



MAR 1 2011

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: 2011 Atlantic Mackerel, Squid, and Butterfish (MSB) Specifications
Supplemental Environmental Assessment (SEA)

LOCATION: Atlantic Exclusive Economic Zone

SUMMARY: This action would increase the butterfish allowable biological catch (ABC) for the 2011 fishing year from 1,500 mt to 1,811 mt, and apply the increase to the butterfish mortality cap in the *Loligo* squid fishery. The action would only revise the butterfish ABC set forth in the final 2011 specifications and management measures MSB Fishery Management Plan (FMP), which went into effect on February 14, 2011 (76 FR 8306).

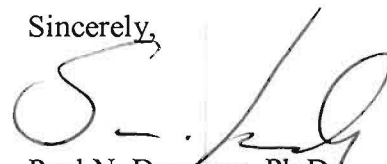
RESPONSIBLE

OFFICIAL: Patricia A. Kurkul
Regional Administrator
National Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)
55 Great Republic Drive, Gloucester, MA, 01930
(978) 281-9315

The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A copy of the Finding of No Significant Impact (FONSI), including the supporting environmental assessment, is enclosed for your information.

Although NOAA is not soliciting comments on this completed SEA/FONSI, we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the Responsible Official named above.

Sincerely,


for Paul N. Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosure

**2011 Atlantic Mackerel, Squid, and Butterfish (MSB) Specifications
Supplemental Environmental Assessment (SEA)**

February 2011

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201

Dover, DE 19901

(302) 674-2331 tel.

(302) 674-5399 fax

Initial draft EA submitted by the MAFMC: July 17, 2010

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Supplemental EA submitted by the MAFMC: February 17, 2011

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INTRODUCTION

This supplemental environmental assessment (SEA) updates the previously approved environmental assessment (EA) (November 22, 2010; attached) that analyzed the 2011 specifications for Atlantic mackerel, butterfish, and squid. Atlantic mackerel, squid, and butterfish (MSB) specifications were published as a proposed rule by NOAA's National Marine Fisheries service (NMFS) in the *Federal Register* on November 17, 2010 (75 FR 81498), and as a final rule on February 14, 2011 (76 FR 8306). The final rule established the 2011 butterfish specifications based on the Mid-Atlantic Fishery Management Council's (Council) preferred Alternative 3a. Alternative 3a specified a butterfish Acceptable Biological Catch (ABC) of 1,500 metric tons (mt), consistent with the Council's Scientific and Statistical Committee (SSC) 1,500 mt ABC recommendation.

Butterfish catches have been constrained to low levels since the ABC was reduced to 4,545 mt in 2005, and then to 1,500 mt in 2008. ABC reductions were in response to the results of the 38th Stock Assessment Workshop (SAW 38; NEFSC 2004) in 2004, which determined the stock was overfished. The Council developed Amendment 10 to the MSB FMP in response to SAW 38; Amendment 10 enacted a rebuilding program for butterfish, as well as measures to reduce butterfish bycatch in the *Loligo* squid fishery. The most notable bycatch reduction measure in Amendment 10 is the butterfish mortality cap ("cap" hereafter) on the *Loligo* squid fishery, which went into effect on January 1, 2011. The cap is 75% of the butterfish ABC ($0.75 * 1,500 \text{ mt} = 1,125 \text{ mt}$), and closes the directed *Loligo* squid fishery once it is attained. The butterfish mortality cap is allocated by trimester: Trimester I (January through April) – 65%; Trimester II (May through August) – 3.3%; Trimester III (September through December) – 31.7%. The directed *Loligo* fishery will close if 80 percent of the Trimester I butterfish mortality cap is projected to be harvested, and/or if 90 percent of the total cap is projected to be harvested in Trimester III. The mortality cap will still be tracked during Trimester II, but the catch and the mortality cap will be applied to Trimester III, along with overages and underages from Trimester I.

The most recent butterfish assessment, SAW 49 (January 2010; NEFSC 2010), determined that the status of the butterfish stock is unknown. Though the assessment was inconclusive, it did verify that long-term declines in the butterfish stock persisted even in the absence of fishing pressure, which suggests that fishing mortality may not be a major factor impacting the stock. The estimates of butterfish fishing mortality and total biomass resulting from SAW 49 were

highly uncertain, and the final assessment report stated that it would be inappropriate to compare the previous status determination criteria from SAW 38 with the current assessment estimates of spawning stock biomass and fishing mortality, because measures of population abundance in the current assessment were scaled much higher than those in the previous assessment. In May 2010, the SSC reviewed the SAW 49 results and other available information, including the Northeast Fisheries Science Center's (NEFSC) Autumn 2009 trawl survey indices for butterfish and, due to uncertainty in the assessment, recommended setting the butterfish ABC at the status quo level of 1,500 mt for the 2011 fishing year.

The Council recommended, and NMFS proposed, the 1,500-mt butterfish ABC in 2011 MSB specifications. During public comment on the proposed specifications, industry members expressed concern that the low butterfish ABC would cause the directed *Loligo* squid fishery to be closed before the fleet was able to access much of the *Loligo* squid quota. Commenters also pointed to recent information from the NEFSC Autumn 2009 and 2010 trawl survey that showed butterfish catches almost twice the average for the last decade (6.41 kg/tow for 2009; 5.59 kg/tow for 2010; average 3.4 kg/tow from 1999-2008). However, based on the SSC's recommended ABC, which was adopted by the Council, NMFS implemented the ABC for butterfish in the final MSB specifications in February 2011.

Because the Autumn 2010 survey information was not available during their initial deliberations, the SSC met on February 7, 2011, to reconsider whether the new information warranted an adjustment to their recommended butterfish ABC for 2011. The SSC reviewed inshore butterfish survey data from the Northeast Area Monitoring and Assessment Program (NEAMAP), as well as landings information for butterfish through 2010. The SSC also reviewed the past justification for the establishment of the 1,500-mt ABC.

The SSC noted the high uncertainty about current stock biomass, which made it difficult to assess the risk of the lower range of ABC values for 2011 that were previously considered in its May 2010 deliberations. It stated that, while establishing an ABC based on average landings over a given time period is justifiable in some situations where stock size is uncertain, it would be inappropriate to continue to use this method in the case of butterfish, given the long-term declining trend in stock abundance. However, the SSC went on to recommend that the Council adjust the 2011 butterfish ABC to 1,811 mt, based on a revised method that considers realized landings and discards from 2002-2008, a time period during which butterfish catch history was dominated principally by discards. This is in contrast to the method that was initially used to set the ABC in Alternative 3a (status quo), which relied on an assumed level of discards associated with average landings over a slightly different timeframe. This new method of determining the ABC is preferable because it is consistent with the altered character of the fishery (i.e., primarily a discard fishery), and the apparent stability in NEFSC Autumn trawl survey abundance indices between 2002 and 2008. The status quo estimate of 1,500 mt butterfish ABC also relied on the output of the model used in NEFSC 2004 (SAW 38).

Based on the SSC's recommendation, the Council requested at its February 2011 meeting, that NMFS adjust the butterfish ABC to 1,811 mt and apply the increase to the mortality cap for the *Loligo* squid fishery. The recommendation considers new information from the Autumn 2010 survey and the more recent NEAMAP results. The higher ABC, described as Alternative 3c in

this document, and resulting higher cap, should provide for additional *Loligo* fishing opportunities compared to the 1,500 mt ABC while still not substantially impacting the butterfish stock.

This SEA modifies the 2011 butterfish specifications portion of the Proposed Action and adds the analyses needed to support these changes. Only information specific to additional butterfish alternatives considered is included in this supplement to the Environmental Assessment for 2011 Atlantic Mackerel, Squid and Butterfish Specifications.

While there likely may be substantial changes to the *Loligo* fishery in 2011, those changes are not the result of the 2011 specifications per se so much as the measures instituted via Amendment 10 and analyzed in its EIS. To summarize Amendment 10's findings, the cap should constrain butterfish catches to the level that the butterfish ABC is set. Compared to a fishery without the cap, the cap would likely result in lower butterfish and *Loligo* catches if the *Loligo* fishery is closed due to reaching the cap. If the cap closes the *Loligo* fishery earlier than would have otherwise occurred (depends on the cap level and the butterfish encounter rate), other non-target species, habitat, and protected resources would also benefit due to the reduction in bottom-trawl gear effort toward *Loligo*. Such a closure would also come with economic costs, estimated to be up to \$15.8 million in direct reduced vessel revenues. Analysis in Amendment 10 suggested that impacts on other related sectors are about triple vessel revenue losses, so total impacts could be about \$63 million.

From the perspective of the annual specifications and related impact analyses, impacts were and are addressed from the point of view of changes compared to the status quo. Given the status quo and the preferred alternatives proposed an ABC of 1,500 mt, no impacts were expected related to the implementation of the 2011 Specifications. The original EA may not have made this point with as much clarity but that potential omission is hereby corrected.

The MSB FMP contains rollover provisions such that the status quo persists even if no action is taken. This means that "no action" is functionally equivalent to the "status quo." Since the initially preferred action was also equivalent to the status quo, the original EA described "no impacts" related to the preferred 2011 butterfish specifications under both the status quo/no action and preferred action scenarios (both entailed an ABC of 1,500 mt, with about 500mt for landings pending minor adjustments for research set-asides).

Unless otherwise noted, the initial Environmental Assessment prepared for this action and attached to this supplement remains applicable, including the purpose and need for this framework. Sections addressed in this supplement should be considered within the context of the full 2011 Atlantic mackerel, squid and butterfish specifications Environmental Assessment.

PURPOSE AND NEED

The purpose of both this and the original approved action is to implement 2011 specifications for the butterfish fishery consistent with the Magnuson-Stevens Fishery Conservation and

Management Act¹ (MSA). This action is needed in order to incorporate new information from the Autumn 2010 bottom trawl survey and most recent NEAMAP results, and provides a new evaluation that warrants an increase in the ABC. This emergency action would increase the 2011 butterfish ABC and expedite the changes based upon new scientific information. The low butterfish ABC and mortality cap (1,125 mt) currently in place for 2011 could result in a closure of the *Loligo* squid fishery. The *Loligo* squid fishery is particularly active during the first Trimester of the fishing year (January – April). Swift implementation of the modified ABC, consistent with the SSC recommendation, is critical to the *Loligo* fleet due to the timing of fleet activity, and history of interactions between *Loligo* squid and butterfish. This increase would provide the *Loligo* squid fleet additional access to *Loligo* squid quota during the fishing year. It would also enable the *Loligo* squid fleet to optimize *Loligo* squid harvest with reduced concern that the fishery could be closed due to the butterfish mortality cap. Therefore, this emergency action would reduce the likelihood of disruption to the *Loligo* squid fishery that would be caused by the existing butterfish cap. The revised Council-preferred specifications for butterfish under alternative 3c comply with the MSA, including the national standards for fishery conservation and management and the Atlantic Mackerel, Butterfish, and Squid Fishery Management Plan (FMP) as currently amended.

ALTERNATIVES

Alternative 3a (ORIGINALLY PREFERRED)

Analysis of this alternative is included in the original EA and is not repeated in this document. The specifications under this alternative would be ABC = 1,500 mt, and initial optimum yield (IOY), domestic annual harvest (DAH), domestic annual processing (DAP) would all equal 500 mt. Joint venture processing (JVP) and total allowable level of foreign fishing (TALFF) would be specified at 0 mt. These specifications, which acknowledge discards have recently been approximately double landings (per the latest stock assessment), are designed to minimize directed fishing and provide for retention of some incidental catch while the butterfish mortality cap on the *Loligo* fishery (implemented via Amendment 10) constrains discards. These specifications are also generally designed to avoid re-development of a directed fishery while butterfish appears to be in a depleted condition. Analysis of this alternative is included in the original EA and is not repeated in this document.

Alternative 3b (STATUS QUO/NO ACTION)

Analysis of this alternative is included in the original EA and is not repeated in this document. The specifications under this alternative would be Max OY = 12,175 mt, ABC = 1,500 mt, and IOY=DAH=DAP=500 mt and JVP and TALFF = 0 mt. These specifications, which assume discards are double landings (per the latest stock assessment), were designed to minimize directed fishing while Amendment 10 was implemented (to rebuild butterfish). An ABC of 1,500 mt was shown to facilitate rebuilding in just one year given average recruitment levels. These specifications are also generally designed to avoid re-development of a directed fishery while a rebuilding plan was implemented. Analysis of this alternative is included in the original EA and is not repeated in this document.

¹ Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

Alternative 3c (PROPOSED ACTION; CURRENTLY PREFERRED)

The new Council-preferred alternative 3c for butterfish recommends an ABC of 1,811 mt, an increase of 21% or 311mt. This adjusted ABC is based on a revised method that averages butterfish landings and discards from 2002-2008, a time period during which butterfish catch history was dominated principally by discards. This is in contrast to the method that was initially used to set the ABC at 1,500 mt, which relied on an assumed level of discards associated with average landing over a slightly different timeframe.

Because the Council indicated that the increase in ABC should be used to increase the butterfish mortality cap to the extent practicable, no changes are proposed to optimum yield (IOY = 500 mt), domestic annual harvest (DAH = 495mt), domestic annual processing (DAP = 495mt), total allowable level of foreign fishing (TALFF = 0) or joint venture processing (JVP = 0). All of the unchanged specifications were analyzed under Alternative 3a in the original EA. Instead it is proposed that the additional 311mt be used in its entirety to increase the butterfish cap from 1,125 mt ($0.75 \times 1,500$) to 1,436mt ($[0.75 \times 1,500] + 311$), a 28% increase. Amendment 10 provided that the ratio (initially 75%) of the ABC used to determine the cap can fluctuate depending on stock status, fishery circumstances, and Council priorities as the ABC increases, which is the current situation.

Alternative 3d (NON-PREFERRED)

The original EA analyzed impacts only for a 1,500 mt ABC because higher amounts appeared infeasible due to MSA constraints binding the Council to the SSC's recommended ABC. There was no information to support lower amounts. Given that briefing documents reviewed by the Council's SSC when formulating the SSC's updated ABC recommendation included an ABC option as high as 4,445 mt, a non-preferred Alternative 3d with an ABC of 4,445 is also analyzed in this supplemental EA. No changes to IOY, DAH, DAP, TALFF or JVP are proposed under this alternative. While an ABC of 4,445 mt would not appear to be a legal recommendation from the Council, CEQ guidelines (<http://ceq.hss.doe.gov/nepa/regs/40/1-10.HTM>) suggest that such constraints do not bind the analytical range within the context of NEPA. Impacts related to both 3d and the new preferred 3c are analyzed below in terms of the impacts they would cause compared to the status quo ABC of 1,500 mt.

SUPPLEMENTAL ENVIRONMENTAL IMPACTS

The revised range of alternatives and their impacts are summarized in Table 1.

The impacts of the proposed change in the 2011 butterfish ABC (via 3c) are not expected to significantly differ from the impacts associated with the ABC analyzed in the original EA, as shown in Table 1 below (which updates Table 1 of the original EA) and are described further below. Alternatives 3a and 3b are described in the original EA (see Alternative Set 5.3 on page 24). Non-preferred alternative 3d is also described below. This document focuses on changes relative to the status quo 1,500 mt butterfish ABC.

Table 1. Qualitative summary of expected impacts of various ABC alternatives considered for butterfish for 2011 in this document. A plus (+) signifies a positive impact; a minus (-) signifies a negative impact; a zero (0) signifies a null impact. A “0/” before a plus or minus sign “+” or “-” indicates a likely small impact.

| Alternatives - JVP and TALFF are not listed in the table because they are both zero throughout. DAHs may be reduced to provide RSA quota as described in this document. | Managed Resource | Non-target Species | Human Communities | Protected Resources | Essential Fish Habitat |
|---|------------------|--------------------|-------------------|---------------------|------------------------|
| Alternative 3a - butterfish (originally preferred); ABC=1,500mt; IOY=DAH= DAP=500mt | 0 | 0 | 0 | 0 | 0 |
| Alternative 3b - butterfish (status quo and no action, same as originally preferred except maintains Max OY); Max OY = 12,175; ABC=1,500mt; IOY=DAH=DAP=500mt | 0 | 0 | 0 | 0 | 0 |
| Alternative 3c - butterfish (currently preferred); ABC=1,811mt; IOY=DAH= DAP=500mt | 0/- | 0/- | 0/+ | 0/- | 0/- |
| Alternative 3d - butterfish (non preferred); ABC=4,445 mt; IOY=DAH=DAP=500mt | 0 to - | - | + | - | - |

Impacts on Managed Resources

Alternative 3c

Butterfish

Neither 3c nor any alternatives analyzed in the original EA would result in butterfish catch exceeding the most recent ABC identified by the SSC for 2011. The SSC originally identified a status quo ABC of 1,500 mt as most appropriate given the lack of accepted biological reference points and the apparent long term declining trend of butterfish described in SAW 49. Upon consideration of updated data presented in a January 26, 2010 staff memo (Appendix A - http://mafmc.org/fmp/msb_files/SSC_Butter_Data_2011_Memo.pdf), the SSC identified an ABC of 1,811 mt as most appropriate. The SSC’s rationale, documented in an attached memo (Appendix B - http://mafmc.org/fmp/msb_files/SSC_butterfish_Feb7_2011.pdf), was that, while objective statements regarding the risk of overfishing in the lower range of candidate ABC values considered in May 2010 and again during the February 2011 SSC conference call are difficult to make, average catch from 2002-2008 is justifiable because:

- a) this time period reflected a period of the catch history dominated principally by discards (no directed fishery as is currently the case)
- b) comparable estimates of discards were available (time series of discard estimates terminated in 2008)
- c) the stock abundance appeared relatively stable (albeit low) based on NEFSC fall survey data for butterfish.

As such, an ABC of 1,811 mt for butterfish is not expected to result in any adverse impacts on the butterfish stock compared to the no action/status quo alternative. The finding from SAW 49 that butterfish fishing mortality appeared relatively low based on a variety of benchmarks

(NEFSC 2010) also supports a conclusion that a relatively low ABC such as 1,811 mt would not be expected to result in any adverse impacts on the butterfish stock.

Other Managed Species

While a revised butterfish ABC of 1,811 mt may lead to higher *Loligo* catches compared to the status quo, this would not be expected to substantially affect the *Loligo* stock because total *Loligo* catch is constrained to a *Loligo* ABC via direct controls on the *Loligo* fishery, as discussed in the original EA. There would be no expected impacts on mackerel or *Illex*, as these fisheries do not interact with the *Loligo* or butterfish fisheries.

Alternative 3d

Butterfish

Alternative 3d would involve a butterfish ABC of 4,445 mt. The MSA constrains Councils to recommend ABCs at or below the ABCs recommended by the SSC, so Alternative 3d would not be feasible for the Council to recommend. Nevertheless, it is included in this supplement since it was discussed during the SSC Webinar that resulted in the revised 1,811 mt ABC. The 4,445 mt ABC recommended through this alternative corresponds with average butterfish catch from 1996-2008. While justifications put forward by the SSC under (b) and (c) above still generally hold true for the time period from 1996-2008, (a) would not hold true (a directed fishery existed prior to 2002) and an ABC of 4,445 mt would be a substantial expansion from recent catch levels.

The quantitative approaches explored (but not accepted) in SAW 49 suggested that an ABC of 4,445 mt would not have any substantial impact on the butterfish stock. However, measures of population abundance in SAW 49 were scaled much higher than those in SAW 38, and the finding in SAW 49 that the butterfish stock could sustain an ABC of 4,445 mt relies on SAW 49's much larger estimate of available spawning stock biomass. Given the uncertainty surrounding reference points for the butterfish stock, the SSC could not reject the hypothesis that an ABC of 4,445 mt has the potential to adversely impact the butterfish stock as compared to the status quo.

Other Managed Species

While an ABC of 4,445 mt may lead to a higher *Loligo* catch because of a subsequent increase in the butterfish cap, this would not be expected to substantially affect the *Loligo* stock because total *Loligo* catch is constrained to a *Loligo* ABC via direct controls on the *Loligo* fishery, as discussed in the original EA. There would be no expected impacts on mackerel or *Illex*.

Impacts on Other Non-Target Species

Alternative 3c

As proposed, an ABC of 1,811 mt would increase the butterfish cap on the *Loligo* fishery by approximately 28% compared to an ABC of 1,500 mt. To the degree that this led to additional *Loligo* effort compared to the status quo of 1,500 mt, impacts on non-target species would also increase. Species caught incidentally to the directed *Loligo* fishery are identified in Table 46 of the original EA; these include spiny dogfish, butterfish, silver hake, *Illex* squid, red hake, and spotted hake. It is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close, which means that an increase to the ABC would have no impact. However, it can be reasonably assumed that a higher butterfish ABC would lead to higher *Loligo* effort. In general, this action may result in a slight negative impact on non-target species, in the form of increased encounters with species that are incidentally captured in the *Loligo* fishery.

Alternative 3d

An ABC of 4,445 mt would increase the butterfish cap on the *Loligo* fishery by approximately 196% compared to an ABC of 1,500 mt if 75% of the butterfish ABC is allocated as the cap on the directed *Loligo* fishery. To the degree that this led to additional *Loligo* effort compared to the status quo of 1,500 mt, impacts on non-target species would also increase. Species caught incidentally to the directed *Loligo* fishery are identified in Table 46 of the original EA. It is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close, which means that an increase to the ABC would have no impact. However, it can be reasonably assumed that a higher butterfish ABC would lead to higher *Loligo* effort. In general, this action may result in a negative impact on non-target species, in the form of increased encounters with species that are incidentally captured in the *Loligo* fishery.

Impacts on Habitat, Including Essential Fish Habitat (EFH)

Alternative 3c

Butterfish and *Loligo* are taken with a number of gears, but bottom otter trawl account for most of the catches for both species in a given year. Bottom trawls are known to adversely impact benthic habitat in a manner that is more than minimal and not temporary in nature. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast, where gear impacts are minimal and temporary. A full description of the impacts of gears used in MSB fisheries is offered in Section 6.3.4 of the EIS for Amendment 9 to the MSB FMP, available here:

<http://www.nero.noaa.gov/nero/regs/frdoc/08/08smbamend9noafeisI.pdf>.

Since *Loligo* catches, and associated butterfish catches, are limited by the availability of the *Loligo* resource, it is difficult to predict how changes in the specifications would affect effort and therefore habitat. As proposed, an ABC of 1,811 mt would increase the butterfish cap on the *Loligo* fishery by approximately 28% compared to an ABC of 1,500 mt. To the degree that this led to additional *Loligo* effort compared to the status quo of 1,500 mt, impacts on habitat would also increase. While it is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close, which means that an increase to the ABC would have no impact, a higher butterfish ABC is reasonably likely to lead to higher *Loligo* effort. This alternative may result in

a slight increase in negative impacts to habitat/EFH. However, impacts will still be minimal due to the lack of featured bottom habitat affected by these fisheries.

Alternative 3d

Butterfish and *Loligo* are taken with a number of gears, but bottom otter trawl account for most of the catches for both species in a given year. Bottom trawls are known to adversely impact benthic habitat in a manner that is more than minimal and not temporary in nature. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast, where gear impacts are minimal and temporary. A full description of the impacts of gears used in MSB fisheries is offered in Section 6.3.4 of the EIS for Amendment 9 to the MSB FMP, available here:

<http://www.nero.noaa.gov/nero/regs/frdoc/08/08smbamend9noafeisI.pdf>.

An ABC of 4,445 mt would increase the butterfish cap on the *Loligo* fishery by approximately 196% compared to an ABC of 1,500 mt if 75% of the butterfish ABC is allocated as the cap on the directed *Loligo* fishery. To the degree that this led to additional *Loligo* effort compared to the status quo of 1,500 mt, impacts on habitat would also increase. While it is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close, which means that an increase to the ABC would have no impact, a higher butterfish ABC is reasonably likely to lead to higher *Loligo* effort. Thus, this alternative may result in an increase in negative impacts to habitat/EFH. However, impacts will still be minimal due to the lack of featured bottom habitat affected by these fisheries.

Impacts on Endangered and Other Protected Resources

Alternative 3c

The principal commercial gear type used to harvest butterfish and *Loligo* is the bottom otter trawl. Because butterfish has primarily been captured as a bycatch species in recent years, there have been no recorded interactions with endangered and protected species and the butterfish fishery. The primary impacts of the alternatives analyzed here are the result of the *Loligo* fishery. Interactions with the *Loligo* fishery occur during Trimesters I and III with marine mammal, and late in Trimester II and early in Trimester III with sea turtles. The analysis and discussion presented in section 6.4 of the original EA are summarized below.

An examination of 2009 NMFS dealer reports on the distribution of catch in 2009 by period suggests that 35% of the catch occurs during Trimester I, 34% occurs during Trimester II, and 29% occurs during Trimester III. Over 75% of *Loligo* catches occurred in statistical areas 537, 616, 622, 613, 626 and 612 (see Figure 10 in the original EA). The seasonal/spatial extent of the fishery is important given the availability of endangered and protected resources to bottom otter trawl fishing gears is also affected by protected resource distribution. In addition, the stock status (i.e., increasing or decreasing stock size) of these protected species may affect interaction rates.

The *Loligo* fishery has had observed interactions with marine mammal species, namely the common dolphin (*Delphinus delphis*) and pilot whale species (*Globicephala spp.*) in the past. In recent years, observer coverage has been assigned generally to the Mid-Atlantic bottom trawl fishery. Recent estimates (from 2003-2007) of marine mammal takes are provided for the Mid-Atlantic bottom trawl fishery as a whole, thus the portion of estimated mortality estimates for the common dolphin and pilot whale species is unknown. For the mid-Atlantic bottom trawl fishery, the mean estimated annual mortality of the common dolphin was 199 (CV=0.12) during the five year period from 2003-2007. The average annual fisheries related mortality for pilot whale species during 2003-2007 was 34 (CV=0.11). Observed takes for both species occurred during the offshore fishery in the fall/winter (during Trimesters I and III).

The *Loligo* fishery is also known to interact with green (*Chelonia mydas*) and loggerhead (*Caretta caretta*) sea turtles late in Trimester II and early in Trimester III (between August and October). In general, turtles move up the coast from southern wintering areas as water temperatures warm in the spring, and south in the fall as the water cools. There is currently no estimate for the number of annual green turtle interactions there are with the *Loligo* fishery. Based on 1996-2004 observer data, Murray (2006) estimated that 616 loggerhead turtles per year are caught in the Mid-Atlantic bottom trawl gear; estimates are not available by fishery, but 8% of the interactions used in Murray's models came from trips targeting *Loligo*.

As proposed, an ABC of 1,811 mt would increase the butterfish cap on the *Loligo* fishery by approximately 28% compared to an ABC of 1,500 mt. To the degree that this led to additional *Loligo* effort during Trimesters I and III (when the butterfish cap is monitored and able to close the *Loligo* fishery) compared to the status quo of 1,500 mt, impacts on protected resources would also increase. While it is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close during Trimesters I and III, which means that an increase to the ABC would have no impact, a higher butterfish ABC is reasonably likely to lead to higher *Loligo* effort, and potential additional interactions with the species listed above. In general, this alternative may result in slightly higher negative impacts to endangered and protected resources when compared to the status quo alternative.

Alternative 3d

A summary of interactions between the *Loligo* fishery and endangered and protected species can be found above, and additional analyses and discussion are available in section 6.4 of the original EA. An ABC of 4,445 mt would increase the butterfish cap on the *Loligo* fishery by approximately 196% compared to an ABC of 1,500 mt if 75% of the butterfish ABC is allocated as the cap on the directed *Loligo* fishery. To the degree that this led to additional *Loligo* effort during Trimesters I and III (when the butterfish cap is monitored and able to close the *Loligo* fishery) compared to the status quo of 1,500 mt, impacts on protected resources would also increase. While it is possible that even under the status quo butterfish ABC the *Loligo* fishery may not close during Trimesters I and III, which means that an increase to the ABC would have no impact, a higher butterfish ABC is reasonably likely to lead to higher *Loligo* effort, and potential additional interactions with the species listed above. In general, this alternative may result in higher negative impacts to endangered and protected resources when compared to the status quo alternative.

Human Communities/Socioeconomic Impacts

Alternative 3c

Alternative 3c is expected to have positive impacts for the primary communities that participate in the *Loligo* fishery (described in Table 38 of the original EA), given short term revenues would increase without additional appreciable negative biological impacts. As proposed, an ABC of 1,811 mt would increase the butterfish cap on the *Loligo* fishery by approximately 28% compared to an ABC of 1,500 mt. This could lead to an approximate additional 28% of *Loligo* landings compared to when *Loligo* would have closed otherwise. Given it is impossible to know the final butterfish encounter ratio and *Loligo* landings at the point of closure, it is not possible to turn the additional 28% into a precise dollar value. The difference could potentially be 28% more compared to \$8 million (would be an additional \$2.2 million) or compared to \$16 million (would be an additional \$4.5 million) for example. This action may result in slight positive economic impacts for the *Loligo* industry because the increase would provide the *Loligo* squid fleet additional access to *Loligo* squid quota during the fishing year.

Alternative 3d

An ABC of 4,445 mt would increase the butterfish cap on the *Loligo* fishery by approximately 196% compared to an ABC of 1,500 mt if 75% of the butterfish ABC is allocated as the cap on the directed *Loligo* fishery. This could lead to an approximate additional 196% of *Loligo* landings compared to when *Loligo* would have closed otherwise. The difficulty of turning this amount of additional landings into dollar values discussed above for 3c applies to 3d as well. Since the impact on the butterfish stock is less clear with an ABC this high, and because there are other negative impacts to other valued ecosystem components, the overall impact on human communities is less clear in the long term though higher revenues would be likely in at least the short term. This action may result in positive economic impacts for the *Loligo* industry because the increase would provide the *Loligo* squid fleet additional access to *Loligo* squid quota during the fishing year.

Cumulative Impacts

Alternative 3c

Alternative 3c, the revised Council-preferred alternative, would not have a significant cumulative effect on any of the valued ecosystem components (VECs) outlined and described in section 7.6 of the original EA. This is consistent with the findings of the original EA, which considered the cumulative effects of the previous Council-preferred measure (Alternative 3a).

While Alternative 3c would increase catch levels above what was analyzed and implemented in the original EA and final rule, the cumulative effects under the revised Council preferred

measure remains largely unchanged. This is because the revised ABC is not expected to have adverse impacts on the butterfish stock compared to status quo, nor is it expected to significantly change the way in which the butterfish and *Loligo* fisheries have operated in recent years. Because the objectives of the FMP would continue to be met under Alternative 3c, the original EA conclusion that the 2011 specifications for butterfish would positively reinforce the past, and anticipated cumulative effects on the butterfish stock remains accurate. Similarly, the original EA indicated that no significant cumulative impacts would occur under the Council preferred butterfish alternative on non-target species or bycatch, habitat (including EFH), protected and endangered resources, and human communities. When the impacts of Alternative 3c are considered in conjunction with all the other pressures and conservation measures related to past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in past FMP documents, the original EA, and this supplemental document, there are no significant cumulative effects associated with alternative 3c in this supplemental document.

FINDING OF NO SIGNIFICANT IMPACT

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 CFR §1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ’s context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?

The revised preferred specifications presented in this SEA are not expected to jeopardize the sustainability of any target species affected by the action. The proposed specifications for butterfish are consistent with the FMP objectives and the SSC advice for ABC. The proposed ABC is considered likely to be sustainable in the long-term and not expected to result in overfishing of the butterfish stock. The proposed actions are unlikely to endanger the long-term sustainability of harvests from the butterfish stock (though the butterfish stock has been declining despite the apparent absence of substantial fishing pressure).

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

The revised preferred specifications presented in this SEA are not expected to jeopardize the sustainability of any non-target species relative to the status quo specifications (See section 7 of the original EA). The proposed measures are not expected to alter fishing methods, result in substantial increases in fishing effort, or change the spatial and/or temporal distribution of fishing activities. Despite the increase in the butterfish cap, it should still function to reduce the bycatch of butterfish and may reduce bycatch of other species if the cap closes the *Loligo* fishery earlier than would have otherwise occurred.

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?

The proposed action as described in section 7.0 of the original EA and in this SEA is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, has the potential to adversely affect EFH as detailed in the original EA. However, because the *Loligo* and butterfish fisheries operate in fairly shallow, sandy continental shelf environments that are highly disturbed by bottom currents and storms, this action is only expected to have minimal and/or temporary impacts. The quota-setting measures proposed in this action could, under certain conditions, result in a slight increase in the amount of time that

bottom trawling vessels spend fishing for *Loligo*, but the adverse impacts of this increased level of fishing on benthic habitats would not be expected to be significant. Neither these, nor any of the other measures included in the original EA or the SEA will have a significant adverse habitat impacts.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

None of the measures in the revised preferred specifications are expected to alter the manner in which the industry conducts fishing activities for the target species. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on these fisheries, including the communities in which it operates, will not impact adversely public health or safety.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

None of the original or revised preferred specifications are expected to alter fishing methods or activities in a way that would harm protected species or critical habitat in any manner not considered in previous consultations on the fisheries. The *Loligo* fishery is known to interact with common dolphins and pilot whales. Fishing effort for *Loligo* related to the increased butterfish mortality cap (i.e., the increased butterfish ABC) is not expected to substantially increase in magnitude, nor is the spatial and/or temporal distribution of fishing effort expected to change (see sections 7.3.3 and 7.4.3 of the original EA). Therefore, revised preferred alternative is not expected to have increased negative effects on common dolphins or pilot whales. The *Loligo* fishery is known to interact with loggerhead and green sea turtles, as described in section 6.4 of the original EA. The increased butterfish cap described in this document is not expected to substantially increase fishing effort, or alter fishing patterns in a manner that would adversely affect either of these endangered species of sea turtles.

6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

These fisheries are prosecuted using bottom otter trawls, which have the potential to impact bottom habitats. In addition, a number of non-target species are taken incidentally to the prosecution of these fisheries. However, fishing effort is not expected to substantially increase in magnitude under the proposed specifications. In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. Therefore, the proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area.

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?

These fisheries are primarily prosecuted using bottom otter trawls. Bottom otter trawls have the potential to impact bottom habitats. In addition, a number of non-target species are taken incidentally to the prosecution of these fisheries. However, fishing effort is not expected to substantially increase in magnitude under the proposed action. In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. As noted in Section 7 of the original EA, the proposed action is not expected to have any substantial natural or physical effects within the affected area. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental impacts that are expected.

8) Are the effects on the quality of the human environment likely to be highly controversial?

Given that the most recent stock assessment for butterfish was inconclusive, there is uncertainty concerning the potential impacts of any recommended catch level on the butterfish stock. The revised preferred alternative was formulated to incorporate the best available scientific information, and is based on the recommendation of the SSC. The revised preferred alternative is based on the average catch during a recent period in which butterfish discards were high and stock abundance appeared relatively stable (based on NEFSC trawl survey data). The revised alternative largely does not differ from the status quo. Therefore, the action is not expected to be highly controversial.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

The *Loligo* and butterfish fisheries are prosecuted primarily using bottom otter trawls in the open ocean throughout the Mid-Atlantic Bight and New England. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas (see section 7.0 of the original EA, and above in this document).

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The impacts of the revised preferred alternative on the human environment are described in section 7.0 of the original EA. The proposed action merely revises the annual butterfish ABC, and the resulting butterfish mortality cap, and is not expected to substantially increase effort. In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities. As a result, the effects on the human environment of the proposed specifications for 2011 are expected to be minimal or non-existent compared to the 2010 specifications, and effects are not highly uncertain nor do they involve unique or uncertain risks (see section 7.0 of the original EA). The potential economic costs of the butterfish cap for the *Loligo* fishery were analyzed in Amendment 10 and summarized above.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

As discussed in the original EA and this SEA, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. The proposed actions, together with past, present, and future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The Atlantic mackerel, *Loligo*, *Illex*, and butterfish fisheries are prosecuted primarily using bottom otter trawls in the open ocean throughout the Mid-Atlantic Bight and New England. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast. These fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources (please see the analysis in this SEA and sections 6.0 and 7.0 of the original document). Therefore, the proposed action is not expected to affect on any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

There is no evidence or indication that these fisheries have ever resulted or would ever result in the introduction or spread of nonindigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The proposed action has been proposed and evaluated consistent with prior year's specification setting processes and therefore is neither likely to establish a precedent for future actions with significant effects nor to represent a decision in principle about a future consideration.

15) Can the proposed action reasonably be expected to threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment?

Fishing effort is not expected to substantially increase in magnitude under the proposed action (see the attached SEA and section 7.0 of the original EA). In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities, or the spatial and/or temporal distribution of fishing effort. Thus, it is not expected that they would threaten a violation of Federal, State, or local law or requirements imposed for the protection of the

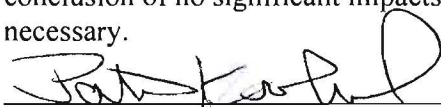
environment. In fact, the proposed measures have been found to be consistent with other applicable laws (see sections 8.3 - 8.11 of the original).

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Fishing effort is not expected to substantially increase in magnitude under the proposed action (see this SEA and section 7.0 of the original document). In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. Therefore the proposed action is unlikely to result in cumulative adverse effects (including any that could have a substantial effect on the target species or non-target species).

DETERMINATION

In view of the information presented in this document to supplement the analyses contained in original environmental assessment prepared for the 2011 Atlantic mackerel, butterfish, and squid fisheries specifications, it is hereby determined that the proposed actions analyzed in this supplemental environmental assessment will not significantly impact the quality of the human environment as described above and in the original environmental assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.



Regional Administrator for NERO, NMFS, NOAA

FEB 28, 2011
Date

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Murray, K.T. 2006. Estimated average annual bycatch of loggerhead sea turtles in the U.S. Mid-Atlantic bottom otter trawl gear, 1996-2004. U.S. Commerce Northeast Fish. Sci. Cent. Ref. Doc. 06-19. 22 pp.

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Northeast Fisheries Science Center (NEFSC). 2010. 49th Northeast Regional Stock Assessment Workshop (49th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 10-01; 41 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at <http://www.nefsc.noaa.gov/nefsc/publications/>

APPENDIX A

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Richard B. Robins, Jr.
Chairman

800 North State Street, Suite 201

Dover, Delaware 19901-3910

Tel: 302-674-2331

Toll Free: 877-446-2362

FAX: 302-674-5399

www.mafmc.org

Christopher M. Moore, Ph.D.
Executive Director

Lee G. Anderson
Vice Chairman

DATE: January 26, 2011

TO: SSC

FROM: Jason Didden 

SUBJECT: February 7, 2010 (10am) webinar to consider most recent butterfish information

Terms of Reference

The purpose of the Feb 7 (10am) SSC meeting is to review the latest data for butterfish and advise the Council if any changes to the 2011 specifications (including ABC) for butterfish are warranted based on the updated information. The terms of reference for the meeting are:

1. Review available information on butterfish abundance (NEFSC and NEAMAP trawl survey results)
2. Review available landings information for butterfish through 2010
3. Advise if any modifications to the 2011 butterfish specifications are warranted based on the additional survey data

Background

Butterfish catches have been constrained to around 1,500mt since the ABC was reduced from 7,200mt to 4,545mt in 2005 and then to 1,500mt in 2008. The constraining factors have included market forces, availability/abundance, and regulatory controls. The ABC reductions were in response to the now eclipsed SARC 38 (2004) assessment that found butterfish to be overfished and were designed to lock in low landings and prevent re-establishment of a directed fishery while the Council developed the butterfish conservation measures contained in Amendment 10 (the butterfish cap on the *Loligo* fishery and an increase to 2^{1/8}-inch mesh for the *Loligo* fishery). 1500mt was also suggested to facilitate rapid rebuilding given long-term average recruitment by an auto-regressive model developed during the Amendment 10 process.

Amendment 10 originally specified that the rebuilding ABC would be the yield corresponding to $F = 0.1$ but the failure of the most recent butterfish assessment (SARC 49) to produce reliable biomass estimates and its critique of the previous assessment (SARC 38) meant that ABCs have to be determined by the SSC based on the overall best available scientific information.

The SSC met in May 2010 to provide recommendations for the 2011 butterfish ABC. The briefing materials from last year may be found at:

http://www.mafmc.org/meeting_materials/SSC/2010-05/SSC_2010-05.htm.

The SSC's May 2010 findings (<http://www.mafmc.org/committees/science.htm>) were: ***The SSC recommends a status quo ABC, 1500 mt. Assessment reports that abundance trends are in decline and at historically low levels. However F appears very low. SSC concluded that maintaining ABC levels at this time is warranted. Available information suggests stock improvement at 1500 MT ABC, if environmental conditions improve.***

NEFSC Trawl Data Updates

Just before the May 2010 SSC meeting Council staff received the fall 2009 data point and it **was** included in the final butterfish presentation given to the SSC. The 2010 fall, and the 2009 and 2010 spring data points (highlighted in orange in Figures 1 and 2 below) are new compared to what was available to the SSC in support of the SSC's decision in May 2010. The new data points are generally lower.

An important note about the 2009 and 2010 numbers is that they use a single butterfish-specific calibration factor (the RV Bigelow replaced the RV Albatross in 2009). The indices below are all in Albatross units (the Bigelow caught more butterfish in the calibration trials which means the Bigelow numbers are scaled down to get Albatross units). It is likely that the next assessment will develop and utilize conversion factors that vary by butterfish length, which will likely result in changes to the 2009 and 2010 values. The next assessment will also examine how to address changes in survey strata beginning in 2009 (see "**NEAMAP Data**" below for additional discussion of this issue).

Recall also that the most recent assessment concluded that the fall survey likely provides a better indication of butterfish abundance because butterfish are more widely distributed throughout the survey area in the fall compared to the spring (compare figures 3 and 4). In addition, butterfish may be in water deeper than the survey to a greater degree in the spring.

CVs are not available for the 2009 and 2010 indices but historically for the Albatross, CVs averaged around .25 for fall and .45 for spring (this translates to 95% confidence intervals being about +/- 50% for fall and +/- 90% for spring).

Figure 1. NEFSC Fall Trawl Butterfish Indices.

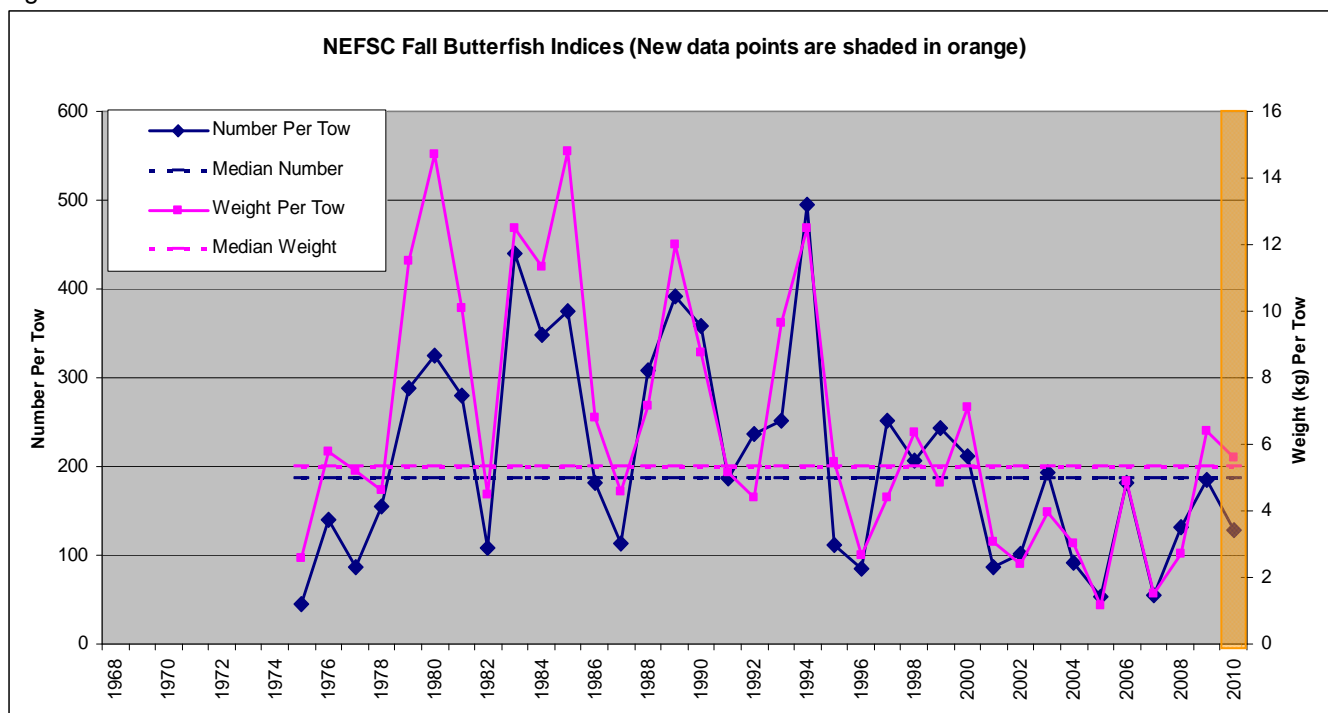


Figure 2. NEFSC Spring Trawl Butterfish Indices.

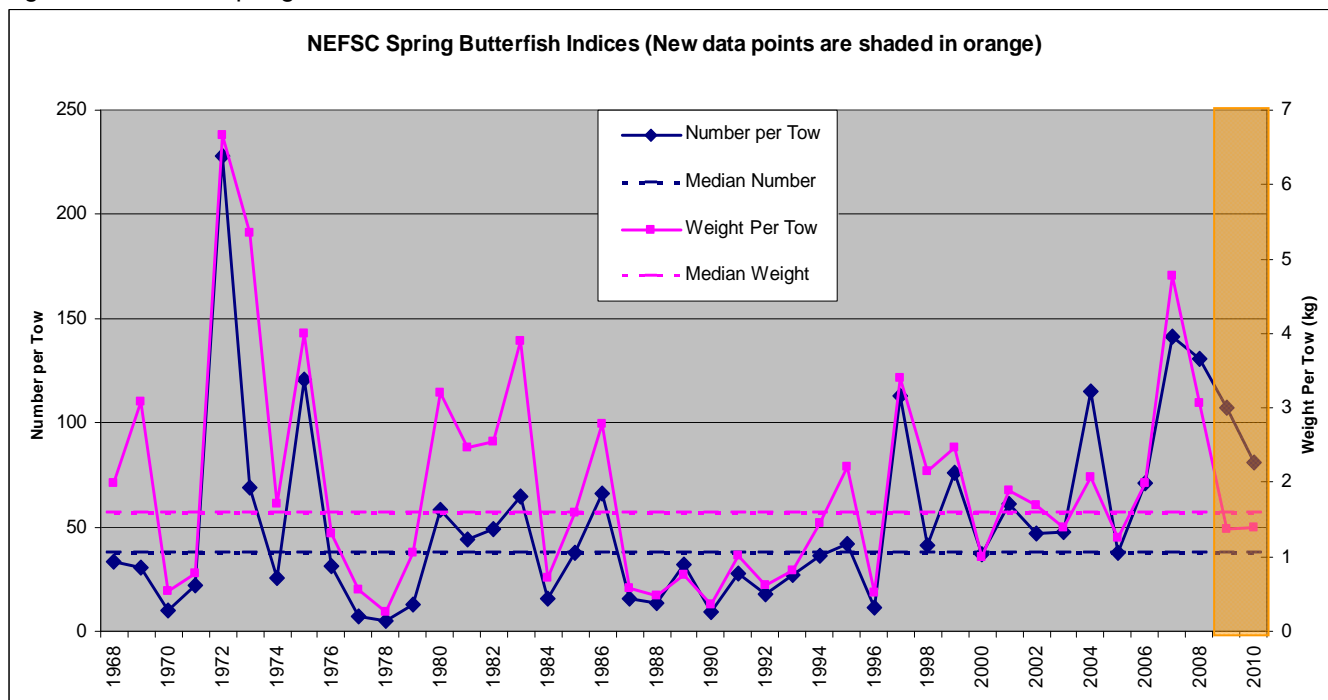


Figure 3. Butterfish distribution in Fall NEFSC trawl survey 1992-2003.

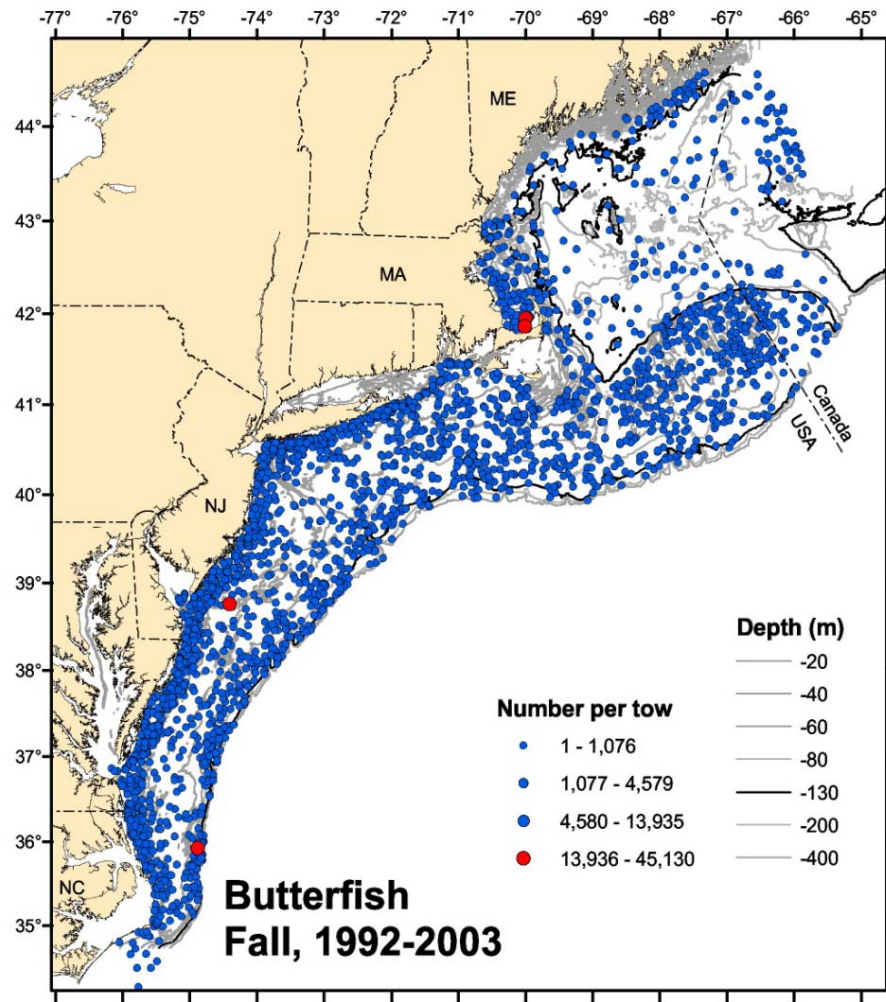
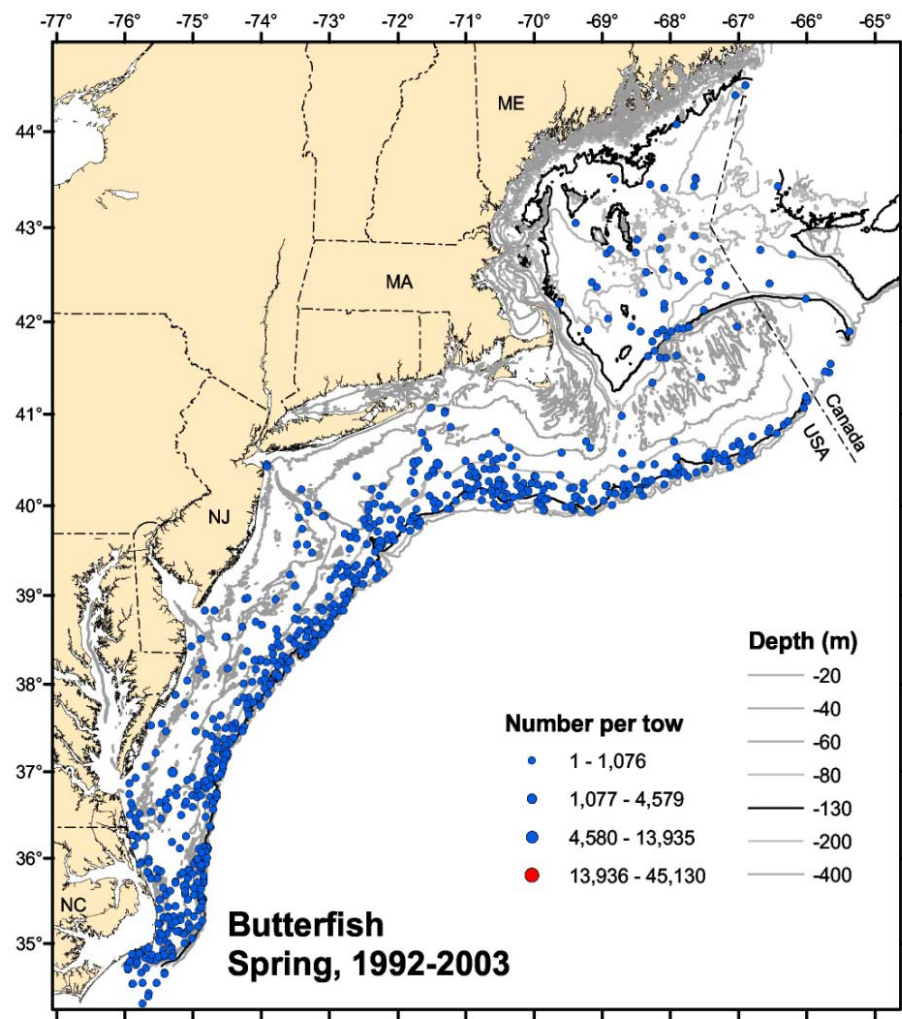


Figure 4. Butterfish distribution in Spring NEFSC trawl survey 1992- 2003



NEAMAP Data

Informal discussions with Science Center staff regarding our request for butterfish trawl data suggested that since the Bigelow doesn't sample as many "inshore" (none <18m) strata as the Albatross, it might be good to examine NEAMAP data as well. This may be especially true for fall when the Albatross encountered relatively high numbers of butterfish inshore (see figure 3 - the data is through 2003 because this was done for an earlier analysis). The next assessment will examine continuity issues related to the NEFSC trawl survey strata changes and how best to incorporate the NEAMAP data. The NEAMAP data was not used in the most recent butterfish assessment because only 2 years of data were available at that time. We still only have 3 years for spring and 4 years for fall. Additional background information on the NEAMAP data will be forwarded to you prior to the meeting.

Figure 5. NEAMAP butterflyfish index by Count.

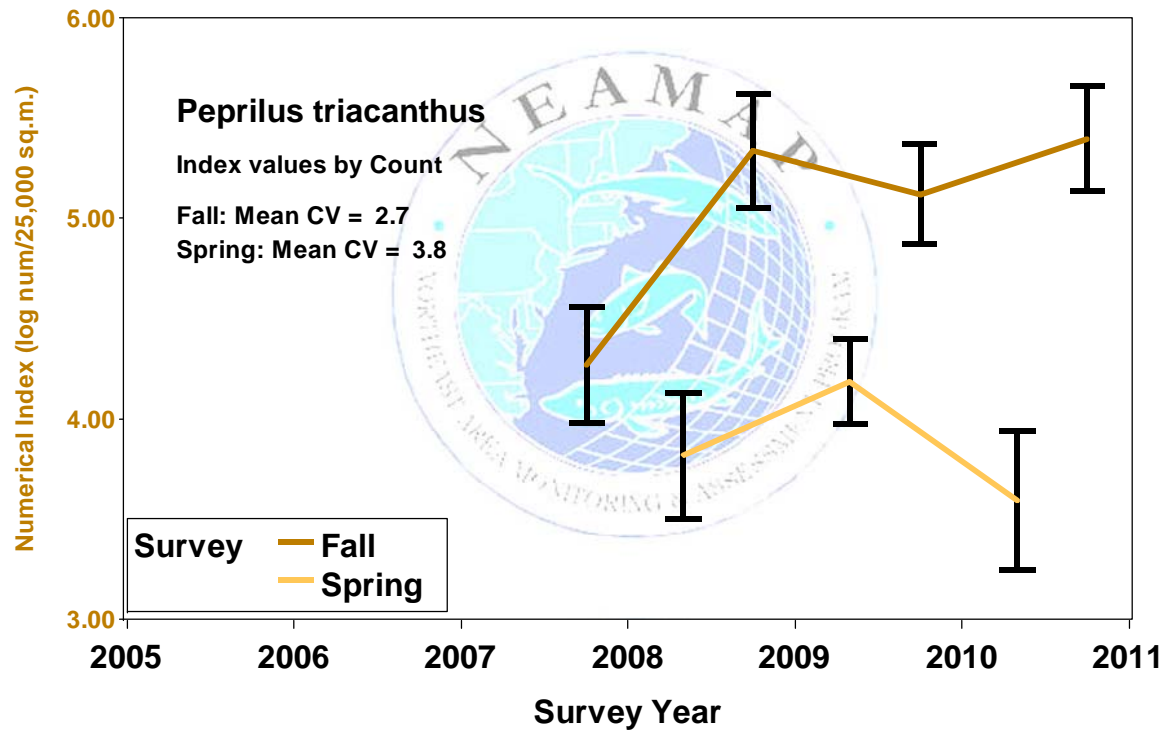
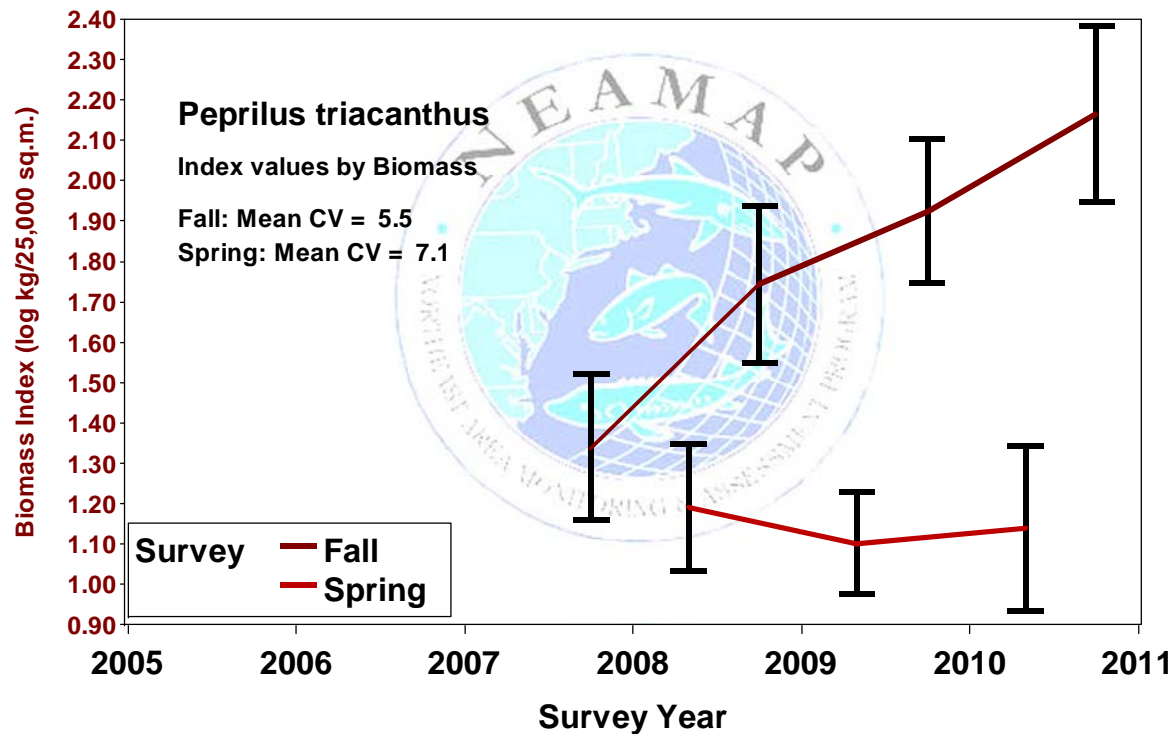


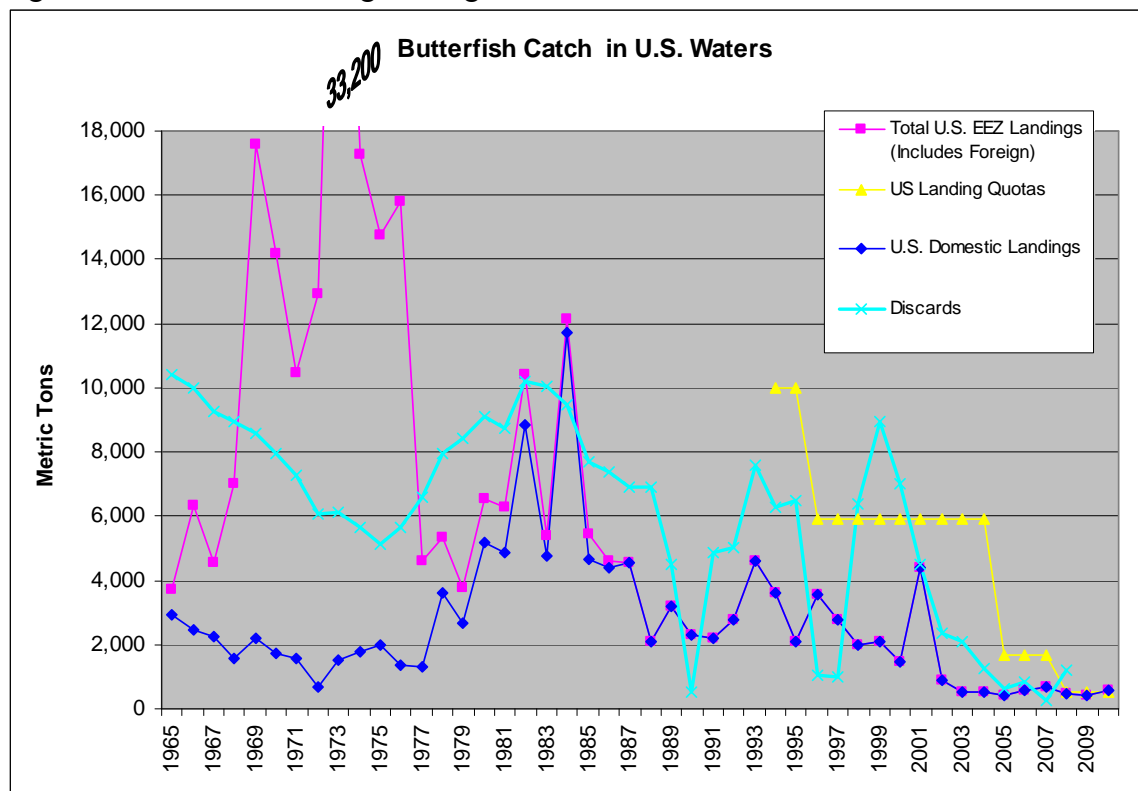
Figure 6. NEAMAP butterflyfish index by Weight.



Landings Data

The only other available new data point would be 2010 landings, preliminarily 575mt (Figure 7). Landings were up slightly from the two prior years and exceeded the landings quota by about 75mt (15%). The butterfish trip limit was reduced from 5,000 pounds to 250 pounds in August 2010 (a relatively early closure) when 400 mt was projected to be reached. The overage initially appears to have been caused by the early closure combined with a mix of post-closure state landings and possibly some federal landings above the specified post-closure trip limit but Council/NERO staffs have not yet fully investigated the causes of the overage.

Figure 7. Butterfish Landings through 2010.



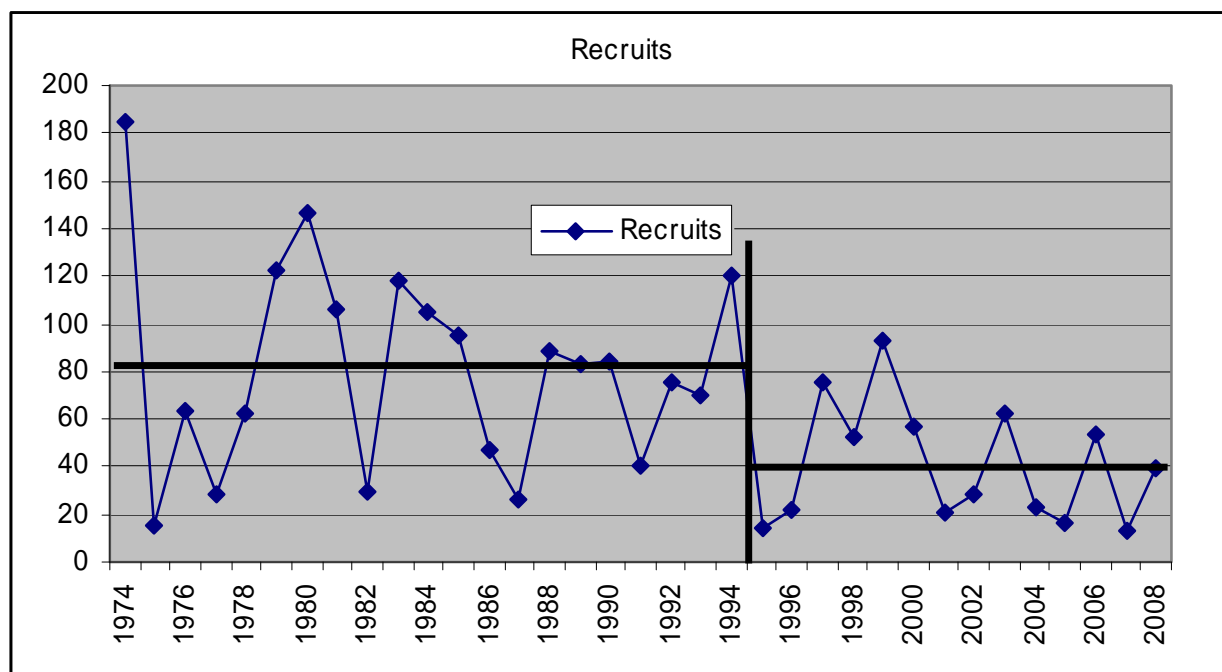
Council Staff Perspective

Staff's general perspective on ABC remains unchanged since the May 2010 meeting: uncertainty is high and there are two primary conflicting points of information most relevant to ABC: 1) The assessment concluded that the butterfish stock had declined even in the absence of substantial fishing pressure. F was estimated to be ≤ 0.05 from 2002 - 2008; $F_{2008}=0.02$ (NEFSC 2010). This suggests that a modestly higher or lower level of fishing mortality compared to the status quo would not have a consequential impact on the butterfish stock; 2) On the other hand it may not be prudent to increase mortality on a stock that appears to have experienced a long term

declining trend. The apparently low fishing mortality finding is also dependent on the scale of biomass outputs, which was a particular point of contention for the SARC (though even if F was several times higher it still would be relatively low).

Staff's perspective on specific ABCs remains unchanged as well. Recall that the tension between the two points described above led staff to examine trends in recent (1995-2008) survey data compared to catches, resulting in the ABC options of 4,445mt and 3,953mt. Staff's presentation and discussion focused on catches at or below these values (derived from average catches) being likely justifiable since recruitment (Figure 8 - through 2008) and the fall survey index (Figure 1 - through 2010) appeared relatively trendless during this apparently lower-productivity period (1995-2008/2010).

Figure 8. Recruits from last assessment.



Going forward, relatively low catches would intuitively be more favorable for the butterfish stock, but quantifying the relative risk between potential ABC values in the range of 1,362mt (the lowest in staff's quota paper range) to 4,445mt was not supported by the current stock assessment information. The updated survey information does not appear to warrant any change to this conclusion as well.

References

Northeast Fisheries Science Center (NEFSC). 2010. 49th Northeast Regional Stock Assessment Workshop (49th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 10-01; 41 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at <http://www.nefsc.noaa.gov/nefsc/publications/>

APPENDIX B

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Richard B. Robins, Jr.
Chairman

Lee G. Anderson
Vice-Chairman

800 North State Street, Suite 201
Dover, Delaware 19901
Tel 302-674-2331
Toll Free 877-446-2362
Fax 302-674-5399
www.mafmc.org

Christopher M. Moore, Ph.D.
Executive Director

M E M O R A N D U M

DATE: February 7, 2011

TO: Richard B. Robins, Jr., Chairman, Mid-Atlantic Fishery Management Council

FROM: Robert J. Latour Ph.D., Acting Chairman, MAFMC Scientific and Statistical Committee

Subject: Report of February 7, 2011 Meeting of the MAFMC Scientific and Statistical Committee

On February 7, 2011 the MAFMC Scientific and Statistical Committee held a webinar to consider available butterfish data and potential implications for the 2011 butterfish specifications (see attachment and terms of reference below).

SSC members in attendance:

R. Latour (proxy SSC Chairman)
C. Jones
D. Secor
D. Tomberlin (left before decision)
D. Lipton
M. Holliday
M. Smith
M. Frisk
W. Gabriel
J. Link

Terms of Reference for the meeting were:

1. Review available information on butterfish abundance (NEFSC and NEAMAP trawl survey results)
2. Review available landings information for butterfish through 2010
3. Advise if any modifications to the 2011 butterfish specifications are warranted based on the additional survey data

The SSC discussed the new data after staff summarized the issue and initial public comments

were taken. The SSC's findings were:

Given the high uncertainty about the scale of current stock biomass, it is difficult to make objective statements regarding the risk of overfishing in the lower range of candidate ABC values for 2011 considered in May 2010 and during the call.

In these situations average catch over some time period may be a justifiable alternative but is problematic in the case of butterfish given the long term declining trend in stock abundance (regardless of the cause).

The SSC agreed by consensus to increase butterfish ABC in 2011 to 1,811 mt based on catch history (average landings and discards) for the years 2002-2008. This time period was selected because it:

- a) reflected a period of the catch history dominated principally by discards
- b) comparable estimates of discards were available (time series of discard estimates terminated in 2008)
- c) the stock abundance appeared relatively stable (albeit low) based on NEFSC fall survey data for butterfish.