Framework Action
Blueline Tilefish

Decision Document
August 21, 2015

This document is to provide the South Atlantic Council with an overview of "where we are and how we got here". A revised Decision Document, incorporating the SSC's recommendations from the June 9th webinar, will be prepared for discussions during the Snapper Grouper Committee meeting in Hilton Head, SC, on September 15-16, 2015.

Background

A stock assessment for the blueline tilefish stock off the U.S. east coast was conducted through the Southeast Data, Assessment, and Review (SEDAR) process in 2013 (SEDAR 32 2013). The assessment used data through 2011 and found the stock of blueline tilefish in the Atlantic to be overfished[1] and undergoing overfishing. At their December 2013 meeting, the South Atlantic Council initiated development of Amendment 32 and voted to request emergency action to reduce overfishing of blueline tilefish immediately while Amendment 32 was being developed. The emergency rule, which was effective on April 17, 2014, set the blueline tilefish ACL at the yield at $75\%F_{MSY}$ = 224,100 pounds whole weight (lbs ww). Amendment 32 was approved and implemented on March 30, 2015. The amendment set the ACL for the South Atlantic region at 98% of the recommended ABC based on projections at the recommended P* level according to the South Atlantic Council's ABC Control Rule; the remaining 2% was set aside to account for landings north of North Carolina based on average landings at the time. ACLs for 2015 through 2018 are shown in **Table 1**.

Table 1. Commercial and recreational annual catch limits (lbs ww) for blueline tilefish as implemented through Amendment 32.

	Blueline Tilefish ACL (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2015	35,632	17,841	17,791
2016	53,457	26,766	26,691
2017	71,469	35,785	35,685
2018 and beyond until modified	87,974	44,048	43,925

Although the blueline tilefish stock is currently treated as one unit along the U.S. east coast, the Amendment 32 regulations only apply to vessels in the South Atlantic Council's area of jurisdiction. Concerns about rapidly increasing commercial and party/charter landings of blueline tilefish north of the NC/VA boundary, particularly in New Jersey, prompted the Mid-Atlantic Fishery Management Council in February 2015 to request emergency action to implement a commercial trip limit of 300 pounds (whole weight) and a recreational possession limit of 7 fish per person within its jurisdiction. Commercial landings from Virginia and farther north increased on average from 11,000 pounds to 217,000 pounds in 2014 and party/charter vessel landings increased on average from 2,400 fish per year to over 10,000 fish.

[1] Effective November 6, 2014, Regulatory Amendment 21 changed the definition of MSST for several snapper grouper species with low natural mortality, including blueline tilefish. Under the revised definition ($MSST = 75\% SSB_{MSY}$) the blueline tilefish stock is not considered overfished.

Representatives from the Mid-Atlantic Council attended the South Atlantic Council's March 2015 meeting in St. Simons Island, GA and discussed concerns about applying the 2013 blueline tilefish stock assessment results throughout the species' range. The South Atlantic Council approved a motion requesting extension of regulations through the Mid-Atlantic and New England areas contingent on the South Atlantic Council's Scientific and Statistical Committee's (SSC) review of SEDAR 32's applicability to the area north of North Carolina. The South Atlantic Council's SSC, including members that are also on the Mid-Atlantic Council's SSC, reviewed the stock assessment during its April 28-30, 2015 meeting in N. Charleston, SC and determined the SEDAR 32 assessment constituted best available science and should be applicable to the blueline tilefish stock throughout its range along the US east coast. Based on this determination, the South Atlantic Council requested that NMFS take emergency action to apply the Amendment 32 measures to the Mid-Atlantic and New England Councils' areas of jurisdiction north of the NC/VA border (**Appendix A**).

On June 4, NMFS approved the Mid-Atlantic Council's request for emergency action and implemented a commercial trip limit of 300 pounds (whole weight) and a recreational possession limit of 7 fish per person. The Mid-Atlantic Council initiated development of an amendment to their Golden Tilefish Fishery Management Plan to include blueline tilefish in the fishery management unit and implement permanent management measures before the emergency rule regulations expire on June 5, 2016 (the original emergency rule expires on December 1, 2015 but can be extended for an additional 186 days). The South Atlatic Council's emergency action request is currently under review.

In a memo dated May 22, 2015 (**Appendix B**), the Southeast Regional Administrator requested that the Southeast Fisheries Science Center (SEFSC) provide scientific advice on whether the SEDAR 32 projections represented the current state of the blueline tilefish stock given that the level of reported blueline tilefish landings in 2014 approached the biomass estimated by the projections. The request was to inform deliberations by the South Atlantic Council's SSC, which was scheduled to convene via webinar on June 3, 2015, to review the SEDAR 32 projections and possibly provide new reference points and fishing level recommendations to the South Atlantic Council. The SEFSC responded, in a memo dated May 29 (**Appendix C**), that the SEDAR 32 projections constituted the Best Scientific Information Available. The South Atlantic Council's SSC later concluded that "…the projections were properly prepared using accepted methods, incorporate typical assumptions and uncertainties, and reflect expected outcomes given the parameters with which they were prepared. However, given the concerns noted with continued shifts in the fishery since the assessment was completed, potential spatial patterns to the population and impacts of such patterns on productivity, and the inability of the projections to address effort shifts in the same manner as the assessment, the existing projections may not accurately reflect the population and fishery as they now exist, and therefore, cannot be considered Best Scientific Information Available. Based on this decision the Committee recommends that revised projections be prepared." (see **Appendix D**).

Hence, following the South Atlantic Council's June 2015 meeting in Key West, FL, a memo (dated June 18, 2015) was sent to the SEFSC requesting revised projections for the blueline tilefish stock to "address recent landings and concerns over continued effort

shifts and apparent spatial differences in stock productivity" (see **Appendix E**). The request specified P* values for the projections, as recommended by the South Atlantic Council's SSC, and inclusion of 2014 landings and the best estimate of 2015 landings to capture higher recruitment during the projection period than that which was estimated in the SEDAR 32 base projections. In addition, the request included approaches that should be used to address the range of recruitment uncertainty. As of this writing, the SEFSC had not provided the requested projections.

Projections with updated landings information were received on August 12, 2015 (**Appendix F**). The SEFSC did not conduct the additional projections requested because "based on several internal and external discussions it was decided that there was not sufficient scientific support to assume the recruitment scenarios requested for the projections." As an alternative, the SEFSC updated the handline index. On August 18, 2015, the South Atlantic Council requested that the projections be re-done with actual landings for 2012-2015 (**Appendix G**).

On September 9, 2015, the South Atlantic Council's SSC will convene again via webinar to review the new projections or consider other approaches to recommend a revised ABC for the blueline tilefish stock.

This document is to provide the South Atlantic Council with an overview of "where we are and how we got here". A revised Decision Document, incorporating the SSC's recommendations from the June 9th webinar, will be prepared for discussions during the Snapper Grouper Committee meeting in Hilton Head, SC, on September 15-16, 2015.

I. Possible Approaches for ABC

When the South Atlantic Council's SSC convenes via webinar on September 9, 2015, they may discuss several approaches to recommend an ABC for blueline tilefish. If new projections are provided in response to the Council's request and based on the SSC's recommendations from their June 3 discussion, then those projections may be what the SSC focuses on. However, if no new projections are provided, the SSC may discuss the following approaches:

Approach 1. No Action. Set the ABC for 2016 and beyond using the projection values from SEDAR 32 and implemented through Amendment 32:

Year	ABC
2016	54,548
2017	72,928
2018	89,769

Approach 2. Use the equilibrium yield at 75%F_{MSY} from the SEDAR 32 assessment. The corresponding value is 224,100 pounds whole weight (lbs ww) and constitutes the ABC that was temporarily put in place through emergency action while the South Atlantic Council developed Amendment 32.

Approach 3. P* projections with updated landings for 2012-2015. Note; The South Atlantic Council requested these projections be redone with more accurate landings data.

Acceptable biological catch (ABC) of blueline tilefish based on the annual probability of overfishing P* = 0.3 (left panel) and P*=0.5 (right panel). Landings were set to those observed for 2012, 2013, 2014, and 2015 (partial year), with the ABC associated with the specified probability of overfishing calculated for the remaining years (2016-2020). L=Landings, D=Discards.

Year	P*=0.3				P*=0.5			
	ABC-L (1000 lb)	ABC-D (1000 lb)	ABC-L (1000 fish)	ABC-D (1000 fish)	ABC-L (1000 lb)	ABC-D (1000 lb)	ABC-L (1000 fish)	ABC-D (1000 fish)
2016	30.669	0.033	6.703	0.008	48.391	0.052	10.700	0.011
2017	47.832	0.052	9.702	0.010	70.848	0.077	14.481	0.016
2018	65.536	0.079	12.559	0.014	92.465	0.100	17.937	0.019
2019	81.253	0.088	14.878	0.016	110.039	0.119	20.482	0.022
2020	93.496	0.101	17.934	0.019	122.596	0.133	24.713	0.027

Approach 4. Other option(s) recommended by the SSC. Note: The SSC will convene via webinar on September 9th.

II. Specifying the blueline tilefish ACL for the South Atlantic region

Once an ABC is specified for blueline tilefish, it will be applicable to the entire stock along the U.S. east coast. The South Atlantic Council would then have to specify an ACL for its area of jurisdiction only. The alternatives below provide percentages to deduct from the ABC to account for blueline tilefish landings in the area north of the South Atlantic Council's jurisdiction (north of the NC/VA border) based on landings including Monroe County (**Figure 1** and **Table 1**) since all of Monroe County landings are counted towards the South Atlantic and were included in the SEDAR 32 assessment.

Table 1. Percent of total landings of blueline tilefish by area and for various time periods. Data include commercial landings, Southeast Headboat Survey, Marine Recreational Information Program, and the Northeast for-hire Vessel Trip Report (VTE). Landings not shown due to data confidentiality.

Years	% VA-ME	% NC-FL
2005-2013	6.6	93.4
2011-2013	11.3	88.7
2005-2010	4.3	95.7
2005-2014	11.6	88.4
2011-2014	22.1	77.9

Source: Mike Errigo, SAFMC staff

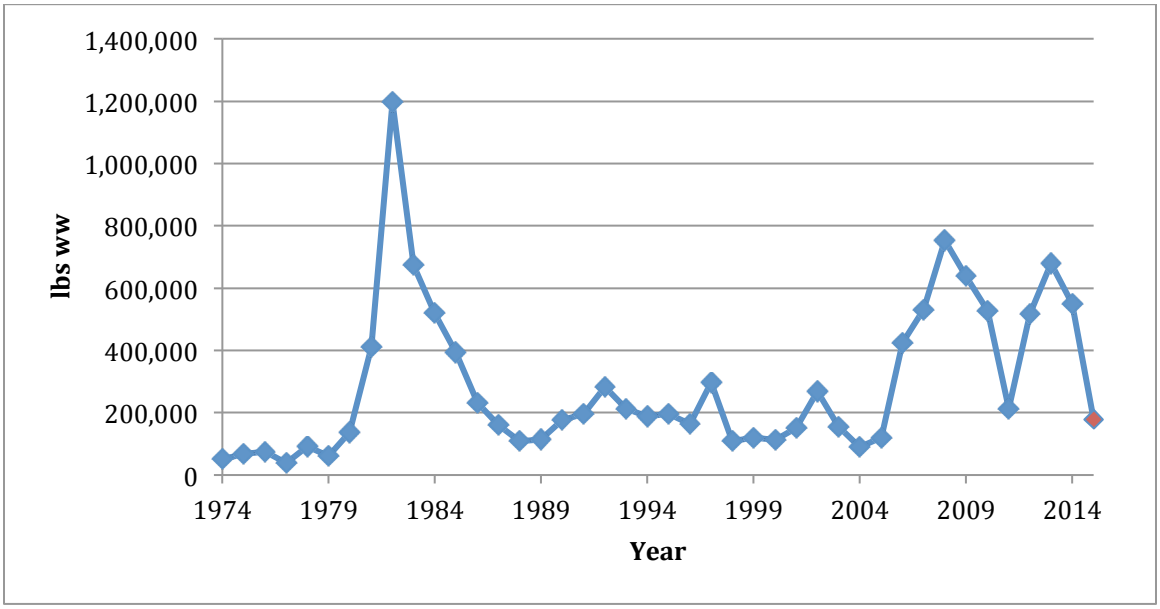

Figure 1. Total landings (commercial and recreational) of blueline tilefish off the U.S. Atlantic coast, 1974-2015 (preliminary).
Source: M. Errigo, SAFMC staff

Alternative 1 (No Action). ACL = OY = 98%ABC. For 2016: ACL = OY = 0.98* 54,548 = 53,457 lbs ww. Commercial and recreational annual catch limits are based on 50.07% commercial and 49.93% recreational.

Alternative 2. ACL = OY = 93%ABC based on landings 2005-2013. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

Alternative 3. ACL = OY = 89%ABC based on landings 2011-2013. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

Alternative 4. ACL = OY = 96%ABC based on landings 2005-2014. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

Alternative 5. ACL = OY = 88%ABC based on landings 2005-2014. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

Alternative 6. ACL = OY = 78%ABC based on landings 2011-2014. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

References

SEDAR (Southeast Data, Assessment, and Review) 32. 2013. South Atlantic Blueline Tilefish. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

Appendix A

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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Ben Hartig, Chair
Dr. Michelle Duval, Vice Chair

Robert K. Mahood, Executive Director
Gregg T. Waugh, Deputy Executive Director

May 6, 2015

Dr. Roy E. Crabtree
Regional Administrator
NOAA/NMFS Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Dr. Crabtree:

During their March 2015 meeting, the South Atlantic Fishery Management Council (Council) voted to request that the National Marine Fisheries Service (NMFS) implement an emergency rule to extend regulations approved in Snapper Grouper Amendment 32 (blueline tilefish) to the Mid-Atlantic and New England Council jurisdictions. This request was conditioned on the Council's Scientific and Statistical Committee (SSC) determining that the SEDAR 32 assessment is applicable to the entire Atlantic Coast. The Council's recommendations are intended to prevent overfishing of blueline tilefish. The full Council motion is as follows:

> DIRECT THAT THE SSC DETERMINE, AT ITS APRIL 2015 MEETING, THE GEOGRAPHIC RANGE COVERED BY THE SEDAR 32 ASSESSMENT.
> IF WARRANTED, REQUEST EMERGENCY ACTION TO EXTEND REGULATIONS PROPOSED IN AMENDMENT 32, ONCE THE AMENDMENT IS APPROVED, TO THE AREAS THAT THE SSC CONSIDERS ARE REPRESENTED BY THE STOCK ASSESSMENT.

The SSC met and reviewed SEDAR 32 and the more recent data on catches since 2011, the last year of data in the assessment. The NMFS Southeast Fisheries Science Center (SEFSC) presented updated information on catch by area and reviewed the information from north of North Carolina used in the stock assessment (document prepared by Dr. Kevin Craig, lead blueline tilefish assessment scientist, SEFSC and Jason Didden, MAFMC Staff). Also, Dr. Cynthia Jones and Michael Schmidtke presented the Old Dominion University life history study. The SSC concluded the following:

- **SSC Consensus: After reconsideration of the SEDAR 32 assessment and all the supplemental information provided, the SSC still agrees that the SEDAR 32 assessment applies to the entire coast wide stock and is still considered BSIA.**

- The most compelling piece of information is that regardless of the location of the landings of blueline tilefish, they seem to be being harvested from the same areas.

Pursuant to Section 305(c)(2)(B) of the Magnuson-Stevens Fishery Conservation and Management (Magnuson-Stevens) Act as reauthorized, the Council requests emergency action to extend blueline tilefish measures recently implemented in Snapper Grouper Amendment 32, based on the results of the 2013 stock assessment (SEDAR 32 2013), through the Mid-Atlantic and New England Council areas. Specifically, the Council requests that the National Marine Fisheries Service initiate emergency action to establish the following:

- COMMERCIAL TRIP LIMIT = 100 LBS WW
- RECREATIONAL BAG LIMIT = 1/VESSEL/DAY MAY THROUGH AUGUST AND NO RETENTION DURING THE REMAINDER OF THE YEAR.
- COMMERCIAL AND RECREATIONAL ACCOUNTABILITY MEASURES (details are in Attachment 1).

The South Atlantic blueline tilefish stock was determined to be overfished and undergoing overfishing (SEDAR 32 2013). The Council received notification of the status of the stock via letter dated December 6, 2013. As outlined in the Magnuson-Stevens Act, the Council had until December 6, 2015 to implement management measures to end overfishing and establish a rebuilding plan for blueline tilefish in the South Atlantic. The Council completed Amendment 32 to the Snapper Grouper Fishery Management Plan for that purpose and regulations were effective March 30, 2015.

The 2014 OFL of 224,100 lbs ww was exceeded in 2014 (preliminary landings estimated to be 374,184 lbs ww as of the March 2015 South Atlantic Council meeting). The 2015 commercial landings are 107,509 lbs ww or 603% of the commercial ACL of 17,841 lbs ww, and the commercial sector was closed on April 7, 2015. The 2015 OFL of 54,612 lbs ww has already been exceeded (double the OFL) without counting any of the recreational harvest in the South Atlantic Council's area or any of the recreational or commercial harvest north of North Carolina. Thus the overfishing that occurred in 2014 is continuing in 2015. Therefore, these regulations should be extended into the Mid-Atlantic and New England Council areas immediately to prevent further overfishing during 2015 and 2016.

The Policy Guidelines for the Use of Emergency Rules (62 FR 44421, August 21, 1997) list three criteria for determining whether an emergency exists: (1) recent, unforeseen events or recently discovered circumstances; (2) serious conservation or management problems in the fishery; and (3) emergency regulations outweigh the value of advance notice, public comment, and deliberative consideration of the impacts to the same extent as would be expected under the normal rulemaking process. This emergency rule is requested to address the serious conservation issue that will result from the continued overfishing of blueline tilefish. In addition, the stock assessment results and high landings from north of North Carolina are new information that requires the Council respond quickly. The Council concluded the benefits of this emergency rule outweigh the value of the normal notice and comment process. The public will have a number of opportunities to comment during development of Amendment 38 that will contain a permanent solution to this unforeseen change in stock status and harvest.

We appreciate your assistance in expediting implementation of this request. If you require any additional information, please do not hesitate to contact Bob Mahood.

Sincerely,

Ben Hartig
Chairman

Enclosure

cc: Council Members and Staff
Rick Robins and Chris Moore, MAFMC
Terry Stockwell III and Thomas Nies, NEFMC
Scientific and Statistical Committee
Snapper Grouper Advisory Panel
Bonnie Ponwith, Theo Brainerd, Tom Jamir, and Larry Massey, SEFSC
Monica Smit-Brunello, NOAA GC
Jack McGovern and Rick DeVictor, NMFS SERO

ATTACHMENT 1

Blueline Tilefish Accountability Measures from Amendment 32

Commercial Accountability Measure: If commercial landings as estimated by the Science and Research Director reach or are projected to reach the commercial annual catch limit, the Regional Administrator shall publish a notice to close the commercial sector for the remainder of the fishing year. On and after the effective date of such a notification, all sale or purchase is prohibited and harvest or possession of this species in or from the South Atlantic exclusive economic zone is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued as appropriate, without regard to where such species were harvested, i.e., in state or Federal waters.

Additionally, if the commercial annual catch limit is exceeded, the Regional Administrator shall publish a notice to reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if the species is overfished and the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded.

Recreational Accountability Measure: If recreational landings reach or are projected to reach the recreational annual catch limit for blueline tilefish, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year, regardless of stock status, unless, using the best scientific information available, the Regional Administrator determines that a closure is unnecessary.

If recreational landings, as estimated by the Science and Research Director, exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings. If necessary, the Regional Administrator shall publish a notice to reduce the length of the fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the species is overfished and the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Appendix B

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

MAY 2 2 2015

F/SER25:RD

MEMORANDUM FOR: Bonnie Ponwith, Ph.D.
Director, Southeast Fisheries Science Center

FROM: Roy E. Crabtree, Ph.D.
Regional Administrator

SUBJECT: Request for Scientific Advice Concerning the Blueline Tilefish Projections

Blueline tilefish was assessed in 2013 using data through 2011. The Southeast Fisheries Science Center prepared projections, dated April 28, 2014, which provided estimates of the acceptable biological catch (ABC) and the overfishing level (OFL). However, there are concerns associated with the projections since the level of reported blueline tilefish landings in 2014 is similar to the magnitude of biomass estimated by the projections.

On June 3, 2015, the South Atlantic Fishery Management Council's (Council) Scientific and Statistical Committee (SSC) will review the blueline tilefish projections to determine if they can be used to support fishing level recommendations for current and future years, and the SSC will revise estimates for ABC and OFL, if appropriate. The Council will receive the SSC's report, and any updated recommendations, at their June 8-12, 2015, meeting.

Please provide scientific advice by June 1, 2015, regarding whether the projections represent the current state of the stock given the concerns noted above, and are appropriate for use by the SSC and Council in specifying new reference points and fishing level recommendations for the blueline tilefish stock. Also, please review the Terms of Reference for the SSC meeting (see attached) and have your staff prepare a response to assist the SSC, both before and during the meeting, as they respond to the Terms of Reference. We are requesting an expedited response because the SSC meets on June 3, 2015.

cc: F/SF: Alan Risenhoover
SEFSC: Theo Brainerd, Peter Thompson, Stacy Hargrove, Tom Jamir, Larry Massey
NEFSC: Bill Karp
GARFO: John Bullard, Mike Pentony
F/SER: Andy Strelcheck, Heather Blough
F/SER2: Jack McGovern
F/SER25: Rick DeVictor

Appendix C

Review of Projections for South Atlantic Blueline Tilefish

Sustainable Fisheries Branch, National Marine Fisheries Service, Southeast Fisheries Science Center, 101 Pivers Island Rd., Beaufort, NC 28516

May 28, 2015

This document responds to a request to provide scientific advice regarding whether projections from the SEDAR 32 Blueline Tilefish stock assessment represent the current state of the stock and are appropriate in setting new reference points and fishing level recommendations, and to review the Terms of Reference for the June 3, 2015 meeting of the SSC (see May 22, 2015 Memorandum).

A benchmark stock assessment of Blueline Tilefish was completed in 2013 using data through 2011 (the terminal year of the assessment). The assessment was conducted through the standard SEDAR process, reviewed by 6 reviewers (including 3 CIE reviewers) at the September 2013 SEDAR Review Workshop, and presented to the SSC in October 2013. The assessment included several sets of projections, and in addition between October 2013 and the April 2014 SSC meeting, the Science Center responded to four different requests for projections that made various assumptions about fishing mortality and interim year landings (20 projection scenarios; see SEDAR 32 assessment document and documents dated Nov 25, 2013; Apr 7, 2014; Apr 28, 2014; and May 23, 2014). These projections, the projection methodology in general, and an additional analysis of age composition data to investigate recent year class strength were presented and reviewed at the April 2014 SSC meeting. The projection methodology was considered appropriate and identical to methods applied in concurrent and past SEDAR assessments. The analysis of age compositions did not reveal evidence of a recent strong year class of Blueline Tilefish. The geographic extent over which the assessment should be applied was reviewed and discussed at the April 2015 SSC meeting. The recommendation was that the assessment be considered a coastwide stock assessment.

The benchmark stock assessment conducted under SEDAR 32 has been recommended as the best scientific information available to inform the management of Blueline Tilefish by the SEDAR Review Panel and at multiple meetings of the SSC. The May 22, 2015 memorandum refers to the appropriateness of the projections from this assessment for "…specifying new reference points and fishing level recommendations…" Reference points (e.g., MSY, F_{msy}) were specified and approved in the original SEDAR 32 assessment and are not affected by projections, so the current request in the May 22 memorandum relates only to fishing level recommendations. Concern was expressed that "…the level of reported blueline tilefish landings in 2014 is similar to the magnitude of biomass estimated by the projections." We assume that 'biomass' refers to spawning stock biomass, not population biomass. Spawning stock biomass is smaller than population biomass, because it comprises only mature females. Landings, particularly when taken from a single year, do not provide information on population abundance or the state of a stock. The estimated landings in 2014 were 450,232 lb or 204.2 metric tons (mt). We do not have an estimate of the standard error, but note that landings are never known precisely. However, the point estimate of landings (204.2 mt) is well within the projected uncertainty in

spawning stock biomass, which ranges about three-fold around a point estimate near 150 mt (95% confidence intervals, 80-280 mt; see April 28 document Fig. 4, top left panel). That estimate of landings is well below estimated total biomass.

It is not implausible that the stock could withstand higher landings than projected for some period of time. The inference from the assessment and all of the projections conducted to date is that the current level of landings is not sustainable in the long-term. This is illustrated in an early set of projections (see Table 2 of November 25, 2013 document) that assumed landings for each year from 2012-2014 (484,815 lb) that were similar in magnitude to those that were subsequently observed, but unknown at the time the projection was conducted (2012: 464,974 lb, 2013: 497,263 lb, 2014: 450,232 lb). In the projection, this assumed level of landings resulted in a near three-fold decline in projected spawning stock biomass. This illustrates that as fishing continues above MSY levels, spawning stock biomass declines, and actual landings can become a high proportion of spawning biomass. The current memorandum expressed concerns about the projections because estimated 2014 landings are 'similar in magnitude to [spawning] biomass estimated by the projections'; this concern seems warranted, as this observation is consistent with the conclusion from the assessment that overfishing is occurring.

April 2015 SSC Meeting Terms of Reference

Review Blueline Tilefish stock projections

The projections from the SEDAR 32 Blueline Tilefish stock assessment use standard methodology that has been used and reviewed in a number of other SEDAR assessments. The methodology was reviewed during the SEDAR 32 Blueline Tilefish Review Workshop and at the October 2013 SSC meeting. The projection methodology and revised projections were the focus of the April 2014 SSC meeting. There have been no additional projections or changes to the projection methodology since the April 2014 SSC meeting. Therefore, there should be no need to conduct additional review of the projections.

Identify uncertainties and discuss their impact on projection results and fishing level recommendation and management

Projections are forecasts of the future and, hence, are uncertain. The assumptions of the projection methodology are outlined in the SEDAR 32 stock assessment document and in the projection documents noted above. The primary assumptions are that the relevant fisheries continue to fish at their estimated current proportions of total fishing effort and maintain the same selectivity pattern after the terminal year of the assessment (2011); the estimated spawner-recruit relationship applies in the future and past recruitment deviations are a reflection of future uncertainty in recruitment; the projections are conditioned on the assumptions inherent in the catch-age stock assessment model (they are based on a single model structure).

Key sources of uncertainty in the assessment are carried through the projection period. For Blueline Tilefish, these include uncertainty in natural mortality, steepness, spawner-recruit parameters, and in initial (2012) abundance at age. The effect of this uncertainty can be seen in the error bars associated

with projected spawning stock biomass, fishing mortality, and recruitment (see projection documents noted above). Uncertainty associated with implementation error (e.g., delay in management action) was not included, but implementation error will generally lead to higher uncertainty than that estimated for subsequent years of the projection.

Determine whether projection assumptions such as interim year landings are met, and comment on the consequences of this determination for fishing level recommendations and management

The projection assumptions are described above and in the SEDAR 32 assessment and associated documents. Interim year landings were used for 2012 and 2013 in the projections while assumed landings of 224,000 lb (landings associated with 75% F_{msy} under equilibrium conditions) were used for 2014. Management was assumed to begin in 2015. At the time the projections were conducted, 2013 landings were considered preliminary. The 2014 landings are still considered preliminary but were estimated at 450,232 lb (commercial: 360,640 lb; recreational: 89,592 lb), above the assumed 224,000 lb that were used in the projections. Higher realized landings than assumed for the interim years of the projection would result in lower ABCs in subsequent years.

Determine whether existing projections represent Best Scientific Information Available, and whether they are adequate to support fishing level recommendations for both the current and future years

The assessment and associated projections have undergone extensive review and no methodological flaws have been discovered. No alternative projections are available or have been proposed. Therefore, these projections and their associated uncertainty represent the best scientific information currently available.

Provide guidance for revised projections, if necessary

Because the April 2014 projections represent Best Scientific Information Available, as noted above, revised projections should not be necessary.

Provide revised Fishing Level Recommendations, including ABC and OFL, if appropriate

Regulatory measures were put in place for Blueline Tilefish under an Emergency Action Rule implemented for the 2014 fishing season. Actual landings in 2014 exceeded those specified in the regulatory amendment. Based on accountability measures in use for other fisheries, landings overages in 2014 could be subtracted from the ABC for future years from the quota of the fishery that incurred the overage. However, this method of fish accounting does not factor in the compound mortality rate, such that a fish harvested now does not equal a fish left for future harvest. Accounting for this aspect of the population dynamics would typically require a further reduction in future landings in order to return to the original population trajectory. Similarly, an underage would allow for slightly more fish to be harvested in subsequent years to return to the original population trajectory. In general, landings above those used in the projections and delays in restricting harvest will necessitate more severe reductions in future years in order to achieve management objectives.

Appendix D

SOUTH ATLANTIC FISHERY MANAGMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

SSC Meeting Report

June 3, 2015

1:00 – 3:00 pm

MEETING VIA WEBINAR

VERSION
Final (6/8/15)

CONTENTS

DOCUMENTS

Attachment 1. Projections 1, November 25, 2013

Attachment 2. Projections 2, April 7, 2014

Attachment 3. Projections 3, April 28, 2014

Attachment 4. Interpolated projection results, May 2014

Attachment 5. Updated length comps for MRIP and NC H&L

WEBINAR ACCESS

Registration required to access the webinar is available through this link:

https://attendee.gotowebinar.com/register/1634019781014553345

After registering, you will receive a confirmation email containing information about joining the webinar.

SAFMC PUBLIC COMMENT PROCESS

Written comment:

Written comment on SSC agenda topics is to be distributed to the Committee through the Council office, similar to all other Council briefing materials. Written comment to be considered by the SSC shall be provided to the Council office no later than one week prior to an SSC meeting. For this meeting, the deadline for submission of written comment is 12:00 pm Wednesday, May 27, 2015.

SAFMC

4055 Faber Place Drive

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North Charleston, SC 29405

Verbal comment:

Two opportunities for comment on agenda items will be provided during SSC meetings. The first will be at the beginning of the meeting, and the second near the conclusion, when the SSC reviews its recommendations. Those wishing to comment should indicate such in the manner requested by the Chair, which may be through a show of hands or a written list if the number of interested parties is extensive, who will then recognize individuals to come forward and provide comment. All comments are part of the record of the meeting.

1. INTRODUCTION

1.1. Documents

Agenda

1.2. Action

- Introductions
- Review and Approve Agenda

2. PUBLIC COMMENT

The public will be provided two opportunities to comment on SSC agenda items during this meeting. The first at the start of the meeting, and the final will be provided at the end during the review of recommendations. Those wishing to make comment should indicate their desire to do so to the Committee Chair.

Rusty Hudson provided some public comments.

3. BLUELINE TILEFISH STOCK PROJECTIONS

3.1. Documents

Attachment 1. Projections 1, November 25, 2013

Attachment 2. Projections 2, April 7, 2014

Attachment 3. Projections 3, April 28, 2014

Attachment 4. Interpolated projection results, May 2014

Attachment 5. Updated length comps for MRIP and NC H&L

3.2. Overview

The Council has requested that the SSC review the projections for blueline tilefish and determine whether they are still useful for management. Numerous concerns have been raised over several years regarding the stock projections. These include: the appropriateness of the assumed recruitment levels since the terminal year, the potential impacts of the deepwater closure occurring during the terminal year of 2011, landings consistently exceeding assumed and projected levels since the assessment was

conducted, and the possibility of continued changes in the timing and range of the directed fishery. At the December, 2013 meeting the SAFMC requested an updated assessment be conducted as soon as possible in order to address projection and other assessment concerns. Those concerns have only increased since then.

In January of 2014, the Science Center provided several options for getting blueline tilefish updated in a timely manner. The Council's preferred option was to replace a planned assessment of vermilion snapper in 2015 with blueline tilefish, using 2014 as the terminal year of data. However, the blueline assessment was then pushed back to 2016, with 2015 as the likely terminal year of data, when SEDAR 41 was delayed due to issues with the historical headboat landings. Other options considered were to swap out one of the SEDAR 41 stocks with blueline tilefish or to replace the 2014 gag update with blueline tilefish; the gag update has also since been delayed due to the issue with the historical headboat landings. At this time, the next blueline assessment is scheduled for delivery to the Council in January 2017 using a 2015 terminal data year.

3.3. Action

- Review blueline tilefish stock projections
- Identify uncertainties and discuss their impact on projection results and fishing level recommendations and management.
- Determine whether projection assumptions such as interim year landings are met, and comment on the consequences of this determination for fishing level recommendations and management.
- Determine whether existing projections represent Best Scientific Information Available, and whether they are adequate to support fishing level recommendations for both the current and future years.
- Provide guidance for revised projections, if necessary.
- Provide revised Fishing Level Recommendations, including ABC and OFL, if appropriate.

SSC RECOMMENDATIONS

1. Review blueline tilefish stock projections

   The committee received a detailed presentation providing an overview of the projections prepared for blueline tilefish.

2. Identify uncertainties and discuss their impact on projection results and fishing level recommendations and management.

   The Committee noted that each projection document includes a review of uncertainties and assumptions.

   As with any projection situation, actual catches are an uncertainty, as are recruitment and abundance trends. These uncertainties increase as the time between the terminal assessment year and the projection period increases.

   The lack of fishery dependent (and independent) survey information, particularly for those fish below the age of entry to the fisheries, adds to the uncertainty in recruitment in the last few years of the assessment. In this case, the 2007 cohort (age 1 in 2008) is the last one informed by data other than estimated SSB and the stock recruitment relationship.

   Recruitment trends in the last years of the assessment were a point of discussion during reviews of initial projection results. It was cautioned that apparent strong age-1 year classes estimated from 2003-2007 were possibly the model's attempt to address the high catches coming from newly exploited areas North of Cape Hatteras, rather than simply indicating a period of favorable production. If that is the case, then the projections have an added uncertainty. The projection model cannot do as the assessment does, and add recruits in earlier years to explain recent continued landings levels, since the projection method does not take into account the observed age and length compositions nor the CPUEs that resulted in the observed landings.

   The nature of stock projections is such that catches exceeding those used to derive the projections will result in lower estimated abundance, higher estimated fishing mortality F, and lower future yield.

   The continued shifts observed in this fishery, first to areas North of Cape Hatteras, and most recently extending further North into areas off Virginia and Maryland, are adding to the uncertainties in the projections and exacerbating the spatial issues previously discussed regarding the assessment model. Continuation of this trend, and the magnitude of the fishery now observed in the Mid-Atlantic region was not foreseen when the assessment was completed and the projections prepared.

3. Determine whether projection assumptions such as interim year landings are met, and comment on the consequences of this determination for fishing level recommendations and management.

   Landings levels used in the projections are a combination of assumptions, for the interim years between the last observed data and the first year of management, and fixed levels that take effect with management changes. Recent landings substantially exceeded assumed interim levels and chosen

management levels, and as noted above, the effect of this change alone will be to reduce available yield in future years.

Continued northward shifts in the primary fishing effort may impact selectivity assumed for the projections, if the fish encountered in these areas have a different age and size composition. Also, the Data Workshop indicated some differences in size at age between the regions. The degree to which this will affect management recommendations is difficult to establish given the lack of abundance and composition information from the northern reaches. It is noted that some information from these areas is included in the assessment, and therefore addressed in the projections selectivities, since the shift had begun several years prior to the terminal assessment years.

The Committee agreed that conditions in the fishery have changed since the assessment model concluded. Unfortunately, due to the previously noted lack of population information from areas fishing effort has moved into, it remains unknown whether recent landings trends reflect a stock level productivity change, or simply reflect the impacts of the fishery exploiting 'new' (as in unseen in the assessment) biomass in new areas. It is also possible that the effort and resultant landings are simply continuing to drive the population to ever lower abundance. If there is a productivity change or fishery expansion into further new areas that is not addressed in the projections, the projection results will be biased, and will overestimate fishing mortality and underestimate yield and abundance. Anecdotal reports suggest that there was a biomass of blueline tilefish in the Mid-Atlantic areas since the 1980's which is being newly exploited by recent effort shifts.

Regardless of the causes, effort shifts have impacted landings and thus management. Therefore, the Council should reconsider the current level of landings allocated or set aside for landings outside the South Atlantic jurisdiction.

4. Determine whether existing projections represent Best Scientific Information Available, and whether they are adequate to support fishing level recommendations for both the current and future years.

The Committee agreed that the projections were properly prepared using accepted methods, incorporate typical assumptions and uncertainties, and reflect expected outcomes given the parameters with which they were prepared. However, given the concerns noted with continued shifts in the fishery since the assessment was completed, potential spatial patterns to the population and impacts of such patterns on productivity, and the inability of the projections to address effort shifts in the same manner as the assessment, the existing projections may not accurately reflect the population and fishery as they now exist, and therefore, cannot be considered Best Scientific

Information Available. Based on this decision the Committee recommends that revised projections be prepared.

Further, the SA SSC received a report from the MA SSC on June 1 that the MA SSC does NOT consider the assessment best available scientific information for management (in the MA). However, the SA SSC concluded in its recent meeting that, considering the fact that no new information is available the assessment should still be considered best available scientific information.

5. Provide guidance for revised projections, if necessary.

Request that the Center revise the projections to include observed landings through 2014 and the best estimate of landings for 2015 to provide OFL based on P=50% and ABC based on fishing at P*=30%.*

Given the recent landings north of Cape Hatteras, it is unknown if the biomass of an existing population in that region was fully accounted for in the assessment model.

Further exploratory projections are required to address productivity-spatial shift issues. The committee discussed developing alternatives based on varying recruitment levels, similar to the scenarios provided recently for king mackerel to address uncertainty in recent productivity trends. In this situation, applying higher recruitment to the terminal years is a way of approximating the solution used by the assessment model to explain high landings in the terminal year that are confounded with a shift in fishing area.

While the Committee ran short of time before it could fully vet specific alternatives or approaches, one suggestion was offered to base recruitment during the projection period on the levels estimated to support the landings increase observed since 2008. Average estimated age-1 recruitment is about twice as abundant during 2003-2008 as it is during the last years of the assessment and carrying into the years of the projection scenarios.

5. Provide revised Fishing Level Recommendations, including ABC and OFL, if appropriate.

The committee cannot provide revised fishing levels at this time, since revised projections are needed.

4. OTHER BUSINESS

The SSC stresses the importance of the Blueline Tilefish update assessment, but expressed some concern about timing and how the outcome of the genetic study may impact the assessment type, e.g. is an update appropriate or not.

5. PUBLIC COMMENT

The public is provided an additional opportunity to comment on SSC recommendations and agenda items.

No public comments were received at this time.

6. REPORT AND RECOMMENDATIONS REVIEW

The Committee is provided an opportunity to review its report and final recommendations.

The final SSC report should be provided to the Council by 9 am on Tuesday, June 9, 2015 for distribution to the Council for its June meeting. Recognizing the short turn around required, the Council requests that, if the final report cannot be provided, SSC recommendations addressing the TORs be provided by 3 pm on June 9, 2015 so that they may be reported during the Snapper-Grouper Committee meeting along with other SSC recommendations from the April 2015 SSC meeting.

7. ADJOURN

Appendix E

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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June 18, 2015

MEMORANDUM

TO: Bonnie Ponwith

FROM: Bob Mahood

SUBJECT: Request for Blueline Tilefish Stock Projections

Upon review of projections for the blueline tilefish stock, the SAFMC's SSC determined that existing analyses no longer represent best scientific information available. The SSC therefore requested revised projections to address recent landings and concerns over continued effort shifts and apparent spatial differences in stock productivity. The Council requests that the Center provide revised projections, based on P* values of 50% and 30% applied for 2016-2020 and including yield in pounds and numbers of fish for landings and discards, for the scenarios described as follows.

1. Incorporating actual landings through 2014 and the best estimate of 2015 landings, including landings from the MAFMC and NEFMC areas for all years. Projections are requested using both the VTR and MRIP estimates for the recreational sector in the Northeast areas, and the Center is asked to provide guidance on the appropriateness of each data stream.

2. Incorporating actual landings through 2014 and the best estimate of 2015 landings (see above for including MAFMC and NEFMC areas) and reflecting higher recruitment during the projection period (those years since the terminal assessment year) than that estimated in base projection scenarios. Multiple scenarios using different fixed recruitment values, as described below, to reflect the range of recruitment uncertainty should be provided in response to this request.
    - The first scenario, reflecting an approach recommended by the SSC, is to base the alternative recruitment assumption on the levels estimated by the assessment model as necessary to support increased landings observed since around 2006. The recommendation to accommodate this approach is to base recruitment on 5 and 10 year averages of recruitment estimated by the assessment for 2007 and earlier. These years reflect the cohorts that largely supported those catches, while avoiding likely impacts of the regulatory closure in 2011. These values, 250,680

age-1 fish for the 5-year (2003-2007) period and 182,928 age-1 fish for the 10-year period (1998-2007), should be used as fixed recruitment levels (age-1 abundance) for 2008 and later.

- The second scenario requested to address recruitment uncertainty is to provide projection outputs based on the 75th percentile of recruitment estimated in the uncertainty evaluation of the base updated projections.
- Recognizing that there are likely other approaches to addressing the SSC request to explore alternative recruitment scenarios, the Center is encouraged to provide any further alternatives that it deems appropriate.

To allow review by the SSC prior to consideration of these projections by the Council at its September 14-18, 2015, meeting, we are requesting that results be provided to Council staff by August 12, 2015.

We appreciate your assistance in addressing these requests. Please contact John Carmichael if you have any questions.

cc: Council members and staff
Theo Brainerd and Tom Jamir
Jack McGovern and Rick DeVictor
Monica Smit-Brunello
Chris Moore, MAFMC Executive Director

Appendix F

Projections for South Atlantic Blueline Tilefish SEDAR 32 Stock Assessment

Sustainable Fisheries Branch, National Marine Fisheries Service,
Southeast Fisheries Science Center,
101 Pivers Island Rd, Beaufort, NC 28516

August 11, 2015

This document responds to a request from the SSC (June 18, 2015) for additional projections following the SEDAR 32 South Atlantic blueline tilefish stock assessment. The request consisted of two components: (1) P* projections with updated landings information and (2) Additional projection scenarios assuming high recruitment.

1. P* projections within updated landings information

50% and 30% P* projections were requested with actual blueline landings for the 2012-2014 interim years, the best estimate of blueline landings for the 2015 interim year, and predicted landings associated with P*=0.5 and P*= 0.3 for 2016-2020 (the prediction years). The terminal year of the assessment was 2011 and so this represents a 9 year P* projection. Actual total landings (commercial and recreational) for the interim period were 464,974 lb in 2012, 497,263 lb in 2013, 363,654 lb in 2014, and 94,638 lb in 2015. Landings in 2015 are underestimated because they cover only a portion of the year and are highly preliminary. Projections were requested with both Northeast Vessel Trip Reports (VTRs) and MRIP landings estimates for the recreational sector. Projections were conducted using only the MRIP estimates. VTRs cover only the charterboat sector and only in the northeast region of the stock area. This same mode is covered by MRIP and so the two data sources are redundant. Results of the P* projections are shown in Table 1.

Table 1. Acceptable biological catch (ABC) of blueline tilefish based on the annual probability of overfishing P* = 0.3 (left panel) and P*=0.5 (right panel). Landings were set to those observed for 2012, 2013, 2014, and 2015 (partial year), with the ABC associated with the specified probability of overfishing calculated for the remaining years (2016-2020). L=Landings, D=Discards.

Year	P*=0.3				P*=0.5			
	ABC-L (1000 lb)	ABC-D (1000 lb)	ABC-L (1000 fish)	ABC-D (1000 fish)	ABC-L (1000 lb)	ABC-D (1000 lb)	ABC-L (1000 fish)	ABC-D (1000 fish)
2016	30.669	0.033	6.703	0.008	48.391	0.052	10.700	0.011
2017	47.832	0.052	9.702	0.010	70.848	0.077	14.481	0.016
2018	65.536	0.079	12.559	0.014	92.465	0.100	17.937	0.019
2019	81.253	0.088	14.878	0.016	110.039	0.119	20.482	0.022
2020	93.496	0.101	17.934	0.019	122.596	0.133	24.713	0.027

2. Additional projection scenarios

Additional projections using actual landings of blueline tilefish (as described above) but assuming multiple, alternative high recruitment scenarios were requested. The request for assumed high recruitment during the projection period was based on continued high landings of blueline tilefish beyond the terminal year of the assessment. A previous document outlined the scientific issues surrounding the assumption of an alternative recruitment regime during the projection period. Based on several internal and external discussions, it was decided there was not sufficient scientific support to assume the recruitment scenarios requested for the projections. As an alternative, the handline index used in the assessment was extended to 2014 and compared to the predicted biomass of blueline tilefish available to the handline fishery from the projections. This comparison allows an evaluation of whether the pattern in predicted biomass of blueline beyond the terminal years of the assessment (2012-2014) is similar to trends in the available empirical data.

The handline index used in the assessment spanned 1993-2010 and covered the area from Cape Hatteras south to Cape Canaveral. The index was extended to 2014 (excluding the 2011 deep water closure year) and the entire index was re-standardized (hereafter 'Updated HL index'). The predicted biomass vulnerable to the handline fishery from the projections was computed for 2012-2014 (i.e., abundance at age X handline selectivity at age X mean weight at age; hereafter 'Projection HL index'), and for consistency in comparison, these computations were extended backward in time (1993-2010) using the abundance at age from the assessment. The original handline index from the SEDAR 32 assessment and the updated HL index are shown in Figure 1A. The general pattern in the two indices is similar, though the re-standardization alters some of the years. The updated HL index has shown a positive trend since the terminal year of the assessment (2011) with the largest increase in relative abundance in 2014. The updated HL index compared to the projection HL index is shown in Figure 1B. The projection HL index shows a similar increase in relative abundance of blueline tilefish to the updated HL index in 2012 and 2013. The two indices diverge in 2014 with the updated HL index increasing and the projection HL index declining. However, the uncertainty in the projection HL index incorporates the estimates of relative abundance from the updated HL index for each of the three years.

Discussion

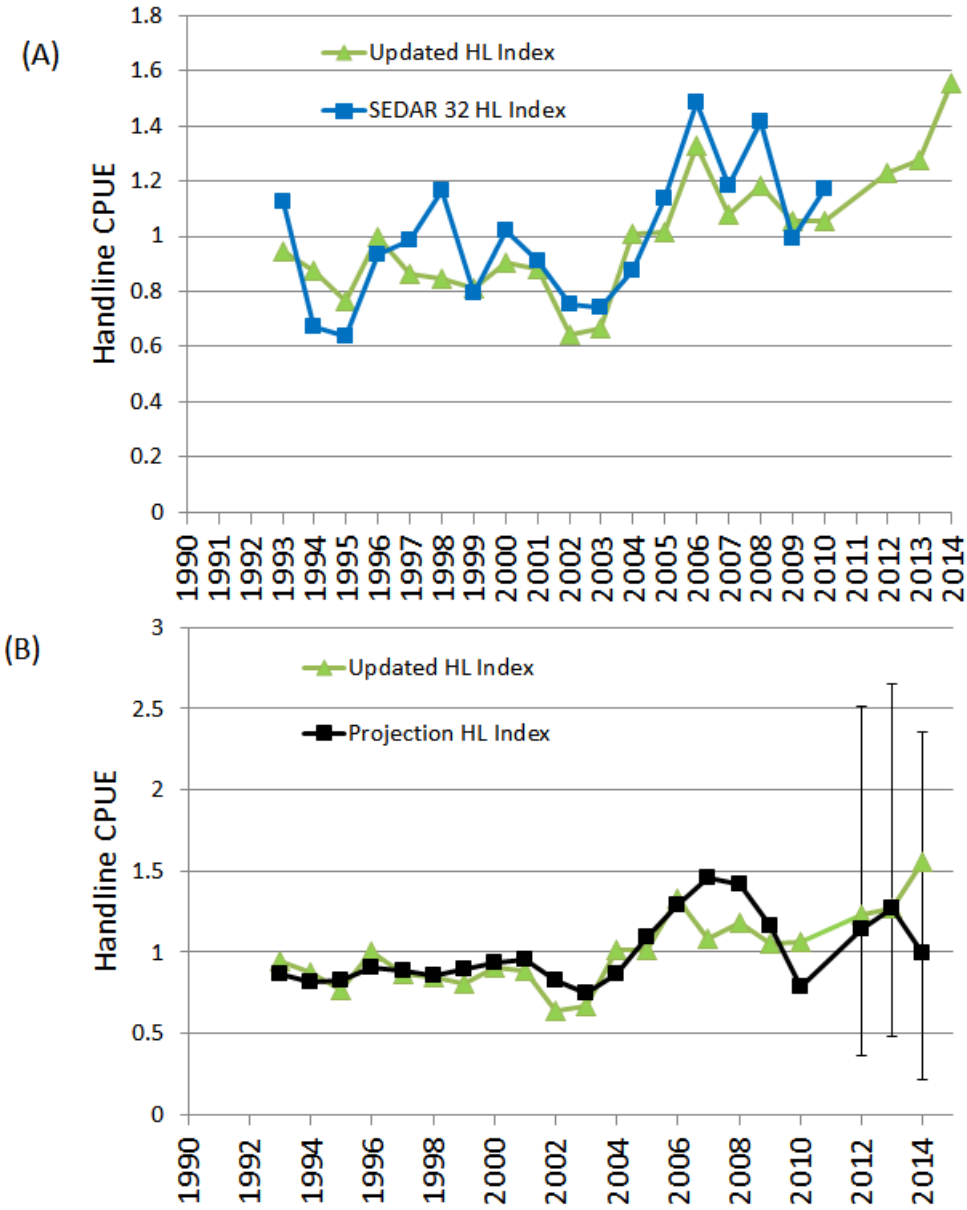
Projections of fish stocks are highly uncertain, particularly in the long-term (>3 years). The P* projections were run over 9 years (2012-2020) with a 4 year interim period (2012-2015). Fisheries were assumed to continue fishing at their estimated current proportions of total fishing efforts, using the estimated current selectivity patterns. Changes in the fishery or responses to management regulations (implemented in 2014 and 2015) would likely affect projection results. As noted in previous documents (see Sept 20, 2013 memo) projections beyond 3 years are highly uncertain for this stock.

The projections assume that the estimated spawner-recruit relationship applies in the future and that past residuals reflect future uncertainty in recruitment. Enhanced recruitment has been put forth as one hypothesis for the continued high landings of blueline tilefish. However, analysis of recent age

composition and length composition data (since the assessment) do not provide empirical evidence for continued high recruitment. Increases in catchability and increased fishing effort are plausible alternative hypotheses for the continued high landings of blueline.

Exploitation of previously unexploited ‘pockets’ of fish in the northern region of the range have also been put forth as a hypothesis to explain the recent high landings of blueline tilefish. The productivity of blueline north of Cape Hatteras is not known. Because blueline are sedentary, it is highly unlikely that productivity has shifted northward. Given the lack of a physical transport mechanism to the south, it is also unclear how much fish in the northern region of the range contribute to coastwide productivity of the stock. There is currently insufficient scientific information to determine the contribution of northern fish to coastwide productivity of blueline. Irrespective of the particular mechanism, the exploitation history of deepwater species, such as blueline tilefish, would suggest that recent high landings may be a transient phenomenon.

Figure 1. (A) The original handline index used in the assessment (1993-2010) and the updated index (1993-2014). (B) The updated index compared to the predicted biomass of blueline from the projections. Error bars are the 5th and 95th percentiles of the projection biomass from 10,000 bootstrap replicates.



Appendix G

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August 18, 2015

MEMORANDUM

To: Dr. Bonnie Ponwith
Dr. Roy E. Crabtree

From: Robert K. Mahood

Subject: Input Data for August 11, 2015

In your memo of August 12, 2015 to Roy Crabtree, the updated landings data used for the projections appear to underestimate the actual landings, in some cases by a considerable amount (see attached table). In addition, our SSC had some specific recommendations about the level of landings to use for 2013 (see attached table).

We are requesting that the projections that will be presented to the SSC be rerun with the following level of landings (lbs ww), which we believe are the correct landings.

2012	516,885
2013	577,747
2014	550,786
2015	111,178 (South Atlantic recreational and commercial only)

We are requesting that the additional output requested by Dr. Crabtree on August 14, 2015 also come from the rerun projections using the above landings. As indicated in Dr. Crabtree's memo, the results should be provided by close of business on August 21, 2015 so the information can be included in the SSC briefing book.

Thanks for your assistance and if you have any questions, please contact Gregg Waugh or John Carmichael.

cc: Ben Hartig
Michelle Duval
Luiz Barbieri and Marcel Reichert
Gregg Waugh and John Carmichael
Theo Brainerd and Tom Jamir
Jack McGovern and Rick DeVictor