

# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 Faber Place Drive, Suite 201, North Charleston SC 29405 Call: (843) 571-4366 | Toll-Free: (866) SAFMC-10 | Fax: (843) 769-4520 | Connect: www.safmc.net

Dr. Michelle Duval, Chair | Charlie Phillips, Vice Chair Gregg T. Waugh, Executive Director

June 27, 2017

Dr. Francisco Werner Chief Science Advisor and Director of Scientific Programs NOAA Fisheries 1315 East West Highway Silver Spring, MD 20910

Dear Dr. Werner:

We are incredibly disappointed that we will need to cancel the November workshop with MRIP, SEFSC, SERO, and the Gulf and South Atlantic Councils to review ACL tracking methodologies. The South Atlantic Council has raised this issue in numerous letters (see Attachments 1-3), the most recent being the March 29<sup>th</sup> letter from me to Mr. Sam Rauch, Acting Assistant Administrator (included in Attachment 4, Overview).

We raised this as an issue at the February/March 2017 CCC meeting and again at the May CCC meeting where a session was held to address this topic (see Attachment 4, Overview). In the minutes of the meeting, Mr. Gregg Waugh, Executive Director, describes the approach and what we expect to get out of a workshop (see CCC minutes, Attachment 5, pages 181-182): "What we want the output of this effort to be is the delivery of estimates in different forms, maybe using annual estimates of catch and effort, so that we reduce the PSEs." The Council's request was only for the handful of species identified as being rarely intercepted: Snowy Grouper, Blueline Tilefish, Golden Tilefish, Hogfish, Atlantic Cobia, and Red Snapper.

From the start, we have been concerned about this workshop becoming a long-term research effort rather than a very specific delivery of products in November. This is why we went to such lengths in the overview document and the letter to Sam to indicate exactly what we expected as an outcome of the workshop. Despite these efforts, there was still some confusion as indicated by Cisco's comments beginning on page 191. Gregg clarified this near the middle of page 192 of the minutes indicating that the workshop described by Cisco is separate from the November 2017 Council-sponsored workshop. To get clarification on participation and work for the November workshop, Gregg asked the following (see CCC minutes, Attachment 5, page 193): "Cisco, assuming we go ahead with this workshop in November, I'm assuming that the MRIP folks would attend that meeting and do some work ahead of that meeting as well?" Cisco replied: "Yes, I can confirm that. They're in with both feet, and let me put it that way." Furthermore, just two weeks ago during the Council's June meeting week, I again expressed my concerns that this workshop not become a lengthy research project, and was assured by Dr. Ponwith that the agency understood and shared those concerns.

Imagine our dismay to hear on the June 26, 2017 conference call of the organizing committee that the methods presented to the SSC in October 2015 were merely suggested approaches that would all need to be studied and evaluated further before they could actually be used. I had considerable email dialogue with Dr. Richard Merrick in August 2016 regarding the application of these methods to cobia (see Attachment 6), and there was no indication from MRIP staff at any point during those communications that those techniques were not fully supported or required additional review. I was clear that the intent in applying such methods was to track catches against ACLs with greater precision, so that we could be certain our accountability measures would not be unnecessarily triggered. I remain exceedingly frustrated by the attempts to confound this issue with the use of MRIP estimates during the stock assessment process. Decisions made by analytical teams regarding how or whether to use MRIP catch estimates during a data workshop have no bearing on their use in day-to-day management of ACLs. Indeed, there are multiple instances in which an annual estimate of catch for a species has been removed as an outlier or replaced via application of averaging techniques for an assessment, and not once has that resulted in either a change to the original MRIP estimate or a change to the ACL database. As Dr. Merrick stated, the MRIP BSIA estimates, once produced, do not change and are available for use by both scientists and managers.

To say that we are bitterly disappointed in the lack of progress on developing alternative estimation methods is a huge understatement. We have spent a considerable amount of manhours and funds working with NMFS to address the shortcomings of the MRIP data for ACL tracking and thought we were working together on solutions. Our staff, Council Members, and SSC members have participated in the FES Transition Team, Gulf-South Atlantic working group, APAIS Calibration workgroups, and calibration efforts. Our staff has researched numerous issues to help clearly define specific concerns as detailed in the attached letters. Much to our surprise, we find ourselves left high and dry with no alternative ACL tracking methodologies that we can use, despite our SSC reviewing a suite of alternatives nearly two years ago and stating they could be considered BSIA. Adding to the disappointment is the specific acknowledgement in the Draft MRIP Strategic Plan (page 20 "Supplemental Surveys for Specialized Needs") of the challenges we face in the South Atlantic, yet there is a stark contrast between the considerable resources that have been devoted solely to red snapper in the Gulf for well over three years, with the lack of such investment in the South Atlantic.

Unfortunately, this leaves us no choice but to halt planning for the November workshop. I cannot condone the use of Council resources for this effort when it has become clear that the products we have requested will not be forthcoming. Should the agency wish to move forward with its vision of an expanded effort to evaluate and develop additional alternatives for broader use, we certainly encourage that. However, in the interim, our intent is to immediately begin working on a comprehensive amendment to remove any use of unacceptably uncertain MRIP estimates as an accountability measure for ACL management for Snowy Grouper, Blueline Tilefish, Golden Tilefish, Hogfish, Atlantic Cobia, and Red Snapper in our fishery management plans. If at some point in the future, NMFS develops approaches they feel are sufficiently evaluated and thorough to warrant our review, we would be glad to have our SSC evaluate them and consider using them for future accountability measures.

We appreciate your consideration of our comments on this issue, which is of great importance to the Council and our stakeholders in the South Atlantic. Please do not hesitate to contact me should you have any questions.

Sincerely,

Michelle a. Dewal

Dr. Michelle Duval, Chair

cc: Council Members and Staff
Chris Oliver, Sam Rauch, and Alan Risenhoover
Bonnie Ponwith, Theo Brainerd, and Erik Williams
Monica Smit-Brunello

SEDAR Tab 4-2B



# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 FABER PLACE DRIVE, SUITE 201 NORTH CHARLESTON. SOUTH CAROLINA 29405

TEL 843/571-4366

FAX 843/769-4520

Toll Free 1-866-SAFMC-10
Email: safmc@safmc.net web page: www.safmc.net

Ben Hartig, Chair Dr. Michelle Duval, Vice Chair Robert K. Mahood, Executive Director Gregg T. Waugh, Deputy Executive Director

October 24, 2014

Dr. Richard Merrick Chief Science Advisor NOAA/NMFS 1315 East West Highway Silver Spring, MD 20910

Dear Dr. Merrick:

The purpose of this letter is to express the Council's concern about the quality of the information that was available for the recent blueline tilefish stock assessment (SEDAR 32). Based on the results of the stock assessment the Council was required to reduce the blueline tilefish ACL significantly, turning what had been an important fishery for a number of our fishermen, into a bycatch fishery.

There are three major issues that exemplify the problems with the blueline tilefish stock assessment that we believe can be addressed:

# 1. MRIP is inadequate for rare event species:

South Atlantic deepwater species like blueline tilefish, golden tilefish and snowy grouper are simply not adequately captured by the MRIP survey, and even MRIP staff readily agrees this is not what the survey is designed for. It is rare to have PSEs less than 0.7, yet we are forced to use these very imprecise (and likely inaccurate) estimates in stock assessments, catch level projections, and ACL tracking. Occasional encounters of rare event species lead to outlier catch events that exert far more influence over management than is justified considering the uncertainty in such values. Recently the Council experienced such an event with unusually high catches of blueline tilefish in 2013. This was traced back to a single intercept sample, which expanded into a catch that was 50% higher than the entire estimate for 2012. It's time for MRIP to be an active partner in solving this problem, as it disadvantages fishermen from all sectors and detracts from improvements they are trying to make in other areas.

# 2. Adequate funding for fishery-independent surveys:

Existing resources are inadequate to survey our managed species throughout their range, even despite recent additions such as the Southeast Reef Fish Survey. In particular, a gap remains with the deepwater species such as tilefishes and snowy grouper. Current sampling does not capture the full range of management jurisdiction, let alone the full range of the

species. For example, blueline tilefish are found all the way to Montauk, NY, yet the available surveys only cover a small portion of the species range. Moreover, cuts in funding have completed eliminated portions of existing surveys, such as longline sampling conducted through the SC DNR MARMAP program, that were the only means for surveying tilefishes. As more regulations are imposed in the form of trip limits and early season closures, our fishery-dependent indices are becoming less representative of the resource, making the need for fishery-independent indices even more critical. Furthermore, even the best fishery-dependent indices alone simply cannot account for market-based shifts in effort, nor access to the resource that is limited by weather events or shifting oceanographic conditions, nor provide information necessary to evaluate management actions. Factors such as this can artificially inflate or deflate indices and are not necessarily reflective of the true abundance – but it's the fishing public that pays the price for such uncertainty.

3. Assessment-focused cooperative research/monitoring:
Focused research, conducted in cooperation with the fishermen in advance of an upcoming stock assessment needs to become an institutionalized part of the process. Given the chronic paucity of sampling resources in the Southeast, this is likely the only way we can ensure there is enough information to fill specific data needs and calculate key age and growth parameters that are the backbone of an assessment. Without North Carolina fishermen pitching in through an EFP during the deepwater closure in 2011, there would have been even less age and growth information for the last assessment of blueline tilefish. In hindsight, given the decision to evaluate blueline tilefish as a unit stock on a coast wide (ME-FL) basis (despite the lack of information available to index the stock over

that spatial scale), these efforts should have been expanded northward.

Our final point really has to do with the inflexibility in the MSA of "ending overfishing immediately". Blueline tilefish is a classic example of a specific set of conditions, including considerable uncertainty in critical yet basic datasets, under which the Councils should be allowed to phase in ending overfishing provisions over three years. The defacto fishery closure that the blueline tilefish ACLs will create puts us in a negative feedback loop whereby we will cut off our only source of data, that was provided from the fishery. Therefore the next assessment will be even more data poor, the uncertainties will increase, and the Council will be expected to be even more conservative when applying buffers. The agency should never close a fishery without a funded plan in place to collect the fishery independent data required to ensure that a future assessment can be conducted to evaluate the management action and ultimately reopen the fishery. Fishermen on all sides of the aisle deserve better than that, and so do the analysts who have to make difficult decisions about model inputs.

We realize you can't address all of these issues, some of which are currently being considered by Congress. However, there are ways you can address the first three items listed. The Council looks forward to working with you to resole these issues.

Perhaps at some point in the future we could arrange a meeting to discuss our concerns in more detail.

If you have any questions, please contact Bob Mahood or me.

Sincerely

Ben Hartig Chairman

cc: Eileen Sobeck and Sam Rauch
Bonnie Ponwith and Theo Brainerd
Steve Turner and David Gloeckner
Phil Steel, Andy Strelcheck and Jack McGovern
Monica Smit-Brunello
Council Members and Staff





4055 FABER PLACE DRIVE; SUITE 201 NORTH CHARLESTON, SOUTH CAROLINA 29405

TEL 843/571-4366 FAX 843/769-4520
Toll Free 866-723-6210
Email: safmc@safmc.net Website: www.safmc.net

Dr. Michelle Duval, Chair Charlie Phillips, Vice Chair Robert K. Mahood, Executive Director Gregg T. Waugh, Deputy Executive Director

October 27, 2015

Dr. David Van Voorhees National Marine Fisheries Service Office of Science and Technology, Fisheries Statistics Division 1327 East West Highway Silver Spring, MD 20910

Dear Dr. Van Voorhees:

The South Atlantic Fishery Management Council discussed management of hogfish at length during their meeting in Hilton Head Island last month. The Council is currently developing an amendment (Amendment 37) to the Snapper Grouper FMP that would make changes to hogfish management in response to the recent stock assessment. In August of this year, the National Marine Fisheries Service prohibited recreational harvest of hogfish because the recreational ACL of 85,355 pounds had been exceeded by 186%. This is the first time there has been an in-season closure of the recreational sector for hogfish. In 2014, the bulk of the recreational ACL was landed in Wave 1 and the recreational ACL was exceeded by 31%.

The 2015 recreational landings estimate for Wave 2 (242,442 pounds) represents a significant spike compared to the average landings of 74,737 pounds from 2004-2014 and is uncharacteristically high compared to landings during Wave 2 of previous years. Typically, Wave 2 has the lowest yield of hogfish of any of the other Waves by an order of magnitude (4,382 pounds in Wave 2 vs. 14,071 pounds on average for the other waves). From 2004 to 2014, recreational landings for hogfish approached and sometimes exceeded the current ACL, but never by the magnitude observed in 2015. The closest was in 2007 when the recreational landings were 143,823 pounds, less than half of the 2015 estimate.

Understandably, the Council is very concerned over this year's recreational landings for hogfish. Council staff examined the available data used to develop the catch estimates, and determined that the bulk of the Wave 2 landings originated from a few intercepts in Miami-Dade County. Further examination indicated a large increase in expansion factors in 2015 at those sites where the highest hogfish catches are estimated. Hogfish are primarily landed by spearfishing, so the Council is also concerned with whether the diving sector is appropriately represented in MRIP intercepts and the effort survey. In light of these issues, the Council

requests that recreational landings estimates for hogfish for 2015 be re-evaluated with special attention paid to whether sampling is adequately capturing spearfishing effort and whether catch estimates for species targeted by spearfishing are appropriate.

Thank you in advance for your prompt consideration of this request.

Sincerely,

Michelle Duval Council Chair

Michelle a. Duval

cc: Council Members & Staff
Jack McGovern & Rick DeVictor
Bonnie Ponwith, Theo Brainerd & Tom Jamir
Monica Smit-Brunello



# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 FABER PLACE DRIVE, SUITE 201 NORTH CHARLESTON, SOUTH CAROLINA 29405 TEL 843/571-4366 FAX 843/769-4520 Toll Free: 1-866-SAFMC-10

E-mail: safmc@safmc.net Web site: www.safmc.net

Dr. Michelle Duval, Chair Charlie Phillips, Vice-Chair Robert K. Mahood, Executive Director Gregg Waugh, Deputy Executive Director

November 12, 2015

Dr. David Van Voorhees National Marine Fisheries Service Office of Science and Technology, Fisheries Statistics Division 1327 East West Highway Silver Spring, MD 20910

Dear Dr. Van Voorhees:

As you are aware, hogfish data have come under increased scrutiny in the past year due to the completion of a stock assessment and subsequent changes in management. The Acceptable Biological Catch (ABC) for the hogfish stock off the Carolinas will be based on the Only Reliable Catch Series (ORCS) approach and sector allocation will remain based on historical and recent catches as with other stocks managed by the South Atlantic Fishery Management Council (Council). Examination of the landings data for hogfish off the Carolinas has revealed potential outliers in the 1980s and again in 1995. Preliminary evidence suggests the outliers could be due to mistakenly labeling other species as hogfish. Hogfish are a rarely encountered species off the Carolinas and the Council is concerned that even a few skewed data points could have a significant impact on the ABC and sector allocation. As such, the Council respectfully requests that MRIP review the intercept data for hogfish off the Carolinas and advise us whether the potential outliers Council staff have identified indicate errors. If errors are identified, please provide updated estimates of hogfish landings and length frequency for those years.

A review of the catch estimates by Council staff revealed a few trips that took place in the 1980s for which catches of hogfish are associated with key inshore species such as spot and croaker. This is of concern because hogfish off the Carolinas are not observed inshore. In 1995, there was a large number of hogfish sampled by a single port sampler in southeastern North Carolina. The average weight of the fish that were sampled is much lower than that typically observed for hogfish harvested off the Carolinas. Moreover, the high number of samples has a significant effect on the average weight estimate for the hogfish stock off the Carolinas. The catches indicate up to 36 hogfish caught on a single hook and line trip in 1995, while no other intercepts from any other years exceed 10 hogfish per hook and line trip. Furthermore, hogfish are more commonly targeted by divers using spearfishing gear. Interview ID codes, which appear to have abnormal catches of hogfish, are listed in Table 1.

The Council is considering the ABC and allocations for hogfish through Amendment 37 to the Snapper Grouper FMP, which will be reviewed at the December 2015 meeting. It would be very

useful for MRIP to investigate the listed raw interview files to determine if the intercepts reported as hogfish in the 1980s and 1995 can be corrected so they may be used for management. If Council staff can be of any assistance in resolving the issue, please let me know. The Council sincerely appreciates your assistance in addressing these issues.

Sincerely,

Mechelle a. Dewal

Dr. Michelle Duval Council Chair

Table 1. List of interview ID Codes that were flagged as having potential issues.

1105219950424001

1105219950429001

1105219950429007

1105219950509001

1105219950715013

1105219950721013

1105219950728001

1105219950728007

1105219950728010

1032719820620003

1087519860803003

cc: Council Members and Staff

Jack McGovern and Rick DeVictor

Bonnie Ponwith, Theo Brainerd and Tom Jamir

Monica Smit-Brunello

# **TOPIC OVERVIEW**

# CCC MEETING May 18, 2017

**Recreational Fisheries Overview Session** – the purpose of this session is two-fold: (1) to receive a report on round table discussions within the recreational community on improvements to recreational data and (2) to discuss issues related to estimating the recreational catch and tracking recreational ACLs.

# **A. Recreational Round Table Summaries** – presentation by Russell Dunn

#### **B.** Three Issues of Concern to Councils:

# 1. Alternative ACL Tracking Methodologies

**Background** – fisheries are being closed due to recreational landings exceeding the recreational ACL based on variable data that in many instances seems to be an outlier data point. The letter from the SAFMC to Sam Rauch dated March 29, 2017 outlines the problem and provides examples (attached).

MRIP staff provided a presentation to the SAFMC Scientific and Statistical Committee (SSC) in October 2015 that outlined several alternative approaches for estimating catch and effort for rare recreational species for use in comparing to ACLs to determine when closures should take place. The SSC considered the alternatives reasonable and appropriate and able to provide estimates with increased precision. There was also discussion regarding efforts to develop precision standards within the MRIP program. Further, it is our understanding that the alternative estimation methods developed by MRIP can be applied on a regional basis to address the type of rare event estimation issues illustrated in this letter. The letter from Dr. Van Voorhees (attached to the SAFMC letter) contains suggestions for alternative approaches for improving precision on catch estimates for rare event species based on the SSC presentation.

The SAFMC requested that the MRIP program make sufficient MRIP staff resources available within existing funding levels to work with the Southeast Fisheries Science Center to enable the Center to implement alternative estimation methods for appropriate rare event species including Hogfish, Blueline Tilefish, Golden Tilefish, Snowy Grouper, Red Snapper, and the Atlantic migratory group of Cobia and use those methods to monitor Annual Catch Limits (ACLs). The output of this effort should be the delivery of estimates in different forms (e.g., using annual estimates of catches and effort) for recreational ACL tracking to reduce the PSEs that are available for review and consideration by the Councils, SSCs, Advisory Panels, and the public.

To get this effort started, and ensure a consistent approach is taken across the Southeast Region, the SAFMC also asked that MRIP staff participate in a joint meeting of the South Atlantic and Gulf of Mexico Council's Scientific and Statistical Committees, devoted to this topic, that the South Atlantic Council has requested be held later this year. We are in the process of organizing this meeting with the Gulf

Council and will provide the relevant information as soon as possible. The Mid-Atlantic Council has agreed to send a SSC member to participate in this meeting. It is critical that MRIP/Center provide outputs of various methods for review prior to the Joint SSC meeting. Having MRIP/Center representatives at the Joint SSC meeting to present these outputs will greatly improve the efficiency of developing alternative methods for recreational ACL tracking. We recognize the uncertain funding situation but want to express our strong support for in-person participation at this meeting.

**NMFS Action:** MRIP staff is willing to support the Joint SSC meeting. NMFS will provide an overview on how they will participate in this process.

CCC Action: Is this an issue that other Councils are concerned about or is this limited to the South Atlantic, Gulf, and Mid-Atlantic Councils? Do we need to make any additional requests of NMFS?

#### 2. Alternative methods to estimate Private Recreational Catch

**Background:** The SAFMC's letter identified the challenge of estimating the recreational catch and discards for the majority of EEZ-caught species. The Council is working with NMFS SERO, MRIP, our state partners, and the Snook and Gamefish Foundation on a project to pilot an electronic permit/logbook for the private recreational fishery. The intent is to focus on snapper grouper species, especially red snapper, and cobia.

Validation is very important and we will work with MRIP to have the intercept samplers ask if the fisherman being interviewed has the electronic permit. If MRIP records this permit number, we will be able to validate such trips. We are willing to modify the methods to provide improved validation and are open to any suggestions.

MRIP is currently working with a number of states in the Gulf to pilot various types of logbook programs, mainly targeting red snapper.

**NMFS Action:** Provide a general presentation on how MRIP is willing to and is already working with a number of groups to test/evaluate alternative methods. They will cover the process to have regional partnerships involved in the MRIP program.

**CCC Action:** Is this an issue that other Councils are concerned about or is this limited to the South Atlantic, Gulf, and Mid-Atlantic Councils? If other Councils are interested, we would be glad to provide you regular updates.

# 3. Weight Conversion Issue

**Background:** The SAFMC most recently raised this issue at the February 2017 CCC meeting. Having multiple estimates of weigh of MRIP catch is causing public confusion, confusion about what weight to use in preparation of Council/ASMFC documents (e.g., cobia), and confusion over what numbers are being/will be used to track recreational ACLs and close recreational fisheries. MRIP produces an estimate of the numbers of fish and weight of fish. The SEFSC has a method they feel is much

improved to estimate weight of fish using the MRIP estimate of numbers of fish. The NEFSC has yet another method for converting MRIP numbers of fish to weight of fish. The net result is at least two different weight estimates and for some species (e.g., cobia, king mackerel, Spanish mackerel, dolphin, and wahoo), the possibility of three different weight estimates.

The SAFMC has requested that the weight conversion issue be resolved such that the NMFS determine the best method and that method be applied consistently across different regions. There was some discussion a few years ago between MRIP and the SEFSC about developing a standard methodology for providing mean weight estimates needed to expand the MRIP harvest numbers into weights for both the Northeast and Southeast; however, due to workload and the changes to MRIP, this has not been addressed to date.

**NMFS Action:** Provide an explanation of why we have different weight estimates now and why this will always be the case.

**CCC Action:** Is this something that the CCC should request NMFS to address with a specific deadline for work to be completed? Or is the explanation sufficient such that we don't pursue having only one weight estimate? Another approach to avoid confusion with the public being able to compare two different weight estimates to a weight ACL, would be to specify and track recreational ACLs in numbers of fish.



# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 Faber Place Drive, Suite 201, North Charleston SC 29405 Call: (843) 571-4366 | Toll-Free: (866) SAFMC-10 | Fax: (843) 769-4520 | Connect: www.safmc.net

Dr. Michelle Duval, Chair | Charlie Phillips, Vice Chair Gregg T. Waugh, Executive Director

March 29, 2017

Mr. Sam Rauch Acting Assistant Administrator for Fisheries NOAA Fisheries 1315 East-West Highway Silver Spring, MD 20910

#### **RE: MRIP ESTIMATES & HIGH PSE VALUES**

Dear Mr. Rauch:

Requirements to manage fisheries with specific Annual Catch Limits (ACLs) under the Reauthorized Magnuson-Stevens Act have significantly increased the importance of recreational catch estimates provided by the Marine Recreational Information Program (MRIP). This has led to closer scrutiny of MRIP methods, which has in turn led to a number of changes in those methods over the last few years. While many knowledgeable experts and scientific reviewers agree that these changes have reduced bias and improved the statistical properties of the estimates, there remains considerable skepticism among the fishing public, state managers, and Council members that the MRIP program accurately reflects recreational catch and effort. This skepticism is particularly acute among those who fish in the Exclusive Economic Zone (EEZ) in the South Atlantic and pursue species managed by the South Atlantic Fishery Management Council (SAFMC), as many of these species fall into the category of "rare events", exhibiting catch estimates that are prone to outliers and high uncertainty. One success from increased efforts to promote awareness and understanding of MRIP is a more knowledgeable fishing public. The flip side of this success is that same public now becoming more aware of shortcomings and challenges, and more prone to let their dissatisfaction be heard, particularly when estimates that seem "wrong" to them lead to closures of favored fisheries.

Recreational fishing is incredibly important to the Southeast Region, including those areas managed by the South Atlantic and Gulf of Mexico Fishery Management Councils. Nearly 31 million recreational fishing trips are reported by MRIP for the South Atlantic and Gulf of Mexico Regions in 2016, representing 60% of the trips measured by the program. Over 2.7 million of these trips were taken in the EEZ, representing over two-thirds of all EEZ trips reported by MRIP. These values for 2016 are by no means anomalous; the Gulf and South Atlantic areas have accounted for over 60% of all trips over the entire MRIP survey period. Nor do these values represent the full importance of recreational fishing in the Region, as trips taken on headboats, or in Texas, are not included in these values.

Prior to requirements to manage by ACLs, large increases or "spikes" in MRIP estimates did not exert much effect on the management program, as the "MRFSS" program (as it was then

called) was widely accepted as meeting its stated goal of providing accurate information on overall trends of recreational fishing, with less accuracy and precision expected of individual estimates. That is no longer the case, as management programs must now prevent landings from exceeding the ACL. Within the South Atlantic Region, a number of recent, high-profile, unexpected spikes have led to recreational fishery closures that, to many observers, are simply the result of outlier values within the MRIP estimation process, and not indicative of actual landings or fishery trends.

In 2015, NOAA Fisheries closed the **recreational hogfish fishery** in the South Atlantic on August 24 due to landings exceeding the ACL. This was triggered by an estimate for Wave 2 (March and April) of 228,494 pounds, a value that was 3.8 times the entire annual ACL of 85,355 pounds. Given that average annual hogfish landings reported by MRIP from 1986 to 2014 were only 75,126 pounds, and landings exceeded 100,000 pounds in only 4 of those years, the 2015 Wave 2 seems an outlier – far out of line with the normal and expected values. Moreover, in most recent years landings are highest in Waves 3 and 4. Nonetheless, the fishery was closed. The Council raised this issue in 2015, and the response from Dr. Dave Van Voorhees is attached. Percent standard errors were frequently well over 50% for hogfish. The response noted: "This level of imprecision could result in highly variable changes in the time series, particularly at the 2-month wave level, and may continue to be a source of concern moving forward." We agree with this conclusion and want to work with NOAA Fisheries to address this problem across our fisheries.

In 2015, NOAA Fisheries closed the **recreational blueline tilefish fishery** on April 7 due to landings exceeding the ACL. MRIP reported 162,483 pounds of blueline tilefish landed in 2016, with 155,293 pounds (96%) taken in Wave 4. Total annual landings exceeded this single wave estimate in only 3 of the prior 20 years of estimates, and the 2015 landings for Wave 3 was only 373 pounds. Blueline tilefish appears particularly resistant to MRIP sampling efforts. No values are reported for 1986-1992, 1994, 1998-1999, and estimates are only reported in 1 or 2 waves for the 10 years from 1993 through 2005 that provide any estimate.

Impacts and consequences of abnormal and outlier catch estimates extend beyond the immediate effects of annual fishery closures, because such estimates become part of the databases that provide Best Scientific Information. Management action evaluations required for Council FMPs rely upon time series data, so the impact of an outlier value will be felt every time the dataset is used to evaluate an action. Stock assessments also depend upon the time series of past estimates. Unusual and outlier values, whether unusually high spikes or missing values effectively treated as zeros, add to the uncertainty of assessment estimates. As these values never 'go away', their impact on the assessment never goes away. In addition, nearly all Southeast Data, Assessment and Review (SEDAR) workshops devote considerable effort to evaluating outlier MRIP values. Even more importantly, the lack of public confidence in such values undermines confidence in the entire assessment product.

The Council recognizes that fishing effort in the EEZ is not a large component of the overall effort surveyed by MRIP, only representing about 8% of the trips observed in recent years in the South Atlantic Region. Given that total EEZ trips includes effort directed at common South Atlantic targets such as dolphin, billfish, tuna, and mackerels, the number of observed trips interacting, much less directing on, the species in our snapper grouper complex will be even lower. As a result, most, if not all, of the species in our snapper grouper complex can likely be considered 'rare events' when it comes to the MRIP sampling effort. The Council further

recognizes that no generalized survey, such as MRIP, is likely capable of providing accurate, robust estimates of rare events in a cost effective manner. Unfortunately, there is nothing in the Magnuson Act that relaxes the requirements for management by ACLs when the only accepted monitoring program is simply incapable of providing estimates that meet the accuracy standards demanded for management by ACLs.

To address these important data issues, the Council is working with the NMFS SERO, Snook and Gamefish Foundation, state partners, and ACCSP on a project to pilot an electronic permit and logbook for the private recreational fishery. We will work closely with MRIP and the NMFS SEFSC during this project to ensure proper design, methods, and verification/validation. Validation would be greatly improved if the MRIP interviewers would ask if the person being interviewed has the electronic permit and record the permit number. The Council is also working on another project with the NMFS SERO, SEFSC, state partners, and Harbor Light Software, Inc. to conduct outreach for electronic reporting in the charter and headboat fisheries. This would greatly improve reporting in the for-hire fisheries.

In addition, the Council, in cooperation with NOAA Fisheries, Sea Grant, our constituents, and our state partners, has established a Citizen Science Program. The objective is to work with fishermen and scientists to address our significant data shortcomings. At the Citizen Science kickoff meeting in January 2016, one of the greatest concerns brought forward by stakeholders was the accuracy and precision of recreational discard estimates, particularly for species such as red snapper. Both the recently completed stock assessment for red snapper (SEDAR 41) and the existing management regime are almost entirely dependent on estimates of discards. The highest priority project suggested by participants at the Citizen Science kickoff workshop was a discard "app" that would allow fishermen the ability to provide information (currently not collected by MRIP) that is critical to estimates of discard mortality. The Council is currently seeking funding to develop and pilot this technology for scamp grouper, with the hope of expanding its use to other species. Through both the Citizen Science program, as well as the projects described above, the Council is working to stretch every federal dollar in its budget to address these challenges from our end.

MRIP staff provided a presentation to the SAFMC Scientific and Statistical Committee (SSC) in October 2015 that outlined several alternative approaches for estimating catch and effort for rare recreational species for use in comparing to ACLs to determine when closures should take place. The SSC considered the alternatives reasonable and appropriate and able to provide estimates with increased precision. There was also discussion regarding efforts to develop precision standards within the MRIP program. Further, it is our understanding that the alternative estimation methods developed by MRIP can be applied on a regional basis to address the type of rare event estimation issues illustrated in this letter. The attached letter from Dr. Van Voorhees contains suggestions for alternative approaches for improving precision on catch estimates for rare event species based on the SSC presentation.

Therefore, we request that the MRIP program make sufficient MRIP staff resources available within existing funding levels to work with the Southeast Fisheries Science Center to enable the Center to implement alternative estimation methods for appropriate rare event species including Hogfish, Blueline Tilefish, Golden Tilefish, Snowy Grouper, Red Snapper, and the Atlantic migratory group of Cobia and use those methods to monitor Annual Catch Limits (ACLs). The output of this effort should be the delivery of estimates in different forms (e.g., using annual estimates of catches and effort) for recreational ACL tracking to reduce the PSEs

that are available for review and consideration by the Councils, SSCs, Advisory Panels, and the public.

To get this effort started, and ensure a consistent approach is taken across the Southeast Region, we also ask that MRIP staff participate in a joint meeting of the South Atlantic and Gulf of Mexico Council's Scientific and Statistical Committees, devoted to this topic, that the South Atlantic Council has requested be held later this year. We are in the process of organizing this meeting with the Gulf Council and will provide the relevant information as soon as possible. It is critical that MRIP/Center provide outputs of various methods for review prior to the Joint SSC meeting. Having MRIP/Center representatives at the Joint SSC meeting to present these outputs will greatly improve the efficiency of developing alternative methods for recreational ACL tracking. We recognize the uncertain funding situation but want to express our strong support for in-person participation at this meeting.

Thank you for your help with this critical issue. We would appreciate a response as soon as possible but no later than our June 12-16, 2017 Council meeting. This issue will also be discussed at the upcoming Council Coordinating Committee (CCC) meeting May 16-18, 2017, and it would be very helpful if a response were available at that meeting. We look forward to working with you to improve the livelihoods of our stakeholders by advancing the data available for management.

Best Regards,

Michelle a. Duval

Michelle Duval, Chair

cc: Council Members & Staff
Bonnie Ponwith & Theo Brainerd
Monica Smit-Brunello
Jack McGovern & Rick DeVictor
Alan Risenhoover
Dave Van Voorhees



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Silver Spring, MD 20910

DEC 0 7 2015

Michelle Duval, Ph.D.
South Atlantic Fishery Management Council
4055 Faber Place Drive; Suite 201
North Charleston, SC 29405

Dear Dr. Duval:

This letter is a combined response to your separate requests for information on recreational hogfish landings dated October 27, 2015 and November 12, 2015. Our response is organized into separate sections: 1) concerns over historical survey data on hogfish landings from North Carolina, and 2) concerns about recent high landings estimates for the Atlantic coast of Florida.

#### 1. North Carolina Historical Data

In response to the Council's concerns over hogfish landings data in North Carolina, we conducted an internal review of the data and also consulted survey operations staff with the North Carolina Division of Marine Fisheries (NCDMF) regarding any miscoding of the records in question. Our review covered a number of data elements including the frequency of species code use, species composition in the catch on trips with recorded hogfish landings, and fish measurement distributions among others. We also reviewed various metrics at the sampler level including distributions of intercepts obtained by site and trip end time across years and counts of measured fish by species.

Given our internal findings combined with the information provided by NCDMF, it does appear that the hogfish records in question are atypical. However, we were unable to make a final determination as to whether the records are erroneous or simply rare event observations. The available information is not sufficient to determine if a revision of historic data and estimates is justified.

#### 2. Florida Landings Estimates

We share the Council's concerns over the hogfish landings estimates for 2014 Wave 1 and 2015 Wave 2. We flagged those estimates for further examination during our standard estimate review process, which we perform prior to every release of preliminary estimates.

We conducted investigations into both cases, reviewing all of the survey data collected during those waves by the Access Point Angler Intercept Survey (APAIS, the intercept survey), as well as output produced at various steps in the MRIP estimation process. Based on those reviews, which are briefly summarized below, we did not find anything that would indicate a problem with either the survey data or the estimation process. We do recognize that the landings estimates in question are very imprecise, so we have included a list of approaches that may be explored to help improve the precision of estimates going forward for rare event species like hogfish. These are the same approaches that John Foster presented in more detail at the Council's October 2015 SSC meeting.





# 2.1 APAIS Data and MRIP Estimation

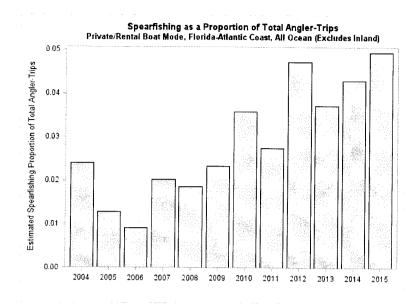
The findings described here are limited to the private/rental boat mode on the Atlantic coast of Florida in 2014 Wave 1 and 2015 Wave 2. In both cases, the private/rental boat mode estimates in Florida accounted for the majority of the large landings estimate for the region. Angler-trips with hogfish catch accounted for very small percentages of intercepted trips, approximately 1.5% (12 of 780) of intercepts in 2014 Wave 1 and also 1.5% (18 of 1174) in 2015 Wave 2. These percentages were larger than what we have typically seen in the past, but we have been seeing what appears to be an increasing trend in spearfishing trips overall.

We also examined the counts of landed hogfish at the trip level along with the weight measurements for individual fish. While some counts of observed and unobserved landed fish at the angler-trip level were above what we have generally seen, they were all below the long term 95th percentiles for these catch dispositions of hogfish. In terms of fish weight, the mean weights were 1.7 lb. in 2014 Wave 1 and 1.8 lb. in 2015 Wave 2, both very much in-line with what we have seen for hogfish in recent years.

Further, we reviewed the sample weights calculated during the MRIP estimation process for these trips. In both cases, the range of sample weights for intercepted trips with hogfish catch fell well within the range of sample weights for intercepted trips with no catch of hogfish. In 2014 Wave 1, sample weights for intercepted angler trips with hogfish ranged from 587 to 2793, while intercepted trips without hogfish catch had sample weights ranging from 148 to 6491. In 2015 Wave 2, sample weights for intercepted hogfish trips ranged from 163 to 4534, while intercepted trips without hogfish catch had sample weights from 39 to 10201. We did not detect any outlier sample weights associated with the hogfish trips.

#### 2.2 Spearfishing

As part of our investigation, we also took a look at the prevalence of spearfishing trips in the APAIS data going back to 2004, and there are two findings of particular interest here. Over this time period, there appears to be a fairly consistent increasing trend in spearfishing prevalence, most notably in Florida. The following figure illustrates this trend, providing the estimated proportion of total private/rental boat effort comprised by spearfishing on the Atlantic coast of Florida in the two ocean areas combined (State Territorial Seas, Federal Exclusive Economic Zone).



Given this increase, we might anticipate increases in trips with catches of species targeted by spearfishers. Despite this increasing trend, spearfishing remains a relatively rare event in APAIS, and so, the catch estimates for these species will likely remain imprecise showing similarly variable changes (mostly increases) in the estimates.

The other finding on spearfishing is a noticeable change in the temporal distribution of spearfishing trips, again for private/rental mode on the Atlantic coast of Florida. For years prior to 2013, we found that spearfishing trips ending before 4 pm made up almost 87% of the total intercepted spearfishing trips, and those ending at 4 pm or later accounted for the remaining 13%. Since 2013, those percentages have been very different with trips ending before 4 pm reduced to 59% and trips ending at 4 pm or later increased to 41%. The most probable cause for this seeming shift in effort to later in the day is the 2013 APAIS design change. While a number of significant improvements were implemented in the 2013 design change, one of the biggest was the more complete coverage of trips ending in late afternoon and early evening hours. Prior to 2013, the MRFSS intercept design focused sampling on peak activity hours with incomplete or inconsistent coverage of late afternoon and evening hours. Separate work on potential design change effects strongly suggests that this temporal undercoverage in the MRFSS APAIS design was a likely source of bias in the MRFSS estimates.

# 2.3 Recommendations

Based on these findings, it may be worth considering use of a calibrated time series of hogfish landings. These estimates would incorporate the calibration approach jointly developed by MRIP and SEDAR to address effects introduced by the 2013 APAIS design change. The direction of changes in the temporal distribution of spearfishing trips, before and after the 2013 design change, suggests that calibrating the time series could result in an increase in hogfish landings prior to 2013. In the context of a calibrated time series, the 2014 and 2015 estimates might appear somewhat less extreme and perhaps less disruptive to both management and to the fishery itself.

While none of the findings indicated a problem that would require revising the survey data or the estimates for 2014 and 2015, it is clear that the wave-level landings estimates for hogfish in the South

Atlantic region are highly imprecise in general with percent standard errors frequently well over 50% (irrespective of the size of the point estimate). This level of imprecision could result in highly variable changes in the time series, particularly at the 2-month wave level, and may continue to be a source of concern moving forward.

For this reason, it may be worth further consideration of alternative approaches for improving precision on catch estimates for rare event species that John Foster presented to the Council's SSC in October. These approaches may be broadly summarized by the following list:

- Increasing samples sizes, particularly APAIS sample sizes
- Optimizing APAIS sample allocations among strata
- Adjustments to APAIS design elements:
  - Further stratification of site-time sample units
  - Adjustments to sample unit selection probabilities
- Design and implementation of a specialized survey program
- Custom estimation methods

While the numerous technical details and trade-off considerations of each approach are beyond the scope of this letter, these approaches could all provide some measure of improvement in the precision of catch estimates for hogfish and other rare event species.

We are committed to sustained improvement in the quality of information products provided by MRIP and are happy to continue working with the Council to discuss ideas on how best to meet the needs for recreational fisheries statistics in the South Atlantic region. Please let us know if you have any questions about the information we have provided here.

Sincerely

David A. Van Voorhees, Ph.D. Chief, Fisheries Statistics Division Office of Science and Technology

# 13. RECREATIONAL FISHERIES OVERVIEW

John Quinn: Next is the Recreational Fisheries Overview. There is four presenters, and, based on what I was told, we're going to start with Gregg Waugh.

Gregg Waugh:

 Thank you, Mr. Chairman. I am just going to give an overview, basically walk you through that topic overview document that is on the briefing book. This section, we're going to do two things. We're going to receive a report on roundtable discussions that the National Marine Fisheries Service helped facilitate with ASA and others in the recreational community. We'll get some of their input on data and management approaches. Then we'll discuss the three issues that we raised at the last CCC meeting.

After I am finished with this overview, Russ Dunn will give a presentation on the recreational roundtable summaries, and then you can see that the first of the three issues that we've raised is alternative ACL tracking methodologies.

Again, we've got fisheries being closed due to recreational landings exceeding their recreational ACL based on variable data that, in many instances, seem to be an outlier, and we're to the point where we can have one intercept in one wave blow our entire recreational ACL for some species.

MRIP staff provided a presentation to our SSC, back in 2015, that outlines some alternative approaches for estimating catch and effort for rare species and using that to compare to ACLs, and this was really an eye-opener to us, that we had some flexibility to lay out how those ACLs would be monitored.

Our SSC thought this was a viable approach, and there was also discussion of developing precision standards within the MRIP program, and so we've got a couple of letters attached to this material that you all can look at at your leisure, but we requested the MRIP program to make sufficient staff resources within existing funding levels to work with the Southeast Fisheries Science Center to help us implement this new estimation methodology. We're looking at this for some of our more rare species, and some not so rare, hogfish, blueline tile, golden tile, snowy grouper, red snapper, and cobia is one that has become increasingly difficult.

What we want the output of this effort to be is the delivery of estimates in different forms, maybe using annual estimates of catch

and effort, so that we reduce the PSEs. To get this effort started and ensure a consistent approach, we're organizing a joint SSC meeting between our SSC, and the Gulf is hopefully going to send some representatives, the Mid-Atlantic is sending a representative, and we're looking at the weeks of November 6 or 13.

The idea is to get some work done ahead of that meeting and then leave that meeting with some concrete examples, and MRIP staff has indicated that they're willing to support this meeting, and Cisco is going to give a little bit of where they stand on that.

The second topic, on page 2, is alternative methods to estimate the recreational catch, and, as we discussed at the last meeting, we have a pilot program ongoing, working with NMFS funding, our state partners, and MRIP, working with the Snook & Gamefish Foundation, on a pilot project to look at an electronic permit and an electronic logbook for the private recreational sector.

We've asked MRIP to work with us on that, and they provide support to some efforts in the Gulf, and Cisco and Andy can provide a little more detail on those, but we're just looking for a little bit of guidance from Cisco.

Then the third item, on the bottom of page 2 of this overview and continuing over to page 3, lays out this weight conversion issue, and this has to do with people going to the MRIP website and getting one weight estimate and then looking at our regional websites, where they take additional length data and weight data and convert to weight and get a better estimate of the weight, and so we have some confusion over two different estimates, and Andy Strelcheck is going to go through an explanation of that.

We're just, on Topics 1 and 2, looking to see if any of the other councils are interested in this issue, and we know it has surfaced in the Mid-Atlantic, and whether anyone else is interested in participating in that meeting. Then, on the third one, I think we've got an explanation that it will be up to the councils to go back and determine whether they want to continue with recreational ACLs in weight or convert to numbers, and so that is a quick overview. If there are any questions, I will be glad to answer them before we start with Russ.

John Quinn:

Any questions to Gregg? Seeing none, Russ Dunn is up next.

45 Russel Dunn:

Thank you. I am Russ Dunn, and I am the lead for work on recreational fisheries issues at NOAA Fisheries Headquarters, and

I work with staff in our regions all around the country, Regional Offices and Science Centers, to really get a better understanding and address the concerns of the recreational community.

Today, I am going to talk briefly about some of the findings that came out of a series of roundtable discussions we just held all around the country and simply introduce to you a document developed by the Teddy Roosevelt Conservation Partnership and the American Sportfishing Association on alternative management.

First, just a quick glimpse of the scale, magnitude, of recreational fishing around the country. As you all know, it has become really an enormous business and driver of local and regional and national economies. These are 2015 numbers. They're our most recent numbers, and so there are roughly nine-million anglers who spent \$28.7 billion. About 85 percent of that was on durable goods. Then this drove the larger -- The \$29 billion in expenditures drove around \$63 billion in sales impacts and supported 439,000 jobs around the country.

The roundtable discussions were really part of our work in reaching out and understanding the recreational community and trying to better address their priorities and concerns, and we have recently been, as you can see, to a town near you. We held nine meetings around the country, mostly between March and last week, but the first one was held in December. It worked out great to be on the shoulders of a council meeting up there.

The meetings were generally pretty small, anywhere from twelve to about thirty people, in general. The one in Alaska was the largest, and there were about fifty people there, and we kept them intentionally small, so that we could have a real dialogue with folks. Our regional staff identified the participants as well as put the agenda together, and so it was really tailored towards concerns in your various regions.

We held one in Alaska, two on the West Coast, two in the Southeast, two up here in the Greater Atlantic Region, one out in Hawaii, and then we treat Atlantic highly migratory species as its own region, and so one there as well. We were fortunate that we had NMFS leadership in participate in two. The AA participated in two, and all of our Regional Administrators participated in each of the others, as well as some of the science leadership.

The goals of these really were to serve as a check-in for NOAA Fisheries with the recreational fishing community. They allowed

us to continue our dialogue to obtain a better understanding of their priorities for the new administration, identify emerging issues before they become crises, and, really, most recently, to give us food-for-thought for the upcoming Rec Fish Summit. We are moving forward, working with the Atlantic States Commission, to cohost a 2018 Rec Fish Summit again. We've done those in the past. We did one in 2010, one in 2014, and now we're planning for one, most likely at the end of March 2018.

I am going to give you just a quick overview. There were dozens of issues identified at each, but we sort of distilled down the notes and the key issues of each, and so I'm going to just touch on it very briefly here, and then, the long-term concern, we did an interesting exercise, where we asked folks, in one to three words, to identify the issue of greatest concern for them on the five to ten-year time horizon. What keeps them up at night when thinking about the recreational fishing industry or sport?

In Alaska, the big topic was halibut allocation. That was the first one. It mostly surrounded the RQE, the Recreational Quota Entity, which is an entity being developed still, which will be able to purchase commercial quota and put it into a common pool for use by the for-hire or what they call up there the guided industry.

Council representation was a big issue up there. The recreational community feels like the representation has become better. There is one recreational seat on the council. However, they feel like there is underrepresentation, particularly with regard to the non-guided sector up there, and communication was a big issue.

In short, the size and complexity of both the council and the NMFS documents was just overwhelming, and so what they are really interested in seeing is distilled, plain-language versions of NMFS and council documents. There was a lot of interest in trying to figure out if there was a way to develop short, explanatory videos, and we heard this in a number of places. You will see the same thing comes up.

The West Coast, like I said, there were two meetings, but we've condensed it down into one. Sanctuaries and monuments was by far the big one that came up there, and it just boils down to public distrust of sanctuaries and monuments and the processes behind them and a real desire to make sure that, if there is fisheries management associated with those, that it be put in the hands of the councils and not in the hands of the sanctuary managers or the various entities which may manage the monuments.

 The access and availability were issues there as well, and to two different perspectives. Access really came up more in southern California, and it was with regard to physical access to fishing grounds, because of mostly the Marine Life Protection Act out in the State of California, but then availability came up more up north, where it's, frankly, a lack of fish, specifically salmon. Coho and winter steelhead were the examples generally used in that meeting. They spoke to the fact that this lack of available fish is driving shifts away from historically salmon fisheries to groundfish and albacore.

In California, one of the concerns which arose from lack of access to the coastline was the concentration of effort in the remaining open areas and what is that doing to those areas.

Communication challenges were exactly the same, in almost the identical language used in Alaska. The documents are overwhelming, they're too complex. Boil it down and give us a plain language breakdown of it and videos. There is a lot of interest in videos out there.

The Southeast, what came to the top very quickly was really frustration and process exhaustion. It's a frustration both with the outcomes of management as well as with the process itself, and what they voiced pretty loudly was that this is driving people away from compliance, that people are simply shrugging their shoulders and walking away and saying, you know what, I don't see enforcement out there, I don't know anyone who has ever been busted, and I am going to do what I think is appropriate, and catch me if you can.

This isn't sort of -- The impression they conveyed was this isn't sort of the bad-actor folks. This is people who had, for years, been part of the system and involved, supporters of the system who have now just said that we're done.

Data, essentially a lack of trust in the lack of data that is available and also a lack of what they see as needed data, was a huge concern, and access and species availability came up, but in a different way than out west.

Access really was speaking to the closure of red snapper in the South Atlantic and the extremely truncated seasons in the Gulf for red snapper, but the species availability was interesting, in that red snapper, in some instances, and black sea bass, in some instances,

has become essentially a nuisance species. They can't get past it, and we just heard that over and over, that that is all they catch and they can't catch anything but those, but they're not allowed to keep it. It's everywhere, and so it was interesting that they see them and they're frustrated by the inability to retain, and they really view them now, outside of windows where they can keep them, just as a nuisance.

Greater Atlantic, data came up again, and it was the same as down in the Southeast, the lack of data and distrust of the data, and they gave some specifics, such as concerns about the high PSEs, which just really undermine anyone's confidence in the data. The timeliness of the data is an issue, and that the data is often all caveats. If NMFS, MRIP, gives a number, there are so many caveats associated with it that it's meaningless, and so that frustration, I don't think, is a surprise to many folks here.

Regulatory stability was a strong theme here, and the need for that, particularly in the for-hire industry. Because of that lack of stability, they're losing customers, and, as a result, they are beginning to really lose infrastructure. There were a number of folks, in the two meetings that we had, who either had just sold their boats or put their boats up or had left the fishery, but still came to the meeting.

That, to me, was a real change in events, in that, for years -- As a regulator, you all know, when you propose something, there is often the concern about this is going to put me out of business. Well, now we're really actually seeing it. There were, like I said, I think at least four people who had gone out of business or sold their boats or downsized.

Access for Greater Atlantic, I guess a lot of that was just the need to access fish and the need to have something available year-round that they can sell to customers.

Pacific Islands had a very flavor different flavor than most of the meetings. Communications were key there. In-person is very important. The scale of the region makes it difficult, but they really emphasized the need to have face-to-face communications, from a cultural perspective, and that it is essential to build those relationships, part of the issue being that the region is so vast, and you see this -- This goes to the challenges of geographic scale. It is very difficult and costly to get people together, to be able to build those needed connections.

Cooperation and partnership was a frustration for fishermen out there, where they really felt there was a limited involvement in consultation or execution of science that was going on. They were frustrated in how some of the research was being conducted and not taking advantage of local expertise, which they felt could benefit the research that was ongoing.

Our final one, which we held just last week, was Atlantic highly migratory species, and that focused primarily, initially, on commercial and non-commercial issues, and what that goes to is, under HMS, for for-hire boats, the sale of tunas is allowed by charter boats, and there is concern that Coast Guard regulations -- That will trigger Coast Guard commercial vessel safety requirements.

If that occurs, that's going to be a very costly upgrade for a number of vessels, and not viable for many, and so there is interest in essentially bifurcating the Atlantic HMS for-hire fishery into a portion which can sell and may be subject to those Coast Guard requirements and a portion which would be strictly recreational and not be able to sell.

Post-release mortality was big. There was a lot of focus on that, in terms, primarily, of improving recreational understanding of how to decrease it and some interest in revisiting circle hook requirements.

Finally, reporting compliance was discussed for quite a while, and a recognition that it is extremely low in Atlantic HMS, that folks are just not reporting as they are required to, and that they felt that it came from a number of reasons, including just not knowing about requirements, lack of trust, and the use of the data. That it will be used against them, and so why bother. There was really a call there, at the meeting, for more robust, enforceable regulations.

What you see here is a little word cloud of the long-term concerns that were voiced, and so the size of the word scales to how frequently it was raised by individuals as we went around each room. We just went around each room, and people gave their one to three words.

Obviously access was the big one, for the long-term. Are they going to be able to continue to get out there and fish? Data was number two, and, interestingly, followed by regulations and habitat. Regulations being overregulation in general, and data being concern about its reliability and the lack thereof. Let me

1 stop there, before I jump into the TRCP, and ask if there are any 2 particular questions or anything I can answer, and then we will 3 jump into the next part. 4 5 John Quinn: McGrew Rice. 6 7 McGrew Rice: As Russ knows, and this might be towards Sam and the people that 8 are in charge, but, because our region is so large, our regional 9 person, Andrew, has a hard time reaching out to the other, Guam, Samoa, American Samoa, areas, and so, basically, it's like it's a 10 budget thing, for finance, and one of the things that came up in our 11 12 meeting was to be able to give -- Because our region, being so big, 13 a little more access to budgeting, so he can be able to go to these 14 other places and talk to the recreational people and stuff. Anyway, 15 that was one of the big things that came up in our meeting. 16 17 Anybody else at this stage? Phil Anderson. John Quinn: 18 19 Phil Anderson: Thanks, Mr. Chair, and thanks, Russ. You mentioned that you 20 wanted to keep these meetings small, and I was wondering if you 21 invited any state participation in these meetings. 22 23 Russel Dunn: The meetings consisted primarily of fishermen, recreational 24 fishermen, but we had participants from most, if not all, of the councils. We invited the recreational council member seats to 25 them, as well as -- I can go back and check, but I know the state 26 27 folks participated in a number of them. They were at California, 28 they were in Newport, Oregon, and Alaska. Offhand, I can't remember where else they were, but we had a number of state 29 30 participants at them. 31 32 Phil Anderson: I know trying to canvass the entire country has got to be tough 33 with holding public meetings. The closest one to Washington was 34 about a four-and-a-half-hour drive, and there's no airplane 35 opportunities going into Newport, Oregon. 36 37 I guess I would just offer a perspective that I know one of the objectives was to build partnerships, and I know that is in reference 38 to the recreational community and partnerships between National 39 40 Marine Fisheries Service and the recreational community. I can't 41 speak for the rest of the nation, but I can tell you that, on the West 42 Coast, when it comes to recreational fisheries, the partnership 43 extends to other entities. 44 45 The partnerships is from the recreational community, National Marine Fisheries Service, and the states. When I think about the 46

1 state activity relative to recreational fisheries in Washington, from 2 be it salmon, halibut, groundfish, and we do the catch monitoring 3 and collect biological information and coordinate tag sampling, enforcement, licensing, all of those things, and I just would offer 4 5 the perspective that this -- Between the councils and the states and 6 National Marine Fisheries Service and the recreational community, 7 those are the four legs of this partnership. 8 9 I think, when you have meetings to ascertain some of the information that you are looking for that doesn't adequately 10 recognize those four legs, it creates a void, and so I think the 11 12 partnership between those four entities, in terms of promoting 13 healthy recreational fisheries, is really important. When we're having conversations about issues associated with the recreational 14 fisheries and talking about ways we can address those, all four of 15 those entities need to be in the room. 16 17 18 Russel Dunn: Yes, and we held -- Last time we held this similar set of meetings 19 was 2013, and we held it in Seattle, and so this time we went down 20 the road to Newport, but point taken. 21 22 John Quinn: Any other questions at this time? Chris Moore. 23 24 Chris Moore: Russ, I just have a quick question. What happened, or was this 25 topic discussed at the Northeast Regional roundtable, the topic being governance, like who is in charge of recreational fisheries 26 27 and who develops regulations and how does it work with the 28 states? 29 30 Russel Dunn: We began the one down in New Jersey with this sort of discussion 31 of the federal management structure, we'll say, but I would say that, rapidly, the participants expressed interest in moving on to 32 33 other topics of which they were more interested, and it wasn't so 34 gentle, we'll say that. 35 36 Anybody else? Seeing none, next portion of your presentation. John Quinn: 37 38 Russel Dunn: Okay. This next part is very brief. You have all heard, many, 39 many times in many places, the recreational community talk about 40 the need for alternative management or management approaches 41 that can potentially increase stability and predictability. 42 43 One of the issues was, when we would ask them what do you 44 mean, tell us what you mean by that, they would get wide-eyed and 45 say, well, we're not really sure, and so we said, well, okay, we don't know what you mean, and so you need to figure it out and 46

 then come back and talk.

To help facilitate that process, we provided a matching grant to TRCP to help host a workshop. We didn't host it, but we provided the funds, and so TRCP teamed up with ASA and the State of Florida to host a discussion on alternative management. NOAA was part of that discussion, and I think we had about eleven staff there, and I think Andy Strelcheck went, where it was really sort of a brainstorming session on potential alternative approaches to management.

They brought in terrestrial folks, and they brought in a lot of state folks, as you can see, and this is just a smattering of the organizations that were at that first meeting. This isn't names endorsing the report.

They then held a second meeting, which they distilled that information down. They brought in some conservation organizations, and they brought in Hill staff, to try and narrow down that discussion into a set of what they felt were useable recommendations, and they just recently put forward a report, which actually there's about fifty copies that they sent up, and they're out on the table out there.

This document, because I'm talking about it, it should in no way be seen as NOAA endorsing it. We didn't write it, but they were interested in how to socialize this document with the federal system. They were interested in speaking here, and there was a decision made not to have them come speak, and so they asked if I would touch on this, and I said, yes, sure.

Basically, what their document does is it touches on these seven recommendations out there. They have really tried to put it forward as a menu of options which they would like to see considered at some level, and so harvest rates and management, obviously it's regulations being set by determining the proportion of fish harvested from a given stock.

Distance-based, it sets catch limits either at a max distance from shore or a given distance from shore or based on depth, a maximum depth. Harvest tags, they are interested, in this paper, mostly in looking at it in terms of application in very low ACL fisheries. Improve angler harvest data, I don't really see that, frankly, as alternative management, but that's included in here.

Release mortality reduction, their perspective there is, if we can

John Quinn:

Cisco Werner:

work to improve our estimates and reduce mortality, where feasible, if that is then fed back into the science and management loop, as it was out on the West Coast, there is the potential that it could allow additional fishing.

Conservation equivalency is a tool that is used frequently with the Atlantic States Marine Fisheries Commission, and it really gives a lot of flexibility, at least in that case, to the states, to meet the conservation goals, and then there is interest in reevaluating OY, and the perspective there is essentially, while maximizing yield might be wholly appropriate in the commercial fisheries, in some recreational fisheries, you may get a better, a more optimum, yield by leaving some fish in the water and having higher encounter rates.

I guess what I would say is there is papers out there, and, if you have interest in following up on discussions on this, the best thing to do is to contact Chris Macaluso at TRCP or Mike Leonard at ASA, and I can put you in touch, or your staff in touch, with those folks. That brings me to the end.

Thank you very much. Any quick questions of Russ on this portion of his presentation? Seeing none, we'll move on. Thank you very much, Russ. We appreciate it. We'll move on back to Cisco Werner for the next portion of this presentation.

Thanks very much. I guess, following up on Gregg's introduction, I will just speak briefly to the topic of the alternative ACL tracking methodologies and, just briefly, to recap, there was a request from the South Atlantic Fishery Management Council that MRIP staff work with the Southeast Fisheries Science Center to evaluate alternative estimation methods for rare events that would improve the precision of catch statistics, and therefore allow for a better ACL tracking.

Again, just recapping, these rare encounters, because of the poor precision of the rarity of the events, introduce problems in the estimates from MRIP, again based because of the small effective sample sizes, and so, in October of 2015, the South Atlantic Fishery Management Council SSC received presentations from the Office of Science and Technology, and, at that point, we outlined a number of possible alternative approaches to estimations that could be considered that would then, in turn, improve the statistical precision of these catch estimates that have these rare events.

Where we stand, to be very brief, is that Dr. Bonnie Ponwith, who

#### Page 191 of 331

1 is the Southeast Fisheries Science Center Director, is leading the 2 coordination of a joint, and by joint, it's the Southeast Fisheries 3 Science Center, the Southeast Regional Office, the Office of Science and Technology, and both the Gulf and South Atlantic 4 5 Councils, in an effort to plan a workshop in early FY18 that would 6 consider these alternative approaches for catch estimation and 7 fishery management options, to address this concern with the rare-8 even species. 9 10 Number one, there is this workshop that's in the planning for FY18, and the second point had to do with the involvement of the 11 12 MRIP staff, and I will just say that the Office of Science and 13 Technology will participate in the planning of that workshop, and we will send the appropriate staff to participate, including funding 14 15 for their participation. 16 17 I think the requests from the South Atlantic Council are both 18 addressed, and I'm not sure, Gregg, if you needed more 19 information, but those are two items that we wanted to report on, 20 that the workshop is in the process of being planned and you will 21 have full participation of the Office of Science and Technology MRIP staff in it. 22 23 24 John Quinn: Okay. Any questions of Cisco? Chris Moore. 25 26 Chris Moore: Gregg or Cisco, is the workshop that you talked about the same 27 one that he is talking about, or are those different workshops? 28 29 Gregg Waugh: No, I think they're different workshops. I think we have a little 30 confusion that we're trying to get resolved, because we're planning 31 on hosting a workshop in November with the SSC, and certainly 32 working with MRIP and Bonnie, and we had a little bit of 33 discussion on a SEDAR Steering Committee call, but we're 34 following up with Bonnie, and we will be resolving this at our June 35 council meeting. 36 37 John Quinn: Chris Moore. 38 39 Chris Moore: Just to follow up, Cisco, and so your workshop would follow this 40 workshop or -- I'm just wondering how the Mid-Atlantic Council might get involved, because we are going to send an SSC person to 41 42 Gregg's workshop, and, based on what you said today, your 43 workshop sounds pretty interesting as well, and certainly it would 44 have application to the Mid-Atlantic Council recreational species. 45 46 Cisco Werner: Since the workshop is in planning, I think this would be the right

1 time to talk to Bonnie and everybody else involved, to make sure 2 that -- To include the Mid-Atlantic participation in the workshop as 3 well. I think, since Bonnie is currently sort of spearheading it, I think the approach would be to approach Bonnie at this point. 4 5 6 John Quinn: Gregg Waugh. 7 8 Gregg Waugh: Thank you, Mr. Chairman. Cisco, assuming we go ahead with this 9 workshop in November, I'm assuming that the MRIP folks would 10 attend that meeting and do some work ahead of that meeting as 11 well? 12 13 Cisco Werner: Yes, I can confirm that. They're in with both feet, and let me put it 14 that way. 15 Thank you. 16 Gregg Waugh: 17 18 Any other questions of Cisco? Seeing none, we'll move on to the John Quinn: 19 final portion of this presentation with Andy Strelcheck. 20 21 Andy Strelcheck: I don't have a presentation, but, just to give people background on 22 this issue, for many of you that use MRIP, you know that they post 23 their landings statistics on the MRIP website. Those are done on a 24 wave-by-wave basis, and produced in both numbers and pounds of 25 fish. 26 27 Gregg Waugh and the South Atlantic Council have expressed some 28 concerns, because, when we generate statistics, at least in the 29 Southeast Region, we use a different methodology for converting 30 numbers of fish to pounds of fish that uses a greater sample size 31 than what is used currently for MRIP. 32 33 We also take into consideration differences in jurisdictional 34 boundaries for the species that we manage. MRIP, on the other 35 hand, splits the South Atlantic and Gulf of Mexico at the Miami-Dade County border, which is near the Florida Keys, and so there 36 37 is no tracking of the jurisdictional boundaries as we manage the stocks. It's simply the sum of landings for the Gulf and South 38 39 Atlantic. 40 41 Also, at the Regional Office level, when we're working with our 42 Science Center, we're cumulatively summing not only the MRIP 43 landings that are generated, but landings from other state surveys, 44 as well as our headboat program, and so it's a summation of 45 multiple surveys and data collection programs, and so Gregg has expressed, obviously, some concerns, along with the South 46

#### **Duval, Michelle**

**From:** Duval, Michelle

**Sent:** Wednesday, August 17, 2016 9:11 AM

**To:** Bonnie Ponwith - NOAA Federal; Richard Merrick

Cc: Dave Van Voorhees - NOAA Federal; Gordon Colvin - NOAA Affiliate; Gregg Waugh

**Subject:** RE: application of alternate estimation methods for cobia

Richard -- Many thanks for the clarification(s) on process, and likewise to Bonnie for highlighting potential tradeoffs of different approaches. I will touch base w/Council staff to get some feedback on scheduling a followup to the initial discussion the SSC had on this topic last October (w/the addition of consideration of the approach developed by MRIP for issues of low sample size).

Thank you for the robust discussion – much appreciated.

From: Bonnie Ponwith - NOAA Federal [mailto:bonnie.ponwith@noaa.gov]

**Sent:** Wednesday, August 17, 2016 6:45 AM **To:** Richard Merrick < richard.merrick@noaa.gov>

Cc: Duval, Michelle <michelle.duval@ncdenr.gov>; Dave Van Voorhees - NOAA Federal <dave.van.voorhees@noaa.gov>;

Gordon Colvin - NOAA Affiliate <gordon.colvin@noaa.gov>; Gregg Waugh <gregg.waugh@safmc.net>

Subject: Re: application of alternate estimation methods for cobia

Hi Michelle and all -

Joining in here. We can look at the methodology that the MRIP folks developed to deal with the special cases they encountered. We can also talk more about how well cobia fits the criteria for analysis using this method and whether it is appropriate to turn to using this method, in the case that it doesn't fit the criteria. We do need to be very careful in considering this as we would gain precision, but at the expense of spatial and especially temporal resolution in the data.

Richard is right, another consideration is smoothing or using averages to avoid managing to a dynamic (spiky) estimation series. We can get the assessment folks and the SSC together to work on the population implications of that approach to help advise the Council on options. We've talked about approaches like these in the SAFMC in the past and can look at it again for this case. We've discovered in those conversations that smoothing can help stabilize ACLs but must also be weighed carefully.

Michelle, I look forward to helping evaluate options available for taking a closer look at the cobia landings.

**Bonnie** 

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Bonnie J. Ponwith, Ph.D., Dir. Southeast Fisheries Science Center NOAA Fisheries 305-361-4264

On Wed, Aug 17, 2016 at 6:26 AM, Richard Merrick <<u>richard.merrick@noaa.gov</u>> wrote:

Michelle

#### SEDAR Tab 4-2B

From my simple perspective, it is MRIP's task to provide data, and in this case the BSIA on the catch of a specific species in a specific area at a specific time.

How these data are used is a different issue. Deciding on an analytic approach to use of these data (e.g., catch averaging) seems to be best handled by a combination of Center assessment staff an your SSCs. I suggest the former because there are implications to the assessment. MRIP can help here, but they shouldn't have the lead.

How the resulting analytic approach is applied is then a management issue, which seems to be best handled by the Council working with SERO. The latter need to be involved to ensure the method is legit under Magnuson.

Finally, this issue seems reminiscent of the discussion we have been having about smoothing quota advice to avoid ups and downs between years. So Rick Methot might be a good one for the SSC to consult.

#### Richard

On Tue, Aug 16, 2016 at 6:18 PM, Duval, Michelle < michelle.duval@ncdenr.gov > wrote:

Hi Richard,

I just want to make sure I am being clear about the intent behind asking about alternative methods to increase the precision in harvest estimates for species like cobia – which is tracking the ACLs on an <u>annual</u> basis using annual or multi-year estimates of catch from the intercept data (rather than standard MRIP by wave) to determine whether or not the ACL has been exceeded, and therefore whether or not an AM has been triggered. Having greater precision around those estimates of harvest (via one of the approaches presented by John Foster last fall), would provide greater certainty to the public that an AM has been appropriately triggered.

So if a determination of which of those approaches is most appropriate for cobia (or our deepwater species) is a decision that can be evaluated at the regional level with the SSC and the Science Center, that's good to know. I was under the assumption that use of these approaches would require some signoff/approval, or development of "rules" for their application by S&T, (similar to use of the alternative approach developed as a result of the bluefish and black sea bass outliers).

m.

From: Richard Merrick [mailto:richard.merrick@noaa.gov]

Sent: Tuesday, August 16, 2016 5:50 PM

To: Duval, Michelle <michelle.duval@ncdenr.gov>

**Cc:** Dave Van Voorhees - NOAA Federal < <a href="mailto:dave.van.voorhees@noaa.gov">dave.van.voorhees@noaa.gov">dave.van.voorhees@noaa.gov</a>; Gordon Colvin - NOAA Affiliate < <a href="mailto:gordon.colvin@noaa.gov">gordon.colvin@noaa.gov</a>; Gregg Waugh < <a href="mailto:gregg.waugh@safmc.net">gregg.waugh@safmc.net</a>); Bonnie Ponwith - NOAA Federal < <a href="mailto:bonnie.ponwith@noaa.gov">bonnie.ponwith@noaa.gov</a>)

Subject: Re: application of alternate estimation methods for cobia

# SEDAR Tab 4-2B Michelle (and Bonnie)

In my simple view of the world, it seems like there is hand off of the landings data from MRIP to the stock assessment folks that occurs once the MRIP folks are comfortable with the data quality. At that point, the stock assessment scientists can proceed with alternative ways of using the data that meet the management situation. For example, averaging the landings for a period over several years seems to me to be an analytical issue that would be dealt with post-MRIP. This post-hoc analysis could be done by the Center, by the SSC, or by some combination.

**RIchard** 

On Tue, Aug 16, 2016 at 10:06 AM, Duval, Michelle <michelle.duval@ncdenr.gov> wrote:

I would very much appreciate that, Richard – I know there may be regional issues (e.g., the recreational season for snowy grouper and blueline tilefish is waves 4/5 only) that would require different approaches for different species, but cobia is very much at the top of the list.

I will check in w/John Carmichael to see if there is room for this on the upcoming SSC agenda for October.

Many thanks,

m.

**From:** Richard Merrick [mailto:richard.merrick@noaa.gov]

**Sent:** Monday, August 15, 2016 5:58 PM

To: Duval, Michelle <michelle.duval@ncdenr.gov>

Cc: Dave Van Voorhees - NOAA Federal <dave.van.voorhees@noaa.gov>; Gordon Colvin - NOAA Affiliate

<gordon.colvin@noaa.gov>; Gregg Waugh <gregg.waugh@safmc.net>
Subject: Re: application of alternate estimation methods for cobia

Michelle

Seems like that would be a good one for your SSC to talk with the Center about. I think it makes sense to discuss this, so would you like me to contact Bonnie?

-	٠					-
R	1	C	h	2	r	d

On Mon, Aug 15, 2016 at 3:26 PM, Duval, Michelle < michelle.duval@ncdenr.gov > wrote:

Many thanks for the quick response, Richard – I know you are busy. Gordon checked on the cobia estimates for me, and they changed (reduced) only by  $\sim$ 28,000 lbs as a result of the revised estimates applied to VA and northward.

What we are most interested in is a different "standard" approach for cobia that would use mean annual or mean multiyear (3 yrs) estimates of catch with annual estimates of effort (rather than the standard summed-by-wave MRIP estimates), particularly given that the accountability measures that we have (and those we are looking to possibly use) are all post-season – they shorten seasons, boat limits, ACLs – the year following an overage.

If we are not using in-season AMs, can we request use of an alternate approach to increase precision since we are only looking at harvest on an annual level to determine if an AM has been triggered?

Many thanks,

m.

From: Richard Merrick [mailto:richard.merrick@noaa.gov]

Sent: Monday, August 15, 2016 2:32 PM

To: Duval, Michelle <michelle.duval@ncdenr.gov>

**Cc:** Dave Van Voorhees - NOAA Federal < <u>dave.van.voorhees@noaa.gov</u>>; Gordon Colvin - NOAA Affiliate

<gordon.colvin@noaa.gov>; Gregg Waugh <gregg.waugh@safmc.net>
Subject: Re: application of alternate estimation methods for cobia

#### Michelle

I think the MRIP folks checked all the recent data for other sectors that might need to use the alternate approach. But I don't think cobia was one of them. Dave please correct me if I am wrong.

#### SEDAR Tab 4-2B

But I think we are open to o	other approaches	to estimating rec	catch, the	problem is	that it will	take a	while
to get them ready for use.							

Richard

On Mon, Aug 15, 2016 at 12:05 PM, Duval, Michelle <michelle.duval@ncdenr.gov> wrote:

Richard,

We just finished three public hearings last week (VA Beach, Morehead City NC, Kitty Hawk NC) for the SAFMC's cobia framework amendment pertaining to adjustment of management measures/AMs. The intent is to hopefully mitigate or prevent future untimely closures as we have had for this year, based on 2015 estimates of Atlantic cobia (GA-NY) harvest. All three were long and difficult.

The frustration and mistrust of the 2015 recreational harvest estimates of Atlantic cobia, and of MRIP in general, continues to escalate (particularly among charter captains). We spent an inordinate amount of time at all hearings fielding questions about the survey design, the numbers of intercepts used to generate the 2015 estimates, the high PSEs associated w/the estimates, public access to the raw data, and any number of unfavorable comments.

Here in NC, this criticism has reached the point of open antagonism of DMF staff by charter captains at Outer Banks locations as they attempt to survey anglers coming off vessels, and an open "strike" by a particular marina against allowing their captains/anglers to participate in the survey (despite efforts by staff to be as unobtrusive and polite as possible).

Given the recent efforts to dig into the black sea bass and bluefish harvest estimates, and application of alternative estimation methods, I was hoping (begging) that consideration of some of these techniques could be considered for cobia. (I have recently mentioned this to Dave and Gordon, so am cc'ing them here). Dave and his staff gave a great presentation to our SSC last fall regarding some of the custom estimation techniques and possible application to our rarely-intercepted species (snowy grouper, blueline tilefish, hogfish), and Gordon mentioned the development of "ground rules" for use of the bluefish/BSB approach.

We are in dire need of some scientifically defensible ground rules for use of these approaches in the South Atlantic – cobia is currently the most sensitive and visible example, but the deepwater species are still in need of attention. While not always "rare" in intercepts, the pulse nature of the cobia fishery certainly poses a challenge to development of estimates w/a high degree of precision. I expect stakeholders will continue to keep this issue front and center; any input is much appreciated.

Many thanks,

m.

#### **Michelle Duval**

**Executive Assistant for Councils** 

Division of Marine Fisheries

Department of Environmental Quality

252 808 8011 office (direct)

252 726 7021 main

michelle.duval@ncdenr.gov

P.O. Box 769

(3441 Arendell Street)

Morehead City, NC 28557



Email correspondence to and from this address is subject to the

North Carolina Public Records Law and may be disclosed to third parties.

Director, Scientific Programs and Chief Science Advisor

SEDAR Tab 4-2B NOAA Fisheries

1315 East West Highway

Silver Spring, MD 20910

(301) 427-8000

--

Richard

Director, Scientific Programs and Chief Science Advisor NOAA Fisheries 1315 East West Highway Silver Spring, MD 20910 (301) 427-8000