

# SOUTHEASTERN FISHERIES ASSOCIATION (SFA)



## EAST COAST FISHERIES SECTION (ECFS)

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South Atlantic Fishery Management Council (SAFMC)  
Scientific and Statistical Committee (SSC)

Monday April 21, 2014

Re: SAFMC SSC Agenda Items

To: The SAFMC SSC members,

Thank you for the opportunity to submit written comment on agenda items for the April 2014 SAFMC SSC meeting that concern members of the Southeastern Fisheries Association, East Coast Fisheries Section (SFA-ECFS). Our membership appreciates the recent protocol change allowing for the opportunity to contribute written and oral comments at SSC meetings.

Below, we include comment on the following SSC agenda items: 1) Blueline tilefish projections "rebuilding plan", 2) the Wreckfish "third party" assessment review to set the acceptable biological catch (ABC), 3) the Gag grouper update assessment review and 4) Snowy grouper assessment review, which set ABCs for respective fish stocks.

We support the findings of the independent Rademeyer and Butterworth (2014) South Atlantic wreckfish stock assessment. We believe that this statistical catch-at-age model provides rigorous findings that this stock is above maximum sustainable yield (MSY, i.e. not overfished), and no overfishing is taking place. Further, we support the findings that the current quota can be sustainably increased by 100 thousand lbs. per year to 335 thousand lbs. per year without affecting MSY in future projections.

During the March 2014 SAFMC meeting, SG Fishery Management Plan Regulatory Amendment 21 rulemaking was approved to modify the MSST analysis formula for several SG fish stocks with low natural mortality rates. We appreciate the SSC's work in support of this amendment to keep SG stocks from being designated as "overfished" by overly conservative stock assessment metrics. We understand that an emergency rule to reduce the ACL for Blueline tilefish by two-thirds of the current ACL was necessary to address the stock status, per SEDAR 32. Likewise, SFA-ECFS strongly supports approval of SG RA 21 that should lead to resolution of the stock status and provide more appropriate stock projections for Blueline tilefish than those based upon SEDAR 32.

The decisions made at this meeting will affect management of South Atlantic Snapper-Grouper (SG) stock annual catch limits (ACLs) for several fishing seasons to come; hence, your decisions are very important to the SFA-ECFS. We are interested in all of the SSC agenda items and we look forward to attending the SSC meeting and offering oral comment. Please see the attached comments, below, that address your reviews on: 1) Blueline tilefish projections, 2) the Gag grouper update to SEDAR 10, and 3) the Snowy grouper SEDAR 36 stock assessment.

Jimmy Hull, Chairman  
SFA ECFS  
jgh/rhh/pjb

## Comments on Blueline Tilefish SEDAR 32 projections

The conservative benchmarks from SEDAR 32 South Atlantic Blueline Tilefish have inappropriately resulted in a stock status of **overfished** and **undergoing overfishing**. We are well aware that the conservative benchmarks that resulted from SEDAR 32, such as the MSST value (where MSST is set too close to  $B_{msy}$ ), were set at unrealistic levels where the stock status will oscillate between overfished and not overfished in any given assessment. This has put the SSC and the SAFMC in a precarious position of developing rebuilding plans that may be quickly met, and then just as quickly re-assessed as overfished. These regulatory constraints, which have again resulted from overly-conservative model benchmarks, hurt both the recreational and commercial fishing industry, as well as the coastal economies of the SE US. Meanwhile, the SAFMC and staff have been put in a frenetic mode to produce rebuilding plans for fisheries that are sustainable by more realistic metrics.

### *SEDAR 32 must be updated with a realistic MSST value*

Using contemporaneous methods of evaluating MSST, the stock status of South Atlantic Blueline Tilefish should be: **not overfished**. Accordingly, after Snapper-Grouper Amendment 21 is approved, stock status should be adjusted to the new MSST level of 75%  $SSB_{MSY}$ , and projections made accordingly. We support expeditious approval of SG Amendment 21 that would set MSST at 75%  $SSB_{MSY}$  for Blueline Tilefish, as well as other long-lived snapper-grouper species. Following approval of SG Amendment 21, the SEFSC and the SSC should re-evaluate the findings of SEDAR 32, and produce realistic fishery stock projections.

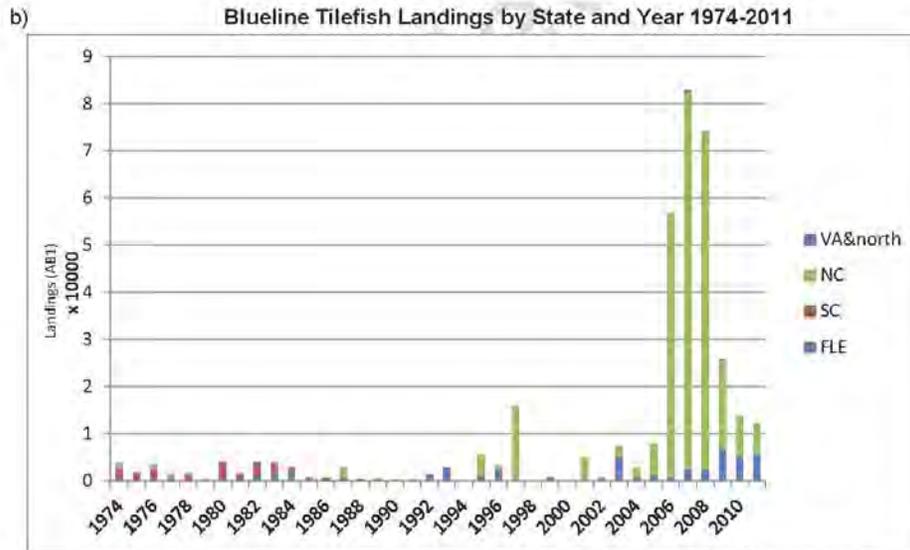
### *The NMFS-SEFSC continues to have problems creating spatially explicit models*

We have the same concerns with SEDAR 32 as with SEDAR 36 snowy grouper, that the NMFS-SEFSC BAM model did not rigorously and adequately assess developing fisheries north of Cape Hatteras. In SEDAR 32, the analysts did not evaluate CPUE above 35 degrees N latitude, where a significant portion of the fishery has developed over the past decade. The SEDAR 32 CIE reviewers (see Melvin review in SEDAR 32 SAR) recognized this, and established that the CPUE north of 35 degrees N latitude was much higher than the southern zones. As SEDAR 32 only considers CPUE between 28 & 35 degrees N, the significant landings to the north are not being indexed accurately in the assessment. This again suggests that the NMFS-SEFSC's BAM model is not accounting for a now widely recognized climate change factor that is resulting in range extensions of South Atlantic species, and recent development of fisheries north of Cape Hatteras. This is important as a significant fishery has developed north of Cape Hatteras, whereas historically, the Blueline Tilefish was largely a bycatch species during directed trips for snowy grouper in the South Atlantic region.

### *Problems with recreational landings data*

The independent reviewers at the SEDAR 32 RW questioned the validity of MRIP recreational landings data used to construct a record of recreational fishing landings. The RW was addressed by fishing industry representatives that cast serious doubt over the veracity of the MRIP Blueline Tilefish landings history (see DW figure

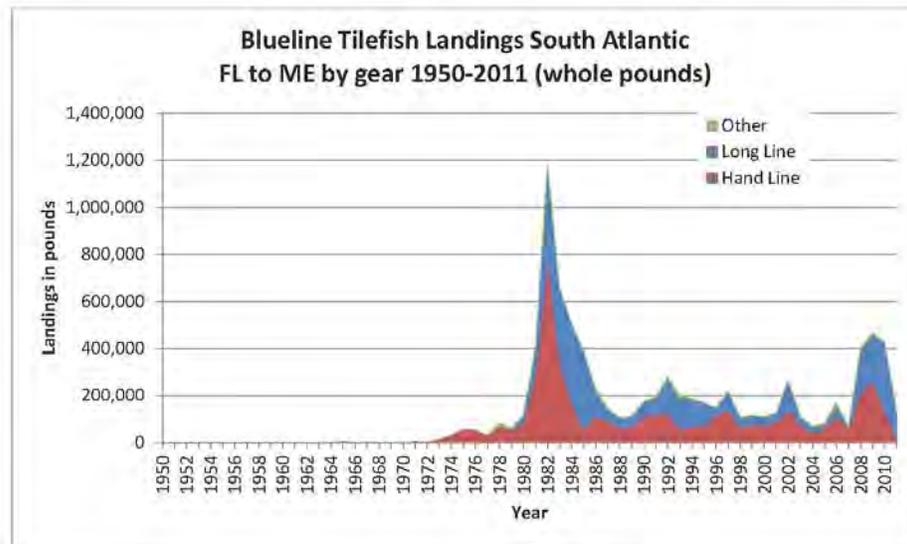
4.11.1 below). The unreliability of MRIP estimates is particularly concerning during the recent expansion of the fishery north of Cape Hatteras from 2006 to 2008, including some elevated discard data from 2007. Further, we believe that SEDAR 32 did not effectively address anomalous annual commercial landings records during the 1980's where Blue-line Tilefish were likely confused with Golden Tilefish in reporting, before institution of the Trip Ticket reporting system (from DW Fig. 3.4).



**Figure 4.11.1.** Estimated number of Atlantic blue-line tilefish landings from MRFSS/MRIP (1981-2011) and SRHS (1974-2011) by state (a), by state and year (b), and by state and mode (c). Florida landings from east coast only, including Florida Keys. Due to confidentiality concerns SRHS landings for GA and FLE are grouped and shown as FLE.

April 2013

South Atlantic Blue-line Tilefish



**Figure 3.4** Blue-line tilefish landings, in whole weight pounds, for all states (FL-ME) by gear.

## **Comments on Gag Grouper SEDAR 10 Update**

Before considering the gag Update, the SAFMC's SSC should be aware of the external review (RW report) highlighting serious flaws in the 2006 SEDAR 10 gag grouper benchmark stock assessment (see comments in briefing book Attachment 16). Specifically, the RW recognized the incoherent stock-recruitment relationship, where recruitment rate is decoupled from spawning stock biomass in the Beverton- Holt curve as recruitment doesn't vary across a vast range of SSB values. The inability of the SEDAR 10 benchmark assessment to produce a coherent the stock-recruitment relationship led to flawed projections, such as a prediction that the South Atlantic Gag stock would be "overfished" by 2007. Clearly, the SEFSC's prediction of an "overfished" gag stock never came to fruition. Alternatively, the SEDAR 10 RW did not project that the stock would become overfished in the projected future. In fact, the SEDAR 10 RW noted the SEFSC's MSST estimate was "overly-conservative" and suggested a much lower value as a more realistic stock status benchmark. There were no indications of recruitment impairment even at the lowest observed SSB (~ 5 million lbs.), as such, the MSST was set at that level. It should be noted that SG Amendment 21, which sets MSST at 75% SSB<sub>msy</sub>, for long-lived species such as gag grouper, should prevent such discrepancies in future assessments.

### **Problems with the Gag (2014) update**

#### *Another data poor stock assessment*

The update, using the Beaufort statistical catch-at-age model, suffers from critical shortages of age-comp data. As a result, the analysts, unfortunately, relied on less explicit length-comp data to create age-frequency curves. For example, age-comp samples for the headboat index averaged 69 samples per year, dangerously approaching a threshold (n= 47 samples) where age-frequency analyses were not deemed valid by SEFSC analyses. For the commercial diving age-comps, there were only four years represented, with less than a total of 100 samples to describe decades worth of landings. Alternatively, the commercial handline sector, from 1992-2002, averaged ~546 age-comp measurements per year, and represents the only age- explicit fishing fleet modeled in the update. A weighting system, where state-specific length-comps were multiplied by the relative total state commercial landings, was utilized in lieu of adequate age-comp data. For age-comp data poor fleets other than the commercial handline, it is clear that this model became a less powerful catch-at-length model, weighted to create "proxy" age-comps for use in age-frequency curves.

#### *Incoherent spawner-recruitment relationship*

Like the 2006 SEDAR 10 gag benchmark stock assessment, the 2014 update also produced an incoherent stock-recruitment relationship (see figs below). Again, this decoupled relationship of recruitment as a function of SSB value should be a red flag that invalidates: 1) any recruitment predictions, 2) conventional MSST calculations, and 3) any projections of overfishing or overfished status based upon cumulative recruitment estimates. Below are the Beverton-Holt curves for SEDAR 10, and the 2014 update presented side by side. They are similarly incoherent and invalid for the purposes of estimating recruitment as a function of SSB.

Figure 11. Estimated Beverton-Holt stock-recruitment relationship presented for South Atlantic gag grouper. Two digit year labels represent estimated recruitment values from 1972-2004. Dashed curve is estimated relationship. Solid curve is estimated relationship with lognormal bias correction, from which benchmarks are derived.

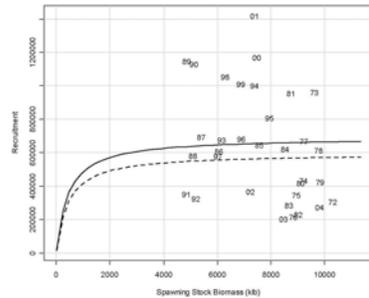
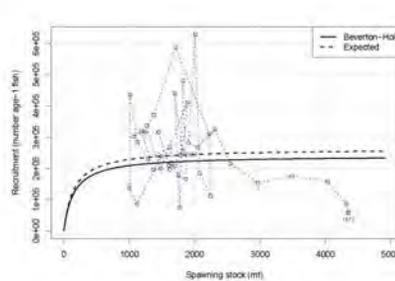


Figure 25. Top panel: Beverton-Holt spawner-recruit curves, with and without lognormal bias correction. The expected (upper) curve was used for computing management benchmarks. Bottom panel: log of recruits (number age-1 fish) per spawner as a function of spawners.

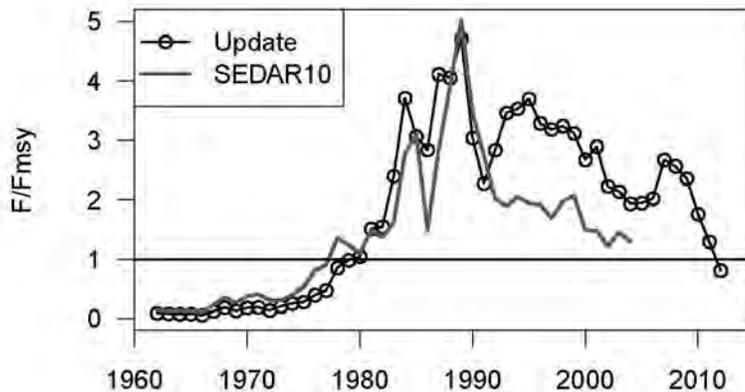


These spurious stock-recruitment curves, further, put the SAFMC in a precarious position of having to guess on appropriate future management alternatives when they realize that recruitment predictions are “artifacts” of poor model input. These inexplicit spawner-recruitment curves have become common place in stock assessment output from the BAM, and are likely resulting in inappropriate management decisions by the SAFMC relative to actual spawner-recruit potential of many stocks. In fact, projections on stock status from the update should continue to be tempered by the SAFMC’s development of management alternatives for gag grouper.

#### *Lack of continuity with SEDAR 10 benchmark*

Below is a plot of  $F/F_{msy}$  as a function of MSST for the SEDAR 10 benchmark and the 2014 update. Although input methods and parameters for the gag update are largely the same from the 2006 benchmark, the analysts iterated some changes in input data. These changes may have resulted in inconsistencies in model output between the benchmark and update models. For instance, an example of modification in data treatment from the benchmark included weighting the age-comp data as a function of the corresponding length-comps. This was performed for the commercial handline and headboat data sets. The SEFSC should explain to the SSC what model modifications resulted in such an obvious “discontinuity” between the benchmark and update  $F/F_{msy}$  model relationship trends, per the output (see update fig. 38, below) from the update.

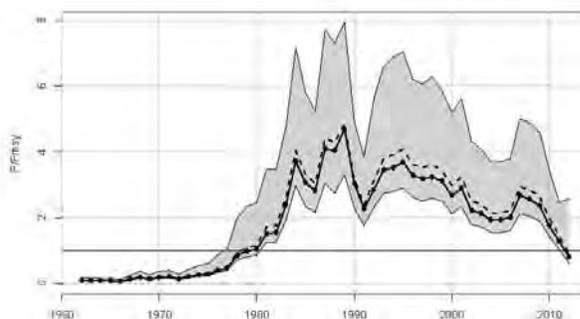
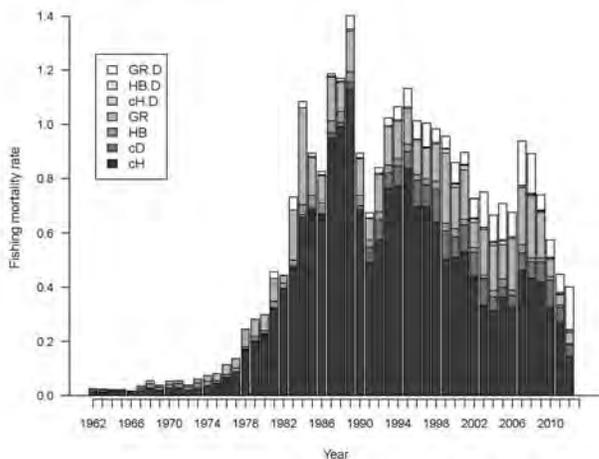
Figure 35. Comparison of results from this update assessment and from the previous, SEDAR-10 benchmark assessment. Top panel:  $F$  relative to  $F_{MSY}$ . Bottom panel: spawning biomass relative to the minimum stock size threshold ( $MSST = (1 - M)SSB_{MSY}$ ).



#### *Unrealistic assumptions on fishing removals*

As evidenced in the figures from the update, fishing removals of gag grouper have been declining precipitously over nearly a decade (and largely over 20 years) in every sector and every fleet in the South Atlantic (see Update Figure 23 below). FMP's, including a January-April fishing ban during spawning season, instituted in 2010, will have drastic consequences on future landings rates. This management action reduces fishing pressure when gravid adults aggregate to spawn, with obvious positive implications on removing fishing pressure on gravid SSB and supporting successful recruitment events. Collectively, the reduction in fishing pressure led the update to indicate that in the terminal year of 2012  $F/F_{msy} < 1$ , meaning there was no overfishing at the terminal year of the update. In SEDAR 10, the terminal year was used to indicate fishing status, meaning that "no overfishing" may be the ultimate plausible state of cumulative fishing removals since the benchmark. However, since the SEFSC uses the geometric mean of the last 3 years, the fishing removal rate was calculated ( $F/F_{msy} = 1.23$ ) to suggest that overfishing was still occurring. This calculation is in spite of a long term trend of  $F$  becoming lower than  $F_{msy}$  (see update figure 34c, pg. 93, below).

Figure 22. Estimated fully selected fishing mortality rate (per year) by fleet. *cH* refers to commercial handlines, *sD* to commercial drifing, *HB* to headboat, *GR* to general recreational, *cH.D* to commercial discard mortalities, *HB.D* to headboat discard mortalities, and *GR.D* to general recreational discard mortalities.



Despite the 2014 gag update's dire, but woefully invalid estimates of recruitment failure in 2010 and 2012 that were purported to affect future projections, there is no credible evidence that fishing removals ( $F$ ) relative to  $F_{msy}$  would change in trajectory from the trend over the past decade.

In summary, the SSC should be aware of issues iterated by the independent review panel (RW) at the SEDAR 10 gag benchmark. Further, where problems still exist in the update, such as inferences on SSB, MSST, and recruitment projections resulting from the spawner-recruitment curve; the SSC must view the update model's output and projections with considerable skepticism.

## **Comments on SEDAR 36- Snowy Grouper standard stock assessment**

The SEDAR 36 standard stock assessment for South Atlantic snowy grouper indicated that the stock is still “**overfished**” but is currently **not undergoing “overfishing”** with respect to benchmarks produced in SEDAR 4 to achieve rebuilding of the stock. With updated modifications of both data and the model, where more accurate estimates of steepness and natural mortality were included, the SEDAR 36 model suggests a lower SSB<sub>msy</sub> to achieve the rebuilding of the stock, and that increased sustainable fishing rates (F<sub>msy</sub>) and production (MSY) can be achieved during this rebuilding plan. It is clear, with strong statistical certainty of ~ 76%, that snowy grouper is not undergoing “overfishing” and that fishing rate (F/F<sub>msy</sub>) is significantly under the sustainable (F<sub>msy</sub>) fishing rate that is permissible under the “rebuilding plan” targets for B<sub>msy</sub> and SSB<sub>msy</sub>. Specifically, fishing removal rate is only 59% of the possible rate that still maintains the rebuilding trajectories to achieve “not overfished” status (i.e. SSB/SSB<sub>msy</sub> and B/B<sub>msy</sub> are = 1).

### **Problems with SEDAR 36:**

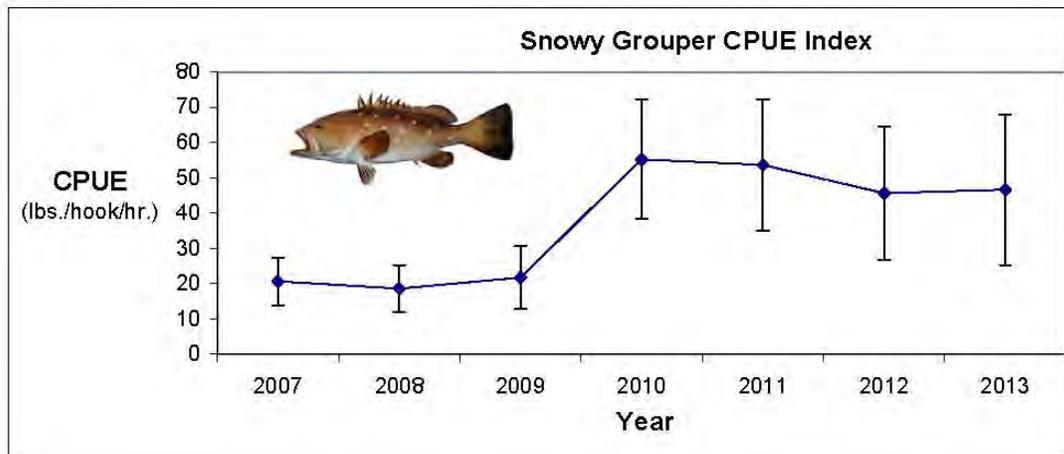
#### *Lack of relevant spatially explicit evaluation of population*

SEDAR 36 suffers from utilizing indices of abundance that are not explicit of the abundance pattern of the mature adult population. Specifically, the headboat and MARMAP surveys are not performed in spatial context with this deep water species where mature adults reside (~200 to 700’ depth). This discrepancy has obvious implications on the ability of the shallow water fleets to produce coherent life history data and indices of abundance indicative of this mature adult population. Alternatively, the commercial handline fishery that is prosecuted within an acceptable spatial range of the mature adult population has been excluded by the analysts both in SEDAR 4 and here in SEDAR 36.

The area north of Cape Hatteras was excluded from Southeast Region Headboat Survey (SRHS, area 1) index development for this stock assessment. Although this exclusion may be statistically prudent, this decision is in spite of a SEDAR 36 panelist’s divulgence that a significant snowy grouper fishery has developed north of Cape Hatteras over the past 20 years. The SEDAR 36 analysts dismiss the significance of this emerging fishery by providing data that only 0.6% of the South Atlantic commercial landings are caught off of VA. This issue raises a question as to whether the NMFS-SEFSC is truly cognizant of northerly range extensions of snapper-grouper species north of Cape Hatteras, but south of VA. The choice of SEDAR 36 to not evaluate this emerging fishery suggests inaccuracy in the SEDAR 36 findings and projections, and a need to consider these issues in future assessments. Indeed, the NMFS Chief Scientist, Richard Merrick has recently acknowledged that climate change-driven range extensions confound western Atlantic stock assessment SSB & MSY estimates as we move in the future, particularly for species undergoing extensions north of Cape Hatteras and subsequently into the mid Atlantic US coast. It is clear that the SEFSC must more clearly account for the confounding impacts of climate change on stock structure in all future South Atlantic fishery stock assessments.

### *Indices of abundance*

The indices of abundances used in SEDAR 36 suffer from unacceptable statistical variance (see SEDAR 36 Tables 6&7). Specifically, the CV's for the MARMAP chevron trap and vertical line indices were beyond acceptable statistical thresholds in all years. Likewise, the annual headboat index of abundance values routinely exceeded statistical acceptable CV thresholds. Oddly, the commercial handline index, which was only considered as a sensitivity run, was statistically rigorous, with CV's always < 10%. Further, the commercial handline index (1993-2005) shows an increasing trend of abundance, evidence that the index is subverting the "hyperstability" issue that SEFSC analysts have used to justify its exclusion. Indeed, the Oden & Barile (2013) comment to SEDAR 36 continues the SEFSC's trend analysis of an increasing commercial handline fleet CPUE by extending a nominal commercial handline CPUE index from 2007 to 2013 (see below), and the description of this index is provided to SEDAR 36. These data below were not utilized in SEDAR 36.



In summary, we encourage the SSC to provide a critical review of the SEDAR 36 snowy grouper standard assessment that is inclusive of the problems highlighted in this comment. We hope that the problems with SEDAR 36 as with other grouper assessments, such as the 2014 South Atlantic gag update, will be kept in mind as the SSC determines prudent fishing removal rates based upon stock projections; as these interpretations are utilized to direct the SAFMC's management decisions. Specifically, the projections from SEDAR 36 should be considered as "conservative" as the SSC sets revised ABCs under the rebuilding plan for a now "underfished" snowy grouper stock.