Summary of Public Hearing Comments on Regulatory Amendment 20:

6 written comments were received and a few individuals provided testimony at the hearings.

The season should open in January with a 150-200 lb trip limit at most and last as long as it can. Important to have snowy at the beginning of the year when other groupers are closed.

Snowy grouper should be managed with split seasons that align with co-occurring species and appropriate possession limits to avoid extended closures and excessive regulatory discards.

Consider increasing the trip limit to 150-175 lbs per trip. This would allow for the season to stretch out longer, be more profitable for fishermen, and allow less discards longer into the season.

There is no need for a commercial split season for snowy grouper as it is the only grouper that can be retained during the first 4 months of the year.

Increase in recreational allocation is a step in the right direction but the allocation is still not equitable.

Concern over resulting 83/17 allocation due to inclusion of historic recreational data from Monroe County. Commercial fishermen feel the recreational sector should not be rewarded with a higher ACL when recreational landings routinely exceed the ACL and the recreational fishermen are not held accountable.

Concern over the accuracy of recreational landings, particularly in Monroe County. Estimates are based on very few intercepts yet these landings are being used to increase the recreational ACL.

There should not be a re-allocation of the snowy grouper ACL without public input and transparency.

Consider allowing at least 2 of any species in the aggregate bag limit, with a 3 fish total OR allow 2 of any one species and only 2 total for the vessel. This may discourage fishermen from continuing to fish and avoid discards.

Support for May-August recreational season for snowy grouper.

Alternative 5 under Action 3 should be reworded to move the southern management boundary to the Brevard/**Indian River County** to include Cape Canaveral.

Consider a 300-pound trip limit for the area included in revised Alternative 5.

The Council should delay action on Regulatory Amendment 20 until concerns over SEDAR 36 have been properly addressed.

Summary of re-submitted comments on SEDAR 36:

The snowy grouper stock is currently "underfished" and the “rebuilding” estimates for this stock are conservative.

SEDAR 36 was conducted without physical meetings. Public meetings are necessary to truly examine the veracity of data supporting the indices of abundance used by the SEDAR 36 analysts, and to question their assumptions.

SEDAR 36 used indices of abundance that do not reflect the abundance pattern of the mature adult population.

The area north of Cape Hatteras was excluded from the Southeast Region Headboat Survey index development. The SEFSC must more clearly account for the confounding impacts of climate change on stock structure in all future South Atlantic fishery stock assessments.

The MARMAP chevron trap and vertical line and the headboat index used in SEDAR 36 suffer from unacceptable statistical variance whereas the commercial handline index, which was only considered as a sensitivity run, was statistically rigorous, with CV’s always < 10%.

SEDAR 36 relied upon the Southeast Region Headboat Survey (SRHS) recreational landings database as the primary index of abundance. Reliance on this data source is inappropriate, as the survey does not capture the historical snowy grouper fishery and population centers in shelf environments from 200’ to ~ 700’ depth.

Dear South Atlantic Council,

Good afternoon, my name is Chris Edwards and I commercial fish out of Morehead City on the boat F/V Elizabeth. I just want to voice my concern about amendment 20 and the snowy grouper season. I personally feel that the season should open in January like it does now with a 150-200 lb trip limit at most and last as long as it can. It is very important from a commercial fishing standpoint to have Snowy grouper in the first part of the year, as none of the other grouper species are open. Also, the blueline tilefish are a great concern of mine, as we catch them at the same time we are catching the snowy grouper. When the tilefish are caught in 400-500 feet of water their eyes bulge out of their head because of pressure change and most don't make it back to the bottom. I feel that there should be about a 50lb trip limit on the blueline tilefish while the snowy grouper season is open.

Thank You

Chris B. Edwards

August SAFMC Public Hearing Comments

I am Chris McCaffity. My comments concerning Blueline Tilefish, Snowy Grouper, and Gray Triggerfish are that these quotas should be managed with split seasons that align with co-occurring species and appropriate possession limits to avoid extended closures and excessive regulatory discards. The council's primary focus should be on properly managing all of our quotas to avoid closures that result in well over a million pounds of seafood being allocated to projected dead discards every year.

Good afternoon, my name is Brian Moore, I currently am part owner in a seafood market and also a partner in a wholesale operation. We specialize in supplying local snapper and grouper to other wholesales, restaurants and the general public. Over the last 7 or 8 years it has become increasingly harder to provide LOCAL seafood due to regulations management. I know that some type of management is needed but the problem is we do not have a steady supply of local fish. We have gone to a 12 month fishery to a 6 month. Under current regulations shallow water grouper does not open until May 1st so the only local grouper we see are snowys. Under admenment 20 there is going to be a 30 % increase in ACL for commerical. I feel that we need to increase the trip limit to say 150-175 lbs per trip. This would allow for the season to stretch out longer and be more profitable for the fishermen allow less discards longer into the season. There is no reason to split the season as to it is the only local grouper that can be retained during the first 4 months of the year.
I also feel that trigger fish ACL needs to be split to co inside with Berliner seasons. If you split the season this would allow the fishermen to have equal opportunity to catch the allotment. Also as with beeliners after 75% has been caught then enforce a reduced trip limit to make season last a little longer.

I have one more point I would like to address, as for recreational catch limits on commercial vessels. I believe that either you are recreational fisherman or commercial but not both. I believe that your intent as a fisherman must be stated before your trip begins. So that no recreational limits are retained on a vessel that intends to sell its catch. That for example after trigger fish close commercial boats are allowed to keep there recreational,limits if they have a recreational license. These fish that are retained most of the time end ip being sold illegally thus making it harder for dealers and suppliers to sell legal fish.

Thank you for your time
Brian Moore
Morehead City, NC

TEAGUE
670 11TH STREET
PO BOX 510339
KEY COLONY BEACH, FLORIDA 33051

August 14, 2014

TO: SAFMC

RE: Snapper Grouper Regulatory Amendment 20

I have reviewed the entire Amendment Document, and I will say that I do see some improvement from previous regulations, but I still have some difference of opinion, and maybe some additional suggestions.

I am located in the Florida Keys, and I will present this information from the perspective of individual small boat recreational fishermen. I think I do honestly represent the opinions of the Key Colony Beach Fishing and Boating Club. We have over 220 members with a large waiting list. We are all recreational anglers, none of which derive any profit from the resources that belong to ALL Americans.

While I am specifically addressing this Amendment, and Snowy Grouper, many of my comments refer to ALL Regulations from ALL Regulating Authorities. I would urge all Fishery Management Authorities to get more in line with the changes being made to Magnuson-Stevens, which is attempting to provide more fairness to Recreational Fishermen. For too long, the fishery resource that is part of our American Heritage has been stolen from millions of Recreational Fishermen and given to just a few Commercial Fishermen. In the first place, in virtually every instance where a resource has been depleted, it is the Commercial Sector that has done that, and yet, Recreational Fishermen have then been shut out.

Since I am not a scientist, I am not going to question the basis for establishing the suggested ACL. My comments will be based on that number.

Previous Snowy Grouper catch shares is just a quick example. Allowing 5% of the ACL for Recreational is a real slap in the face. Hundreds or even thousands of fishermen allowed only 523 fish total. What a joke!!

I will say that an increase to 17% is a step in the right direction, but it is still not equitable. Without reducing the Commercial Allowable Catch, because of an increasing ACL, the Recreational Sector could receive 50% of the ACL. Certainly Recreational deserves a lot more than 17%.

Let me explain what we go through down here to attempt to catch a Snowy. By your own information, you show that we have to go over 16 miles or more just to reach 650 foot depths. Around here, we usually have to go to about 800 feet, which is about 25 miles. That makes a

round trip about 50 gallons of gas. Since this type of deep dropping requires drifting, the winter months are tough to schedule as the winds are much higher. For us, it is much better to wait until about June and then have a few months of lighter winds. In this area, in the same area that we might find Snowy, we might also find Golden Tilefish, or Blueline Tilefish, maybe a Queen Snapper or one of a couple other species. SO, if we should catch any one of the Golden Tilefish or Snowy, WHAT DO WE DO??? You see Recreational Fishermen are usually good conservationists. In your document, you state emphatically that the mortality for Snowy is 100%. The same is true of any fish caught at those depths. SO, as I read your Alternatives, none of them allow even 2 Snowy or Golden, even though one alternative allows 3 fish. Does anyone think that we can control what the second fish we catch will be? Do we keep fishing after catching one Snowy or one Golden and simply throw away more of the same while we try to catch the species we have not caught yet? It would make a lot more sense to allow at least 2 of any one species, with a 3 fish total, OR it would even make more sense to allow 2 of any species and only 2 total for the vessel. I think we would all be happy to come home with 2 Snowy or 2 Golden, and would quit fishing if the first 2 we caught are the same species. Otherwise there is a real temptation to keep fishing for a second species, and that would probably result in killing fish not legal to keep. Fifty Gallons of gas for one fish??? Not to mention the cost of the gear required to do Deep Dropping. AND keep in mind it is largely the excise tax that RECREATIONAL Fisherman pay that supports the very agencies that stop us from fishing. We also support the science of rebuilding stocks!!

Based on what I know of fishing in this area, I would propose Grouper and Tilefish Combined at 3 with no more than 2 of any one Species per vessel per day. OR as I stated above, even a 2 per vessel per day if both could be the same species. I would also support the May through August timeframe. That way, the Charters or For Hire that have larger boats would not catch the total allowable for Recreational during the months smaller boats cannot easily access the fishing zone. When you make it so that Commercial and For Hire catch the entire ACL, true Recreational Fishermen who do not profit from the God Given resources end up with nothing.

While I applaud some movement in improving fairness to the Recreational Sector, I still think much must be done in all Fishery Regulations to allow more for Recreational Fisherman as they are not the cause of depleted stocks. We do not longline indiscriminately, and we only catch what we can eat. We make no profit from the resource, but we pay to support the resource.

Respectfully submitted,
Jim Teague
Jteague13@comcast.net

From: Double O Charters [mailto:doubleochartersllc@yahoo.com]
Sent: Thursday, April 10, 2014 11:24 PM
To: Kim Iverson
Subject: Snowy grouper

Kim Iverson,
Please forward my concern in regards to the 95% to 5% allocation of snowy grouper staying the same. I reside in Monroe county and run a charter business out of Cudjoe Key. I believe the stocks of this fish are as high as I've ever seen. I have had to be very inventive to not catch them when targeting Blueline Tile fish and Blackbelly Rose fish. I have had to tell my charters we won't deep drop for these other species when the snowies are closed due to the fact we can't keep from catching/killing them. I believe we are at a point in fisheries management we all understand these species are important to our lively hoods and respect the fishery as a whole. I don't see much of a commercial interest in the South Atlantic in the deep grouper because of the restrictions of the daily/trip limit placed on the snowies. I see no reason why the percentages can't be shared more equally between the commercial and recreational sectors.

Respectfully,
Capt. Beau Woods
305-731-6892

August 18, 2014

Mr. Bob Mahood, Executive Director
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405

Email comments to: Mike.Collins@safmc.net
(Please put SG RA 20 in the subject line)

Re: Snapper Grouper Regulatory Amendment 20 Snowy Grouper

Mr. Mahood,

The Southeastern Fisheries Association (SFA), East Coast Fisheries Section (ECFS) submits this written comment to the South Atlantic Fishery Management Council (SAFMC) regarding the proposed Snapper Grouper (SG) Regulatory Amendment 20 (RA-20) with respect to the Atlantic Snowy grouper stock.

We have several concerns about the results of the final Southeastern Data, Assessment and Review (SEDAR 36) stock assessment report (SAR) which are utilized in the SG RA-20 proposed rule making process for Atlantic Snowy grouper. Specifically, we concur with the findings of the SEDAR 36 SAR that this fish stock is currently "underfished," but we believe that the “rebuilding” estimates for this stock are conservative, and even more access to this fish stock is a reasonable option, at this time.

The specific problems with stock projections and alternative management options need to be **resolved before the SFA ECFS can comment on preferred management options and alternatives affecting the SAFMC commercial and recreational fisheries**. In summary, the Council should refrain from selecting management options until the allocation issue, as described below, has been resolved.

- The MRFSS/MRIP estimates by year are very unreliable[1]. In particular there is the need to examine years without samples or have extreme estimated landing numbers that are suspect due to low sample size by region. See Wave 3 during

[1] http://www.sefsc.noaa.gov/sedar/download/SEDAR36_WP01_Matter_8.16.2013.pdf?id=DOCUMENT
See Tables in the working paper hyperlinked here demonstrating the issues with zero samples, zero intercepts, and massive expansions on minimal samples and/or intercepts from various regions in the SAFMC area

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May/June 2012, as compared to Wave 3 during 2013 in Tables S-8 and S-9[2]. We truly question the veracity of the 83% commercial and 17% recreational results leading to a reallocation being utilized in this SAFMC SG RA-20 proposed rule! We feel this is wrong and needs remedy.

- The recent SEDAR 36 Standard Assessment process was held with no physical meetings, even though it had been a decade since the previous SEDAR 04 snowy grouper assessment full benchmark. The Snowy grouper and Blueline Tilefish should have (and can still be) assessed, as a "deep-water complex", at the same SEDAR event, with physical meetings to truly examine the veracity of data supporting the indices of abundance used by the SEDAR 36 analysts, and to question their assumptions about the uncertainties of the fishing history. Also, see the addendum with the Barile and Oden written comment about SEDAR 36[3], along with the SFA ECFS comment to the SAFMC Scientific and Statistical Committee (SSC) [though public record of our written comment was not included in the SSC April 2014 Briefing Book (BB), or the final report, nor was found in the June 2014 SAFMC BB. ***"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 SSBmsy to achieve the rebuilding of the stock, and that increased sustainable fishing rates (Fmsy) 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/Fmsy) is significantly under the sustainable (Fmsy) fishing rate that is permissible under the "rebuilding plan" targets for Bmsy and SSBmsy. 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/SSBmsy and B/Bmsy are = 1)."***
- The SAFMC failed to nominate a commercial fishing interest to participate in the SEDAR 36 webinar process during December 2012, yet they chose two recreational fishing representatives to the panel. Then as a reaction to complaints later after the SEDAR 36 webinars had begun, a single commercial

[2]See PDF page 21 of 22 pages for Tables S-8 & S-9 at hyperlink below.
http://safmc.net/sites/default/files/meetings/pdf/Public%20Hearings%20&%20Scoping/Aug%202014/SGReg20_PHSummary_Aug2014.pdf

[3] http://www.sefsc.noaa.gov/sedar/download/SEDAR36_WP13_PublicComments_10.1.2013.pdf?id=DOCUMENT
Includes Jeff Oden comment received on July 23, 2013 and Oden & Barile public comment received September 13, 2013.

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fisherman from North Carolina named Captain Jeff Oden was picked by the SAFMC June 2013 meeting[4] to serve as a SEDAR 36 commercial representative during the assessment webinars, in spite of 95% of the allocations had been historically assigned. Due to conflicts of scheduling after Captain Oden's appointment, he could not attend all of the webinars.

- The SFA ECFS Central Florida fish houses feel that Action 3 for Commercial Management Measures for Snowy Grouper, in particular Alternative 5 as currently written, causes severe economic and social concerns about the Brevard/Volusia County, Florida line being chosen for the period May to August for future fishing seasons as an alternative. The Alternative 5 should be **reworded** to move the southern management boundary to the **Brevard/Indian River County**, Florida line near Sebastian Inlet, instead. Setting the management boundary line at Brevard/ Indian River Co. would then include Cape Canaveral as an important biogeographical portion of the historic Snowy Grouper fishery in this management action. Based on the distance from Sebastian Inlet to the snowy grouper fishing grounds out to 650 feet, it requires 35 miles[5] minimum one-way to the deeper depths where the larger snowy grouper have populations separate from the inshore juvenile and young to medium sized female adult snowy groupers found predominately in 200 to 360 feet of water depth. Offshore of New Smyrna just north of the Brevard/Volusia County, FL line it is 52-miles to 650-feet of depth. With a ten-mile an hour commercial vessel it takes most of the day of traveling round trip to catch the current trip limit, usually in one to three multi-hook drops with the hook and line fishing gear. The catch per unit of effort (CPUE) has increased over recent years for commercial fishing for snowy groupers, as has the average sizes, far in advance of the 6 to 7 pounds whole weight (ww) referenced in Table S-2[6].
- Our fishermen prefer a 300 pounds (gw) trip quota to support access to this historically utilized deep-water fishery stock.

Jimmy Hull, Chairman
SFA ECFS

[4] See June 2013 Council minutes on PDF page 25 of 113 pages for Jeff Oden motion as a SEDAR 36 Panelist. http://www.safmc.net/meetings/pdf/FullCouncilMinJun13.pdf

[5] See Table S-7 in the Snapper Grouper Regulatory Amendment 20 for distances from various inlets from NC to FL on PDF pages 18-19 of 22 http://safmc.net/sites/default/files/meetings/pdf/Public%20Hearings%20&%20Scoping/Aug%202014/SGReg20_PHSummary_Aug2014.pdf

[6] See Table S-2 on PDF page 11 of 22 from hyperlink in Footnote 3 above

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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 SSBmsy to achieve the rebuilding of the stock, and that increased sustainable fishing rates (Fmsy) 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/Fmsy) is significantly under the sustainable (Fmsy) fishing rate that is permissible under the "rebuilding plan" targets for Bmsy and SSBmsy. 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/SSBmsy and B/Bmsy are = 1).

Problems with SEDAR 36:

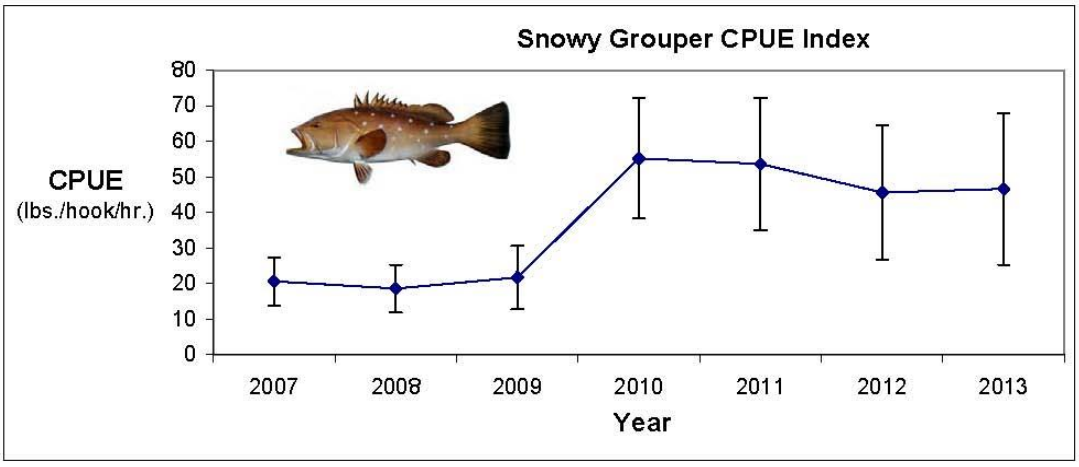
Lack of relevant spatially explicit evaluation of population

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 was provided to SEDAR 36. These data below were not utilized in SEDAR 36. In a broader context, the concern of "local hyper-depletion" of the stock needs to be rigorously examined in context with the cryptic, but broad spatial distribution of the deep-water complex meta-population.



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.

MRIP Recreational Survey Data for Snowy Grouper in the Atlantic

Vivian M. Matter

SEDAR36-WP-01

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MRIP Recreational Survey Data for Snowy grouper in the Atlantic

by Vivian M. Matter

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July 3, 2013
Sustainable Fisheries Division Contribution No. SFD-2013- 012

INTRODUCTION

Recreational survey data for snowy grouper from the Marine Recreational Fisheries Statistics Survey (MRFSS) and the Marine Recreational Information Program (MRIP) in the Atlantic are presented, including summaries of catch estimates and sampling proportions. Issues addressed include the calibration of MRFSS charterboat estimates back in time, 1981-1985 adjustments and substitutions, calibration of MRFSS estimates for 1981-2003 to MRIP estimates, and estimating recreational landings in weight. The data in this report is current as of the date of this documentation.

MRFSS and MRIP

The MRFSS began in 1981 and provides information on participation, effort, and species-specific catch. Data are collected to provide catch and effort estimates in two-month periods ("waves") for each recreational fishing mode (shore fishing, private/rental boat, charterboat, or headboat/charterboat combined) and area of fishing (inshore, state Territorial Seas, U.S. Exclusive Economic Zone) by state. Starting in 1986, MRFSS stopped covering headboats in the Gulf of Mexico and South Atlantic. In recent years MRIP has re-incorporated headboats in some states, but these headboat estimates are not official. Official headboat estimates for the South Atlantic and Gulf of Mexico come from the Headboat Survey. Before 1986, charterboats and headboats were combined as one mode in the South Atlantic and the Gulf of Mexico. In the mid and North Atlantic, charterboats and headboats remained combined until 2003. Beginning in 2004, the charter and headboat modes in these regions were separated. No survey was conducted in wave 1 of 1981. Catch estimates are made for strata used in the intercepts: fish landed whole and observed by the samplers ("Type A"), fish reported as killed by the fishers ("Type B1") and fish reported as released alive by the fishers ("Type B2").

For Hire Survey and calibration of old method estimates with the new method.
Two surveys within MRFSS provide the information described above: the "traditional" MRFSS and the For-Hire Survey (FHS), or "new charterboat method," discussed below. The traditional MRFSS design is based on an intercept survey of anglers and telephone survey of coastal households and has been used since the inception of the MRFSS. It applies to all fishing modes included in the survey. For 1981-1985 in TX to ME and for 1981-2003 in VA to ME, the traditional MRFSS covered charterboats and headboats as a combined mode.

In 1998, the FHS began providing estimates for charterboats in the Gulf of Mexico. The traditional MRFSS and FHS operate concurrently, but the FHS estimates have been phased in as the "official" charterboat estimates starting with LA through FL West Coast in 2000. (This was expanded to the FL East Coast in 2003 and to GA through ME starting in wave 2 of 2005.) There are also ‘unofficial’ FHS estimates from GA-ME in 2004. This new method was

needed because of the low number of charterboat anglers contacted in the traditional telephone survey of coastal households.
In the FHS, directories of charterboats are developed for each state and are continuously updated. Each week, a sample of 10% of the listed charterboats are surveyed by telephone to ask about their fishing effort during the previous week, including the number of vessel trips, the number of anglers, areas fished and other information. Validation surveys by field samplers directly observe some charterboat effort on the docks to allow correction of over and under-reporting of trips in the telephone survey. The MRFSS intercept survey of anglers at boat access sites is conducted as usual, encountering some charterboats. This allows calculation of a correction factor for charterboat trips on unlisted boats (not in the charterboat directory): (total intercepted cbt angler trips) / (intercepted cbt angler trips on listed boats).

Thus the estimate of total charterboat angler trips for an area of fishing is:

Estimated total charterboat angler trips =

(total charterboat angler trips in on listed boats) * (correction factor for trips on unlisted boats) where the total charterboat angler trips on listed boats is based on the 10% sample in the telephone survey and corrected for over/under reporting by the validation survey.

The FHS estimates of catch then follow in the same manner as for the traditional MRFSS, with the mean catch per trip coming from the MRFSS intercept survey. The pilot study of new charterboat methods in the Gulf of Mexico found that the annual effort at the state and Gulf level were not significantly different between the pilot study and the traditional MRFSS. However, the effort from the new charterboat methods differed from the traditional MRFSS in the distributions of effort by area and season.

Conversion factors have been estimated for the South Atlantic to calibrate the traditional MRFSS charterboat/headboat estimates in 1981-1985 (SEDAR28-DW-12, Matter et.al., 2012) and the traditional MRFSS charterboat estimates in 1986-2003 (SEDAR16-DW-15, Sminkey, 2008) with the FHS. For the Mid-Atlantic calibration factors were developed for 1981-2003 (SEDAR17-Data Workshop Report, 2008). 1986-2003 South Atlantic calibration factors were updated in 2011 (SEDAR25-Data Workshop Report, 2011). The relationship between the old charterboat method estimates of angler trips and the FHS was used to estimate the conversion factors. Since these factors are based on effort, they can be applied to all species' landings. Table 1 shows the conversion factors and standard errors (in parentheses) for the South Atlantic and the Mid-Atlantic.

Separation of SA combined charter/headboat mode

In the South Atlantic, 1981-1985 charter and headboat modes were combined into one single mode for estimation purposes. Since the NMFS Southeast Region Headboat Survey (SRHS) began in this region in 1981, the MRFSS combined charter/headboat mode must be split in order to not double estimate the headboat mode for these years. MRFSS charter/headboat mode was split in these years by using a ratio of SRHS headboat angler trip estimates to MRFSS charter boat angler trip estimates for 1986-1990. This method has been used in the past (SEDAR 28-Spanish mackerel and cobia). The mean ratio was calculated by state (or state equivalent to match SRHS areas to MRFSS states) and then applied to the 1981-1985 estimates to strip out the headboat component. These headboat estimates were then eliminated from the MRFSS estimates.

MRIP estimates and the calibration of MRFSS estimates

The Marine Recreational Information Program (MRIP) was developed to provide more accurate recreational catch estimates by accounting for potential biases such as possible differences in catch rates at high-activity and low-activity fishing sites, or the amount of fishing occurring at different parts of the day. Revised catch and effort estimates, based on this improved estimation method, were released on January 25, 2012. These estimates are available for the Atlantic and Gulf Coasts for 2004 through 2011. To learn more about the peer-reviewed re-estimation process, along with any implications for fisheries science and management, visit **www.countmyfish.noaa.gov**. (NOAA Fisheries, Office of Science and Technology). Table 2 shows the differences between Atlantic snowy grouper MRIP estimates and the MRFSS estimates for the time period 2004-2011.

Since new MRIP estimates are only available for a portion of the recreational time series that the MRFSS covers, calibration factors between the MRFSS estimates and the MRIP estimates were developed in order to maintain one consistent time series for the recreational estimates. The MRFSS to MRIP calibration process is detailed in SEDAR31-DW25 and SEDAR32-DW02. Table 3 shows the ratio estimators used in the calibration for snowy grouper. Figure 1 shows the MRFSS versus MRIP adjusted AB1 estimates for Atlantic snowy grouper.

Monroe County, Florida
Official MRFSS Florida estimates are divided into two estimates by coasts, Florida east coast (FLE) and Florida west coast (FLW). FLE includes the area from the GA/Florida border to the Miami-Dade/Monroe county line. FLW includes Monroe county through the AL/Florida border. Unofficial post-stratified estimates are available that break up the state in to five regions, including Monroe county (fl_reg=3). These estimates were not available in SEDAR 4. Table 4 shows the Monroe county, Florida AB1 estimates by year for snowy grouper. The 1981 landings estimate of 62,969 fish is based on one intercept where an interviewer saw 23 fish (and measured 10) from 2 contributors on that trip. It is from wave 4, private mode, and ocean>10miles.

Snowy grouper is a deep-water species and Monroe county catches are most likely from the Atlantic side of the Keys. This species would not be associated with the shallow Gulf waters of Monroe county. Tables and figures in this report (excluding the MRFSS versus MRIP tables and figures) include the Monroe county landings for snowy grouper as part of the Atlantic stock.

Calculating landings estimates in weight
The MRFSS and the MRIP surveys use different methodologies to estimate landings in weight. To apply a consistent methodology over the entire recreational time series, the Southeast Fisheries Science Center (SEFSC) implemented a method for calculating average weights for the MRIP (and MRIP adjusted) landings. This method is described in SEDAR32-DW-02. Table 5 shows the MRIP estimated landings in weight by year and source for Atlantic snowy grouper. Table 6 shows the MRIP estimated landings in weight by year and mode for Atlantic snowy grouper.

Variances
Variances are provided by MRFSS/MRIP for their recreational catch estimates. Variances are adjusted to take into account the variance of the conversion factor when an adjustment to the estimate has been made (FHS and MRIP conversions). However, the variance estimates of the charter and headboat modes in 1981-1985 are missing. This is due to the MRIP calibration procedure, which requires the combined charter/headboat mode to be split in order to apply the MRIP adjustment to the charter mode back to 1981. In addition variance estimates are not available for weight estimates generated through the SEFSC method described above.

CATCH ESTIMATES and SAMPLING PROPORTIONS

Tables 7-8 show the MRIP catch estimates and CVs by mode and by state for snowy grouper in the Atlantic. In the tables, estimated A+B1 is the catch that was killed and B2 is the catch that was released alive. Tabulated estimates use the new charterboat method (FHS) or are calibrated to the new using the discussed calibration factors. MRIP or MRIP adjusted landings are used for all years (except for headboat mode 1981-1985). Headboat estimates from 2003-2012 are from the mid and North Atlantic sub-regions. Tables 9 and 10 show the number of trips with measured snowy grouper and the number of snowy grouper measured from the MRFSS/MRIP survey by year, mode and state.

References

General overview of the MRFSS has been adapted from the following:
Recreational Survey Data for Gag and Black Grouper in the Gulf of Mexico. Patty Phares, Vivian Matter, and Steve Turner. National Marine Fisheries Service, Southeast Fisheries Science Center, Sustainable Fisheries Division, January, 2006. Sustainable Fisheries Division Contribution No. SFD-2006-008. SEDAR10-DW-26.

Estimated Conversion Factors for Calibrating MRFSS Charterboat Landings and Effort Estimates for the Gulf of Mexico in 1981-1997 with the For Hire Survey Estimates with Application to Red Snapper Landings. Guillermo A. Diaz and Patty Phares. National Marine Fisheries Service, Southeast Fisheries Science Center, Sustainable Fisheries Division, August, 2004. Sustainable Fisheries Division Contribution No. SFD-2004-036. SEDAR7-AW-03

Estimated conversion factors for calibrating MRFSS charterboat landings and effort estimates from the Southeastern US (North Carolina to Florida-east coast) in 1981-2003 with For-Hire Survey estimates with application to King Mackerel landings. Tom Sminkey. National Marine Fisheries Service, Office of Science and Technology, February 2008. SEDAR16-DW-15.

Estimated Recreational Catch in Weight: Method for Filling in Missing Weight Estimates from the Recreational Surveys with Application to Yellowedge Grouper, Tilefish (golden), and Blueline Tilefish. Vivian M. Matter and Stephen C. Turner. National Marine Fisheries Service, Southeast Fisheries Science Center, Sustainable Fisheries Division, March, 2010. Sustainable Fisheries Division Contribution No. SFD-2010-003. SEDAR22-DW-16.

TABLES AND FIGURES

Table 1. Atlantic MRFSS charterboat conversion factors and standard errors (in parentheses).

Table 1a) Apply to 1981-1985 charterboat/headboat mode in the South Atlantic.

	WAVE					
STATE	1	2	3	4	5	6
NC	-	2.151 (0.12)	2.294 (0.12)	1.444 (0.12)	1.763 (0.12)	0.857 (0.12)
SC	-	1.035 (0.04)	1.085 (0.04)	1.437 (0.04)	0.891 (0.04)	0.750 (0.04)
GFE	0.845 (0.02)	0.951 (0.02)	0.985 (0.02)	1.016 (0.02)	0.811 (0.02)	0.696 (0.02)

Table 1b) Apply to 1986- 2002 charterboat mode in FLE
*FHS began in the east coast of Florida in 2003.

	Wave					
Area	1	2	3	4	5	6
INSHORE	1.600 (0.65)	2.786 (0.65)	2.201 (0.65)	2.894 (0.65)	1.630 (0.65)	2.386 (0.65)
OCEAN	0.664 (0.10)	0.852 (0.10)	0.828 (0.10)	1.006 (0.10)	0.478 (0.10)	0.549 (0.10)

Table 1c) Apply to 1986- 2003 charterboat mode in GA and SC

	Wave				
Area	2	3	4	5	6
INSHORE	1.635 (0.90)	3.100 (0.90)	2.092 (0.90)	0.931 (0.90)	0.757 (0.90)
OCEAN	0.939 (0.36)	1.272 (0.33)	2.161 (0.32)	0.835 (0.33)	0.638 (0.36)

Table 1d) Apply to 1986- 2003 charterboat mode in NC

	Wave				
Area	2	3	4	5	6
INSHORE	11.850 (3.48)	10.026 (2.63)	6.616(2.84)	3.766 (2.84)	9.415 (3.11)
OCEAN	2.188 (0.58)	2.504 (0.58)	1.565 (0.60)	2.102 (0.60)	0.661 (0.60)

Table 1e) Apply to 1981-2003 charterboat mode in the mid-Atlantic
*originally only said to apply to 1986-2003 data, but the cbt/hbt combined mode in sub_reg=5 was consistent from 1981-2003 and there is no HBS data providing headboat estimates in this sub-region.

	Wave				
State	2	3	4	5	6
DE / MD	1.294 (0.52)	1.599 (0.54)	1.930 (0.54)	0.861 (0.52)	1.171 (0.56)
NJ	1.289 (0.36)	1.179 (0.34)	1.644 (0.34)	0.809 (0.34)	1.115 (0.36)
NY	1.187 (0.48)	2.048 (0.54)	2.665 (0.48)	1.210 (0.51)	0.617 (0.48)
VA	0.770 (0.25)	0.680 (0.21)	0.761 (0.21)	0.324 (0.22)	0.313 (0.22)

Table 2. Snowy grouper MRIP vs. MRFSS estimates of landings (number of fish) for the Atlantic (sub-regions 4-6) 2004-2011. See accompanying graph below table.

Estimate Status	Year	Fishing Year	Common Name	MRFSS Unweighted Total Harvest (A+B1)	MRIP Weighted Total Harvest (A+B1)	Difference: MRIP - MRFSS	% Change from MRFSS	PSE for MRIP Weighted Total Harvest (A + B1)
FULL YEAR	2004	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	13,079	10,998	-2,082	-15.9%	41.2
FULL YEAR	2005	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	10,935	19,806	8,871	81.1%	70.8
FULL YEAR	2006	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	13,487	18,675	5,187	38.5%	37.8
FULL YEAR	2007	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	3,771	3,095	-677	-17.9%	47.2
FULL YEAR	2008	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	1,770	2,228	459	25.9%	47.5
FULL YEAR	2009	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	3,825	2,826	-999	-26.1%	37.6
FULL YEAR	2010	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	1,989	3,249	1,259	63.3%	30.8
FULL YEAR	2011	Calendar Year (Jan 1 - Dec 31)	SNOWY GROUPER	88	45	-44	-49.4%	77.9

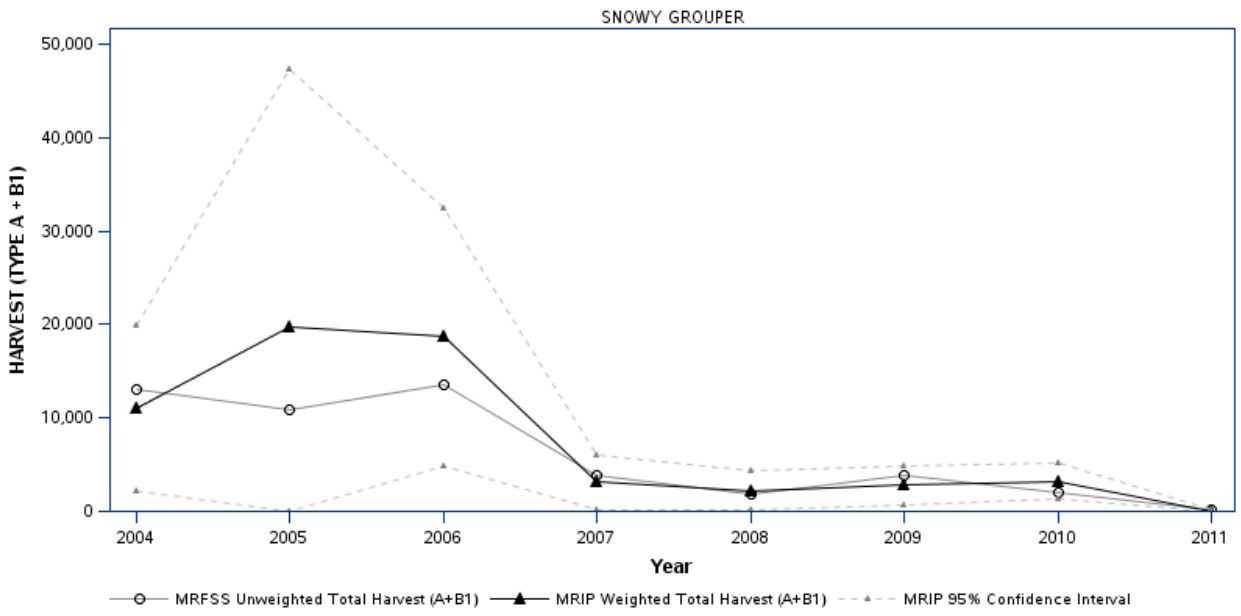

Table 3. Atlantic snowy grouper ratio estimators for adjusting MRFSS numbers and variance estimates (AB1 and B2) to MRIP numbers and variances for 1981-2003. The variances of the numbers ratio estimators are also shown.

4a) South Atlantic snowy grouper

	Numbers Ratio Estimator		Variance Ratio Estimator		Variance of Numbers Ratio Estimator	
MODE	**AB1**	**B2**	**AB1**	**B2**	**AB1**	**B2**
Charterboat	1.18309365	0.963883567	1.739864052	4.740098084	0.020800002	0.02183795
Private	1.08973494	0.601987711	3.477535501	0.85678465	0.228753475	0.002761638
All	1.149877089	0.68991855	2.480792481	1.106974274	0.058085172	0.011067975

4b) snowy grouper (all regions)

	Numbers Ratio Estimator		Variance Ratio Estimator		Variance of Numbers Ratio Estimator	
MODE	**AB1**	**B2**	**AB1**	**B2**	**AB1**	**B2**
All	1.096839896	1.051288793	2.4513201	2.353457676	0.036027345	0.037147887

Figure 1. MRFSS AB1 estimates (number of fish) versus MRIP adjusted AB1 estimates for Atlantic snowy grouper 1981-2003.

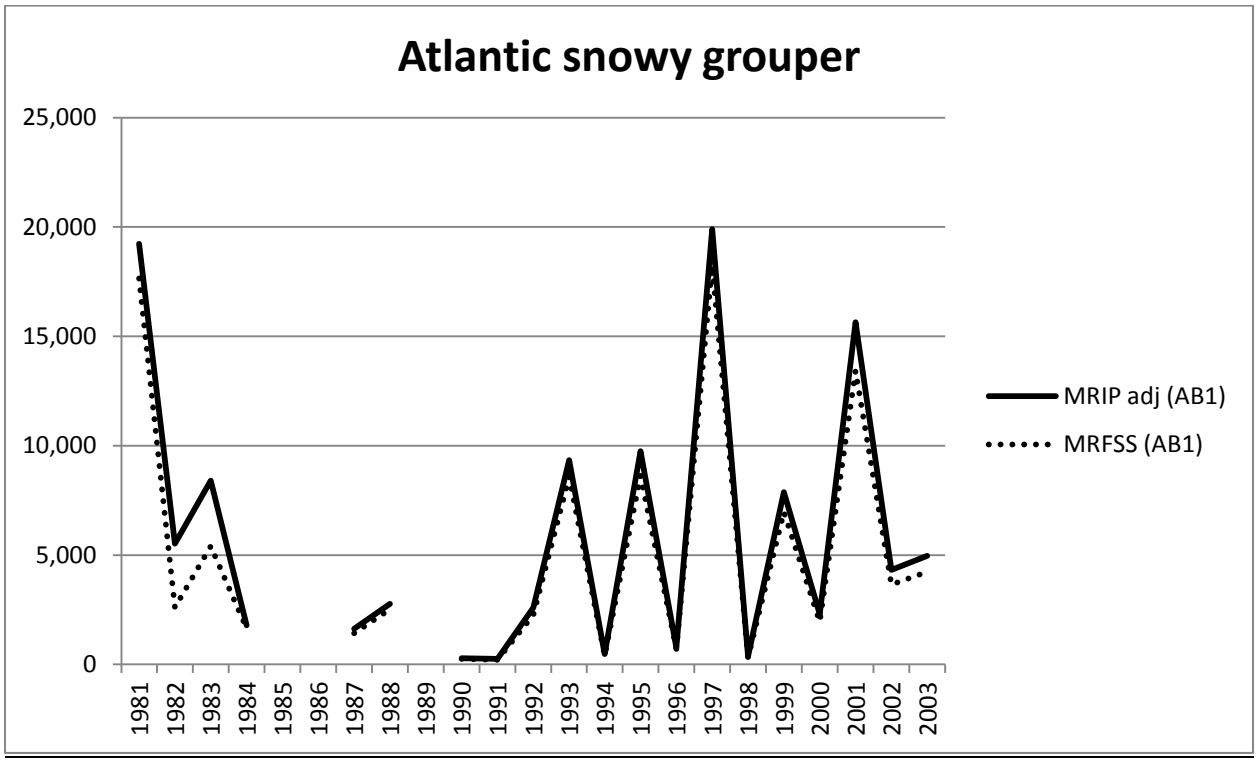

Table 4. Monroe county, Florida MRIP AB1 estimates (number of fish) for snowy grouper.

YEAR	AB1	B2
1981	69,969	0
1982	0	0
1983	0	0
1984	0	0
1985	0	0
1986	0	0
1987	0	0
1988	0	0
1989	0	0
1990	0	0
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0	0
1998	0	0
1999	489	48
2000	255	0
2001	191	12
2002	81	907
2003	178	0
2004	1,975	29
2005	635	0
2006	0	0
2007	1,355	0
2008	276	50
2009	2,651	1,181
2010	2,567	0
2011	39	0
2012	15,282	0
Grand Total	**88,946**	**2,227**

Table 5. Atlantic snowy grouper MRIP estimates of landings (whole weight in pounds) using the SEFSC weight estimation method by year and source.

lbsest_SECwwt	lbsestSEC_source*						
YEAR	s	sr	sry	srys	srysm	srysmwa	Grand Total
1981		574,305					574,305
1982		41,056					41,056
1983		81,631					81,631
1984		23,902					23,902
1985							
1986							
1987		21,646					21,646
1988		36,940					36,940
1989							
1990		3,758					3,758
1991		3,346					3,346
1992		34,614					34,614
1993		124,310					124,310
1994		6,257					6,257
1995		129,718					129,718
1996		10,173					10,173
1997		265,003					265,003
1998		4,932					4,932
1999		104,804			2,284		107,088
2000		31,953					31,953
2001		209,228					209,228
2002		57,868					57,868
2003		67,010					67,010
2004		156,380					156,380
2005		266,869					266,869
2006			15,978		827	227,705	244,510
2007		6,852	36,362	4,737	25,898		73,848
2008		31,057					31,057
2009		13,400	32,482		22,616		68,497
2010		12,974		8,691	46,644	26,266	94,576
2011		793					793
2012	65	95,159					95,224
Grand Total	**65**	**2,415,939**	**84,822**	**13,428**	**98,268**	**253,972**	**2,866,494**

* The hierarchy used for each estimate of weight is recorded in the variable 'lbsestSEC_source' and uses the first letter of each variable used from the hierarchy (**s**pecies, **r**egion, **y**ear, **s**tate, **m**ode, **w**ave, and **a**rea). For example an estimate with 'lbsestSEC_source'=srys, would have used an average weight from the combined samples in for the strata defined by that species, region, year, and state. All modes, waves, and areas in that stratum would have been included.

Table 6. Atlantic snowy grouper MRIP estimates of landings (whole weight in pounds) using the SEFSC weight estimation method by year and mode.

YEAR	Cbt	Priv	Grand Total
1981	0	574,305	574,305
1982	41,056	0	41,056
1983	39,872	41,759	81,631
1984	0	23,902	23,902
1985	0	0	0
1986	0	0	0
1987	12,769	8,877	21,646
1988	3,314	33,626	36,940
1989	0	0	0
1990	0	3,758	3,758
1991	3,346	0	3,346
1992	22,171	12,443	34,614
1993	1,812	122,498	124,310
1994	6,257	0	6,257
1995	59,228	70,490	129,718
1996	0	10,173	10,173
1997	5,749	259,254	265,003
1998	4,932	0	4,932
1999	48,011	59,077	107,088
2000	31,953	0	31,953
2001	171,959	37,269	209,228
2002	57,868	0	57,868
2003	59,482	7,529	67,010
2004	97,547	58,833	156,380
2005	99,832	167,037	266,869
2006	244,510	0	244,510
2007	39,037	34,811	73,848
2008	31,057	0	31,057
2009	26,346	42,152	68,497
2010	73,617	20,959	94,576
2011	793	0	793
2012	7,425	87,799	95,224
Grand Total	**1,189,945**	**1,676,549**	**2,866,494**

Table 7. Estimated MRIP AB1 catch (number landed) and B2 catch (number released alive) and coefficients of variations (CV) by mode for snowy grouper in the Atlantic. MRIP estimates and FHS charter estimates are used (or calibrated to MRIP and FHS). *CVs for all modes in 1981-1985 only reflect the private and shore mode CVs, since charter and headboat mode CVs are unavailable. Hbt estimates are from sub-regions 4 and 5 (mid and North Atlantic) from 2003+. Shore mode excluded.

	Cbt				Hbt				Priv				Grand Total			
YEAR	AB1	CV	B2	CV	AB1	CV	B2	CV	AB1	CV	B2	CV	AB1	CV	B2	CV
1981	0	0.00	0	0.00					82,200	0.77	0	0.00	82,200	0.77	0	0.00
1982	3,084	0.00	0	0.00					0	0.00	220	0.93	3,084	0.00	220	0.93
1983	2,995	0.00	0	0.00					3,137	1.73	0	0.00	6,132	0.89	0	0.00
1984	0	0.00	0	0.00					1,796	1.37	0	0.00	1,796	1.37	0	0.00
1985	0	0.00	0	0.00					0	0.00	0	0.00	0	0.00	0	0.00
1986	0	0.00	0	0.00					0	0.00	0	0.00	0	0.00	0	0.00
1987	959	0.80	0	0.00					667	0.78	2,546	0.67	1,626	0.57	2,546	0.67
1988	249	0.61	0	0.00					2,526	1.73	0	0.00	2,775	1.58	0	0.00
1989	0	0.00	0	0.00					0	0.00	0	0.00	0	0.00	0	0.00
1990	0	0.00	0	0.00					282	0.97	808	0.93	282	0.97	808	0.93
1991	251	0.90	0	0.00					0	0.00	0	0.00	251	0.90	0	0.00
1992	1,666	0.72	0	0.00					935	1.73	518	0.93	2,600	0.77	518	0.93
1993	136	0.95	0	0.00					9,202	1.73	0	0.00	9,338	1.71	0	0.00
1994	470	1.31	54	2.16					0	0.00	0	0.00	470	1.31	54	2.16
1995	4,449	0.89	0	0.00					5,295	1.73	588	0.93	9,745	1.02	588	0.93
1996	0	0.00	0	0.00					764	1.25	521	0.93	764	1.25	521	0.93
1997	432	1.31	0	0.00					19,476	0.79	0	0.00	19,907	0.78	0	0.00
1998	370	0.93	0	0.00					0	0.00	0	0.00	370	0.93	0	0.00
1999	3,924	0.49	48	0.70					4,438	1.27	164	0.93	8,362	0.71	212	0.73
2000	2,559	0.76	0	0.00					0	0.00	702	0.93	2,559	0.76	702	0.93
2001	13,036	0.85	12	0.99					2,800	1.46	392	0.93	15,836	0.74	404	0.90
2002	4,397	0.80	0	0.00					0	0.00	1,211	1.43	4,397	0.80	1,211	1.43
2003	4,579	1.00	0	0.00	0	0.00	0	0.00	566	1.73	638	0.93	5,145	0.91	638	0.93
2004	8,553	0.42	67	0.60	0	0.00	0	0.00	4,420	0.64	455	1.01	12,972	0.35	522	0.89
2005	7,894	0.85	0	0.00	0	0.00	0	0.00	12,548	0.98	1,581	0.96	20,442	0.69	1,581	0.96
2006	18,675	0.38	47	1.00	0	0.00	0	0.00	0	0.00	0	0.00	18,675	0.38	47	1.00
2007	2,803	0.25	1,125	0.91	0	0.00	0	0.00	1,646	0.82	0	0.00	4,450	0.34	1,125	0.91
2008	2,504	0.42	185	0.57	0	0.00	0	0.00	0	0.00	442	1.00	2,504	0.42	627	0.73
2009	1,557	0.30	0	0.00	0	0.00	0	0.00	3,920	0.24	1,487	0.21	5,476	0.19	1,487	0.21
2010	3,041	0.31	67	1.00	0	0.00	0	0.00	2,774	0.12	0	0.00	5,815	0.17	67	1.00
2011	84	0.41	18	1.02	0	0.00	0	0.00	0	0.00	0	0.00	84	0.41	18	1.02
2012	610	0.36	1,257	1.00	0	0.00	24	1.04	16,024	0.70	1,347	0.69	16,634	0.68	2,628	0.60
Grand Total	**89,280**	**0.19**	**2,882**	**0.57**	**0**	**0.00**	**24**	**1.04**	**175,414**	**0.40**	**13,619**	**0.25**	**264,693**	**0.27**	**16,525**	**0.23**

Table 8. Estimated **MRIP AB1 (number of fish landed)** and **B2 (number released alive)** by year and state for snowy grouper in the Atlantic (sub-regions 4-6 and Monroe county, FL). Charterboat estimates use the FHS method or are calibrated to the FHS method. MRIP estimates (or MRFSS estimates adjusted to MRIP estimates) are used. Shore mode excluded.

YEAR	FLKEYS		FLE		GA		SC		NC		DE		NY		Grand Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	62,969	0	19,230	0	0	0	0	0	0	0	0	0	0	0	82,200	0
1982	0	0	0	220	0	0	3,084	0	0	0	0	0	0	0	3,084	220
1983	0	0	6,132	0	0	0	0	0	0	0	0	0	0	0	6,132	0
1984	0	0	1,796	0	0	0	0	0	0	0	0	0	0	0	1,796	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	2,546	0	0	0	0	1,626	0	0	0	0	0	1,626	2,546
1988	0	0	2,526	0	0	0	0	0	249	0	0	0	0	0	2,775	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	808	0	0	0	0	282	0	0	0	0	0	282	808
1991	0	0	0	0	0	0	0	0	251	0	0	0	0	0	251	0
1992	0	0	935	518	0	0	0	0	1,666	0	0	0	0	0	2,600	518
1993	0	0	9,202	0	136	0	0	0	0	0	0	0	0	0	9,338	0
1994	0	0	470	0	0	0	0	0	0	54	0	0	0	0	470	54
1995	0	0	9,745	588	0	0	0	0	0	0	0	0	0	0	9,745	588
1996	0	0	0	521	0	0	0	0	764	0	0	0	0	0	764	521
1997	0	0	12,996	0	0	0	0	0	6,912	0	0	0	0	0	19,907	0
1998	0	0	370	0	0	0	0	0	0	0	0	0	0	0	370	0
1999	489	48	6,990	164	0	0	0	0	883	0	0	0	0	0	8,362	212
2000	255	0	385	702	0	0	0	0	1,918	0	0	0	0	0	2,559	702
2001	191	12	3,012	392	0	0	0	0	12,633	0	0	0	0	0	15,836	404
2002	81	907	105	304	0	0	0	0	4,212	0	0	0	0	0	4,397	1,211
2003	178	0	1,202	638	0	0	0	0	3,764	0	0	0	0	0	5,145	638
2004	1,975	29	7,183	493	0	0	0	0	3,815	0	0	0	0	0	12,972	522
2005	635	0	12,736	1,581	0	0	0	0	7,071	0	0	0	0	0	20,442	1,581
2006	0	0	17,339	0	0	0	0	0	1,335	47	0	0	0	0	18,675	47
2007	1,355	0	1,731	40	0	0	0	0	1,364	1,086	0	0	0	0	4,450	1,125
2008	276	50	169	479	0	0	0	0	2,059	97	0	0	0	0	2,504	627
2009	2,651	1,181	1,693	306	0	0	0	0	1,133	0	0	0	0	0	5,476	1,487
2010	2,567	0	0	0	0	0	0	0	3,249	67	0	0	0	0	5,815	67
2011	39	0	0	0	0	0	0	0	45	18	0	0	0	0	84	18
2012	15,282	0	823	1,347	0	0	0	0	522	1,257	6	0	0	24	16,634	2,628
Grand Total	**88,946**	**2,227**	**116,770**	**11,647**	**136**	**0**	**3,084**	**0**	**55,751**	**2,627**	**6**	**0**	**0**	**24**	**264,693**	**16,525**

Table 9. Number of angler trips with measured snowy grouper in the Atlantic in the MRFSS by year, mode, and state.

	Cbt				Priv				
YEAR	FLKeys	FLE	NC	All	FLKeys	FLE	NC	All	Grand Total
1981					1	1		2	2
1982									
1983		1		1		1		1	2
1984						1		1	1
1985									
1986									
1987							1	1	1
1988			1	1		1		1	2
1989									
1990							1	1	1
1991			1	1					1
1992									
1993						1		1	1
1994		1		1					1
1995		2		2		1		1	3
1996							2	2	2
1997			1	1		1	1	2	3
1998		2		2					2
1999	6	7		13		1		1	14
2000	5	1		6					6
2001	4	2	2	8		2		2	10
2002	1	1	3	5					5
2003	2	7	4	13		1		1	14
2004	2	5	1	8		1		1	9
2005	3	1	2	6					6
2006		2	6	8					8
2007	6	2	8	16			1	1	17
2008	3	1	7	11	1			1	12
2009	2	1	12	15	1	4		5	20
2010	1		22	23	1		1	2	25
2011			1	1					1
2012	1		10	11	2			2	13
Grand Total	**36**	**36**	**81**	**153**	**6**	**16**	**7**	**29**	**182**

Table 10. Number of snowy grouper measured in the Atlantic in the MRFSS by year, mode, and state.

	Cbt				Priv				
YEAR	FLKeys	FLE	NC	All	FLKeys	FLE	NC	All	Grand Total
1981					10	5		15	15
1982									
1983		4		4		1		1	5
1984						1		1	1
1985									
1986									
1987							1	1	1
1988			1	1		1		1	2
1989									
1990							1	1	1
1991			3	3					3
1992									
1993						1		1	1
1994		1		1					1
1995		5		5		5		5	10
1996							2	2	2
1997			2	2		2	4	6	8
1998		3		3					3
1999	20	12		32		1		1	33
2000	9	1		10					10
2001	5	2	25	32		5		5	37
2002	1	2	16	19					19
2003	2	11	8	21		1		1	22
2004	5	22	8	35		2		2	37
2005	8	3	14	25					25
2006		33	9	42					42
2007	10	2	37	49			1	1	50
2008	4	1	28	33	1			1	34
2009	3	1	40	44	2	4		6	50
2010	1		72	73	1		2	3	76
2011			1	1					1
2012	1		10	11	4			4	15
Grand Total	**69**	**103**	**274**	**446**	**18**	**29**	**11**	**58**	**504**

SEDAR 36: South Atlantic Snowy Grouper
Public Comments

SEDAR36-WP-13

Submitted: 23 July 2013
Revised: 13 September 2013
Revised: 1 October 2013

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SEDAR 36: South Atlantic Snowy Grouper
Public Comments

Two public comments were received through the sedar36comments@safmc.net email address. The first was received on July 23 (see page 3) and the second was received on September 13 (see pages 4-6). Panel responses to public comment are on pages 7-10.

Received: July 23, 2013
Thanks for the opportunity to speak on behalf of the commercial fishery in northern N.C.

1. First in reading the MRIP info i still find that i am unable to find a age/ length comparison between N.C. thru Fla. I know Kyle mentioned they are about the same. What is about the same???

2. Secondly, will the recent overages in the recreational sector have and adverse impact on the assessment?

3. Thirdly, if you read my previous historical account of our northern fishery, you may have noticed that enviromental influences are having more than minimal impacts on our surrounding fisheries. As assessment biologist, how can you ignore (if in fact you do) the changing dynamics of our fisheries in your assessments that are so obvious in the northern reaches of this complex. And would anyone question this northward shift in the deep water complex?

4. Also, if you go to Fla for instance, you would expect to catch a golden tilefish in 85 or 90 fathoms and out. If you came to northern N.C. you would have to go to 125> fathoms to catch one. Also, a citation in Fla would probably be 25 or 30 lbs.. If you wanted to raise and eyebrow out of Hatteras that fish would have to be 50>lbs. So therefore considering this geographical differential, If you don't assess the Northern snowy fishery via Mar Map....especially since port sampling since 2006 is biased in both the commercial and recreational fisheries.....(and port sampling only started after 2006 up here).....then how can you recommend to the council and assessment that gives a true picture of the whole of the South Atlantic fishery (Va. line right)....especially in lieu of all the world records that have been set in Va. and N.C.....?

5. Can you offer insight in how the commercial fishery might help fill in "data poor" voids in the assessment process during this time of fiscal austerity with a scientific set aside which allows both a fisher and a biologist to prosper?

6. If the answer to 5 was yes, then can you please request it of the SAFMC/NMFS?

Thank you for your consideration of these questions.
Jeff Oden

Received: September 13, 2013

Comments on data availability for SEDAR 36, including an alternative commercial vertical handline CPUE index

Jeff Oden and Peter Barile

SAFMC Amendments 13c and 15a have resulted in a step down in commercial landing quotas from a 2500 lb. trip limit to 275 lbs. in 2006, and a further reduction to100 lbs. in 2008 in the South Atlantic Snowy grouper fishery. As a result, the most reliable landings data stream, commercial long line landings, available from 1993 to 2005, is not available in SEDAR 36 as an index of abundance. SEDAR 36 relies upon a Southeast Region Headboat Survey (SRHS) recreational landings database as the primary index of abundance. Reliance on this data source is both unfortunate and inappropriate, as the SRHS fishery (in 60-90' depth) is located remotely from both the historical snowy grouper fishery and population centers in shelf environments from 200' to ~ 700' depth.

A further result of the commercial trip limit decrease to 100lbs. is the decline of the commercial handline (vertical line) fishery, and the decision to not utilize this data in SEDAR 36. The decision to exclude this data, is a result of the contention that with at a 100 lbs. max trip limit, it is not possible to measure trends in abundance. We disagree, and propose that with the high efficiency of targeted snowy grouper vertical line drops, a meaningful and explicit CPUE index of abundance can be developed. Below, we demonstrate development of such an index; and alternatively, describe why the usage of SRHS landings data is an inappropriate source of landings data for use in SEDAR 36. Despite regulation, it is clear that there is significantly more commercial vertical handline landings data available versus the estimated SRHS data utilized in SEDAR 36.

A vertical line (bandit gear) commercial CPUE index

The commercial vertical line fishery in the South Atlantic for snowy grouper has been historically significant, with >1000 targeted trips per year (SEDAR 36 WP03) at the 2500 lb. trip limit, with regulation markedly decreasing both effort and landings. However, with increasing landings regulation on snapper-grouper species in the South Atlantic, multi-species are targeted on snapper-grouper trips, making a reduced effort for snowy grouper a measurable index of abundance. Indeed, targeted snowy grouper trips have remained > 500 trips/ yr. in the South Atlantic (see Figure 1., SEDAR 36 WP03).

Here we provide a current (2007-2013) snowy grouper CPUE index of abundance, from the vertical line fishery, following the 2006 step-down in trip limits. This index is a summary of commercial logbook data volunteered by vertical electric reel fishermen (n=5) from the Cape Canaveral to Daytona Beach area, one of the historically significant fishery zones for the commercial handline fishery (SEDAR 36 WP03, Figure 2). There were 113 trips in 2012 and 71 in 2013 assessed, roughly ~ 20% of the ~500 snowy grouper trips made in the south Atlantic each year (see Figure 1., SEDAR 36 WP03). From interviews with fishermen, it is obvious that highly efficient vertical line drops occur on the order of minutes, rather than hours, making assessment of effort to reach a 100 lb. trip limit a measurable parameter. Specifically, vertical line drops, with 3

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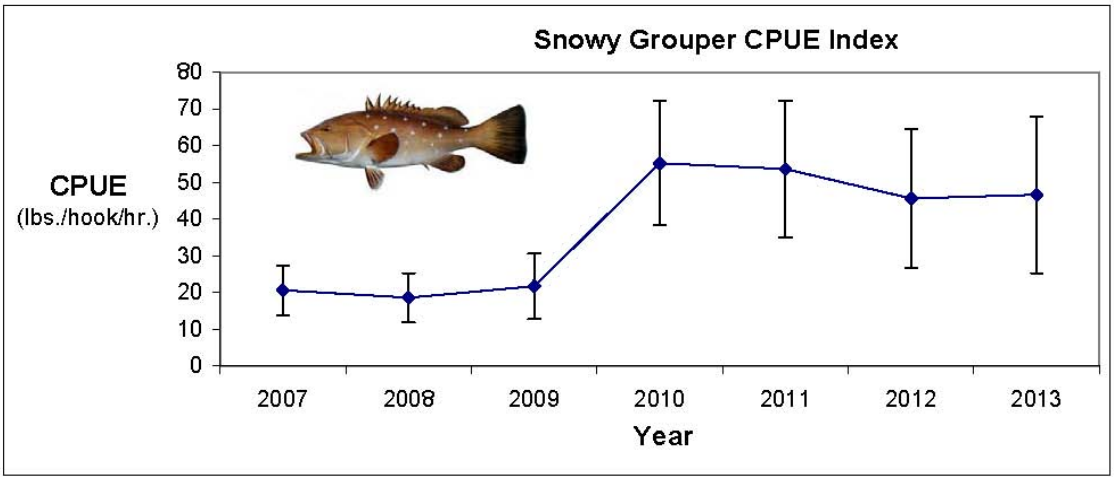
to 12 hooks, for snowy grouper are generally made on abrupt bottom topography (mostly wrecks) where large populations of snowy grouper are know to aggregate. As vertical line catches are made generally from 15 to 30 min., depending on depth; it is plausible to measure the efficiency of landings per hook during these short time intervals. This specific analysis is in contrast to less precise estimates (in hours) listed in the commercial logbooks for directed snowy grouper fishing effort. The data presented here are a much more realistic and explicit description of a nominal commercial handline CPUE than presented in SEDAR 36 WP03 (Figure 3). Summary statistics are available in Table 1., and a plot of the commercial snowy grouper vertical line CPUE index is presented in Figure 1.

Table 1. Summary statistics for nominal CPUE index (lbs*hook*hr.) expressed as annual mean ± standard deviation (SD), including the number of trips (n^1), vertical line drops (n^2), and total landings per year for 2007-2013 in NE FL.

Year	Nominal mean CPUE (lbs*hook*hr.)	SD	n^1 (trips)	n^2 (drops)	Total landings (gutted wt.in lbs,)
2013	46.6	21.3	71	128	8,443
2012	45.6	18.9	113	164	10,212
2011	56.6	18.6	29	36	2,726
2010	55.2	16.9	27	32	2,563
2009	21.7	8.9	12	24	1,106
2008	18.6	6.7	8	17	719
2007	20.6	6.8	7	14	612

Figure 1. Plot of snowy grouper nominal CPUE, expressed as mean ± standard deviation, for commercial vertical handline fishery for 2007-2013 for NE FL.



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Use of Southeast Region Headboat Survey data as an index of abundance

As summarized from SEDAR 36 WP-12, estimated Southeast Region Headboat Survey (SRHS) landings from (2007-2012) are presented, below, in Table 2. First, it is inappropriate for NMFS to utilize this index of abundance from a shallow water (~60-90') depth fishery survey for a predominately deep water species (200' to 700') where a fishery has historically been prosecuted at these depths. Second, the SEDAR 36 stock assessment has chosen to primarily utilize an index of abundance from a fishery that may catch (as an estimate, with no real landings data) an average of 89 total individuals per year from the South Atlantic region. With an estimated 200,000 trips (angler-days/ yr., see SEDAR 36 WP-12, Table 4.) in the South Atlantic since 2007, this would yield ~ 0.00045 snowy grouper per trip, hardly the kind of catch rate data that should be used to construct an index of abundance. Further, in terms of morphometric data utilized to characterize these estimated landings, the data are even more lacking. From Table 3 of SEDAR 36 WP-12, since 2007, an average of 3.5 fish/ year from FL, <1 fish/ yr. from SC & NC and a total of 27 fish from the South Atlantic were utilized to estimate mean weight and weight ranges. This paucity of data, again, is just not acceptable.

Table 2. Summarized data from SEDAR 36 WP-12 on Southeast Region Headboat Survey landings from 2007-2012 indicating estimated number of individuals landed and total wt. of landings by state and totals in the South Atlantic region.

	FL/	GA	SC		NC		Total South	Atl.
Year	**#**	**lbs.**	**#**	**lbs.**	**#**	**lbs.**	**#**	**lbs.**
2007	39	46	90	163	44	74	173	283
2008	18	20	12	24	23	47	53	91
2009	23	32	11	22	74	150	108	204
2010	39	79	-	-	38	59	77	139
2011	33	35	-	-	30	31	63	67
2012	41	56	-	-	19	30	60	85
mean	**32**	**45**	**38**	**70**	**38**	**65**	**89**	**144**

Conclusions and Recommendations:

1) The SEDAR 36 stock assessment model is based upon an inappropriate and data-poor index of abundance, the Southeast Region Headboat Survey. Reviewers of SEDAR 36 should recognize the limitations of the stock assessment model based upon the lack of empirical fisheries dependant and fisheries independent data.

2) A significant commercial vertical handline fishery (>500 (+) trips/ yr.) currently exists, and is not being utilized in SEDAR 36. As demonstrated here, through mining of commercial logbook data, and interviews of vessel captains, a more realistic estimate of catch efficiency (nominal CPUE) can be calculated and applied across the South Atlantic.

3) The SAFMC's SSC should review the data available for scheduled stock assessments to determine if there are adequate and credible data available to construct age-structured models. Otherwise, data-poor stock assessments, such as SEDAR 36, should be handled in an alternative manner.

Responses to public comments submitted through sedar36comments@safmc.net email address. Submitted comments were broken into broad topics for purposes of panel response.

Comparison of regional differences in MRIP age/length data

During the first assessment webinar, a data provider from the headboat survey noted that the spread in distribution of length compositions by region from MRFSS/MRIP and the headboat survey were similar. Sample sizes in the MRFSS/MRIP data are not sufficiently large to do a meaningful comparison of growth curves by region or state. Table 10 in SEDAR36-WP01 shows the number of snowy grouper lengths measured by state through MFRSS/MRIP. Figure 6 in SEDAR36-WP06 shows comparisons of the length compositions from MRFSS/MRIP by state. Sample sizes of recreational age data (MRFSS/MRIP and headboat combined) by state are found in Table 4 in SEDAR36-WP06. The assessment panel noted the limited biological samples available from the recreational fleet and included a research recommendation in the assessment report to increase the number of age samples from the general recreational fishery (MRIP) with more complete spatial coverage.

Effect of 2012 recreational ACL overages on the assessment

The assessment model does not explicitly track quotas, or whether those quotas are met. It doesn't need to. Essentially, the assessment model estimates the fishing mortality rate that provides the observed level of landings, conditional on the predicted abundance at age. To the assessment, it doesn't matter if the observed landings were above or below a quota. It is true that an estimate of "overfishing" can be driven primarily by one sector, and that managers can consider such information when devising regulations. However, that type of analysis should be part of a management strategy evaluation, and is beyond the scope and terms of reference of a stock assessment.

In the SEDAR 36 assessment, the estimated fishing rate exceeded MFMT (maximum fishing mortality threshold - represented by Fmsy) for most of the assessment period (1974-2012), but only once in the last six years. This occurred in 2012, when the recreational fleet exceeded its quota. However, the terminal F estimate is based on a three-year geometric mean ($F_{current} = F_{2010-2012}$). $F_{current}$ is below Fmsy in the base run and the median of the MCB uncertainty analysis indicating that overfishing is not occurring.

How are environmental influences factored into stock assessments?

Stock assessment models do not ignore environmental effects on fish populations. They model fluctuations in recruitment, which may be caused by the environment or other factors. In addition, environmental effects (e.g., temperature) can be taken into account when developing indices of abundance. For snowy grouper, this was done for the MARMAP indices (see SEDAR36-WP02 for more details). It is true, however, that there is a lot of room for

improvement in how assessment models account for environmental, as well as ecological, effects. These factors can be quite complex (multi-dimensional) and can change through time in unpredictable ways. The potential for environmental and ecological effects (and their interactions) is widely acknowledged, but at the same time, poorly understood. In theory, there is no reason these effects cannot be built into assessment models, but in practice, such models are often best treated more as hypotheses than as well-tested descriptions of real dynamics.

Regional differences in fishery north of Cape Hatteras

For most snapper-grouper species, Cape Hatteras seems to be the most appropriate biogeographic boundary between the South Atlantic and Mid-Atlantic. However, the NC-VA line is the management boundary. For many species, this difference is likely inconsequential. For other species, such as snowy grouper, the distinction might be important. There is nothing to prevent the South Atlantic Council from implementing area-specific regulations, if they conclude that is the best path forward.

Scientists, managers, and of course fishermen are all well aware of the large fish being caught off VA and northern NC. History shows a pattern of pockets of deepwater species being discovered and then rather quickly depleted. This leaves many questions: How large is this northern subpopulation? Is it self-reproducing? Is it being subsidized by the South Atlantic population? How much fishing pressure can it sustain? Should it be managed as a "trophy fishery" or something else?

For any stock, variation in exploitation and life-history characteristics might be expected at finer geographic scales. Modeling finer spatial scales would require more data, such as information on the movements and migrations of adults and juveniles. One of the research recommendations in the SEDAR 36 assessment report is to determine the optimal level of spatial structure to include in an assessment of snapper-grouper species, such as snowy grouper, and to determine if well defined zoogeographic breaks (e.g. Cape Hatteras) should help define stock structure.

Commercial fishery assistance with data collection

Continued participation and cooperation in current commercial data collection programs (e.g. commercial logbooks, TIP – port sampling, etc.) are critical for future stock assessments. For deepwater species, such as snowy grouper, perhaps the best opportunity for commercial fishermen to assist with data gaps would be for scientists and fishermen to team up to conduct the sampling needed for indices of abundance. In this scenario, the scientists would design the study (with fishers' input), and the fishermen would conduct the actual sampling (with scientists help). One of the research recommendations in the SEDAR 36 assessment report is to develop reliable indices of abundance; this information could be collected by fishermen in collaboration with scientists through cooperative research projects.

It is routinely requested that additional funding be devoted to fishery independent sampling, which would include scientific sampling funded through cooperative programs such as the fishery research and cooperative research grants (see links below). Deepwater species would seem an ideal subject for this type of cooperation.

http://www.ncseagrant.org/home/research/fishery-research
http://sero.nmfs.noaa.gov/operations_management_information_services/state_federal_liaison_branch/crp/index.html

Indices of abundance

A comment expressed concerns with the decision to use the headboat index and not to use the commercial handline or longline indices in the SEDAR 36 assessment model. Although no commercial indices were used in the SEDAR 36 base run, commercial landings, length, and age data were used. Fishery independent indices are preferred for assessments, as these indices are able to track trends in abundance better than fishery dependent indices for a number of reasons, including hyperstability (shifting effort to areas of high abundance), hyperdepletion, regulation changes, technology creep, and the difficulty in identifying effective effort.

The SEDAR 36 assessment model fits two fishery independent indices (MARMAP chevron trap and MARMAP vertical longline) and one fishery dependent index (headboat). Additional fishery dependent indices were discussed and considered for use in the assessment including a commercial handline index, a commercial longline index, a MRFSS/MRIP index, and a SCDNR charterboat logbook index. The alternate commercial handline index presented in the public comment was not provided to the assessment panel for consideration during the assessment process.

The MRFSS/MRIP data, SCDNR charterboat logbook data, and commercial longline index were discussed during the pre data deadline webinar. Sample sizes for the MRIP and SCDNR charterboat datasets were small and the panel decided that the data were insufficient for index development. The commercial longline index was rejected for use primarily due to small samples sizes, but the panel also discussed additional concerns, including an inconsistent pattern across regions in the nominal index and large deviations in years with the lowest sample sizes.

A commercial handline index was reconstructed for consideration in SEDAR 36. (A similar index was developed, and ultimately rejected as a measure of abundance during SEDAR 4). The index was, again, not recommended for use. Reasons cited are similar to SEDAR 4, including the difficulty in defining effective effort for deep water species using current reporting approaches. Also noted are the aggregative nature of snowy grouper, and their affinity for confined habitat locations, traits that make them particularly susceptible to rapid depletion at local levels and either of which could result in an index that does not track abundance. However, the commercial

handline index was included as a sensitivity run (see sensitivity run ‘S8’ in the assessment report).

Commercial logbook data from 2006-2012 were not included when developing the commercial handline and longline indices due to restrictive regulations that went into effect during this time period. In 2006, the commercial trip limit was reduced from 2500 pounds gutted weight to 275 pounds gutted weight. For both the commercial handline and longline logbook data, there was a dramatic increase in the number of trips that were at or close to the trip limit. When most trips reach a management limit for a species, and there is no way to more precisely define effort directed at that species, an index created from such data will not track abundance. In fact, such an index would likely under-represent any rise in abundance, because catches restricted by a trip limit cannot increase with increasing population abundance.

The headboat index was included in the SEDAR 4 and SEDAR 36 assessment model base runs. The headboat fishery typically operates in a manner more similar to fishery independent data collection because the fishery targets the snapper-grouper complex in general rather than the focal species specifically. This helps minimize the changes in catchability relative to other fishery dependent indices that target the specific species more effectively.

A comment noted concerns about the headboat fishery operating in waters shallower than where snowy grouper typically occur. This is recognized in the analysis, and does not mean that the information is not useful, just that it may need to be considered with this fact in mind. Snowy grouper are found inshore, in areas fished by the headboats, otherwise they would not appear in the catch of this sector. Of possible concern is the difference in size and age of the fish encountered by the headboat versus other sectors that operate in deeper waters. Many species in the snapper-grouper complex exhibit movement to deeper waters by older individuals, thus a headboat fishery operating in shallower areas may not be able to access the full age range of the population. This appears to be the case with snowy grouper, and is addressed through the selectivity pattern estimated for the headboat catches. The headboat fishery has a domed selectivity, indicating that it primarily catches fish between ages 3 and 11. For comparison, selectivity patterns for the commercial fisheries indicate catches of fish at all age classes, reflecting effort in this sector that occurs in both shallow and deep areas. In terms of the assessment model, this means that the headboat fishery data is providing an abundance index of fish primarily between the ages of around 3 to 11.