and to the edge of the EEZ (Figure 2).

Alternative 1D: Landward boundary approximating 400 meter depth contour
Under this alternative, a broad coral zone would be designated with the landward boundary approximating the 400 meter (~219 fathom) depth contour and extending out to the northern and southern boundaries of the MAFMC management region, and to the edge of the EEZ (Figure 2).

Alternative 1E: Landward boundary approximating 500 meter depth contour
Under this alternative, a broad coral zone would be designated with the landward boundary approximating the 500 meter (~273 fathom) depth contour and extending out to the northern and southern boundaries of the MAFMC management region, and to the edge of the EEZ (Figure 2).
Figure 2: Broad coral zone alternatives.
5.2 RESTRICTIONS WITHIN BROAD CORAL ZONES

Alternative 2A: No Action
Under this alternative, no action would be taken to implement management measures in any designated broad deep sea coral zones. Several canyons have been closed for tilefish habitat protection, and as was noted in the analysis for those actions, deep sea corals do receive some protection from those closures. In the Mid-Atlantic region, tilefish gear-restricted areas include part of Norfolk Canyon.

Alternative 2B: Prohibit all bottom-tending gear
Under this alternative, vessels would be prohibited from using any bottom-tending gear within designated broad coral zones. "Bottom-tending gear" includes any mobile bottom-tending gear (as defined in Alternative 2C below), as well as any stationary or passive gear types that contact the bottom, including bottom longlines, pots and traps\(^9\), and sink or anchored gill nets.

**Sub-alternative 2B-1: Exempt red crab fishery from broad zone restrictions**
If selected in conjunction with Alternative 2B, sub-alternative 2B-1 would exempt the red crab fishery from restrictions on all bottom-tending gear. The red crab fishery currently consists of only a few vessels, which harvest crabs using traps. These vessels focus effort along the center of a narrow range of depth (from approximately 550 to 750 meters). Thus, any prohibition on all bottom-tending gear within the proposed broad zones, absent an exemption, would impact all fishing activity for red crab within the Mid-Atlantic Council region.

**Sub-alternative 2B-2: Exempt golden tilefish fishery from broad zone restrictions**
If selected in conjunction with Alternative 2B, sub-alternative 2B-2 would exempt the golden tilefish fishery from restrictions on all bottom-tending gear. Golden tilefish are primarily harvested using bottom longlines. Selecting sub-alternative 2B-2 would allow the golden tilefish bottom longline fishery to continue operation within a designated broad zone, but prevent current or future use of stationary or passive bottom-tending gear targeting other species (with the exception of red crab trap gear if sub-alternative 2B-1 above is also selected).

Alternative 2C: Prohibit all mobile bottom-tending gear
Under this alternative, vessels would be prohibited from using any mobile bottom-tending gear within designated broad coral zones. Mobile bottom-tending gear (as defined at 50 C.F.R. §648.200 with respect to the Northeast multispecies and tilefish fisheries) means gear in contact with the ocean bottom, and towed from a vessel, which is moved through the water during fishing in order to capture fish, and includes otter trawls, beam trawls, hydraulic dredges, non-hydraulic dredges, and seines (with the exception of a purse seine).

Alternative 2D: Require VMS for vessels fishing in broad coral zones
Under this alternative, vessels would be required to use an approved Vessel Monitoring System (VMS) as a condition for operating within any broad coral zones. This alternative could be selected alone or in combination with any of the gear restriction alternatives above.

---

\(^9\)As indicated in section 4.4, alternatives contained in this document would not apply to non-federally managed fisheries, including species managed solely by the Atlantic States Marine Fisheries Commission, such as American lobster.
5.3 DISCRETE CORAL ZONE DESIGNATION ALTERNATIVES

Alternative 3A: No Action/Status Quo
Under this alternative, no action would be taken to designate discrete deep sea coral zones. This option is equivalent to the status quo.

Alternative 3B: Designation of Discrete Coral Zones
Under this alternative, specific submarine canyons and slope areas would be designated as discrete coral zones based on observed coral presence or highly likely coral presence indicated by modeled suitable habitat. Proposed discrete zones are listed in Table 1 as sub-options to this alternative (see also: Figure 3). The Council could select any combination of these specific areas to designate as discrete coral zones.

Boundaries for each of the proposed discrete zones were drawn primarily on the basis of a NOAA-developed habitat suitability model for deep sea corals, as well as areas of very high slope (>30 degrees). Recent research has indicated that the coral habitat suitability model has been very successful in predicting coral habitat, and additionally has confirmed that areas of slope greater than 30 degrees almost always contain hardbottom habitat and deep sea corals. Areas of high and very high habitat suitability and areas of high slope were buffered by approximately 0.4 nautical miles to account for spatial uncertainties associated with the current resolution of the habitat model. Specific locations of historical and recent coral observations were also considered when developing boundaries, especially where recent data was available for observations that have not yet been incorporated into the habitat model. The specific criteria for how the boundaries were developed are further detailed in Appendix A. The geographic coordinates of discrete zone alternatives are listed in Appendix B.

Sub-alternative 3B-1: Advisor-proposed boundaries for specific canyons
Under this sub-alternative, modified discrete zone boundaries would be implemented for Norfolk Canyon, Baltimore Canyon, and the Mey-Lindenkoloh Slope, as proposed by a member of the Council’s MSB Advisory Panel following a April 2013 Deep Sea Corals Alternatives workshop (Table 2; Figure 4).

---

Table 1: Proposed discrete zones under alternative 3B. The Council could select any combination of the individual options listed below to designate as discrete coral zones.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Block Canyon</td>
<td>231.6</td>
</tr>
<tr>
<td>2 Ryan and McMaster Canyons</td>
<td>390.3</td>
</tr>
<tr>
<td>3 Emery and Uchupi Canyons</td>
<td>369.2</td>
</tr>
<tr>
<td>4 Jones and Babylon Canyons</td>
<td>166.1</td>
</tr>
<tr>
<td>5 Hudson Canyon</td>
<td>770.8</td>
</tr>
<tr>
<td>6 Mey-Lindenkohl Slope (encompassing several canyons, including Mey, Hendrickon,</td>
<td>2818.2</td>
</tr>
<tr>
<td>Toms, South Toms, Berkley, Carteret, and Lindenkohl Canyons, and the slope area</td>
<td></td>
</tr>
<tr>
<td>between them)</td>
<td></td>
</tr>
<tr>
<td>7 Spencer Canyon</td>
<td>163.3</td>
</tr>
<tr>
<td>8 Wilmington Canyon</td>
<td>268.1</td>
</tr>
<tr>
<td>9 North Heyes and South Wilmington Canyons</td>
<td>183.4</td>
</tr>
<tr>
<td>10 South Vries Canyon</td>
<td>142.6</td>
</tr>
<tr>
<td>11 Baltimore Canyon</td>
<td>231.0</td>
</tr>
<tr>
<td>12 Warr and Phoenix Canyon Complex</td>
<td>511.6</td>
</tr>
<tr>
<td>13 Accomac and Leonard Canyons</td>
<td>538.2</td>
</tr>
<tr>
<td>14 Washington Canyon</td>
<td>554.1</td>
</tr>
<tr>
<td>15 Norfolk Canyon</td>
<td>543.7</td>
</tr>
</tbody>
</table>

Table 2: Advisor-proposed boundaries for Norfolk Canyon, Baltimore Canyon, and the Mey-Lindenkohl Slope (sub-alternative 3B-1).

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mey-Lindenkohl Slope (Advisor proposed; Straight line landward boundary)</td>
<td>2445.3</td>
</tr>
<tr>
<td>2 Mey-Lindenkohl Slope (Advisor proposed; Depth-based; landward boundary</td>
<td>2458.8</td>
</tr>
<tr>
<td>approximating 250 fathom/457 meter depth contour)</td>
<td></td>
</tr>
<tr>
<td>3 Baltimore Canyon (Advisor proposed)</td>
<td>220.7</td>
</tr>
<tr>
<td>4 Norfolk Canyon (Advisor proposed)</td>
<td>598.4</td>
</tr>
</tbody>
</table>
Figure 3: Discrete coral zone alternatives.
Figure 4: Advisor proposed boundaries (sub-alternative 3B-1).
5.4 RESTRICTIONS WITHIN DISCRETE CORAL ZONES

Alternative 4A: No Action
Under this alternative, no action would be taken to implement management measures in any potential discrete deep sea coral zones.

Alternative 4B: Prohibit all bottom-tending gear
Under this alternative, vessels would be prohibited from using any bottom-tending gear within the designated discrete coral zones. This prohibition could include any or all of the discrete coral zones listed in Table 1. "Bottom-tending gear" includes any mobile bottom-tending gear (as defined in Alternative 4C below), as well as any stationary or passive gear types that contact the bottom, including bottom longlines, pots and traps, and sink or anchored gill nets.

Alternative 4C: Prohibit mobile bottom-tending gear
Under this alternative, vessels would be prohibited from using any mobile bottom-tending gear within designated discrete coral zones. This prohibition could include any or all of the discrete coral zones listed in Table 1. Mobile bottom-tending gear (as defined at 50 C.F.R. §648.200 with respect to the Northeast multispecies and tilefish fisheries) means gear in contact with the ocean bottom, and towed from a vessel, which is moved through the water during fishing in order to capture fish, and includes otter trawls, beam trawls, hydraulic dredges, non-hydraulic dredges, and seines (with the exception of a purse seine).

5.5 FRAMEWORK PROVISIONS TO ALLOW FUTURE MODIFICATIONS TO MANAGEMENT MEASURES

Framework actions facilitate expedient modifications to certain management measures. Framework actions can only modify existing measures and/or those that have been previously considered in an FMP amendment. While amendments may take several years to complete and address a variety of issues, frameworks generally can be completed in 5-8 months and address one or a few issues in a fishery. The MSB FMP contains a list of actions that are able to be taken via framework action. The following alternatives would modify that list to allow framework actions related to the proposed deep sea coral measures in this amendment.

Recently completed research surveys have observed deep sea corals in several submarine canyons within the Mid-Atlantic Council management area. Additional research is planned or ongoing and many data products will not be available within the planned timeline for this amendment. Modifying the framework provisions of the FMP would allow the Council to modify deep sea coral zones or management measures in response to new information or issues arising after implementation of the amendment.

Alternative 5A: No Action
Under this alternative, no changes would be made to the framework provisions of the MSB FMP. Any future modifications to the deep sea coral zones or associated management measures would likely have to be accomplished through an amendment to the FMP.

11As indicated in section 4.4, alternatives contained in this document would not apply to non-federally managed fisheries, including species managed solely by the Atlantic States Marine Fisheries Commission, such as American lobster.
**Alternative 5B: Option to modify coral zone boundaries via framework action**
This alternative would give the Council the option to modify the boundaries of deep sea coral zones through a framework action.

**Alternative 5C: Option to modify management measures within zones via framework action**
This alternative would give the Council the option to modify fishing restrictions, exemptions, and other management measures within deep sea coral zones through a framework action.

**Alternative 5D: Option to add additional discrete coral zones via framework action**
This alternative would allow the Council to add discrete coral zones through a framework action.

**Alternative 5E: Option to implement special access program via framework action**
This alternative would give the Council the option to design and implement a special access program for commercial fishery operations in deep sea coral zones through a framework action.

### 5.6 VESSEL MONITORING ALTERNATIVES

**Alternative 6A: No Action**
Under this alternative, no changes would be made to the VMS requirements for *Illex* squid moratorium vessels.

**Alternative 6B: Vessel Monitoring Systems (VMS) requirement for *Illex* squid moratorium vessels**
This option would require use of VMS for all *Illex* squid moratorium vessels (regardless of whether fishing activity is occurring within or outside of any potential deep sea coral zones).

### 5.7 CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS

The following section contains options that were previously included in the range of alternatives, but have been removed from further consideration at this time.

1. **Require Council review and approval for fishing within broad zones**
   - **Sub-alternative:** Implement special access program (for existing fisheries)
   - **Sub-alternative:** Implement exploratory fishing access program (for potential new fisheries)
   - **Sub-alternative:** Implement research/experimental access program (for scientific research)

The Fishery Management Action Team (FMAT) recommended moving this alternative set to considered but rejected primarily due to existing exemption and access programs that would serve essentially the same purpose as these proposed alternatives. Specifically, Exempted Fishing Permits (EFPs) issued through the Greater Atlantic Regional Fisheries Office (GARFO) would cover many of the intended activities described under the sub-alternatives above. An EFP is a permit that authorizes a fishing vessel to conduct fishing activities that would be otherwise prohibited under the regulations at 50 CFR part 648 or part 697. Generally, EFPs are issued for activities in support of fisheries-related research, including seafood product development and/or market research, compensation fishing, and the collection of fish for public display. **Exploratory fishing** as described in the sub-alternative above would be covered by the existing EFP program.
For a **special access** program within any potential broad zones, if the Council wishes to permit special access for any fishing activities, it is possible that such a system could be designed. However, the Council would need to give **specific direction** as to how such a system would operate, including who would be eligible, the types of fishing and species to be harvested. Because this alternative would need further development to be included in the amendment, the FMAT recommends moving this sub-alternative to “considered but rejected.” However, a Council special access program could be considered at a later date via a framework action, provided that Alternative 5E, the option to implement a special access program via framework action, is selected by the Council.

For the purposes of **scientific research**, a statutory exemption is provided within the MSA, meaning scientific research activities are exempt from any and all MSA regulations. A Letter of Acknowledgement (LOA) can be obtained from the Regional Office that acknowledges certain activities as scientific research conducted from a scientific research vessel. An LOA is not required for scientific research, but serves as a convenience to the researcher and to law enforcement entities. To be considered a scientific research vessel, a vessel must be conducting scientific research activity under the direction of a foreign government agency, a U.S. government agency, a U.S. state or territorial agency, university or other accredited educational institution, international treaty organization, or scientific institution.


2. **Require observers on vessels fishing in broad coral zones**

The FMAT recommended moving this alternative to “considered but rejected” due to ongoing efforts to resolve issues related to observer coverage funding and industry cost-sharing. Specifically, an Omnibus Observer Coverage Funding Amendment is currently being developed jointly between the Mid-Atlantic and New England Councils, and is directly related to proposed requirements like the one under this alternative. The Omnibus amendment was initiated following NMFS’s partial disapproval of both Amendment 5 to the Atlantic Herring FMP and Amendment 14 to the MSB FMP, which contained recommendations for 100 percent observer coverage for certain vessels and provisions for cost-sharing with industry participants. There is no current legal mechanism that allows NMFS and the fishing industry to share observer costs, and budget uncertainties have prevented NMFS from being able to commit to funding for increased observer coverage for particular fisheries. Without a clear and viable funding source for this requirement, this alternative is not practical at this time. Once the Omnibus Observer Coverage Funding Amendment is completed, the Council could address observer coverage requirements within broad coral zones through a future framework action (provided that Alternative 5C to modify management measures within coral zones via Framework is selected by the Council).

3. **Require gear monitoring electronics on board to fish within broad or discrete zones**

This alternative was proposed at the August 2013 Council meeting, and would require vessels operating in broad or discrete zones to have gear monitoring electronics on board that are able to read the distance from the seafloor at which the vessel’s gear is operating. The FMAT recommended that this alternative be moved to “considered but rejected” due to the need for further development, including clarification on how such a requirement would work and the specific
purpose it would serve. Specifically, whether this alternative would serve as a tool for enforcement purposes, or simply as a tool for the vessel operator’s knowledge (i.e., to facilitate avoiding bottom contact). More information is needed on how these systems would operate in the context of the proposed measures in this amendment, and the potential benefits to requiring them on board, including any potential intersection with enforcement.

The FMAT recognizes that this proposed alternative is at least partially related to concerns regarding vessel movement in and around zones when fishing gear is not fully deployed. The FMAT also recognizes the need for more information and development of measures to address these issues. Specifically, there is a need to consider vessel needs for deployment and haulback of gear (which for squid trawl vessels often extends significantly behind the vessel). Squid trawlers target specific high productivity areas in and around the heads of the canyons, near the continental shelf-slope break. If any of the proposed coral zones are implemented, future fishing activity near these zones would likely occur very near the coral zone boundaries, posing a potential problem for vessels when positioning for gear deployment or haulback, or drifting into closed areas during these processes. Additionally, there is a need to consider potential allowances and associated restrictions for transit through any potential coral zones (for example, transit allowances for vessels with stowed gear, etc.). The Council is soliciting feedback and suggestions from the public and the Council’s advisors on these issues during the public hearing process.

4. Exempt Illex and longfin squid fisheries from broad zone restrictions AND

5. Exempt Illex and longfin squid fisheries from discrete zone restrictions

The FMAT recommended that the alternatives exempting the Illex and longfin squid fisheries from both broad and discrete zone be moved to “considered but rejected.” If the Council wishes to avoid negative economic impacts to the squid fisheries, the FMAT believes that there is a sufficient range of options within the document that would allow this to occur, including the “no action” option under each alternative set as well as the option to designate the deepest depth-based broad zone (500m). For analysis purposes under the National Environmental Policy Act (NEPA), when the above exemption alternatives are included in any set of alternatives taken in combination, the result is essentially a status quo situation in terms of impacts to the affected environment. Thus, these exemption alternatives would appear to be contrary to the “purpose and need” of the amendment if they would result in a lack of meaningful action in combination with other alternatives.

6. Depth-contour based boundaries for discrete coral zones

Under this alternative, the landward boundary designations of the discrete coral zones would follow one of the following depth contours: 200 m, 300 m, 400 m, or 500 m. The boundary would follow the contour until the point at which the depth contour boundary intersects with the original boundaries of the sides of the canyon, and follow the original boundaries on the seaward side. The FMAT recommended that these options be moved to “considered but rejected” for several reasons. The discrete zones are intended to encompass areas of coral presence and highly likely coral habitat, and therefore the revised discrete zone boundaries were drawn based on the best available scientific information about coral presence and suitable habitat. In the course of re-drawing the boundaries, the FMAT attempted to align any landward boundaries with one of the proposed depth contours. The FMAT found that the vast majority of proposed depth-contour based boundaries did not meet or approximate the criteria for drawing the boundaries based on coral presence and habitat suitability (see Appendix A). Given the differences across canyon and slope areas, there was additionally no consistent depth contour across proposed areas which would approximate areas of
high coral habitat suitability. Finally, analysis of all proposed depth-contour based boundaries in combination with the model-based boundaries and additional advisor proposed boundaries would mean analyzing five to seven different sets of boundaries for each area. This would overly complicate any cumulative effects analysis given the need to analyze all alternatives in combination with each other alternative, and delay amendment development.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those resources expected to experience environmental impacts if the actions under consideration in this amendment are implemented. The actions being considered are generally expected to reduce commercial fishing effort below current levels for some offshore fisheries that operate within or near potentially designated coral zones. However, some of this effort is likely to be displaced to areas outside any implemented coral zones. From this perspective, the affected environment consists of those physical, biological, and human components of the environment that are or will be meaningfully connected to commercial fishing operations in those zones. These environmental components are described below.

6.1 PHYSICAL ENVIRONMENT

The managed resources inhabit the Northeast U.S. Shelf Ecosystem, which has been described as including the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The continental slope includes the area east of the shelf, out to a depth of 2000 m. Four distinct sub-regions comprise the NOAA Fisheries Northeast Region: the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope. The areas of interest in this action include the Mid-Atlantic Bight and the continental slope. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise.

The continental shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope at the shelf break (100-200 m water depth), continuing eastward with increasing depth until it becomes the continental rise, and finally the abyssal plain. The width of the slope varies from 10-50 km, with an average gradient of 3-6°; however, local gradients can be nearly vertical. The base of the slope is defined by a marked decrease in seafloor gradient where the continental rise begins. The slope is cut by at least 70 large canyons between Georges Bank and Cape Hatteras and numerous smaller canyons and gullies, many of which may feed into the larger canyon systems.

On the slope, silty sand, silt, and clay predominate. A “mud line” occurs on the slope at a depth of 250-300 m, below which fine silt and clay-size particles predominate. Localized coarse sediments and rock outcrops are found in and near canyon walls, and occasional boulders occur on the slope because of glacial rafting. Sand pockets may also be formed because of downslope movements.

Submarine canyons are not spaced evenly along the slope, but tend to decrease in areas of increasing slope gradient. Canyons are typically “v” shaped in cross section and often have steep walls and outcroppings of bedrock and clay. The canyons are continuous from the canyon heads to the base of the continental slope. Some canyons end at the base of the slope, but others continue as channels onto the continental rise. Larger and more deeply incised canyons are generally significantly older than smaller ones, and there is evidence that some older canyons have experienced several episodes of filling and re-excavation.
Canyons can alter the physical processes in the surrounding slope waters. Fluctuations in the velocities of the surface and internal tides can be large near the heads of the canyons, leading to enhanced mixing and sediment transport in the area.

More information on the physical properties of the Northeast U.S. Shelf Ecosystem and the submarine canyon environments relevant to this action can be found in the NOAA Technical Memo “Characterization of the Fishing Practices and Marine Benthic Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat” (Stevenson et al. 2004, available at: http://www.nefsc.noaa.gov/publications/tm/tm181/).

6.2 BIOLOGICAL ENVIRONMENT

6.2.1 Description of the Managed Resource

**Atlantic mackerel** is a semi-pelagic/semi-demersal (may be found near the bottom or higher in the water column) schooling fish species primarily distributed between Labrador (Newfoundland, Canada) and North Carolina. Additional life history information is detailed in the Essential Fish Habitat (EFH) document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The status of Atlantic mackerel is unknown with respect to being overfished or not, and unknown with respect to experiencing overfishing or not. Recent results from the Northeast Fisheries Science Center (NEFSC) Spring Trawl survey (the spring survey catches the most mackerel) are highly variable, and are graphed in the “NEFSC Biological Update” that is created as part of the annual quota setting process. These are available at: http://www.mafmc.org/ssc-meeting-documents/ (see May 2014 Meeting Materials).

**Atlantic butterfish** is a semi-pelagic/semi-demersal schooling fish species primarily distributed between Nova Scotia, Canada and Florida. Additional life history information is detailed in the EFH document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The status of butterfish is not overfished (above target biomass) with no overfishing occurring according to a recently accepted assessment (NEFSC 2014, available at: http://nefsc.noaa.gov/publications/crd/crd1403/).

**Longfin squid** is a semi-pelagic/semi-demersal schooling cephalopod species primarily distributed between Georges Bank and Cape Hatteras, NC. Additional life history information is detailed in the EFH document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. Based on a new biomass reference point from a 2010 stock assessment, the longfin squid stock was not overfished in 2009, but overfishing status was not determined because no overfishing threshold was recommended (though the assessment did describe the stock as “lightly exploited”). The assessment documents are available at: http://www.nefsc.noaa.gov/saw/reports.html. Recent results from the NEFSC Trawl surveys are highly variable, and are graphed in the “NEFSC Biological Update” that is created as part of the annual quota setting process. These are available at: http://www.mafmc.org/ssc-meeting-documents/ (see May 2014 Meeting Materials).

**Illex squid** is a semi-pelagic/semi-demersal schooling cephalopod species distributed between Newfoundland and the Florida Straits. Additional life history information is detailed in the EFH document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The status of Illex is unknown with respect to being overfished or not, and unknown with respect to experiencing overfishing or not. Recent results from the NEFSC Trawl surveys are highly variable, and are graphed in the “NEFSC Biological Update” that is created as part of the annual quota setting process. These are available at: http://www.mafmc.org/ssc-meeting-documents/ (see May 2014 Meeting Materials).
6.2.2 Deep Sea Corals

Deep sea corals, or cold water corals, are generally defined as corals occurring at ocean depths below 50 meters. Deep sea corals are unlike shallow water corals in that they do not possess the symbiotic photosynthetic algae known as zooxanthellae, which produce food for corals found in shallow waters. Deep sea corals exist mainly in areas where photosynthesis cannot occur due to lack of light, and so instead they must obtain food from their environment. Several types of deep sea corals are found in U.S. waters of the northwestern Atlantic Ocean. The major orders of deep sea corals found in the Mid-Atlantic region include stony corals (Scleractinians), sea pens (Pennatulaceans), true soft corals and gorgonians (Alcyonaceans and Gorgonaceans), and black corals (Antipatharians). Types of deep sea corals observed to date in the Mid-Atlantic range from small, solitary corals to larger colonies including complex structure-forming corals. Deep sea corals, in particular types that form complex structures, provide habitat for many species of fishes and invertebrates.

Deep Sea Coral Distribution and Abundance Data

Records of deep sea coral observations are maintained in a database by NOAA’s Deep Sea Coral Research and Technology Program (DSCRTP). These records include historical and current data from a variety of sources, including peer-reviewed literature, research surveys, museum records, and incidental catch records. The records contained in this database are mostly presence-only. Many areas have not been adequately surveyed for the presence of deep sea corals. There is very little absence or abundance information available for deep sea corals, although usable absence data may become available as data is processed from recent research.

Several recent research efforts have resulted in new observations of deep sea corals in the Mid-Atlantic. Some of this research is still ongoing, with plans for some work to continue into 2014 and 2015. Although some qualitative results are available, much of the processed/georeferenced data from recent cruises is not yet available. New information has been incorporated into the range of alternatives to the extent possible, and will be added to the analysis as it becomes available before the amendment is finalized. Available findings from these surveys, relative to proposed coral zones, are described in Section 7.1.2.

The Northeast Fishery Science Center’s fishery independent surveys have been assessed for deep sea coral bycatch. Neither the NEFSC’s trawl survey nor their scallop survey “catch” deep-sea corals in any meaningful quantities, nor is any catch of corals recorded in any meaningfully quantitative way. For example, prior to the year 2000, bycatch quantity in the Atlantic sea scallop surveys were estimated by cursory visual inspection or “eyeballing” only. Since that time, the survey has gathered more quantitative bycatch information. The bycatch data, referred to as “trash,” is divided up into 3 categories: substrate, shell, and other invertebrates, but the log sheets still only record percent composition and total volume (bushels), and methods and accuracy of this quantification may vary. The NEFSC trawl surveys also have a “trash” component – trash being defined as any substrate or non-coded invertebrate species. The trash is loosely described and roughly quantified to the whole liter.

The general lack of deep-sea coral in both of these surveys may be due to the surveys fishing too shallow to encounter the larger deep-sea coral species (e.g., nearly all the scallop surveys fish < 100 m and all are < 140 m) and the possibility that some of these larger corals (e.g., *Paragorgia, Primnoa*) may have been “fished out” in the relevant areas earlier in the 19th and 20th centuries. Nevertheless, the NEFSC is planning to improve their quantification of invertebrate bycatch in their groundfish and scallop surveys, including the identification and enumeration of any deep-sea corals encountered.
Records of deep sea coral bycatch in the Northeast Fisheries Observer Program (NEFOP) data have historically been sparse and inconsistently recorded, although there has been an attempt to improve this in recent years. In the spring of 2013, NEFOP implemented database and protocol changes related to the documentation of deep sea coral interactions. The NEFOP Program Manual and NEFOP database now include more specific categories of coral, including: soft coral, hard coral, sea pens, and sponges (as opposed to several inconsistent, more generic categories applied in prior years).

A deep sea coral training module was developed based on a completed identification guide (Packer and Drohan 2013, unpublished), and has been successfully incorporated into all current observer certification programs offered at the NEFOP Training Center (including the At-Sea Monitor certification, Industry Funded Scallop Observer certification, and the NEFOP certification). This program includes basic coral identification skills, sampling protocols, and how corals interface with the NEFOP Species Verification Program (SVP). In addition to initial general identification, observers are now instructed on proper photographic logging of any deep sea coral bycatch. These photos are to be uploaded for species identification or confirmation by NOAA coral experts. All observer-issued reference materials are now uploaded with the most current Coral ID guide and sampling protocols. Additionally, all NEFOP editing staff have also been trained on the NEFOP Coral Program.

When reviewing observer data for deep sea coral interactions, it is important to keep in mind that the percentage of commercial fishing trips actually covered by observers or the observer program varies depending on the fishery (gear type, fishing area, target species, etc.). Additionally, because the observer program observes thousands of trips every year in dozens of different fisheries, with each fishery having its own regulations for mesh size and configuration, a reported absence of deep-sea coral at a location may simply be a function of the catchability of the gear used. This is also a problem with the NEFSC surveys; fishing gear is not designed to “catch” deep-sea corals. Some level of gear impacts may be occurring that do not result in corals or coral fragments being retained or entangled in the gear, able to be viewed by an observer or scientists on the NEFSC trawl surveys. Deep sea coral records from the NEFSC Fishery Independent Surveys, relative to proposed coral zones, are described in Section 7.

6.3 HUMAN COMMUNITIES AND ECONOMIC ENVIRONMENT

This section describes the socio-economic importance of the MSB fisheries, as well as the importance of several other fisheries that may be impacted by measures proposed in this action (see section 7 for more information on how these fisheries were identified). Information was compiled from various FMPs and associated documents to describe the human and economic environments of each fishery, and data presented for each fishery may vary based on the information source. The fisheries described below include the managed fisheries (MSB), as well as summer flounder/scup/black sea bass, golden tilefish, red crab, silver hake (whiting), and scallops. These are the fisheries that the analysis in section 7 suggested may be impacted by this action. (While a very small percentage of the scallop-dredge revenues may be impacted, this fishery is included given the high value of the scallop fishery.)

Recent Amendments to the MSB FMP contain additional information about the MSB fisheries, especially demographic information on ports that land MSB species. See Amendments 11 and 14 at http://www.mafmc.org/msb/ for more information or visit NMFS’ communities page at: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/. In general, the MSB fisheries saw high foreign landings in the 1970s followed by a domestication of the fishery, and domestic landings have been lower than the foreign landings. Detailed information on historical landings is available in the briefing.
materials for the most recent SSC meeting on MSB, at http://www.mafmc.org/ssc-meetings/2014/may-7-8-2014.

6.3.1 Atlantic Mackerel

US commercial landings of mackerel increased steadily from roughly 3,000 metric tons (mt) in the early 1980s to greater than 31,000 mt by 1990. US mackerel landings declined to relatively low levels 1992-2000 before increasing in the early 2000s. The most recent years have seen a significant drop-off in harvest.

Nominal ex-vessel price has generally varied between about $200-$700 per mt, but when inflation is taken into account, erosion is observed in the ex-vessel per-pound value of mackerel from 1982-2010. The 2011 and 2012 prices increased substantially (near $700/mt), which is likely at least partially related to the low levels of mackerel landed. The 2013 ex-vessel prices were about $436/mt. Total ex-vessel value tracks both price and the quantity of fish landed (see Council’s Advisory Panel Fishery Information Document at http://www.mafmc.org/ssc-meetings/2013/april-may). Landings in 2013 totaled 4,372 mt and generated $1.9 million in ex-vessel revenues.

The mackerel fishery became a limited access fishery in 2013, except for open-access incidental catch permits. The current numbers of permits are 32 Tier 1 permits, 24 Tier 2 permits, and 90 Tier 3 permits.

Table 3: 2013 vessel dependence on mackerel (revenue-based).

<table>
<thead>
<tr>
<th>Dependence on Mackerel</th>
<th>Number of Vessels in Each Dependency Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%-5%</td>
<td>23</td>
</tr>
<tr>
<td>5%-25%</td>
<td>13</td>
</tr>
<tr>
<td>25%-50%</td>
<td>4</td>
</tr>
<tr>
<td>More than 50%</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports. Not at state level due to data confidentiality issues.

Table 4: Recent mackerel landings by gear type (mt).

<table>
<thead>
<tr>
<th>Year</th>
<th>Gill Nets</th>
<th>Bottom Trawl</th>
<th>Single Mid-Water Trawl</th>
<th>Pair Mid-Water Trawl</th>
<th>Trap/Pots/Pound Nets/Weir</th>
<th>Other/Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>27</td>
<td>327</td>
<td>69</td>
<td>72</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>2012</td>
<td>4</td>
<td>3,059</td>
<td>576</td>
<td>1,488</td>
<td>24</td>
<td>181</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>965</td>
<td>166</td>
<td>2,338</td>
<td>15</td>
<td>883</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Because of data confidentiality issues, details for port revenues from mackerel cannot be provided. Ports that had at least $100,000 in ex-vessel revenues from mackerel over 2011-2013 (combined) included (from more mackerel dollars to less): North Kingstown, RI; Gloucester, MA; New Bedford, MA; Cape May, NJ; Portland, ME, and Point Judith, RI. (Source: Unpublished NMFS dealer reports.) Additional information on this fishery can be found in the specifications’ Environmental Assessment, available at http://www.greateratlantic.fisheries.noaa.gov/regs/2014/November/14msb2015174specspr.html.

6.3.2 Illex Squid

Landings of Illex squid are heavily influenced by year-to-year availability and world-market activity. Nominal ex-vessel price has increased from $200-$500 per metric ton in the 1980s to $600-$1,000 per mt in recent years. In inflation adjusted dollars, prices have varied from $600-$1,000 per mt without trend.
2013 ex-vessel prices were about $610/mt. Total ex-vessel value tracks both price and the quantity of fish landed (see Council’s Advisory Panel Fishery Information Document at [http://www.mafmc.org/ssc-meetings/2013/april-may](http://www.mafmc.org/ssc-meetings/2013/april-may) for details). Landings in 2013 totaled 3,835 mt and generated $2.3 million in ex-vessel revenues.

The *Illex* fishery is a limited access fishery with 74 current permits except for open access incidental permits. As long as the fishery is open there is no trip limit for moratorium permits - open access incidental permits have a 20,000 pound per trip limit. Only a few vessels accounted for most *Illex* landings in 2013. Landings are usually provided by state but since there are few dealers that buy *Illex*, confidentiality rules do not allow precise descriptions. However, it can be reported that most *Illex* landings occur in New Jersey and Rhode Island.

### Table 5: 2013 Vessel dependence on *Illex* squid (revenue-based).

<table>
<thead>
<tr>
<th>Dependence on <em>Illex</em></th>
<th>Number of Vessels in Each Dependency Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%-5%</td>
<td>9</td>
</tr>
<tr>
<td>5%-25%</td>
<td>5</td>
</tr>
<tr>
<td>25%-50%</td>
<td>2</td>
</tr>
<tr>
<td>More than 50%</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table 6: Recent *Illex* landings by gear type (mt).

<table>
<thead>
<tr>
<th>Year</th>
<th>Bottom Trawl</th>
<th>Mid-Water Trawl</th>
<th>Other/Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>18,192</td>
<td>486</td>
<td>118</td>
</tr>
<tr>
<td>2012</td>
<td>11,390</td>
<td>319</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>3,597</td>
<td>5</td>
<td>190</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Because of data confidentiality issues, details for port revenues from mackerel cannot be provided. Ports that had at least $100,000 in ex-vessel revenues from *Illex* over 2011-2013 (combined) included (from more mackerel dollars to less): North Kingstown, RI; May, NJ; Hampton, VA; and Wanchese, NC. *(Source: Unpublished NMFS dealer reports.)*

### Table 7. Recent numbers of active dealers.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of dealers buying at least $10,000 <em>Illex</em></th>
<th>Number of dealers buying at least $100,000 <em>Illex</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Additional information on this fishery can be found in the specifications’ Environmental Assessment at [http://www.greateratlantic.fisheries.noaa.gov/regs/2014/November/14msb2015174specspr.html](http://www.greateratlantic.fisheries.noaa.gov/regs/2014/November/14msb2015174specspr.html).

#### 6.3.3 Longfin Squid

The development and expansion of the US squid fishery occurred relatively slowly as the US industry did not develop the appropriate technology to catch and process squid in offshore waters until the 1980's. Price has increased fairly steadily since 1982 to $2,365/mt in 2013, even taking inflation into account (see

Table 8: 2013 Vessel dependence on Longfin squid (revenue-based).

<table>
<thead>
<tr>
<th>Dependence on Longfin</th>
<th>Number of Vessels in Each Dependency Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%-5%</td>
<td>49</td>
</tr>
<tr>
<td>5%-25%</td>
<td>68</td>
</tr>
<tr>
<td>25%-50%</td>
<td>35</td>
</tr>
<tr>
<td>More than 50%</td>
<td>31</td>
</tr>
</tbody>
</table>

Table 9: Recent Longfin landings by gear type (mt).

<table>
<thead>
<tr>
<th>Year</th>
<th>Bottom Trawl</th>
<th>Unknown</th>
<th>Mid-Water Trawl</th>
<th>Dredge</th>
<th>Trap/Pots/Pound Nets/Weir</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>8,051</td>
<td>1,319</td>
<td>91</td>
<td>54</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>10,879</td>
<td>1,621</td>
<td>99</td>
<td>131</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>2013</td>
<td>9,890</td>
<td>990</td>
<td>19</td>
<td>184</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Table 10. Recent numbers of active dealers.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of dealers buying at least $10,000 Longfin</th>
<th>Number of dealers buying at least $100,000 Longfin</th>
<th>Number of dealers buying at least $1,000,000 Longfin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>21</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>2012</td>
<td>20</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>2013</td>
<td>20</td>
<td>18</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Table 11. Recent Longfin squid ex-vessel revenues by port for all ports with at least $200,000 Longfin squid ex-vessel sales combined over last three years. CI = Confidential Information.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POINT JUDITH, RI</th>
<th>MONTAUK, NY</th>
<th>CAPE MAY, NJ</th>
<th>HAMPTON BAYS, NY</th>
<th>NORTH KINGSTOWN, RI</th>
<th>NEW BEDFORD, MA</th>
<th>NEW LONDON, CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$8,206,277</td>
<td>$3,792,870</td>
<td>$2,932,800</td>
<td>$2,643,944</td>
<td>$2,321,291</td>
<td>$1,128,010</td>
<td>$141,030</td>
</tr>
<tr>
<td>2012</td>
<td>$10,661,735</td>
<td>$4,739,505</td>
<td>$3,666,660</td>
<td>$3,080,859</td>
<td>$1,837,346</td>
<td>$1,195,242</td>
<td>$998,311</td>
</tr>
<tr>
<td>2013</td>
<td>$9,842,003</td>
<td>$3,250,471</td>
<td>$4,390,149</td>
<td>$2,234,447</td>
<td>$3,251,086</td>
<td>$848,885</td>
<td>$725,914</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BARNSTABLE, MA</th>
<th>STONINGTON, CT</th>
<th>POINT LOOKOUT, NY</th>
<th>BELFORD, NJ</th>
<th>WOODS HOLE, MA</th>
<th>POINT PLEASANT, NJ</th>
<th>SHINNECOCK, NY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$331,584</td>
<td>$360,612</td>
<td>$488,106</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
<tr>
<td>2012</td>
<td>$1,100,494</td>
<td>$689,303</td>
<td>$537,550</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
<tr>
<td>2013</td>
<td>$71,755</td>
<td>$403,915</td>
<td>$161,679</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NEWPORT, RI</th>
<th>HAMPTON, VA</th>
<th>FALMOUTH, MA</th>
<th>EAST LYME, CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
<tr>
<td>2012</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
<tr>
<td>2013</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
<td>CI</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.
Additional information on this fishery can be found in the specifications’ Environmental Assessment at http://www.greateratlantic.fisheries.noaa.gov/regs/2014/November/14msb2015174specspr.html.

6.3.4 Butterfish

During the period 1965-1976, US Atlantic butterfish landings averaged 2,051 mt. From 1977-1987, average US landings doubled to 5,252 mt, with a historical peak of slightly less than 12,000 mt landed in 1984. Since then US landings have declined sharply. Low abundance and reductions in Japanese demand for butterfish probably had a negative effect on butterfish landings in the 1990s-early 2000s but regulations kept butterfish catches low from 2005-2012. Price (nominal) has increased fitfully since 1982 to about $1481/mt in 2013, but taking inflation into account erodes most of that price increase (see Fishery Information Document at http://www.mafmc.org/ssc-meetings/2013/april-may for details). Landings in 2013 totaled 1074 mt and generated $1.6 million in ex-vessel revenues.

Table 12: 2013 vessel dependence on butterfish (revenue-based).

<table>
<thead>
<tr>
<th>Dependence on Butterfish</th>
<th>Number of Vessels in Each Dependency Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%-5%</td>
<td>108</td>
</tr>
<tr>
<td>5%-25%</td>
<td>19</td>
</tr>
<tr>
<td>25%-50%</td>
<td>0</td>
</tr>
<tr>
<td>More than 50%</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 13: Recent butterfish landings by gear type (mt).

<table>
<thead>
<tr>
<th>Year</th>
<th>Trawl</th>
<th>Dredge</th>
<th>Unknown/ Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>452</td>
<td>27</td>
<td>185</td>
</tr>
<tr>
<td>2012</td>
<td>456</td>
<td>20</td>
<td>163</td>
</tr>
<tr>
<td>20130</td>
<td>940</td>
<td>14</td>
<td>137</td>
</tr>
</tbody>
</table>

Table 14. Recent numbers of active dealers.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of dealers buying at least $10,000 butterfish</th>
<th>Number of dealers buying at least $50,000 butterfish</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>2012</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>2013</td>
<td>17</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Table 15: Recent butterfish ex-vessel revenues by port for all ports with at least $100,000 butterfish ex-vessel sales combined over last three years. CI = Confidential Information.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POINT JUDITH, RI</th>
<th>MONTAUK, NY</th>
<th>NORTH KINGSTOWN, RI</th>
<th>NEW BEDFORD, MA</th>
<th>HAMPTON BAYS, NY</th>
<th>STONINGTON, CT</th>
<th>AMAGANSETT, NY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>373,268</td>
<td>281,011</td>
<td>31,224</td>
<td>58,929</td>
<td>47,095</td>
<td>CI</td>
<td>49,144</td>
</tr>
<tr>
<td>2012</td>
<td>302,847</td>
<td>231,844</td>
<td>27,466</td>
<td>75,764</td>
<td>59,724</td>
<td>35,268</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>376,089</td>
<td>300,094</td>
<td>536,403</td>
<td>67,917</td>
<td>39,704</td>
<td>22,090</td>
<td></td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.
Additional information on this fishery can be found in the specifications’ Environmental Assessment at http://www.greateratlantic.fisheries.noaa.gov/regs/2014/November/14msb2015174specspr.html.

6.3.5 Summer Flounder, Scup, and Black Sea Bass

Otter trawls are utilized in the commercial fisheries for all three species. In addition, floating traps and pots/traps are used to capture scup and black sea bass, respectively. Information on commercial landings and economic value is provided below. Additional information on these fisheries can be found on the Council website at: http://www.mafmc.org.

Table 16: Landings (million lb) and revenues (millions of US dollars) for summer flounder, scup, and black sea bass, 2008-2013.

<table>
<thead>
<tr>
<th></th>
<th>Summer Flounder</th>
<th>Scup</th>
<th>Black Sea Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landings</td>
<td>Ex-vessel value</td>
<td>Landings</td>
</tr>
<tr>
<td>2008</td>
<td>9.21</td>
<td>21.89</td>
<td>5.22</td>
</tr>
<tr>
<td>2009</td>
<td>11.05</td>
<td>21.05</td>
<td>8.20</td>
</tr>
<tr>
<td>2010</td>
<td>13.55</td>
<td>27.44</td>
<td>10.73</td>
</tr>
<tr>
<td>2011</td>
<td>16.57</td>
<td>29.86</td>
<td>15.03</td>
</tr>
<tr>
<td>2012</td>
<td>12.91</td>
<td>30.23</td>
<td>14.88</td>
</tr>
<tr>
<td>2013</td>
<td>12.49</td>
<td>29.17</td>
<td>17.87</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

The ex-vessel value of summer flounder landings in 2013 was approximately $29.2 million resulting from commercial landings of 12.5 million lb, with an average ex-vessel price estimated at $2.33/lb. Based on VTR data for 2013, the bulk of the summer flounder landings were taken by bottom otter trawls (97 percent), followed by bottom scallop trawls (1 percent), with other gear types (e.g. hand lines, scallop dredges, sink gill nets) each accounting for 1 percent or less of landings. In Federal waters, commercial fishermen holding a moratorium permit may fish for summer flounder. Permit data for 2013 indicates that 824 vessels held commercial permits for summer flounder. Top ports of landing in 2013 included Newport News, VA (2.20 mil lb), Hampton, VA (1.92 mil lb), and Pt. Judith, RI (1.92 mil lb).

Commercial scup landings were approximately 17.9 million lb (from ME to Cape Hatteras, NC) and valued at $9.80 million in 2011 ($0.55/lb). Based on VTR data for 2013, the bulk of scup landings were taken by bottom otter trawls (97 percent), followed by pots and traps (~1.3 percent). In Federal waters, commercial fishermen holding a moratorium permit may fish for scup. Permit data indicate that 697 vessels held commercial permits for scup in 2013. The top ports of landing for scup in 2013 included Point Judith, RI (6.19 mil lb), Montauk, NY (3.38 mil lb), and Cape May, NJ (0.91 mil lb).

Commercial black sea bass landings were approximately 1.74 million lb (from ME to Cape Hatteras, NC) and valued at $5.7 million in 2012 ($3.30/lb). Based on VTR data for 2013, the majority of black sea bass landings were reported to be taken by bottom otter trawls (61 percent), followed by pots and traps (26 percent), offshore lobster pots (7 percent), and hand lines (5 percent). Other gear types each accounted for less than 1 percent of landings. In Federal waters, commercial fishermen holding a moratorium permit may fish for black sea bass. Permit data for 2013 indicate that 736 vessels held commercial permits for black sea bass. Top ports of landing for black sea bass in 2013 included Ocean City, MD (0.22 mil lb), Pt. Pleasant, NJ (0.21 mil lb), and Cape May, NJ (0.19 mil lb).
Additional information on this fishery can be found in the specifications’ Environmental Assessment at http://www.greateratlantic.fisheries.noaa.gov/regs/2014/March/14sfsbsb20142015specspr.html.

6.3.6 Golden Tilefish
A detailed description of the social and economic aspects of the fishery for tilefish was presented in Amendment 1 to the FMP (2009; available at http://www.mafmc.org/fmp/pdf(Tilefish_Amend_1_Vol_1.pdf). Montauk, NY and Barnegat Light, NJ continue to be the ports with the most landings.

Commercial tilefish ex-vessel revenues have ranged from $2.5 to $5.5 million for the 1999 through 2013 period (calendar year). The mean price for tilefish (adjusted) has ranged from $1.03/lb in 2004 to $3.27/lb in 2013. The 2009 through 2013 coastwide average ex-vessel price per pound for all market categories combined was $2.98, $3.31 for extra large, $3.71 for large, $2.86 for medium, $2.21 for kittens, $1.92 for small-kittens; $1.83 for small, and $3.29 for unclassified.

Over 56 percent of the landings for 2013 were caught in statistical area 537, which includes Atlantis and Block Canyons. Statistical area 616, which includes Hudson Canyon, had 36 percent of the landings.

The ports and communities that are dependent on tilefish are fully described in Amendment 1 to the FMP available at: http://www.mafmc.org/fmp/pdf(Tilefish_Amend_1_Vol_1.pdf). Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Table 17: Top ports of landing (in lb) for golden tilefish, based on NMFS 2012 - 2013 dealer data. Since this table includes only the “top ports,” it may not include all of the landings for the year. (Note: values in parenthesis correspond to IFQ vessels). C=Confidential.

<table>
<thead>
<tr>
<th>Port</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landings</td>
<td># Vessels</td>
</tr>
<tr>
<td>MONTAUK, NY</td>
<td>1,193,294 (1,188,394)</td>
<td>17 (4)</td>
</tr>
<tr>
<td>BARNEGAT LIGHT/LONG BEACH, NJ</td>
<td>397,610 (396,054)</td>
<td>12 (9)</td>
</tr>
<tr>
<td>HAMPTON BAYS, NY</td>
<td>213,948 (C)</td>
<td>3 (C)</td>
</tr>
<tr>
<td>POINT JUDITH, RI</td>
<td>7,789 (0)</td>
<td>48 (0)</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.

Table 18: Dealer dependence on tilefish, 2009-2013.

<table>
<thead>
<tr>
<th>Number of Dealers</th>
<th>Relative Dependence on Tilefish</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>3</td>
<td>5%-10%</td>
</tr>
<tr>
<td>2</td>
<td>10% - 25%</td>
</tr>
<tr>
<td>3</td>
<td>25% - 50%</td>
</tr>
<tr>
<td>1</td>
<td>50% - 75%</td>
</tr>
<tr>
<td>1</td>
<td>90%+</td>
</tr>
</tbody>
</table>

Source: Unpublished NMFS dealer reports.
Additional information on this fishery can be found in the specifications’ Environmental Assessment at http://www.greateratlantic.fisheries.noaa.gov/regs/2014/September/14tilefish20152017specspr.html.

6.3.7 Red Crab

The red crab fishery is a small, market-driven fishery, and landings are very closely tied to market demand. As a result, the landings have been lower than the Total Allowable Landings recently. Almost all red crab landings occur in New Bedford, MA. The few boats with limited access permits in the red crab fishery have overlapping ownership and operate as a voluntary cooperative. The cooperative relationship fosters a strong incentive to harvest red crab in a way that maximizes profits for the fleet as a whole. It is understood that primarily the current market conditions, not the landings limit, constrain the catch of red crab.

Since implementation of the FMP, four vessels have harvested the total red crab landings. Although this is a small fishery in terms of the number of vessels that participate, the individuals that are involved in this fishery have a very high dependence on the red crab resource. The handful of vessels that received limited access permits were surveyed during the development of the FMP, and the majority of harvesters reported that revenues from the red crab fishery make up the vast majority of their annual income. Since implementation of the FMP, vessel owners still report red crab as the primary fishery that supports their annual income. The figure and table below describe landings and revenues for red crab.

![Red Crab Landings 2002-2012](http://www.nefmc.org/management-plans/red-crab)

Figure 5. Red Crab Landings 2002-2012.

---

12 Taken from 2013 Red Crab Specifications, available at http://www.nefmc.org/management-plans/red-crab.
Prior to 1960, the commercial exploitation of silver hake in the Northwest Atlantic was exclusively by U.S. fleets. Distant water fleets reached the banks of the Scotian Shelf by the late 1950s, and by 1961, scouting/research vessels from the former USSR were fishing on Georges Bank. By 1962, factory freezer fleets (ranging from 500 to 1,000 GRT) intensively exploited the whiting and red hake stocks on the Scotian Shelf and on Georges Bank. Led by the former USSR, the distant water fleet landed an increasingly larger share of silver hake catch from the Gulf of Maine, Georges Bank, and northern Mid-Atlantic waters. In 1962, the distant water fleet landed 41,900 tons of silver hake (43% of the total silver hake landings), but that number had increased to 299,200 tons (85% of the total silver hake landings) in 1965. That year marked the year of the highest total commercial silver hake landings, 351,000 tons. Unable to sustain such high rates of fishing, the abundance of silver hake off the U.S. Atlantic coast began to decline. As a result, total commercial catches decreased significantly after 1965 and reached a 20-year low of 55,000 tons in 1970. U.S. recreational landings also dropped after 1965 to about half the levels of previous years.

After 1970, catches of silver hake by the distant water fleet in U.S. waters increased again, especially in southern New England and the Mid-Atlantic. Between 1971 and 1977, distant water fleet landings from the southern stock averaged 75,000 tons annually and accounted for 90% of the total harvest from the southern stock. The size and efficiency of distant water fleet factory ships also increased, many ranging between 1,000 and 3,000 GRT. In 1973, the International Commission for the Northwest Atlantic

---

Fisheries established temporal and spatial restrictions that reduced the distant water fleet to small “windows” of opportunity to fish for U.S. silver hake. These windows restricted the distant water fleet to the continental slope of Georges Bank and the Mid-Atlantic. As effort control regulations increased, foreign fleets gradually left most areas of Georges Bank.

Although foreign fishing had ceased on Georges Bank by about 1980 and in the Mid-Atlantic by about 1986, the U.S. groundfish fleet’s technologies and fishing practices began to advance, and between 1976 and 1986, fishing effort (number of days) increased by nearly 100% in the Gulf of Maine, 57% on Georges Bank, and 82% in southern New England (Anthony, 1990). Such increases in effort, although directed primarily towards principal groundfish species (cod, haddock, yellowtail flounder), were accompanied by a 72% decline in silver hake biomass. In turn, U.S. East Coast landings of silver hake began to decline, dropping to 16,100 tons in 1981. Since that time, landings have remained relatively stable, but at much lower levels in comparison to earlier years. U.S. East Coast silver hake catches are taken almost exclusively by otter trawls, either as bycatch from other fisheries or through directed fisheries targeting a variety of sizes of silver hake. The figures below describe silver hake landings, and vessel dependence on silver hake.

Figure 6. Northern Silver Hake Catch.
Figure 7. Southern Silver Hake Catch.

Table 20. Silver hake landings and revenues.

<table>
<thead>
<tr>
<th>Year</th>
<th>Silver hake landings (mt)</th>
<th>Silver hake revenue ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>16,181</td>
<td>13,567,329</td>
</tr>
<tr>
<td>1997</td>
<td>15,565</td>
<td>15,045,264</td>
</tr>
<tr>
<td>1998</td>
<td>14,867</td>
<td>13,259,078</td>
</tr>
<tr>
<td>1999</td>
<td>14,020</td>
<td>14,243,589</td>
</tr>
<tr>
<td>2000</td>
<td>12,362</td>
<td>11,644,431</td>
</tr>
<tr>
<td>2001</td>
<td>12,908</td>
<td>13,211,153</td>
</tr>
<tr>
<td>2002</td>
<td>7,938</td>
<td>7,410,730</td>
</tr>
<tr>
<td>2003</td>
<td>8,643</td>
<td>9,326,001</td>
</tr>
<tr>
<td>2004</td>
<td>8,163</td>
<td>10,006,343</td>
</tr>
<tr>
<td>2005</td>
<td>6,902</td>
<td>8,493,180</td>
</tr>
<tr>
<td>2006</td>
<td>5,153</td>
<td>6,727,695</td>
</tr>
<tr>
<td>2007</td>
<td>6,217</td>
<td>7,880,472</td>
</tr>
<tr>
<td>2008</td>
<td>5,915</td>
<td>8,035,894</td>
</tr>
<tr>
<td>2009</td>
<td>7,441</td>
<td>8,602,262</td>
</tr>
<tr>
<td>2010</td>
<td>8,014</td>
<td>10,951,987</td>
</tr>
</tbody>
</table>
6.3.9 Sea Scallops\textsuperscript{14}

In the fishing years 2003-2011, the landings from the northeast sea scallop fishery stayed above 50 million pounds, surpassing the levels observed historically. The recovery of the scallop resource and consequent increase in landings and revenues was striking given that average scallop landings per year were below 16 million pounds during the 1994-1998 fishing years, less than one-third of the present level of landings. Recent landings and revenues are described in the figures below.

The limited access scallop fishery consists of 347 vessels. It is primarily full-time, with 250 full-time dredge, 52 full-time small dredge vessels and 11 full-time net boats. Since 2001, there has been considerable growth in fishing effort and landings by vessels with general category permits, primarily as a result of resource recovery and higher scallop prices. Most limited access category effort is from vessels using scallop dredges, including small dredges. The number of vessels using scallop trawl gear has decreased continuously and has been at 11 full-time trawl vessels since 2006. In comparison, there has been an increase in the numbers of full-time and part-time small dredge vessels after 2002. About 80% of the scallop pounds are landed by full-time dredge and about 13% landed by full-time small dredge vessels since the 2007 fishing year. Both full-time and part-time limited access vessels had a high dependence on scallops as a source of their income. Full-time limited access vessels had a high dependence on scallops as a source of their income and the majority of the full-time vessels (94%) derived more than 90% of their revenue from the scallop fishery in 2011. Comparatively, part-time limited access vessels were less

\textsuperscript{14} Taken from Framework 25, available at http://www.nefmc.org/management-plans/scallops
dependent on the scallop fishery in 2011, with only 37% of part-time vessels earning more than 90% of their revenue from scallops.

Amendment 11 implemented a limited entry program for the general category fishery reducing the number of general category permits after 2007. In 2011, there were 288 LAGC IFQ permits, 103 Northern Gulf of Maine (NGOM) and 279 incidental catch permits in the fishery totaling 670 permits. Although not all vessels with general category permits were active in the years preceding 2008, the number of vessels (and owners) that hold a limited access general category permit under the Amendment 11 regulations are less than the number of general category vessels that were active prior to 2008. Most general category effort is, and has been, from vessels using scallop dredge and other trawl gear. The percentages of scallop landings show that landings made with a scallop dredge in 2012 continue to be the highest compared to other general category gear types. General category permit holders (IFQ and NGOM) are less dependent on scallops compared to vessels with limited access permits. In 2011, less than half (43%) of IFQ permitted vessels earned greater than 50% of their revenue from scallops. Among active NGOM permitted vessels (that did not also have a limited access permit), 88% had no landings with scallops in 2011. Scallops still comprise the largest proportion of the revenue for IFQ general category vessels, accounting for 38.6% of these vessels revenue. Scallops still comprise the largest proportion of the revenue for IFQ general category vessels, accounting for 38.6% of these vessels revenue. For NGOM vessels (that did not also have a limited access permit) scallop landings accounted for less than 1% of revenue in 2011.

Figure 9. Scallop landings by permit category and fishing year (in lb., dealer data).
Figure 10. Trends in total scallop revenues (left bar, left axis), landings (right bar, left axis) and ex-vessel price (line, right axis) by fishing year (including limited access and general category fisheries, revenues and prices are expressed in 2011 constant prices.)
7.0 IMPACTS OF THE ALTERNATIVES

7.1 DEEP SEA CORALS IN THE MID-ATLANTIC

Impacts to deep sea corals were analyzed by mapping and quantifying available data for coral presence and suitable habitat relative to all proposed coral zones (broad and discrete). The sections below describe this analysis relative to several data sources for deep sea corals and their habitat, including historical records, observations from recent research surveys, Northeast Fisheries Observer Program (NEFOP) records, and modeled deep sea coral habitat.

7.1.1 Deep Sea Coral Research and Technology Program (DSCRTP) Records

Coral presence data from NOAA’s Deep Sea Coral Research and Technology Program database were analyzed using ArcGIS software and Microsoft Excel to determine how records of known corals overlap with proposed management areas. The DSCRTP database\(^\text{15}\) contains 870 records of deep sea corals within the MAFMC management region. Of these, 635 records are included within proposed broad coral zones (73%; Table 21). There is only one coral record in the database that is contained within a proposed discrete zone that is not also encompassed by a broad zone alternative (one observation of *Dasmosmilia lymani*, a stony coral, in Baltimore Canyon). Within the proposed discrete zones, the areas of highest coral observations are contained within Baltimore Canyon, Norfolk Canyon, and the Mey-Linedenkohl Slope (Table 24).

The coral records within the total area of the proposed zones are composed of sea pens (40%), soft corals/gorgonians (34%), and hard/stony corals (26%). Outside of the proposed zones, there are 232 total records, the majority of which are stony corals or sea pens (Table 23). However, the data below should be interpreted with caution. The data presented for coral records are presence-only, as little absence or abundance information is available. Many areas in the mid-Atlantic have not been explored for the presence of corals, thus, a lack of historical records does not necessarily indicate a lack of deep sea corals. Although each record is associated with a set of geographic coordinates, some historical records have uncertainties associated with their exact position. Furthermore, identifying deep sea coral taxa down to genus and species levels is difficult and problematic, especially through the use of photographs or video alone, and deep sea coral taxonomy is constantly evolving. Additionally, given the nature of this type of data collection, many of the records tend to be spatially clustered and may display a bias toward areas that have been more heavily sampled. This analysis does not include the results of recent survey work, as data from these cruises have not yet been added to the DSCRTP database (however, some information is available; see Section 7 for additional discussion of recent research findings).

---

\(^{15}\) As of June 10, 2013.
Table 21: Deep sea coral presence records within proposed MAFMC broad coral zones, in number (a) and percent (b). Data from DSCRTP database as of June 2013.

<table>
<thead>
<tr>
<th>Broad zone (depth contour as landward boundary)</th>
<th>Total records (all types)</th>
<th>Soft corals and gorgonians</th>
<th>Stony corals</th>
<th>Sea pens</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Shallower than 200 m]</td>
<td>235</td>
<td>24</td>
<td>118</td>
<td>93</td>
</tr>
<tr>
<td>200 meter broad zone</td>
<td>635</td>
<td>214</td>
<td>167</td>
<td>255</td>
</tr>
<tr>
<td>[between 200 m and 300 m]</td>
<td>40</td>
<td>1</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>300 meter broad zone</td>
<td>595</td>
<td>213</td>
<td>150</td>
<td>232</td>
</tr>
<tr>
<td>[between 300 m and 400 m]</td>
<td>51</td>
<td>10</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>400 meter broad zone</td>
<td>544</td>
<td>203</td>
<td>124</td>
<td>217</td>
</tr>
<tr>
<td>[between 400 m and 500 m]</td>
<td>25</td>
<td>15</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>500 meter broad zone</td>
<td>519</td>
<td>188</td>
<td>120</td>
<td>211</td>
</tr>
<tr>
<td>TOTAL (MAFMC Region)</td>
<td>870</td>
<td>238</td>
<td>285</td>
<td>348</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Broad zone (depth contour as landward boundary)</th>
<th>% of total records (all types)</th>
<th>% Soft corals and gorgonians</th>
<th>% Stony corals</th>
<th>% Sea pens</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Shallower than 200 m]</td>
<td>27%</td>
<td>10%</td>
<td>38%</td>
<td>27%</td>
</tr>
<tr>
<td>200 meter broad zone</td>
<td>73%</td>
<td>90%</td>
<td>62%</td>
<td>73%</td>
</tr>
<tr>
<td>[between 200 m and 300 m]</td>
<td>5%</td>
<td>0%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>300 meter broad zone</td>
<td>68%</td>
<td>89%</td>
<td>56%</td>
<td>67%</td>
</tr>
<tr>
<td>[between 300 m and 400 m]</td>
<td>6%</td>
<td>4%</td>
<td>10%</td>
<td>4%</td>
</tr>
<tr>
<td>400 meter broad zone</td>
<td>62%</td>
<td>85%</td>
<td>46%</td>
<td>62%</td>
</tr>
<tr>
<td>[between 400 m and 500 m]</td>
<td>3%</td>
<td>6%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>500 meter broad zone</td>
<td>60%</td>
<td>79%</td>
<td>40%</td>
<td>61%</td>
</tr>
<tr>
<td>TOTAL (MAFMC Region)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 22: Composition of deep sea corals presence records by type within proposed broad and discrete zones. Data from DSCRTP database as of June 2013.

<table>
<thead>
<tr>
<th>Coral Type</th>
<th>Broad Zones</th>
<th>Discrete Zonesa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Records within Broad Zones</td>
<td>% Composition of Broad Zone Records by Coral Type</td>
</tr>
<tr>
<td>Soft corals and gorgonians</td>
<td>213</td>
<td>33.5%</td>
</tr>
<tr>
<td>Stony corals</td>
<td>167</td>
<td>26.3%</td>
</tr>
<tr>
<td>Sea pens</td>
<td>255</td>
<td>40.2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>635</td>
<td>100%</td>
</tr>
</tbody>
</table>

a All records within proposed discrete zones are also contained within the shallowest broad zone option (200 m), with the exception of two records in Norfolk Canyon (one sea pen and one stony coral).
Table 23: Deep sea coral presence records within the Mid-Atlantic region but NOT within any of the proposed zones. Data from DSCRTP database as of June 2013.

<table>
<thead>
<tr>
<th>Coral Type</th>
<th>Number of Records OUTSIDE of proposed coral zones</th>
<th>% by Coral Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft corals and gorgonians</td>
<td>23</td>
<td>10%</td>
</tr>
<tr>
<td>Stony corals</td>
<td>117</td>
<td>50%</td>
</tr>
<tr>
<td>Sea pens</td>
<td>92</td>
<td>40%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>232</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 24: Deep sea coral historical presence records by proposed discrete zone. Note that these records reflect varying spatial concentrations of survey effort, and many areas have not been surveyed for corals. This data also does not contain any new records from recent research surveys (2012-2013).

<table>
<thead>
<tr>
<th>Coral Type (Order)</th>
<th>Alcyonacea</th>
<th>Gorgonacea</th>
<th>Pennatulacea</th>
<th>Scleractinia</th>
<th>Total Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Canyon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ryan-McMaster Canyons</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Emery-Uchupi Canyons</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Jones-Babylon Canyons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope</td>
<td>9</td>
<td>13</td>
<td>40</td>
<td>12</td>
<td>74</td>
</tr>
<tr>
<td>Spencer Canyon</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Wilmington Canyon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>North Heyes-South</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Wilmington Canyons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Vries Canyon</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>7</td>
<td>21</td>
<td>1</td>
<td>25</td>
<td>54</td>
</tr>
<tr>
<td>Warr-Phoenix Canyon Complex</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Accomac-Leonard Canyons</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Washington Canyon</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>5</td>
<td>16</td>
<td>5</td>
<td>11</td>
<td>37</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>25</strong></td>
<td><strong>57</strong></td>
<td><strong>84</strong></td>
<td><strong>64</strong></td>
<td><strong>230</strong></td>
</tr>
</tbody>
</table>

7.1.2 Coral Observations from Recent Research

As noted previously, deep sea corals have recently been observed within the boundaries of several proposed discrete coral zones, including Block Canyon, Ryan and McMaster Canyons, the Mey-Lindenkohl Slope, Spencer Canyon, Wilmington Canyon, Baltimore Canyon, Phoenix Canyon, Accomac and Leonard Canyons, Washington Canyon, and Norfolk Canyon. Although some qualitative results are available, much of the processed and/or georeferenced data from recent cruises is not yet available. However, new information has been incorporated into the range of alternatives to the extent possible. Findings from each survey relative to proposed coral zones are briefly described below.

2012 BOEM Survey

In 2012, research cruises funded by the Bureau of Ocean Energy Management (BOEM) explored Mid-Atlantic deepwater hard bottom habitat, focusing on canyon habitats and coral communities. This survey included many dives in Baltimore Canyon using a remotely operated vehicle (ROV), and a few dives in
Norfolk Canyon. Deep sea corals were locally abundant in both Baltimore and Norfolk Canyons, and the surveys resulted in the first observations of the species *Lophelia pertusa* in the Mid-Atlantic (Figure 11). *L. pertusa* is a structure-forming coral commonly found off the coast of the southeastern U.S., and occasionally observed in New England, but has not previously been observed in the Mid-Atlantic. In September 2012, *L. pertusa* was observed in live colonies on steep walls in both Baltimore and Norfolk Canyons, at depths between 381 and 434 m.\(^\text{16}\) Several other coral types were observed in both Baltimore and Norfolk Canyons, including dense areas of *Paragorgia, Anthothela, Primnoa,* and *Acanthogorgia* communities (georeferenced data not yet available). Sightings of lost fishing gear were also recorded in the two canyons, including traps, fishing lines, and nets. Baltimore and Norfolk Canyons are currently included in the range of possible deep sea coral discrete zones under Alternative 3B.

\[\text{Figure 11: Observations of } Lophelia pertusa \text{ from BOEM cruises in Baltimore and Norfolk Canyons, 2012 and 2013. Source: Brooke and Ross (2013).}\]

\[\text{2012 ACUMEN Survey}\]

In the summer of 2012, the Atlantic Canyons Undersea Mapping Expeditions (ACUMEN) surveys concluded with a deep-sea coral survey funded by NOAA and the Deep-Sea Coral Research and

\[\text{16 Brooke, S., and Ross, S.W. In press. First observations of the cold-water coral Lophelia pertusa in mid-Atlantic canyons of the USA. Deep-Sea Res. II. http://dx.doi.org/10.1016/j.dsr2.2013.06.011.}\]
Technology Program from aboard the NOAA ship Henry Bigelow.\textsuperscript{17} Areas sampled in the Mid-Atlantic included Middle Toms Canyon, the edge of Hendrickson Canyon, the slope area between Toms and Hendrickson Canyons, and Toms Canyon. Using a towed camera system, high-resolution images were taken to collect data on deep-sea coral diversity, abundance, and distribution, as well as ground-truth locations of predicted deep-sea coral habitat (based on habitat suitability model outputs), historical records, and multibeam bathymetry collected by NOAA ships Okeanos Explorer and Ferdinand Hassler. Deep-sea corals were observed in many locations within the Toms Canyon complex, which is currently included in the range of proposed deep sea coral zones (the Mey-Lindenkohl slope area) under Alternative 3B. Corals were observed during every tow with fewest coral observations at the head of Toms Canyon and the most coral observations made in Middle Toms Canyon (Table 23). The majority of corals were octocorals, with fewer observations of stony corals and sea pens. Differences among individual canyons likely reflect differences in depth and substrate type in the area where tows were conducted. These factors are hypothesized to influence coral abundance and distribution.

2013 Deep Sea Coral Research and Technology Program Survey

In the summer of 2013, scientists from NOAA, Woods Hole Oceanographic Institution (WHOI), and the Delaware Museum of Natural History (DMNH) conducted another deep-sea coral survey cruise aboard NOAA ship Henry Bigelow. This cruise, a logical follow-on to the successful ACUMEN initiative, utilized the same towed camera system and methodologies as the previous cruise. Only one Mid-Atlantic canyon, Ryan Canyon, was surveyed during this cruise. Five tows were made, covering shallow, mid, and deeper depths within the canyon. Based on data collected from approximately 9,000 bottom images, corals were virtually nonexistent along the shallowest (closest to the canyon head) tow tracks. Corals were much more abundant at the deepest tow (Table 25). Similar to results from the 2012 expedition, in the areas surveyed, the majority of corals observed were octocorals and differences in coral distribution within Ryan Canyon likely reflect differences in depth and substrate type. One camera tow survey, following the 500 m contour, was made in the inter-canyon area between Ryan and McMaster canyon, where corals were observed in only one image.

2013-2014 Northeast Canyons and Seamounts Okeanos Explorer Expeditions

In the summer of 2013, the NOAA vessel Okeanos Explorer explored northeast submarine canyons using an ROV. In the Mid-Atlantic, this included work in and around Block Canyon, where deep sea corals were observed in July of 2013. This ROV dive began at approximately 1,870 meters depth and transitioned upslope, where numerous coral colonies were observed on the faces and tops of large hard features. Cup corals were also observed on the underside of ledges. The dominant species was Acanella sp., a type of bamboo coral that commonly occurs on both soft and hard substrates.\textsuperscript{18} Another Okeanos Explorer expedition was conducted in September and October of 2014.\textsuperscript{19} This expedition included ROV dives in Lindenkohl and Hendrickson Canyons (within the Mey-Lindenkohl Slope proposed discrete zone), as well as in Washington, Norfolk, Phoenix, McMaster, and Ryan Canyons. In Washington Canyon, scientists observed colonies of deep sea including Anthothela and both white and pink bubblegum corals. In Norfolk Canyon, several colonies of octocorals (including Acanthagorgia, Anthothela, and bubble gum corals), were observed in addition to many species of fish and invertebrates, including monkfish, red crab, and several schools of squid. In Phoenix Canyon, the dive

\textsuperscript{17} http://oceanexplorer.noaa.gov/oceango/oeexplorations/acumen12/bigelow/welcome.html
\textsuperscript{18} http://oceanexplorer.noaa.gov/oceango/oeexplorations/ex1304/dailyupdates/dailyupdates.html
\textsuperscript{19} http://oceanexplorer.noaa.gov/oceango/oeexplorations/ex1404/welcome.html.
began at about 1,135 meters depth, and many large rocks and outcrops encrusted with corals were observed, as well as several species of squid, skate, and flounder. High densities of cup corals under ledges were also observed. In Hendrickson Canyon, the ROV began at about 1,670 meters and observed abundant cup corals during this dive, generally located under frequent overhangs and outcrops. Also noted were octocorals, black corals, stony corals, sea pens, and several species of fish. In McMaster canyon, octocorals were observed in high density, as well as groups of cup corals. Similar to Hendrickson Canyon, large groups of corals were observed living under overhangs and outcrops along the steep canyon walls. In Ryan Canyon, human debris was observed, in addition to shrimp, fish, eels, hake, dogfish, some cup corals, and coral rubble. Diversity of corals along the transect in Ryan Canyon was low. Photos, videos, logs, and maps from these dives are publicly available at: http://oceanexplorer.noaa.gov/okeanos/explorations/ex1404/welcome.html.

2014 Towed Camera Survey
A research survey aboard the Henry Bigelow using towed cameras took place in August 2014. Data from this survey are still being processed. However, researchers have indicated that deep sea corals were observed in Lindenkohl, Toms, and Carteret Canyons (within the Mey-Lindenkohl Slope proposed discrete zone), as well as in Washington Canyon, Accomac and Leonard Canyons, Wilmington Canyon, and Spencer Canyon. These camera surveys are also being used to further ground truth NOAA’s coral habitat suitability model. Scientists noted that the abundance, distribution, and diversity of deep sea corals varied between and within canyons, exhibiting different trends correlating with different geological characteristics.
Table 25: Preliminary image survey of NE canyon fauna from TowCam surveys, 2012-2013. Images were captured at 10 second intervals through each dive. Each bottom image was visually screened for hard and soft corals, sponges, and fish fauna. Presence/absence information was logged for each image.

<table>
<thead>
<tr>
<th>TowCam Dive #</th>
<th>Canyon Location</th>
<th>Date</th>
<th>Launch Lat N</th>
<th>Launch Lon W</th>
<th>Recovery Lat</th>
<th>Recovery Lon</th>
<th>No. of Images on bottom</th>
<th>No. images with corals</th>
<th>No. images with sponges</th>
<th>% images with corals</th>
<th>% images with sponges</th>
<th>Nominal Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB1204-01</td>
<td>Toms Canyon SE</td>
<td>7/7/2012</td>
<td>38 56.3823</td>
<td>72 25.7944</td>
<td>38 55.5772</td>
<td>72 25.6275</td>
<td>1734</td>
<td>828</td>
<td>2</td>
<td>47.75</td>
<td>0.12</td>
<td>1802</td>
</tr>
<tr>
<td>HB1204-02</td>
<td>Toms Canyon Lower West</td>
<td>7/8/2012</td>
<td>38 57.1788</td>
<td>72 27.2815</td>
<td>38 57.5213</td>
<td>72 27.5442</td>
<td>2067</td>
<td>557</td>
<td>121</td>
<td>26.95</td>
<td>5.85</td>
<td>1736 to 1694</td>
</tr>
<tr>
<td>HB1204-03</td>
<td>Toms Canyon Canyon Head</td>
<td>7/8/2012</td>
<td>39 06.2975</td>
<td>72 38.0914</td>
<td>39 05.8721</td>
<td>72 38.1695</td>
<td>1226</td>
<td>11</td>
<td>16</td>
<td>0.90</td>
<td>1.31</td>
<td>553 to 861</td>
</tr>
<tr>
<td>HB1204-04</td>
<td>Hendrickson Canyon Lower East Scarp</td>
<td>7/9/2012</td>
<td>38 57.6673</td>
<td>72 26.3203</td>
<td>38 57.5940</td>
<td>72 26.5532</td>
<td>1148</td>
<td>291</td>
<td>264</td>
<td>25.35</td>
<td>23.00</td>
<td>175 to 1705</td>
</tr>
<tr>
<td>HB1204-05</td>
<td>Middle Toms Canyon Mid</td>
<td>7/10/2012</td>
<td>38 56.9385</td>
<td>72 35.3163</td>
<td>38 56.8551</td>
<td>72 35.0058</td>
<td>1963</td>
<td>1016</td>
<td>522</td>
<td>51.76</td>
<td>26.59</td>
<td>1337 to 1591</td>
</tr>
<tr>
<td>HB1204-06</td>
<td>Toms Canyon Mid-East</td>
<td>7/10/2012</td>
<td>39 01.6231</td>
<td>72 33.2098</td>
<td>39 01.7749</td>
<td>72 33.1740</td>
<td>1781</td>
<td>154</td>
<td>83</td>
<td>8.65</td>
<td>4.66</td>
<td>1115 to 1216</td>
</tr>
<tr>
<td>HB1302-001</td>
<td>Ryan Canyon</td>
<td>6/10/2013</td>
<td>39 46.4979</td>
<td>71 41.9049</td>
<td>39 46.3115</td>
<td>71 41.9738</td>
<td>649</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>599</td>
</tr>
<tr>
<td>HB1302-002</td>
<td>Ryan Canyon</td>
<td>6/11/2013</td>
<td>39 43.8514</td>
<td>71 42.6188</td>
<td>39 43.9435</td>
<td>71 41.9149</td>
<td>420</td>
<td>2</td>
<td>0</td>
<td>0.48</td>
<td>0.00</td>
<td>771</td>
</tr>
<tr>
<td>HB1302-003</td>
<td>Ryan Canyon</td>
<td>6/12/2013</td>
<td>39 43.8357</td>
<td>71 42.1705</td>
<td>39 43.3885</td>
<td>71 41.3225</td>
<td>2262</td>
<td>48</td>
<td>497</td>
<td>2.12</td>
<td>21.97</td>
<td>992</td>
</tr>
<tr>
<td>HB1302-004</td>
<td>Ryan Canyon</td>
<td>6/12/2013</td>
<td>39 42.3582</td>
<td>71 38.6827</td>
<td>39 41.5694</td>
<td>71 38.3070</td>
<td>2079</td>
<td>62</td>
<td>496</td>
<td>2.98</td>
<td>23.86</td>
<td>1135</td>
</tr>
<tr>
<td>HB1302-005</td>
<td>Ryan Canyon</td>
<td>6/13/2013</td>
<td>39 34.7145</td>
<td>71 33.3316</td>
<td>39 35.317</td>
<td>71 32.6441</td>
<td>1358</td>
<td>584</td>
<td>9</td>
<td>43.00</td>
<td>0.66</td>
<td>1965</td>
</tr>
<tr>
<td>HB1302-006</td>
<td>Ryan-McMaster Inter-canyon area</td>
<td>6/13/2013</td>
<td>39 47.5719</td>
<td>71 42.7850</td>
<td>39 47.3285</td>
<td>71 40.5977</td>
<td>2230</td>
<td>1</td>
<td>52</td>
<td>0.04</td>
<td>2.33</td>
<td>498</td>
</tr>
</tbody>
</table>
### Northeast Fisheries Observer Program Records

Records of deep-sea coral bycatch in the Northeast Fisheries Observer Program (NEFOP) data were obtained for the years 1994 to 2014. The data contains limited records with limited taxonomic information: there were 65 confirmed coral entries in the database collected from 1994-2014. Most of these records were identified as stony corals, with the remaining records composed primarily of sea pens (Table 26). Historically, observers did not record numbers or density; instead, corals tended to be discarded and the total weight simply estimated. Gear types in these recorded observations included otter trawls, scallop dredges, lobster pots and sink gill nets, at beginning haul depths ranging from 5.5 to 464 meters (3 to 254 fathoms). Estimated or actual weights for the deep-sea coral in a given haul ranged from 0.1 to 100 kg.

Within the Mid-Atlantic Council region, only 11 records of deep sea corals have been reported in the observer data since 1994 (Table 27). Of these, six of were recorded as interactions with gill nets in state waters in the Chesapeake Bay area. Of the remaining 5 records in federal waters, none occur within any of the currently proposed deep sea coral zones (Figure 12).

Table 26: NEFOP records of deep sea interactions in the Northeast region, by coral type and gear type, 1994-2014. NK= not known.

<table>
<thead>
<tr>
<th>Coral Type and Gear Type</th>
<th>Number of observations</th>
<th>Total weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORAL, SOFT, NK</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>CORAL, STONY, NK</td>
<td>46</td>
<td>562.9</td>
</tr>
<tr>
<td>DREDGE, SCALLOP, SEA</td>
<td>3</td>
<td>10.6</td>
</tr>
<tr>
<td>GILL NET, DRIFT-SINK, FISH</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>GILL NET, FIXED OR ANCHORED, SINK, OTHER/NK SPECIES</td>
<td>26</td>
<td>315.2</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>16</td>
<td>237</td>
</tr>
<tr>
<td>SEA PEN, NK</td>
<td>17</td>
<td>7.8</td>
</tr>
<tr>
<td>GILL NET, DRIFT-SINK, FISH</td>
<td>6</td>
<td>1.8</td>
</tr>
<tr>
<td>GILL NET, FIXED OR ANCHORED, SINK, OTHER/NK SPECIES</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>POT/TRAP, LOBSTER OFFSH NK</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>4</td>
<td>3.7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>65</td>
<td>571.4</td>
</tr>
</tbody>
</table>
Table 27: NEFOP records of deep sea corals within the Mid-Atlantic Council Region, 1994-2014. NK = not known.

<table>
<thead>
<tr>
<th>Coral Records by Gear Type</th>
<th>Number of observations</th>
<th>Total weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DREDGE, SCALLOP, SEA</td>
<td>3</td>
<td>10.6</td>
</tr>
<tr>
<td>CORAL, STONY, NK</td>
<td>3</td>
<td>10.6</td>
</tr>
<tr>
<td>GILL NET, FIXED OR ANCHORED, SINK, OTHER/NK</td>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>SPECIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORAL, STONY, NK</td>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>2</td>
<td>100.1</td>
</tr>
<tr>
<td>CORAL, SOFT, NK</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>CORAL, STONY, NK</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Grand Total</td>
<td>11</td>
<td>230.7</td>
</tr>
</tbody>
</table>

Figure 12: NEFOP records of deep sea corals in the Mid-Atlantic, 1994-2014.
7.1.4 Deep Sea Coral Habitat Suitability Model

A main limitation of point data for deep sea coral observations is that this data is mostly presence-only, and many areas have not been surveyed for the presence of deep sea corals. Surveying deep offshore habitats using Remotely Operated Vehicles (ROVs) or towed cameras is expensive and often logistically difficult. However, existing coral observation data, together with associated environmental data, are useful for developing models that can predict deep sea coral habitat based on known coral locations. The following summarizes the results of a habitat suitability model for deep sea corals in the Northeast region, developed in partnership between NOAA's National Centers for Coastal Ocean Science (NCCOS) and NOAA Northeast Fisheries Science Center (NEFSC). This predictive habitat model was developed by relating two types of data: 1) known deep sea coral presence locations from the Deep Sea Coral Research & Technology Program database, and 2) environmental and geological predictor variables. A variety of environmental variables were incorporated, including slope, depth, depth change, rugosity, salinity, oxygen, substrate, temperature, turbidity, and others.

In the Northeast Region, several different taxonomic groups of deep sea corals were modeled. Some of these model outputs are better predictors of coral presence than others, due to different sample sizes of coral records of each type in the DSCRTP database. The model output for Gorgonian and Alcyonacean corals is expected to be the model with the best predictive ability for structure-forming deep sea corals, as it is based on a sizeable number of data points from known structure-forming species. Therefore, the model outputs for Gorgonian and Alcyonacean corals were used to evaluate the habitat suitability of each proposed discrete zone (Table 28, Figures 13-24). Model outputs are displayed in the figures below, and reflect the predicted likelihood of deep sea coral habitat for a given area. In these maps, the values for predicted likelihood of coral habitat suitability are displayed by the following likelihood categories: very low, low, medium, high, and very high.

In July 2012, the NOAA ship Bigelow visited three "hotspots" predicted by the model, and surveyed the sites using WHOI's TowCam. Data collected during this cruise was used to refine model predictions. The model was qualitatively validated: all camera tow sites that were observed to be hotspots of coral abundance and diversity were also predicted hotspots of habitat suitability based on the regional model. The model was further validated during the August 2014 towed camera surveys previously described. Each attempt has indicated that this habitat suitability model performs well in predicting areas of likely deep sea coral habitat, as well as predicting areas where corals are unlikely to be found.

It should be noted that the exact location of deep coral hotspots on the seafloor often depends on fine-scale seabed features (e.g., ridges or ledges of exposed hard substrate) that are smoothed over in this regional-scale model. The current resolution of the model is grid cells of approximately 370 m² (although there are plans to improve the model by increasing resolution to 25 m² within the next several years, as well as incorporate more recent coral observations). These maps should be viewed as representing only the general locations of predicted suitable coral habitat (within approximately 350-750 meters, or approximately two model grid cells). This is the primary reason why proposed discrete zone boundaries were buffered by 0.4

---

nautical miles (approximately 741 meters). Also, model predictions are of coral presence, and high likelihood of presence will not necessarily correlate with high abundance.

Table 28: Percent of each proposed discrete zone area within each predicted habitat suitability likelihood class (very low, low, medium, high, and very high), and total discrete zone area.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
<th>Total canyon Area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Canyon</td>
<td>9%</td>
<td>22%</td>
<td>61%</td>
<td>6%</td>
<td>2%</td>
<td>231.6</td>
</tr>
<tr>
<td>Ryan-McMaster Canyons</td>
<td>17%</td>
<td>19%</td>
<td>49%</td>
<td>11%</td>
<td>4%</td>
<td>390.3</td>
</tr>
<tr>
<td>Emery-Uchupi Canyons</td>
<td>18%</td>
<td>27%</td>
<td>42%</td>
<td>10%</td>
<td>2%</td>
<td>369.2</td>
</tr>
<tr>
<td>Jones-Babylon Canyons</td>
<td>12%</td>
<td>19%</td>
<td>46%</td>
<td>17%</td>
<td>5%</td>
<td>166.1</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>12%</td>
<td>15%</td>
<td>30%</td>
<td>12%</td>
<td>30%</td>
<td>770.8</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope</td>
<td>18%</td>
<td>27%</td>
<td>41%</td>
<td>9%</td>
<td>6%</td>
<td>2818.2</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope (Advisor proposed under Alt. 3B-1; Straight line)</td>
<td>20%</td>
<td>28%</td>
<td>39%</td>
<td>8%</td>
<td>5%</td>
<td>2445.3</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope (Advisor proposed under Alt. 3B-1; Depth-based)</td>
<td>20%</td>
<td>27%</td>
<td>38%</td>
<td>9%</td>
<td>7%</td>
<td>2458.8</td>
</tr>
<tr>
<td>Spencer Canyon</td>
<td>18%</td>
<td>16%</td>
<td>49%</td>
<td>7%</td>
<td>10%</td>
<td>163.3</td>
</tr>
<tr>
<td>Wilmington Canyon</td>
<td>5%</td>
<td>7%</td>
<td>23%</td>
<td>15%</td>
<td>50%</td>
<td>268.1</td>
</tr>
<tr>
<td>North Heyes-South Wilmington Canyons</td>
<td>2%</td>
<td>10%</td>
<td>47%</td>
<td>27%</td>
<td>14%</td>
<td>183.4</td>
</tr>
<tr>
<td>South Vries Canyon</td>
<td>8%</td>
<td>11%</td>
<td>39%</td>
<td>30%</td>
<td>12%</td>
<td>142.6</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>8%</td>
<td>6%</td>
<td>31%</td>
<td>13%</td>
<td>42%</td>
<td>231.0</td>
</tr>
<tr>
<td>Baltimore Canyon (Advisor proposed under Alt. 3B-1)</td>
<td>13%</td>
<td>7%</td>
<td>23%</td>
<td>16%</td>
<td>41%</td>
<td>220.7</td>
</tr>
<tr>
<td>Warr-Phoenix Canyon Complex</td>
<td>5%</td>
<td>10%</td>
<td>51%</td>
<td>24%</td>
<td>10%</td>
<td>511.6</td>
</tr>
<tr>
<td>Accomac-Leonard Canyons</td>
<td>22%</td>
<td>20%</td>
<td>44%</td>
<td>12%</td>
<td>2%</td>
<td>538.2</td>
</tr>
<tr>
<td>Washington Canyon</td>
<td>45%</td>
<td>19%</td>
<td>22%</td>
<td>5%</td>
<td>10%</td>
<td>554.1</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>51%</td>
<td>8%</td>
<td>20%</td>
<td>8%</td>
<td>14%</td>
<td>543.7</td>
</tr>
<tr>
<td>Norfolk Canyon (Advisor proposed under Alt. 3B-1)</td>
<td>55%</td>
<td>8%</td>
<td>17%</td>
<td>7%</td>
<td>12%</td>
<td>598.4</td>
</tr>
</tbody>
</table>
Figure 13: Block Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 14: Ryan and McMaster Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 15: Emery and Uchupi Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 16: Jones and Babylon Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 17: Hudson Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 18: Mey-Lindenkohl Slope areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 19: Spencer Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 20: Baltimore Canyon and South Vries Canyons (two separate proposed areas) areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 21: Warr-Phoenix Canyon Complex areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 22: Accomac and Leonard Canyons areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 23: Washington Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
Figure 24: Norfolk Canyon areas of high slope, deep sea coral habitat suitability, and discrete zone boundaries.
7.2 Impacts to Deep Sea Corals

In general terms, deep sea corals are expected to benefit from any alternative that reduces the likelihood of damage by commercial fishing gear. However, many corals growing on steep slopes are likely to have a degree of natural protection from some commercial fishing gear, as very steep slopes cannot be trawled. Areas of higher three-dimensional complexity tend to be avoided by fishermen for fear of damage and loss of their gear. In other areas, fishing may be occurring in or near areas of deep sea coral habitats. Thus, the exact nature of potential impacts to corals are difficult to define, but it should be noted that many of the proposed measures are precautionary in nature and are designed to protect corals from future expansion of fishing effort. Given its small overall scope and the small physical footprint of gear contact with the seafloor, it is believed that the red crab fishery may currently have a small impact on corals. As such, an exemption from the broad zones is being considered for the red crab fishery.

Under the status-quo, one would expect some ongoing negative impacts to deep water corals and any potential expansion of effort into new deep water areas would be unconstrained and could increase impacts. Evidence of gear impacts to deep water corals in the Mid-Atlantic is sparse and generally limited to occasional observations of fishing gear during remote vehicle coral surveys and coral observations in the limited NEFOP data described above. However, trawling’s detrimental impact on deep water corals is well documented.²¹

As shown above, for areas where the presence of deep sea corals is likely but not proven, the presence of modeled deep sea coral habitat provides the best measure for inferring deep sea coral occurrence. Deep sea research dives have, however, validated that coral is likely to be found in areas predicted to have suitable habitat by the model. Therefore, for any of the coral zones defined in the alternatives, the total area of likely deep sea coral habitat serves as a measure of the importance of the zone for deep sea corals. The impacts of the alternatives can be assessed as the protection afforded to corals by eliminating or reducing access to those areas by vessels using bottom tending fishing gear.

In Tables 29 and 30 on the next page, the canyon areas are arranged in descending order in terms of total area of modeled high/very high suitable habitat (the left side of the “Habitat Suitability” columns). This area is simply the total area of the potential discrete zone multiplied by the percent of the area that has high or very high suitability (from the suitability model described above) for deep water corals. For example, the Mey-Lindenkohl Slope area is 2818.2 km², and 14.7% of that area is predicted to have high/very high habitat suitability for corals, so its total area with modeled high/very high deep water coral suitability is 414.1 km² (2818*.147 = 414).

While slope is a variable included in the habitat suitability model, areas of high slope (>30 degrees) are also believed to be an important indicator of coral habitat, so the amount of high slope areas in the potential coral zones is also provided in the table below. These follow the same initial trend as modeled habitat suitability, with the Mey-Lindenkohl Slope and Hudson Canyon areas having the greatest areas of high slope, but also identify some canyons as potentially having more or less coral than suggested by the suitability model. For example, based on high slope areas, the Norfolk and Spencer Canyon areas may have relatively more coral habitat than suggested by the suitability model.

As discussed in the economic impacts section, if some canyon areas are closed, it would be expected that effort would shift near/around canyons that remain open to some degree. This reduces both the positive biological and negative fishery socio-economic impacts of canyon closures.

²¹For example, see references in Hourigan 2014, p. 128 in Interrelationships Between Corals and Fisheries, Ed. Stephen Bortone.
As can be seen in the maps above for the canyons, the 500 m broad zone would cover most of the high/very high suitability areas. The exceptions are the heads of longer canyons that incise the shelf/slope break (e.g. Hudson, Baltimore, Washington, and Norfolk), where high/very high suitability areas extend into the shallower heads of the canyons (400m/300m). Based on the outputs of the habitat suitability model in the Mid-Atlantic Region, the 200m broad zone would protect nearly 100% of areas predicted as having a high or very high likelihood of coral habitat suitability, the 300m broad zone would protect 99% of high/very high likelihood areas, the 400m broad zone would protect 97% of high/very high likelihood areas, and the 500m broad zone would protect 93% of high/very high likelihood areas.
Table 29: Summary of analysis across proposed discrete zones under alternative 3B for coral observations, habitat suitability, and areas of high slope. Note: recent fieldwork observations are not included in the DSCRTP historical database.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Total area (km²)</th>
<th>Historical Coral Records (all)</th>
<th>Recent fieldwork with coral observations?</th>
<th>Total Area of High/Very High Habitat Suitability</th>
<th>Percent High/Very High Habitat Suitability</th>
<th>Total area of slope &gt;30 degrees (km²)</th>
<th>Percent area of slope &gt;30 degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mey-Lindenkohl Slope Depth</td>
<td>2458</td>
<td>62</td>
<td>✓</td>
<td>383.4</td>
<td>15.6%</td>
<td>175.3</td>
<td>7.1%</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope Straight</td>
<td>2445</td>
<td>65</td>
<td>✓</td>
<td>317.8</td>
<td>13.0%</td>
<td>172.4</td>
<td>7.1%</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>220</td>
<td>50</td>
<td>✓</td>
<td>125.2</td>
<td>56.9%</td>
<td>13.2</td>
<td>6.0%</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>598</td>
<td>37</td>
<td>✓</td>
<td>118.4</td>
<td>19.8%</td>
<td>42.9</td>
<td>7.2%</td>
</tr>
</tbody>
</table>

Table 30: Summary of analysis across advisor-proposed discrete zones under sub-alternative 3B-1 for coral observations, habitat suitability, and areas of high slope. Note: recent fieldwork observations are not included in the DSCRTP historical database.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Total area (km²)</th>
<th>Historical Coral Records (all)</th>
<th>Recent fieldwork with coral observations?</th>
<th>Total Area of High/Very High Habitat Suitability</th>
<th>Percent High/Very High Habitat Suitability</th>
<th>Total area of slope &gt;30 degrees (km²)</th>
<th>Percent area of slope &gt;30 degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mey-Lindenkohl Slope Depth</td>
<td>2458</td>
<td>62</td>
<td>✓</td>
<td>383.4</td>
<td>15.6%</td>
<td>175.3</td>
<td>7.1%</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope Straight</td>
<td>2445</td>
<td>65</td>
<td>✓</td>
<td>317.8</td>
<td>13.0%</td>
<td>172.4</td>
<td>7.1%</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>220</td>
<td>50</td>
<td>✓</td>
<td>125.2</td>
<td>56.9%</td>
<td>13.2</td>
<td>6.0%</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>598</td>
<td>37</td>
<td>✓</td>
<td>118.4</td>
<td>19.8%</td>
<td>42.9</td>
<td>7.2%</td>
</tr>
</tbody>
</table>
7.3  FISHERY EFFORT AND ECONOMIC IMPACTS

Impacts to fishing effort and thus also economic impacts were analyzed by mapping and quantifying recent fishing effort relative to all proposed coral zones (broad and discrete). Several data sources are available to analyze past effort. None of the sources are complete, and their strengths and weaknesses are discussed below.

7.3.1  VTR Revenue Mapping Model

Economic impacts of proposed coral zones were analyzed using a Vessel Trip Report (VTR)-based revenue mapping model produced by the Northeast Fisheries Science Center. A Technical Memo outlining the methodology behind this model is forthcoming from the NEFSC, and an overview is provided here.

Federally permitted vessels are required to submit a VTR for each trip, the requirements of which include indicating a general fishing location as a set of geographic coordinates. These self-reported coordinates do not precisely indicate the location of fishing effort, given that only one point is provided regardless of trip length or distance covered during the trip. In the absence of spatially explicit fishery effort data for many fisheries, this model allows for more robust analysis using VTR data by taking into account some of the uncertainties around each reported point. Using observer data, for which precise locations are available, the model was developed to derive probability distributions for actual fishing locations, around a provided VTR point. Other variables likely to impact the precision of a given VTR point, such as trip length, vessel size, and fishery, were also incorporated into the model. This model allows for generation of maps that predict the spatial footprint of fishing. Price information from dealer reports was used to transform VTR catches into revenues. Trip information was used to incorporate information about revenue generated from each trip, resulting in a model that can produce maps of revenue generated for a given set of specified parameters such as gear type, species, or port of landing. The revenue-mapping model covers the years 2007-2012, and can be used to identify areas important to specific fishing communities, species, gears, and seasons to establish a baseline of commercial fishing effort.

For this analysis, first, gear and species combinations likely to be impacted by the proposed measures were identified. VTR-point data were used to identify the primary gear-species combinations that occur within proposed broad and discrete zones. The primary gear types reported within the proposed coral zones (broad and discrete combined) include bottom otter trawls, sea scallop dredges, crab pots and traps, lobster pots, and bottom longlines. The primary species caught include longfin squid, *Illex* squid, sea scallops, deepsea red crab, American lobster, summer flounder, silver hake (whiting), golden tilefish, Jonah crab, scup, and black sea bass.

Of these gear-species combinations, American lobster and Jonah crab were not included in further analysis due to the nature of the regulatory authority under which the alternatives in this document are proposed. Management measures applied under the discretionary provisions of the MSA to designate deep sea coral zones would be applicable to Federally-managed fisheries only, meaning they would not impact lobster pots, since lobster is managed solely by the Atlantic States Marine Fisheries Commission (i.e., not jointly managed with NMFS or the Councils). Jonah crabs are caught as bycatch within the lobster pot fishery, and generally retained for sale.

Thus the primary gear-species combinations identified for further analysis in the revenue-mapping model included:

1. Bottom otter trawl – Squid (*Illex* and longfin)
2. Bottom otter trawl – Hake
3. Bottom otter trawl – Summer flounder, scup, and black sea bass (BOT – FLUKE)
4. Pots/Traps – Red crab
5. Bottom longline – Golden tilefish
6. Dredge – Sea scallops

The data in Tables 31 and 32 are also illustrated in revenue intensity maps shown in Figures 25-30 and both are a direct product of the VTR model. The data reveal spatial concentrations of effort that provide additional context for the estimates in the tables. When interpreting the maps, the appropriate interpretation is that most revenues would be contained by the areas of intense color, but it would not be correct to interpret the model as saying high effort definitely occurred in all areas of intense color.

This model does have important caveats. The probability distributions generated from each reported VTR point create a likelihood of actual fishing locations in all directions from a given point, and do not take into account any specific directionality that may be associated with specific fishing methods or specific locations. For example, the model does not take into account fishing behavior along depth contours or other specific habitat features. The model-estimated distribution of fishing effort would tend to be expanded beyond the shelf break or into the middle of canyons to deeper areas that are not actually fished. As such, the model likely overstates effort and revenue dependence in those deeper areas, suggesting that the values (i.e. contributions to overall revenue) in Tables 31 and 32 are overestimates. The model should still illustrate the approximate relative value among potential closure areas and facilitate approximate relative comparisons.
Table 31: VTR model-estimated revenue (USD) by proposed discrete zone, shown as a percentage of coastwide revenues for each species-gear combination, 2007-2012, Maine through North Carolina. BOT = bottom otter trawl; BLL = bottom longline; DRG = dredge.

<table>
<thead>
<tr>
<th>DISCRETE ZONE</th>
<th>AREA (km²)</th>
<th>BOT-SQUID</th>
<th>DRG-SCALL</th>
<th>BOT-FLUKE</th>
<th>POT-RCRAB</th>
<th>LL-TILE</th>
<th>BOT-HAKE</th>
<th>Total</th>
<th>Mobile gears only (trawl/dredge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mey-Lindenkohl Slope</td>
<td>2,818</td>
<td>2.14%</td>
<td>0.19%</td>
<td>1.17%</td>
<td>3.47%</td>
<td>1.65%</td>
<td>0.32%</td>
<td>0.42%</td>
<td>0.39%</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>770</td>
<td>1.27%</td>
<td>0.04%</td>
<td>0.56%</td>
<td>1.13%</td>
<td>3.50%</td>
<td>1.20%</td>
<td>0.22%</td>
<td>0.18%</td>
</tr>
<tr>
<td>Wilmington Canyon</td>
<td>268</td>
<td>1.64%</td>
<td>0.08%</td>
<td>0.17%</td>
<td>0.77%</td>
<td>0.13%</td>
<td>0.02%</td>
<td>0.21%</td>
<td>0.20%</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>231</td>
<td>0.73%</td>
<td>0.05%</td>
<td>0.16%</td>
<td>0.80%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.11%</td>
<td>0.11%</td>
</tr>
<tr>
<td>Warr &amp; Phoenix Canyon Complex</td>
<td>512</td>
<td>0.62%</td>
<td>0.05%</td>
<td>0.10%</td>
<td>0.98%</td>
<td>0.03%</td>
<td>0.01%</td>
<td>0.10%</td>
<td>0.09%</td>
</tr>
<tr>
<td>Accomac &amp; Leonard Canyons</td>
<td>539</td>
<td>0.33%</td>
<td>0.05%</td>
<td>0.10%</td>
<td>0.87%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.08%</td>
<td>0.07%</td>
</tr>
<tr>
<td>North Heyes &amp; South Wilmington Canyon</td>
<td>183</td>
<td>0.53%</td>
<td>0.03%</td>
<td>0.06%</td>
<td>0.42%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.07%</td>
<td>0.07%</td>
</tr>
<tr>
<td>Washington Canyon</td>
<td>554</td>
<td>0.22%</td>
<td>0.05%</td>
<td>0.10%</td>
<td>0.64%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.07%</td>
<td>0.06%</td>
</tr>
<tr>
<td>Spencer Canyon</td>
<td>168</td>
<td>0.46%</td>
<td>0.05%</td>
<td>0.09%</td>
<td>0.24%</td>
<td>0.01%</td>
<td>0.00%</td>
<td>0.06%</td>
<td>0.06%</td>
</tr>
<tr>
<td>South Vries Canyon</td>
<td>143</td>
<td>0.36%</td>
<td>0.02%</td>
<td>0.04%</td>
<td>0.28%</td>
<td>0.01%</td>
<td>0.00%</td>
<td>0.05%</td>
<td>0.05%</td>
</tr>
<tr>
<td>Norfolk Canyon*</td>
<td>544</td>
<td>0.34%</td>
<td>0.01%</td>
<td>0.03%</td>
<td>0.88%</td>
<td>0.01%</td>
<td>0.00%</td>
<td>0.04%</td>
<td>0.04%</td>
</tr>
<tr>
<td>Ryan &amp; McMaster Canyons</td>
<td>390</td>
<td>0.13%</td>
<td>0.00%</td>
<td>0.18%</td>
<td>0.30%</td>
<td>0.02%</td>
<td>0.22%</td>
<td>0.34%</td>
<td>0.03%</td>
</tr>
<tr>
<td>Emery &amp; Uchupi Canyons</td>
<td>369</td>
<td>0.12%</td>
<td>0.00%</td>
<td>0.14%</td>
<td>0.33%</td>
<td>0.32%</td>
<td>0.23%</td>
<td>0.03%</td>
<td>0.03%</td>
</tr>
<tr>
<td>Jones &amp; Babylon Canyons</td>
<td>166</td>
<td>0.08%</td>
<td>0.01%</td>
<td>0.06%</td>
<td>0.17%</td>
<td>0.44%</td>
<td>0.12%</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Block Canyon</td>
<td>231</td>
<td>0.06%</td>
<td>0.00%</td>
<td>0.10%</td>
<td>0.13%</td>
<td>0.14%</td>
<td>0.22%</td>
<td>0.02%</td>
<td>0.01%</td>
</tr>
<tr>
<td>All Discrete Zones</td>
<td>7,881</td>
<td>9.00%</td>
<td>0.60%</td>
<td>3.06%</td>
<td>11.43%</td>
<td>6.51%</td>
<td>2.48%</td>
<td>1.50%</td>
<td>1.40%</td>
</tr>
</tbody>
</table>

*Norfolk Canyon revenue estimates for trawl and dredge fisheries were adjusted to exclude the Norfolk Canyon Tilefish GRA, which is closed to mobile bottom-tending gear.

Table 32: VTR model-estimated cumulative revenue (USD) by proposed broad zone, shown as a percentage of coastwide revenues for each species-gear combination, 2007-2012, Maine through North Carolina. BOT = bottom otter trawl; BLL = bottom longline; DRG = dredge. Note that percentages are not additive given the significant overlap in area across all broad zones.

<table>
<thead>
<tr>
<th>BROAD ZONE</th>
<th>APPROX. AREA (km²)</th>
<th>BOT-SQUID</th>
<th>DRG-SCALL</th>
<th>BOT-FLUKE</th>
<th>POT-RCRAB</th>
<th>LL-TILE</th>
<th>BOT-HAKE</th>
<th>Total</th>
<th>Mobile gears only (trawl/dredge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 Broad Zone</td>
<td>101,372</td>
<td>24.56%</td>
<td>1.25%</td>
<td>7.44%</td>
<td>42.15%</td>
<td>16.83%</td>
<td>7.80%</td>
<td>3.80%</td>
<td>3.47%</td>
</tr>
<tr>
<td>300 Broad Zone</td>
<td>100,165</td>
<td>22.13%</td>
<td>1.12%</td>
<td>6.35%</td>
<td>40.31%</td>
<td>12.31%</td>
<td>6.10%</td>
<td>3.37%</td>
<td>3.09%</td>
</tr>
<tr>
<td>400 Broad Zone</td>
<td>99,218</td>
<td>20.29%</td>
<td>1.03%</td>
<td>5.62%</td>
<td>38.63%</td>
<td>10.07%</td>
<td>4.84%</td>
<td>3.07%</td>
<td>2.81%</td>
</tr>
<tr>
<td>500 Broad Zone</td>
<td>98,444</td>
<td>19.06%</td>
<td>0.97%</td>
<td>5.14%</td>
<td>37.29%</td>
<td>8.83%</td>
<td>4.07%</td>
<td>2.86%</td>
<td>2.52%</td>
</tr>
</tbody>
</table>
Figure 25: Areas of high cumulative estimated revenue (USD) for red crab caught using pots, 2007-2012, Maine through Virginia.

Figure 26: Areas of high cumulative estimated revenue (USD) for scallops caught using dredge gear, 2007-2012, Maine through Virginia.
Figure 27: Areas of high cumulative estimated revenue (USD) for *Illex* and longfin squid caught using bottom otter trawls, 2007-2012, Maine through Virginia.

Figure 28: Areas of high cumulative estimated revenue (USD) for summer flounder, scup, and black sea bass caught using bottom otter trawl gear, 2007-2012, Maine through Virginia.
Figure 29: Areas of high cumulative estimated revenue (USD) for silver hake (whiting) caught using bottom otter trawl gear, 2007-2012, Maine through Virginia.

Figure 30: Areas of high cumulative estimated revenue (USD) for golden tilefish caught using bottom longline gear, 2007-2012, Maine through Virginia.
Because of the limitations of the VTR revenue-mapping model, raw VTR catch data and observer data were also analyzed to provide additional information on how fishing activity might be impacted by the proposed coral zones. For both of these additional investigations, a broader range of years was also used, 2000-2013.

### 7.3.2 VTR Point Data

An analysis of VTR point data, based on reported locations, was conducted to support for the model results. However, additional years were considered (2000-2013), and only catch data were used (i.e., they were not transformed into revenues as was done for the model). Additionally, the summer flounder/scup/black sea bass group was broken up into a summer flounder/black sea bass group and scup alone due to the lower value of scup. Unlike the above model, this analysis focused on the reported point location alone rather than spreading the effort around the point based on other information.

The initial dataset was all Northeast VTR reports for the gears described in the table below. Not all VTR reports include location information that can be mapped, so records lacking this information were removed. As discussed above, the VTR location information is approximate for a trip overall, but likely gives an approximate indication of whether areas are important for fishing, especially when considered over a range of years. The following table reports the percentage of catches that did have location information that could be mapped.

**Table 33. Percent of VTR catch data with associated location information, 2000-2013.**

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Percent of Catch Mappable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bottom otter trawl – Squid (<em>Illex</em> and <em>longfin</em>)</td>
<td>94%</td>
</tr>
<tr>
<td>2. Bottom otter trawl – Hake</td>
<td>93%</td>
</tr>
<tr>
<td>3a. Bottom otter trawl – Summer flounder and black sea bass</td>
<td>93%</td>
</tr>
<tr>
<td>3b. Bottom otter trawl – Scup</td>
<td>95%</td>
</tr>
<tr>
<td>4. Pots/Traps – Red crab</td>
<td>87%</td>
</tr>
<tr>
<td>5. Bottom longline – Golden tilefish</td>
<td>92%</td>
</tr>
<tr>
<td>6. Dredge – Sea scallops</td>
<td>95%</td>
</tr>
</tbody>
</table>

Catches were analyzed with ArcGIS to determine the amounts of catch (totaled over all years) that are associated with the various areas being considered in this amendment. The table below describes the results. The percentages in the table are only of the total available to be mapped. So for example, from the 94% of all VTR squid catches (pounds) that could be mapped, 1.3% of those trips reported locations on their VTRs deeper than 500m (i.e. in the 500m broad zone), and those 1.3% of trips accounted for 15% of reported VTR catches. Since each trip only is associated with one general latitude/longitude point, these values are not necessarily the catches that actually occurred in the area, but should indicate relative importance of the various areas if the VTR locations are generally reported near where fishing actually occurred.
Table 34. Fishing activity in potential coral zones based on Vessel Trip Report (VTR) point data, 2000-2013.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Trips in Area</td>
<td>% of Catch from Area*</td>
<td>% of Trips in Area</td>
<td>% of Catch from Area*</td>
<td>% of Trips in Area</td>
<td>% of Catch from Area*</td>
<td>% of Trips in Area</td>
</tr>
<tr>
<td>All Areas Not Under Consideration</td>
<td>93.4%</td>
<td>44.5%</td>
<td>93.7%</td>
<td>88.1%</td>
<td>97.7%</td>
<td>93.8%</td>
<td>98.3%</td>
</tr>
<tr>
<td>500m broad zone</td>
<td>1.3%</td>
<td>15.0%</td>
<td>0.6%</td>
<td>0.7%</td>
<td>0.5%</td>
<td>1.7%</td>
<td>0.3%</td>
</tr>
<tr>
<td>400m broad zone (includes deeper zones)</td>
<td>1.7%</td>
<td>19.9%</td>
<td>1.1%</td>
<td>1.8%</td>
<td>0.6%</td>
<td>2.0%</td>
<td>0.4%</td>
</tr>
<tr>
<td>300m broad zone (includes deeper zones)</td>
<td>3.0%</td>
<td>30.5%</td>
<td>2.6%</td>
<td>5.6%</td>
<td>1.0%</td>
<td>2.8%</td>
<td>0.6%</td>
</tr>
<tr>
<td>200m broad zone (includes deeper zones)</td>
<td>4.7%</td>
<td>40.7%</td>
<td>4.6%</td>
<td>9.5%</td>
<td>1.6%</td>
<td>3.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Baltimore Canyon (Industry)</td>
<td>0.0%</td>
<td>0.5%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope-Depth (Industry)</td>
<td>0.1%</td>
<td>0.6%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope-Straight (Industry)</td>
<td>0.2%</td>
<td>1.2%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.4%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Norfolk Canyon (Industry)</td>
<td>0.1%</td>
<td>1.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Accomac &amp; Leonard Canyons</td>
<td>0.0%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>0.1%</td>
<td>1.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Block Canyon</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Emery &amp; Uchupi Canyons</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>0.7%</td>
<td>1.1%</td>
<td>1.0%</td>
<td>1.3%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Jones &amp; Babylon Canyons</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope</td>
<td>0.3%</td>
<td>2.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.1%</td>
<td>0.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>0.1%</td>
<td>1.5%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>North Heyes &amp; South Wilmington Canyon</td>
<td>0.0%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Ryan &amp; McMaster Canyons</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>South Vries Canyon</td>
<td>0.1%</td>
<td>1.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Spencer Canyon</td>
<td>0.0%</td>
<td>1.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Warr &amp; Phoenix Canyon Complex</td>
<td>0.0%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Washington Canyon</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Wilmington Canyon</td>
<td>0.1%</td>
<td>1.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Note: The catch percents assume that all of the catch from a given trip occurred in the area encompassed by the reported VTR location.
7.3.3 Northeast Fisheries Observer Program Data (NEFOP)

Observer data from NEFOP were obtained for bottom trawl, bottom longline, and sink/anchored gillnet gear types for years 2000 through 2013 for the Mid-Atlantic region. Records with incomplete geographic coordinates were removed. Observed hauls were analyzed relative to proposed broad zones. While coverage of trips is much lower with the observer data compared to the Vessel Trip Report (VTR) data, the observer data generally provides very precise location data for each tow/set. Observer coverage also varies by fishery and by year, however, aggregating the data over many years likely reveals relative patterns in fishing effort. Accordingly, NEFOP data was used to consider effort across the potential coral zones.

**Observed Bottom Trawl Effort**

Within the Mid-Atlantic management region, there were 25,073 total observed hauls (on 3,967 trips) using bottom trawl gear within this time period (Table 35; Figure 31). Tables 36-39 show the number of bottom trawl hauls intersecting each of the proposed broad coral zones, with associated number of trips and the average depth taken at the start of each haul. Depth information is meant to provide an approximation of the depth at which these fisheries are prosecuted, but may not provide a complete picture (especially for longer hauls), given that it is based on haul start location.

Hauls were analyzed by selecting those intersecting each broad zone, and many records are duplicated across Tables 36-39 if they intersect more than one broad zone alternative. In the vicinity of the proposed coral zones, bottom trawl effort is concentrated along the continental shelf and shelf break, and at the heads of canyons (Figure 31). For observed bottom trawl hauls over this time period, 14% intersect the 200 meter broad zone, 6% intersect the 300 meter broad zone, 3% intersect the 400 meter broad zone, and 1% intersect the 500 m broad zone. Tables are also provided that describe how many hauls intersect the discrete zones, and Figure 31 overlays the haul track data on a map with the proposed coral zones.

Table 35: All NEFOP observed bottom trawl hauls and trips, by gear type, within the Mid-Atlantic Council region from 2000-2013.

<table>
<thead>
<tr>
<th>Gear Type</th>
<th>Number of trips</th>
<th>Number of hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>3,959</td>
<td>24,985</td>
<td>86 m (47 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SCALLOP</td>
<td>2</td>
<td>20</td>
<td>51 m (28 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SHRIMP</td>
<td>6</td>
<td>68</td>
<td>340 m (186 ftm)</td>
</tr>
<tr>
<td>Total</td>
<td>3,967</td>
<td>25,073</td>
<td>Average: 87 m (48 ftm)</td>
</tr>
</tbody>
</table>
Table 36: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 200 meter broad zone alternative, 2000-2013. Records removed for species observed on less than 5 hauls.

<table>
<thead>
<tr>
<th>Gear Type; Target Species</th>
<th>Number of trips</th>
<th>Number of hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>637</td>
<td>3,414</td>
<td>199 m (109 ftm)</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>1,257</td>
<td>163 m (89 ftm)</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>1,248</td>
<td>199 m (109 ftm)</td>
</tr>
<tr>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>449</td>
<td>267 m (146 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>245</td>
<td>279 m (152 ftm)</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>67</td>
<td>109 m (60 ftm)</td>
</tr>
<tr>
<td>WHITING, BLACK (HAKE, OFFSHORE)</td>
<td>--</td>
<td>46</td>
<td>362 m (198 ftm)</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>32</td>
<td>133 m (73 ftm)</td>
</tr>
<tr>
<td>SQUID, NK</td>
<td>--</td>
<td>23</td>
<td>152 m (83 ftm)</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>20</td>
<td>100 m (55 ftm)</td>
</tr>
<tr>
<td>GROUNDFISH, NK</td>
<td>--</td>
<td>18</td>
<td>262 m (143 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SHRIMP</td>
<td>6</td>
<td>67</td>
<td>343 m (188 ftm)</td>
</tr>
<tr>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>31</td>
<td>344 m (188 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>15</td>
<td>338 m (185 ftm)</td>
</tr>
<tr>
<td>SHRIMP, PANDALID (NORTHERN)</td>
<td>--</td>
<td>9</td>
<td>353 m (193 ftm)</td>
</tr>
<tr>
<td>WHITING, BLACK (HAKE, OFFSHORE)</td>
<td>--</td>
<td>9</td>
<td>350 m (191 ftm)</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>643</strong></td>
<td><strong>3,481</strong></td>
<td><strong>Average: 202 m (110 ftm)</strong></td>
</tr>
</tbody>
</table>

Table 37: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 300 meter broad zone alternative, 2000-2013. Records removed for species observed on less than 5 hauls.

<table>
<thead>
<tr>
<th>Gear Type; Target Species</th>
<th>Number of trips</th>
<th>Number of hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>432</td>
<td>1,486</td>
<td>217 m (119 ftm)</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>640</td>
<td>207 m (113 ftm)</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>441</td>
<td>162 m (88 ftm)</td>
</tr>
<tr>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>172</td>
<td>323 m (176 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>121</td>
<td>323 m (177 ftm)</td>
</tr>
<tr>
<td>WHITING, BLACK (HAKE, OFFSHORE)</td>
<td>--</td>
<td>42</td>
<td>371 m (203 ftm)</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>31</td>
<td>101 m (55 ftm)</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>13</td>
<td>91 m (50 ftm)</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>11</td>
<td>126 m (69 ftm)</td>
</tr>
<tr>
<td>GROUNDFISH, NK</td>
<td>--</td>
<td>7</td>
<td>289 m (158 ftm)</td>
</tr>
<tr>
<td>SQUID, NK</td>
<td>--</td>
<td>5</td>
<td>147 m (81 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SHRIMP</td>
<td>6</td>
<td>67</td>
<td>343 m (188 ftm)</td>
</tr>
<tr>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>31</td>
<td>344 m (188 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>15</td>
<td>338 m (185 ftm)</td>
</tr>
<tr>
<td>SHRIMP, PANDALID (NORTHERN)</td>
<td>--</td>
<td>9</td>
<td>353 m (193 ftm)</td>
</tr>
<tr>
<td>WHITING, BLACK (HAKE, OFFSHORE)</td>
<td>--</td>
<td>9</td>
<td>350 m (191 ftm)</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>438</strong></td>
<td><strong>1,553</strong></td>
<td><strong>Average: 222 m (122 ftm)</strong></td>
</tr>
</tbody>
</table>
Table 38: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 400 meter broad zone alternative, 2000-2013. Records removed for species observed on less than 5 hauls.

<table>
<thead>
<tr>
<th>Gear Type; Target Species</th>
<th>Number of trips</th>
<th>Number of hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>272</td>
<td>627</td>
<td>221 m (121 ftm)</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>291</td>
<td>208 m (113 ftm)</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>166</td>
<td>158 m (86 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>63</td>
<td>348 m (190 ftm)</td>
</tr>
<tr>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>56</td>
<td>378 m (207 ftm)</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>19</td>
<td>91 m (50 ftm)</td>
</tr>
<tr>
<td>WHITING, BLACK (HAKE, OFFSHORE)</td>
<td>--</td>
<td>14</td>
<td>395 m (216 ftm)</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>10</td>
<td>86 m (47 ftm)</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>7</td>
<td>126 m (69 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SHRIMP</td>
<td>5</td>
<td>13</td>
<td>357 m (195 ftm)</td>
</tr>
<tr>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>5</td>
<td>345 m (189 ftm)</td>
</tr>
<tr>
<td>Grand Total</td>
<td>277</td>
<td>640</td>
<td>Average: 225 m (123 ftm)</td>
</tr>
</tbody>
</table>

Table 39: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by gear type and target species, intersecting the 500 meter broad zone alternative, 2000-2013.

<table>
<thead>
<tr>
<th>Gear Type; Target Species</th>
<th>Number of trips</th>
<th>Number of hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAWL, OTTER, BOTTOM, FISH</td>
<td>170</td>
<td>299</td>
<td>192 m (105 ftm)</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>13</td>
<td>81 m (44 ftm)</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>12</td>
<td>341 m (186 ftm)</td>
</tr>
<tr>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>9</td>
<td>338 m (185 ftm)</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>6</td>
<td>123 m (67 ftm)</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>10</td>
<td>86 m (47 ftm)</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>95</td>
<td>157 m (86 ftm)</td>
</tr>
<tr>
<td>SQUID, NK</td>
<td>--</td>
<td>1</td>
<td>106 m (58 ftm)</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>153</td>
<td>212 m (116 ftm)</td>
</tr>
<tr>
<td>TRAWL, OTTER, BOTTOM, SHRIMP</td>
<td>1</td>
<td>1</td>
<td>349 m (191 ftm)</td>
</tr>
<tr>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>1</td>
<td>349 m (191 ftm)</td>
</tr>
<tr>
<td>Grand Total</td>
<td>171</td>
<td>300</td>
<td>Average: 192 m (105 ftm)</td>
</tr>
</tbody>
</table>
Table 40: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by target species, intersecting the discrete zones under alternative 3B.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>TARGET SPECIES</th>
<th>Trips</th>
<th>Hauls</th>
<th>Avg. Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>meters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>fathoms</td>
</tr>
<tr>
<td>Block Canyon</td>
<td></td>
<td>26</td>
<td>51</td>
<td>329.7</td>
</tr>
<tr>
<td></td>
<td>GROUNDFISH, NK</td>
<td>--</td>
<td>3</td>
<td>249.9</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>14</td>
<td>360.9</td>
</tr>
<tr>
<td></td>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>33</td>
<td>327.5</td>
</tr>
<tr>
<td></td>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>1</td>
<td>206.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>13</td>
<td>261.9</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>4</td>
<td>334.7</td>
</tr>
<tr>
<td></td>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>5</td>
<td>303.6</td>
</tr>
<tr>
<td></td>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>4</td>
<td>137.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>12</td>
<td>365.2</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>7</td>
<td>368.1</td>
</tr>
<tr>
<td></td>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>2</td>
<td>299.9</td>
</tr>
<tr>
<td></td>
<td>WHITING, BLACK (Hake, OFFSHORE)</td>
<td>--</td>
<td>3</td>
<td>401.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>6</td>
<td>390.8</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>4</td>
<td>388.6</td>
</tr>
<tr>
<td></td>
<td>WHITING, BLACK (Hake, OFFSHORE)</td>
<td>--</td>
<td>2</td>
<td>395.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>197</td>
<td>488</td>
<td>154.1</td>
</tr>
<tr>
<td></td>
<td>DORY, BUCKLER (JOHN)</td>
<td>--</td>
<td>1</td>
<td>135.3</td>
</tr>
<tr>
<td></td>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>15</td>
<td>119.4</td>
</tr>
<tr>
<td></td>
<td>HAKE, RED (LING)</td>
<td>--</td>
<td>1</td>
<td>40.2</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>41</td>
<td>214.0</td>
</tr>
<tr>
<td></td>
<td>MONKFISH (GOOSEFISH)</td>
<td>--</td>
<td>2</td>
<td>138.1</td>
</tr>
<tr>
<td></td>
<td>SCUP</td>
<td>--</td>
<td>21</td>
<td>127.8</td>
</tr>
<tr>
<td></td>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>3</td>
<td>134.1</td>
</tr>
<tr>
<td></td>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>12</td>
<td>356.3</td>
</tr>
<tr>
<td></td>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>373</td>
<td>137.0</td>
</tr>
<tr>
<td></td>
<td>SQUID, NK</td>
<td>--</td>
<td>2</td>
<td>139.9</td>
</tr>
<tr>
<td></td>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>5</td>
<td>186.2</td>
</tr>
<tr>
<td></td>
<td>WHITING, BLACK (Hake, OFFSHORE)</td>
<td>--</td>
<td>12</td>
<td>376.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>172</td>
<td>571</td>
<td>153.2</td>
</tr>
<tr>
<td></td>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>66</td>
<td>109.8</td>
</tr>
<tr>
<td></td>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>14</td>
<td>246.2</td>
</tr>
<tr>
<td></td>
<td>SCUP</td>
<td>--</td>
<td>13</td>
<td>113.8</td>
</tr>
<tr>
<td></td>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>14</td>
<td>105.9</td>
</tr>
<tr>
<td></td>
<td>SHRIMP, ROYAL RED</td>
<td>--</td>
<td>1</td>
<td>365.8</td>
</tr>
<tr>
<td></td>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>349</td>
<td>141.7</td>
</tr>
<tr>
<td></td>
<td>SQUID, NK</td>
<td>--</td>
<td>8</td>
<td>151.1</td>
</tr>
<tr>
<td></td>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>104</td>
<td>212.7</td>
</tr>
<tr>
<td></td>
<td>WHITING, BLACK (Hake, OFFSHORE)</td>
<td>--</td>
<td>2</td>
<td>343.8</td>
</tr>
<tr>
<td>Location</td>
<td>91</td>
<td>248</td>
<td>169.9</td>
<td>92.9</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----</td>
<td>-----</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Spencer Canyon</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>1</td>
<td>118.9</td>
<td>65.0</td>
</tr>
<tr>
<td>SCUP</td>
<td>-</td>
<td>4</td>
<td>134.9</td>
<td>73.8</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>119</td>
<td>156.8</td>
<td>85.7</td>
</tr>
<tr>
<td>SQUID, NK</td>
<td>-</td>
<td>6</td>
<td>133.8</td>
<td>73.2</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>118</td>
<td>186.5</td>
<td>102.0</td>
</tr>
<tr>
<td><strong>Wilmington Canyon</strong></td>
<td></td>
<td>112</td>
<td>215</td>
<td>156.8</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>15</td>
<td>86.6</td>
<td>47.3</td>
</tr>
<tr>
<td>MACKEREL, ATLANTIC</td>
<td>-</td>
<td>1</td>
<td>76.8</td>
<td>42.0</td>
</tr>
<tr>
<td>SCUP</td>
<td>-</td>
<td>4</td>
<td>107.9</td>
<td>59.0</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>-</td>
<td>5</td>
<td>99.1</td>
<td>54.2</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>108</td>
<td>154.3</td>
<td>84.4</td>
</tr>
<tr>
<td>SQUID, NK</td>
<td>-</td>
<td>1</td>
<td>168.2</td>
<td>92.0</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>81</td>
<td>180.1</td>
<td>98.5</td>
</tr>
<tr>
<td><strong>North Heyes-South Wilmington Canyons</strong></td>
<td>33</td>
<td>49</td>
<td>183.2</td>
<td>100.2</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>15</td>
<td>173.6</td>
<td>94.9</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>34</td>
<td>187.4</td>
<td>102.5</td>
</tr>
<tr>
<td><strong>South Vries Canyon</strong></td>
<td></td>
<td>58</td>
<td>121</td>
<td>183.4</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>41</td>
<td>169.4</td>
<td>92.6</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>80</td>
<td>190.5</td>
<td>104.2</td>
</tr>
<tr>
<td><strong>Baltimore Canyon</strong></td>
<td></td>
<td>117</td>
<td>267</td>
<td>150.3</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>80</td>
<td>81.3</td>
<td>44.5</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>-</td>
<td>13</td>
<td>89.0</td>
<td>48.7</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>89</td>
<td>152.6</td>
<td>83.4</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>85</td>
<td>222.4</td>
<td>121.6</td>
</tr>
<tr>
<td><strong>Warr-Phoenix Canyon Complex</strong></td>
<td></td>
<td>30</td>
<td>72</td>
<td>185.8</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>43</td>
<td>176.2</td>
<td>96.3</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>29</td>
<td>200.1</td>
<td>109.4</td>
</tr>
<tr>
<td><strong>Accomac-Leonard Canyons</strong></td>
<td></td>
<td>37</td>
<td>87</td>
<td>168.6</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>5</td>
<td>66.2</td>
<td>36.2</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>40</td>
<td>161.7</td>
<td>88.4</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>42</td>
<td>187.4</td>
<td>102.5</td>
</tr>
<tr>
<td><strong>Washington Canyon</strong></td>
<td></td>
<td>47</td>
<td>93</td>
<td>150.3</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>19</td>
<td>93.1</td>
<td>50.9</td>
</tr>
<tr>
<td>SCUP</td>
<td>-</td>
<td>1</td>
<td>107.9</td>
<td>59.0</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>-</td>
<td>11</td>
<td>104.9</td>
<td>57.4</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>27</td>
<td>143.5</td>
<td>78.5</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>35</td>
<td>202.1</td>
<td>110.5</td>
</tr>
<tr>
<td><strong>Norfolk Canyon</strong></td>
<td></td>
<td>50</td>
<td>178</td>
<td>193.1</td>
</tr>
<tr>
<td>CROAKER, ATLANTIC</td>
<td>-</td>
<td>1</td>
<td>20.1</td>
<td>11.0</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>-</td>
<td>2</td>
<td>77.7</td>
<td>42.5</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>-</td>
<td>49</td>
<td>174.7</td>
<td>95.5</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>-</td>
<td>126</td>
<td>203.5</td>
<td>111.3</td>
</tr>
</tbody>
</table>
Table 41: NEFOP observed bottom trawl hauls, trips, and average haul start depth, by target species, intersecting the advisor-proposed discrete zones under sub-alternative 3B-1.

<table>
<thead>
<tr>
<th>Canyon or Complex</th>
<th>Trips</th>
<th>Hauls</th>
<th>Avg. Haul Start Depth</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>meters</td>
<td>Fathoms</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>34</td>
<td>45</td>
<td>192</td>
<td>105</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>8</td>
<td>77</td>
<td>42</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>1</td>
<td>106</td>
<td>58</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>12</td>
<td>153</td>
<td>83</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>24</td>
<td>254</td>
<td>139</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope (Depth-based)*</td>
<td>24</td>
<td>30</td>
<td>182</td>
<td>99</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>2</td>
<td>131</td>
<td>72</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>2</td>
<td>221</td>
<td>121</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>1</td>
<td>57</td>
<td>31</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>16</td>
<td>135</td>
<td>74</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>9</td>
<td>281</td>
<td>154</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope Straight*</td>
<td>69</td>
<td>151</td>
<td>179</td>
<td>98</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>8</td>
<td>125</td>
<td>69</td>
</tr>
<tr>
<td>HAKE, SILVER (WHITING)</td>
<td>--</td>
<td>1</td>
<td>132</td>
<td>72</td>
</tr>
<tr>
<td>SCUP</td>
<td>--</td>
<td>4</td>
<td>113</td>
<td>62</td>
</tr>
<tr>
<td>SEA BASS, BLACK</td>
<td>--</td>
<td>1</td>
<td>90</td>
<td>49</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>83</td>
<td>156</td>
<td>85</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>54</td>
<td>229</td>
<td>125</td>
</tr>
<tr>
<td>Norfolk Canyon</td>
<td>36</td>
<td>86</td>
<td>209</td>
<td>114</td>
</tr>
<tr>
<td>CROAKER, ATLANTIC</td>
<td>--</td>
<td>1</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>FLOUNDER, SUMMER (FLUKE)</td>
<td>--</td>
<td>2</td>
<td>59</td>
<td>32</td>
</tr>
<tr>
<td>SQUID, ATL LONG-FIN</td>
<td>--</td>
<td>20</td>
<td>186</td>
<td>102</td>
</tr>
<tr>
<td>SQUID, SHORT-FIN</td>
<td>--</td>
<td>63</td>
<td>224</td>
<td>122</td>
</tr>
</tbody>
</table>

*Differences in hauls and trips in the depth-based vs. straight line option for advisor-proposed boundaries of Mey-Lindenkohl are largely due to a very small area in the western corner of the proposed area, where the straight-line boundary extends slightly into an area where the depth-based boundary does not.
Figure 31: NEFOP observed bottom trawl hauls in the Mid-Atlantic region by gear type, 2000-2013.
**Observed Gillnet Effort**

Observer data indicate that in the Northeast Region from 2000-2013, there were 63,494 observed hauls (on 14,160 trips) using gillnet gear. Geographic coordinates for gillnet set location were present for only about 33% of the records in the database; therefore, haul coordinates were analyzed. Records with incomplete geographic location for haul were removed (6% of hauls; 4% of trips).

Within the Mid-Atlantic region, there were 13,928 observed hauls using gillnet gear, on 3,432 trips (Table 42a). Of these observed hauls, only six intersected any of the proposed coral zones (a small fraction of one percent). All six of these were hauls targeting monkfish using sink gillnets in 2004. These hauls occurred on two trips northeast of Block Canyon along the 300 meter depth contour (Figure 32). No observed gillnet hauls during this time period intersected any of the proposed discrete zones.

The vast majority of observed gillnet effort since 2000 has occurred in waters much shallower than the depths of any of the proposed coral zones in the Mid-Atlantic (Table 42). Only about 0.6% of observed gillnet trips and 0.5% of observed gillnet hauls occurred deeper than 75 fathoms (137 meters) in the Mid-Atlantic region, according to haul depth information recorded in the observer data.

Table 42: NEFOP Observer records of gillnet gear a) in the MAFMC region and b) intersecting proposed coral zones, 2000-2013.

### a) Within MAFMC Region

<table>
<thead>
<tr>
<th>Gear Type</th>
<th>Trips</th>
<th>Hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>GILL NET, ANCHORED-FLOATING, FISH</td>
<td>32</td>
<td>135</td>
<td>10 m (5 ftm)</td>
</tr>
<tr>
<td>GILL NET, DRIFT-FLOATING, FISH</td>
<td>197</td>
<td>621</td>
<td>20 m (11 ftm)</td>
</tr>
<tr>
<td>GILL NET, DRIFT-SINK, FISH</td>
<td>496</td>
<td>2,045</td>
<td>8 m (15 ftm)</td>
</tr>
<tr>
<td>GILL NET, FIXED OR ANCHORED,SINK, OTHER/NK SPECIES</td>
<td>2,707</td>
<td>11,127</td>
<td>12 m (22 ftm)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,432</strong></td>
<td><strong>13,928</strong></td>
<td><strong>11 m (21 ftm)</strong></td>
</tr>
</tbody>
</table>

### b) Within proposed coral zones

<table>
<thead>
<tr>
<th>Gear Type</th>
<th>Trips</th>
<th>Hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>GILL NET, FIXED OR ANCHORED,SINK, OTHER/NK SPECIES</td>
<td>2</td>
<td>6</td>
<td>282 m (154 ftm)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2</strong></td>
<td><strong>6</strong></td>
<td><strong>282 m (154 ftm)</strong></td>
</tr>
</tbody>
</table>
Figure 32: NEFOP observer hauls for gillnet gear in the Mid-Atlantic, 2000-2013, and area of intersection with proposed MAFMC broad coral zones.

**Observed Bottom Longline Effort**

For years 2000-2013, a total of 885 trips and 4,791 hauls using bottom longline gear were recorded for the Northeast Region in the NEFOP database. The majority of these records occurred within the management region of the NEFMC, and primarily targeted Atlantic cod, haddock, and other groundfish. Records with missing or incomplete geographic coordinates were unable to be plotted and were removed (about 1% of trips; 8% of hauls).

Within the MAFMC region, a total of 130 hauls using bottom longline gear were recorded in the observer data for 2000-2013. All of these records indicated tilefish as the target species, and occurred in northern areas of the MAFMC management region between 2004 and 2008 (Table 43; Figure 33).

In total, the proposed coral zones are intersected by most of these observed longline trips occurring within the MAFMC region (92%), and only about half of the hauls (53%). At the 300 meter broad zone, the number of observed trips within proposed zones drops to 4. Only one trip extends into the 400 meter and 500 meter broad zones (Figure 33). This would suggest that longline effort in these areas tends to be concentrated around the 200 meter depth contour or shallower at the heads of the canyon.
Table 43: NEFOP Observer data records of hauls using bottom longline gear from 2000-2013 a) in the MAFMC region, and b) within proposed broad coral zones.

a) Within MAFMC Region

<table>
<thead>
<tr>
<th>Gear Type, Target Species</th>
<th>Trips</th>
<th>Hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGLINE, BOTTOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TILEFISH, GOLDEN</td>
<td>10</td>
<td>98</td>
<td>180 m (99 ftm)</td>
</tr>
<tr>
<td>TILEFISH, NOT KNOWN</td>
<td>3</td>
<td>32</td>
<td>166 m (91 ftm)</td>
</tr>
<tr>
<td>Grand Total</td>
<td>13</td>
<td>130</td>
<td>177 m (97 ftm)</td>
</tr>
</tbody>
</table>

b) Within proposed broad coral zones

<table>
<thead>
<tr>
<th>Broad Zone, Target Species</th>
<th>Trips</th>
<th>Hauls</th>
<th>Average Haul Start Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 Meter Broad Zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TILEFISH, GOLDEN</td>
<td>12</td>
<td>69</td>
<td>203 m (111 ftm)</td>
</tr>
<tr>
<td>TILEFISH, NOT KNOWN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 Meter Broad Zone</td>
<td>5</td>
<td>229 m (125 ftm)</td>
<td></td>
</tr>
<tr>
<td>TILEFISH, GOLDEN</td>
<td>4</td>
<td>193 m (106 ftm)</td>
<td></td>
</tr>
<tr>
<td>TILEFISH, NOT KNOWN</td>
<td>1</td>
<td>375 m (205 ftm)</td>
<td></td>
</tr>
<tr>
<td>400 Meter Broad Zone</td>
<td>2</td>
<td>144 m (79 ftm)</td>
<td></td>
</tr>
<tr>
<td>TILEFISH, GOLDEN</td>
<td>2</td>
<td>144 m (79 ftm)</td>
<td></td>
</tr>
<tr>
<td>500 Meter Broad Zone</td>
<td>1</td>
<td>146 m (80 ftm)</td>
<td></td>
</tr>
<tr>
<td>TILEFISH, GOLDEN</td>
<td>1</td>
<td>146 m (80 ftm)</td>
<td></td>
</tr>
</tbody>
</table>
7.3.4 Summary of Economic Impacts

In general terms, fisheries that operate in offshore areas are expected to be negatively affected by any alternative that reduces access to those fishing areas. Of the fisheries that operate in the area, the squid and red crab fisheries are most likely to be affected. The potential for revenue losses at gross fleet-wide levels should be proportionate to the relative reduction in areas that can be fished, though the exact losses would depend on which areas are closed and how vessels respond to area closures, given that participants would be expected to relocate harvest effort into areas that remain open to some degree. Net losses are then dependent on the degree of reduced efficiencies, i.e., if lower catches are made in the remaining areas and/or if it costs more to fish in those areas. Many of the fisheries operate in specific environments and locations, such as in specific areas near/around canyons that are known for being highly productive. Thus, alternative locations may be limited depending on the measures selected by the Council. However, in general, effort would be expected to shift near/around other areas/canyons not impacted by the proposed measures. This effect would reduce both the negative socio-economic impacts to commercial fishermen and the protections to corals from closing particular areas.
Alternatively, socio-economic effects may be increased because of how fishermen deploy and fish their nets to account for bottom contours, current, wind, and area restrictions, which may prevent them from fishing a greater area than is mapped. For example, if they cannot have gear in the water (but not in contact with the bottom) while their vessel is above a canyon during net deployment and/or retrieval, they may not be able to fish the non-restricted shelf areas immediately adjacent to the closed areas. They also report that these areas are sometimes the most productive areas. While it is not possible to quantify the exact impacts relative to this fishing behavior, it would suggest that fishery impacts may be greater than is otherwise apparent because the effective closed area would be bigger than the mapped closed area.

7.4 SYNTHESIS OF CORAL AND ECONOMIC IMPACTS

The information provided in the above sections reflects the best scientific information on the distribution of deep sea coral and coral habitat. For the discrete zones, the measure of coral presence in individual canyon areas is quantitatively expressed as the area of high/very high coral habitat suitability within each canyon. This allows for a ranking of the canyons relative to their potential value if closed. The broad zones include portions of all of the discrete zones/canyons - their protective value and economic impacts diminish as the defining depth contours increase in depth.

The relative values of the discrete zones provided in Tables 29 (total coral habitat area) and 31 and 32 (ex-vessel revenue) are illustrated in Figure 34. Note that when the canyons are ranked by descending coral habitat area, the decline in percent revenue corresponds fairly well. Exceptions include Spencer Canyon, which is important economically, for its size, but comprises the second lowest coral habitat position, and Norfolk Canyon which has a high coral habitat rank, but a low economic value, largely due to the fact that a Tilefish GRA currently closes part of Norfolk Canyon to mobile bottom-tending gear, which was accounted for in revenue estimates.

This figure can be used to rank individual discrete zones - areas that result in higher coral protection relative to fishery revenues potentially have a higher rank given that more coral would be protected while impacting relatively less fishery revenue. However, results should be interpreted with caution, as there are uncertainties associated with both the habitat model and the revenue mapping model. In addition, effort redistribution by commercial fishermen as a reaction to any closed area may partially reduce the expected impacts.
Figure 34: Ranked discrete zones as percentage of coastwide revenue (all gears, species) and coral habitat. *Note: Norfolk Canyon revenue estimates for trawl and dredge fisheries were adjusted to exclude the Norfolk Canyon Tilefish GRA, which is closed to mobile bottom-tending gear.
APPENDIX A: Criteria for proposed discrete coral zone boundaries

The Council’s Deep Sea Corals FMAT met in April 2014 to discuss revisions to the original discrete zone boundaries based on new scientific information. Original boundaries were developed by the NEFMC Habitat Plan Development Team (PDT) during development of the NEFMC’s Omnibus Habitat Amendment 2 (prior to splitting deep sea coral alternatives into a separate omnibus amendment).

The FMAT reviewed the boundaries relative to new information available from a deep sea coral habitat suitability model, new high resolution bathymetry data, and recent observations of corals from research surveys. The following criteria were developed by the FMAT and used to guide the re-drawing of boundaries:

1. Identify the major geomorphological features of each canyon or slope area (major axes; overall shape) within the current range of alternatives, based on examination of high resolution slope, bathymetry and other data describing canyon features and morphology.

2. Encompass areas of high and very high habitat suitability from the deep sea coral habitat suitability model outputs for Alcyonacean corals (gorgonian and non-gorgonian combined), within the geographic range of each proposed canyon or slope area. Note: the Alcyonacean model output is expected to be the best predictor of habitat suitability for structure-forming corals.

3. For each proposed canyon or slope area, encompass areas of slope greater than 30 degrees, with emphasis on areas of slope greater than 36 degrees, within approximately 0.4 nautical miles (2 habitat suitability model grid cells) of high or very high suitable habitat. Note: during 2012-2013 TowCam and Okeanos Explorer cruises, areas of slope >=36 degrees contained exposed hard bottom almost 100% of the time, and areas of slope >=30 degrees often contained hardbottom habitat.

4. Draw boundaries to approximate a buffer of 0.4 nautical miles (2 model grid cells) from target areas of high slope and areas of high habitat suitability (as described in steps 2 and 3 above).

5. Incorporate available data for coral observations from 2012-2013 fieldwork in Baltimore Canyon, Norfolk Canyon, Toms Canyon complex, Block Canyon, and Ryan Canyon. Ensure that boundaries encompass areas where corals were observed within the proposed canyons, if location data is available. Note: These observations have not yet been incorporated into the habitat suitability model or the DSCRTTP coral database.

6. Identify additional areas of conservation interest based on database (historical) records of deep sea corals, with an emphasis on records of Alcyonaceans (soft corals and gorgonians) and Scleractinians (stony corals), particularly larger and/or structure-forming (including colonial) coral types.

7. For adjacent canyons or slope areas with identified conservation areas of interest, identify whether such adjacent areas should be collapsed into a single area. Eliminate overlap between proposed discrete zone boundaries. Simplify boundary lines where possible.

8. Identify whether these coral data-based boundaries conflict with any of the industry-proposed boundaries, and where there are major discrepancies, consider sub-options.

1 “High” and “very high” likelihood classes for habitat suitability were taken directly from thresholded versions of the model output provided by NOAA/NCCOS model developers.

2 Slope data derived from ACUMEN 25m resolution multibeam data.
APPENDIX B: Coordinates for discrete zone alternatives

Table B1: Geographic coordinates of discrete zone options under Alternative 3B (decimal degrees).

<table>
<thead>
<tr>
<th>Name</th>
<th>Point</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Canyon</td>
<td>1</td>
<td>39.78774</td>
<td>-71.2897</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.87666</td>
<td>-71.2918</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39.98863</td>
<td>-71.3417</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>40.00886</td>
<td>-71.3171</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>39.89611</td>
<td>-71.2436</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>39.82509</td>
<td>-71.2019</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>39.6349</td>
<td>-71.1584</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>39.62337</td>
<td>-71.1979</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>39.78774</td>
<td>-71.2897</td>
</tr>
<tr>
<td>Ryan &amp; McMaster Canyons</td>
<td>1</td>
<td>39.85643</td>
<td>-71.657</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.81256</td>
<td>-71.6229</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39.71607</td>
<td>-71.5835</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>39.55715</td>
<td>-71.4652</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>39.52924</td>
<td>-71.5128</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>39.57439</td>
<td>-71.5947</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>39.66868</td>
<td>-71.706</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>39.73072</td>
<td>-71.7474</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>39.80707</td>
<td>-71.764</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>39.85643</td>
<td>-71.657</td>
</tr>
<tr>
<td>Emery &amp; Uchupi Canyons</td>
<td>1</td>
<td>39.6018</td>
<td>-71.9388</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.69588</td>
<td>-71.9203</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39.67931</td>
<td>-71.8211</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>39.51302</td>
<td>-71.604</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>39.4543</td>
<td>-71.652</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>39.48318</td>
<td>-71.7578</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>39.6018</td>
<td>-71.9388</td>
</tr>
<tr>
<td>Jones &amp; Babylon Canyons</td>
<td>1</td>
<td>39.48357</td>
<td>-72.06</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.53643</td>
<td>-72.0641</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39.50618</td>
<td>-71.962</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>39.51045</td>
<td>-71.9188</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>39.39676</td>
<td>-71.8026</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>39.38328</td>
<td>-71.8747</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>39.48357</td>
<td>-72.06</td>
</tr>
<tr>
<td>Hudson Canyon</td>
<td>1</td>
<td>39.32704</td>
<td>-72.1715</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.42664</td>
<td>-72.2581</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39.52176</td>
<td>-72.4375</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>39.62123</td>
<td>-72.4461</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>39.64233</td>
<td>-72.474</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>39.65916</td>
<td>-72.4604</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>39.62348</td>
<td>-72.3987</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>39.55616</td>
<td>-72.3871</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>39.49726</td>
<td>-72.1959</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>39.50198</td>
<td>-72.1511</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>39.23224</td>
<td>-71.8073</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>39.1731</td>
<td>-71.8829</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>39.23788</td>
<td>-72.0515</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>39.32704</td>
<td>-72.1715</td>
</tr>
</tbody>
</table>
Table B1 (continued):

<table>
<thead>
<tr>
<th>Mey-Lindenkohl Slope</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>39.22271</td>
<td>-72.4366</td>
</tr>
<tr>
<td>2</td>
<td>39.20866</td>
<td>-72.3282</td>
</tr>
<tr>
<td>3</td>
<td>38.98085</td>
<td>-72.1964</td>
</tr>
<tr>
<td>4</td>
<td>38.55349</td>
<td>-72.7979</td>
</tr>
<tr>
<td>5</td>
<td>38.58046</td>
<td>-72.8952</td>
</tr>
<tr>
<td>6</td>
<td>38.66082</td>
<td>-72.9539</td>
</tr>
<tr>
<td>7</td>
<td>38.75238</td>
<td>-73.0619</td>
</tr>
<tr>
<td>8</td>
<td>38.82365</td>
<td>-73.0615</td>
</tr>
<tr>
<td>9</td>
<td>38.84491</td>
<td>-73.0325</td>
</tr>
<tr>
<td>10</td>
<td>38.84654</td>
<td>-72.9841</td>
</tr>
<tr>
<td>11</td>
<td>38.82296</td>
<td>-72.9545</td>
</tr>
<tr>
<td>12</td>
<td>38.87079</td>
<td>-72.8996</td>
</tr>
<tr>
<td>13</td>
<td>38.91425</td>
<td>-72.9109</td>
</tr>
<tr>
<td>14</td>
<td>38.91835</td>
<td>-72.8611</td>
</tr>
<tr>
<td>15</td>
<td>39.04203</td>
<td>-72.7772</td>
</tr>
<tr>
<td>16</td>
<td>39.06321</td>
<td>-72.724</td>
</tr>
<tr>
<td>17</td>
<td>39.14312</td>
<td>-72.7101</td>
</tr>
<tr>
<td>18</td>
<td>39.14626</td>
<td>-72.6236</td>
</tr>
<tr>
<td>19</td>
<td>39.22271</td>
<td>-72.4366</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spencer Canyon</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.63672</td>
<td>-73.1702</td>
</tr>
<tr>
<td>2</td>
<td>38.48241</td>
<td>-72.9827</td>
</tr>
<tr>
<td>3</td>
<td>38.4408</td>
<td>-73.054</td>
</tr>
<tr>
<td>4</td>
<td>38.59631</td>
<td>-73.2134</td>
</tr>
<tr>
<td>5</td>
<td>38.64906</td>
<td>-73.2014</td>
</tr>
<tr>
<td>6</td>
<td>38.63672</td>
<td>-73.1702</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wilmington Canyon</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.32567</td>
<td>-73.5678</td>
</tr>
<tr>
<td>2</td>
<td>38.3879</td>
<td>-73.5794</td>
</tr>
<tr>
<td>3</td>
<td>38.40976</td>
<td>-73.6104</td>
</tr>
<tr>
<td>4</td>
<td>38.44497</td>
<td>-73.5978</td>
</tr>
<tr>
<td>5</td>
<td>38.44538</td>
<td>-73.5659</td>
</tr>
<tr>
<td>6</td>
<td>38.49917</td>
<td>-73.5139</td>
</tr>
<tr>
<td>7</td>
<td>38.48334</td>
<td>-73.4793</td>
</tr>
<tr>
<td>8</td>
<td>38.43814</td>
<td>-73.5</td>
</tr>
<tr>
<td>9</td>
<td>38.38391</td>
<td>-73.4782</td>
</tr>
<tr>
<td>10</td>
<td>38.25638</td>
<td>-73.3171</td>
</tr>
<tr>
<td>11</td>
<td>38.23769</td>
<td>-73.3382</td>
</tr>
<tr>
<td>12</td>
<td>38.24964</td>
<td>-73.4122</td>
</tr>
<tr>
<td>13</td>
<td>38.32567</td>
<td>-73.5678</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North Heyes &amp; South Wilmington Canyon</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.32564</td>
<td>-73.5679</td>
</tr>
<tr>
<td>2</td>
<td>38.24969</td>
<td>-73.4121</td>
</tr>
<tr>
<td>3</td>
<td>38.20536</td>
<td>-73.3536</td>
</tr>
<tr>
<td>4</td>
<td>38.1844</td>
<td>-73.3701</td>
</tr>
<tr>
<td>5</td>
<td>38.18542</td>
<td>-73.4787</td>
</tr>
<tr>
<td>6</td>
<td>38.26847</td>
<td>-73.6292</td>
</tr>
<tr>
<td>7</td>
<td>38.32564</td>
<td>-73.5679</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>South Vries Canyon</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.1218</td>
<td>-73.7805</td>
</tr>
<tr>
<td>2</td>
<td>38.16504</td>
<td>-73.7347</td>
</tr>
<tr>
<td>3</td>
<td>38.05362</td>
<td>-73.4869</td>
</tr>
<tr>
<td>4</td>
<td>38.03972</td>
<td>-73.4963</td>
</tr>
<tr>
<td>5</td>
<td>38.04236</td>
<td>-73.6122</td>
</tr>
<tr>
<td>6</td>
<td>38.1218</td>
<td>-73.7805</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Baltimore Canyon</strong></td>
<td><strong>Warr &amp; Phoenix Canyon Complex</strong></td>
<td><strong>Accomac &amp; Leonard Canyons</strong></td>
</tr>
<tr>
<td>1</td>
<td>38.12645</td>
<td>-73.8805</td>
</tr>
<tr>
<td>2</td>
<td>38.19796</td>
<td>-73.8846</td>
</tr>
<tr>
<td>3</td>
<td>38.20234</td>
<td>-73.9062</td>
</tr>
<tr>
<td>4</td>
<td>38.23295</td>
<td>-73.8885</td>
</tr>
<tr>
<td>5</td>
<td>38.22208</td>
<td>-73.8292</td>
</tr>
<tr>
<td>6</td>
<td>38.17262</td>
<td>-73.8259</td>
</tr>
<tr>
<td>7</td>
<td>38.13976</td>
<td>-73.8195</td>
</tr>
<tr>
<td>8</td>
<td>38.04245</td>
<td>-73.6128</td>
</tr>
<tr>
<td>9</td>
<td>38.05924</td>
<td>-73.8274</td>
</tr>
<tr>
<td>10</td>
<td>38.08937</td>
<td>-73.8566</td>
</tr>
<tr>
<td>11</td>
<td>38.12645</td>
<td>-73.8805</td>
</tr>
<tr>
<td>12</td>
<td>37.98642</td>
<td>-73.6779</td>
</tr>
<tr>
<td>13</td>
<td>37.85528</td>
<td>-74.1436</td>
</tr>
<tr>
<td>14</td>
<td>37.87024</td>
<td>-74.1179</td>
</tr>
<tr>
<td>15</td>
<td>37.83992</td>
<td>-73.8725</td>
</tr>
<tr>
<td>16</td>
<td>37.71273</td>
<td>-73.7477</td>
</tr>
<tr>
<td>17</td>
<td>37.666</td>
<td>-73.8055</td>
</tr>
<tr>
<td>18</td>
<td>37.66739</td>
<td>-73.9709</td>
</tr>
<tr>
<td>19</td>
<td>37.73559</td>
<td>-74.116</td>
</tr>
<tr>
<td>20</td>
<td>37.83528</td>
<td>-74.1436</td>
</tr>
<tr>
<td>21</td>
<td>37.48498</td>
<td>-74.4904</td>
</tr>
<tr>
<td>22</td>
<td>37.44389</td>
<td>-74.4604</td>
</tr>
<tr>
<td>23</td>
<td>37.44267</td>
<td>-74.444</td>
</tr>
<tr>
<td>24</td>
<td>37.4282</td>
<td>-74.4272</td>
</tr>
<tr>
<td>25</td>
<td>37.28014</td>
<td>-73.8687</td>
</tr>
<tr>
<td>26</td>
<td>37.18749</td>
<td>-73.9017</td>
</tr>
<tr>
<td>27</td>
<td>37.26229</td>
<td>-74.2035</td>
</tr>
<tr>
<td>28</td>
<td>37.40942</td>
<td>-74.4992</td>
</tr>
<tr>
<td>29</td>
<td>37.47416</td>
<td>-74.5159</td>
</tr>
<tr>
<td>30</td>
<td>37.48498</td>
<td>-74.4904</td>
</tr>
<tr>
<td>31</td>
<td>37.10603</td>
<td>-74.7374</td>
</tr>
<tr>
<td>32</td>
<td>37.1165</td>
<td>-74.6713</td>
</tr>
<tr>
<td>33</td>
<td>37.0984</td>
<td>-74.645</td>
</tr>
<tr>
<td>34</td>
<td>37.08395</td>
<td>-74.6341</td>
</tr>
<tr>
<td>35</td>
<td>37.09448</td>
<td>-74.6034</td>
</tr>
<tr>
<td>36</td>
<td>37.07048</td>
<td>-74.5257</td>
</tr>
<tr>
<td>37</td>
<td>37.06082</td>
<td>-74.0613</td>
</tr>
<tr>
<td>38</td>
<td>36.96249</td>
<td>-74.0606</td>
</tr>
<tr>
<td>39</td>
<td>37.00855</td>
<td>-74.6676</td>
</tr>
<tr>
<td>40</td>
<td>37.04396</td>
<td>-74.6883</td>
</tr>
<tr>
<td>41</td>
<td>37.05542</td>
<td>-74.6742</td>
</tr>
<tr>
<td>42</td>
<td>37.07256</td>
<td>-74.6953</td>
</tr>
<tr>
<td>43</td>
<td>37.08211</td>
<td>-74.7396</td>
</tr>
<tr>
<td>44</td>
<td>37.10603</td>
<td>-74.7374</td>
</tr>
</tbody>
</table>
Table B2: Geographic coordinates of advisor-proposed discrete zone options under alternative 3B-1 (decimal degrees) for Norfolk Canyon, Mey-Lindenkohl Slope (straight line), and Baltimore Canyon. Note: Mey-Lindenkohl depth-based option not shown due to depth-contour based boundaries.

<table>
<thead>
<tr>
<th>Discrete Zone</th>
<th>Point</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norfolk Canyon</td>
<td>1</td>
<td>37.0668</td>
<td>-74.6169</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>37.06449</td>
<td>-74.5835</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>37.07265</td>
<td>-74.5624</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>37.07191</td>
<td>-74.452</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>37.09775</td>
<td>-74.0097</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>36.96916</td>
<td>-74.0059</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>37.00795</td>
<td>-74.6123</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>37.04666</td>
<td>-74.6578</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>37.08634</td>
<td>-74.7046</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>37.0807</td>
<td>-74.7249</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>37.09514</td>
<td>-74.7412</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>37.11139</td>
<td>-74.6742</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>37.0668</td>
<td>-74.6169</td>
</tr>
<tr>
<td>Mey-Lindenkohl Slope (Straight line)</td>
<td>1</td>
<td>38.774168</td>
<td>-73.0613</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39.209146</td>
<td>-72.4398</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>38.989577</td>
<td>-72.1927</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>38.538973</td>
<td>-72.7948</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>38.74111</td>
<td>-73.032</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>38.774168</td>
<td>-73.0613</td>
</tr>
<tr>
<td>Baltimore Canyon</td>
<td>1</td>
<td>38.15049</td>
<td>-73.836</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>38.10714</td>
<td>-73.7835</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>38.06859</td>
<td>-73.5448</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>37.97704</td>
<td>-73.5757</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>38.07334</td>
<td>-73.8233</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>38.16501</td>
<td>-73.8633</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>38.18001</td>
<td>-73.88</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>38.22256</td>
<td>-73.8483</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>38.24167</td>
<td>-73.8433</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>38.21923</td>
<td>-73.8295</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>38.15049</td>
<td>-73.836</td>
</tr>
</tbody>
</table>
Draft Memorandum

Date: January 28, 2015

To: Council

From: Jason Didden

Subject: Listening Session – MRIP New Effort Estimation Methodology

MRIP has tested and approved a new survey methodology for estimating recreational fishing effort on the Atlantic Coast. Because of a variety of well-documented issues with the current landline phone survey, a mail-based survey was developed and tested after evaluating potential options to gather effort data. The mail survey uses license data to increase angler contact rates and a master postal address database to ensure inclusion of individuals who do not have licenses. Appropriate statistical methods are used to integrate the two sample frames.

The mail-based survey has proved to be superior to the phone survey both in terms of increasing response rates and minimizing other potential biases that affect the phone survey. In the pilot studies it produced effort estimates that are 3-6 times higher than the current phone survey. Since increases in effort estimates will result in increases in catch estimates, implementation of the new survey may have profound effects on the management of some Council-managed species.

The current transition plan for the new survey is to first run the old and new surveys side by side to assist in developing a way to calibrate the old data with the new survey. Once that is done, new catch time series can be worked into assessments and then management. The timeline for this transition process is still being finalized, with the transition balancing the use of better data and making sure the calibration is done robustly. Until a calibration is done and the revised time series are used in assessments/assessment updates, the new method cannot be used for quota monitoring since the old quotas and new catch estimates would be an “apples to oranges” comparison. This means it will likely be at least 2 years before the new methodology is actually used for quota monitoring.

Given this timeline and the potential impacts on management over the next few years, the Council invited Rob Andrews of NMFS’ Science and Technology to provide an update on the new methodology and its implications. Additional background materials may be found at http://www.st.nmfs.noaa.gov/recreational-fisheries/program-overview/mrip-effort-survey.
Listening Session: New Recreational Fishing Effort Estimation Methodology

Guest Speaker: Rob Andrews, NOAA Fisheries, Office of Science and Technology

Wednesday, February 11, 2015 · 5:00 – 6:00 p.m.
Doubletree by Hilton Raleigh Brownstone-University
1707 Hillsborough Street, Raleigh, NC 27605
Telephone 919-828-0811


Members of the public are invited to attend the Council’s next listening session at 5 p.m. on Wednesday, February 11th for a presentation and discussion about new methods of estimating recreational fishing effort. Rob Andrews from NOAA Fisheries’ Office of Science and Technology will give a brief presentation and answer questions about the new methodology. The listening session is being held in conjunction with the February 2015 Council meeting. Individuals are welcome to attend in person or via webinar at the link above.

**Background**

Over the past several years, NOAA Fisheries’ Marine Recreational Information Program (MRIP) has been working on ways to improve effort estimates on the Atlantic and Gulf Coasts. In 2014 NOAA Fisheries released preliminary findings from a multi-year pilot project which indicated that mail surveys likely do a better job of capturing recreational fishing effort by reaching a broader population of anglers and getting more accurate information from respondents.

The pilot study produced substantially higher effort estimates than those currently produced by the phone survey, meaning that implementation of the mail survey could have profound impacts on the management of some Council-managed fisheries. Before the new effort estimation methods can be used for management purposes, the two surveys will be run side by side for several years to calibrate historical data with the new survey. A transition team with representatives from NOAA Fisheries, Fishery Management Councils, Marine Fisheries Commissions, and state partners has been formed to design an implementation plan. Additional background materials may be found at: [http://www.st.nmfs.noaa.gov/recreational-fisheries/program-overview/mrip-effort-survey](http://www.st.nmfs.noaa.gov/recreational-fisheries/program-overview/mrip-effort-survey).

*Please contact Jason Didden at jdidden@mafmc.org or (302) 526-5254 if you have any questions regarding the listening session process or if you would like to confirm that your computer is set up to access the webinar.*
Atlantic Coastal States to Collect Recreational Intercept Data for MRIP

Beginning in 2016, all coastal states from Maine through Georgia will transition to conducting the Access Point Angler Intercept Survey (APA-IS) to collect information on marine recreational fishing catch and effort in their own waters. Previously, APAIS, which is a component of the Marine Recreational Information Program (MRIP), has been administered by NOAA through a third party contractor. Over the past decade several states (e.g., Maine, New Hampshire, Massachusetts, North Carolina, South Carolina and Georgia) have successfully improved data quality, and stakeholder confidence in that data, through greater state involvement with APAIS contractors.

Based on these successes, the states, through the ACCSP and the Atlantic States Marine Fisheries Commission (ASMFC), approved a plan to transition to state conduct of APAIS in 2016. The approved plan details the transition from a NOAA contractor to ASMFC/ACCSP and...Continued on page 11

In October 2014, ACCSP and ASMFC approved a plan to transition to state conduct of APAIS in 2016. APAIS is a component of MRIP (a NOAA Fisheries recreational data collection program) which has been administered through a third party contractor.

Image (c) Rick Bellavance
Who We Are & What We Do

**STAFF**
The Program is separated into three teams to effectively advance the goals of the Program.

**PROGRAM STAFF**
Program staff is dedicated to maintaining ACCSP standards and handling administrative and funding tasks of the Program, including outreach.
- Michael S. Cahall, Director
- Ann McElhatton, Program Manager
- Elizabeth Wyatt, Program Assistant

**DATA TEAM**
The Data Team works with partners to identify, transform, and audit data so they can be included in the Data Warehouse. They also provide data services by designing custom data requests and participating in stock assessments.
- Geoff White, Data Team Leader
- Julie Defilippi, Senior Data Coordinator
- Joe Myers, Data Coordinator
- Jennifer Ni, Information Systems Specialist

**SOFTWARE TEAM**
The Software Team designs and builds the Standard Atlantic Fisheries Information System (SAFIS), as well as internal systems that the Program manages or that support program activities.
- Karen Holmes, Software Team Leader
- Nico Mwai, Fisheries Programmer

Shared with the ASMFC is Ed Martino, Information Systems Manager.

**COMMITTEES**
Since its inception, the ACCSP has been a committee-based organization. Committees are responsible for setting program policies and standards, deciding annual funding allocations, and planning and coordinating data collection and data management programs.

Committees, composed primarily of representatives from the partners (listed on page 12), provide the framework for the collaborative processes that create and manage the standards and govern the Program. Technical committees create and manage the program standards with guidance from the Operations and Advisory Committees. The Coordinating Council provides general oversight to the Program and sets overall policies.

**COORDINATING COUNCIL**
Chair: Cheri Patterson, NH FGD

**OPERATIONS COMMITTEE**
Chair: Thomas Hoopes, MA DMF

**ADVISORY COMMITTEE**
Chair: Rick Bellavance, RI - Com.

**BIOLOGICAL REVIEW PANEL**
Chair: Larry Beerkircher, NOAA

**BYCATCH PRIORITIZATION COMMITTEE**
Chair: Jennifer Lee, NOAA

**COMMERCIAL TECHNICAL COMMITTEE**
Chair: Amy Dukes, SC DNR

**INFORMATION SYSTEMS COMMITTEE**
Chair: Holly McBride, NOAA

**OUTREACH COMMITTEES**
- Atlantic Coastal Fisheries Communications Group: Chair: Tina Berger, ASMFC
- Data Warehouse Outreach Group: VACANT
- SAFIS Outreach Group: Chair: Anna Webb, MA DMF

**RECREATIONAL TECHNICAL COMMITTEE**
Chair: Scott Newlin, DE DFW

**PHILOSOPHY**

**VISION**
To be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

**MISSION**
Produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed and disseminated according to common standards agreed upon by all program partners.

**VALUES**
- Accurate data are required for good fisheries management decisions.
- Coordination and collaboration amongst the program partners are essential for success.
- The Program must be responsive to the changing needs for fisheries data.
- Processes must be open and transparent but confidential data must be protected.
- Data shall be accessible and easy to use.
- Responsibilities should be matched with available resources.

**NEED MORE INFORMATION?**
For more information on the ACCSP Staff, please visit [http://www.accsp.org/staff.htm](http://www.accsp.org/staff.htm). For more information on the ACCSP Committees, please visit [http://www.accsp.org/committees.htm](http://www.accsp.org/committees.htm). For more information on the ACCSP Philosophy, please visit [http://www.accsp.org/philosophy.htm](http://www.accsp.org/philosophy.htm).
Letter from the Director

It’s hard to believe, but ACCSP is getting ready to wrap up the 2014 fiscal year and with that comes the end to the first twenty years of the Program. As I reflect on the past two decades, I am amazed with the hard work of the program partners and staff as they have come together to ambitiously accomplish many impressive milestones ... for instance, here is a list of 15 highlights as we move into 2015!

ACCSP HIGHLIGHTS

1. The ACCSP developed the only common fisheries-dependent standards that all partners can work with when collecting and contributing their data to the Program and when using the data to manage stocks that exist in multiple jurisdictions.

2. The ACCSP has been working with NOAA and state partners to bring together landings data for the inclusion of the annual Fisheries of the United States publication since 2007.

3. The ACCSP Data Warehouse is the principal source of fisheries-dependent information on the Atlantic coast with almost 60 million landings records, including commercial catch and effort data dating back 1950 and recreational catch and effort data dating back to 1981.

4. The Data Warehouse has over 800 species, 150 areas, 140 gear codes, 100 market categories, 55 grade categories, and 30 dispositions.

5. ACCSP is a frequent participant at stock assessments and has contributed data to over 25 since 1995.

6. The partners of the ACCSP created the Standard Atlantic Fisheries Information System (SAFIS), a real-time, web-based data entry system for dealer reported landings that was deployed first in Rhode Island in 2003 and expanded to cover NOAA Northeast dealers in 2004.

7. In the past ten years, SAFIS has grown to include five commercial, for-hire, and recreational applications.

8. SAFIS provides many benefits to industry, including an integrated price board to automatically generate pricing information and allows for flexibility in creating favorites (e.g., species, gears, dispositions).

9. The data collected through SAFIS are real-time and are available for quota monitoring. However these data are not available in the Data Warehouse until the following year after careful quality assurance and control measures.

10. The ACCSP supplies state landings for compliance and quota monitoring to NOAA’s Northeast and Southeast Fisheries Science Centers.

11. The ACCSP supplies Florida West coast commercial catch and effort data to the Gulf States Marine Fisheries Commission.

12. The ACCSP funds the collection of catch, effort, and landings data (including licensing, permit and vessel registration data); biological data; releases, discards and protected species data; and economic and sociological data.

13. Over 300 custom data requests have been completed by ACCSP since tracking of this type of data request began in 2008. Many of these requests come from partners, however, staff have also worked with individuals from U.S. Coast Guard, Natural Resources Defense Council, Edible New Jersey magazine, as well as media and many universities to supply relevant data.

14. In 2013, ACCSP developed an application to provide a depository that will record and track American lobster fishery effort (e.g., traps allocated, purchased, and sold).

15. ACCSP has developed the first handheld application for reporting for-hire and commercial landings through the mobile version of the eTRIPS.
The Data Warehouse is an online database populated with fisheries-dependent data supplied by the program partners of ACCSP.

Status of Available Data

Please visit http://www.accsp.org/dataware.htm for the most up to date status of available data.

COMMERCIAL CATCH & EFFORT
The chart below reflects the level of detail of the catch and effort data in the Data Warehouse. More importantly, this chart shows how collection methods have evolved.

The broadest level of catch and effort data in the Data Warehouse is annual summaries dating back to 1950.

RECREATIONAL CATCH & EFFORT
Data Warehouse users can also query or request recreational catch and effort data. The most recent data includes wave 5 for 2014. The 2004 - 2012 data have been updated in conjunction with the new MRIP estimation methodology released in early 2012. This includes both the public estimates and the advanced queries for bag limit analysis and directed trips.

BIOLOGICAL DATA
This biological data includes information on American lobster from 1981 - 2012 and Atlantic herring from 2002 - 2011. All biological data, as well as commercial and recreational if needed, can be accessible via a custom data request. Be able to define your fishery and know what species, geographical span, temporal span, gears, etc. are relevant to your query.

STATE PARTNER COMMERCIAL CATCH & EFFORT DATA IN DATA WAREHOUSE

This chart illustrates how commercial catch and effort data are collected at the partner level and the level of detail at which those data are submitted to ACCSP. For example, ‘Trip reports (presented as monthly)’ means that data were collected by partners at the trip-level and submitted as monthly summaries to NOAA or ACCSP. The Program began receiving all data directly from partners in 2007.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ME DMR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH FGD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA DMF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RI DFW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT DEEP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYS DEC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NJ DFW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE DFW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD DNR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMRC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC DMF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC DNR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GA DNR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FL FWCC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Annual summaries

Monthly summary

Trip reports (presented as monthly)

Mixed trip reports and monthly summaries

Trip reports (all fisheries)
How is the ACCSP Involved in the Atlantic Coast Stock Assessment Process?

Many custom data requests are used to aid stock assessments. To make sound and informed decisions for fish stocks and populations, there must be a fluid data review and assessment process among all those involved. Consequently, the Program is an integral partner in the stock assessment process due to its ability to rapidly compile and disseminate fisheries-dependent data for various audiences and providing details about particular records that were questionable. This helps the process move forward quickly. Not only does participation in the stock assessment process increase visibility for ACCSP, but the Data Team is able to see firsthand how the information in the Data Warehouse is used. In October 2014, Joe Myers (Data Coordinator) and Julie Defilippi (Senior Data Coordinator) attended the SEDAR 41: Red Drum Data Workshop in Charleston, SC, which was hosted by the ASMFC. The ACCSP staff attended the workshop as a key provider of the commercial landings data for red drum from the Atlantic coast of Florida to New York. In addition to updating the 2009 red drum stock assessment with current data from 2008-2013, the group discussed shifting to a new assessment model from the previous catch-at-age model to Stock Synthesis 3. One of the improvements of Stock Synthesis 3 over the previous model is the ability to include data prior to 1989, which had previously been excluded due to limited/poor size and age composition data prior to that year. The final report for the stock assessment is expected to be submitted in fall of 2015.

For more information about the stock assessment process, please visit http://www.accsp.org/Fact%20Sheets/2013/ACCSP_FishDependentData.pdf or for questions related to the stock assessment data workshop process, please email Joe Myers at joe.myers@accsp.org.
The program partners of ACCSP often come into contact with one another through a variety of fisheries data collection mechanisms (e.g., Fisheries of the U.S. process, stock assessments), but it’s coming together as ACCSP committees that leads to the cooperative efforts of ACCSP becoming the “principal source of fisheries-dependent information on the Atlantic coast.” For this issue of Fisheries Files, we are pleased to hear from several committee members on the same question “What is the most significant contribution ACCSP has made to fisheries data along the Atlantic coast since 1995?”

From Nicole Lengyel (Vice-chair of the ACCSP Biological Review Panel and the Bycatch Prioritization Committee and Principal Biologist with RI DFW):

ACCSP has created applications that allow state and federal partners to feed fisheries-dependent data into a single repository with all data being held to the same standards. Additionally, all data housed by ACCSP is subject to the same quality assurance and quality control protocols. These features allow managers to query fisheries-dependent data on a coastwide basis and provide a certain level of confidence in the data being used which is essential for coastwide and regional stock assessments.

From Jerry Morgan (Vice-chair of the ACCSP Advisory Committee and owner of Captain Morgan’s Bait & Tackle in Madison, CT):

ACCSP has developed and implemented comprehensive and sophisticated databases and datasets for Atlantic state targeted marine species utilizing a user-friendly searchable platform.

From Andy Strelcheck (Vice-chair of the ACCSP Operations Committee and Branch Chief - Limited Access Privilege Programs/Data Management with NOAA’s Southeast Regional Office):

In my time with ACCSP, I would have to say ACCSP’s most significant contribution to fisheries data is development of a standardized, integrated data collection process that is used by a multitude of state and federal partners for management and science. ACCSP’s commitment to new data collection projects is also a significant contribution as it allows the program to continually evolve and respond to changing fisheries data needs.

From Anna Webb (Chair of ACCSP SAFIS Outreach Group and staff with the Statistics Project of MA DMF):

ACCSP has developed the fisheries-dependent data collection standards which are critical for comparison of datasets across participating partners, and created comprehensive, long-term, industry-wide datasets.

For the latest updates on the Data Warehouse, SAFIS, as well as partner projects, please follow us on Twitter at @ACCSP_Fisheries.

You can also find great photo albums (e.g., Atlantic coast standard fish measurements, and fascinating fish statistics) on Facebook. Be sure to like us at https://www.facebook.com/AtlanticCoastalCooperativeStatisticsProgram.

For any questions concerning ACCSP social media, please contact Ann McElhatton at ann.mcelhatton@accsp.org.
### Fast Facts:

**Top Five Commercial Gear Types by Value and Decade**

These non-confidential statistics were downloaded in January 2015. However, data in the Data Warehouse are updated regularly. Please visit [http://www.accsp.org/dataware.htm](http://www.accsp.org/dataware.htm) for the most up-to-date set of statistics.

<table>
<thead>
<tr>
<th>GEAR TYPE</th>
<th>DOLLARS</th>
<th>POUNDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1960-1969</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$618,627,427</td>
<td>6,784,328,747</td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$273,565,835</td>
<td>1,304,071,426</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$266,959,077</td>
<td>963,752,131</td>
</tr>
<tr>
<td>RAKES, HOES, AND TONGS</td>
<td>$203,879,651</td>
<td>420,647,028</td>
</tr>
<tr>
<td>PURSE SEINES</td>
<td>$86,139,098</td>
<td>7,397,033,434</td>
</tr>
<tr>
<td><strong>1970-1979</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$1,443,741,084</td>
<td>4,650,140,794</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$851,082,695</td>
<td>1,140,289,179</td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$771,093,332</td>
<td>1,397,636,334</td>
</tr>
<tr>
<td>RAKES, HOES, AND TONGS</td>
<td>$493,526,303</td>
<td>458,440,260</td>
</tr>
<tr>
<td>OTHER GEAR S</td>
<td>$363,305,985</td>
<td>500,515,000</td>
</tr>
<tr>
<td><strong>1980-1989</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$2,709,116,035</td>
<td>4,575,100,095</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$1,938,195,847</td>
<td>1,613,158,418</td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$1,195,379,557</td>
<td>1,622,722,896</td>
</tr>
<tr>
<td>RAKES, HOES, AND TONGS</td>
<td>$747,423,647</td>
<td>298,334,602</td>
</tr>
<tr>
<td>OTHER GEAR S</td>
<td>$725,935,113</td>
<td>893,566,330</td>
</tr>
<tr>
<td><strong>1990-1999</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$3,234,840,147</td>
<td>4,492,732,027</td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$3,217,410,594</td>
<td>2,384,627,848</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$1,977,233,201</td>
<td>1,695,177,554</td>
</tr>
<tr>
<td>RAKES, HOES, AND TONGS</td>
<td>$690,400,931</td>
<td>132,450,308</td>
</tr>
<tr>
<td>GILL NETS</td>
<td>$577,830,781</td>
<td>1,135,480,676</td>
</tr>
<tr>
<td><strong>2000-2009</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$4,853,492,069</td>
<td>2,231,369,706</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$3,204,034,778</td>
<td>1,666,004,463</td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$2,492,921,023</td>
<td>4,332,816,640</td>
</tr>
<tr>
<td>GILL NETS</td>
<td>$600,326,931</td>
<td>818,740,205</td>
</tr>
<tr>
<td>HOOK AND LINE</td>
<td>$537,659,893</td>
<td>259,231,049</td>
</tr>
<tr>
<td><strong>2010-2014</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POTS AND TRAPS</td>
<td>$2,535,727,012</td>
<td>1,155,668,131</td>
</tr>
<tr>
<td>DREDGE</td>
<td>$1,654,785,755</td>
<td>496,787,371</td>
</tr>
<tr>
<td>TRAWLS</td>
<td>$780,929,478</td>
<td>1,147,404,016</td>
</tr>
<tr>
<td>OTHER GEAR S</td>
<td>$311,943,247</td>
<td>93,000,750</td>
</tr>
<tr>
<td>LONG LINES</td>
<td>$274,053,324</td>
<td>137,439,413</td>
</tr>
</tbody>
</table>

* 2014 data are preliminary
“Where do you get your data?” It is arguably one of the most frequently asked questions in fisheries management. In most cases, there isn’t a single or simple answer. Understanding the different facets to data collection can be a bit overwhelming. First, let’s look at why data are collected. It may be simply to track landings for annual catch limits that are in place. Data are also collected to better understand a species’ life history – how old it gets, how often it reproduces, how fast it grows. Of course, data are used in stock assessments designed to provide fisheries managers with the information necessary to make sound decisions. Stock assessments examine the effects of fishing and other factors to describe the past and current status of a fish stock, and make predictions about how a stock will respond to current and future management measures.

It is also helpful to remember that the regional fishery management councils do not collect data. NOAA Fisheries is the agency responsible for fisheries data collection, working in cooperation with state marine resource agencies. Data from other organizations, including universities, may also be evaluated in stock assessments and other fishery management processes. Data are supplied to NOAA Fisheries Southeast Fisheries Science Center. Along the East Coast, the Atlantic Coastal Cooperative Statistics Program (ACCSP) acts as a data warehouse, storing data supplied by state agencies and other partners, making it accessible to users, and developing data standards with these partners. All data are supplied to NOAA Fisheries Southeast Fisheries Science Center, either directly or through the ACCSP data warehouse.

There are two basic sources for fisheries data: fisheries-dependent and fisheries-independent. As the term implies, fishery-dependent data is information collected from commercial and recreational fishermen. Fisheries-independent data is collected separately through various research and monitoring programs and often involves both research vessels and field biologists. Both types of data are important elements in stock assessments and in the development of fishery management plans and amendments. To better understand how these data are collected, we’ll take a closer look at fisheries-dependent data and the various ways information is collected from fishermen in this continuing newsletter series.

This excerpt was reprinted with permission from the South Atlantic Fishery Management Council’s article “Connecting the Dots in Federal Fisheries Management: Tying together fisheries management, data collection, and science; Part 2: Fisheries Dependent Data Collection”. The complete article can be viewed at http://safmc.net/sites/default/files/newsletter/pdf/SAFMC_Fall2014SAUpdate.pdf.
Meeting & Funding Cycle Calendar

Please note all meetings are subject to change and additional meetings of each ACCSP committee may be scheduled throughout the year as tasks are assigned. For the most up-to-date information on all committee meetings, please visit http://mahi.accsp.org:8888/pls/accsp/?p=550:14:3063375393360001:.... For a general timeline of our annual funding cycle, please visit http://www.accsp.org/funding.htm. The FY2015 request for proposals will be distributed in late May 2015. To be added to that distribution list, please email info@accsp.org. If you have any questions or comments on this calendar, please do not hesitate to contact Ann McElhatton, Program Manager, at ann.mcelhatton@accsp.org.

February 3-5: Atlantic States Marine Fisheries Commission (ASMFC) Meeting - Alexandria, VA
February 5: ACCSP Executive Committee Meeting (12:45 pm) and Coordinating Council Meeting (4:15 pm)
February 10-12: Mid-Atlantic Fishery Management Council (MAFMC) Meeting - Raleigh, NC
February 12: ACCSP presenting at MAFMC Meeting (9:00 am)
March 1: Start of ACCSP FY15
March 2-6: South Atlantic Fishery Management Council (SAFMC) Meeting - St. Simon’s Island, GA
Week of March 16: ACCSP Recreational Technical Committee webinar
March 16: ACCSP Executive Committee conference call (1:00 pm)
March 18: ACCSP Commercial Technical Committee webinar
March 19: ACCSP Information Systems Committee webinar
April 14-16: MAFMC Meeting - Long Branch, NJ
April 21-23: New England Fishery Management Council (NEFMC) Meeting - Mystic, CT
Week of March 30: ACCSP Advisory Committee webinar
Week of April 6/13: ACCSP Operations Committee webinar
May 4-7: ASMFC Meeting/ACCSP Executive Committee Meeting and Coordinating Council Meeting; ACCSP issues request for proposals - Alexandria, VA
Week of May 25: ACCSP Recreational Technical Committee Meeting
June 8-12: SAFMC Meeting - Key West, FL
June 9-11: MAFMC Meeting - Virginia Beach, VA
June 16-18: NEFMC Meeting - Newport, RI
June 22: Initial proposals are due
June 25: ACCSP Executive Committee conference call (1:00 pm)
June 29: Initial proposals are distributed to ACCSP Operations and Advisory Committees
Week of July 13: Review of initial proposals for ACCSP Operations and Advisory Committees (webinar)
August 4-6: ASMFC Meeting/ACCSP Executive Committee Meeting and Coordinating Council Meeting - Alexandria, VA
August 11-13: MAFMC Meeting - New York, NY
Week of August 3: Feedback submitted to principal investigators
August 24: Revised proposals due
Week of August 31: ACCSP Recreational Technical Committee webinar
August 31: Revised proposals distributed to ACCSP Operations and Advisory Committees
Week of Sept. 7: Preliminary ranking exercise for Advisors (webinar)
Sept. 14-18: SAFMC Meeting - Hilton Head Island, SC
Sept. 24: ACCSP Executive Committee conference call (1:00 pm)
Sept. 22-23: Annual Advisors and Operations Committee Joint Meeting (in-person; location TBD)
Sept. 29-Oct. 1: NEFMC Meeting - Plymouth, MA
Oct. 6-8: SAFMC Meeting - Philadelphia, PA
Dates TBD: ASMFC Annual Meeting/ACCSP Executive Committee and Coordinating Council Meeting
Dates TBD: ACCSP Recreational Technical Committee/Joint MRIP Wave Meeting
December 1-3: NEFMC Meeting - Newburyport, MA
December 7-11: SAFMC Meeting - Atlantic Beach, NC
December 8-10: MAFMC Meeting - Annapolis, MD
December 17: ACCSP Executive Committee conference call (1:00 pm)
**Catch Source: An Overview from MA DMF**

A new field was added to the Standard Atlantic Fisheries Information System (SAFIS) in June 2014 called “Catch Source”. Previously, the gears and disposition fields captured certain data that were not technically gears and dispositions (i.e., Placed in Car, Aquaculture, Research Set Aside). The new field was created to capture this information and retain the ability to capture the correct gear and disposition information.

Several dispositions were removed from the available options: “Placed in car”, “Removed for Sale”, “Aquaculture”, and all Research Set Aside (RSA) dispositions. Additionally, “Aquaculture (803)” was removed from the gear options; all aquaculture should now be reported with the appropriate gear type. The new field, Catch Source, was added with 4 options: “Standard” – indicates a traditional commercial trip (default value), “Aquaculture” - indicates the landing is a cultured product, “Carred” – indicates the landing was carried for future sale, and “Research Set Aside (RSA)” – indicates the landing was caught under a RSA compensation fishing or research project permit.

Commercial harvesters with the electronic reporting endorsement should view this video for a tutorial on how to use the new field in SAFIS: Catch Source found at https://www.youtube.com/watch?v=E1jlimxp6wY.

Seafood Dealers should follow the following guidelines:

- When purchasing cultured product- change the Catch Source field to “Aquaculture”.
- When purchasing product landed under the guise of a valid RSA permit (either compensation fishing or for research purposes), choose “RSA”.
- When a dealer knows a purchase is coming from multiple landings, please choose the “Carred” catch source to indicate that the purchase was from carred landings.
- All others should carry the defaulted “Standard” Catch Source.

This article was reprinted with permission by MA DMF. Much of the information may be specific to how MA DMF is set on SAFIS, however much of the information is relevant to all that use SAFIS. For all MA DMF E-reporting newsletters, please visit http://www.mass.gov/eea/agencies/dfg/dmf/commercial-fishing/trip-level-reporting/.

---

1-TICKET VS. 2-TICKET SYSTEM

States along the Atlantic Coast collect dealer and harvester data differently. They may use a 1-Ticket system or a 2-Ticket system. Both satisfy ACCSP standards for data collection in the commercial catch and effort data collection module. Here is a breakdown of what makes each system unique.

<table>
<thead>
<tr>
<th>1-TICKET SYSTEM</th>
<th>2-TICKET SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All of the same data collected through a 2-ticket system are collected, however the harvester and dealer report the different data on a single form</td>
<td>• Harvester report includes unique trip ID (links to dealer report), vessel ID, trip date, location, effort data, and catch estimates (in pounds)</td>
</tr>
<tr>
<td>• Best for program partners whose harvesters and dealers interact routinely at the point of sale</td>
<td>• Dealer report includes unique trip ID (links to harvester report), species (pounds and value), and unloading data</td>
</tr>
<tr>
<td>• Still should provide a verification mechanism (e.g., port agent observation, biological sampling records, enforcement)</td>
<td>• Best for states with a large amounts of consignments and/or out-of-state shipping</td>
</tr>
<tr>
<td>• Outreach is vital to ensure harvesters and dealers communicate</td>
<td>• Serves as a means to verify that a trip has occurred</td>
</tr>
<tr>
<td>• States that use a 1-Ticket system include North Carolina, South Carolina, Georgia, and Florida</td>
<td>• Landings reported by harvesters are estimates, but do provide measure of comparison with dealer reports</td>
</tr>
<tr>
<td></td>
<td>• States that use a 2-Ticket system include Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia</td>
</tr>
</tbody>
</table>

For more information on the Atlantic Coast Fisheries Data Collection Standards, please visit http://www.accsp.org/documents/programdesign/2012/ACCSP_StandardsandAppendices2012_Final05082012.pdf
Improved Effort Survey: MRIP Makes Changes

While ACCSP and ASMFC are working to transition the Atlantic coast states to state conduct of APAIS (please see page 1 for more information), NOAA is working on improving another component of MRIP. The effort survey is what is used to determine how many fishing trips are taken by recreational anglers. The goals of the improved survey are to identify a better method to reach anglers (including maximizing response rates) and to get more accurate information from respondents. After extensive, multi-year pilot studies, MRIP is intending to move to a new mail survey method for surveying Atlantic and Gulf Coast saltwater recreational shore and private boat anglers. Below is an overview from NOAA on taking what they have learned from the pilot studies and how the implementation will take place through a thorough transition process. This transition process is being developed by a Transition Team of staff from state agencies, Regional Fisheries Management Councils, Interstate Marine Fisheries Commissions, and NOAA.

Step 1: State and Regional Input
The Transition Team will work with state and regional data partners and stakeholders to determine their top concerns and priorities with respect to the transition process.

Step 2: Side-by-Side Comparison
NOAA Fisheries will conduct the new mail survey alongside the current coastal telephone survey on the Atlantic and Gulf coasts in 2015 and 2016 (and additional years, if necessary).

Step 3: Calibration
The transition team will develop a method for calibrating the two sets of estimates and use it to adjust historical time series of data, as necessary.

Step 4: Transition
The Marine Recreational Information Program, or MRIP, is the way NOAA is counting and reporting marine recreational catch and effort. It is a customer-driven initiative that not only produces better estimates, but does so through a process grounded in the principles of transparency, accountability, and engagement.

Decision-makers will carefully work the calibrated estimates into fishery stock assessments after sufficient side-by-side testing has occurred. Managers will then be able to use the results to set the fishing levels and annual catch limits.

Only after all four elements have been achieved will we use the estimates from the new methodology in the management process. The current phone survey will continue to provide shore and private boat recreational fishing effort information for the Atlantic and Gulf coasts for science and management decision-making at least through 2016. We will not fully shift to the new survey method until we are confident that we can explain any differences between estimates, and determine how to integrate the new numbers into stock assessments and catch accounting. Only then will it be appropriate to base management decisions on the revised estimates.

For more information, please visit http://www.st.nmfs.noaa.gov/recreational-fisheries/program-overview/mrip-effort-survey or contact Leah Sharpe at Leah.Sharpe@noaa.gov.

Collect Intercept Data for MRIP

... from page 1

state conduct of the APAIS. Under this plan, NOAA will retain primary accountability for APAIS and will be responsible for survey design, catch and effort estimation, and public dissemination. ASMFC/ACCSP will act as the central coordinator of the state-conducted APAIS and be responsible for data entry, compilation, quality control checks and edits, as well as formatting and delivery of intercept data to NOAA. States will manage field collection, which will be conducted by state employees in accordance with APAIS standard data collection protocols.

The goals of the state conduct of APAIS are to:
• Build more cooperative ownership of recreational data and the data collection program
• Support field data collection via state staff with vested interest in fisheries
• Maximize angler participation and minimize refusal rates
• Improve and maximize data quality and efficiency of data collection

“The states, ACCSP, and ASMFC are very appreciative of the hard work and dedication provided by Geoff White and the ACCSP Recreational Technical Committee in developing the APAIS transition plan,” stated Cheri Patterson, ACCSP Coordinating Council Chair from New Hampshire. “Through their efforts, the plan establishes a solid framework for the states and NOAA to better meet the needs of fishery stakeholders, scientists and managers.”

For more information on the details of the transition plan, please contact Geoff White, ACCSP Data Team Leader, at Geoff.White@accsp.org or 703.842.0785.
Program Partners

In 1995, representatives from 23 coastal resource agencies along the Atlantic coast signed a Memorandum of Understanding to become partners in the ACCSP. The program partners are implementing the ACCSP standards within their respective areas.

- NOAA Fisheries Service (NOAA)
- U.S. Fish and Wildlife Service (US FWS)
- Atlantic States Marine Fisheries Commission (ASMFC)
- New England Fishery Management Council (NEFMC)
- Potomac River Fisheries Commission (PRFC)
- Mid-Atlantic Fishery Management Council (MAFMC)
- South Atlantic Fishery Management Council (SAFMC)
- Maine Department of Marine Resources (ME DMR)
- New Hampshire Fish and Game Department (NH FGD)
- Massachusetts Division of Marine Fisheries (MA DMF)
- Rhode Island Division of Fish and Wildlife (RI DFW)
- Connecticut Department of Energy and Environmental Protection (CT DEEP)
- New York State Department of Environmental Conservation (NYS DEC)
- New Jersey Division of Fish and Wildlife (NJ DFW)
- Delaware Division of Fish and Wildlife (DE DFW)
- Pennsylvania Fish and Boat Commission (PFBC)
- District of Columbia Fisheries and Wildlife Division (DC FWD)
- Maryland Department of Natural Resources (MD DNR)
- Virginia Marine Resources Commission (VMRC)
- North Carolina Division of Marine Fisheries (NC DMF)
- South Carolina Department of Natural Resources (SC DNR)
- Georgia Department of Natural Resources (GA DNR)
- Florida Fish and Wildlife Conservation Commission (FL FWCC)
ACCSP Convenes Workshop on Recreational PSE

The Atlantic Coastal Cooperative Statistics Program (ACCSP) with the support of the Marine Recreational Information Program (MRIP) an ongoing data collection and reporting effort through NOAA Fisheries, convened a workshop on recreational Percent Standard Error (PSE) on September 23rd and 24th, 2014. The focus was to evaluate levels of recreational data precision that would best support stock assessment results and fisheries management actions. More than 50 individuals from state and federal fisheries agencies participated either in-person or via webinar. Presentations reviewed a simulation model developed for this project, and supporting information on the current use of precision measures by the Councils, Commissions, and states.

The PSE model report and workshop presentations are available on the ACCSP website for review.

For more information, please contact Geoff White, Data Team Leader, at geoff.white@accsp.org.

Dr. John Weidenmann developed a Management Strategy Evaluation (MSE) model using simulated data to investigate the effect of varying input PSE levels (.2, .3, .4, .5, .6, .8, 1.0) on three generalized species having slow, medium, and fast growth over various exploitation histories.

Participants had in-depth and spirited discussion on the effects of PSE in assessments and management. The surprising feedback from participants was that stock assess...Continued on page 8.
Program Partners

In 1995, representatives from 23 coastal resource agencies along the Atlantic coast signed a Memorandum of Understanding to become partners in the ACCSP. The program partners are implementing the ACCSP standards within their respective areas.

- NOAA Fisheries (NOAA)
- U.S. Fish and Wildlife Service (US FWS)
- Atlantic States Marine Fisheries Commission (ASMFC)
- New England Fishery Management Council (NEFMC)
- Potomac River Fisheries Commission (PRFC)
- Mid-Atlantic Fishery Management Council (MAFMC)
- South Atlantic Fishery Management Council (SAFMC)
- Maine Department of Marine Resources (ME DMR)
- New Hampshire Fish and Game Department (NH FGD)
- Massachusetts Division of Marine Fisheries (MA DMF)
- Rhode Island Division of Fish and Wildlife (RI DFW)
- Connecticut Department of Energy and Environmental Protection (CTDEEP)
- New York State Department of Environmental Conservation (NYS DEC)
- New Jersey Division of Fish and Wildlife (NJ DFW)
- Delaware Division of Fish and Wildlife (DE DFW)
- Pennsylvania Fish and Boat Commission (PFBC)
- District of Columbia Fisheries and Wildlife Division (DC FWD)
- Maryland Department of Natural Resources (MD DNR)
- Virginia Marine Resources Commission (VMRC)
- North Carolina Division of Marine Fisheries (NC DMF)
- South Carolina Department of Natural Resources (SC DNR)
- Georgia Department of Natural Resources (GA DNR)
- Florida Fish and Wildlife Conservation Commission (FL FWCC)

PSE Workshop

Continued from page 1

ments appear to be capable of utilizing data with a higher PSE than previously considered. The group supported developing broad guidance on using data within ranges of PSE for stock assessment. There was also general agreement that management actions should be aligned with the precision of the data and the ability to measure the outcome of fishery management actions. Many avenues were identified to further clarify the issues and recommendations. These ranged from additional modeling efforts, vetting the workshop proceedings and guidance to larger audiences, and addressing the guidance to management in a separate venue.

Over the next several months, ACCSP will be working with the steering committee and MRIP to complete the workshop proceedings and determine the appropriate process to expand on the feedback received at the PSE workshop.
Rhode Island Party & Charter Boat Captains to Report with Tablet Technology

Commercial and for-hire captains in Rhode Island are now able to enter their trip reports using a mobile version of the Standard Atlantic Fisheries Information System (SAFIS). The application, known as eTRIPS Mobile (eTRIPS/m), was developed and integrated into SAFIS by the ACCSP, at the request of the Rhode Island Division of Fish and Wildlife (DFW) and the Rhode Island Party and Charter Boat Association. eTRIPS/m captures catch and effort data from the captains. Trip reports, or logbooks in some fisheries, provide catch and effort data to the state or federal government and are used in fisheries management and assessments. Trips can be categorized as commercial or for-hire.

Rick Bellavance, Captain of Priority Too and President of the Rhode Island Party and Charter Boat Association, describes the innovate ability to report on a handheld device by stating, “ACCSP’s new mobile reporting application will revolutionize the way fishermen provide fisheries-dependent data. The software, designed with extensive input from active and experienced fishermen, is easy to use and save time. It’s the latest tool available to improve data quality and timeliness - a goal of fishermen everywhere.”

The eTRIPS/m application will increase data accuracy and make data available immediately to fisheries managers improving their ability to respond to changes in the fishery in a more timely way. John Lake, Principal Biologist with the Rhode Island DFW Marine Fisheries, is enthusiastic for the launch of eTRIPS/m as a management tool because he recognizes that there will be more flexibility in the management of the party and charter boat sector in state waters (0-3 miles from shore). He explains, “Every year, it’s a delicate balance to create realistic recreational regulations on species for party and charter boat operators that are also, not too liberal for general recreational anglers. This type of trip level data collected from the mobile application greatly aids in the accounting of catch and analysis of how the regulations are working.”

If you would like to view a demonstration of eTRIPS/m, the ACCSP is conducting a webinar on Thursday, November 6 at 10am EST. Please email info@accsp.org or call 703.842.0780.
Greater Atlantic Regional Fisheries Office and Northeast Fisheries Science Center

Electronic Technology Implementation Plan

Draft– January 2015
# Table of Contents

1.0 Purpose of Electronic Technology Plan ................................................................. 2

2.0 Objectives of Monitoring Regime ............................................................................. 2

3.0 Current State of Data Collections ............................................................................. 2

3.1 Ongoing (December 2014) FDDC Improvement Initiatives ....................................... 3

3.1.1 Fishery Dependent Data Committee .................................................................... 4

3.1.2 FDDC Modernization Initiative .......................................................................... 4

3.1.3 Electronic Monitoring Initiative .......................................................................... 5

3.1.4 Observer Electronic Reporting System Development ........................................... 7

3.1.5 Bio-sampling Monitoring System Development ..................................................... 7

3.1.6 Electronic Vessel Trip Reports ............................................................................. 8

4.0 Plans for Expanding Technological Capabilities in the Region ..................................... 8

4.1 FDDC System Modernization .................................................................................... 8

4.1.1 Project outline, phases, timeline towards May 2017 implementation ..................... 8

4.1.2 Project planning contract ....................................................................................... 9

4.1.3 Fisheries in the Northeast to be included .................................................................. 9

4.1.4 Council coordination and regulatory conformance ................................................. 10

4.1.5 Evaluation ............................................................................................................. 10

4.2 Electronic Monitoring ................................................................................................ 10

4.2.1 Project outline, phases, timeline towards May 2017 implementation ..................... 11

4.2.2 Fisheries in the NE to be included ......................................................................... 12

4.2.3 Council coordination and regulatory conformance ................................................. 13

4.2.4 Evaluation ............................................................................................................. 13

5.0 Funding Requirements ............................................................................................ 14

5.1 FDDC Modernization Initiative .............................................................................. 14

5.2 Electronic Monitoring ............................................................................................... 14

6.0 Communications Strategies ...................................................................................... 14

Appendix 1 – List of FMPs and Corresponding EM Status ............................................. 16

Appendix 2 – Summary of Fishery Management Council Engagement Process ................ 17

Appendix 3 – Draft Communications Plan ..................................................................... 18
1.0 Purpose of Electronic Technology Plan

The purpose of this plan is to modernize fishery dependent data collections to ensure collections are timely, correct/validated, optimally automated, vertically and laterally integrated/unified, adaptable to emerging needs, and capable of providing data at a scale that will support anticipatable management and scientific needs of the agency and our partners.

Transition from the current state to future state while preserving archived data and ensuring data from all systems, old and new, are accessible and utile.

2.0 Objectives of Monitoring Regime

The monitoring programs in the northeast region are designed to fulfill many objectives, but the primary purposes are to provide information about the state and performance of the fishery (fish and fishermen) and full catch accounting for regional fisheries to support the region’s scientific and management missions. Other objectives of the monitoring programs include:

- Provide stock-specific data needed for stock assessments on kept and discarded catch, including size and age composition by gear type.
- Characterize all aspects of the fishing industry.
- Quantify fishing effort.
- Maintain fishing history at individual and aggregate levels.
- Support evidentiary needs for enforcement.
- Provide the data needed by fishing industry members to facilitate their business planning.
- Facilitate research by independent organizations regarding fishery science and operation.
- Provide flexibility to ensure that data can be adapted to support future needs such as ecosystem-based management.

3.0 Current State of Data Collections

The fishery dependent data collections (FDDC) in the northeast region have been developed over the past 20 years. Some collections have evolved from even older structures. Over that time, reporting requirements and the supporting systems have been expanded and refined, as needed, in response to new statutory requirements and the scientific and management initiatives of the agency and our two councils.

Current fishery dependent data collections comprise a variety of electronic and paper submission systems, such as:

- Electronic systems
  - Seafood dealer reports
  - Vessel monitoring system
  - Groundfish sector reports
  - Fishery-specific catch reports
This suite of independently developed systems now requires substantial investment, often including manual interventions, to reconcile and integrate data. Spatial and temporal resolution of these collections varies, but historically has been highly aggregated.

Recent scientific and management requirements over the last several years have stretched the adequacy of those monitoring and reporting systems. After decades of region-wide management and seasonal catch accounting at an aggregated level, we are now moving to management schemes that require timelier, complete, and correct catch accounting, with some management programs calling for accounting at the individual vessel and activity level. The demand for more timely and frequent stock assessments has increased in response to required specifications of annual catch limits, and the need for more efficiently integrated regional fishery dependent data streams has been highlighted in a national peer review of data for stock assessment needs in the northeast region. Our current suite of FDDC tools is not as efficiently integrated as needed. It is only through substantial investment in data reconciliation processes that we are able to achieve fuller data integration, higher data quality, speedier delivery, and finer spatial and temporal granularity are required to support management and scientific applications.

This plan includes a description of current activities and future plans for: (1) An overarching revision to regional fishery dependent data collection and (2) evaluation and integration of electronic technologies.

3.1 Ongoing (December 2014) FDDC Improvement Initiatives

In 2013, the Greater Atlantic Regional Fisheries Office (GARFO) and the Northeast Fisheries Science Center (NEFSC) launched two major initiatives focused on improving fishery dependent data in the region – the Fishery Dependent Data Committee and the FDDC Modernization Project. Both are introduced below, along with a description of our ongoing effort to integrate electronic (camera-based) monitoring as a management tool in association with other data collection methodologies in a part of the Northeast multispecies fisheries and, potentially, in other fisheries. The Fishery Dependent Data Committee is charged with making incremental changes to improve the current fishery-dependent data systems. The FDDC Modernization Project is an integrated revamping of the entire FDDC program, currently in the early phases of organizing the requirements of a new system to be implemented in 2017. Electronic monitoring is moving toward experimental operation under the current system. Electronic monitoring and other electronic technologies, described below, will be evaluated for potential inclusion as tools...
to implement the modernized data system. Other, more narrowly focused, projects are discussed in our implementation plan below.

### 3.1.1 Fishery Dependent Data Committee

The responsibilities for the various FDDC programs noted above fall to both the GARFO and the NEFSC. Over the years, as the various FDDC programs were developed and refined on an as-needed basis, different branches (and even individual staff) within the GARFO and NEFSC took on the duties of running the program, monitoring the data quality, making corrections to the data, archiving, and distributing the data to other staff for analysis and other functions. Due to the somewhat independent (non-integrated, though related) nature of many of the various reporting, monitoring and data management systems and due to the distributed work assignments, the GARFO and NEFSC staff have not always treated the suite of FDDC programs as a system and have not always coordinated fully and well with one another.

In 2013, recognizing that recent trends in fisheries management and stock assessments are placing more demands on our fisheries dependent data, the GARFO and NEFSC initiated a working group “to ensure that all of our data collection, data quality control/assurance and correction, and data management functions are executed with optimum efficiency, consistency, and with full consideration of managers’ and users’ interests and needs.” The Committee consists of staff from each program in the GARFO and NEFSC that has data collection and management responsibilities, as well as a few staff representing users of the data. A representative of the Office of Law Enforcement’s VMS program is in the group, and the deputy regional administrator and deputy science director are the co-chairs.

The Committee provides a forum for sustained conversation and cross-divisional coordination to make incremental improvements to our existing FDDC programs and supporting systems. The relevance of this working group to the Electronic Technology Implementation Plan is that this group:

- Promotes integration of the existing FDDC programs to better ensure that data associated with a particular trip are aligned, correct, and timely.
- Initiates and coordinates efforts to improve our existing collections, including electronic collections.
- Advances and improves the current state of FDDC programs, while the future state (under our modernization initiative, see below) is being developed.
- Develops and refines best practices for data management and internal coordination, which will provide a basis for our work under this implementation plan.
- Evaluates proposed management measures and how to most effectively integrate them into existing, revised, or new FDDCs and associated databases.

### 3.1.2 FDDC Modernization Initiative

This effort contemplates a comprehensive overhaul and modernization of our entire FDDC program. In order to develop a vision for an improved FDDC system, GARFO and NEFSC staff sought to better understand the data needs and uses of all internal and external data users, to
identify the strengths and weaknesses of the existing data collections and systems, and to elicit the desired characteristics of an ideal fishery dependent data system.

Staff interviewed NMFS scientists and managers throughout the Atlantic and Gulf coasts, the Atlantic Coastal Cooperative Statistics Program, state fishery scientists and managers, regional fishery management council and fishery commission staff, and individuals from non-governmental organizations and academic/research institutions. In addition, GARFO and NEFSC staff worked collaboratively with a project team established by the Gulf of Maine Research Institute (GMRI) to conduct surveys and interviews with vessel owners, operators, and crew; seafood dealers and auction house staff; representatives of commercial fishing organizations/associations; and third party software developers/providers. Together, the GMRI project team and GARFO and NEFSC staff hosted a two-day workshop (June 30 – July 1, 2014) in which industry, agency staff, and other interested parties could delve more deeply into our collective data needs and uses in an attempt to identify operational considerations that affect the timeliness and accuracy of FDDC, as well as opportunities for enhanced efficiency in data collection, organization, and distribution.

GARFO and NEFSC staff are in the process of evaluating the information collected through interviews, surveys, and a workshop to develop a requirements document that outlines what data are needed, when they are needed, and how they are used in the Northeast. We are compiling a requirements catalog for our FDDC systems. This document will characterize the modernized fishery dependent data system, identify policy and programming issues that need to be resolved, and recommend solutions to identified issues that affect system development, as appropriate. This work will then feed into efforts to design and build an improved fishery dependent data system, as further discussed below.

To develop the vision for an improved data collection system, all options are being considered, including software revisions, changes to policy/regulations, process refinements, and staffing/resource adjustments. We emphasized this point during our interviews and workshop with internal and external data stakeholders, enabling us to elicit candid and unfettered feedback that will help us develop a truly efficient and progressive system for the future. Preliminary feedback indicates that most respondents support a move to a system that would integrate existing data systems, and that there is broad support for various forms of electronic data collection to reduce manual data entry, collect more precise fishing area data, and automate data validation.

The next steps and a timeline for the completion of this initiative are provided in the implementation plan details below.

3.1.3 Electronic Monitoring Initiative

Beyond the two efforts that take a comprehensive approach to FDDC programs, we have another significant initiative underway to advance electronic monitoring (EM), initially in the Northeast multispecies fishery and potentially in the Atlantic herring and Atlantic mackerel fisheries. Our efforts focus on these fisheries because both the New England and Mid-Atlantic Councils and fishery participants and stakeholders have expressed an interest in using EM. Other fisheries could be included as they are identified, following the same general implementation plan.
In early 2013, GARFO and the NEFSC developed a white paper outlining two potential uses of EM in regional FDDC programs: (1) In a full-retention (no discard) fishery, all catch would be observed by dockside monitors, and EM would be used to verify that no discarding occurred at sea and (2) in a logbook program, fishermen would record kept catch and discard data electronically, and discard estimates would be verified using EM.

In 2013, the NEFSC completed an extensive pilot study testing the applicability of EM in the groundfish fishery (http://www.nefsc.noaa.gov/fsb/ems/) including evaluation of these two potential applications. From this study, and the many others like it, we have identified the necessary components to support an operational EM program (e.g., catch handling protocols, technical specifications). Despite all of these investigations and efforts to work through EM program details, we still need to figure out the other aspects of a comprehensive EM program before we can develop the appropriate performance standards, regulations, and infrastructure. Some outstanding questions include:

- What are the detailed roles and responsibilities of the various parties involved?
- Will EM data be able to meet the data quality standards of the MSA and other laws?
- Who will have responsibility to store the video data and for how long?
- Who will have access to the data and for what purpose?
- How much will it cost the government and the industry?

Several of these questions were highlighted as informational needs and action items at a recent National EM Workshop (http://www.eminformation.com/) and Northeast EM Workshop (May 7-8, 2014) (http://www.greateratlantic.fisheries.noaa.gov/stories/2014/ElectronicMonitoring.html).

A key take-home message of both the national and regional workshops was the need for performance standards to reduce uncertainty, and facilitate innovation and investment. We have several projects underway with the objective of answering these questions and informing regional performance standards for EM programs.

- Operational use in a groundfish sector - We are working with sectors to prepare a proposal to use EM to meet their at-sea monitoring requirements in fishing year 2015. This project will build on pilot projects by integrating EM data into the sector’s and NMFS’s monitoring and reporting programs.
- EM Data Analysis – The NEFSC will be contracting an analyst to begin working on outstanding analytic questions, such as how much video should be reviewed, using existing data from the pilot project.
- Cost Analysis – We are developing estimates of potential costs for EM programs in the Northeast groundfish and Atlantic herring fisheries compared to traditional observer models to provide fishermen, the Councils, and the government with a better understanding for decision-making.
- Atlantic Herring/Mackerel – There has been considerable interest in increasing monitoring of bycatch and discarding events in the Atlantic herring and mackerel fisheries because of interactions with groundfish, river herring, shad, and other species.
EM holds promise as a cost-effective means of monitoring compliance with slippage restrictions and members of the herring industry have begun a pilot project. Both Councils have expressed interest in exploring this option, though it is not currently part of any ongoing Council action. We will continue to encourage the Councils to keep this option under consideration.

- **NEFMC EM Working Group** – The NEFMC convened a workgroup in 2013 to identify and develop solutions to barriers to implementing EM in groundfish sectors. The group has representation from industry, conservation organizations, the Council, GARFO, NEFSC, enforcement, and General Counsel. The workgroup will report to the Council and may provide recommendations on next steps for EM implementation for sectors.

The next steps and a timeline for completion of this initiative are provided in the implementation plan details below.

### 3.1.4 Observer Electronic Reporting System Development

The NEFSC is developing an Observer Electronic Reporting System (OBERS). Its observer data collection systems are a combination of paper-based and electronic reporting systems, with the electronic reporting being duplicative of the paper systems. In addition, existing electronic systems only collect a subset of the data to meet immediate needs and are not comprehensive. Processing of these data are time consuming and prone to data entry and transcription errors.

The objective of OBERS is to provide the end-user access to the core observer data and access to the additional data elements collected through this flexible/dynamic data acquisition system. This project will include the conversion of the legacy data to the new presentation model so all of the data can be presented in the same structures.

The design of this system will improve the flexibility of the current northeast U.S. fisheries observer data collection program. A flexible database and dynamic at-sea data acquisition application will improve data quality, decrease processing time while adapting more quickly to the changes needed for effective fisheries management. The NEFSC expects to complete the system so it can be deployed within the next 12 months.

### 3.1.5 Bio-sampling Monitoring System Development

The NEFSC and GARFO are jointly developing a new Bio-sampling Monitoring (BSM) system. Currently, the BSM collection system is a combination of paper-based and electronic reporting systems, with sample requesters using a web-based data entry program and port samplers using both paper and electronic systems. The existing system can be slow to respond to additional requests and slow to acknowledge which requests have been fulfilled, resulting in both over and under sampling. Processing of these data by port samplers are time consuming and prone to data entry and transcription errors.
The new data collection system is designed to eliminate redundant data collection and improve data timeliness and quality with a new database design and software applications that take advantage of electronic measuring boards, scales, and barcode scanners.

3.1.6 Electronic Vessel Trip Reports

Electronic Vessel Trip Reports (eVTRs) have been developed extensively through the region’s Cooperative Research Program. The software system developed by NEFSC and called Fisheries Logbook Data Recording Software (FLDRS) supports both sub-trip and tow-by-tow reporting, which supports analyzing fishery data on stock-by-stock and fine-scale management area bases. Under some applications of EM, tow-by-tow reporting is a critical element for cost-effective analysis of video data for validation purposes. Several vendors have also developed eVTR applications that have been found compliant with GARFO's eVTR technical requirements and may be used by vessels for the purpose of eVTR submission.

In use since 2002 by the study fleet and authorized for broad scale use in 2011, acceptance of eVTRs has been slow. The GARFO and NEFSC are currently working to improve our existing eVTR system and to expand its use. Also, the use of vessel monitoring systems is expanding in the region.

These systems capture all the data elements currently required under the paper VTR system and operator reports can be validated through vessel electronics (e.g., GPS). They are a significant improvement over a land-based web reporting system that could improve timeliness but also potentially suffer from increased recall bias compared to systems (paper or electronic) that require the recording of data while at sea.

4.0 Plans for Expanding Technological Capabilities in the Region

4.1 FDDC System Modernization

4.1.1 Project outline, phases, timeline towards May 2017 implementation

The overall project plan for modernizing our FDDC and associated data systems will take place between 2014 and 2017, and will involve the following fundamental steps:

1. Develop data system requirements document (December 2014)
   - List current and expected data uses and needs of internal and external users
   - Identify strengths and weaknesses of current fishery dependent data system
   - Characterize ideal fisheries dependent data system and necessary outputs
2. Create project plan and appropriate business rules to implement idealized fishery dependent data system (Spring/Summer/Fall 2015)
   - Optimize data collections
     i. Streamline data collections to provide needed data in a more effective manner
     ii. Identify regulatory changes to achieve optimized data collection plan
• Map integrated fishery dependent data system
  i. Identify relationships between data collections and tables
  ii. Determine standards by which data will be collected, transmitted, and stored
  iii. List programming changes necessary to more effectively link data tables
• Ensure business rules/programming maintains linkage with legacy data
• Integrate other initiatives related to fishery dependent data collections/systems
  i. National ER/EM strategies
  ii. Regional electronic monitoring initiatives

3. Identify and prioritize system implementation modules (Spring 2016)
• Develop work break-out structure identifying how project plan will be implemented
• Identify priority tasks based on available resources and greatest benefits to NMFS

4. Program and test updates to fishery dependent data system (Summer/Fall 2016/Spring 2017)
• Ensure data system can accommodate data from external sources (e.g., state data)
• Evaluate effectiveness of integration with data from previous systems (legacy data) to ensure consistent and reliable data queries

• Develop outreach materials and conduct information sessions throughout the coast to explain future changes to data collections and system outputs
  o Discuss real-world examples of how new or revised system/collections will affect dealers and vessel operator activities
  o Highlight the benefits of streamlined and primarily electronic reporting
  o Demonstrate data products and other outputs that will be useful to industry
• Conduct training sessions with NMFS, Council, Commission, state, and ACCSP staff that will be affected by new database design and storage
• Conduct training sessions with permit holders who will be affected by new reporting requirements.

4.1.2 Project planning contract

A planning and IT development firm, Ambit Group, LLC (http://www.theambitgroup.com/), has been contracted (fall 2014) to organize and create the supporting documentation for an overall project plan and work break-down structure that will include a list of initiatives in sufficient detail to implement solutions to achieve the objectives of the fishery dependent data visioning project. The contractor will work with GARFO and NEFSC staff to translate the requirements document and needs assessment mentioned above into business rules as part of an enterprise solution focused on collecting and making available all data associated with the operation of a single commercial fishing trip. The enterprise solution must be able to support the collection, organization, evaluation (quality control and analysis), and dissemination of the affected data collected during the course of a fishing trip for both internal and external uses.

4.1.3 Fisheries in the Northeast to be included
All regional fisheries managed in federal waters will be affected by the modernization initiative, with all fisheries likely subject to a baseline data collection. This includes species managed by the New England and Mid-Atlantic Fishery Management Councils, but also the Atlantic States Marine Fisheries Commission. Some fisheries, such as the American lobster fishery, may be subject to reporting requirements for the first time, while others (e.g., Northeast multispecies, Atlantic herring, and Atlantic sea scallop) will likely require additional or revised data collections based on the data collection optimization recommendations outlined in the requirements document. Please see Appendix 1 for a complete list of FMPs in the region and corresponding EM and modernization status.

4.1.4 Council coordination and regulatory conformance

The New England and Mid-Atlantic Councils, the Atlantic States Marine Fisheries Commission, and the Atlantic Coastal Cooperative Statistics Program have been involved with the development of the data needs/requirements document and an industry workshop to solicit further input regarding future fishery dependent data system characteristics. All bodies have been, and will continue to be, briefed on the ongoing progress of the modernization initiative and their direct involvement will be sought throughout. Upon the completion of the internal review, these groups will have the opportunity to review the requirements document and provide further input, as appropriate.

The need to update regulations to implement improvements to the fisheries dependent data collections will be assessed during the development of the business rules and project plan during the fall of 2014 and spring of 2015. Regulatory updates will likely be necessary, and could be implemented through omnibus amendments to several fishery management plans (FMP), or through the administrative authority granted to the Secretary under the Magnuson-Stevens Fishery Conservation and Management Act, whichever is appropriate. Please see Appendix 2 for a summary of GARFO and NEFSC engagement with the Councils regarding this initiative.

4.1.5 Evaluation

The modernized fishery dependent data system will be routinely evaluated to ensure it continues to meet our evolving data needs as management actions are developed over time. Occasional updates may be necessary, but should be infrequent if the modernized system is designed with sufficient flexibility and adaptability, as intended. The Fishery Dependent Data Committee will be responsible for the continued maintenance of the modernized system, including any changes necessary to implement future management actions or address unanticipated data needs. We will continue to periodically seek input from affected data stakeholders to ensure the system is meeting our ongoing needs.

4.2 Electronic Monitoring

The implementation plan for the groundfish fishery focuses on using the sector operations plans model laid out by the Northeast Multispecies FMP. This is consistent with the model the two sectors and NMFS are developing, which requires the least amount of resource investment by NMFS, no regulatory changes and the fewest new data streams. However, if policy issues cannot be resolved through the sector’s operations plan, or if the Council or industry wishes to pursue a
different model due to costs or logistical issues (e.g., full retention), additional Council action would be needed. We will keep the New England Council apprised of our progress and will work with the Council and their EM workgroup to make whatever regulatory changes are necessary to support the implementation of EM in the groundfish fishery.

In the Atlantic herring and mackerel fisheries, no EM program is currently authorized under the regulations, so Council action would be needed to design such a program. Both Councils have expressed preliminary interest in exploring EM for monitoring slippage events in the mid-water trawl fishery, but no Council action has been initiated. We will continue to discuss this idea with the Councils and support development of a program if the Councils decide to move forward. In the meantime, the implementation schedule below assumes that some form of program will move forward for herring, mackerel, and groundfish fisheries contingent on available funding. Other fisheries could be added if identified and would require Council amendments to be implemented. Other fisheries would follow the same general implementation phases.

4.2.1 Project outline, phases, timeline towards May 2017 implementation

The overall project plan for implementing EM will take place between 2014 and 2017, and will involve the following fundamental steps:

Fall 2014
- Develop and review sector proposal
- Atlantic herring industry pilot conducts data collection
- Discuss Council action to develop EM program for herring and mackerel fisheries (under existing or new action)

Winter 2014/Spring 2015
- Complete cost analysis and present to NEFMC and MAFMC
- NEFMC’s EM workgroup provides report, identifies next steps
- If Councils decide to move forward, develop goals and objectives and program design for a herring/mackerel EM program
- Conduct EM trial with sectors during 2015 fishing year to aid in development of an operational EM program for fishing year 2016

Summer/Fall 2015
- Continue tuning infrastructure and training as sector program precedes, contingent on available funding and continued interest of industry
- Evaluate initial performance of sector program and make adjustments for 2016 proposal, if data quality and timeliness is adequate to continue
- Councils continue development of herring/mackerel EM program, if applicable
- Integrate EM efforts with FDDC project plan, as appropriate

Winter/Spring 2016
- Publish rulemaking to approve sector program v2.0
- Councils complete development and submit herring/mackerel EM program
Spring/Summer/Fall 2016

- Develop and publish EM performance standards and program requirements for herring/mackerel and groundfish,
- For comparative purposes, in fishing year 2016 operate EM program for groundfish and herring concurrent with at-sea monitoring
- Conduct outreach on EM program requirements
- Sectors and NMFS work on sector operations plans
- Industry, providers, and NMFS work on infrastructure implementation, contingent on available funding

Winter/Spring 2017

- Publish rulemaking to approve sector operations plans
- Implementation of herring/mackerel EM program (January 2017), contingent on available funding and continued interest of industry
- Implementation of additional sector EM programs (May 2017), contingent on available funding and continued interest of industry

Summer/Fall 2017

- Evaluate initial performance of programs and make adjustments to operational protocols, as needed
- Step up compliance assistance and outreach

We will also implement a communications plan (see Section 6.0) to educate stakeholders on what we do know about EM systems to reduce uncertainty and facilitate broader engagement in the development of EM programs.

Broad scale EM implementation will require the resolution of a number of issues described at the National EM Workshop and echoed at our regional workshop and other fora. There is a need for national policies to address: (1) Data access and confidentiality; (2) record retention and documentation requirements; and (3) data quality standards, and cost responsibilities (see section 5.0). Nationally consistent technical standards could lead to economies of scale if EM equipment and service providers are able to operate the same systems in multiple regions. Councils and the public should be consulted and allowed to comment on such national policies before they are finalized.

4.2.2 Fisheries in the NE to be included

As indicated above, we are working implement EM in part of the Northeast multispecies (groundfish) fishery, beginning in 2015. Also, we are working with members of the large volume mid-water trawl fisheries – Atlantic herring and mackerel – towards EM initiatives in those fisheries. Please see Appendix 1 for a complete list of FMPs in the region and corresponding EM and modernization status.

There is ambivalence in the region about EM, even within a fishery. Some industry members attach great promise to EM. Many view it as an alternative to carrying and bearing the costs of carrying traditional observers or at-sea monitors. Other industry members are skeptical of the
reported cost savings, and some view the idea of cameras on their boats as unwelcome intrusions. Given this ambivalence, implementation of EM is likely to be selective, rather than widespread.

We must also determine how EM can meet data obligations under the Marine Mammal Protection Act and Endangered Species Act, and the advantages of biosampling, serious injury comments and gear entanglement details for protected species may be lost if video replaces observers in some fisheries.

4.2.3 Council coordination and regulatory conformance

Amendment 16 to the Northeast Multispecies FMP provided for the possibility of using EM in the fishery. The New England Fishery Management Council has an EM workgroup, of which GARFO and NEFSC are members. As Council members are interested in this initiative and the chair is supportive, coordination is already part of the routine Council process.

The herring and mackerel FMPs do not provide for the possibility of EM. As our work with industry members progresses, we will look first to initiating pilot studies of EM in these fisheries under exempted fishing permits (EFPs). The EFPs would exempt the participating vessel for some of the requirements related to carrying an observer. Broader implementation of EM in the fishery will require amendments to the management plans.

We will work with the New England and Mid-Atlantic Fishery Management Councils and stakeholders through the Council process to develop solutions to regional or FMP-specific policy issues, including: (1) Establishing shared goals and objectives; (2) defining roles and responsibilities; and (3) designing program elements. Additional regional workshops would also provide a forum to increase EM literacy and to brainstorm solutions to regional issues. Please see Appendix 2 for a summary of GARFO and NEFSC engagement with the Councils regarding this initiative.

4.2.4 Evaluation

As noted in the timeline above, evaluation will be continuous, as will coordination with industry on improvements. EM is likely to remain at a small scale for several years. During that time GARFO and NEFSC staff will continue to work directly with industry proponents towards analyzing and perfecting the systems and the shoreside business rules, with an eye towards broader implementation. The comparability between the quality of data collected with a system using EM as a component and the quality of data collected under the current at-sea monitoring program needs to be evaluated.

Evaluation must include determining costs for all parties involved in EM. For many, the motive for EM is to avoid the cost and inconvenience of carrying a traditional observer or at-sea monitor. We must test the notion that EM is more cost-effective during the initial year of its use in the groundfish fleet.
5.0 Funding Requirements

5.1 FDDC Modernization Initiative

The modernization of the region’s fishery dependent data collection systems is a monumental, multi-year project. Costs will be determined as system requirements are finalized and program details will be adjusted as cost/benefit analyses are completed for each component. The ability of the agency and industry to develop and adopt the new systems will depend upon costs and the availability of funding to cover such costs. The target date for completion of the projects assumes adequate funding will be available to advance the project at a rapid rate. As costs, resources, project details, and project plans are better known, we will work with the Councils and within NMFS to ensure expectations for the project scope and delivery timeline and clear and understood.

5.2 Electronic Monitoring

Under the initiative to make EM operational in a portion of the groundfish fleet in 2015, the industry participants intend to bear a significant portion of the program costs. As noted above, the participants will enter a contract with a third-party who will provide EM technical services, including sampling of the video data, analysis of discarding events, and reporting to NMFS. The agency will bear costs accommodating changes to our data processing to handle the data from the EM service provider. These programming changes have been initiated under existing contract task orders and no new funds are required for this activity. New funding will be required to support NEFSC costs as the sector program moves toward an operational model, in part because of spending restrictions to occur under the Standardized Bycatch Reporting Methodology Omnibus Amendment.

There continues to be uncertainty about the ability of the industry and NMFS to fund broad implementation of EM programs, with no significant revenue or budget increases expected in the near future. The cost analysis we are developing will help the industry, Councils, and NMFS better understand what potential EM program costs might be. From the workshops, we know that start-up costs tend to be higher than broadly believed, as vessel owners have to buy or install equipment and potentially pay for additional video review, and as vessel operators get used to the catch handling protocols. Development of performance standards will allow innovation, which could produce cost savings as technology advances or open-source software is developed. The cost analysis may also provide information to help industry identify private partners to fund different program components. If discretionary federal funds are identified to offset implementation costs for industry, it will be important to subsidize traditional, as well, EM program implementation, to ensure neither program model is undermined.

6.0 Communications Strategies

The GARFO and NEFSC are collaborating on the development of a broad-based communications plan for the next three years (see Appendix 3). This multifaceted
communications strategy will be adaptive and will serve both major electronic technology initiatives. It will guide our engagement efforts towards:

- Encouraging industry members to get involved in the development of these new FDDC systems.
- Ensuring these FDDC initiatives are embedded in Council priorities in the coming years.
- Inviting private companies with expertise in the development data and communications systems to work on FDDC solutions with industry members.
- Supporting the two Councils’ consideration of FDDC improvements relative to management questions before them and their work priorities.
- Familiarizing industry members with the importance and benefits of FDDC modernization.
- Guiding industry members towards selecting appropriate onboard FDDC systems to support their reporting requirements and ensuring they receive training in their use.
- Continuing to look for ways to improve FDDC systems and their use.
- Supporting data users and management partners as they adapt to new collections.

A draft of the communications plan is under review in the GARFO. Investment to date in engagement with stakeholders regarding these initiatives has been considerable. Examples include:

- Staff interviewed over 150 data users and industry members to identify data requirements.
- Issued a grant to GMRI to survey and interview industry members, seafood dealers, sector managers and others about the needs of industry relative to FDDC.
- In partnership with GMRI and the University of Massachusetts at Dartmouth, hosted a two day workshop (June 2014) with stakeholders on FDDC modernization and data requirements.
- Participated in the New England Fishery Management Council’s workgroup on EM.
- Along with The Nature Conservancy, hosted a two day regional EM workshop (May 2014) to promote understand of EM in the region, identify/refine objectives for its use, and develop strategies for future implementation.
- Staff reported to the NEFMC on progress of the EM workgroup and the findings/results of the regional EM workshop.
- Leadership and staff reported to both northeast councils about the FDDC modernization initiative and conducted a listening session with the MAFMC on the subject.

We are committed to working closely with the industry and all stakeholders as these initiatives develop.
## Appendix 1 – List of FMPs and Corresponding EM Status

<table>
<thead>
<tr>
<th>Fishery Management Plan</th>
<th>Electronic Monitoring?</th>
<th>Modernized Data Collection?</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Lobster</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Atlantic Herring</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Atlantic Salmon</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Atlantic Sea Scallop</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Bluefish</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Mackerel/Squid/Butterfish</td>
<td>Yes – Mackerel Only</td>
<td></td>
</tr>
<tr>
<td>Monkfish</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Northeast Multispecies</td>
<td>Yes – Sectors Only</td>
<td></td>
</tr>
<tr>
<td>Skates</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Small Mesh Multispecies</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Spiny Dogfish</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Summer Flounder/Scup/Black Sea Bass</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Surfclams &amp; Ocean Quahogs</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Red Crab</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Tilefish</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

All fishery dependent data collections are subject to modernization.
## Appendix 2 – Summary of Fishery Management Council Engagement Process

<table>
<thead>
<tr>
<th>Date</th>
<th>Council Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2013 – Spring 2014</td>
<td>Interviewed over 180 data users, including Atlantic States Marine Fishery Commission and New England and Mid-Atlantic Council staff members, to identify data requirements.</td>
</tr>
<tr>
<td>April 2014</td>
<td>At New England Council Meeting, staff provided a summary of new and ongoing efforts to implement electronic technologies in Northeast fisheries.</td>
</tr>
<tr>
<td>May 2014</td>
<td>In conjunction with the Nature Conservancy, hosted a two day regional electronic monitoring workshop to promote understanding of electronic monitoring in the region, identify/refine objectives for its use, and develop strategies for future implementation. Several New England Fishery Management Council members were in attendance.</td>
</tr>
<tr>
<td>June 2014</td>
<td>Provided the New England Fishery Management Council an overview and opportunity to comment on electronic monitoring efforts.</td>
</tr>
<tr>
<td>June/July 2014</td>
<td>Held Northeast Federal Fishery Dependent Data Visioning Workshop to explore the current and future fishery dependent data needs of the fishing industry, science, and management in the region. Workshop participants included New England and Mid-Atlantic Council Staff.</td>
</tr>
<tr>
<td>August 2014</td>
<td>GARFO conducted Mid-Atlantic Fishery Management Council Listening Session on Fishery Dependent Modernization Plan</td>
</tr>
<tr>
<td>November 2014</td>
<td>Provided the New England Fishery Management Council an overview and opportunity to comment on GARFO’s Draft Strategic Plan, which includes electronic monitoring objectives.</td>
</tr>
<tr>
<td>December 2014</td>
<td>Provided the Mid-Atlantic Fishery Management Council an overview and opportunity to comment on GARFO’s Draft Strategic Plan, which includes electronic monitoring objectives.</td>
</tr>
</tbody>
</table>
Appendix 3 – Draft Communications Plan

Place Holder – Draft Communications Plan under Internal Review; will be attached with final Plan
SURVEYS AND FIELD STUDIES

**Integrated Pelagic Survey / Ecosystem Monitoring Survey:** The NOAA Ship *Pisces* completed the November 2014 IPS / EcoMon survey. It coupled mid-water trawl acoustic operations with ecosystem monitoring. Data were collected on ocean chemistry, physical oceanography, plankton and forage fish, ranging from the Bay of Fundy to Cape Hatteras. A wide range of sampling was conducted meeting objectives for multiple NOAA programs. A second EcoMon cruise will likely take place in February or May, when data will be collected on larval herring and mackerel.

**AMAPPS Aerial Surveys:** Looking for marine mammals and sea turtles, NEFSC scientists conduct aerial surveys of waters from the coast to about the 2000m depth contour from New Jersey to Halifax, Nova Scotia. SEFSC scientists survey from New Jersey to Florida. In addition, USFWS scientists survey sea birds from the coast to about 30 miles offshore from Florida to Maine using USFWS airplanes. Recent surveys took place Feb-Apr 2014 and are also currently being conducted from Dec 2014-Feb 2015. The plan is to continue these surveys once or twice a year until 2018, to study annual and seasonal differences.

**FSV Bigelow Catchability:** NEFSC scientists from multiple branches are discussing the potential effect of current direction and speed on *Bigelow* catchability. They will be examining relationships between estimated current speed and direction relative to direction of trawl survey tows and catch per tow. Current speed and direction are obtained from a numerical oceanographic model developed at SMAST. The work is expected to inform field research in 2015 and provide a preliminary evaluation of the potential effect of currents on catch.

**Remote sensing for biological sounds:** Using the R/V *AUK*, NEFSC and WHOI scientists deployed gliders in Massachusetts Bay in December as part of an ongoing pilot project. The gliders are equipped with acoustic receivers and hydrophones and may be able to identify through sound the locations of spawning cod aggregations.

**Completion of Fall WGOM Long Line survey** - NEFSC scientists worked with industry on commercial vessels in October and November in a pilot survey to sample fish species in rocky and smooth bottom habitats for comparison with data collected during NEFSC bottom trawl surveys. They sampled base stations, alternate stations, and bait-type test stations. Sampling involved Go-Pro camera work to verify bottom-type, deploying long-term current meters, and tagging dogfish. This represents the second cooperative longline survey of GOM. Results of the first survey in May 2014 are being analyzed.
Observer Program (Fisheries Sampling) - Fisheries Sampling Branch (FSB) completed 3,036 seadays and 1,213 trips during October – December 2014. This comprises days from the Northeast Fisheries Observer Program (NEFOP), At-Sea Monitoring (ASM), and Industry funded Scallop (IFS). FSB has been refining sampling protocols for pot and trap fisheries. FSB staffed a kiosk at an outreach event at the Delaware Coast Day in Lewes, DE, and held an information session in Montauk, New York describing sea day coverage. FSB also completed the first stage of an evaluation and review of Observer Programs.

STOCK ASSESSMENTS AND PEER REVIEWS
The Assessment Oversight Panel (SSC chairs and senior NEFSC scientist) met on Dec. 22, 2014 to discuss plans for the herring Operational Stock Assessment. The call was open to the public. NEFSC scientists summarized recent data and implications for conducting a new herring stock assessment. The AOP concluded that anticipated changes to the assessment model would exceed the scope of modifications allowed in the Operational Assessment Process, and decided that an alternative approach will be needed in the short term. Additional meetings will be held with the NEFMC SSC and PDT so that a basis for 2016 herring catch advice can be developed.

Peer review of scallop survey methods will take place during March 17-19, 2015 in New Bedford, MA.

Peer review of lobster stock assessment, done in collaboration with ASMFC, will take place during spring 2015.

OTHER CENTER ACTIVITIES/ACHIEVEMENTS

Climate, Ecosystem, Habitat, and Assessment Steering Group (CEHASG): The CEHASG (NEFSC) reviewed the Atlantic Mackerel assessment on Dec. 3 with the goal of developing a research plan to support the next benchmark assessment. Ecosystem, climate, and habitat issues were discussed with plans to include these factors in future assessments.

Minimizing River Herring and Shad Catch in Herring and Mackerel Fisheries: Discussions between GARFO Protected Resources Division and NEFSC Ecosystems Processes Division were held on Nov. 26 about a National Cooperative Research project to develop methods using fishery dependent and survey data to reduce RH/S catch in the herring and mackerel fisheries through modeling.

eVTR initiative support: COOP staff are coordinating with Cornell and the North Atlantic Clam Association to support electronic VTR reporting. The focus is on squid and including other Mid-
Atlantic fisheries, and to modifying software to support eVTR in the clam fishery. There are currently over 50 vessels and crews equipped and trained with eVTR.

**Jonah Crab Fisheries Improvement Project (FIP):** Jonah crab has been a bycatch of the lobster fishery. In recent years this crab market has increased. In November, NEFSC and GMRI staff discussed stock assessment needs and management strategies for the ASMFC to consider in the new FMP. There is a need to determine an appropriate minimum size. The FIP is initiating a program to collect data related to crab size and life history to characterize the commercial harvest in Southern New England. The data will help to inform minimum size alternatives.

**Ocean acidification (OA):** NEFSC Scientists at the NEFSC Howard Laboratory have completed OA experiments that evaluated the effects of elevated CO₂ and water temperature on early life-stages of summer and winter flounder. Initial results show both species to be sensitive to CO₂.

### Publications

**A Field-based Nursery for “Head Starting” Lobsters to Improve Post-release Survival for Potential Stock Enhancement in Long Island Sound, Connecticut.** By: Renee Mercaldo-Allen¹, Ronald Goldberg¹, Catherine A. Kuropat¹, Paul Clark¹, Robert Alix¹, Werner Schreiner¹, and John Roy², Accepted by: North American Journal of Aquaculture.¹
Northeast Fisheries Science Center, Milford Laboratory, 212 Rogers Ave, Milford CT 06460 USA ²The Sound School, 60 S Water Street, New Haven CT 06519 USA

**Post-release mortality in istiophorid billfish.** By: Michael K. Musyl, Christopher D. Moyes, Richard W Brill, Bruno L. Mourato, Andrew West, Lianne M. McNaughton, Wei-Chuan Chiang, Chi-Lu Sun). Accepted by: Canadian Journal of Fisheries and Aquatic Sciences


**Wind, Recruitment, and Gulf of Maine Atlantic Cod.** By: Jon Hare, Elizabeth Brooks, Mike Palmer, and Jim Churchill. Accepted by: Fisheries Oceanography

**When “data” are not data: the pitfalls of post-hoc analyses that use stock assessment model output.** By: Elizabeth Brooks and Jonathan Deroba. Accepted by: Can. J. Fish. Aquat. Sci.

**Incremental fishing gear modifications fail to significantly reduce large whale serious injury rates.** By: Pace RM III, Cole TVN, Henry AG. (2014) Endang Species Res 26:115-126

1st Quarter Fiscal Year 2015
Northeast Enforcement Division

October 1, 2014 – December 31, 2014

Council Report

To report fisheries violations,
call our national hotline:
1-800-853-1964
### Table of Contents

- 1st Quarter Enforcement and Compliance ................................................................. 3
- Incident and Case Information ................................................................................. 7
- 1st Quarter, Fiscal Year 2015 Highlights ................................................................. 8
- Compliance Assistance & Outreach ......................................................................... 8
- Joint/Cooperative Enforcement Highlights .............................................................. 9
- Northeast VMS Program ......................................................................................... 10
- Observer Program Highlights ................................................................................. 12
- Cases sent to NOAA General Counsel Enforcement Section (GCES) .................. 13
1st Quarter Enforcement and Compliance

Summary
In the first quarter, there were 139 documented patrols, allowing critical face-to-face interaction between our field staff and the industry; 71 documented instances of outreach (not an exhaustive list; includes phone calls with industry, dock visits, trade shows, presentations, etc); and 9 meetings. This list does not include the extensive outreach that the VMS team provides on a daily basis, nor can it fully capture the interaction our agents, officers, and support staff regularly have with industry. In the fourth quarter, there were 33 dealer inspections; none of which had issues that resulted in compliance assistance and 77 vessel inspections, 3 of which had issues that resulted in compliance assistance. There were 116 total inspections performed during the fourth quarter, of those inspections 114 observed compliance and 2 inspections observed non-compliance.

ACIs Reported
1st Quarter Fiscal Year 2015

Figure 1: 265 ACIs reported from October 1, 2014 through December 31, 2014. The chart is broken down by patrols, outreach, other (collateral duties, homeland security, info gathering, education, training, MMPA) and meetings.
Table 1: Summary of 1st Quarter Incidents By Types

<table>
<thead>
<tr>
<th>Law/Regulation/Program</th>
<th>FY 15 1st Quarter Incident Totals</th>
<th>FY 14 1st Quarter Incident Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACFCMA</td>
<td>62</td>
<td>45</td>
</tr>
<tr>
<td>Atlantic Tuna</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Endangered Species Act</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Federal Regulation (non-fisheries)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lacey Act (Federal)</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Lacey Act (Foreign)</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Lacey Act (State)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Marine Mamal Protection Act</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>MSFCMA</td>
<td>123</td>
<td>260</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>State Regulations (fisheries)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>341</td>
</tr>
</tbody>
</table>

Figure 2: Incidents opened from October 1, 2014 through December 31, 2014. 232 incidents were opened. "Other" includes one State Regulation – Fisheries, and one Other.
Table 2: Summary of 1st Quarter Complaints By Types

<table>
<thead>
<tr>
<th>Law/Regulation/Program</th>
<th>FY 15 1st Quarter Complaint Totals</th>
<th>FY 14 1st Quarter Complaint Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACFCMA</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Atlantic Tuna</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Endangered Species Act</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Federal Regulations (non-fisheries)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lacey Act (Federal)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lacey Act (Foreign)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Lacey Act (State)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Marine Mammal Protection Act</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>MSFCMA</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>31</td>
</tr>
</tbody>
</table>

Figure 3: Complaints opened from October 1, 2014 through December 31, 2014. 25 complaints were opened.
Figure 4: Inspections performed from October 1, 2014 through December 31, 2014. 116 inspections were performed. 114 inspections observed compliance and 2 inspections observed non-compliance.
Incident and Case Information

INDEEAA ICTED 1st Quarter 2014 & 2015

Figure 5. FY2015 1st quarter: 115 inspections, 92 investigations, 25 complaints, 2 other. 234 total
FY2014 1st quarter: 204 inspections, 51 investigations, 31 complaints, 11 other. 297 total
Figure 6. Status of incidents in the 1st quarter of FY2014 (257 completed, 43 ongoing) and 1st quarter FY2015 (181 completed, 53 ongoing).
1st Quarter, Fiscal Year 2015 Highlights

Lacey Act

John Price, owner and president of J.P. Shellfish, Inc., the largest seafood dealer in Maine, plead guilty in U.S. District Court in Portland, ME to twelve felony counts of structuring cash transactions and to one misdemeanor count of Lacey Act trafficking. Price conspired with Robert Thompson and 13 commercial fishermen in the previously mentioned American Lobster scheme. John Price was sentenced to 45 days in prison, 2 years of supervised probation, and given a $100,000 criminal penalty in U.S. District Court in Portland, ME. Five co-conspirators in the DC Air & Seafood case were also sentenced in federal district court this quarter.

Magnuson-Stevens Fishery Conservation and Management Act
Alan Dresner pled guilty in federal court to one count of wire fraud for criminal violations stemming from his role in systematically underreporting fluke that was being harvested as part of the federal RSA Program. Dresner was a Brooklyn, NY based federally permitted dealer who conspired with Anthony Joseph to under-report summer flounder landings under the guise of Research Set Aside quota. The scheme involved his personal falsification and internet submission of at least 120 fisheries dealer reports from July 2009 to December 2011, and defrauded the United States of 246,376 pounds of overharvested and underreported fluke valued at $510,000. As part of the plea deal, Dresner agreed to be subject to between $516,000 and $577,000 in combined fines and restitution. The defendant also agreed to make a $15,000 community service payment to the Cornell Cooperative Extension of Suffolk County in order to pay for the enhancement of fluke habitat through the C.C.E.’s Marine Meadows Program. The jointly proposed sentence includes relinquishment of Dresner’s federal dealer license and a ban on accessing the NOAA SAFIS computer system. [http://www.justice.gov/opa/pr/2014/April/14-enrd-424.html](http://www.justice.gov/opa/pr/2014/April/14-enrd-424.html)

Compliance Assistance and Outreach
OLE and GAR SFD/SED have conducted outreach to remind longfin squid and mackerel permit holders of the new requirement to become VMS-compliant. Several owners have opted to relinquish their permits rather than purchase and install a VMS.

Joint/Cooperative Enforcement Highlights
OLE agents delivered a presentation and facilitated discussion on “investigative tools used to combat IUU fishing” at the US / Indonesia IUU Workshop hosted by NOAA OLE. The concepts discussed integrated well with presentations delivered by other NOAA and DOJ personnel. The resultant discussions during the
workshop indicated that the Indonesian delegation garnered numerous ideas for combating IUU fishing in and around their nation.

OLE agents and compliance assistance personnel met with USCG representatives from the USCGC Grand Isle, USCGC Flying Fish, Station Gloucester, SECTOR Boston and District LE at Station Gloucester. The meeting provided an opportunity for NOAA and USCG to discuss the recent Atlantic cod emergency action regulations, ALWTR regulations, and current trends regarding the illegal use of net liners.

**Northeast VMS Program**

Northeast Active VMS Vessel Population: 1,014

Population Breakdown by (VMS) Permits held¹:

- 652 Surfclam/Ocean Quahog (Permit Category 1,6,7)
- 573 Scallop General Category (Cat. A,B,C)
- 442 Multispecies (Cat. A,D,F)
- 344 Scallop Limited Access (Cat. 2,3,5,6,7,8)
- 304 Longfin Squid/Limited Access Mackerel (Cat. 1,T1,3,T3)
- 133 Herring (Cat. A,B,C,E)
- 47 Combination (Multispecies Cat. E)
- 15 Monkfish (Cat. F)

Note: There are 485 groundfish sector vessels and 127 common pool vessels registered to the NE VMS Program. There are 26 sector and 6 common pool vessels on a NMFS – authorized power down Letter of Exemption.

Vessels with Limited Access Longfin Squid and Mackerel permits were required to install and operate a VMS as of September 1, 2014. GARFO sent a reminder bulletin to vessel owners on August 13th, and a clarification bulletin on October 6th. There are a total of 34 VMS non-compliant vessels – 20 skiffs and 14 fishing vessels. Vessel owners who fail to install a VMS will not have their squid/mackerel permits renewed. OLE intends to issue violations to those non-compliant owners whose vessel leaves the dock/mooring.

OLE published a final rule in the Federal Register on December 24, 2014 implementing regulations that codify VMS type approval standards, requirements, procedures, and responsibilities applicable to commercial Enhanced Mobile Transceiver Units (EMTU) and mobile communications service (MCS) providers. The rule will improve enforceability of standards and better ensure all approved units and communications services remain in compliance. The effective date is January 23, 2015. The new regulation may be found at 50 CFR 600, Subpart Q, sections 1500-1518. Additionally, under these new regulations, type approval authority in the Greater Atlantic Region shifts from the Regional Administrator to the OLE Director, consistent with the policy in all other regions.

**VMS Industry Contact Log Report:**

¹ The total count below exceeds the VMS population count since most vessels hold multiple permits
The NE VMS Team addressed 127 industry issues this quarter and closed 102 issues. The most-frequently reported issues were: Declaration and forms assistance, Miscoding, and Declaration failure. A total of 40 issues were referred, primarily to: GARFO APS Division, OLE ASACs or Agents, and, GARFO Sustainable Fisheries Division.

### VMS - Industry Contact Dispositions
#### 1st Quarter Fiscal Year 2015

- **Closed**: 102 (80%)
- **Referred**: 40 (31%)
- **Remain Open**: 25 (20%)

Figure 7: Status of contacts in the 1st quarter of FY2015 (102 closed, 40 referred, 25 remain open).
Observer Program Highlights

During this quarter the observer program deployed on 1,211 trips for 3,034 sea days. Approximately 98% of all selected or observed trips were completed without a reported enforcement incident. There was a total of 19 reported violation reports received and acted upon this quarter. The summary below details the status of observer related complaints during the 1st Quarter of 2015.

Table 3: Summary of Observer Program complaints and status

<table>
<thead>
<tr>
<th>Type of complaint</th>
<th>Number of complaints and status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refusal</td>
<td>13 observer refusal complaints: 3 closed under compliance assistance 1 closed due to lack of evidence 9 ongoing</td>
</tr>
<tr>
<td>Assault</td>
<td>None</td>
</tr>
<tr>
<td>Harassment/Intimidiation</td>
<td>2 observer harassment/intimidation complaints: 1 closed due to lack of evidence 1 ongoing</td>
</tr>
<tr>
<td>Interference</td>
<td>4 observer interference complaints: 1 closed as unfounded 2 closed due to lack of evidence 1 ongoing</td>
</tr>
<tr>
<td>Vessel Safety</td>
<td>None</td>
</tr>
<tr>
<td>Observer Safety</td>
<td>None</td>
</tr>
<tr>
<td>Failure to provide reasonable assistance</td>
<td>None</td>
</tr>
<tr>
<td>Observer gear/sample tampering</td>
<td>None</td>
</tr>
<tr>
<td>Observer program notification</td>
<td>None</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>A $1,000 summary settlement for an observer safety violation from a previous quarter was issued. Two $2,500 summary settlements for observer refusal violations from a previous quarter were issued. A $3,300 summary settlement for observer interference and observer notification violations from a previous quarter was issued and was paid. A $35,000 penalty assessment from an adjudicated refusal case was paid. A $16,625 penalty for observer harassment and interference was assessed by an administrative law judge.</td>
</tr>
</tbody>
</table>
Cases sent to NOAA General Counsel
Enforcement Section (GCES)

- 36 cases opened
- 6 summary settlements issued ($7,150)
  - $4,650 collected
- 8 cases forwarded to GCES

Table 6. Cases sent to GCES

<table>
<thead>
<tr>
<th>Program/Law</th>
<th>Violation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSFCMA</strong></td>
<td><strong>Violation</strong></td>
</tr>
<tr>
<td>(3 cases)</td>
<td>Fishing in Nantucket Lightship Closed Area</td>
</tr>
<tr>
<td></td>
<td>Fishing with undersized net mesh</td>
</tr>
<tr>
<td></td>
<td>Observer refusal</td>
</tr>
<tr>
<td><strong>MMPA</strong></td>
<td><strong>Violation</strong></td>
</tr>
<tr>
<td>(4 case)</td>
<td>Importation of marine mammal</td>
</tr>
<tr>
<td></td>
<td>Unlawful take of marine mammal</td>
</tr>
<tr>
<td></td>
<td>Prohibited importation of marine mammal product – whale sausage, from Norway</td>
</tr>
<tr>
<td></td>
<td>Prohibited importation of marine mammal product</td>
</tr>
<tr>
<td><strong>Atlantic Tuna</strong></td>
<td><strong>Violation</strong></td>
</tr>
<tr>
<td>(1 case)</td>
<td>Fished for, retained, possessed an Atlantic HMS that is less than its minimum size limit</td>
</tr>
</tbody>
</table>
January
7 Council/GARFO Webinar on Supplemental Information Reports (NEPA)
12 SC/OQ Cost Recovery Amendment Public Hearing, Warwick, RI
12 Deep Sea Coral Amendment Public Hearing, Riverhead, NY
13 SC/OQ Cost Recovery Amendment Public Hearing WEBINAR
13 Deep Sea Coral Amendment Public Hearing, Cape May, NJ
13-14 2014 NEFSC Science Plan Workshop, Boston, MA
14 SC/OQ Cost Recovery Amendment Public Hearing, Cape May, NJ
14 Deep Sea Coral Amendment Public Hearing, Washington, DC
15 SC/OQ Cost Recovery Amendment Public Hearing, Berlin, MD
15 Deep Sea Coral Amendment Public Hearing, Virginia Beach, VA
16 Deep Sea Coral Amendment Public Hearing, Berlin, MD
17-19 2015 Interim CCC Meeting, Washington, DC
21-22 Mid-Atlantic Regional Planning Body Public Meeting, New York, NY
22 NE Observer Policy Committee, Danvers, MA

February
3-5 ASMFC Winter Meeting, Alexandria, VA
10-12 Mid-Atlantic Fishery Management Council Meeting, Raleigh, NC
17-19 2015 Interim CCC Meeting
18-20 Bluefish Stock Assessment Data Workshop, Providence, RI
19 NMFS TEWG Stock Status Subgroup Webinar
23-25 National SSC Meeting, Honolulu, HI

March
3-4 National Fish Habitat Board Meeting, Arlington, VA
18-19 SSC Meeting, Baltimore, MD

April
14-16 Mid-Atlantic Fishery Management Council Meeting, Long Branch, NJ
23-27 ASMFC Habitat Committee & ACFHP Meetings, Pidgeon Key, FL
MID-ATLANTIC COUNCIL
2015 Planned Council Meeting Topics

February 10-12, 2015 – Doubletree by Hilton Raleigh Brownstone-University, Raleigh, NC
- Research Set Aside (Cooperative Research)
- Climate Change and Fisheries- Ecosystem Approach to Fisheries Management (EAFM) (Meeting 1)
- Ricks E Savage Award
- Review Surfclam/Ocean Quahog Cost Recovery Amendment public hearing comments and adopt Amendment for submission
- Omnibus Observer Coverage Amendment
- Review Deep Sea Coral Amendment public hearing comments and adopt Amendment for submission

April 14-16, 2015 – Ocean Place Resort, Long Branch, NJ
- Review Tilefish Specifications for 2016/2017
- Discuss Summer Flounder Amendment
- Adopt Monkfish Framework 9
- Update from NMFS River Herring Technical Expert Working Group
- Climate Change and Fisheries-EAFM (Meeting 2)

June 9-11, 2015 – Hilton Virginia Beach Oceanfront, Virginia Beach, VA
- Review Atlantic Mackerel, Squid, Butterfish Specifications for 2016/2017
- Set RH/S Cap for 2016-2018 and review progress on RH/S issues
- Review results of squid latent capacity scoping and establish scope of amendment
- Review Surfclam and Ocean Quahog Specifications for 2016
- Species/Fisheries Interaction Workshop -EAFM

August 11-13, 2015 – Holiday Inn Midtown, New York City, NY
- Swearing-in of new and reappointed Council members
- Election of Officers
- Approve Summer Flounder, Scup, Black Sea Bass Specifications for 2016-2018
- Summer Flounder Amendment Update
- Adopt Bluefish Specifications for 2016
- Review EAFM Guidance Document (First Draft)
- Review Draft Comprehensive Research Plan
- Review/develop habitat policies/objectives
- Adopt action for Council role in Cooperative Research

October 6-8, 2015 – Doubletree Philadelphia Center City, Philadelphia, PA
- Review Spiny Dogfish Specifications for 2016
- Review EAFM Guidance Document (Second Draft)
- Approve Comprehensive Research Plan

December 8-10, 2015 – The Westin, Annapolis, MD
- Adopt Summer Flounder, Scup, Black Sea Bass Recreational Specifications for 2016
- Summer Flounder Amendment Update
- Adopt SSCs 5-year Research Priority Recommendations
- Review Tilefish 5-year IFQ Program Review
- Update Council on status of Surfclam and Ocean Quahog Excessive Shares Amendment
- Adopt EARM Guidance Document
<table>
<thead>
<tr>
<th>FMP/AMD/FW</th>
<th>Issues Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Mackerel/Squid/Butterfish</td>
<td>Deep Sea Corals Amendment</td>
</tr>
<tr>
<td></td>
<td>Slippage Framework</td>
</tr>
<tr>
<td></td>
<td>Squid Latent Capacity</td>
</tr>
<tr>
<td>Summer Flounder/Scup/Black Sea Bass</td>
<td>Black Sea Bass Recreational Management Amendment</td>
</tr>
<tr>
<td></td>
<td>Scup Allocation Amendment</td>
</tr>
<tr>
<td></td>
<td>Comprehensive Summer Flounder Amendment</td>
</tr>
<tr>
<td></td>
<td>Scup GRAs Framework</td>
</tr>
<tr>
<td></td>
<td>Cost Recovery Amendment</td>
</tr>
<tr>
<td></td>
<td>Excessive Shares Amendment</td>
</tr>
<tr>
<td>Omnibus</td>
<td>Standardized Bycatch Reporting Methodology Amendment</td>
</tr>
<tr>
<td></td>
<td>Omnibus ABC Framework</td>
</tr>
<tr>
<td></td>
<td>Omnibus Observer Coverage Amendment</td>
</tr>
<tr>
<td></td>
<td>Regulatory Omnibus Amendment to Simplify Baselines</td>
</tr>
</tbody>
</table>
FOR IMMEDIATE RELEASE
January 27, 2015

PRESS RELEASE

PRESS CONTACT: Mary Clark
(302) 674-2331 (ext. 261)

Mid-Atlantic Council Seeking Applications for Advisory Panel Members

Deadline to Apply: February 27, 2015

The Mid-Atlantic Fishery Management Council is soliciting applications from qualified individuals to serve on eight advisory panels. Advisory panels provide information and recommendations to the Council during the development of fishery management plans, amendments, specifications, and management measures. One of the chief responsibilities of advisory panels is the annual development of Fishery Performance Reports. These reports provide the Council and SSC with information about the factors that influenced fishing effort and catch within each fishery during the previous year.

Advisory panels are composed of individuals with diverse experience and interest in Mid-Atlantic fisheries. Members include commercial fishermen, recreational anglers, for-hire operators, dealers, scientists, environmentalists, and other members of the interested public. Most advisory panels meet 1–2 times per year. Members are compensated for travel and per diem expenses for all meetings. Individuals who are appointed to advisory panels serve for three-year terms. All current advisory panel members must reapply in order to be considered for reappointment.

The Council is accepting applications for the following advisory panels:
- Summer Flounder, Scup, and Black Sea Bass
- Mackerel, Squid, and Butterfish
- Surfclam and Ocean Quahog
- Tilefish
- Bluefish
- Ecosystems, Habitat, and Ocean Planning
- Dogfish (Jointly managed with New England Council)
- Monkfish (Jointly managed with New England Council)

Anyone interested in serving on an advisory panel may apply online or download an application at www.mafmc.org/forms/advisory-panel-application. Applications can also be obtained by calling the Council office at (877) 446-2362 or emailing jsaunders@mafmc.org. Completed applications should be submitted using one of the following methods:

- Online using the form at the web address above;
- Mail to Mid-Atlantic Fishery Management Council, 800 N. State Street, Suite 201, Dover, DE 19901;
- Email to jsaunders@mafmc.org; or
- Fax to (302) 674-5399.

Please include “ADVISORY PANEL” in the subject of your fax or email.

Completed applications must be received no later than 5:00 p.m. February 27, 2015.
Mr. Robins,

At the beginning of this month I provided you with a copy of a comment I submitted regarding the 2015-2017 MSB specifications to the National Marine Fisheries service on behalf of The Town Dock and the owner of the F/V Lightning Bay, Donald Fox.

I'd like to follow that up by requesting that this topic please be considered during the 2016 specification process for MSB.

Please let me know if this will be possible.

Thank you for your time,
Katie Almeida

Katie Almeida
Fisheries Policy Analyst
The Town Dock
45 State Street
Narragansett, RI 02882

Phone: 508-930-2633
Email: kalmeida@towndock.com
December 31, 2014

Richard Robins  
Mid-Atlantic Fishery Management Council  
300 North State Street Suite 201  
Dover, Delaware 19901

Dear Mr. Robins,

The following comment is submitted on behalf of The Town Dock regarding the Squid, Mackerel, and Butterfish 2015 proposed specifications:

We are requesting a change to increase the available quota for Trimester II in the Longfin Squid fishery. In two out of the last three years, Trimester II has closed early, triggering a limit of 2,500 lbs per vessel per trip for the remainder of the period. Some fishing vessels have been able to utilize the RSA program’s Longfin squid to bridge the gap between this shutdown and the start of Trimester III; however, this option will be unavailable in 2015 due to the suspension of the program.

In addition, over the past four years a significant amount of the Longfin quota has been left un-harvested:

<table>
<thead>
<tr>
<th>Year</th>
<th>Un-harvested amount (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>11,951</td>
</tr>
<tr>
<td>2011</td>
<td>10,378</td>
</tr>
<tr>
<td>2012</td>
<td>9,476</td>
</tr>
<tr>
<td>2013</td>
<td>10,911</td>
</tr>
</tbody>
</table>

In recognizing these issues, we request consideration the following proposals in regards to Longfin Squid:

A. Eliminate or relax the provision where Trimester II can only increase by 50%.
B. Increase the rollover amount from Trimester I to Trimester II from 50% to 100%, rather and have it split between Trimester II and III.
C. Reconsider an implementation of a buffer system. The buffer system would take a determined percentage off the top of the yearly T.A.C at the beginning of the season that could be drawn upon if a Trimester is close to being shut down. This would allow the industry to keep fishing activity steady. A suggested buffer amount is 10% of the TAC.

We appreciate the opportunity to provide comments regarding these proposed specifications.

Sincerely,

Ryan Clark  
Vice President
December 31st, 2014

Richard Robins
Mid-Atlantic Fishery Management Council
800 North State Street
Suite 201
Dover, Delaware 19901

Dear Mr. Robins,

I would like to submit a comment regarding the 2015 Squid, Mackerel, and Butterfish proposed specifications.

As a boat owner I would like to see more available quota for Trimester II. Trimester II has closed early in two of the last three years, despite that the overall quota hasn’t been caught for years. I would like you to please consider the following proposal:

An increase of the rollover amount from Trimester I to Trimester II. I would like to see an increase from 50% to 100%.

I greatly appreciate the opportunity to provide comments regarding these proposed specifications.

Sincerely,

Donald Fox, owner F/V Lightning Bay
EDUCATION

MS Marine Biology, May 2014
MS Marine Policy, May 2014
University of Maine - Orono, ME
  ▪ Interdisciplinary masters’ thesis: Assessing growth and habitat preferences of Atlantic halibut off the coast of Maine using biological samples and fishermen’s knowledge.

Post-Baccalaureate Certificate in Geographic Information Systems, 3 of 4 required classes completed
Pennsylvania State University World Campus (online)

BA Biological Sciences, minor in Marine Science and Policy, 2009
Smith College - Northampton, MA
  ▪ Oceans and Climate semester for advanced science students with Sea Education Association, Fall 2007
  ▪ Field-based semester on ecology and conservation in Madagascar with School for International Training, Spring 2008

WORK EXPERIENCE

Restoration Planning Assistant, Sept 2014 – Feb 2015
University of Michigan, under contract to NOAA Fisheries – Orono, ME
  ▪ Assisted with coordination and convening of four NOAA teams tasked with planning major restoration and monitoring efforts on Penobscot River.
  ▪ Wrote draft implementation plan for NOAA restoration and monitoring efforts in the Penobscot River watershed, as well as associated outreach and stakeholder engagement efforts over the next 3-5 years.

Environmental Specialist I, Dec 2013 – Feb 2015
Integrated Statistics, under contract to NOAA Fisheries – Orono, ME
  ▪ Designed procedure of, carried out, and analyzed responses of a phone survey of over 170 river herring harvesters from Maine to South Carolina.
  ▪ Interviewed 9 fishermen for oral history project on river herring and eels in Downeast Maine.
  ▪ Created nine short videos, several written reports, and other outreach materials highlighting fishermen’s knowledge of river herring and American eels.

Graduate Research Assistant, Aug 2011 – May 2014
School of Marine Sciences, University of Maine - Orono, ME
  ▪ Collected (10 samples), prepared (about 100 samples), and analyzed (about 500 samples) halibut otoliths in cooperation with the Maine Department of Marine Resources.
  ▪ Designed procedure of, carried out, and analyzed 25 in-person interviews with commercial halibut fishermen.
  ▪ Performed statistical analysis in R, Microsoft Excel, and ArcGIS.
  ▪ Supervised and advised undergraduate students.
  ▪ Held leadership role in the organization of annual symposium showcasing graduate student research.
JULIA BEATY
RESUME

WORK EXPERIENCE, CONTINUED

Program Assistant, Jan 2010 – Apr 2011
Conservation Intern, June - Dec 2009
Alaska Marine Conservation Council - Anchorage, AK
  ▪ Assisted with several projects related to sustainable fisheries and marine conservation.
  ▪ Used GIS software to map subsistence hunting and fishing areas in the Bering Sea based on interviews with about 90 hunters and elders from 18 rural villages.
  ▪ Managed website, email, and print communications with members and supporters.
  ▪ Represented the organization at many community events, organized a film festival, and played a key role in four large fund-raising events.
  ▪ Recruited, trained, and supervised more than 20 volunteers in various capacities.

Social Events Chairwoman, Mar 2010 – Apr 2011
Alaska Women’s Environmental Network - Anchorage, AK
  ▪ Board member of non-profit focused on fostering women’s leadership in environmental fields.
  ▪ Assisted with development of professional mentorship program and annual fundraiser.

Natural History Day Camp Teacher/Family Program Leader, summer 2007 and 2008
Wellfleet Bay Wildlife Sanctuary - Wellfleet, MA
  ▪ Independently planned and implemented outdoor lessons for groups of young campers.
  ▪ Led a variety of family programs and nature walks for the general public.

Education Intern, Summer 2006
Waquoit Bay National Estuarine Research Reserve - Falmouth, MA
  ▪ Led and assisted with various environmental education programs for the general public.

PUBLICATIONS


PROFESSIONAL TRAINING
  ▪ Strengthening Your Facilitation Skills, Levels 1 &2, University of Maine Cooperative Extension
  ▪ Wellstone Action – Camp Wellstone, Activist Track (3-day grassroots organizing and leadership training)
  ▪ Alaska Women’s Environmental Network Professional Mentorship Program

AWARDS
  ▪ American Fisheries Society A. Stephen Wiethman Best Student Paper Award in Socioeconomics, honorable mention 2013
  ▪ Maine Sea Grant Scholar 2011 – 2012
January 30, 2015

Ben Hartig
4055 Faber Place Dr.
Suite 201
North Charleston, SC 29405

Dear Chairman Hartig:

We are deeply concerned that our previously unsuccessful efforts to establish a northern management area in the Snapper Grouper Fishery Management Plan have left a regulatory loophole that poses an immediate risk to the blueline tilefish resource in the Mid-Atlantic region. As you are aware, based on the 2006 advice of the South Atlantic Fishery Management Council, two of our member states—Virginia and Maryland—adopted regulations to ensure the sustainability of their fisheries. Unfortunately, those same fish are now being targeted by a directed longline fishery landing in other Mid-Atlantic states that do not have landing regulations. Headboats from states north of Maryland are also operating without limits on the same population.

The scale of the unregulated commercial landings in the Mid-Atlantic rivals the entire ACL for the species. We believe the situation warrants immediate action to ensure the viability of the blueline tilefish resource in the Mid-Atlantic.

At our December meeting, our Council passed the following motion:

Move that the Council send a letter to Mid-Atlantic and Southern New England states requesting the states adopt consistent incidental commercial trip limits and recreational bag limits for blueline tilefish to prevent the unmanaged expansion of this data-poor fishery.

Letters have been sent to the relevant state directors requesting that they adopt regulations to close this critical regulatory gap. A copy of one of them is attached.
We are committed to working closely with your Council to develop long-term solutions to ensure the sustainability of this fishery in the Mid-Atlantic. We recognize that blueline tilefish is a data-limited stock and look forward to exploring opportunities to advance the state of the science on the species in our region. Meanwhile, we look forward to working with you and our respective NMFS regional offices to explore emergency or interim actions, as appropriate, to control the unmanaged fishery in the Mid-Atlantic.

Sincerely,

[Signature]

Richard B. Robins, Jr.
Chairman

att: Letter to Delaware Director

cc: John Bullard, NMFS
    Roy Crabtree, NMFS
January 30, 2015

David Saveikis, Director
Division of Fish & Wildlife
Dept. of Nat. Res. & Env. Control
89 Kings Highway
Dover, DE 19901

Dear Director Saveikis:

This letter requests that your state agency consider adopting incidental commercial trip limits and recreational bag limits for blueline tilefish that complement other landing regulations in the Mid-Atlantic region in order to prevent the unmanaged exploitation of this fishery. Virginia and Maryland have previously established regulations for blueline tilefish to ensure the sustainability of the fisheries operating from those states, and their regulations are attached herewith.

The management of blueline tilefish in the Mid-Atlantic region has been hampered by a lack of coordination at the federal level, resulting in a patchwork of state regulations that do not extend effectively throughout the range of the fishery. Blueline tilefish are managed by the South Atlantic Fishery Management Council and the latest assessment (SEDAR 32, 2013) indicated that the stock is overfished and overfishing is occurring. When the South Atlantic Council sharply reduced the Annual Catch Limit (ACL) for the species in 2014 by emergency action, the regulatory gap in the Mid-Atlantic was exploited and commercial landings increased sharply (Figure 1). The MA-VA group cannot be further broken down due to confidentiality issues, but most of the increase in 2013 and 2014 came from New Jersey. The present, unmanaged loophole fishery for blueline tilefish in the Mid-Atlantic poses a threat to the sustainability of this resource.

![Figure 1. Northeast dealer weighout landings of blueline tilefish](image)

*Preliminary Blueline Tilefish NE Dealer Data (2014 thru 11/17)*
The Mid-Atlantic Council is committed to working with the South Atlantic Council and the regional offices of NMFS to develop long term solutions for the coordinated management of blueline tilefish in the Mid-Atlantic. We are also committed to working with the South Atlantic Council and the Agency to explore emergency or interim actions, as appropriate under the Magnuson-Stevens Fishery Conservation and Management Act to bring the unmanaged components of the fishery in the Mid-Atlantic region under sustainable management.

As we renew our efforts to address the management of this fishery at the federal level, we would request your consideration of the following motion passed by the Mid-Atlantic Fishery Management Council at our December meeting:

Move that the Council send a letter to Mid-Atlantic and Southern New England states requesting the states adopt consistent incidental commercial trip limits and recreational bag limits for blueline tilefish to prevent the unmanaged expansion of this data-poor fishery.

Historically, the commercial fishery north of North Carolina consisted of incidental interactions by vessels targeting black sea bass or golden tilefish. Beginning in the early to mid-2000’s, a recreational “deep-drop” fishery emerged in the region, primarily in the area of the Nor’east Canyon, with landings predominantly in Virginia. The deep drop recreational fishery emerged quickly and caught a mix of species including blueline tilefish, golden tilefish, snowy grouper, wreckfish, barrelfish, and black-bellied rosefish, among others. These species stratify by depth in the region and the blueline tilefish were readily available in depths of 45-70 fathoms. While it was emerging, the recreational deep-water fishery generated a steady stream of new IGFA world records for species in the complex, yielding 22 all-tackle IGFA records from 2005 through 2009. The recreational fishery included two distinct modalities - directed trips focused on deep-water species and mixed-mode trips that direct on tilefish and other deepwater species for a portion of an offshore trip that is generally focused on HMS species (pelagics). As the fishery continued to gain attention, in 2006 the South Atlantic Council wrote the Virginia Marine Resources Commission (VMRC) to express concern over the sustainability of the emerging fishery, due to the intrinsic biological characteristics of the species, which make them susceptible to overexploitation. Blueline tilefish are long-lived and are relatively sedentary, making them vulnerable to localized depletion. They are also characterized as a species facing high risk based on the 2009 PSA (productivity susceptibility analysis) analysis performed by MRAG.\(^1\)

In response to the concerns raised by the South Atlantic Council, following a series of staff briefings and public hearings, the VMRC developed recreational and commercial regulatory measures. Recognizing that the recreational fishery was a uniquely high quality fishery, in 2007 the VMRC sought to ensure its sustainability by adopting a recreational bag limit of 7 tilefish (blueline or golden) per person. Furthermore, based on the biological concerns about the species’ ability to withstand directed commercial fishing, and the lack of a historical dependence on the species commercially, the VMRC developed incidental commercial trip limits of 300 pounds for blueline tilefish. Maryland followed suit with similar regulations. The federal FMP overseeing the management of the species subsequently allowed a substantial expansion of commercial and recreational fisheries for blueline tilefish in the South Atlantic. Commercial landings increased dramatically between 2005 and 2010, predominantly in North Carolina. By the time the next stock assessment was conducted in 2013 (SEDAR 32), the

\(^1\) [http://www.safmc.net/Portals/6/Meetings/Council/BriefingBook/Jun09/SSC/A11_EWGPSACatchLimits.pdf](http://www.safmc.net/Portals/6/Meetings/Council/BriefingBook/Jun09/SSC/A11_EWGPSACatchLimits.pdf)
assessment concluded that the blueline tilefish stock was overfished and overfishing was occurring.

The efforts by our member states Virginia and Maryland to ensure the sustainability of the blueline tilefish fishery off of their coasts have proved inadequate due to a lack of coordinated management in federal waters where the species is caught. Consequently, some headboats from states north of Maryland have been fishing on the same resource without any bag limits. Also, a small fleet of commercial longline vessels from North Carolina and other states have directed on the same population of fish, and they are now being landed in states north of Maryland that have not adopted commercial trip limits, most notably in New Jersey.

The need for federal coordination in the Mid-Atlantic region was recognized and explored unsuccessfully in Amendment 18 to the Snapper-Grouper Fishery Management Plan (FMP). The Mid-Atlantic Fishery Management Council and the VMRC supported the establishment of a snapper-grouper management area north of North Carolina that would have allowed for the development of regionally appropriate regulatory measures. After NOAA General Counsel questioned the need to establish a northern management area in the FMP, the South Atlantic Council did not adopt the northern management area alternative in Amendment 18. As a consequence, the regulatory loophole in the Mid-Atlantic has persisted, leaving the blueline tilefish population in the Mid-Atlantic vulnerable to unmanaged and unsustainable exploitation.

We look forward to working with our state and federal management partners to ensure a sustainable future for this fishery in the Mid-Atlantic and appreciate your consideration of this important issue. Please contact me or Dr. Chris Moore if you have any questions regarding our request or require additional information.

Sincerely,

Richard B. Robins, Jr.
Chairman

att: Maryland and Virginia Blueline Tilefish Regulations

cc: Ben Hartig, SAFMC
    Michelle Duvall, SAFMC
    Sam Rauch, NMFS
    John Bullard, NMFS
    Roy Crabtree, NMFS
Maryland and Virginia Blueline Tilefish Regulations Overview (accessed online 1/30/15)

Maryland

Commercial

<table>
<thead>
<tr>
<th>Species</th>
<th>Gear Type</th>
<th>Season</th>
<th>Sizes</th>
<th>Limits</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Tilefish</td>
<td>Hook &amp; Line, Net, Pot, Trap, Trotline, Seine</td>
<td>1/1/2014 - 12/31/2014</td>
<td>None</td>
<td>300 lbs of species listed under comments (excludes individuals with federal Golden Tilefish Quote)</td>
<td>Includes: (a) Blueline tilefish (Caulolatilus microps), (b) Golden tilefish (Lopholatilus chamaeleonticeps), and (c) Sand tilefish (Malacanthus plumieri). Last updated on 1/7/2013 10:51:18 AM.</td>
</tr>
</tbody>
</table>

Recreational

<table>
<thead>
<tr>
<th>Species</th>
<th>Minimum Size Limits</th>
<th>Season</th>
<th>Creel Limit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tilefish species</td>
<td>None</td>
<td>Open Year Round</td>
<td>Daily—7 in aggregate</td>
<td>Tilefish species [<a href="http://www.dsd.state.md.us/comar/gnttile.aspx?file=06.02.05.29.htm">www.dsd.state.md.us/comar/gnttile.aspx?file=06.02.05.29.htm</a>]</td>
</tr>
</tbody>
</table>

Virginia

Commercial

A. It shall be unlawful for any person harvesting tilefish when commercial fishing, as described in 4VAC20-1120-20, to do any of the following:

1. Possess aboard any vessel in Virginia waters any amount of tilefish species, in excess of 500 pounds whole weight or 455 pounds gutted weight.

2. Possess aboard any vessel in Virginia waters any amount of blueline tilefish in excess of 300 pounds whole weight or 273 pounds gutted weight.

3. Possess aboard any vessel any amount of golden tilefish during any in-season closure announced by the National Marine Fisheries Service.

B. It shall be unlawful for any vessel to land in Virginia more than 175 pounds of grouper, as described in 4VAC20-1120-20, per day when commercial fishing.

C. It shall be unlawful for any person to transfer at sea to another person or vessel any harvest of tilefish or grouper.

Recreational

A. The recreational harvest, landing and possession limit for tilefish, as described in 4VAC20-1120-20, shall be seven fish. It shall be unlawful for any person to recreationally harvest, land or possess more than seven tilefish within or without Virginia tidal waters. When fishing from any boat or vessel where the entire catch is held in a common hold or container, the possession limit for tilefish shall be for the boat or vessel and shall be equal to the number of persons on board legally eligible to fish multiplied by seven. The captain or operator of the boat or vessel shall be responsible for any boat or vessel possession limits.
PREAMBLE
The organization practices and procedures contained herein shall constitute the procedures that will be followed by the Council, except when they conflict with or are incomplete as to the requirements of the Magnuson Fishery Conservation and Management Act, or 50 CFR Part 600 Subparts A, B, and C, which shall prevail in any event.

Table of Contents

1.0 Council Functions and Responsibilities ................................................................. 5

2.0 Council Organization .............................................................................................. 7
  2.1 Council Composition and Jurisdictions ................................................................. 7
    2.1.1 Voting Members .......................................................................................... 7
    2.1.2 Non-Voting Members ................................................................................. 7
  2.2 Oath of Office ........................................................................................................ 8
  2.3 Council Members .................................................................................................. 8
    2.3.1 Term of Appointment - Voting Members ...................................................... 8
    2.3.2 Council Nomination and Appointment Procedures ...................................... 8
    2.3.3 Nomination Deadlines ................................................................................. 8
    2.3.4 Rules of Conduct ........................................................................................ 9
    2.3.5 Lobbying ...................................................................................................... 9
    2.3.6 Financial Interest ........................................................................................ 10
    2.3.7 Recusal ........................................................................................................ 12
    2.3.8 Security Assurances .................................................................................... 12
    2.3.9 Council Member Training .......................................................................... 12
    2.3.10 Removal ..................................................................................................... 13
    2.3.11 Council Member Compensation ................................................................. 13
  2.4 Officers and Terms of Office .................................................................................. 14
    2.4.1 General ........................................................................................................ 14
    2.4.2 Nominations ................................................................................................ 14
    2.4.3 Elections ....................................................................................................... 14
    2.4.4 Special Elections .......................................................................................... 14
    2.4.5 Authority of the Chair ................................................................................. 15
  2.5 Designees .............................................................................................................. 15
  2.6 Advisory Groups ................................................................................................... 16
    2.6.1 Scientific and Statistical Committee ............................................................ 16
    2.6.2 Advisory Panels .......................................................................................... 20
  2.7 Working Groups .................................................................................................... 21
  2.8 Ad-Hoc Committees ............................................................................................. 21
  2.9 Council Coordination Committee .......................................................................... 21

3.0 Council Meeting and Hearings ............................................................................. 22
  3.1 Meetings ................................................................................................................ 22
    3.1.1 General ........................................................................................................ 22
    3.1.2 Frequency ..................................................................................................... 22
    3.1.3 Location ........................................................................................................ 22
    3.1.4 Notice .......................................................................................................... 22
    3.1.5 Conduct of Meetings ..................................................................................... 23
    3.1.6 Deeming Process ......................................................................................... 24
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.7 Record</td>
</tr>
<tr>
<td>3.1.8 Closed Meetings</td>
</tr>
<tr>
<td>3.1.9 Agendas</td>
</tr>
<tr>
<td>3.1.10 Special Accomodations</td>
</tr>
<tr>
<td>3.2 Hearings</td>
</tr>
<tr>
<td>3.2.1 General</td>
</tr>
<tr>
<td>3.2.2 Notice</td>
</tr>
<tr>
<td>3.2.3 Conduct of Hearings</td>
</tr>
<tr>
<td>3.2.4 Record</td>
</tr>
<tr>
<td>4.0 Employment Practices</td>
</tr>
<tr>
<td>4.1 Staffing</td>
</tr>
<tr>
<td>4.1.1 Executive Director</td>
</tr>
<tr>
<td>4.1.2 Employment Practices</td>
</tr>
<tr>
<td>4.1.3 Staff Training</td>
</tr>
<tr>
<td>4.2 Details of Government Employees</td>
</tr>
<tr>
<td>4.3 Personnel Actions</td>
</tr>
<tr>
<td>4.3.1 Probation</td>
</tr>
<tr>
<td>4.3.2 Unauthorized Absences</td>
</tr>
<tr>
<td>4.3.3 Employee Inquiries, Requests, Suggestions and Grievances</td>
</tr>
<tr>
<td>4.3.4 Disability</td>
</tr>
<tr>
<td>4.3.5 Reprimand or Suspension Without Pay</td>
</tr>
<tr>
<td>4.3.6 Reasons for Disciplinary Action</td>
</tr>
<tr>
<td>4.3.7 Dismissal</td>
</tr>
<tr>
<td>4.4 Salary and Compensation Administration</td>
</tr>
<tr>
<td>4.4.1 General</td>
</tr>
<tr>
<td>4.4.2 Pay Bands</td>
</tr>
<tr>
<td>4.4.3 Wage Increases for Full Time Employees</td>
</tr>
<tr>
<td>4.4.4 Incentive/Special Act and Service Awards</td>
</tr>
<tr>
<td>4.4.5 Work Schedule and Overtime Pay</td>
</tr>
<tr>
<td>4.4.6 Recruitment</td>
</tr>
<tr>
<td>4.5 Leave</td>
</tr>
<tr>
<td>4.5.1 Annual Leave</td>
</tr>
<tr>
<td>4.5.2 Sick Leave</td>
</tr>
<tr>
<td>4.5.3 Paid Holidays</td>
</tr>
<tr>
<td>4.5.4 Administrative Leave</td>
</tr>
<tr>
<td>4.5.5 Personal Leave</td>
</tr>
<tr>
<td>4.5.6 Maternity Leave</td>
</tr>
<tr>
<td>4.5.7 Family Leave</td>
</tr>
<tr>
<td>4.5.8 Leave and Retiree Health Insurance Accounts</td>
</tr>
<tr>
<td>4.6 Employee Benefits</td>
</tr>
<tr>
<td>4.6.1 Health Insurance</td>
</tr>
<tr>
<td>4.6.2 Life Insurance</td>
</tr>
<tr>
<td>4.6.3 Retirement</td>
</tr>
<tr>
<td>4.6.4 Long Term Disability Insurance</td>
</tr>
<tr>
<td>4.7 Experts and Consultants</td>
</tr>
<tr>
<td>5.0 Travel Reimbursement Procedures</td>
</tr>
<tr>
<td>5.1 General</td>
</tr>
<tr>
<td>5.2 Council, AP, SSC Members</td>
</tr>
<tr>
<td>5.3 Council staff, members of plan teams, and others</td>
</tr>
</tbody>
</table>
5.4 Reimbursement ............................................................................................................ 39
5.5 Receipts ....................................................................................................................... 39
5.6 Foreign Travel .............................................................................................................. 39
5.7 Invitational Travel ....................................................................................................... 39

6.0 Financial Management .............................................................................................. 40
6.1 Cooperative Agreements .......................................................................................... 40
   6.1.1 Administrative ................................................................................................... 40
   6.1.2 Programmatic ................................................................................................... 41
6.2 Procurement .............................................................................................................. 42
6.3 Property Management System .................................................................................. 42
6.4 Space Management .................................................................................................. 43
6.5 Accounting System .................................................................................................. 43
6.6 Audits ....................................................................................................................... 44
6.7 Financial Reports ...................................................................................................... 44

7.0 Record Keeping ......................................................................................................... 45
7.1 Definitions: ................................................................................................................ 45
7.2 Administrative Records for FMPs .............................................................................. 45
7.3 Disposition of Records .............................................................................................. 46
7.4 Permanent Records .................................................................................................. 46

8.0 Amendments to Statement of Organization Practices and Procedures ................. 49
8.1 Amendments .............................................................................................................. 49

The SOPP is available on the Council’s website at http://www.mafmc.org/about. Hard copies are available upon request by calling 302-674-2331 or by submitting a written request to 800 North State Street, Suite 201, Dover, DE 19901.

1.0 COUNCIL FUNCTIONS AND RESPONSIBILITIES

In accordance with the requirements of the Act, the Council shall:

a. Prepare and submit to the Secretary of Commerce (Secretary) or his or her delegate a fishery management plan with respect to each fishery requiring conservation and management within the Council’s geographic area of authority and such plan amendments as are necessary.

b. Review and comment on applications for foreign fishing transmitted to the Council under a governing international fishery agreement by the Secretary of State under the terms of the Act.

c. Prepare comments on any fishery management plan or amendments prepared by the Secretary which are transmitted to the Council under Section 304(c)(4) of the Act. Take part in review and comment (“deeming”) process for proposed regulations prepared by the Secretary which are transmitted to the Council under Section 303(c) of the Act.

d. Conduct public hearings at appropriate times and locations in the Council’s membership area, to allow interested persons an opportunity to be heard in the development of fishery management plans and amendments and with respect to the administration and implementation of the provisions of the Act. When conducting a hearing outside Council’s usual jurisdiction, the Council will first consult with the Council in that area.

e. Submit to the Secretary such periodic reports as the Council deems appropriate, and any other relevant report which may be requested by the Secretary.

f. Review on a continuing basis, and revise as appropriate, the assessments and specifications contained in each fishery management plan for each fishery within its geographical area with regard to:

(1) The present and probable future condition of the fishery;

(2) The maximum sustainable yield from the fishery;

(3) The optimum yield from the fishery;
(4) The capacity and the extent to which fishing vessels of the United States will harvest the optimum yield on an annual basis; and

(5) The portion of such optimum yield on an annual basis which will not be harvested by fishing vessels of the United States and can be made available for foreign fishing.

g. Develop annual catch limits for each of its managed fisheries that may not exceed the fishing level recommendations established by mechanisms and processes under the Act.

h. Develop multi-year research priorities for fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes, in the manner prescribed in the Act.

i. Conduct any other activities which are required by or provided for in the Act or which are necessary and appropriate to the foregoing functions.

The Council expects to participate in international negotiations concerning any fishery matters under the cognizance of the Council. The Council also expects to be consulted during preliminary discussions leading to U.S. positions on international fishery matters, including the allocation of fishery resources to other nations within its area of authority.
2.0 COUNCIL ORGANIZATION

2.1 Council Composition and Jurisdictions

   a. The Council has 21 voting members and 4 non-voting members. The states of New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, and North Carolina are represented on the Council. 5 non-voting members. The Council’s geographic area of authority includes the Exclusive Economic Zone (EEZ) of the Atlantic Ocean, seaward of the preceding states. The boundary between the Mid-Atlantic and South Atlantic Councils begins at the seaward boundary between the States of Virginia and North Carolina (36°33'01.0" N. lat), and proceeds due east to the point of intersection with the outward boundary of the EEZ as specified in the Magnuson-Stevens Act.

2.1.1 Voting Members

The voting members of the Council shall be:

   a. The principal state official in the government position with marine fishery management responsibility and expertise in each constituent state, who is designated as such by the Governor of the State, so long as the official continues to hold such position, or the designee of such official.

   b. The Regional Administrator of the National Marine Fisheries Service (NMFS) for the NortheastGreater Atlantic Region, so long as the Administrator continues to hold such position, or a designee;

   c. 13 members appointed by the Secretary of Commerce.

       (1) 7 obligatory seats are state-specific and must be filled by one individual from each of the Council’s constituent states.

       (2) 6 at-large seats may be filled by individuals from any constituent state.

2.1.2 Non-Voting Members

   a. The non-voting members of the Council shall be:

       (1) The Northeast Regional Director of the U.S. Fish and Wildlife Service, or a designee;

       (2) The Commander of the 5th District Coast Guard District, or a designee;

       (3) The Executive Director of the Atlantic States Marine Fisheries Commission, or a designee;

       (4) A representative of the U.S. Department of State, designated for such purpose by the Secretary of State, or a designee.

   b. Non-voting members of the Council may serve on committees of the Council and may serve as chairpersons of committees and, as members of the committee, may initiate and second motions, as well as vote on matters that pertain to the committee. At meetings of the Council, non-voting members may neither initiate nor second motions, nor vote on matters that may be classified as business of the Council. They may, however, participate fully in discussions of such matters.
2.2 Oath of Office
As trustees of the nation’s fishery resources, all voting members must take an oath specified by the Secretary as follows:

I, [name of the person taking oath], as a duly appointed member of a Regional Fishery Management Council established under the Magnuson-Stevens Fishery Conservation and Management Act, hereby promise to conserve and manage the living marine resources of the United States of America by carrying out the business of the Council for the greatest overall benefit of the Nation. I recognize my responsibility to serve as a knowledgeable and experienced trustee of the Nation’s marine fisheries resources, being careful to balance competing private or regional interests, and always aware and protective of the public interest in those resources. I commit myself to uphold the provisions, standards, and requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law, and shall conduct myself at all times according to the rules of conduct prescribed by the Secretary of Commerce. This oath is given freely and without mental reservation or purpose of evasion.

2.3 Council Members

2.3.1 Term of Appointment - Voting Members
Voting members (other than principal state officials, the Regional Administrator, or their designees) are appointed for a term of three years and may be reappointed. A voting member’s Council service of 18 months or more during a term of office will be counted as service for the entire three-year term. The anniversary date for measuring terms of membership is August 11. The Secretary may designate a term of appointment shorter than three years, if necessary, to provide for balanced expiration of terms of office. Members may not serve more than three consecutive terms. A member who has completed three consecutive terms will be eligible for appointment to another term one full year after completion of the third consecutive term.

2.3.2 Council Nomination and Appointment Procedures
When the terms of both an obligatory member and an at-large member expire concurrently, the Governor of the state holding the expiring obligatory seat may indicate that the nominees who were not selected for appointment to the obligatory seat may be considered for appointment to an at-large seat, provided that the resulting total number of nominees submitted by that Governor for the expiring at-large seat is no fewer than three different nominees.

2.3.3 Nomination Deadlines
Nomination packages (Governor's) letters and completed nomination kits must be forwarded by express mail under a single mailing to arrive at the address specified by the Assistant Administrator by March 15. For appointments outside the normal cycle, the Secretary will provide a deadline for receipt of nominations to the affected Council and state governors.

a. Obligatory seats: (1) The Governor of the state for which the term of an obligatory seat is expiring should submit the names of at least three qualified individuals to fill that seat by the March 15 deadline. (2) If the Governor fails to provide a nomination letter and at least three complete nominations kits by March 15, the obligatory seat will remain vacant until all required information has been received and processed and the Secretary has made the appointment.

b. At-large seats; (1) if a Governor chooses to submit nominations for an at-large seat, he/she must submit lists that contain at least three qualified nominees for each vacant
A nomination letter and a nomination kit for each qualified nominee must be forwarded by express mail under a single mailing to arrive at the address specified by the Assistant Administrator by March 15. (2) Nomination packages that are not substantially complete by March 15 may be returned to the nominating Governor. At-large members will be appointed from among the nominations submitted by the governors who complied with the nomination requirements.

2.3.4 Rules of Conduct

Council members, employees, and contractors must comply with the Federal Cost Principles Applicable to Regional Fishery Management Council Grants and Cooperative Agreements, especially with regard to lobbying, and other restrictions with regard to lobbying as specified in 2.3.5 (Lobbying) of this part.

2.3.5 Lobbying

a. Council members, employees and contractors must comply with the requirement of 31 U.S.C. § 1352 and Department of Commerce implementing regulations published at 15 CFR Part 28, "New Restrictions on Lobbying." These provisions generally prohibit the use of Federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with the award. Because the Council receives in excess of $100,000 in Federal funding, the regulations mandate the Council must complete Form SF-LLL, "Disclosure of Lobbying Activities," regarding the use of non-Federal funds for lobbying. The Form SF-LLL shall be submitted within 30 days following the end of the calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed. The recipient must submit the Forms SF-LLL, including those received from sub-recipients, contractors, and subcontractors, to the Grants Officer.

b. Council members, employees, and contractors must comply with the Federal Cost Principles Applicable to Regional Fishery Management Council Grants and Cooperative Agreements summarized as follows:

(1) Either Title 2 CFR Part 200 - Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards or Title 2 CFR Part 225 - Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87), depending on the year of the award, is applicable to the Federal assistance awards issued to the Council.

(2) The purpose of the cost principles at 2 CFR Parts 200 and 225 are to define what costs can be paid on Federal awards issued to non-profit organizations. The regulations establish both general principles and detailed items of costs.

(3) Under 2 CFR Parts 200 and 225, costs for certain lobbying activities are unallowable as charges to Federal awards. These activities would include any attempts to influence:

i) The introduction of Federal or state legislation; or

ii) The enactment of a modification of any pending legislation by preparing, distributing, or using publicity or propaganda, or by urging members of the general public to contribute to or to participate in any demonstration, march, rally, fundraising drive, lobbying campaign, or letter writing or telephone campaign.
(4) Generally, costs associated with providing a technical and factual presentation directly related to the performance of a grant, through hearing testimony, statements, or letters to Congress or a state legislature are allowable if made in response to a documented request.

(5) Costs associated with lobbying to influence state legislation in order to reduce the cost or to avoid material impairment of the organization's authority to perform the grant are also allowable.

2.3.6 Financial Interest

a. Financial interest in harvesting, processing, lobbying, advocacy, or marketing includes:

   (1) Stock, equity, or other ownership interests in, or employment with, any company, business, fishing vessel, or other entity or employment with any entity that has any percentage ownership in or by another entity engaging in any harvesting processing, lobbying, advocacy, or marketing activity in any fishery under the jurisdiction of the Council concerned;

   (2) Stock, equity, or other ownership interests in, or employment with, any company or other entity that has any percentage ownership in or by another entity that provides equipment or other services essential to harvesting, processing lobbying, advocacy, or marketing activities in any fishery under the jurisdiction of the Council concerned, such as a chandler or a dock operation;

   (3) Employment with, or service as an officer, director, or trustee of, an association whose members include companies, vessels, or other entities engaged in any harvesting, processing, lobbying, advocacy, or marketing activities, or companies or other entities providing services essential to harvesting, processing, lobbying, advocacy, or marketing activities in any fishery under the jurisdiction of the Council concerned; and

   (4) Employment with an entity that has any percentage ownership in or by another entity providing consulting, legal, or representational services to any entity engaging in, or providing equipment or services essential to harvesting, processing, lobbying, advocacy, or marketing activities in any fishery under the jurisdiction of the Council concerned, or to any association whose members include entities engaged in the activities described in paragraphs (a) and (b) of this section.

b. Financial interest in harvesting, processing, lobbying, advocacy, or marketing does not include: stock, equity, or other ownership interests in, or employment with, an entity engaging in scientific fisheries research in any fishery under the jurisdiction of the Council concerned, unless it is covered under paragraph (a) of the definition. A financial interest in such entities is covered by 18 U.S.C. § 208, the Federal conflict-of-interest statute.

2.3.6.1 Financial Interest Form

a. Financial Interest Form means NOAA Form 88-195, "STATEMENT OF FINANCIAL INTERESTS For Use by Voting Members of, and Nominees to, the Regional Fishery Management Councils, and members of the Scientific and Statistical Committee (SSC)" or such other form as the Secretary may prescribe.

(1) Reporting. The Act requires the disclosure of any financial interest in harvesting, processing, lobbying, advocacy, or marketing activity that is being, or will be, undertaken within any fishery over which the Council concerned has jurisdiction. An
affected individual must disclose such financial interest held by that individual; the
affected individual's spouse, minor child, or partner; or any organization (other than
the Council) in which that individual is serving as an officer, director, trustee,
partner, or employee. The information required to be reported must be disclosed on
the Financial Interest Form (as defined in paragraph (a) of this section), or such
other form as the Secretary may prescribe.

(2) The Financial Interest Form must be filed by each nominee for Secretarial
appointment to the Council with the Assistant Administrator by April 15 or, if
nominated after March 15, one month after nomination by the Governor. A seated
voting member appointed by the Secretary must file a Financial Interest Form with
the Executive Director of the appropriate Council within 45 days of taking office;
must file an update of his or her statement with the Executive Director of the
appropriate Council within 30 days of the time any such financial interest is acquired
or substantially changed by the affected individual or the affected individual's
spouse, minor child, or partner, or any organization (other than the Council) in which
that individual is serving as an officer, director, trustee, partner, or employee; and
must update his or her form annually and file that update with the Executive Director
of the appropriate Council by February 1 of each year, regardless of whether any
information has changed on that form.

(3) The Executive Director must, in a timely manner, provide copies of and updates to
the Financial Interest Forms of appointed Council members to the NMFS Regional
Administrator, the Regional Attorney who advises the Council, the Department of
Commerce Assistant General Counsel for Administration, and the NMFS Office of
Sustainable Fisheries. These completed Financial Interest Forms shall be kept on
file in the office of the NMFS Regional Administrator and at the Council offices, and
shall be made available for public inspection at such offices during normal office
hours. In addition, the forms shall be made available at each Council meeting or
hearing and shall be posted for download from the Internet on the Council's website.

(4) The Council must retain the Financial Interest Form for a Council member for at
least 5 years after the expiration of that individual's last term.

(5) An individual being considered for appointment to an SSC must file the Financial
Interest Form with the Regional Administrator for the geographic area concerned
within 45 days prior to appointment. A member of the SSC must file an update of his
or her statement with the Regional Administrator for the geographic area concerned
within 30 days of the time any such financial interest is acquired or substantially
changed by the SSC member or the SSC member's spouse, minor child, or partner,
or any organization (other than the Council) in which that individual is serving as an
officer, director, trustee, partner, or employee; and must update his or her form
annually and file that update with the Regional Administrator by February 1 of each
year.

(6) An individual who serves as an SSC member to more than one Council shall file
Financial Interest Forms with each Regional Administrator for the geographic areas
concerned.

(7) The Regional Administrator shall maintain on file the Financial Interest Forms of all
SSC members for at least five years after the expiration of that individual's term on
the SSC. Such Forms are not subject to Sections 302(j)(5)(B) and (C) of the Act.
(8) It is unlawful for Council nominees, affected Council members, and members of the SSC to knowingly and willfully fail to disclose, or to falsely disclose any financial interest or to knowingly vote on a Council decision in violation of 50 CFR § 600.235. In addition to the penalties provided under 50 CFR § 600.735, a violation may result in removal of the individual from Council membership.

2.3.7 Recusal

a. Affected Members may not vote on any Council decision that would have a significant and predictable effect on a disclosed financial interest. Any individual who believes that a Council decision would have such an effect may, at any time before a vote is taken, announce to the Council his or her intent not to vote on the decision and identify the financial interest that would be affected. An individual who is recused from voting may participate in Council and committee deliberations relating to the decision, after notifying the Council of the voting recusal and identifying the financial interest that would be affected.

b. At the request of an Affected Member or upon the initiative of an appropriate designated official (See Section 302(j)(1)(b)), such official shall determine for the record whether a Council decision would have a significant and predictable effect on that individual's financial interest. The determination will be based upon a review of the information contained in the individual's financial disclosure form and any other reliable and probative information provided in writing. All information considered will be made part of the public record for the decision. At the beginning of each Council meeting, or during a Council meeting at any time reliable and probative information is received, the designated official shall announce the receipt of information relevant to a determination concerning recusal, the nature of that information, and the identity of the submitter of such information. If the designated official determines that the affected individual may not vote, the individual may state for the record how he or she would have voted. The Council Chair may not allow such an individual to cast a vote.

2.3.8 Security Assurances

a. The Department of Commerce Office of Security will issue security assurances to Council members following completion of favorable background investigations. A Council member's appointment is conditional until such time as the background investigation has been favorably adjudicated. The Secretary will revoke the member's appointment if that member receives an unfavorable background investigation. In instances in which Council members may need to discuss, at closed meetings, materials classified for national security purposes, the agency of individual (e.g., Department of State, U.S. Coast Guard) providing such classified information will be responsible for ensuring that Council members and other attendees have the appropriate security clearances.

2.3.9 Council Member Training

a. The Secretary shall provide a training course covering a variety of topics relevant to matters before the Councils and shall make the training course available to all Council members and staff and staff from NMFS regional offices and science centers. To the extent resources allow, the Secretary will make the training available to Council committee and advisory panel members.
b. Council members appointed after January 12, 2007, shall, within one year of appointment, complete the training course developed by the Secretary. Any Council member who completed such a training course within 24 months of January 12, 2007, is considered to have met the training requirement of this section.

2.3.10 Removal

The Secretary of Commerce may remove for cause any Secretarial appointed member of a Council in accordance with Section 302(b)(6) of the Act, wherein the Council concerned first recommends removal of that member by not less than two-thirds of the voting members. A recommendation of the Council to remove a member must be made in writing to the Secretary and accompanied by a statement of the reasons upon which the recommendation is based.

2.3.11 Council Member Compensation

a. The voting members who are not employed by the Federal Government or any State or local government (that is, anyone who does not receive compensation from any such government for the period when performing duties as a Council member) receives compensation at a daily rate as specified by the Act when engaged in the actual performance of duties as assigned by the Chairman of the Council, i.e. the daily rate of a GS15 Step 7 of the General Schedule. Actual performance of duties, for the purposes of compensation, may include travel time subject to section 5.0.

b. Effective September 1, 1991, all Council members whose eligibility for compensation has been established in accordance with NOAA guidelines will be paid on a contract basis without deductions being made for Social Security, or Federal and State income taxes. Until that time, such deductions may be made at the Council’s option. A report of compensation will be furnished each year as required by the Internal Revenue Service. Such compensation may be paid on a full day’s basis whether in excess of eight hours a day or less than eight hours a day. The time is compensable where the individual member is required to expend a significant private effort which substantially disrupts the daily routine to the extent that a work day is lost to the member. "Homework" time in preparation for formal Council meetings is not compensable. State officials may be compensated if they can document they are on leave without pay (LWOP). (LWOP does not include annual leave, holidays, or weekends.)

c. Non-government Council members receive compensation for:

(1) Days spent in actual attendance at a meeting of the Council or jointly with another Council.
(2) A member may claim daily compensation for travel on days before or after the meeting if his or her normal business activity was unduly disrupted by the travel.
(3) Meetings of standing or ad hoc committees of the Council, if approved in advance by the Chair.
(4) Individual member meeting with scientific and technical advisors when approved in advance by the Chair and a substantial portion of any day is needed.
(5) Conducting or attending hearings when authorized in advance by the Chair.
(6) Other meetings involving Council business when approved in advance by the Chair.
(7) Compensation for webinars: To be compensated for webinars, the webinar must last more than one hour before compensation is paid. Any webinar lasting 1-4
hours, compensation will be paid at 50%. Webinars lasting more than 4 hours will merit a full day of compensation.

d. The Council Chair must submit to the Regional Office annually a report of Council member compensation authorized. This report shall identify, for each member, amount paid, dates, and location and purpose of meetings attended.

2.4 Officers and Terms of Office

2.4.1 General

A Chair and a Vice Chair shall be elected annually at the first Council meeting following the seating of new Council members (on or after August 11 of each year) by the voting members of the Council present and voting; each such officer shall serve for a period of one year and until a successor is elected. Officers may succeed themselves. The Council may elect other officers as it deems necessary.

2.4.2 Nominations

The Chair shall appoint a Nominating Committee, who shall make its nominations (at least two for each office) at the beginning of the election process. Following the Committee's nomination, any voting member may nominate additional candidates from the floor. When nominations are closed the election shall be held.

2.4.3 Elections

The election of Chair will be held first, followed by the election for Vice Chair. If only one candidate accepts the nomination for an office, the Chairman of the Nominating Committee shall cast all votes for that candidate. If there are two or more candidates, the election shall be by a secret ballot with the votes tabulated by two or more Tellers appointed by the Council Chair. The Tellers shall use the following rules to determine the winning candidate:

a. To win, a candidate must receive a majority of the votes cast.

b. If no candidate receives a majority of the votes, the Tellers shall declare no election. If there are more than two candidates, the candidate receiving the lowest number of vote shall be dropped from consideration and a vote will be taken for the remaining candidates. This process will continue until a candidate receives a majority of the vote cast.

c. Those preferring not to vote for any candidate shall check "ABSTAIN" on the ballot. The number of ballots cast for an individual shall not be announced. Any Council member who questions the result may review the ballots. The vote of anyballots will not identify which Council member shall not be identified nor made public in any respect.

d. The Tellers shall use the following rules to determine the winning candidate:

2.4.4 Special Elections

In the event that the Chair cannot fulfill the Chair's obligations for the balance of the Chair's term, a special election will be held at the next scheduled Council meeting to fill the position of Chair. In the event that the Vice Chair cannot fulfill the Vice Chair's obligations for the balance of the Vice Chair's term, a special election will be held at the next scheduled Council meeting to fill the position of Vice Chair. The procedures for nominations and elections set forth above will be followed for special elections.
2.4.5 Authority of the Chair

a. The Council Chair shall be the chief executive officer of the Council. Subject only to the authority of the Council, the Chair shall have general charge and supervision over, and responsibility for the business and affairs of the Council. Unless otherwise directed by the Council, the Chair may enter into and execute in the name of the Council, contracts or other instruments in the regular course of business or contract or other instruments not in the regular course of business which are authorized, either generally or specifically, by the Council. The Council Chair shall have the general powers and duties of management usually vested in the office of the Chair of the Board of a corporation.

b. The Council Chair shall have the authority to appoint and dissolve committees of Council members, name their officers and membership, and describe their functions, duties, and responsibilities consistent with the Charter of the Council, the Act, and other applicable law.

c. The Council Chair shall also have the full authority to call meetings as necessary for the conduct of the Council's business.

d. The Council Chair shall have the authority to authorize reimbursement of travel expenses and/or compensation of any eligible members of the Council, its committees or subpanels except that proper notification, at the direction of the Chair, in the Federal Register of a regular meeting of the Council or one of its committees or subpanels shall constitute authorization for travel expenses and/or compensation to be paid to eligible members.

e. The Council Chair shall have the authority to authorize, approve, or disapprove all meetings of Council subpanels or committees.

f. In the event of the absence or inability of the Council Chair to serve or fulfill the Chair's obligations, the Council Vice-Chair shall assume authority and duties of the Chair.

2.5 Designees

a. The Act authorizes only the principal State officials, the Regional Administrator, and the nonvoting members to designate individuals to attend Council meetings in their absence. The Chair of the Council must be notified in writing, in advance of any meeting at which a designee will initially represent the Council member, the name, address, and position of the individual designated. A designee may not name another designee. However, such officials may submit to the Chair, in advance, a list of several individuals who may act as designee, provided that the list designates who would serve if more than one designee is in attendance.

b. Only a full-time state employee of the state agency responsible for marine and/or anadromous fisheries shall be appointed by a constituent state Governor as the principal state official for purposes of Section 302(b) of the Act.

c. A principal state official may name his/her designee(s) to act on his/her behalf at Council meetings. Individuals designated to serve as designees of a principal state official on a Council, pursuant to Section 302(b)(1)(A) of the Act, must be a resident of the state and be knowledgeable and experienced, by reason of his or her occupational or other experience, scientific expertise, or training, in the fishery resources of the geographic area of concern to the Council.

d. New or revised appointments by state Governors of principal state officials and new or revised designations by principal state officials of their designee(s) must be delivered in
writing to the appropriate NMFS Regional Administrator and the Council Chairman at least 48 hours before the individual may vote on any issue before the Council. Written appointment of the principal state official must indicate his or her employment status, how the official is employed by the state fisheries agency, and whether the official's full salary is paid by the state. Written designation(s) by the principal state official must indicate how the designee is knowledgeable and experienced in fishery resources of the geographic area of concern to the Council, the county in which the designee resides, and whether the designee's salary is paid by the state.

e. Reimbursement of travel expenses to any meeting must be limited to the member, or authorized designee; in any case, one person.

**Designation of Regional Administrator**

The Northeast Region Regional Administrator, or his/her designee, serves as a voting member on the Council.

**2.6 Advisory Groups**

**2.6.1 Scientific and Statistical Committee**

**2.6.1.1 Objectives and Duties**

a. The Council will establish a Scientific and Statistical Committee (SSC) which shall:

(1) Assist the Council in the development, collection, evaluation, and peer review of such statistical, biological, economical, social and other scientific information as is relevant to the Council's development and amendment of any fishery management plan;

(2) Provide the Council ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch, preventing overfishing, maximum sustainable yield, and achieving rebuilding targets, and reports on stock status and health, bycatch, habitat status, social and economic impacts of management measures, and sustainability of fishing practices. Specifically in order to allow the Council to fulfill its obligations under Section 302(h)(6), the Committee shall, based on current stock conditions, the status determination criteria specified in the Fishery Management Plans (FMPs), and consistent with 50 C.F.R. Part 600.310, National Standard 1 Guidelines - Optimum Yield, provide the "fishing level recommendation" in terms of harvest for each of the Council's managed species.

(3) Assist the Council in determining what statistical, biological, economical, social or other scientific information is needed for the development of a management plan that meets the requirements of the Act; and shall advise the Council as to the best way of obtaining this information, including identifying entities with ongoing research programs that may be able to develop the needed information.

a. The Committee will not provide another peer review of the SAW/SARC or TRAC results.

b. When requested by the Council, through the Council Chair or the Chair's designee, the Committee shall:

(1) Provide expert scientific and technical advice to the Council on the development of fishery management policy, on establishing the goals and objectives of fishery management plans or amendments thereto, and on the preparation of such plans or amendments thereto; However, The Committee will not provide another peer
review of the Northeast Regional Stock Assessment Workshop (SAW) results or the Stock Assessment Review Committee (SARC).

(2) Advise the Council on preparing comments on any fishery management plan or amendments thereto prepared by the Secretary or Secretary's delegate which are transmitted to the Council pursuant to Section 304(c)(2) of the Act.

(3) Comment on any proposed regulations which the Council deems necessary to implement any fishery management plan or amendment to a fishery management plan which is prepared by the Council.

(4) Assist the Council in establishing criteria for judging plan effectiveness;

(5) Perform such other necessary and appropriate duties as may be required by the Council to carry out its functions under the Act; and

(6) Attend Council meetings as requested by the Council Chair. Members of the Committee may be tasked to serve as Chair or member of the Northeast Stock Assessment Review Committee (SARC) when requested by the Northeast Fisheries Science Center (NEFSC).

2.6.1.2 Development of ABCs

a. Section 302(g)(1)(B) of the Act provides that the Committee shall provide recommendations for acceptable biological catch (ABC) that prevent overfishing.

b. The Council Chairman, in consultation with the Executive Director and the Chair of the Species Committee that has responsibility for a stock under consideration, shall develop a set of terms of reference based on the relevant ABC control rule that will guide the work of the Committee in developing ABC recommendations for that stock. The terms of reference will specify a date by which all material to be considered by the Committee will be provided. This date shall be at least 15 working days prior to the Committee meeting. The Committee is not obligated to consider any material submitted after this date.

c. Any Committee member who has a financial conflict of interest in providing advice on the species under consideration shall recuse him/herself from discussion and voting.

d. Only those Committee members present at the meeting may participate in developing the ABC recommendation. At least 50% of the members must be present to establish a quorum for ABC recommendations.

e. The Committee Chair may request oral presentations or comments from analysts and/or interested stakeholders during the meeting.

f. On the basis of the submitted material, the Committee shall provide an ABC recommendation for the upcoming fishing year(s) that follows the ABC control rule adopted by the Council for a given species (stock). The recommended ABC will reflect the level of scientific uncertainty inherent in the assessment of stock status and the Council's risk policy, such that the recommended ABC is less than or equal to the overfishing limit in line with the Act and 50 C.F.R. § 600.310, National Standard 1 Guidelines to the Act—Optimum Yield. The Committee recommendation will be provided to the Council in the form of a written report that clearly identifies the: (1) materials considered in developing the ABC; (2) the overfishing limit; (3) the magnitude and sources of uncertainty in the overfishing limit that were considered by the Committee; and (4) the level of risk adopted in the ABC control rule recommended by the Committee following the Council's risk policy.
g. The ABC report shall include a statement in writing to accompany any scientific advice provided to the Council that the advice is based on the best scientific information available, as defined in 50 C.F.R. § 600.315, \textit{National Standard 2 Guidelines to the Act—Scientific Information}.

h. The Committee report shall be transmitted to Council staff within 10 working days following the Committee meeting.

i. The Council may remand back to the Committee its ABC recommendation based on the following criteria: (1) failure of the Committee to follow the terms of reference provided to it by the Council; (2) an error, in fact or omission, in the materials provided to the Committee; (3) an error in fact in the calculations, if any, undertaken by the Committee in developing its ABC recommendation; and (4) failure of the Committee to follow its standard operating procedures.

j. These criteria do not limit the ability of the Council to seek clarification of the foundation for the Committee recommendation.

k. The Committee Chair, or designee, shall present the Committee’s ABC recommendation at a subsequent Council meeting.

2.6.1.3 Members and Chair

a. The Committee shall have up to 20 members, all of whom shall be nominated for membership on the Committee by Council members, and shall be appointed to the Committee by a majority vote of the Council. The Committee may be composed of Federal employees, State employees, academicians, or independent experts, and each shall have strong scientific and/or technical credentials and experience in the biological, statistical, economical, social, and other relevant disciplines. The goal will be to structure the committee such that there is a balance in both home bases and expertise of its members. Each member of this committee shall be treated as an affected individual for purposes of paragraphs (2), (3)(B), (4), and (5)(A) of subsection (j) of Section 302 of the Act. The Secretary shall keep disclosures made pursuant to this subparagraph on file.

b. Members of the Committee will be appointed by the Council for a period of three years, and may be reappointed at the discretion of the Council. Appointments to the Committee will be staggered to allow overlap of membership. Vacancy appointments shall be for the remainder of the unexpired term of the vacancy. When vacancies arise the Committee shall provide the Council with a list of recommended candidates for consideration; the Council is not bound by the Committee’s list of recommended nominees.

c. In addition to the 20 members identified in (a) above, interim or special appointments to the Committee of limited duration (not to exceed one year) may also be made to add expertise in special topic areas being addressed by the Committee. These interim appointments have all the rights and privileges of regular Committee members.

d. Committee members shall be notified of meetings at least 30 days in advance of each meeting. Committee members who cannot attend a scheduled meeting shall so advise the Executive Director. The terms of members who are absent for three consecutive SSC meetings without notifying the Executive Director in advance of the absence and without a reasonable excuse may be revoked. In addition, Committee members shall attend at least half of the meetings each year in person. Failure to do so may also lead to loss of membership on the Committee.
e. From within the membership of the Committee, the Council Chair shall appoint a Chair of the SSC.

f. From among their membership, the Committee may elect a Vice-Chair. The Vice-Chair will be appointed for a term of three years. The Committee Vice-Chair assists the Committee Chair in running meetings, and may represent the Committee to the Council if requested.

2.6.1.4 Administrative Provisions

a. The Committee shall meet as a whole, or in part, at the call of the Committee Chair, with the approval of the Council Chair, as often as necessary to fulfill the Committee’s responsibilities, taking into consideration time and budget constraints. To the extent practicable, the Committee shall hold its meetings in conjunction with the meeting of the Council.

b. The Council staff, in consultation with the Council Chair and SSC Chair, shall be responsible for developing an agenda for Committee meetings.

c. The Committee shall report to the Council Chair or the Chair’s designee.

d. The Executive Director of the Council shall, upon request of the Committee Chair, provide such staff and other support, as the Council considers necessary for Committee activities, within budgetary limitations.

e. The Council shall pay the actual expenses of the Committee members, in accordance with Section 302(f)(7)(D) of the Act, while engaged in the performance of Council business, and subject to the availability of appropriations, pay a stipend to members of the committee who are not employed by the Federal Government or a State marine fisheries agency.

f. Meetings shall be open to the public. Public comments may be received during the meeting at the discretion of the Committee Chair. Notice of meetings of the SSC shall comply with the applicable notice requirements specified for Council meetings.

g. Committee decisions shall be made by consensus whenever possible. The Committee Chair retains the right to call for a vote if it becomes apparent that a consensus cannot be reached on decision that is considered vital. All voting will be anonymous and not by roll call. Proxy votes will not be allowed.

h. Minutes of each meeting of the Committee shall be kept and posted on the Council website. The minutes shall contain a record of the persons present, a description of matters discussed, and conclusions reached. ABC reports will also be posted on the Council website.

i. The Committee can establish subcommittees or working groups to address specific issues and provide feedback to the general SSC membership for action.

j. Pursuant to Section 302(g)(1)(F) of the Act, stipends are available, subject to the availability of appropriations, to SSC members who are not employed by the Federal Government or a State marine fisheries agency. For the purposes of this section, any personnel from state or tribal agencies that have conservation, management or enforcement responsibility for any marine fishery resource, are not eligible for stipends.

k. SSC members shall file Financial Interest Forms as described in section 2.3.6.
2.6.2 Advisory Panels

Advisors shall be appointed as needed to assist the work of the Council and will ordinarily be named to provide advice to a particular Council committee. Such advisors will constitute Advisory Panels which fulfill the requirement for a fishing industry advisory committee as required by Section 302(g)(2) of the Act.

2.6.2.1 Objectives and Duties

When requested by the Council, through the Council Chair or the Executive Director, Advisory Panels shall:

a. Advise the Council on the assessments and specifications contained in each fishery management plan for each fishery within the Council's geographical area of concern, with particular regard to:
   (1) the capacity and the extent to which the fishing vessels (commercial and recreational) of the United States will harvest the resources considered in fishery management plans,
   (2) the effect of such fishery management plans on local economies and social structures,
   (3) potential conflicts between user groups of a given fishery resource,
   (4) the capacity and the extent to which United States fish processors will process that portion of an optimum yield harvested by United States fishing vessels, and
   (5) enforcement problems peculiar to each fishery with emphasis on the expected need for enforcement resources;

b. Advise and/or prepare comments for the Council on:
   (1) fishery management plans or amendments thereto during preparation of such plans or amendments by the Council, and on
   (2) fishery management plans prepared by the Secretary and transmitted to the Council for review;

c. Advise the Council on current trends and developments in fishery matters; and

d. Perform such other necessary and appropriate advisory duties as may be required by the Council to carry out its functions under the Act.

Advisory Panel, subcommittees of the panels, or panel members shall meet and attend Council meetings and public hearings on fishery management plans and amendments as authorized by the Council Chair or the Executive Director.

2.6.2.2 Membership

a. Advisory Panel members shall apply for appointment, be recommended by the Executive Committee, and be appointed by the Council Chair. Advisory panel members shall be appointed by the Chairman for a period of three years, and may be reappointed at the pleasure of the Chair. Vacancy appointments shall be filled, when practicable for the remainder of the unexpired term of the vacancy. Neither proxies nor designees can serve in place of an appointed member.

b. Advisory Panels shall be composed of persons who are either actually engaged in the harvesting or processing of, or are knowledgeable and interested in the conservation
and management of, the fisheries to be managed. Advisory Panels shall also reflect expertise and interest from the standpoint of geographical distribution, industry and other user groups, and the economic and social groups encompassed in the Council's geographical area of concern.

c. Advisory Panel members shall be notified of meetings at least 23 days in advance of each meeting. Advisory Panel members who cannot attend a scheduled meeting shall advise the Executive Director.

2.6.2.3 Administrative Provisions

a. The Advisory Panels shall meet with the approval of the Council Chair, as often as necessary to fulfill the Advisory Panels' responsibilities, taking into consideration time and budget constraints.

b. The Council shall pay the actual expenses of the members of the Advisory Panels, in accordance with Section 302(f)(7)(D) of the Act, while engaged in the performance of Council business. Pursuant to Section 302(g)(1)(F) of the Act, stipends are available, subject to the availability of appropriations, to panel members who are not employed by the Federal Government or a State marine fisheries agency. For the purposes of the section, any personnel from state or tribal agencies that have conservation, management or enforcement responsibility for any marine fishery resource, are not eligible for stipends.

c. Notice of meetings of Advisory Panel meetings shall comply with the applicable notice requirements specified for Council meetings.

2.7 Working Groups
Fishery management planning and development of FMPs may be performed by various types of working groups, under the direction of the Council. For example, the Council may establish a Plan Team to assess the need for management, assemble information, conduct and evaluate analyses, evaluate public/industry proposals and comments, and estimate the costs of plan development, implementation, and monitoring.

2.8 Ad-Hoc Committees
The Council may use ad hoc groups to address resource user conflicts or other issues. The Council Chair may appoint standing and ad hoc committees from among the voting and nonvoting members as it deems necessary for the conduct of Council business.

2.9 Council Coordination Committee
The Councils may establish a Council Coordination Committee (CCC) consisting of the chairs, vice chairs, and executive directors of each of the eight Councils or other Council members or staff, in order to discuss issues of relevance to all Councils.

The CCC is not subject to the requirements of the Federal Advisory Committee Act (5 U.S.C. App.2). Procedures for announcing and conducting open and closed meetings of the CCC shall be conducted in accordance with the provisions of 50 CFR § 600.135.
3.0 COUNCIL MEETING AND HEARINGS

In fulfilling the Council's responsibilities and functions, the Council members may meet in plenary session, in working groups, or individually to hear statements in order to clarify issues, gather information, or make decisions regarding material before them. To provide for review and decision by the Secretary, recommendations of each of these groups must be documented and available. The documentation must include, at a minimum, a statement of the problem, recommendations for corrective action, likely impact on the affected resource, and likely impact on affected user groups.

3.1 Meetings

3.1.1 General

The Council will meet at the call of the Chair of the Council or upon request of a majority of the voting members. In the latter case, the Council members who want the meeting communicate in writing to the Executive Director in the form of individual letters or a petition. When eleven signatures are received, the Executive Director (a) informs the Chair and (b) arranges for the meeting. Advisory groups may meet with the approval of the Chair. Emergency meetings may be called by the Chair or equivalent presiding officer.

3.1.2 Frequency

The Council must meet in plenary session at least once every six months. Council committees and advisory groups may meet as frequently as necessary, with the approval of the Council Chair.

3.1.3 Location

a. The Council must conduct its meetings at appropriate times and places in any of the constituent states of the Council.

b. Two or more Councils may hold joint meetings within a constituent state of one of the Councils for the purpose of discussing issues of mutual concern or for the purpose of developing or amending a joint FMP.

c. The Council meeting place should have a capacity large enough to accommodate the anticipated public attendance and be accessible to those interested in attending, including consideration of the cost of transportation and lodging.

3.1.4 Notice

a. Public notice of regular meetings of the Council, Scientific Statistical Committee or Advisory Panels, including the agenda, must be published in the Federal Register on a timely basis, and appropriate news media notice must be given.

b. Appropriate notice shall be provided by any means that will result in wide publicity in the major fishing ports of the region (and in other major fishing ports having a direct interest in the affected fishery), except that email notifications and website postings alone are not sufficient.

c. The published agenda of any regular meeting may not be modified to include additional matters for Council action without public notice, or such notice must be given at least 14 days prior to the meeting date, unless such modification is to address an emergency under Section 305(c) of the Act, in which case public notice shall be given immediately.
d. Drafts of all regular public meeting notices must be transmitted to the NMFS Headquarters Office at least 23 calendar days before the first day of the regular meeting.

e. Councils must ensure that all public meetings are accessible to persons with disabilities, and that the public can make timely requests for language interpreters or other auxiliary aids at public meetings. Drafts of emergency public notices must be transmitted to the NMFS Washington Office at least 5 working days prior to the first day of the emergency meeting. Although notices of, and agendas for, emergency meetings are not required to be published in the Federal Register, notices of emergency meetings must be promptly announced through the appropriate news media.

3.1.5 Conduct of Meetings

a. All meetings of the Council advisory and working groups must be open, unless closed in accordance with section 0.

b. Interested persons will be permitted to present oral or written statements regarding the matters on the agenda at regular meetings of the Council, within reasonable limits established by the Chair. All written information submitted to a Council by an interested person shall include a statement of the source and date of such information. Any oral or written statement shall include a brief description of the background and interests of the person in the subject of the oral or written statement (MSFCMA 302(i)(2)(D)).

c. At any time when a Council determines it appropriate to consider new information from a state or Federal agency or from a Council advisory body, the Council shall give comparable consideration to new information offered at that time by interested members of the public. Interested parties shall have a reasonable opportunity to respond to new data or information before the Council takes final action on conservation and management measures.

d. A vote is required for Council approval or amendment of a fishery management plan (including any proposed regulations), a Council finding that an emergency exists involving any fishery, or Council comments to the Secretary on fishery management plans developed by the Secretary.

e. A majority of the voting members of any Council constitutes a quorum for Council meetings, but one or more such members designated by the Council may hold hearings.

f. Decisions of any Council are by majority vote of the voting members present and voting (except for proposed removal of Council members, see 50 CFR § 600.230). Voting by proxy is permitted only pursuant to 50 CFR § 600.205(b). An abstention does not affect the unanimity of a vote.

g. Voting members of the Council who disagree with the majority on any issue to be submitted to the Secretary, including principal State officials raising federalism issues, may submit a written statement of their reasons for dissent. If any Council member elects to file a minority report, it should be submitted at the same time as that of the majority. The staff shall provide statistical and clerical support as requested and as approved by the Council Chair in preparation of such a minority report. The Regional Administrator of the National Marine Fisheries Service serving on the Council, or the Regional Administrator's designee, shall submit such a statement, which shall be made available to the public upon request, if the Regional Administrator disagrees with any such matter.
h. The Council may comment on and make recommendations concerning any activity undertaken or proposed to be undertaken, by a State or Federal agency that, in the view of the Council, may affect the habitat of a fishery resource under its jurisdiction and shall comment on and make recommendations concerning any such activity that NMFS brings to the Council's attention that is likely to substantially affect the habitat of an anadromous fishery resource under its jurisdiction.

i. Parliamentary procedures should be used as a guide, but need not be rigidly adhered to, at the Chair's prerogative. Decisions by consensus are permitted, except where the issue is Council approval of a Fishery Management Plan or amendment (including any proposed regulations), or comments for the Secretary on foreign fishing applications, or Secretarially-prepared management plans, when a vote is required.

j. Prior to all roll call votes, a written copy of the motion to be voted on will be made available to Council members. The written motion, as voted on, must be preserved as part of the record or minutes of the meeting. For a vote on a Council finding that an emergency exists in a fishery, the exact number of votes (for, against, and abstaining) must be preserved as part of the record of the meeting. At the request of any voting member of a Council, the Council shall hold a roll call vote on any matter before the Council. The official minutes and other appropriate records of any Council meeting shall identify all roll call votes held, the name of each voting member present during each roll call vote, and how each member voted on each roll call vote.

Appointed public Council members and administrative employees are subject to Federal laws and regulations concerning bribery and conflicts of interest 50 CFR 600.225. Appointed Council members are required to report their Financial Interest in harvesting, processing, lobbying, advocacy, or marketing according to 50 CFR 600.235. Council members must recuse themselves from voting on matters that would have a significant and predictable effect on the financial interests reported. To the extent that interests are reported under 50 CFR 600.235, Council members are partially exempt from 18 U.S.C. 208.

3.1.6 Deeming Process

a. If draft regulations have not been deemed necessary and appropriate at the time an FMP or an Amendment or Framework adjustment to an FMP is approved by the Mid-Atlantic Fishery Management Council, the Council's Executive Director shall review the draft regulations, when available, for such actions before they are implemented by NMFS.

b. After reviewing the draft regulations, the Executive Director shall recommend to the Council Chair whether they are necessary and appropriate for the purposes of implementing the Council-approved action.

c. After considering the Executive Director's recommendation the Council Chair, on behalf of the full Council, shall make the determination to deem the draft proposed regulations as necessary and appropriate for the purposes of implementing the action, consistent with Section 303(c) of the Act.

d. Once this process has occurred and if approval has been granted, the Executive Director shall forward the appropriate documents to NMFS.
3.1.7 Record

a. Detailed minutes of each meeting of the Council, except for any closed session, shall be kept and shall contain a record of the persons present, a complete and accurate description of matters discussed and conclusions reached, and copies of all statements filed. The Chairman shall certify the accuracy of the minutes of each such meeting and submit a copy thereof to the Secretary. The minutes shall be made available to any court of competent jurisdiction.

b. Subject to the procedures established by the Council under 50 CFR § 600.405, and the regulations prescribed by the Secretary under 50 CFR § 600.130 relating to confidentiality, the administrative record (including minutes required under paragraph a. of this section) of each meeting, and records or other documents which were made available to or prepared for or by the Council, SSC, or APs incident to the meeting, must be available for public inspection and copying at a single location in the offices of the Council.

c. Each Council is required to maintain documents generally available to the public on its Internet site. The following documents shall be posted on the Council’s website: fishery management plans and their amendments for the fisheries for which the Council is responsible; drafts of fishery management plans and plan amendments under consideration; analysis of actions the Council has under review; minutes or official reports of meetings of the Council and its committees and Advisory Panels; materials provided by the Council staff to Council members in preparation for meetings; and other Council documents of interest to the public. For documents too large to maintain on the Web site, not available electronically, or seldom requested, the Council must provide copies of the Documents for viewing at the Council office during regular business hours or may provide the documents through the mail.

Emergency Meetings

Drafts of emergency public notices must be transmitted to the NMFS headquarters office at least 5 working days prior to the first day of the emergency meeting. Although notices of and agendas for emergency meetings are not required to be published in the Federal Register, notices of emergency meetings must be promptly announced through any means that will result in wide publicity in the major fishing ports of the region. E-mail notification and website postings alone are not sufficient.

3.1.8 Closed Meetings

a. A Council, SSC, AP, or other committee shall close any meeting, or portion thereof, that concerns:

(1) Information bearing on a national security classification.

(2) Matters or information pertaining to national security, employment matters, or briefings on litigation in which the Council is interested.

(3) Internal administrative matters other than employment. Examples of other internal administrative matters include candidates for appointment to AP, SSC, and other subsidiary bodies and public decorum or medical conditions of members of a Council or its subsidiary bodies.

b. If any meeting or portion is closed, the Council shall notify local newspapers in the major fishing ports within its region (and in other major, affected fishing ports), including in that notification the time and place of the meeting.
c. In deciding whether to close a portion of a meeting to discuss internal administrative matters, a Council or subsidiary body should consider not only the privacy interests of individuals whose conduct or qualifications may be discussed, but also the interest of the public in being informed of Council operations and actions.

d. Without the notice required by paragraph (b) of this section, a Council, SSC, or AP may briefly close a portion of a meeting to discuss employment or other internal administrative matters. The closed portion of a meeting that is closed without notice may not exceed 2 hours.

e. Before closing a meeting or portion thereof, a Council or subsidiary body should consult with the NOAA General Counsel Office to ensure that the matters to be discussed fall within the exceptions to the requirement to hold public meetings described in paragraph (a) of this section.

f. Actions that affect the public, although based on discussions in closed meetings, must be taken in public. For example, appointments to an AP must be made in the public part of the meeting; however, a decision to take disciplinary action against a Council employee need not be announced to the public.

g. Members of the Council, advisory, and working groups planning to attend a closed meeting must obtain the necessary security clearance in advance of the meeting.

3.1.9 Agendas

Suggested agendas for all Council meetings will be drawn up by the Executive Director and approved by the Chair. The Chair will be assisted by the Vice Chair, the staff and the members of the Council who wish to contribute. An agenda shall be published and distributed to Council members at least 14 calendar days before the subject meeting. Members may submit items for the agenda of a meeting within three weeks of the close of the previous meeting.

3.1.10 Special Accommodations

a. All meetings of the Council and its associated bodies are held in a manner and place physically accessible to people with disabilities.

b. The Council will provide for language interpreters or other auxiliary aids if a request is received at least five days prior to the meeting date.

3.2 Hearings

3.2.1 General

The Act directs the Council to hold public hearings, at appropriate times and in appropriate locations in the geographical area concerned, to provide the opportunity for all interested persons to be heard in the development of FMPs and amendments, and with respect to the administration and implementation of the Act. The Chair will determine when hearings are appropriate. The term "geographical area of concern", for purposes of holding hearings, may include an area under the authority of another Council if the fish in the fishery concerned migrate into, or occur in, that area or if the matters being heard affect fishermen of that area; but not unless such other Council is first consulted regarding the conduct of such hearings within its area.
3.2.2 **Notice**

Hearings must follow the same procedures for announcement as for Council and advisory group meetings (see section 3.1.2). Timely public notice also should be given to the local media where the hearing is to take place. Publicity should be sufficient in time, substance, and area coverage to assure that all interested parties are aware of the opportunity to make their views known.

3.2.3 **Conduct of Hearings**

When it is determined that a hearing is appropriate, the Chair of the Council must designate at least one voting member of the Council to officiate. All points of view must be given a reasonable opportunity to be heard.

3.2.4 **Record**

An accurate and timely report of the participants and their views must be provided in writing to the Council and maintained as a part of the Council's official records.
4.0 EMPLOYMENT PRACTICES

4.1 Staffing

4.1.1 Executive Director

Composition

The voting members of the Council shall hire an Executive Director. The duties and functions of the Executive Director are:

a. Supervise, direct, and account for the administration and operation of the Council.

b. Retain, set the salary of, conduct performance evaluations of, and dismiss staff as necessary to accomplish the goals of the Council. The Executive Director shall prepare staff job descriptions, revise them as necessary, and review personnel duties to determine if they are consistent with job descriptions and Council guidelines.

c. Assign the duties of the staff as may be necessary to accomplish the goals of the Council.

d. In consultation with the Chair, make and enter into any and all contracts, agreements, or stipulations, and retain, employ and contract for the services of private and public consultants, research and technical personnel, and procure by contract, consulting research, technical and other services and facilities, whenever the same shall be deemed necessary or desirable in the performance of the functions of the Council and whenever funds have been made available for such purposes. All legal procedures and applicable regulations shall be followed. The Council may establish a value above which the Council will approve contracts.

e. Maintain such facilities as may be required for the effective and efficient operation of the Council.

f. Prepare an annual budget for approval by the Council.

g. Coordinate efforts of the Council with other Councils and related Federal agencies.

h. Transfer funds between line items in accordance with NOAA and NMFS regulations, guidelines, and grant conditions.

i. Prepare an Administrative, Operating, and Accounting Procedures Manual for the operation of the Council.

j. Prepare fishery management plans in accord with Council policy.

k. Carry out other duties as may be assigned by the Council and/or the Council Chair pursuant to section 4.1.2 paragraph (b).

4.1.2 Employment Practices

a. Nondiscrimination.

All activities of the Council must be operated supported in whole or in part by federal funds shall be operated under a policy of equal employment opportunity. Council staff positions must be filled solely on the basis of merit, fitness for duty, competence and qualifications. The Council is an Equal Employment Opportunity Employer. All employment actions will be free from discrimination based on race, religion, color, national origin, sex, age, disability, sexual orientation, status as a parent, or on any additional basis protected by applicable
Federal, state, or local law. Executive Order 13152 dated May 2, 2000, prohibits employment discrimination based on an individual’s status as a parent and reprisal. See 50 CFR § 600.120.

Except for complaints alleging sexual orientation and status as a parent, complaints by employees alleging that they have been discriminated against on the basis listed above, should be processed in accordance with 29 C.F.R. Part 1614. Employees must contact an EEO Counselor at NOAA's Office of Civil Rights within 45 days of the date of the alleged discrimination. Employees alleging discrimination on the basis of sexual orientation will have their complaints processed in accordance with Department Administrative Order (DAO) 215-11. Employees must contact an EEO Counselor at NOAA’s Office of Civil Rights, 800-452-6728 (voice), 301-713-0982 TDD, within 45 days of the date of the alleged discrimination.

b. Relationship Between Council and Staff.

Council members may submit requests for task performance by the Executive Director or the staff to the Council or the Chair for approval and transmittal. Only the Chair, or the Council acting at a duly constituted meeting, may direct task performance by, and exercise supervision over, the Executive Director. The members of the staff shall receive their direction and supervision solely from the Executive Director.

c. No employee of the Council may be deprived of employment, position, work, compensation, or benefit provided for or made possible by the Act on account of any political activity or lack of such activity in support of or in opposition to any candidate or any political party in any national, State, county, or municipal election, or on account of his or her political affiliation.

d. In conducting official Council business, Council members and staff generally have the same protection from individual tort liability as Federal employees on official actions, and are protected by the Federal workers’ compensation statute, by the minimum wage/maximum hour provisions of the Fair Labor Standards Act (FLSA), and by the rights of access and confidentiality provisions of the Privacy Act (PA).

e. Council staff is eligible for unemployment compensation in the same manner as Federal employees.

f. Drug Free Workplace.

The Council's workplace will remain drug-free at all times. The unlawful manufacture, distribution, dispensing, possession or use of a controlled substance will not be tolerated in the Council office. Appropriate personnel action, up to and including termination of employment, will be taken against any employee in violation of this prohibition. Employees are expected to notify management of any criminal drug statute conviction for a violation occurring in the workplace no later than 5 days after such conviction.

g. Harassment.

The Council has a zero tolerance policy for harassment on the basis of race, religion, color, national origin, sex, age, sexual orientation, disability and reprisal. Any employee who believes he or she has been harassed should believe he or she has witnessed harassment is encouraged to report the harassment to a supervisor or manager. The supervisor or manager should then follow the steps set forth in DAO 202-955. Any complaints of harassment on the basis of sexual orientation have been handled in accordance with DAO 215-11. The provisions of these DAOs are entirely separate from the EEO complaint process, and must be followed whether or not an employee has filed an
EEO complaint. The Council’s Harassment Policy is intended to ensure that staff members work in an environment free of harassment in all of their interactions with Council members, other staff members, and the public during the course of official Council meetings, advisory body meetings, or committee meetings.

h. Whistleblower Protections.

It is the intent of the Council to adhere to all applicable laws and regulations. The underlying purpose of this Employee Protection Policy is to encourage the organization’s goal of full legal compliance. The support of all employees is necessary to achieving this result. To this end, any employee who reasonably believes that a policy, practice, or activity of the Council is in violation of law has a right to file a complaint with the U.S. Department of Commerce’s Office of Inspector General. This right notwithstanding, any employee with such concerns is encouraged to report those concerns to the Council for review and any necessary correction.

j. The Council will not retaliate against employees who disclose or threaten to disclose to the Department, any activity, policy, or practice of the Council that the employee reasonably believes is in violation of a law, or a rule, or regulation mandated pursuant to law or is in violation of a clear mandate of public policy concerning the health, safety, welfare, or protection of the environment.

4.1.3 Staff Training

a. On the job or part time education (undergraduate or postgraduate college level) training assignments are made by the Executive Director as required by changed job requirements and as budgeted funds permit.

b. Employees desiring Council support for on the job training or education assignments shall submit a written request through their supervisor to the Executive Director containing the details of and justification for the assignment. In evaluating a request the Executive Director will consider the extent to which the course or degree pursued relates to the work which the employee is now performing or may reasonably be expected to perform; the relationship between the employee’s work schedule and the educational schedule; and funding available in the budget.

c. Training must be authorized in advance in order to be reimbursed, with reimbursement made upon satisfactory completion of the course. Allowable costs are:

(1) training materials;
(2) textbooks;
(3) fees charged by the educational institution; and
(4) tuition charged by the educational institution, or in lieu of tuition, instructors’ salaries and the related share of indirect cost of the educational institution to the extent that the sum thereof is not in excess of the tuition which would have been paid to the participating educational institution.

4.2 Details of Government Employees

All Federal agencies are authorized by Section 302(f)(2) of the Act, 16 U.S.C. § 1852(f)(2), to detail personnel to the Council on a reimbursable basis to assist the Council in the performance of its functions. Non-reimbursable details are not precluded. Council requests to the heads of such agencies must contain the purpose of the detail, length of time, compensation to be paid, if any, and the stipulation that the Assistant Administrator be consulted prior to granting the
request. Copies of this correspondence will be transmitted to the Assistant Administrator through the servicing Regional Office. Federal employees so detailed retain all benefits, rights, and status they are entitled to in their regular employment. The Council may negotiate arrangements with State or local governments to utilize employees of those governments. Assistance in arranging these details may be obtained through the servicing Regional Office.

4.3 Personnel Actions

4.3.1 Probation

All appointments shall be for a probationary period of six (6) months during which the individual’s fitness for permanent appointment shall be evaluated. If the Executive Director deems it necessary, the probationary period may be extended for not more than two additional six month periods. In no case shall any probationary period be extended beyond eighteen (18) consecutive months. At any time during the probationary period, the Director may dismiss the employee for reasons of unsatisfactory service or conduct. The Executive Director shall notify the employee in writing of the action.

4.3.2 Unauthorized Absences

Any absence from duty that is not in compliance with the various authorized leaves shall be considered an absence without leave and is cause for disciplinary action. No employee shall be absent from duty without authorization by a supervisor except in case of emergency illness, accident, or serious unforeseen circumstances. Such emergency conditions shall be brought to the attention of the supervisor as soon as practicable. Any employee who is absent from work without a valid leave of absence for three (3) consecutive working days, may be deemed to have abandoned the position and to have resigned from the staff unless proven to the satisfaction of the Executive Director that such absence was excusable. Nothing herein contained shall be construed as preventing the Director from taking disciplinary action against an employee under section 4.3.5 because of unauthorized absence.

4.3.3 Employee Inquiries, Requests, Suggestions and Grievances

Employees and their immediate supervisors should discuss and resolve all employee inquiries, requests and suggestions informally. It is the responsibility of each supervisor to conduct such discussions objectively and to initiate action to resolve problems. If, after such informal action, the problem is not resolved, a formal written grievance may be taken to the Executive Director. Should the employee not be satisfied with the Executive Director’s resolution of the grievance, an appeal may be taken to the Council.

4.3.4 Disability

Requests for disability-related accommodations should be processed in accordance with DAO 215-10. Action may be initiated by the employee, the employee’s legal representative or the supervisor, but in all cases, must be supported by medical evidence acceptable to the Executive Director, the Council, and their insurance carrier.

4.3.5 Reprimand or Suspension Without Pay

In situations where a verbal warning has not resulted in the expected improvement, or where more severe action is warranted, the employee may be reprimanded in writing and a copy shall be placed in the employee’s personnel folder. An employee may be suspended without pay by the Executive Director for reasons of misconduct, negligence, inefficiency, insubordination,
conduct unbecoming to a Fishery Management Council employee, unauthorized absence, or other justifiable reasons when alternate personnel action would not be appropriate. Suspensions without pay shall not exceed thirty (30) calendar days unless approved by the Council. In no case shall suspension with pay be utilized, but retroactive pay may be granted should the suspension subsequently prove unfounded.

4.3.6 Reasons for Disciplinary Action

Disciplinary action may be taken for any conduct not in keeping with reasonable standards, as determined by the Executive Director and/or Council.

4.3.7 Dismissal

The Executive Director may dismiss employees for reasons of misconduct, negligence, inefficiency, insubordination, conduct unbecoming to a Fishery Management Council employee, unauthorized absence, lack of funding, or other justifiable reasons if it is documented that other personnel actions will not solve the problem. The employee may appeal this action to the Council.

4.4 Salary and Compensation Administration

4.4.1 General

In setting rates of pay for Council Staff, the principle of equal pay for equal work is followed. Variations in basic rates of pay should be in proportion to substantial differences in the difficulty and responsibilities of the work performed. The duties of any new position shall be contained in a brief description to be submitted to the NOAA Personnel Office servicing the NMFS Regional Office assigned to the Council prior to the submission of a budget in which the salary of that position is requested. The Council will request a salary range appropriate to the position within the labor market of the Council's office and a determination of the applicability of the Fair Labor Standards Act. The Council may fill the position at any salary level within that range, except that, unless recruitment of exceptionally qualified employees is hampered, the policy of hiring at the beginning rate shall be recognized. After a position has been filled, the employee may be promoted annually and be recognized for superior performance within the specified salary ranges in accordance with the Council policies.

4.4.2 Pay Bands

Each position shall have assigned to it a pay band for compensation purposes. The pay of employees shall be according to the published rates as set forth in the Alternative Personnel Management System for the U.S. Department of Commerce (62 FR 67434). A part time employee working on a regular and continuous schedule of less than 37 hours per week shall be paid the hourly rate appropriate to the pay band of the employee for the hours actually worked. Such schedule shall be established as the work situation requires, with the approval of the Executive Director.

4.4.3 Wage Increases for Full Time Employees

All wage increases shall be at the beginning of the new federal fiscal year. Those employees who have been employed six (6) months or longer shall be eligible for pay raise advancement. Those employees with less than six (6) months service shall not be eligible for pay raise advancement until the following budget year. The Council has the discretion to adjust pay rates and pay increases based on cost of living (COLA) differentials in their geographic locations. No
pay adjustment based on geographic location shall exceed the COLA and locality pay adjustments available to Federal employees in the same geographic area. A Council employee will normally have his pay rate advanced upon completion of one year service, including six (6) consecutive months of satisfactory performance immediately prior to the effective date. These wage increases shall be made no more often than yearly. Wage increases are not to be construed as an automatic “right”, but rather as an adjunct to satisfactory service. A poor or unsatisfactory performance evaluation shall be the grounds for denial of the annual wage increase.

Employees will be entitled to promotions and associated pay raises solely on the basis of merit and performance. The Executive Director, acting for the Council, shall conduct performance reviews at least biennially with each Council employee and will approve promotions and raises based on the employee’s performance, length of service, or special accomplishments. Pay raises and performance evaluations for the Executive Director will be accomplished through a review process involving the Council Chair and/or members of the Council designated by the Chair. Career development, including formal training, will be supported by the Council, subject to budgetary limitations, when directly beneficial to both the employee and the Council.

4.4.4 Incentive/Special Act and Service Awards

Incentive Awards are designed to motivate employees to increase productivity and creativity by rewarding those whose job performance and ideas benefit the Council and are substantially above normal job requirements and performance standards. Cash awards for outstanding service may be granted to full time employees in addition to salary increases at any time during the year. A cash award may be granted in any amount ranging from $25 to $5000 and will be determined by the Executive Director within budget constraints after consultation with the Chairman. A cash award is a one time, lump sum payment and not a part of the basic annual salary of the employee. The payment is subject to Federal and State withholding taxes, and social security and Medicare deductions. Cash awards are not subject to retirement fund contributions. Cash awards may be granted for various reasons such as: a) completion of short-term project in less time than expected or where there were unusual difficulties to overcome; b) development of new/revised procedures or other contribution toward improvement of office productivity; c) handling an unusually heavy workload, such as when coworkers are absent or vacant positions are not filled immediately; d) completion of significant special assignment outside normal job responsibilities; and e) contribution that improved public awareness and/or understanding of programs.

4.4.5 Work Schedule and Overtime Pay

The standard work week for all full time employees shall be 37.5 hours. The standard work day shall be 8:00 A.M. to 4:30 P.M. with a one hour lunch period. Deviation may be authorized by the Executive Director to meet operational needs through the use of flex-time or telework. Cases of continuing or permanent schedule deviation shall be subject to the approval of the Executive Director or Council. Employees in supervisory, executive or professional positions shall not be eligible for overtime cash payments. However, they shall be eligible for compensatory leave at the rate of one hour leave for one hour's work. Compensatory leave must be taken within six (6) months of the date from which it was earned. Employees other than supervisory, administrators, executives or professionals shall be eligible for cash overtime payments at the rate of one hour's pay for each hour up to 40 hours per week or in excess of 7.5 hours per day and 1.0 hours worked in excess of 40 hours per week or in excess of 8 hours per day. Overtime payments shall be made in accordance with the provisions of the Fair Labor Standards Act (FLSA) 29 U.S.C. § 201 et. seq. Employees eligible for cash overtime may elect
to receive compensatory time in lieu of cash overtime. Such requests must be in writing and approved by the Executive Director prior to the end of the pay period in which it is earned. Requests for compensatory time in lieu of cash overtime may not exceed 75 hours at any one time and must be taken within 6 months of the time that it was earned.

### 4.4.6 Recruitment

All personnel vacancies should be filled on a competitive basis, unless unusual circumstances clearly dictate otherwise. For this purpose, the Executive Director may use the vacancy advertising system operated by NOAA through the servicing Regional Office or any other recruitment tool, including newspapers and local employment agencies.

### 4.5 Leave

#### 4.5.1 Annual Leave

a. Full time employees of the Council shall be entitled to annual leave in accordance with the following schedule. Part time employees accrue leave at the same rate, per hours worked.

   (1) Up to 3 years of service: 13 days per year (2 hours leave per 40 hours).
   (2) 3 to 15 years of service: 20 days per year (3 hours leave per 40 hours).
   (3) Over 15 years of service: 26 days per year (4 hours leave per 40 hours).

b. Prior Federal, State or local government service will be credited for the purpose of determining leave accrual of individual employees.

c. Though accruing, employees shall not normally be granted paid annual leave until the completion of six (6) months of continuous service.

d. At the end of the calendar year, employees may carry over up to 30 days unused annual leave from one year to the next. Amounts remaining above 30 days will be forfeited. Employees who were authorized to carry over 40 days in accordance with Council SOPPs prior to December 11, 1980, may continue under such policy. Under certain conditions, forfeited annual leave may be restored if it was properly scheduled for use and circumstances beyond the employee's control caused the forfeiture. Approval for this restoration must be obtained from the Executive Director, who will refer to the NOAA Personnel Regulations and other source documents for guidance.

e. Employees shall request annual leave as per the guidelines established by the Executive Director.

f. Lump sum reimbursements not to exceed 30 days plus current year earnings of unused leave are authorized upon employee separation. Lump sum reimbursements not to exceed 40 days carryover plus current year earnings of unused leave are authorized upon employee separation for those employees authorized to carry over 40 days of unused leave. In the case of the death of an employee, the employee's estate shall be paid in cash for any accumulated annual leave.

#### 4.5.2 Sick Leave

a. All employees except temporary, seasonal and emergency shall accrue paid sick leave credit at the rate of 13 days per year (two hours leave per 40 hours). Permanent part time employees shall accrue sick leave at the same rate, per hours worked. Sick leave credit may be accumulated without limit. Distributions of accumulated funds for unused
sick leave may be made to the employee upon his or her retirement, or to his or her estate upon his or her death. Eligibility criteria for retirement is age 60 or 20 years of service. An employee eligible for sick leave with pay may use such sick leave for absence due to illness or death of a member of the employee's immediate family requiring the employee's personal presence. In addition, sick leave can be used for appointments with doctors, dentists, or other recognized medical practitioners, subject to prior approval of the Executive Director. An employee, at his option, may also use sick leave to provide full regular pay during periods when he is paid less than full pay under workmen's compensation provisions. Such leave shall be charged in proportion to the difference between workmen's compensation pay and full pay. Employees cannot take sick leave with pay in excess of the days actually accrued.

b. An employee needing sick leave shall inform his immediate supervisor of the fact and the reason in advance when possible, or otherwise as soon as practicable; failure to do so may be cause for denial of pay for the period of absence. Before approving pay for sick leave, the Executive Director may require either a medical practitioner's certificate or a written statement signed by the employee setting forth the reason for the absence. In the case of an absence of more than three (3) consecutive days, a medical practitioner's certificate may be required as a condition of approval.

c. In meritorious cases, the Council may advance up to one year's earnings of sick or annual leave when it is reasonably expected that the advanced leave will be repaid by the employee. This must be approved by the Council Chair or an individual to whom the Chair has designated this authority in writing.

4.5.3 Paid Holidays

Paid holidays shall be official Federal holidays plus one holiday designated by the Executive Director.

4.5.4 Administrative Leave

The Executive Director may grant any employee administrative leave for jury duty (no limit); inclement weather (at the discretion of the Executive Director); military duty (not to exceed 15 days each calendar year); military induction examination; and blood donation (up to 4 hours); and for such other reasons as the Executive Director may designate.

4.5.5 Personal Leave

Upon a permanent employee's written request, the Executive Director may approve a leave without pay, not to exceed three (3) months. Such leave may be renewed for an additional period not to exceed three (3) months by formal action of the Executive Director and written approval by the Chair of the Council.

4.5.6 Maternity Leave

Maternity leave may be charged against any accumulated leave credits. After all leave credits are exhausted the employee may continue on maternity leave without pay for a period not to exceed 14 weeks after parturition.

4.5.7 Family Leave

Full time employees of the Council shall be entitled to family leave in accordance with the U.S. Department of Labor Family and Medical Leave Act (FMLA) 29 CFR Part 825. Employees are
eligible to receive up to a total of 12 workweeks of unpaid leave during any 12 month period for one or more of the following reasons:

a. For the birth and care of the newborn child of the employee;

b. For placement with the employee of a son or daughter for adoption or foster care;

c. To care for an immediate family member (spouse, child, parent) with a serious health condition; or

d. To take medical leave when the employee is unable to work because of a serious health condition.

4.5.8 Leave and Retiree Health Insurance Accounts

Accounts shall be maintained to pay for unused sick or annual leave and retiree health benefits as authorized. The accounts will be funded from the Council’s annual operating allowances. Funds will be deposited into these account each year based on an actuarial report of future insurance needs for retirees and the availability of funds. Interest earned on this account will be maintained in the account, along with the principal, for the purpose of payment of unused annual and sick leave only. This account, including interest, may be carried over from year to year. Budgeting for accrued leave will be identified in the “Other” object class categories section of the SF-424A.

4.6 Employee Benefits

4.6.1 Health Insurance

The Council will pay the basic rate for the employee and his family under the plan chosen, including the blood bank. Surviving spouses of employees will be considered eligible to participate in group health benefits at their own expense and at no cost to the Council for a period of up to one year. The conditions and benefits outlined in this section are not to be considered as part of any contract of employment but are those benefits which the Council considers to be consistent with the requirements of the Secretary of Commerce. Salary increases funded in lieu of life and medical/dental policies are not permitted.

Full time employees of the Council who retire from the Council with a minimum of 20 years of service are eligible to receive health benefits which are comparable to Federal employees, set by the U.S. Office of Personnel Management Federal Employees Health Benefit Program, on a cost share basis of 75% Council and 25% employee.

4.6.2 Life Insurance

The Council will pay for employee life insurance coverage at the rate of one times salary, with a minimum coverage of $50,000, non-contributory.

4.6.3 Retirement

The Council will pay a base of ten (10) percent of an employee's salary into a deferred compensation plan. Depending on availability of funding, the Council will contribute an additional match of up to four (4) percent beginning January 1, 2012. Vesting will be 100 percent. In the case of the death or disability of an employee, the employee or the employee's estate or beneficiary shall be paid in cash for 100% of the employee's deferred compensation plan.
4.6.4 Long Term Disability Insurance

The staff is eligible for coverage by a disability plan similar to that provided by the Federal Government to its employees.

4.7 Experts and Consultants

As long as funding is available in the Council's budget, the Executive Director may contract with experts and consultants as needed to provide technical assistance not available from NOAA at a rate that does not exceed the first step of GS 15 plus travel. A Council must notify the NOAA Office of General Counsel before seeking outside legal advice, which may only be for technical assistance not available from NOAA. If the Council is seeking legal services in connection with an employment practices question, the Council must first notify the Department of Commerce's Office of the Assistant General Counsel for Administration, Employment and Labor Law Division. A Council may not contract for the provision of legal services on a continuing basis.
5.0 TRAVEL REIMBURSEMENT PROCEDURES

5.1 General
a. The Federal Travel Regulations (FTR), found at 41 CFR Part 301, apply to all travel.
   Expenses reimbursed by the Government include: transportation by air coach, rail coach, bus or
   privately owned vehicle (automobile or private plane reimbursed on a per mile basis); lodging and meals in accordance with the FTR and GSA’s established lodging and meals and incidental expenses (M&IE) rates (hereinafter referred to as per diem rate); and incidental expenses such as taxi fares, parking, and telephone calls on official business.

b. If flying, coach air transportation must be utilized when available. Travel via first class air must be justified on the reimbursement voucher and approved by the Council Chair or his/her authorized representative, after ensuring compliance with the FTR and OMB Circular A-122.

c. If driving, privately owned vehicles (POVs) may be authorized when other modes of transportation are either unavailable or inconvenient. When a POV is authorized for the convenience of the traveler, the reimbursed costs must not exceed the costs of coach air fare.

d. Accommodations equivalent to other than first class must be utilized in the unlikely event that water vessel transportation is required.

5.2 Council, AP, SSC Members
Sections 302(d) and (f) of the Act provide that the voting members of the Council, the Executive Director of the Marine Fisheries Commission on the Council, and members of advisory groups and committees will be reimbursed for actual expenses incurred in the performance of Council duties. They are not bound by the per diem limits for meals and lodging as set forth in the rates established by GSA Rules. They are subject, however, to the total reimbursement limits established by the FTR for actual expenses, and they must itemize their actual expenses up to the specified limit each day. Lodging receipts are required. The limits are included in the FTR. Federal employees serving in the above capacities are subject to the reimbursement rules of their agencies.

5.3 Council staff, members of plan teams, and others
Members of the Council staff and plan teams, invited experts, consultants, or others specifically invited, unlike those described in Section 5.2, must adhere to the per diem rates or actual expense requirements set forth in the FTR. The Executive Director shall be housed at the same hotel as the Council during Council and committee functions unless exempted by the Council Chair. Council staff attending a meeting shall be housed at the same hotel as the Council during Council and committee functions unless exempted by the Executive Director.
Non-NOAA team members
Non-NOAA team members may be reimbursed for travel expenses but receive no other compensation from the Council.

5.4 Reimbursement
Official telephone calls, taxis, privately owned vehicle mileage, parking, porters, etc., will be reimbursed in the amount of actual expenditure and are not included in meal and lodging limits.

5.5 Receipts
All claims for reimbursement, other than those expenses covered by M&IE, must be supported with receipts for all expenses (other than meals) except those expenses that individually amount to less than $50.

5.6 Foreign Travel
a. Foreign travel must be approved, in advance, by the Assistant Administrator for Fisheries or designee and by the Grants Officer. Requests for foreign travel approval should be submitted, in writing, at least 4530 days in advance to the Assistant Administrator, through the NMFS Office of Management and Budget and the Grants Officer. Routine across the border travel to Canada is exempt.

a. The Chair is authorized to approve routine across the border travel for Council members which has been granted to it by NOAA. The Executive Director is authorized to approve routine across the border travel for staff which has been granted to it by NOAA.

b. Council Chairman or his authorized representatives may approve routine across the border travel to Canada for Council members and employees within specified Federal rates. Domestic invitational travel for non-Council personnel may be approved by the Council Chairman or his/her authorized representative. Foreign invitational travel must be approved as described in paragraph (a) of this section. The per diem limits or actual expense requirements described above also are applicable to non-Council personnel traveling at Council expense. Payment for NOAA personnel from Council funds is not authorized.

5.7 Invitational Travel
The Executive Director may accept in-kind and/or actual invitational funds for Council staff travel (including his/her own), only after (1) notifying the NMFS Regional Administrator of the origin and purpose of such funding, and (2) directing such gifts to the Administrator. 50 CFR § 600.125(c).
6.0 FINANCIAL MANAGEMENT

The Council's grant activities are governed by 2 CFR Part 200 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards), 2 CFR Part 215, 2 CFR Part 230, and OMB Circular A-133 (Audits of States, Local Governers, and Non-Profit Organizations), which prescribe standards for financial management systems, procurement, property management, financial reporting, cash depositories, and grant close out procedures. The Council is required to comply with the provisions of the regulations, Circulars, DOC pre-award notification requirements, and terms and conditions of the cooperative agreement.

6.1 Cooperative Agreements

The Council receives funds through cooperative agreements for two basic types of expenditures: administrative (or operations) funds to cover general operating expenses, such as salaries, office space, utilities, travel, State liaison activities, etc., and programmatic (or contract) funds primarily designed to fund entries generated by the Council for development of FMPs (including amendments) or FMP oriented information.

6.1.1 Administrative

The funding for the administrative and technical support of Council operations is included in the budget of the Department of Commerce and, through the Department, in the budgets of NOAA and NMFS. The funding requirements for the Council are subject to regular budgetary review procedures. Annual or biennial grants and Five year cooperative agreements will provide such Federal funds as the Secretary determines are necessary to the performance of the functions of the Council and consistent with budgetary limitations. Requirements for periodic reports for purposes of NOAA budgetary control are described in individual grants and cooperative agreements issued to the Council.

a. Application for cooperative agreement

The Council must submit a formal application (Standard Form 424, Application for Federal Assistance) to the Northeast Regional Administrator. This application includes a Budget Data Form, a Program Narrative Statement supporting the application, and a Statement of General Assurances. As backup to the Budget Data Form, each Council must prepare a Budget Summary Worksheet. The Budget Data Form must reflect the amounts in lines A1 through A8 of the Worksheet. The Program Narrative Statement should describe in appropriate detail the purpose for which funds are sought, e.g., operational expenses, FMP oriented contracts, State liaison support.

b. Accounting

A Cash Receipts and Disbursement Journal with a monthly Summary of Accounts is required as a minimum bookkeeping system. A Statement of Income and Expenses for the Council must be prepared monthly for the Council membership. Each cash disbursement must be approved by the Council Executive Director or Administrative Office, except that the Council may set a level above which checks must be signed by the Council Executive Director or Administrative Office and the Chair or Vice Chair. When budget estimates are submitted to the Assistant Administrator, the uniform account classification titles should be used.

c. Advance of funds

Drawdowns from the Treasury will be made in accordance with provisions established by the cooperative agreement.
6.1.2 Programmatic

Prior to preparing a programmatic application, the Executive Director shall survey appropriate academic institutions to determine if the desired results of the programmatic project have already been achieved or are being worked on and can be obtained at no cost by the Council.

a. Receipt of Funds

The Council may not independently enter into agreements, including grants, contracts, or cooperative agreements, whereby they will receive funds for services rendered. All such agreements must be approved and entered into by NOAA on behalf of the Council. Additionally, the Council is not authorized to accept gifts or contributions directly. All such donations must be directed to the NOAA Administrator in accordance with applicable Department of Commerce regulations.

b. Criteria

NOAA has established the following criteria to guide each year's decisions on programmatic funding:

1. Proposed projects must be directly related to the formulation of an FMP, amendment, or emergency action (including data collection necessary to determine whether an FMP should be formulated); necessary to evaluate an FMP already in place; or necessary to obtain information for use in framework FMP management actions.

2. Proposed projects must be short term, preferably one year or less but generally not longer than two years.

3. Proposed projects must avoid duplication of effort and operate as cost efficiently as possible in order to maximize benefits for Federal expenditures. When a Council has identified data needs for a particular fishery, available resources from NOAA, the States, Office of Sea Grant, academic institutions, and other established sources of information should be utilized to avoid duplication of effort. If certain biological, ecological, economic, or social data is needed on a high priority basis which cannot readily be supplied free of charge by NMFS or other institutions, the Council may be authorized to contract for the information collection and analysis. The SSC of each Council should assist in identifying immediate and longer range research and data needs.

c. Procedure

1. Requests for programmatic funding may be submitted at the same time as the Council's administrative budget, or at other times as requested by the Assistant Administrator. Documentation should include a cover letter explaining the need for the project, how it contributes to an FMP (proposed, developing or existing), and how it meets criteria outlined in this section.

2. Competing project proposals which meet the above criteria may be funded based on an evaluation of urgency of problem to be addressed, impact of failing to fund, impact of delay in funding, and importance and size of fishery.

3. Programmatic contract services always must be described in the context of overall Council plans in a particular programmatic area. The relationship of individual contracts to past and projected goals must be reflected in all Council applications for contract funds.
6.2 Procurement
The procurement system of the Council will be the direct responsibility of the Executive Director. The terms and conditions of the award and 2 CFR Parts 200, 215 and 230 will be adhered to in procurement and a clear audit trail for all Council expenditures will be maintained. The cost and financial management principles outlined in 2 CFR Parts 200, 215 and 230 apply to all Council procurement actions.

a. To avoid duplication of work, efforts must be made to use existing support sources (Federal, State, other Councils, etc.) before commercial sources are sought.

b. Competition must be held for all commercial purchases over $100,000 unless the unique nature of the procurement, unforeseen time constraints, and/or substantiated overall savings (administrative plus contractual) clearly dictate otherwise. Proposed sole-source contracts over $100,000 must be approved in writing by the Regional Administrator and the Grants Officer. Final copies of all contracts awarded will be filed with the appropriate Grants Officer. All sole source procurements under $100,000 with individuals and commercial vendors will be documented. Internal Council evaluations may be made on procurements in excess of $100,000 to ensure their legality, economy, and viability, or the Council may delegate such authorization to its Executive Director or Chair.

c. Efforts must be made to utilize small businesses, minority-owned firms, and women's business enterprises for Council procurements, and to purchase American made equipment and products. The Commerce Business Daily (CBD) should be considered as a means of publicizing contemplated contracts.

d. The purchase or lease of ADP equipment by the Council and its subcontractors requires prior approval by the RA, Regional Administrator and the Grants Officer. Such approval will be made only after a cost benefit analysis (system life cost, lease vs. purchase, compatibility, etc.) by the Council demonstrates the economy of the proposed action.

e. The Council is authorized to purchase supplies and services from GSA directly.

6.3 Property Management System
It is the responsibility of the Executive Director to develop and implement property management procedures that ensure adequate control and protection of Council property at all times. An annual inventory report will be submitted to the NOAA Grants Officer. Theft of Council property should be reported promptly to local law enforcement personnel, including the FBI, the Grants Officer, and to the Regional Office. Property management procedures must ensure adequate control and protection of Council property at all times. Such procedures must include as a minimum:

a. A perpetual inventory system for all non-expendable items (office equipment, furniture, etc.).

b. Procedures for marking such items as Council property.

c. Provision or safeguarding sensitive items such as cameras and biological equipment.

d. Procedures to be followed in disposing of surplus items. Surplus property with a current per-unit fair market value of greater than $5,000 will be disposed of in accordance with 2 CFR Part 200. Equipment with a current per-unit fair market value of less than or equal to $5,000 may be disposed of in the following manner:

1. Property which is determined to be surplus to the Council needs may be transferred, traded, sold, or discarded.
(2) Items may be transferred to another Council, Federal, State, or local agency.

(3) Items may be traded for needed supplies, equipment, or for other considerations with another Council, Federal, State, or local agency.

(4) Items may be sold to another Council, Federal, State, or local agency, or commercial vendor at a fair market value.

(5) Any item that is no longer functional may be discarded in any appropriate manner.

e. A summary of all personnel authorized to have access to Council property (to include consultants, if appropriate).

6.4 Space Management
Economy should be exercised regarding the amount and cost of space acquired. When acquiring office space, the Council may avail itself of the following:

a. General Services Administration leasing assistance;

b. Regional Office assistance; and

c. Direct negotiations within the guidelines stated above.

The leasing, renting, and acquisition of real property and space will be performed in a manner consistent with 2 CFR Part 200 or 2 CFR Part 230, as applicable.

6.5 Accounting System

a. The Executive Director shall have the authority to adopt and install an accounting procedure consistent with and within Federal guidelines. The accounting system must be a document oriented, obligation accounting system (with accruals, as necessary, for budget projection purposes). Actual journals and ledgers must be maintained either manually or on an automated system; in either case, however, all obligations must be clearly documented and organized in order to provide quick access and verification by professional auditors. The actual composition (chart of accounts) of the system as a minimum must provide fiscal control over expenditures in line with those object classes depicted in the Council budget submission. This will allow not only timely submission of the periodic financial status reports, but it will also ensure close coordination between actual spending rates and budgeted amounts so that comparisons and changes can be made at any time. All financial records must be handled in accordance with 2 CFR Part 200.

b. The Executive Director may contract with a Certified Public Accountant to assist in the establishment, operation, maintenance, audit, and control of such system.

c. The Council shall bond its employees in an amount adequate to safeguard the Council's interests. The total funds, on deposit and cash on hand, shall not, at any time, exceed the amount of the bond unless specifically authorized by the Council.

d. Checks may be drawn on the sole signature of the Executive Director or Administrative Officer, except that checks greater than $30,000, which must be signed by the Executive Director and also the Council Chair or the Vice Chair.

e. Year-end Expenditures and Carry Overs. It shall be the policy of the Council not to expend funds at the end of a fiscal year in anticipation of needs which may arise in subsequent fiscal years.
6.6 Audits
An independent audit is required at least biennially by DOC Office of the Inspector General auditors or an independent public accountant (IPA). The Council is subject to audit by the DOC Office of the Inspector General and the General Accounting Office. The scope of the audit may include: conduct of financial operations; compliance with applicable laws and regulations; economy and efficiency of administrative procedures; and achievement of results.

a. If an IPA is to perform the audit, the request for proposals and contract must comply with 2 CFR Part 200.

b. As part of the IPA’s examination of Council records, it is requested that they comment on whether efforts have been made by the Council to include small, minority, and women owned businesses as sources of supplies and services.

c. In order to provide guidance or provide additional information to the auditors and the Council on audit related matters, it is suggested that the following personnel be invited to participate in the audit exit conference:

(1) The Grants Officer;

(2) The Assistant Administrator's staff and/or a representative of the Regional Office; and

(3) The Council Chair.

6.7 Financial Reports
Reports are required which summarize total expenditures made and Federal funds unexpended for each award, and the status of Federal cash received. Guidance for the preparation of these reports and other financial reporting procedures is contained in 2 CFR Part 200 and Special Award Conditions of the Cooperative Agreement.
7.0 RECORD KEEPING

7.1 Definitions:

a. **Records**: documentary items that are made or received by an agency of the United States in connection with the transaction of public business. Agencies are legally required to keep these records as evidence of their actions, and they must be maintained in accordance with your agency’s records retention schedule or one of the government’s general records retention schedules. They can be in any format (i.e. text documents, photos, computer codes, electronic files, CD-ROMS, disks, USB keys, magnetic tapes).

b. **Non-records**: items made or acquired solely for reference, extra copies of documents kept for reference/personal convenience (even if it’s a copy of something that is a record—only the original is the record), notes taken during a meeting which aren’t shared with others, drafts.

c. **Personal papers**: materials pertaining solely to your private affairs, for example the telephone bill that you brought in to pay during your lunch break or your personal appointment calendar.

7.2 Administrative Records for FMPs

a. Councils and NMFS Headquarters, Regions and Centers collectively are responsible for maintaining records pertaining to the development of FMPs and amendments within their geographic area of authority. In the event of litigation, compilation of an administrative record for a court case will be under the direction of the NOAA General Counsel.

b. Categories of documents which generally constitute an administrative record include, but are not limited to, the following:

1. Council meeting agendas
2. Minutes of Council meetings
3. Plan Team reports
4. SSC reports
5. AP reports
6. Hearing reports
7. Council reports/recommendations
8. Correspondence relating to the FMP
9. Scoping comments
10. Work plan
11. Discussion papers
12. NEPA documents
13. Regulatory analyses
14. PRA justification
15. Proposed regulations
16. Final regulations
Emergency regulations
Notices of meetings (Council, SSC, AP, Team)

7.3 Disposition of Records


b. The goal of an effective disposition program is annually to destroy unneeded records that are not required to be retained, while preserving records having long term or enduring value because of administrative, legal, scientific, or historical importance.

c. The Council must consult with NOAA before destroying Council records. Financial records (including time and attendance records) should be handled according to the stipulations of 2 CFR Part 200. The Council must send records associated with FMPs to the appropriate Region for disposition.

d. All records and documents created or received by Council employees while in active duty status, or while conducting Council business, belong to the Federal Government. When employees leave the Council, they cannot take the original or file copies of records with them; to do so violates Federal law.

7.4 Permanent Records

The designation of a file as "permanent" means that the records are appropriate for offer to the National Archives when 20 years old, unless otherwise specified. Destruction of permanent records is not authorized. The following are examples of permanent files:

a. EIS Files - Documents relating EIS's or environmental assessments. Cut off at end of calendar year when created. Permanent retention; no approved disposition at this time.

b. Annual Report Files - Input for the DOC Annual Reports and related correspondence. Cut off at end of calendar year when created; permanent.

c. Meeting Files - Including agendas, minutes, reports, studies and related correspondence. Cut off at end of calendar year; permanent.

Privacy Act (PA) Records

Each Council will maintain in its office, under appropriate safeguards in accordance with the PA, personnel files on employees, experts and consultants under contract, and advisory group members.

Maintenance

A file for each Council member containing appointment papers, security reports, biographical data and other official papers will be centrally maintained in NOAA under security and safeguard conditions required of files subject to the PA. This file will be available to members to which it
pertains on request, and to other members and government officials in accord with the provisions of the Privacy Act.

**Protection**
The PA provides the following protection for individuals, including Council employees, except as otherwise limited by law:

b. An individual is permitted to know what records pertaining to him/her are collected, maintained, used, or disseminated.

c. An individual is not permitted to prevent records pertaining to him/her, which have been obtained for a particular purpose, from being used or made available for another purpose.

d. An individual is permitted to request access to information in Federal records pertaining to him/her, to have a copy made of all or any portion of such records, if releasable, and to request to correct or amend such records.

e. The collection, maintenance, use, or dissemination of any record of identifiable personal information must be in a manner which assures that such action is for a necessary and lawful purpose, that the information is current and accurate for its intended use, and that adequate safeguards are provided to prevent misuse of such information.

f. Exemption from the requirements of the PA are permitted only in those cases where there is an important public need for such exemption as has been determined by specific statutory authority.

g. Federal agencies are subject to civil suit for any damage which occurs as a result of willful or intentional action which violates any individual’s rights under the PA.

**Request for PA Information**
Any time an individual is asked to provide information about himself/herself to be maintained in a PA record, the individual must be given a written statement for his/her retention which provides the following information:

h. The authority (statute or executive order) which authorizes the collection of the information, indicating whether the authority either imposes or authorizes any penalty for failing to answer; whether providing the information is mandatory or voluntary;

i. The principal purpose for which the information is to be used; and

j. Any other routine uses which may be made of the information. These routine uses must be limited to those published in the FEDERAL REGISTER, and the effect(s), if any, on the individual of not providing all or any of the requested information, both beneficial and adverse.

**Disclosure of PA Records**
The disclosure of PA records to the individual to whom they pertain, to a person accompanying the individual, to the parent of a minor, or to a legal guardian comprise a fundamental aspect of the PA. Otherwise, Councils may only disclose PA records under one of eleven situations outlined in NOAA Circular 75 82.

**Disposition of PA Records**
Councils must contact NOAA for guidance before disposing of PA records. Examples of PA records with recommended time frames for disposition are as follows:
k. Membership files: Containing biographical data on members. Cut off when member leaves Committee; destroy five years later.

l. Time and attendance files: Retain for three years following the final financial report for each grant year in accordance with 15 CFR Part 14.

**Freedom of Information ACT (FOIA) Requests**

All FOIA requests must be submitted in writing. The envelope and letter should be clearly marked "Freedom of Information Request."

m. FOIA requests received by a Council should be coordinated promptly with the appropriate NMFS Regional Office. The Region will forward the request to the NMFS FOIA Official to secure a FOIA number and log into the FOIA system. The Region will also obtain clearance from the NOAA General Counsel’s Office concerning initial determination for denial of requested information.

n. FOIA requests will be controlled and documented in the Region. The requests should be forwarded to the NMFS FOIA Officer who will prepare the Form CD-244, FOIA Request and Action Record, with the official FOIA number and due date. In the event the Region determines that the requested information is exempt from disclosure, in full or in part, under the FOIA, the denial letter prepared for the Assistant Administrator’s signature, along with the Foreseeable Harm Memo and list of documents to be withheld, must be cleared through the NMFS FOIA Officer. Upon completion, a copy of the signed CD-244 and cover letter transmitting the information should be provided to the NMFS FOIA Officer and the NOAA FOIA Officer.

**Confidentiality of Data**

In order to comply with 50 CFR Part 600 Subpart E, the Council adopts its Confidentiality of Data Policy by reference into this SOPPs.
8.0 AMENDMENTS TO STATEMENT OF ORGANIZATION PRACTICES AND PROCEDURES

8.1 Amendments
This Statement of Organization Practices and Procedures may be amended from time to time by majority vote of the voting members present and voting provided notice of the specific proposed change has been sent in writing to all members of the Council at least ten (10) days in advance of the meeting in which the matter shall be presented. Amendments to current SOPPs must be consistent with the guidelines in 50 CFR Part 600 Subpart C, the terms and conditions of the cooperative agreement (the funding agreement between the Council and NOAA that established Council funding and mandates specific requirements regarding the use of those funds), the statutory requirements of the Act, and other applicable law. Upon approval of a Council's SOPP amendment by the Secretary, a notice of availability must be published in the Federal Register that includes an Internet address from which the amended SOPP may be read and downloaded and a mailing address to which the public may write to request copies.