Atlantic States Marine Fisheries Commission

South Atlantic State/Federal Fisheries Management Board

October 20, 2020
1:15 – 4:15 p.m.
Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order *(L. Fegley)* 1:15 p.m.

2. Board Consent 1:15 p.m.
   - Approval of Agenda
   - Approval of Proceedings from August 2020

3. Public Comment 1:25 p.m.

4. Atlantic Cobia Addendum I to Amendment 1 for Final Approval *(T. Kerns)* **Final Action** 1:45 p.m.
   - Review Options and Public Comment
   - Consider Final Approval of Addendum I to Amendment 1

5. Review 2020 Traffic Light Analyses for Atlantic Croaker and Spot 2:45 p.m.
   - Review 2020 Reports (*D. Franco and H. Rickabaugh)*
   - Review Management Response Requirements from Addendum III *(S. Lewis)*

6. Consider Fishery Management Plan Review and State Compliance for 2019 Fishing Year for Red Drum *(S. Lewis)* **Action** 4:00 p.m.

7. Other Business/Adjourn 4:15 p.m.

The meeting will be held via webinar, click here for details.
Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEETING OVERVIEW

South Atlantic State/Federal Fisheries Management Board Meeting
Tuesday, October 20, 2020
1:15 – 4:15 p.m.
Webinar

Chair: Lynn Fegley (MD) Assumed Chairmanship: 02/20	Technical Committee (TC) Chairs: Black Drum: Harry Rickabaugh (MD) Cobia: Angela Giuliano (MD) Atlantic Croaker: Dawn Franco (GA) Red Drum: Lee Paramore (NC) Spot: Harry Rickabaugh (MD)	Law Enforcement Committee Representative: Capt. Chris Hodge (GA)
Vice Chair: Vacant	Advisory Panel Chair: Craig Freeman (VA)	Previous Board Meeting: August 3, 2020
Voting Members: NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS, SAFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 3, 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Atlantic Cobia Addendum I to Amendments 1 for Final Approval (1:45-2:45 p.m.) Final Action

Background

- In February 2020, the Board initiated Draft Addendum I to Amendment 1 to consider reflecting the updated MRIP data (used in SEDAR 58) in allocation percentages, reconsider *de minimis* measures, and update the method for calculating the commercial trigger so that it can be calculated in scenarios when commercial harvest has not approached the quota. The Cobia Plan Development Team developed Draft Addendum I with management options for each of these issues.
- The Board approved draft Addendum I for public comment in August 2020. Public hearings were held via webinar in September and early October. (**Briefing Materials**).

Presentations

- Review of options and public comment summary (**Supplemental Materials)** by T. Kerns

Board actions for consideration at this meeting

- Review and consider final approval of Draft Addendum I.

5. Review 2019 Traffic Light Analyses for Atlantic Croaker and Spot (2:45-4:00 p.m.)

Background

- The Traffic Light Analyses is updated annually for both spot and Atlantic croaker to asses changes to the population in non-benchmark stock assessment years.
- Addendum III (2020) of the Atlantic Croaker FMP and Addendum III (2020) of the Spot FMP of the Spot FMP incorporated region specific indices, established the reference points for all surveys, changed the management trigger for Spot and Atlantic Croaker, and outlined management responses if management is triggered.
- The Spot and Croaker Technical Committees ran the TLA for each species with the additional year's data.

Presentations

- Review of 2020 Traffic Light Analyses for Atlantic Croaker and Spot by D. Franco and H. Rickabaugh.
- Overview of management response from Addendum III by S. Lewis

6. Consider Approval of 2019 Fishery Management Plan Reviews and Compliance for Red Drum (4:00-4:15 p.m.) Action

Background

- Red Drum state compliance reports are due on July 1. The Red Drum Plan Review Team (PRT) has reviewed state reports and compiled the annual FMP Review. New Jersey and Delaware have requested *de minimis* status.

Presentations

- 2020 FMP Reviews for Red Drum by S. Lewis.

Board actions for consideration at this meeting

- Consider approval of the 2020 FMP Review, state compliance, and New Jersey and Delaware's *de minimis* requests for Red Drum.

7. Other Business/Adjourn

South Atlantic Board

Activity level: High

Committee Overlap Score: Moderate (American Eel TC, Bluefish TC, Menhaden TC, Weakfish TC)

Committee Task List

- Red Drum SAS – Conduct Red Drum Simulation Assessment
- Cobia TC – Evaluate state implementation plans for Board approval prior to 2021 fishing season
- Atlantic Croaker TC – July 1: Compliance Reports Due
- Red Drum TC – July 1: Compliance Reports Due
- Cobia TC – July 1: Compliance Reports Due
- Atlantic Croaker TC – Conduct 2020 Traffic Light Approach analysis for Annual Meeting
- Spot TC – Conduct 2020 Traffic Light Approach analysis for Annual Meeting
- Black Drum TC – August 1: Compliance Reports Due
- Spotted Seatrout PRT – September 1: Compliance Reports Due
- Spanish Mackerel PRT – October 1: Compliance Reports Due
- Spot PRT – November 1: Compliance Reports Due

TC Members:

Atlantic Croaker: Dawn Franco (GA, Chair), Kristen Anstead (ASMFC), Savannah Lewis (ASMFC), Stacy VanMorter (NJ), Michael Greco (DE), Harry Rickabaugh (MD), Somers Smott (VA, Vice Chair), Morgan Paris (NC), Chris McDonough (SC), Joseph Munyandorero (FL)

Black Drum: Harry Rickabaugh (MD, Chair), Jeff Kipp (ASMFC), Savannah Lewis (ASMFC), Craig Tomlin (NJ), Jordan Zimmerman (DE), Ethan Simpson (VA), Chris Stewart (NC), Chris McDonough (SC), Ryan Harrell (GA), Liz Herdter Smith (FL), Shanae Allen (FL)

Cobia: Angela Giuliano (MD, Chair), Savannah Lewis (ASMFC), Mike Auriemma (NJ), Olivia Phillips (VA, Vice Chair), Somers Smott (VA), Anne Markwith (NC), Justin Yost (SC), Chris Kalinowsky (GA), Christina Wiegand (SAMFC), Michael Larkin (SERO)

Red Drum: Lee Paramore (NC, Chair), Jeff Kipp (ASMFC), Savannah Lewis (ASMFC), Alissa Wilson (NJ), Michael Greco (DE), Robert Bourdon (MD), Ethan Simpson (VA, Vice Chair), Joey Ballenger (SC), Chris Kalinowsky (GA), Roger Pugliese (SAFMC)

Spanish Mackerel (PRT): Savannah Lewis (ASMFC), McLean Seward (NC), BJ Hilton (GA), Chris Swanson (FL), Christina Wiegand (SAFMC), John Hadley (SAFMC)

Spot: Harry Rickabaugh (MD, Chair), Jeff Kipp (ASMFC), Savannah Lewis (ASMFC), Stacy VanMorter (NJ), Michael Greco (DE), Somers Smott (VA), Morgan Paris (NC), Chris McDonough (SC), BJ Hilton (GA)
Spotted Seatrout (PRT): Savannah Lewis (ASMFC), Douglas Lipton (MD), Tracey Bauer (NC), Joey Ballenger (SC), Chris Kalinowsky (GA)

SAS Members:
Red Drum: Joey Ballenger (SC, Chair), Jeff Kipp (ASMFC), Michael Schmidtke (ASMFC), Angela Giuliano (MD), Lee Paramore (NC), Thom Teears (NC), Jared Flowers (GA), Chris Swanson (FL)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD

Webinar
August 3, 2020

Draft Proceedings of the South Atlantic State/Federal Fisheries Management Board Webinar
August 2020

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ATTENDANCE

Board Members

Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Bill Anderson, MD (AA)
Lynn Fegley, MD, Administrative proxy (Chair)
Phil Langley, MD, proxy for Del. Stein (LA)
Pat Geer, VA, proxy for S. Bowman (AA)
Sen. Monty Mason, VA (LA)
Steve Murphey, NC (AA)
Chris Batsavage, NC, Administrative proxy
Jerry Mannen, NC (GA)
Mel Bell, SC, proxy for P. Maier (AA)
Malcolm Rhodes, SC (GA)
Sen. Ronnie Cromer, SC (LA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Jim Estes, FL, proxy for J. McCawley (AA)
Rep. Thad Altman, FL (LA)
Marty Gary, PRFC
John Carmichael, SAFMC
Jack McGovern, NMFS
Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Angela Giuliano, Cobia Technical Committee Chair
Joey Ballenger, Red Drum SAS Chair

Staff

Robert Beal
Toni Kerns
Maya Drzewicki
Kristen Anstead
Max Appelman
Tina Berger
Lisa Havel
Chris Jacobs
Jeff Kipp
Dustin Colsen Leaning
Joe Myers
Mike Rinaldi
Kirby Rootes-Murdy
Julie Defilippi Simpson
Mike Schmidtke
Caitlin Starks
Deke Tompkins
Geoff White

Guests

Pat Augustine, Coram, NY
Michael Auriemma, NJ DEP
Peter Benoit, Ofc. of Sen. King
Ellen Bolen, VMRC
David Borden, RI (GA)
Rob Bourdon, MD DNR
William Brantley, NC DENR
Jeff Brust, NJ DEP
Heather Corbett, NJ DEP
Morgan Corey, NOAA
Tony Friedrich, SGA
Lewis Gillingham, VMRC
Willy Goldsmith, SGA
Shepherd Grimes, NOAA
Kyle Hoffman, SC DNR
Rusty Hudson
Desmond Kahn
Ray Kane, MA (GA)
Adam Kenyon, VMRC
Kathy Knowlton, GA DNR
Alexa Kretsch, VMRC
Mike Luisi, MD DNR
Dee Lupton NC DENR
Chip Lynch, NOAA
Shanna Madsen, VMRC
Casey Marker
Ann Markwith, NC DENR
Genine McClair, MD DNR
Jack McGovern, NOAA
Steve Meyers. Williamsburg, VA
Ken Neill, Yorktown, VA
Derek Orner, NOAA
Olivia Phillips, VMRC
Kelly Place, Williamsburg, VA
Jill Ramsey, VMRC
Tara Scott, NOAA
David Sikorski, Baltimore, MD
David Stormer
Mike Waine, ASA
Alissa Wilson, NJ DEP
Chris Wright, NOAA
Erik Zlokovitz, MD DNR

The South Atlantic State/Federal Fisheries Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Monday, August 3, 2020, and was called to order at 1:30 p.m. by Chairwoman Lynn Fegley.

CALL TO ORDER

CHAIRWOMAN LYNN FEGLEY: Welcome to the South Atlantic Board everyone. Thank you, Cody and team for getting everybody organized and sound checked. Okay, so we have a pretty full agenda. We have three action items to get done today, and we have until 3:45 to do it. Hopefully all will go smoothly.

APPROVAL OF AGENDA

CHAIRWOMAN FEGLEY: A first order of business is Board Consent, with Approval of the Agenda. With that I wanted to forward to the Board that the fourth action item listed on the agenda was to elect a Vice-Chair.

However, you may be aware that there is an item before the Executive Committee this meeting. It is a proposal to divide this Board in two. The proposal is to alter the agenda to remove that item, until a final decision is made by the Policy Board as to whether we're going to remain as one Board or continue on as two. With that I'll ask if anyone else has any need to modify the agenda. If you do, please raise your hand.

MS. KERNS: I don't see any hands, Lynn.

CHAIRWOMAN FEGLEY: Okay, and I am going to ask to approve the agenda by consent. If anybody does not approve of the agenda, please raise your hand.

MS. KERNS: I don't see any hands.

APPROVAL OF MEETING SUMMARY

CHAIRWOMAN FEGLEY: Great. Hoping everybody has had a chance to review the meeting summary from February. That was a meeting summary the meeting did not record, so it was not a transcript. Does anybody have any modifications that they desire to put into the February meeting summary? If so, raise your hands.

MS. KERNS: I don't see any hands raised.

CHAIRWOMAN FEGLEY: Okay, and is there any opposition to approval of the Meeting Summary?

MS. KERNS: I don't see any opposition.

PUBLIC COMMENT

CHAIRWOMAN FEGLEY: Before we move to the public comment. I think I was remiss. I should just introduce myself a little better. My name is Lynn Fegley. I am the Administrative Commissioner. I proxy for my boss Bill Andrews for representing the state of Maryland. That is that and next, is there anybody out there who has public comment? If you do, please raise your hand.

MS. KERNS: If any members of the public don't know how to raise your hand, you click on the little button that is shaped like a hand, and it will raise your hand. If you're having trouble with that you could also send us a chat or a question. I don't see any hand raised, Lynn.

CONSIDER DRAFT ADDENDUM I TO AMENDMENT 1 TO THE COBIA INTERSTATE FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

CHAIRWOMAN FEGLEY: All right, seeing none. The first action item today, and just to remind everybody. I will be looking for a motion at the end of this discussion, and it is to consider Draft Addendum I to Amendment 1 for approval for public comment. This is the point where we send it out to comment for hearings to happen over the next couple months. I believe that Mike Schmidtke is going to take us through the Draft Addendum.

DR. MIKE SCHMIDTKE: I'm going to go ahead and make myself presenter. Do you see my lead screen for the Draft Addendum I presentation?

CHAIRWOMAN FEGLEY: I can see it, Mike.

DR. SCHMIDTKE: Today we're going to be going through Draft Addendum I to Amendment 1 for Cobia FMP, with consideration for public comment. This Draft Addendum addresses four different issues, ranging from recreational and commercial allocations, and adjustments to commercial trigger, calculation method, and then consideration of some alternative *de minimis* measures.

As I go through the presentation today, first I'm going to go through a bit of an overview of the timeline that has brought us to this point. Then I'll give a brief introduction of the four issues that we'll be going through, and then go through the issues one-by-one. As I go through each of those issues, I'll present a slide or two of background information that is relevant to that specific issue, then present the management options that are being proposed by the Plan Development Team.

Then I'll pause after presenting each of those sets of options for some issue-specific questions, comments, and discussion by the Board if you all have any alterations to those. After going through all four of those issues, then I'll also pause for some overall questions, comments, discussions, if there is something that any of the Board members want to talk about from a larger perspective related to the addendum document.

In regards to the timeline. You all will remember after the last Board meeting in February of this year, the Board initiated this Draft Addendum. Since then the Plan Development Team has been working on the document. We had a little bit of a delay, due to COVID-19 and travel restrictions and all of that. It got pushed from the spring meeting back to the summer meeting, where we are now.

But now we're bringing it up and having the Board consider Draft Addendum I for approval for public comment. If approved for public comment today, then there would be a time period for written comments as well as public hearings, in between now and the October meeting, and the October meeting would be when the Board would come back to consider the document for final approval. Looking back to that February meeting. Among many things that happened in that meeting, it was a long one, but one of the things that happened was SEDAR 58 stock assessment for Atlantic cobia was presented to the Board.

This stock assessment was the first for cobia to incorporate the new MRIP recreational catch estimates, based on the Mail-Based Fishing Effort Survey, and transitioning from the Coastal Household Telephone Survey. If you all will remember, those estimates were significantly higher using the new FES estimates, rather than the telephone estimates.

That led to larger population estimates and as you'll see in that second bullet point, a larger quota than what we were previously working under. At the February meeting the Board also specified a new total annual harvest quota of about 80,000 fish, and this was based off of the projections from the SEDAR 58 model.

Under Amendment 1 allocations this total quota is allocated 92 percent to the recreational fishery, and 8 percent to the commercial fishery. A reminder about Amendment 1, and how we manage the recreational fishery. There was a bit of a change in Amendment 1, where the Board decided to move from managing the recreational fishery in terms of a poundage, and moving to numbers of fish.

You'll notice that those different units are reflected throughout the presentation. The previous quotas that had been set were total quota of 670,000 pounds, with 620,000 for the recreational, and 50,000 to the commercial. With such a significant increase to the quota, one of the big questions that came out of that discussion was whether the quota increase that was being seen was only due to the MRIP calibration, and in effect leading to a de facto reallocation of the fishery in the direction of the commercial side.

In response to that question, among a few others, in follow up the Board initiated Draft Addendum I, and one of the requests that was made was for options for a reduced commercial quota percentage that would offset impacts of the increased recreational catch estimates, and the PDT attempted to address this request through Issue 1 in the options shown there.

The Board also requested in some of the follow up discussion's reconsideration of some of the *de minimis* measures that are used for cobia. Those are addressed in Issues 3 and 4, one for the commercial and one for the recreational side. Then after the Board meeting in February, one of the steps in the harvest specification process for cobia is that a commercial trigger is calculated, and that is used in any type of commercial closure that would occur within the season.

The Cobia Technical Committee would normally calculate this commercial trigger, and submit it for the Board's consideration and approval. However, when the Technical Committee attempted to do this using the methods described in Amendment 1, it was not able to be calculated due to the large increase in the commercial quota. There will be a little bit more discussion along those lines when I get to that issue, as well as later on when Angela presents the TC's recommendation. But there was a memo distributed from the TC describing this issue back in May. The Board, via e-mail consent, directed the Plan Development Team to include revising the method for calculating the commercial trigger into Draft Addendum I. It's a little bit out of order numerically, but that is addressed in Issue 2 of the document. Now I'll be moving into Issues 1 through 4, going through one-by-one, and starting off with Issue 1, which deals with the allocation.

The two really long equations that you see on the screen, and those are also in the Draft Addendum I document. Those are from the coastal migratory pelagic FMP from the South Atlantic Fishery Management Council. This is back when Atlantic cobia were being managed by the South Atlantic Fishery Management Council, and these are the equations that were used to come up with the 92 percent and 8 percent allocations that are used in the current fishery.

These percentages came from data that were from recreational harvest data from 2000 through 2008, with additional weight being put on harvest in 2006 through 2008. Obviously, the 92 percent and 8 percent resulted from that. When the PDT, when we got together and we were discussing what potential alternatives would be to the current allocation.

The first thing that we tried was just simply plugging in the recalibrated numbers, the new FES numbers from 2000 through 2008, and I came up with the result shown on the screen, about 2.5 percent for the commercial and 97.5 for the recreational. Now looking at how those played out into poundage and number of fish for those different sectors.

We did notice that on the commercial side if we were to just put those straight in as is then there would be a decrease, a slight decrease to the commercial quota. This would be happening at a time when the recreational quota is undergoing a significant increase, and there is also a stock that is not overfished and overfishing is not occurring.
In light of that information and where the quota has been recently, the PDT kind of started from the baseline that the increase to the recreational quota shouldn't lead to a decrease in the commercial, and that the options that the PDT would propose would allow at least 50,000 pounds for the commercial fishery.

Additionally, the PDT didn't want to get into trying to allocate by fractions of a percent, so for the baseline option we just rounded up that 2.6 to 3 percent, and that kind of put us over the threshold for that 50,000 pounds. You'll see that when we get to the management options. But once we put that in place then we kind of stepped up by single percentages for a couple of alternatives. We have options for 3 percent commercial allocation, 4 percent, and 5 percent.

After that decision really was made, just kind of being honest about the timeline. We got information from NOAA, excuse me MRIP specifically, addressing the questions that the Board had asked at the previous meeting. One of the questions was what would the 620,000-pound recreational quota look like if it were in FES units.

We've asked MRIP for that conversion, and I imagine they had quite a bit on their plate with COVID-19 and a lot of the restrictions from that. But we did get that information after we kind of formulated the options. What it ended up being is shown on your screen. It's shown as the 2019 quota, the FES approximation. One of the things to note about this, well there are a couple things. But one of them initially to note about this is this is not considered an official MRIP calibration conversion, because they weren't converting a harvest from one year, they were converting what we put forward as a quota.

In other instances where they calibrated the harvest, they had additional information, such as harvest by region and information about effort that went into the calibration. Whereas this we just gave them a number and they looked at the time period under which that quota was in place and they used. That information had to make some assumptions.

But, this is about what it would translate to is 1.36 million. When converting that poundage into number of fish using the same average weight that was considered when the current 2020 quotas were formed, which was the 2016 through '18 recreational average weight. That translates to about 41,000 fish.

That column on the right is somewhat of a translation of that old quota into new FES units. When reading this table, one other thing to note is that the top line in the recreational row. The top line that is not in parentheses are the units that would have impacted management, or hypothetically would have impacted management. Whereas the parentheses are the alternative converted units into either pound into fish or fish into pounds, about what those translate into.

The big takeaway from all this is that the increase to the quota does not seem to be solely due to the MRIP conversion. There does seem to be some increase to the actual number of fish that are available and allowable for harvest under the new 2020 quota. Where that comes into play. I talked about the timeline of how these options were developed.

But where that actually comes into play is that with the options that are presented here for Issue 1, there are a couple different backgrounds, and there is some level of numeric basis for a few of the different strategies that the Board could take going from here moving forward. Option A is status quo option, maintaining the 92 and 8 allocations that are in place right now.

Option B is kind of that baseline that the PDT worked off of, the lowest whole percentage that would allow at least 50,000 pounds of harvest. Then skipping Option C for the moment, down to Option D. What Option D ended up being, we found this from looking at that MRIP FES approximation is that is an option that is about as close as we're going to get with whole percentage numbers to a proportional increase on both sides of the fishery.

If you compare that FES number that 41,000 fish number up on the FES approximation to Option D, it is between an 80 and 90 percent increase, it's about 87 percent increase. Whereas, looking at the commercial quota going from 50,000 pounds up to 91,000 pounds is about an 82 percent increase. We're in a similar ballpark, and that is probably just because of the disparity in the amount allocated to one fishery or the other.

That is about as close as we would probably get to a proportional increase in both sides, both of them going up by about 85 or so percent. Then Option C, coming back to that. Option C is an intermediate option in between B and D, where there is increase

to both sectors of the fishery, but the recreational increase is larger than that of the commercial. Depending on what the Board wants to prioritize with the management of this species, I know there has definitely been some input when we spoke to the AP about these options. There was input from the AP that their impression, at least some of the members there.

Their impression was that cobia was being managed as a primarily recreational species, which is still accomplished in all of these options, as the recreational percentage is only going up. But there was some preference for Option B from some members of the AP there. Regardless, there are a few different strategies for the Board to consider. At this point I can pause and take questions if there are any, or hear any comments or discussion.

CHAIRWOMAN FEGLEY: Are there any questions for Mike on what he just presented?

MS. KERNS: I don't see any hands, Lynn.

CHAIRWOMAN FEGLEY: Okay, well I have one. I just wonder, I don't recall, Mike. That is actually really interesting information on Option D that that is sort of the proportional increase for both sectors. That is not explicitly stated in the Addendum right now, is it?

DR. SCHMIDTKE: It is not in the Addendum right now, and one of the reasons why is because somewhat of the timing with which we got it, and the timing of uploading the document. But also, because that is not a definitive MRIP calibration. That was something that I discussed with some of the MRIP staff was that it wasn't an official MRIP calibration.

It was an approximation that was provided to us at our request. That is one of the reasons why I would rather talk about it, you know speak about it here providing caveats. This is something that can be included, I would think in discussions following here at public hearings. But I don't know that it is a number that MRIP would feel comfortable putting into a document.

CHAIRWOMAN FEGLEY: Okay, understood. Thank you for that. Still no questions, correct?

MS. KERNS: Correct.

CHAIRWOMAN FEGLEY: All right, so we will move right along to the next section, Mike.

DR. SCHMIDTKE: Next moving to Issue 2, dealing with the commercial trigger. I talked about this a little bit, and you'll hear about this at least one more time from Angela. When the Cobia TC went into looking at the Amendment 1 method that method is the average number of days from the last three years for harvest to go from trigger percentage to the full non *de minimis* portion of the quota.

The trigger percentage is to be calculated to allow at least 30 days from the trigger to the quota. The problem that the TC ran into when trying to calculate that percentage was what if the harvest either doesn't reach the quota or the trigger, and this could be due to low harvest in a preceding time period before that trigger is calculated, or it could be due to a greatly increased quota, which was the case for the 2020 specification. The TC met and discussed this issue, and recommended an adjusted method. This was a method that is really in similar spirit to what was trying to be accomplished through Amendment 1, but is done in a more flexible way. What they've proposed, and it was in the memo that was circulated in I believe briefing materials that they would calculate the average daily harvest rate from the last five years.

They did change the time period from three to five years, and then calculating the trigger harvest level that would be the non *de minimis* quota, minus 30 times the average daily harvest rate, so the average daily harvest rate being about a days' worth of harvest, and they would be taking off 30

days' worth of harvest from the non *de minimis* quota.

Just reminding of the plan, non *de minimis* states are the only ones that are required to track their landings within the season. The *de minimis* states have a set-aside portion of the commercial quota that is not brought into this, so that we can accurately track those landings against the quota, and not risk overfishing as much.

The advantage of this method is that it can be calculated regardless of what the harvest level has been relative to the quota, because it's reduced down to that daily harvest rate. The options that are put forward in Addendum I are Option A of a status quo, which just kind of read through that method before. But it would require some alterations in years like this.

One of the notes is that within the Cobia TCs memo they did request that that alternative method be used in 2020, and that is something that Angela will get to when she speaks. Option B is the TC recommended method for calculating the commercial trigger. I think I pretty much explained both of those methods at this point, and I can pause once again for any questions, comments, discussion.

MS. KERNS: I don't see any hands raised.

CHAIRWOMAN FEGLEY: If we have no questions there, so we have I think two more issues to go over, so carry on Mike.

DR. SCHMIDTKE: The next issue is looking at the commercial *de minimis* regulations. As a reminder for cobia, *de minimis* status that applies to states with small cobia fisheries, small being defined as on the commercial side less than 2 percent of the coastwide landings, and on the recreational side less than 1 percent of the coastwide landings.

For Issue 3, under the commercial *de minimis* measures. With the current quota of about 146,000 pounds, the 3 percent *de minimis* set aside is 4,387, and there was some concern about with an increasing quota that the amount of set aside harvest for *de minimis* states would become basically more than what the *de minimis* states are actually going to harvest.

Commercial harvest in *de minimis* states, looking back to 2000, range from 48 pounds to 4,477 pounds, with an average of 1,991. In many of those years they weren't harvesting that full amount of set aside. One thing to note when it comes to that *de minimis* set aside is that it not a quota. It's not something, you know if the *de minimis* states reach that level of harvest then the fishery gets shut down or anything like that. It is meant to be an approximation of what the *de minimis* states are harvesting. That portion of the quota is not accessible to the non *de minimis* states who are tracking their harvest within the season. The idea that the PDT was working under was to cap the *de minimis* set aside at amounts that the harvest is not likely to hit, or doesn't hit frequently.

Looking at the options that were put forward, the status quo is to just maintain the flat 3 percent of the commercial quota as the set aside. Option B is to cap the commercial quota at 3,000 pounds, so it would still be 3 percent, as long as that 3 percent is less than 3,000 pounds. But if 3 percent of the commercial quota exceeds 3,000 pounds then 3,000 would be the set aside, and similar type of thing for Option C, except the cap could be 5,000 pounds.

The reasoning for the two numbers that were chosen, 3,000 it was somewhat ad hoc, but if you'll look at the addendum document, in Table 2 you can see that harvest by the *de minimis* and non *de minimis* states, the non *de minimis* ones are only Virginia through South Carolina. All other states qualify for *de minimis*.

But looking at the *de minimis* harvest over those years, most years they are less than 3,000 pounds. Somewhat ad hoc, but it was just kind of a number where it was most years they fall in that category. Then Option C, in all years. That was the count the

lowest thousand-pound mark where they fall under that in all years during the recent time period, going back to 2000. Those are the options put forward for Issue 3, and I'll pause here for questions, comments, discussion.

CHAIRWOMAN FEGLEY: Questions on Issue 3.

MS. KERNS: Don't see any hands raised, Lynn.

CHAIRWOMAN FEGLEY: Okay let's do Issue 4, recreational *de minimis*.

DR. SCHMIDTKE: One note I did forget to mention for Issue 3. I did notice when making the presentation that Table 3 presents what the *de minimis* set aside would be under each of the Issue 1 options, and I did not have the Option D listed in that table. But that has been updated, at least in the document that I have been keeping, and that will be updated in the copy of the document that goes out for public comment.

Next moving into the final issue, recreational *de minimis*. For the recreational fishery the FMP allows *de minimis* states to have regulations that would copy from the nearest neighbor, either a neighboring state or the nearest non *de minimis* state, and match those. That in effect is Virginia, because all of the recreational *de minimis* states are those that are north of Virginia, and all of those states have opted for that option of copying Virginia's regulations.

There is an alternative that is allowed in the plan for those states to choose management using a 29-inch fork length minimum size, and one-fish vessel limit with no seasonal restriction, so their fishery would be open year-round, the recreational fishery that is. That 29-inch size was based off of 50 percent maturity of female cobia from the SEDAR 28 assessment. The SEDAR 58 assessment that information seemed to be updated a bit. There is noted that there are limited samples below 33 inches, which is below the legal size for the commercial fishery. Because of that there is uncertainty about size at maturity that is involved in these data, so not trying to be strict on the numbers for maturity within these sizes, but this is the information that we have from SEDAR 58. It was observed that there was 33 percent female maturity for 23.5 to 29.5 inches.

About 60 percent maturity for 29.5 to 31.5 inches, and 100 percent female maturity above 31.5 inches. These numbers came into play when considering alternatives. It was also brought to the PDTs attention that 29 inches for cobia is a bit of a unique limit, which could potentially lead to confusion among anglers.
It's not really associated with the 33 or 36 that are used in other areas of management. The alternatives that were developed were done so to increase the percent mature at recruitment to the fishery, and possibly connectivity to other limits that are currently in place. The PDT developed two alternatives.

Status quo is 29-inch fork length minimum size limit, Option B is a 31-inch fork length minimum size limit, and that would fall into the category from SEDAR 58 where there is about 60 percent female maturity within that size range. Then Option C uses a 33-inch fork length minimum size limit.

That is the same minimum size limit as the commercial fishery. It also falls into the category from a percent mature perspective for female cobia, it falls into the category of 100 percent mature female fish, so all the fish that would be of legal size under Option C, if they are female, they would be mature cobia. Those are the options that were developed for Issue 4, and I'll pause once more for questions, comments or discussion.

CHAIRWOMAN FEGLEY: Okay, any questions on Issue 4, recreational *de minimis*?

MS. KERNS: I don't see any, Lynn.

CHAIRWOMAN FEGLEY: I think, and Mike that winds up your presentation on the Addendum, right?

DR. SCHMIDTKE: Yes, I was just going to move one slide just for general questions, comments.

CHAIRWOMAN FEGLEY: There we go.

MS. KERNS: Lynn, I do have a hand up, Doug Haymans and/or Spud Woodward. They are in the room together.

CHAIRWOMAN FEGLEY: Okay, Spud or Doug, go on.

MR. DOUG HAYMANS: Yes, the Georgia delegation has a question. Mike, forgive me, but I want to back up to the opportunity where we had to ask questions about the Issue's 1 and 3, and I'll tackle 3 first. Would you mind just covering one more time, when you used the word unmonitored? Even in the *de minimis* states, are they not reporting commercial catch? I understand it is required annually in the compliance report, but doesn't it still come in?

DR. SCHMIDTKE: No. For the *de minimis* states they don't report catch during the season. Like this year right now I'm getting weekly reports from Virginia, North Carolina, South Carolina, because those are the non *de minimis* states. But I'm not getting any reports from other states, because all the other states qualify for *de minimis*.

MR. HAYMANS: I understand that. What I mean is that the information is collected through trip tickets, right?

DR. SCHMIDTKE: Yes.

MR. HAYMANS: We could change this so that they did have to. The word unmonitored is to me a bit misleading to the public, because they are monitored, they simply don't have to report. I'm just curious as to whether the public will understand that when it goes through.

CHAIRWOMAN FEGLEY: Yes, I'm going to weigh in on that. I agree that the word unmonitored coming from a *de minimis* state. Our fishermen are required by law to report. They do report, except they don't report at the frequency. The reports come in on monthly logbooks, and they are not compiled until the end of the season. It is a monitored fishery, it's just not monitored at the level for in-season management, and we wouldn't have the resources to make that happen in Chesapeake Bay.

DR. SCHMIDTKE: If I change the wording, if we edited the wording to monitored within the season, would that work or no?

MR. HAYMANS: We think that would make it a bit clearer to the public, or at least clearer to the Georgia delegation, sure. Lynn, just to make sure I understood what you just said. Your commercial folks are required to report those, but they are not required to report on a monthly basis by the tenth of the following month?

CHAIRWOMAN FEGLEY: Yes, they are. But you figure those reports come in and then they are keyed in, so that the state doesn't have the compiled data until at least probably, at best two months and more on an average of four months after the report is submitted. If you're fishing in the ocean and you're bringing your fish through federal dealers.

Then that data arrives much faster, because the federal dealers are reporting electronically. But the Bay fishery is coming in on paper, so we just can't do the in-season monitoring, where those numbers of the harvest coming from the Bay could be incorporated into monitoring the quota toward a closure, if that makes sense.

MR. HAYMANS: That makes absolute sense. Anyway Mike, I have one more question about Issue 1. If you would back up to your last slide on Issue 1, please. I apologize, I didn't catch it all. But to increase the quota, the Production Team solely did an MRIP conversion. Would you mind giving me the idiot's version of that, please?

DR. SCHMIDTKE: Sure. The number that you see on the right. We went to MRIP and we requested, is there any way that you could convert 620,000 pounds of recreational quota, and tell us what that quota would have been if the FES number, like if it were applied as a FES number. That is what they came back with on the right.

Now like I said, it's an approximation, it is not a definitive MRIP calibration, because it is a quota. It is a single-poundage number that we gave them. We didn't give them poundage by state and effort information throughout the time, all those other things that go into their full-on calibrations, which is one of the reasons why they specifically said that this is an approximate estimate, it is not an official MRIP calibration and it's not included in the document as such.

But it gives a ballpark and, seeing such a large discrepancy that there is potentially 80 percent more quota from what there would have been had, you known in 2019 under that 620,000 pounds, what the quota would have been there if they had been using FES units instead of the telephone survey units in setting that quota. Just seeing that type of difference would indicate that it's very unlikely that the increase of the quota was solely due to the change in MRIP.

CHAIRWOMAN FEGLEY: Does that answer your question, Doug?

MR. HAYMANS: The delegation notes that it still isn't quite clear, but we're willing to continue on. I don't know if we'll ever be quite clear on that but okay.

CHAIRWOMAN FEGLEY: I think I'm seeing a question from Adam Nowalsky.

MR. ADAM NOWALSKY: Is there any other justification for Options C and D, other than these are the quotas that would result in remaining within the range of landings within the given time period and equate to a rounding of the percentage? I mean I appreciate the simplicity of that approach.

There are certainly many other things I've seen from management that we considered that we do often wish were as simple as that. But I'm just concerned that that is somewhat arbitrary. If there is any other basis that staff used in coming up with that and something that would be suitable for addition to this document before it goes out to the public.

DR. SCHMIDTKE: Options C and D really were, I mean they were the approach for coming up for these alternatives was ad hoc in the nature of, we had a baseline from Option B, and we wanted to provide some additional alternatives. I mean if we wanted, if the Board wanted to, because we're within the range of Options C and D, even if they were deleted, could still be considered.

But, the PDT felt like if there was a chance that somebody wanted the commercial quota to increase beyond that 50,000 mark, then they would put that option in, it could be considered, and it would be up to the Board if you all would want to take it further. But it was really just stepping up single-percentages, adding in just filling the full range. Adding in 6 percent, 7 percent for the commercial side was put on the table, but ultimately, I think some members of the PDT got a little antsy about those numbers getting a little bit higher than what they were comfortable with. But yes, it was admittedly ad hoc justification for C and D, and kind of the aligning of the numbers that came about for D was purely circumstantial, and wasn't learned until after the fact.

CHAIRWOMAN FEGLEY: I guess I just wanted to weigh in, and that was the reason why I asked that question about whether or not that explanation about Option D was included in the document, because I think, correct me if I'm wrong, but Options A through C all fall within that the commercial fishery has harvested that number of fish at some point. I think the highest commercial

harvest in the time series in your Table 2 is 81,766 pounds, right?

DR. SCHMIDTKE: I don't have it up right now, but I would believe you for that being the number.

CHAIRWOMAN FEGLEY: I think, you know to Adam's point, Options A through C all reflect something that basically has happened, whereas Option D is definitely reaching beyond the highest harvest that we've recorded since 2000. Maybe that one becomes a little bit more arbitrary, but it's less arbitrary when you consider that it is that proportional increase to both sectors. With that I'll leave it, and Adam, did you have any follow up?

MR. NOWALSKY: Yes, I think I would just offer that whatever of these options we choose to leave in out of C and D, if there is anything else we can offer along the lines of the argument you just made for C, I think it would be helpful for the public to understand where these came from, other than just they were ad hoc. I think we would do ourselves well if we could add something a little bit more descriptive than that.

CHAIRWOMAN FEGLEY: Does anybody else have any questions or comments on the Draft Addendum? I think at this point what I would be looking for is a motion to approve this for public comment, so I'll go unmute and see what happens.

MS. KERNS: I have Chris Batsavage.

CHAIRWOMAN FEGLEY: Thank you, Chris Batsavage.

MR. CHRIS BATSAVAGE: Yes, I would like to make a motion to approve Draft Addendum I to the cobia FMP for public comment as modified today.

CHAIRWOMAN FEGLEY: Great, thank you, is there a second?

MS. KERNS: I see lots of names. I saw Malcolm Rhodes first.

CHAIRWOMAN FEGLEY: Okay, we'll give it to Dr. Rhodes. Is there any discussion on this motion?

MS. KERNS: I don't see any hands.

CHAIRWOMAN FEGLEY: Okay, so I'm going to go ahead and read the motion into the record. It is moved to approve Cobia Draft Addendum I to Amendment 1 for public comment as modified today. Motion by Mr. Batsavage, second by Dr. Rhodes. I think what I would like to do is call this question by consensus. Is there any opposition to this motion? If yes, raise your hand.

MS. KERNS: I don't see any opposition, Lynn.

CHAIRWOMAN FEGLEY: Okay, seeing no opposition Addendum I is approved by consent. Thank you very much for the good discussion.

CONSIDER APPROVAL OF ATLANTIC COBIA COMMERCIAL TRIGGER LEVEL

CHAIRWOMAN FEGLEY: I think with that we're going to move on to the next agenda item, which talks about the trigger calculation. I know that Mike just went through that.

As a reminder, the Addendum will essentially codify the methodology for calculating the trigger going forward, but we still need to do it for 2021, because we haven't done that yet. We're going to let Angela Giuliano go through the trigger-setting mechanism right now. Okay, go ahead, Angela.

MS. KERNS: Lynn, really quickly just before we go there. I just wanted to let Board members think about the public hearings. They will all be webinar-based for this document. We're going to reach out to you all via e-mail about having your hearings, but we wanted you to think about whether or not you wanted your hearings to be paired up with other states, focus on just for your state, looking at it in regional aspects or anything like that. Just think about those things, and when we reach out via e-mail, we can discuss it with the states.

CHAIRWOMAN FEGLEY: You know that is a really good point, since we're not having to have stakeholders drive. Maybe we can do some validation, so absolutely. I assume you want people, is there a date by which you want people to contact you with hearing logistics?

MS. KERNS: I will shoot an e-mail out to folks asking the different questions that we need from them, and put a date in the e-mail that I send out to them.

CHAIRWOMAN FEGLEY: Perfect, thank you. Moving on, Angela Giuliano, take it away.

MS. ANGELA GIULANO: This will be a pretty short presentation. Mike has already gone through some of the methods. I guess we go to my only slide. As Mike mentioned in his presentation, the Technical Committee has proposed an alternative method for calculating the commercial trigger.

As he said, the previous harvest limit of 50,000 pounds never really allowed the observed harvest to get close to the new quota of 146,000 pounds. Just a quick reminder again, the trigger was calculated using the average daily harvest rate from 2015 to 2019, which is the most recent five-year period.

The total number of days for the season was calculated here using the date of first observed cobia harvest, which in all years was early January to the last day of reported harvest for that year. Once we had that average daily harvest rate that was multiplied by 30 days, which is a minimum number of days required in the FMP for the commercial fishery closure. Walking through the proposed calculation, we have our total commercial quota here of 146,232 pounds. If you take out the 3 percent that is set aside for *de minimis* commercial seats, your non *de minimis* quota works out to be 141,845 pounds.

The average daily harvest rate was pretty low, it was 214 pounds per day. Multiplying that by 30 days, last minute harvest over 30 days would be 6,424 pounds, resulting in the commercial fishery closure being proposed as 135,422 pounds. Then just for the Board's information while they are considering the proposed trigger.

The current harvest at this point for the non *de minimis* states as of Friday was 29,488 pounds. That is what I have, so I guess if there are any questions, I can take those now. I was just going to add, as Lynn said this is the last part, I think of the harvest specification for the 2020 fishing year.

CHAIRWOMAN FEGLEY: Are there any questions for Angela about this? It looks like right now, where Mike went over the general methodology, we're now looking at a specific number for quota trigger that is 135,422 is what I remember seeing. Are there any questions for Angela?

MS. KERNS: I don't see any hands raised, Lynn. I do, first we have Doug Haymans.

CHAIRWOMAN FEGLEY: Okay Doug, go ahead.

MR. HAYMANS: Could you back that slide up, please? This is current quota, it's the status quo, but it's not quota that may be actually passes into one, which is drastically different. Are we being asked to do something here based on the current quota of 135,422 pounds as a trigger, when both Virginia and North Carolina promised to try to restrain their commercial to the 50,000-pound quota until we could get a different one through? I'm not quite sure what we're being asked to do here.

CHAIRWOMAN FEGLEY: Mike, I'm going to defer that to you.

DR. SCHMIDTKE: Sure. We have a quota that is specified right now, and part of the process of specifying a quota is establishing a trigger. I understand that Virginia and North Carolina have decided that they are going to manage their fisheries to close at, I think it was 75,000, somewhere around 75,000 pounds.

I understand that they've made that decision, but that was a decision that was made for their specific state fisheries. From the perspective of the quota set by the Commission, this is how the trigger would end up being. This is what the methodology for calculating it would be moving forward.

Yes, if Addendum I when it's passed, if the commercial quota changes, then it would need to be recalculated according to the quota, according to whatever the commercial quota is that is decided by Addendum I, and that would likely go in the timeline just a little bit later in the agenda, but that would likely be something to go into effect for the 2021 fishing year. Does that answer your question, Doug?

MR. HAYMANS: It does. I'm just trying to think through what it would look like if it's at 54,000 pounds. That means that the trigger is somewhere around 48,000 pounds, if it was 64,000-pound quota, and how quickly that might. I'm used to the Council. From the Council perspective when we talk about triggers and potential closures, we see projected dates and what not, and I'm trying to figure out exactly what this commercial trigger is going to do to the length of the season.

CHAIRWOMAN FEGLEY: I think I can say it another way, Doug. This trigger will not be hit. It's almost assured that we will not hit the commercial trigger this year. You could say that this action is maybe slightly out of sync with our management trajectory, since we're just doing Draft Addendum I.

But, if we don't take this action then we won't have a trigger at all and that is in violation of the Plan. The reason that we're using this methodology is because the methodology can't be, it's a little bit of a circular argument. The methodology can't be used because the quota from the 2020 fishing year is high.

MR. HAYMANS: Yes, I understand that. When you say most assured, we won't get the quota is that the 75,000-pound gentlemen's agreement, or is that the 146,000 pounds in the current plan?

DR. SCHMIDTKE: The 146,000.

CHAIRWOMAN FEGLEY: Correct, thank you. I'll defer back to Mike, but I was speaking about the trigger that Angela presented.

DR. SCHMIDTKE: Yes, and it will be very unlikely that we hit the 135,000 either.

MS. KERNS: Lynn, you have Pat Geer with his hand raised. I think maybe he can provide a little clarity, in terms of what Virginia and their gentlemen's agreement quota might be.

CHAIRWOMAN FEGLEY: Go ahead, Pat.

MR. PAT GEER: Doug, it's a shame we don't have the minutes from the last meeting, because as you recall we took a time out and Chris and I had some discussions. It was discussed during the meeting that I believe it's 70,000 pounds, Chris correct me if I'm wrong. But we agreed that these 146 or 135,000 pounds was much more.

We didn't want to see that. It wasn't expected, so we were shooting for around what the average was for the last year, so we agreed on it. It is a gentlemen's agreement of 70,000 pounds. We are monitoring it weekly, and we plan to close when it reaches that level. No one's intent is to harvest 135,000 pounds of cobia commercially this year. But because we need to have a value for this year, and since the Addendum wasn't done yet we have no other option, or we don't have any value at all.

CHAIRWOMAN FEGLEY: Doug, is that getting you straight?

MR. HAYMANS: That's one half. Yes, it is getting me straight, and I appreciate that. Perhaps Mr. Batsavage could sort of speak to the same. It looks like North Carolina is within their agreed upon by each as well, I would appreciate it.

CHAIRWOMAN FEGLEY: Chris Batsavage.

MR. CHRIS BATSAVAGE: Yes, as Pat mentioned that North Carolina and Virginia are monitoring our landings on a weekly basis, and it looks like, I don't know if we're on track or slightly behind where we were last year at this time. But there doesn't appear to be any chance of catching the 146,000.

Since we're monitoring things on a weekly basis, we can put the brakes on the landings before they exceed what we agreed to. I think the official number is 73,000, but I would have to go back and look too. It's somewhere between 70 and 75 for sure, but so far nothing has really popped up from our landings or from Virginia's landings out of the ordinary that was seen in the last few years.

CHAIRWOMAN FEGLEY: Pat, I see your hand up.

MR. GEER: Chris is right, it's 73,000. I apologize. It is 73 it wasn't 70 as I mentioned, 73,000 pounds.

CHAIRWOMAN FEGLEY: Okay, thank you, Pat. Are there any other questions about this trigger?

MS. KERNS: I don't see any hands, Lynn.

CHAIRWOMAN FEGLEY: Okay, so what we'll need here is a motion to approve the commercial closure trigger. I'm just going to go ahead, and it's for the 2020 fishing year, correct?

DR. SCHMIDTKE: Correct, and I have had some conversations with some Board members that have had kind of a concern about locking a number in for long term. Even though we have a harvest quota that is specified, there is nothing in the Amendment that would suggest that we have to have the trigger in lock-step with that, especially knowing that there is a decent chance that it changes by the next meeting. It can be specified just for 2020, and then after Addendum I is completed, any changes to that can be incorporated and the trigger can be recalculated for 2021.

CHAIRWOMAN FEGLEY: Perfect, thanks, Mike. Right, we'll need a motion to approve the trigger for the 2020 fishing year, and once again I'll go unmute and wait to see.

MS. KERNS: Lynn, we have Pat Geer's hand up. I'm not sure if it's a question or for a motion.

CHAIRWOMAN FEGLEY: Thanks Pat, go ahead.

MR. GEER: I think we already have all of it, but it is: move to approve cobia commercial trigger of 135,422 pounds for 2020, if commercial harvest estimated through in-season monitoring meets or exceeds this amount, a coastwide commercial closure for the remainder of the year will begin 30 days later.

CHAIRWOMAN FEGLEY: Mel Bell.
MR. MEL BELL: I'm just going to second it.

CHAIRWOMAN FEGLEY: All right, second by Mr. Bell. Is there any discussion on the motion?

DR. SCHMIDTKE: Just a brief edit as I heard it from Pat, Maya if we could delete, in any year after amount.
MS. KERNS: Lynn, you have Doug, Pat and Mel with their hands up.

CHAIRWOMAN FEGLEY: We'll go alphabetically, so Doug do you have a comment on the motion?

MR. HAYMANS: Does the motion have to have the pounds; or can it not be the method that is used for the trigger?

CHAIRWOMAN FEGLEY: I think we need a number. Mike?

DR. SCHMIDTKE: Yes, the trigger is an actual number the methodology is being considered for inclusion in the Plan through Addendum I. But in order to apply a trigger to a quota within a year, it would need to be a number or a percent of the quota.

CHAIRWOMAN FEGLEY: Doug, do you have a follow up to that?

MR. HAYMANS: No, I'll shut up. I'm okay.

CHAIRWOMAN FEGLEY: Pat, did you want to speak to the motion, or did your hand go down?

MR. GEER: My hand went down, I'm sorry.

CHAIRWOMAN FEGLEY: No that's all right, and Mel Bell, did your hand also go down?

MR. BELL: Yes, Ma'am.

CHAIRWOMAN FEGLEY: Okay, all right, so I think at this point I'm going to go ahead and read the motion into the record. Move to approve a cobia commercial trigger of 135,422 pounds for 2020 if commercial harvest estimated through in-season monitoring meets or exceeds this amount, a coastwide commercial closure for the remainder of the year will begin 30 days later. Motion by Mr. Geer, second by Mr. Bell. I think at this point what I'm going to do is try to do this again by consensus. If anyone opposes this motion, please raise your hand.

MS. KERNS: Lynn, I don't see anyone with their hand up. I just wanted to double-check to make sure you didn't want to ask the public if they wanted to comment on this motion, since it didn't go out for public comment.

CHAIRWOMAN FEGLEY: Yes, thank you. I think that is a really good idea. I'm going to put a pause there and just go ahead. Is there anybody in the public who wants to speak to that?

MS. KERNS: Again, for the public to raise your hand, you just click on that little hand button, and I don't see anybody raising their hand, Lynn.

CHAIRWOMAN FEGLEY: Thank you for that. We'll try again then. If anybody is opposed to this motion, please raise your hand.

MS. KERNS: I see no hands raised.

CHAIRWOMAN FEGLEY: Then this motion is approved by consensus, and it will be a little more straightforward next year, once this Draft Addendum is done.

DISCUSS TIMELINE FOR SUBMITTING ATLANTIC COBIA AMENDMENT 1 IMPLEMENTATION PLANS

CHAIRWOMAN FEGLEY: I guess that brings us to our next item that segues well where we will talk about the timeline for implementing cobia implementation plans, and I think Mike with that I'll go back to you.

DR. SCHMIDTKE: Once Maya is ready to pull up the presentation. I've got just a couple of slides giving some description. I sent out a memo in supplemental materials, but I wanted to address it with the Board, because we have upcoming some pretty tight timelines. In February, excuse me, February was not when Amendment 1 was approved, it was approved earlier.

But in February we had a new harvest quota that was approved, and Amendment 1, when it was approved last fall, it was scheduled for implementation by July 1. Kind of in follow up to that we had that new harvest quota that was approved in February, and there were some parts of evaluating implementation that were put on hold because of that, because states were allowed to carry over their regulations from 2019 into 2020, as far as recreational seasons vessels limits are concerned in achieving state harvest targets.

We have some outstanding implementation evaluations that need to occur. Obviously there have been impacts to the world, and there have been attentions diverted to other things. But looking towards 2021, it was the goal from the February, 2020 meeting to have recreational measures under the current quota in place for 2021.

Since then we've had updates to the timeline regarding Draft Addendum I and Draft Addendum I has potential to impact the quotas. That would be considered for final approval in October, 2020. One thing to note about this is that yes, it could change the quotas, and subsequently the recreational harvest targets. But it's not going to change them by very much, we're talking a percent, a couple of few percent at most. One of the things that I wanted to bring to the attention of the Board, and that the states could have their staff's working on is developing their implementation plans, particularly those states that have harvest targets. I would hope that there would be some communication among the agencies to develop those plans so that they can be evaluated pretty quickly after Addendum I is considered and possibly approved.

Looking forward at the process of how new measures could potentially go into place for 2021. After the October meeting, as long as states are committed and willing to begin working on it, probably soon ahead of even the annual meeting, and then be in a place where small adjustments could potentially be made, based on the results of Addendum I.

Implementation plans could be due to the TC by mid-November. The TC would then, they would need probably a couple weeks to review those, if need be a webinar to review those in early December, and then if the Board wants to have a decision made before 2021, then there would need to be Board consideration, either via e-mail or a South Atlantic Board specific webinar in mid-December.

If either of these options are desired, it needs to be stated and agreed upon on the record. That is something that could be decided today, probably better to do it earlier than later to have that decision, and folks can make the plans for it. But it is something that would need to be stated publicly and agreed upon.

Then states would also need to begin preparing as soon as possible for what is a pretty aggressive timeline. This was throwing out an idea of a way to make it happen before 2021. If the Board, if the states would like to be more aggressive in the timeline to make it happen, with the recognition that several of the seasons don't start until the spring.

There may be a little bit of wiggle room, but if I interpreted what the Board's desire was from February correctly, the Board wanted to have the new recreational measures, any new measure is based off of the new recreational quota, particularly in place for 2021. That's all I had on that and I'll pass it back to you, Madam Chair for hearing discussion and what the Board's plans and commitments are as we move into the fall.

CHAIRWOMAN FEGLEY: It's backing us into an aggressive timeline. Just to repeat what Mike said and what we need discussion on. We need to come to this as not an action item, but we need to come to agreement if we can that we're going to work to get Addendum I measure in place for 2021, which means they would need to follow the timeline on the screen. With that I will put it up for discussion.

MS. KERNS: I don't see any hands, nope, we've got Pat Geer.

CHAIRWOMAN FEGLEY: Okay Pat, and then I see Chris Batsavage on deck, so Pat go ahead.

MR. GEER: One of the concerns I have with this is that. They are not mentioned, but we also have spot and croaker that are going to have some issues as well. Having both this and the Atlantic croaker coming up at the same time, how much of an issue that is going to be for us. In my state, people working on cobia are also working on spot and croaker. This is trying to get this all done. Mike you sent out a letter to us showing the timeline for that as well. Could you elaborate on the timeline for croaker and spot, and how it overlaps with this?

DR. SCHMIDTKE: Bear with me one second, I'm just going to pull up the memo that I sent, so I can make sure I'm not contradicting myself as much as possible. The timeline for spot and croaker is a little bit less clear. The reason for that is as was stated in the memo that was sent out.

One of the surveys, the CHESMAP Survey, one of the surveys that spot and croaker were kind of depending on, especially for that mid-Atlantic region for determining abundance in the TLA. That underwent some changes to the survey. The survey was conducted, it just needs to be recalibrated, and that recalibration process is taking a while, and the most recent update that we have is that it will not be available until the end of the year.

The TLA will need to be conducted without the CHESMAP Survey, and the Croaker and Spot TCs are going to need to talk about how to do that and talk about whether they are going to potentially to replace it with NEMAP, or if they just run it with only the Northeast Fisheries Science Center Survey in the mid-Atlantic region, or what strategy they would take.

But there is the possibility that the removal of CHESMAP, you know when we were going into croaker in particular. When CHESMAP was in consideration the results were kind of predetermined for croaker that it would trigger this year. With the removal of CHESMAP, I'm not sure. I would need to check with, I believe Chris McDonough has run it a couple different ways.

But I don't know at this point what the result would be for croaker, and there was some uncertainty as far as spot on whether a trigger would occur. There were some scenarios where it could, or it couldn't. I think part of that timeline depends on what exactly is triggering. One of the advantages for croaker and spot is that the management responses are, as I recall a bit more prescriptive, based off of Addendum III to each of those plans. They are kind of spelled out in the plans. Also, there wouldn't be as much, there would be implementation plans that would need to be submitted, but there wouldn't need to be as much, I guess analysis evaluation for the spot and the croaker implementation plans as there would be for the cobia plans, because again the spot and croaker is a bit more prescriptive. It's spelled out, and there are some states that are already meeting those requirements as well. That is not a great answer to the question, but it's hard to say right now without having the results of the TLA.

CHAIRWOMAN FEGLEY: Now Mike, thanks. I appreciate that and I was honestly secretly hoping that this wouldn't come up. But what I think we need to do, and Pat I really appreciate your appeal that you've got staff doubled up on these species. But I get the sense of what we're going to need to do is take them one at a time.

We have a clear path with cobia. Spot and croaker, you know the TC hasn't met yet. They haven't had the discussion about what to do with the fact that we're going to see a traffic light analysis that has sort of a switch off in data. I think there are some issues there that the Board is really going to need to discuss in October. In October, you know we might be two Boards, I don't know. But I think we need to really put spot and croaker on the table for October, and hear what the TC has to say and see what those analyses look like, and take it from there recognizing what the workload of our respective staffs are. I think that is about the best we can do right now. Chris Batsavage, did you have a comment?

MR. BATSAVAGE: Yes, thanks Madam Chair. It's sort of a question on implementation for cobia. With the new quota that we have in 2020, the harvest targets for the non *de minimis* states for the recreational fishery have all changed, the numbers of fish have gone up, and they may change again depending on the outcome of Addendum I.

Meanwhile, our regulations currently in place are based on old MRIP and the previous stock assessment. There is a big of a disconnect there, in terms of either current and future targets versus our regulations. A question for Mike is for the implementation plans. Will the states have the opportunity to modify their regulations, like seasons or vessel limits or anything like that that better align with the new targets?

DR. SCHMIDTKE: Yes. I think that is kind of the intent of the upcoming implementation. As I remember it from the February meeting, the states have concern about being able to get that process done ahead of the fishing season this year. I know at least a few of the states, I think probably most of the states at this point, when you consider all the states that are using the same regulations as Virginia.

Many states their season doesn't start in January for the recreational fishery. I mean there is a little bit of time in consideration for that and there has also been the time since then to consider what to do in place for 2021. But yes, the states would be given new harvest targets, and the task for the states would be come up with the season and vessel limit that fits this harvest target, as you want to apply it to your fisheries. Yes, there could be change from the regulations of previous years.

MR. BATSAVAGE: Great, thanks Mike, I thought that was the case, and kind of confused as far as when the timing for that lasts. But that also helps in terms of trying to figure out what will you do in terms of an implementation plan, and the pretty aggressive timeline we need to do. Just, I guess a comment on whether to meet via webinar or via e-mail in December.

I think one challenge we're going to face is this other meeting is already on the books, and I believe the South Atlantic Council meets the first week of December, and the Mid-Atlantic Council meets the second week of December. Then we quickly go into the holidays.

Yes, I guess if we could do this via e-mail that might be one option, or I know it's really pushing it, in terms of getting things in place by 2021, but an early January webinar. I just wanted to flag those two Council meetings that are already on the schedule in December, and I think it's a little tougher to do with the timeline.

CHAIRWOMAN FEGLEY: Thanks Chris for highlighting those meetings, I think that's helpful. Okay, so I think where we are right now is, we need to state on the record that as a body we're onboard with this timeline. Does anybody else have any commentary on this?

MS. KERNS: I don't see any hands.

CHAIRWOMAN FEGLEY: Me neither. I think at that point then, Mike what we're going to do for your benefit is just state on the record that the Board is ready and willing to follow the timeline that you proposed, so that will be ready to implement Addendum I for the 2021 fishing season.

DR. SCHMIDTKE: Toni, does that work as far as like that statement on the record, that works for being able to conduct whatever review by the Board, e-mail or webinar?

MS. KERNS: Yes, that will work. We'll work with the states to determine if we think we can figure out a time to do it via webinar, and if not, we'll have to do it via e-mail.

DR. SCHMIDTKE: Okay.

REVIEW TERMS OF REFERENCE FOR RED DRUM SIMULATION ASSESSMENT

CHAIRWOMAN FEGLEY: Fair enough. Now, I think next, and this is going to be our final action item for the meeting. We are going to go onto something completely different, which is red drum, to talk about the terms of reference for a simulation study. With that I think what I'm going to do is hand it over to Jeff Kipp.

MR. JEFF KIPP: To outline my presentation, I'll be covering the terms of reference for the simulation assessment process for red drum. These define the scope of work to be accomplished by the Stock Assessment Subcommittee and Technical Committee during the assessment. I will then cover the terms of reference for the external peer review, which are going to be similar in language to these assessment TORs, but they direct the Peer Review Panel to evaluate the SAS and TC fulfillment of the assessment TORs.

Then I'll just wrap up with a summary of the timeline of the major milestones during the simulation assessment process. For the terms of reference for the simulation assessment process, TOR 1 is to describe fishery dependent and fishery independent monitoring programs for red drum, and the datasets produced from these monitoring programs for stock assessment, characterize precision and accuracy of datasets.

TOR 2 is to describe available information for parameterizing simulation models, characterize uncertainty of parameters. TOR 3 is to develop methods to project a simulated population through time, implement sampling procedures and simulation models to generate datasets, mirroring datasets available from existing monitoring programs.

TOR 4 is to develop simulated populations that incorporate uncertainty and information used to parameterize the simulation models, characterize uncertainty and limitations in simulated models, and potential impacts on perceived understanding of in situ population dynamics and stock status. TOR 5 is to develop candidate assessment methods and apply assessment methods to dataset sample from simulated populations. TOR 6 is to define reference points for characterizing stock status of simulated populations. TOR 7 is to identify performance metrics and evaluate performance of each candidate assessment method for estimating the population dynamics and stock status of simulated populations, describe strengths and weaknesses of each assessment method.

TOR 8 is to recommend the recommend the preferred assessment method or methods for characterizing stock status. The final TOR, TOR 9 is to provide prioritized recommendations on future monitoring to approve assessment. Now moving to the terms of reference for the external peer review. TOR 1 is to evaluate thoroughness of data collection, data treatment, data presentation, and characterization of data uncertainty.

TOR 2 is to evaluate thoroughness and appropriateness of information used to parameterize simulation models. TOR 3 is to evaluate the appropriateness of simulation models for simulating red drum populations, and generating datasets sampled from the simulated populations. TOR 4 is to evaluate the incorporation and treatment of uncertainty in simulated populations.

TOR 5 is to evaluate candidate assessment methods, and application of assessment methods to datasets sampled from simulated populations. TOR 6 is to evaluate choice of reference points for characterizing stock status of simulated populations, recommend alternatives if necessary. TOR 7 is to evaluate choice of performance metrics used to evaluate performance of each candidate assessment method for estimating the population dynamics, and stock status of simulated population, recommend alternatives if necessary.

TOR 8 is to evaluate the choice of the preferred assessment method or methods for characterizing stock status, recommend alternatives if necessary. TOR 9 is to review recommendations on future monitoring provided by the Technical Committee, and comment on the appropriateness and prioritization of each recommendation, provide any additional recommendations warranted.

Then the final TOR for the Peer Review Panel is TOR 10, prepare a Peer Review Panel Terms of Reference and Advisory Report summarizing the Panel's evaluation of the simulation assessment, and addressing each peer review term of reference. Develop a list of tasks to be completed

following the workshop, complete and submit the report within four weeks of workshop conclusion.

Now moving on to a summary of the timeline. In this table here are the major milestones of the assessment. The full proposed assessment timeline was provided in meeting materials. But the first item is what we're doing currently, Board review of the terms of reference, which will initially, will formally initiate the stock assessment. We have a data deadline proposed for October of this year.

Our first workshop will be a data methods workshop, and that will be in November. Then we'll have two modeling workshops occurring in 2021, the first in February, and the second in June. The TC will meet to review what the Stock Assessment Subcommittee put together in the stock assessment in January of 2022, and then we'll tentatively schedule the Peer Review Workshop for March of 2022. Then we'll bring the assessment and the peer review of that assessment to the Board for consideration at the ASMFC spring meeting in 2022. Then just a couple notes here. We will provide updates to the Board at each ASMFC meeting between this current meeting and the meeting when we present the assessment in May of 2022. Then the current plan is to initiate a traditional benchmark stock assessment with separate TORs following Board consideration of the simulation assessment in May of 2022. That concludes my presentation, and I would be happy to take any questions on those.

CHAIRWOMAN FEGLEY: Thank you Jeff very much, I think this is going to be a really interesting project, and hopefully give us some of the insights that we've been missing with red drum, and to help us manage this fishery. Are there questions for Jeff?
MS. KERNS: I don't see any questions, Lynn.

CHAIRWOMAN FEGLEY: Okay, so I think as a reminder, this is an action item. Oh, Doug, I see your hand go up. Doug Haymans.

MR. HAYMANS: The third member of the Georgia delegation would like to ask a question; Dr. Belcher would like to chime in if that is okay.

CHAIRWOMAN FEGLEY: Please, go ahead.

DR. CAROLYN BELCHER: Just because I haven't been in the discussions relative to this, how does this fit into the traditional approach that we've done with continuity run assessments, and then working towards a new benchmark? Because the concerns that I have is I'm thinking about continuity in knowing that our current model does not have or has not been adapted to the new MRIP numbers. Not really sure how that is going to affect or tie in with that evaluation of the parameters, because all the parameters that we currently have are run based on those older numbers.

MR. KIPP: Yes, so we will be using the updated new MRIP data in this simulation process. Basically, what we're going to do is build a simulation model based on those datasets, including the new MRIP numbers, and then information we know about the population, such as what we believe the natural mortality rates are, growth rates, et cetera.

That way we can develop and simulate known populations with known population parameters. Then the next part of this assessment will be to apply various assessment methods to datasets we draw from those known populations. We are likely going to use the current assessment model as one of those assessment methods as a candidate.

Since we will know what the population parameters are of these simulated populations, we can evaluate the performance of the current assessment model and any other assessment approaches we want to try here, to see what are the most robust for red drum populations. We will be using those new MRIP data, and all the other observed datasets that we have available, such as the survey indices in this simulation model, to simulate information for assessing. Does that answer your question?

DR. BELCHER: Yes, but then the other part of that is just to like the spawner recruit relationship. Is that something that is going to come out of that last assessment, because if there is a scaling issue between the new MRIP numbers and the old MRIP numbers, those parameters are not going to match well.

MR. KIPP: We will meet to determine what parameters we have, what we have to choose from, and that will drive the structure of the simulation model. All of those things we'll probably evaluate with some level of uncertainty in them. For example, if we do pull stock recruit parameters from the past assessment, or any other assessments that occurred before the most recent.

We would parameterize the uncertainty of those parameters as well, and sort of draw from distributions to capture the uncertainty in those parameters in the simulation model. It will involve how well we know those parameters, how well we think we know those parameters, and we will sort of bring the uncertainty in those through the simulation model.

DR. BELCHER: Are you going to still evaluate with the two separate regions as well?

MR. KIPP: I believe that will probably be the plan. We'll address that probably at the data workshop, but you know at this point one of the first things we'll be doing is gathering information, and particularly information that has come online since the last stock assessment. I think if there is anything to suggest, any different stock structure, we would address it at that data workshop. But I believe currently that there is probably nothing new to push us in that direction to a new stock structure.

DR. BELCHER: Who is going to do the assessment? I was just curious, because I know Mike Murphy has been our historic assessor, but do we have an idea on who is going to be leading this?

MR. KIPP: We have gone out and repopulated the Stock Assessment Subcommittee. There has been a bit of turnover. We've got folks from pretty much all the states. We've got Joey Ballenger as the Stock Assessment Subcommittee Chair, and then we've got analysts from Georgia, Jared Flowers.

From Florida Chris Swanson, from North Carolina, Thom Teears, and then from Maryland Angela Giuliano, and then myself on that Stock Assessment Subcommittee, and then Lee Paramore is also the Technical Committee Chair, so a de facto Stock Assessment Subcommittee member. Those are the analysts on the Stock Assessment Subcommittee.

DR. BELCHER: Okay, thanks.

CHAIRWOMAN FEGLEY: Are there at this point any other questions for Jeff about the terms of reference for this simulation study?

MS. KERNS: I don't see any other hands, Lynn.

CHAIRWOMAN FEGLEY: Okay, so again we are going to need a motion to approve these terms of reference. For the last time I will go unmute, and see what we get. Is there anybody out there willing to make a motion to approve the terms of reference?

MS. KERNS: Mel Bell.

MR. BELL: I move to approve the Terms of Reference and schedule for the 2022 Red Drum Simulation Assessment as presented.

CHAIRWOMAN FEGLEY: Thank you Mel, is there a second?

MS. KERNS: We have lots of names, Jim Estes.

CHAIRWOMAN FEGLEY: All right, second by Mr. Estes. Is there any discussion on the motion?

MS. KERNS: Mel's hand up, but it might be, now it's down so no hands up.

CHAIRWOMAN FEGLEY: All right, so I will read the motion into the record. It is, move to approve Terms of Reference for the Red Drum Simulation Assessment as presented. Motion by Mr. Bell, second by Mr. Estes. Once again, I'm going to try to do this by consensus, so if there is anybody who is opposed to this motion, please raise your hand.

MS. KERNS: I don't see any hands.

CHAIRWOMAN FEGLEY: Very good. Seeing no opposition, this motion stands approved by consensus. I do believe, because we have stricken the Vice Chair election from the record, pending the decision on what to do with this Board. That concludes our agenda, except that I do have one addition, and I know that everybody is aware that Dr. Mike Schmidtke is headed down to South Carolina, so he will no longer be working for the Commission.

I just want to say that it has been a tremendous pleasure to work with him, he is sharp and professional, and the South Atlantic Fishery Management Council is lucky to get him. I know that we're not all together so it's hard to do a big round of applause virtually, but I know that you are all standing behind your computers right now clapping, in appreciation for the work that Mike has done. With that and Mike, thank you! With that is there any opposition to adjourning this meeting?

MS. KERNS: I don't see any opposition. Thank you, Lynn, and thank you for saying those nice words about Mike, and we here at the Commission are going to greatly miss him. The South Atlantic Council is getting a great staff member. Then Lynn, I think Bob has something to say as well.

CHAIRWOMAN FEGLEY: Absolutely, Bob Beal, please go ahead.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just two quick things. One is yes, all the best to Mike. I'm glad we get to keep working with him at the South Atlantic Council, and we can solve some Spanish mackerel problems, and other things that we didn't talk about today. I just sent an e-mail around to all the Commissioners and proxies about the storm that is kind of wandering up the east coast now. It's kind of unclear what is going to happen, it's not the strongest of storms that we've seen, but it's still a pretty high-end tropical storm.

You know, there may be heavy rains and winds and some power outages and those sorts of things. I'll work with Pat Keliher, we'll keep an eye on it. If a significant number of Commissioners are unable to participate in a meeting, we'll take that into consideration, and we may adjust schedules as needed. You know we're going to try not to cancel anything. We may slide some things back until later in the week, but we'll just have to see.

The good news is for menhaden, which starts tomorrow, we've got Wednesday afternoon to wrap that up, so tomorrow is kind of a non-decisional meeting on menhaden, striped bass there is a big meeting tomorrow. We'll just have to keep an eye on it. If anyone knows, if your power goes out and you're able to get in touch with Toni and I, let us know, or if somebody in your delegation can't participate let us know, and we'll adjust as necessary. But hopefully we make it through without having to shake things up too much. Thank you, Madam Chair.

CHAIRWOMAN FEGLEY: Absolutely.

MS. KERNS: To add to that, Lynn. For folks, you know along with power outages usually goes internet outages. I just wanted to let everybody know that Go to Webinar does have an App for your cell phone. You can easily download that, and then you would be able to see presentations, communicate, talk on your phone. If you're having trouble with the internet connection on your phone at all, you can also just call into the meetings.

There are instructions on how to do that. If you wanted to pull that stuff off of the web page now, like writing down the meeting code and all of those things, to prepare just in case something happens tomorrow that would be great. Otherwise, you can always give me a call at the office, it forwards to my cell phone, and I can talk you through and walk you through all these different things.

ADJOURNMENT

CHAIRWOMAN FEGLEY: Thanks, Bob and Toni, hopefully we're all going to get through the storm. Everybody, stay safe, and with that we'll move on to the next thing.

MS. KERNS: Lynn, Doug Haymans has his hand up.

MR. HAYMANS: I was just going to say that we have sat here today, starting with whatever we started with this morning, and I've watched the storm pass the Georgia coast, and if there is anything like what came by here, I think you still need to keep your sprinklers running over the weekend, so do we. We got less than a half an inch of rain and a light breeze.

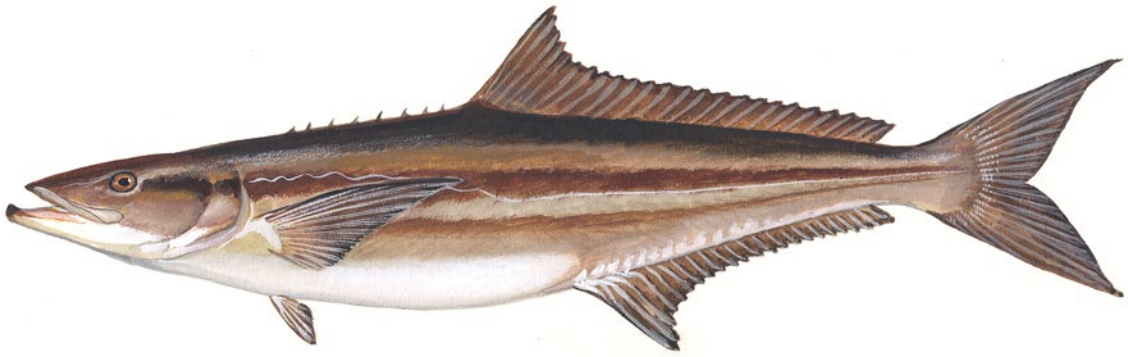
MS. KERNS: Wow, we will all hope for that. Thank you everybody.

(Whereupon the meeting adjourned at 3:18 p.m. on May 5, 2020)

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM I TO AMENDMENT 1 TO THE INTERSTATE FISHERY MANAGEMENT PLAN FOR ATLANTIC MIGRATORY GROUP COBIA FOR PUBLIC COMMENT

Modifications to Recreational and Commercial Allocations, Commercial Trigger, and De Minimis Measures



September 2020

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Draft Addendum I for Public Comment

Public Comment Process and Proposed Timeline

In February 2020, the South Atlantic State/Federal Fisheries Management Board initiated the development of an addendum to the Interstate Fishery Management Plan (FMP) for Atlantic Migratory Group Cobia (Atlantic cobia) to reevaluate recreational and commercial allocations, modify calculation of the commercial trigger, and reconsider *de minimis* measures. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of Atlantic cobia, the addendum process and timeline, and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **October 6, 2020 at 5:00 p.m**. Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

Mail: Toni Kerns
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200A-N
Arlington, VA 22201

Email: comments@asmfc.org
(Subject: Cobia Draft Addendum I)
Phone: (703) 842-0740
Fax: (703) 842-0741

Commission's Process and Timeline

February 2020	South Atlantic Board Tasks PDT to Develop Draft Addendum I
February – August 2020	PDT Develops Draft Addendum I for Public Comment
August 2020	South Atlantic Board Reviews Draft Addendum I and Considers Its Approval for Public Comment
September – October 2020	**Board Solicits Public Comment and States Conduct Public Hearings**
October 2020	Board Reviews Public Comment, Selects Management Options and Considers Final Approval of Addendum I
TBD	Provisions of Addendum I are Implemented

Draft Addendum for Public Comment

1.0 INTRODUCTION

The Atlantic States Marine Fisheries Commission (Commission) is responsible for managing cobia (*Rachycentron canadum*) from New York through Georgia (Atlantic cobia) in state waters (0-3 miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, and has done so through the Interstate Fishery Management Plan for Atlantic Migratory Group Cobia (FMP) since 2017. Atlantic cobia are currently managed under Amendment 1 (2019) to the FMP. The states of New Jersey through Florida have a declared interest in the fishery and are responsible for implementing management measures consistent with the interstate FMP as members of the South Atlantic State/Federal Fisheries Management Board (Board).

In 2018, recreational catch estimates were updated by the Marine Recreational Information Program (MRIP), and historical estimates, based on the Coastal Household Telephone Survey (CHTS), were recalibrated to the newer, mail-based Fishing Effort Survey (FES). The recalibration resulted in Atlantic cobia recreational catch estimates that were, on average, about two times higher than those previously estimated using the CHTS. The updated FES estimates were incorporated into the 2020 Southeast Data, Assessment, and Review (SEDAR) 58 Atlantic Cobia Benchmark Stock Assessment. This addendum further incorporates the FES data into management by considering it in the allocation strategy.

The commercial fishery's harvest is evaluated against its quota through in-season monitoring. A commercial trigger percentage is used to determine the harvest level at which a coastwide commercial closure would be initiated at least 30 days later. The significant increase in the 2020-2022 quota made it well beyond what the commercial fishery has harvested in previous years, making the trigger percentage unable to be calculated using methods from Amendment 1. This addendum considers a more flexible, alternative method for calculating the commercial trigger.

Amendment 1 also defines commercial and recreational criteria and measures for *de minimis* states, or those states with minimal commercial or recreational Atlantic cobia fisheries, such that not enforcing full FMP requirements would not significantly impact the coastwide management program. Commercial *de minimis* states are not required to monitor landings within the fishing season. To account for harvest in these states, 3% of the commercial quota is set aside and not available for harvest in non-*de minimis* states. This addendum considers maximum amounts for *de minimis* set asides that can allow greater utilization of the commercial quota.

Recreational *de minimis* states are able to choose to manage according to the regulations of a neighboring or the nearest non-*de minimis* state or adopt alternative measures that allow a reduced minimum size limit (29 inches fork length rather than 36 inches) and 1 fish per vessel with no recreational season restrictions. This addendum considers increased alternative minimum size limits that would increase probability of female maturity before harvest and be more consistent with other management measures.

2.0 OVERVIEW

2.1 Statement of the Problem

Amendment 1 established recreational and commercial allocations of the total harvest quota, originally derived in 2011 as part of previous Atlantic cobia management through the South Atlantic and Gulf of Mexico Fishery Management Councils' (SAFMC and GMFMC, respectively) Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region (CMP FMP). Allocations to each fishery were based on weighted averages of landings by each sector during 2000-2008, and CHTS estimates were used to determine recreational landings. Following review of the SEDAR 58 assessment and peer review reports, the Board specified a new total annual harvest quota for 2020-2022. Per Amendment 1, this quota is allocated to the recreational (92%) and commercial (8%) fisheries.

With the increase to Atlantic cobia recreational landings and population estimates through incorporation of the FES data, the total, recreational, and commercial quotas all increased substantially. However, while the increase to the commercial quota results in an increase to the amount of Atlantic cobia allowed for commercial harvest, the increase to the recreational quota is largely attributable to the change in the recreational catch estimates and not reflective of a similar effective increase in the number of fish allowed for recreational harvest. Draft Addendum I proposes alternative allocation strategies that will allow for more proportional changes to the commercial and recreational quotas specified in February 2020 and future management based on the new FES recreational data.

Approval of an increased commercial quota also raised an issue in the calculation of the commercial trigger percentage. The calculation method defined in Amendment 1 counts back from the date of harvest reaching the quota to an approximate percentage of the quota that would allow at least 30 days of notice before a closure. Thus, this method is dependent on recent harvests meeting the quota that will be in effect for future years. However, if the quota is increased (as is the case for the 2020-2022 quota) or if harvest decreases, the commercial trigger cannot be calculated. Draft Addendum I proposes a modification of the Amendment 1 method, recommended by the Cobia Technical Committee (TC), which will allow the trigger to be calculated for time periods when the quota increases or harvest decreases.

The SEDAR 58 assessment and increased quotas also illuminate the need for potential changes to the management of commercial and recreational *de minimis* states. An increase to the commercial quota makes the portion set aside (3%) to account for harvest in commercial *de minimis* states also increase. However, the 3% set aside might not fully account for the renct landing by *de minimis states.*

While the coastwide non-*de minimis* minimum size limit is 36 inches fork length, *de minimis* states may choose to harvest 1 fish per vessel with a minimum size limit of 29 inches and no seasonal restriction. The 29 inch limit was based on an estimate of 50% female maturity from the SEDAR 28 stock assessment. Reproductive data from SEDAR 58 indicate there is potential reproductive benefit from using minimum size limits greater than 29 inches fork length, as

more female Atlantic cobia would be able to reach maturity before being susceptible to harvest. Additionally, a recreational *de minimis* state choosing to manage using the 29 inch minimum size limit can create regulatory inconsistency among states, which could lead to confusion for stakeholders as well as management and enforcement difficulties.

2.2 Background

2.2.1 Recreational/Commercial Allocation

The recreational and commercial quotas are 92% and 8%, respectively, of the coastwide total harvest quota set through Board specification. These allocation percentages were derived from those previously in place through Amendment 18 to the CMP FMP. Allocations were based on harvests from 2000-2008, and calculated using the following equations:

$$Com\ \% = \frac{(50\% * Average\ Com\ 2000-2008) + (50\% * Average\ Com\ 2006-2008)}{(50\% * Avg\ Com\ 2000-2008 + 50\% * Avg\ Com\ 2006-2008) + (50\% * Avg\ Rec\ 2000-2008 + 50\% * Avg\ Rec\ 2006-2008)}$$

$$Rec\ \% = \frac{(50\% * Average\ Rec\ 2000-2008) + (50\% * Average\ Rec\ 2006-2008)}{(50\% * Avg\ Com\ 2000-2008 + 50\% * Avg\ Com\ 2006-2008) + (50\% * Avg\ Rec\ 2000-2008 + 50\% * Avg\ Rec\ 2006-2008)}$$

When originally calculated, the recreational harvests used in these equations were estimated using the CHTS. When the annual catch limit was set for Atlantic cobia through Amendment 20B to the CMP FMP (SAFMC, 2014), this resulted in allocations of 620,000 pounds for the recreational fishery and 50,000 pounds for the commercial fishery. These quotas remained in place under the CMP FMP and, later, under Commission management until 2020, when a new quota was specified in response to the SEDAR 58 assessment.

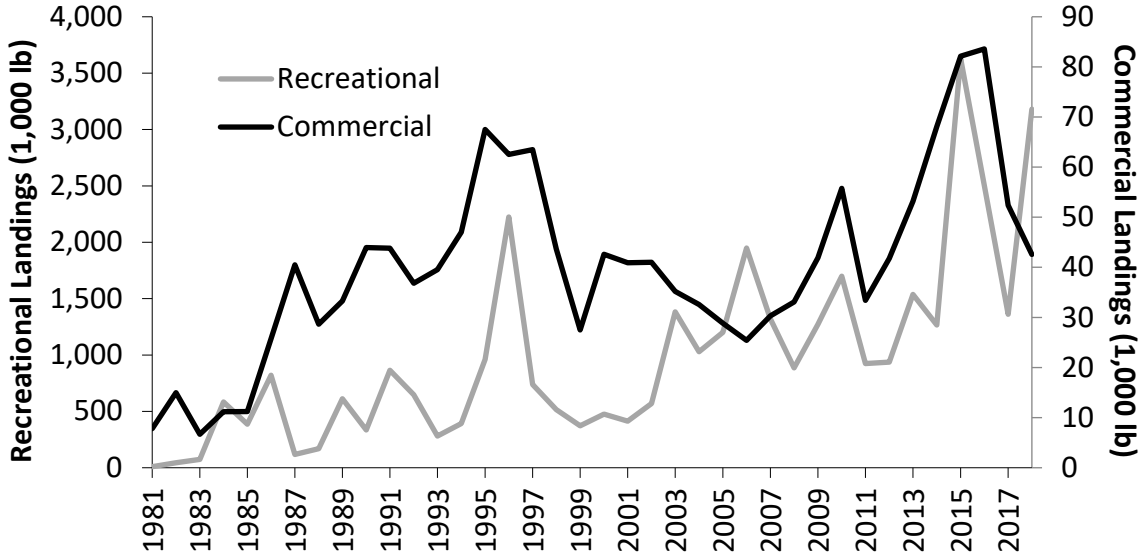


Figure 1. Atlantic cobia landings (GA-MA; in thousands of pounds) from 1981-2018. Recreational landings are shown in gray and correspond to the left vertical axis; commercial landings are shown in black and correspond to the right vertical axis.

2.2.2 Commercial Trigger Calculation

Along with defining parameters for managing the commercial fishery based on an annual quota, monitored throughout the season, Amendment 1 defines a commercial trigger mechanism, which is set as part of the harvest specification process. The commercial trigger is defined using the following language from Amendment 1:

> The trigger percentage and number of following days until a closure occurs will be specified as part of the harvest specification process defined in Section 4.1. The number of days past the trigger percentage until a closure occurs will be calculated as the average number of days from the previous three years for commercial landings to go from the trigger percentage to the full commercial quota, less any *de minimis* set aside. The trigger shall be updated as part of the specification process, using similar methodology, to allow the states at least 30 days' notice of an impending commercial closure.

In calculating the commercial trigger percentage and harvest level with respect to the increased commercial quota specified in 2020, the TC recognized that recent commercial harvests had not met the commercial quota. Therefore, the percentages of the quota harvested at least 30 days prior to meeting the quota could not be determined.

Therefore, the TC recommends the following methodology for calculating the commercial trigger:

1. Calculation of daily commercial harvest rates for non-*de minimis* states based on harvests from the previous 5 years. Daily harvest rates for each year would be estimated as the annual commercial harvest divided by the number of days from the first date of harvest to the last date of harvest in that year.
2. Average the 5 annual harvest rates to estimate the daily harvest rate for the entire time period.
3. Subtract 30 days' worth of harvest (30 times the average daily harvest rate) from the non-*de minimis* portion of the commercial quota.

These methods would provide a level of harvest in pounds or a percentage of the quota that could be used to provide the 30 days' notice prior to a closure required by Amendment 1. Additionally, the use of 5 years of harvest data could better account for variability in year-to-year harvest rates than a narrower three-year harvest window.

2.2.3 SEDAR 58 Benchmark Stock Assessment and 2020 Harvest Specification

A benchmark stock assessment, SEDAR 58, was completed in 2020 for Atlantic cobia and this assessment, following peer review, was accepted for management use by the Board at its February 2020 meeting. This assessment used the Beaufort Assessment Model (BAM), the same forward-projecting age structured model as used previously to assess the species. The stock

assessment primarily used fishery-dependent data (i.e. data from the recreational and commercial fisheries) as well as information on Atlantic cobia biology, life history, and movement to determine current stock condition. Main changes since the previous assessment included updating data sources with new years of data, updating the natural mortality information, and using newly recalibrated recreational catch and effort data from MRIP.

Changes in recreational landings data represent the most significant change in this assessment. MRIP data have recently been recalibrated following changes to the Access Point Angler Intercept Survey and the implementation of the mail-based FES. On the Atlantic Coast, recalibrated harvest and live release estimates for cobia from 1981-2017, on average, were about 2 times higher, with individual years ranging up to 4 times higher, than previous estimates. This is largely due to increased effort estimates from the FES. In the assessment model, these changes resulted in higher estimates of biomass and spawning stock biomass (SSB) compared to the previous assessment. However, trends in landings, biomass, and spawning stock biomass were similar between the two assessments (SEDAR, 2013; SEDAR, 2020).

The Assessment Panel recommended a fishing mortality rate of F40% and SSB at F40% as reference points for Atlantic cobia (SEDAR, 2020). These reference points are calculated to be the fishing rate and SSB level that allows the population to achieve 40% of the maximum spawning potential it would have obtained in the absence of fishing. This type of reference point is often used as a proxy for maximum sustainable yield-derived reference points when data do not allow sufficient modeling of a stock-recruit relationship. The reference points indicated the Atlantic cobia stock is not overfished nor experiencing overfishing.

The assessment estimated the last strong year class was in 2010 (age 1 in 2011) with the four most recent year classes at low levels of recruitment (SEDAR, 2020). While the SSB remains above the overfished threshold, below-average recruitment has led to a decreasing trend in SSB since 2014. The fishing mortality rate has increased since the late 2000s but has not exceeded the overfishing threshold.

Following completion of the stock assessment, the Board moved forward with harvest specification. The harvest specification process allows managers to specify regulations controlling future harvest through a Board vote, allowing managers to respond quickly to changes in the fishery or react following a stock assessment. Through the harvest specification process, the Board may set coastwide total harvest quota, vessel limits, possession or bag limits, minimum size limits, and the commercial closure triggering mechanism for up to three years. Following the completion of the assessment, the TC reviewed projections of SSB, fishing mortality, and removals through 2024 in order to recommend total harvest quota options to the Board.

At its February 2020 meeting, the Board set the coastwide total harvest quota at 80,112 fish for 2020-2022. This results in a recreational quota of 73,703 fish (92%) and a commercial quota of 6,409 fish (8%), equivalent to 146,232 pounds using the 2015-2017 coastwide commercial

average weight. This total quota, based on projections from the SEDAR 58 assessment, is much higher than the previous quota. The recreational quota, in numbers of fish, increased from 22,142 fish to 73,703 fish and the commercial quota increased from 50,000 pounds to 146,232 pounds.

The Amendment 1 quota allocation is based on a weighted average of harvest from each sector between 2000 and 2008 (see *Section 2.2.1*). While the commercial harvest numbers have remained unchanged, the recalibration of the recreational harvest, as estimated by MRIP, has resulted in much larger estimates of historical recreational harvest. This increase in recreational harvest is largely due to previously underestimated effort from the private boat and shore modes and is believed to be a better estimate of previous levels of recreational fishery removals. With Amendment 1 allocation based on previous harvest estimates now being applied to new estimates, the Board requested the harvest allocation be reevaluated through this addendum.

2.2.4 De Minimis Measures

The Commission's Interstate Fisheries Management Program Charter (ISFMP Charter) defines *de minimis* as "a situation in which, under the existing condition of the stock and scope of the fishery, the conservation and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coastwide conservation program required by a Fishery Management Plan or amendment," (ASMFC, 2016). Under Amendment 1, a state may apply annually for *de minimis* status for either or both of its commercial and recreational fisheries. Requests for *de minimis* status are evaluated according to criteria defined in Amendment 1 and considered for approval by the Board.

Commercial *de minimis* states are subject to all coastwide commercial regulations, including minimum size, possession, and vessel limits, as well as closures of the commercial fishery resulting from the coastwide commercial quota being reached. A state with *de minimis* status for its commercial fishery is not required to have in-season commercial harvest monitoring for Cobia. In-season harvest monitoring by non de minimis states is necessary to ensure the fishery can be close before exceeding the annual quota. De minimis states must still report annual landings through state compliance reports. To account for commercial harvest occurring in di minimis states and guard against a quota overage, 3% percent of the commercial quota is set aside and not accessible to non-*de minimis* states.

Recreational *de minimis* states may choose to match the recreational management measures implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or to limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 29 inches fork length (or the total length equivalent, 33 inches). If a *de minimis* state chooses to match an adjacent (or the nearest) non-*de minimis* state, the *de minimis* state is subject to all recreational regulations required by Amendment 1, including bag, size, vessel, and season restrictions, of the adjacent (or nearest) non-*de minimis* state. A *de minimis* state that chooses to limit its recreational fishery to 1 fish per vessel per trip is not subject to seasonal restrictions

for its recreational fishery. One percent (1%) of the recreational quota is set aside to account for harvests in recreational *de minimis* states.

Current recreational *de minimis* measures that do not match those of a neighboring non-*de minimis* state were developed to allow opportunistic harvest of cobia in areas where catches are uncommon. As such, these regulations include a 1 fish per vessel limit with a year-round open season and a reduced minimum size limit of 29 inches FL. This reduced size limit was set to approximately correspond to the female size at 50% maturity, based on the SEDAR 28 stock assessment (SEDAR, 2013). The SEDAR 58 stock assessment indicates similar maturity characteristics, although both assessments had few samples of cobia below the 33-inch FL commercial minimum size limit. SEDAR 58 estimated that 33% of female cobia between 601 and 750 mm (23.7 – 29.5 inches; 9 samples) and 60% of female cobia between 751 and 800 mm (29.6 – 31.5 inches; 5 samples) were mature. All fish larger than 800 mm (31.5 inches) were mature.

3.0 PROPOSED MANAGEMENT PROGRAM

Changes to the management program would replace language in Sections 4.2 and 4.5 of Amendment 1 to the Atlantic Cobia FMP.

3.1 Issue 1: Recreational and Commercial Allocations

In addition to option A which is the status quo allocation (2020 harvest specification based on SEDAR 58 assessment results) a range of alternatives were developed that do not result in a disproportionate increase in the commercial quota. Option B is an allocation that maintains the commercial quota at the Amendment 1 level of 50,000 pounds. Options C and D incrementally increase the commercial allocation within the range of observed commercial harvest percentages in the last 10 years since 2009 (2% to 5%).

Option A. (Status Quo) The recreational quota will be 92% of the coastwide total harvest quota set through Board specification. The commercial quota will be 8% of the coastwide total harvest quota set through Board specification. Under the 2020-2022 total quota, the recreational quota would be 73,703 fish and the commercial quota would be 146,232 pounds.

Option B. The recreational quota will be 97% of the coastwide total harvest quota set through Board specification. The commercial quota will be 3% of the coastwide total harvest quota set through Board specification. Under the 2020-2022 total quota, the recreational quota would be 77,917 fish and the commercial quota would be 54,837 pounds.

Option C. The recreational quota will be 96% of the coastwide total harvest quota set through Board specification. The commercial quota will be 4% of the coastwide total harvest quota set through Board specification. Under the 2020-2022 total quota, the recreational quota would be 76,908 fish and the commercial quota would be 73,116 pounds.

Option D. The recreational quota will be 95% of the coastwide total harvest quota set through Board specification. The commercial quota will be 5% of the coastwide total harvest quota set through Board specification. Under the 2020-2022 total quota, the recreational quota would be 76,106 fish and the commercial quota would be 91,394 pounds.

Table 1. Atlantic cobia (Georgia – Massachusetts) total landings in pounds and percentages of total pounds caught by the recreational fishery from 2000-2018.

Atlantic Cobia Landings (lb)					
Year	**Total**	**% Recreational**	**Year**	**Total**	**% Recreational**
2000	518,092	91.78%	2010	1,754,547	96.82%
2001	454,261	91.00%	2011	957,136	96.51%
2002	609,890	93.28%	2012	978,889	95.73%
2003	1,418,227	97.52%	2013	1,589,819	96.66%
2004	1,062,367	96.93%	2014	1,334,373	94.90%
2005	1,229,884	97.66%	2015	3,711,695	97.79%
2006	1,974,824	98.71%	2016	2,587,126	96.77%
2007	1,350,144	97.75%	2017	1,413,915	96.30%
2008	919,332	96.40%	2018	3,231,501	98.44%
2009	1,314,431	96.81%			

3.2 Issue 2: Commercial Trigger Calculation

The commercial trigger is used to determine when to close the commercial fishery in order to fully utilize but not exceed the quota.

Option A. (Status Quo) The number of days past the trigger percentage until a closure occurs will be calculated as the average number of days from the previous three years for commercial landings to go from the trigger percentage to the full commercial quota, less any *de minimis* set aside.

Option B. Calculate the commercial trigger using the following method (recommended by the TC):

1. Calculation of daily commercial harvest rates for non-*de minimis* states based on harvests from the previous 5 years. Daily harvest rates for each year would be estimated as the annual commercial harvest divided by the number of days from the first date of harvest to the last date of harvest in that year.
2. Average the 5 annual rates to estimate the daily rate for the entire time period.
3. Subtract 30 days' worth of harvest (30 times the average daily harvest rate) from the non-*de minimis* portion of the commercial quota.

3.3 *De Minimis* Measures

3.3.1 Issue 3: Commercial De Minimis Set Aside

Virginia, North Carolina, and South Carolina are the only states that currently do not qualify for commercial *de minimis* status. Commercial harvests that have occurred within and outside of these states from 2000-2018 are shown in Table 2. These numbers include harvests within the Atlantic cobia stock (defined by SEDAR 58 as including cobia from the US Atlantic coast north of the Georgia-Florida state border as far as landings persist) that occur outside of the management unit (north of New York).

Option A. (Status Quo) To account for potential landings in *de minimis* states not tracked in-season against the quota, 3% of the commercial quota would be set aside and not accessible to non-*de minimis* states.

Option B. To account for potential landings in *de minimis* states not tracked in-season against the quota, 3% of the commercial quota or 3,000 pounds, whichever is less, would be set aside and not accessible to non-*de minimis* states.

Option C. To account for potential landings in *de minimis* states not tracked in-season against the quota, 3% of the commercial quota or 5,000 pounds, whichever is less, would be set aside and not accessible to non-*de minimis* states.

Option D. To account for potential landings in *de minimis* states not tracked in-season against the quota, 4 % of the commercial quota would be set aside and not accessible to non-*de minimis* states.

Option E. To account for potential landings in *de minimis* states not tracked in-season against the quota, 4% of the commercial quota or 3,000 pounds, whichever is less, would be set aside and not accessible to non-*de minimis* states.

Option F. To account for potential landings in *de minimis* states not tracked in-season against the quota, 4% of the commercial quota or 5,000 pounds, whichever is less, would be set aside and not accessible to non-*de minimis* states.

Table 2. Commercial Atlantic cobia (MA-GA) landings for states that do (Massachusetts – Maryland and Georgia) and do not (Virginia – South Carolina) qualify for commercial *de minimis* status in 2020, 2000 – 2018.

Year	VA-SC	MA-MD, GA (*De Minimis*)	Year	VA-SC	MA-MD, GA (*De Minimis*)
2000	39,253	3,352	**2010**	54,718	1,037
2001	24,718	1,633*	**2011**	32,444	950
2002	37,510	3,502	**2012**	40,712	1,438*
2003	33,446	1,746	**2013**	50,185	2,992
2004	30,319	3,008*	**2014**	66,545	1,531
2005	27,743	1,086	**2015**	80,523	1,594
2006	25,380	48*	**2016**	81,766	1,817
2007	28,341	2,108*	**2017**	47,899	4,477
2008	31,818	1,279	**2018**	40,656	1,903
2009	39,956	1,944			

*Landings exclude confidential data

Table 3. *De minimis* set-aside portions of the commercial quota for each of the commercial quota options listed for Issue 1.

Issue 1 Commercial Quota Options (lb)	*De Minimis* Set-Aside (lb) with 3%	*De Minimis* Set-Aside (lb) with 4%
A. 146,231	4,387*	5,849*^
B. 54,837	1,645	2,193
C. 73,116	2,193	2,925
D. 91,394	2,742	3,656*

*Would be reduced to 3,000 pounds if Issue 2: Option B or E approved.
^Would be reduced to 5,000 pounds if Issue 2 Option C or F is approved.

3.3.2 Issue 4: Recreational De Minimis Minimum Size Limit

Option A (status quo) was originally proposed to allow harvest at a minimum size where approximately 50% of female cobia were mature. SEDAR 58 provided more recent data that informed percent maturity estimates listed below. SEDAR 58 does note uncertainty in the percentages due to limited data for fish smaller than 33 inches fork length. Alternative recreational *de minimis* minimum size options were developed with two objectives. Option B would increase the estimated percent mature for harvest to be closer to 100%, allowing more female cobia the opportunity to spawn before being susceptible to harvest. Option C would further increase the percent mature, but would also equal the commercial minimum size limit, allowing more consistent regulations based on those used elsewhere in cobia management, rather than a completely different, separate limit.

Option A. (Status Quo) A recreational *de minimis* state may choose to match the recreational management measures implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or limit its recreational fishery to 1 fish per vessel

per trip with a minimum size of 29 inches fork length (or the total length equivalent, 33 inches). SEDAR 58 estimated 33% female maturity between 27.6 and 29.5 inches.

Option B. A recreational *de minimis* state may choose to match the recreational management measures implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 31 inches fork length (or the total length equivalent, 35 inches). SEDAR 58 estimated 60% female maturity between 29.6 and 31.5 inches.

Option C. A recreational *de minimis* state may choose to match the recreational management measures implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 33 inches fork length (or the total length equivalent, 37 inches). SEDAR 58 estimated 100% female maturity above 31.5 inches.

4.0 COMPLIANCE

The management framework contained in *Section 3* of Addendum I to Amendment 1 is effective XX.

5.0 REFERENCES

ASMFC. 2016. Interstate Fisheries Management Program Charter. ASMFC, Arlington, VA. 29 p.

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SAFMC. 2011. Amendment 18 to the Fishery Management Plan for Coastal Migratory Pelagics Resources in the Gulf of Mexico and Atlantic Region. NOAA Award # FNA05NMF4410004. Charleston, SC. 399 p.

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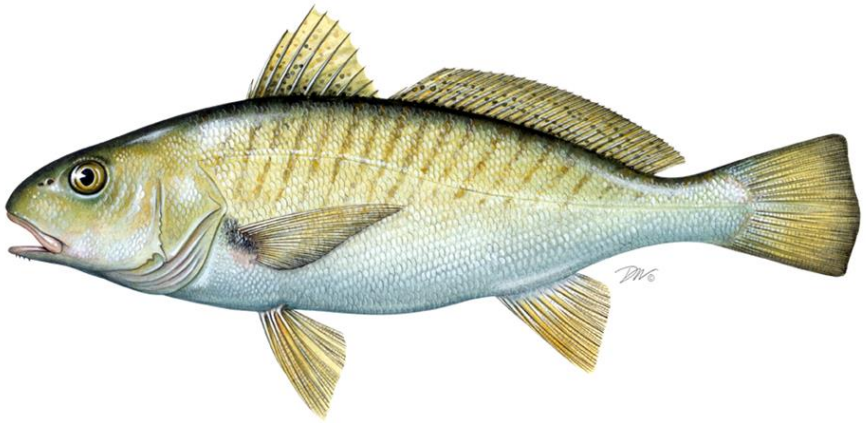
SEDAR. 2013. SEDAR 28 – South Atlantic Cobia Stock Assessment Report. SEDAR, North Charleston, SC. 420 p. Available at: https://sedarweb.org/sedar-28.

SEDAR. 2020. SEDAR 58 – Atlantic Cobia Stock Assessment Report. SEDAR, North Charleston, SC. 500 p. Available at: https://sedarweb.org/sedar-58.

Traffic Light Analysis of Atlantic Croaker (*Micropogonias undulatus)* for the Atlantic States Marine Fisheries Commission Fishery Management Plan Review

2019 Fishing Year



Atlantic Croaker Technical Committee

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Dawn Franco, Georgia Department of Natural Resources, Chair
Somers Smott, Virginia Marine Resource Commission, Vice Chair
Michael Greco, Delaware Division of Fish and Wildlife
Joseph Munyandorero, Florida Fish and Wildlife Conservation Commission
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*Prepared Analysis and Report

1 INTRODUCTION

Atlantic croaker are managed under Amendment 1 to the Interstate Fishery Management Plan for Atlantic Croaker (2005) and Addendum I (2011), Addendum II (2014), and Addendum III (2020). The Amendment does not require any specific measures restricting harvest but encourages states with conservative measures to maintain them. It also implemented a set of management triggers, based on an annual review of certain metrics, to respond to changes in the fishery or resource and initiate a formal stock assessment on an accelerated timeline if necessary. Addendum I revised the management program's biological reference points to assess stock condition on a coastwide basis as recommended by the 2010 stock assessment.

In August 2014, the South Atlantic State/Federal Fisheries Management Board (SAB) approved Addendum II to Amendment I to the Atlantic Croaker Fishery Management Plan (FMP). The Addendum established the Traffic Light Approach (or TLA) to evaluate fisheries trends and develop state-specified management actions (i.e., bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded. Addendum II established the TLA as a precautionary management framework to evaluate fishery trends and develop management actions. Starting in the late 2000s, there were inconsistent signals in the data used to examine the resource. The lack of clear information from the TLA and the assessment made it difficult to provide management advice.

The most recent benchmark stock assessment for Atlantic croaker was completed in 2017 and was not recommended for management use, but did provide more data for further refinement and modification of the existing TLA, as recommended by the Atlantic Croaker Technical Committee (TC). In February of 2020, the SAB approved Addendum III to Amendment I allowing modification of the TLA to use a regional approach as well as establishing management actions to be taken if the TLA triggers were tripped. Addendum III addressed several issues by modifying the TLA to better reflect stock characteristics and identifying achievable management actions based on stock conditions.

The TLA is a statistically-robust way to incorporate multiple data sources (both fishery-independent and -dependent) into a single, easily understood metric for management advice. It is often used for data-limited species, or species that are not assessed on a frequent basis. As such, its serves as an appropriate management tool for Atlantic croaker. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of indicators on the condition of the fish population (abundance metric) or fishery (harvest metric). For example, as harvest or abundance increase relative to their long-term mean, the proportion of green in a given year will increase, and as harvest or abundance decrease, the amount of red in that year becomes more predominant. Under Addendum II, state-specific management action would be initiated when the proportion of red exceeds specified thresholds (30% or 60%), for both harvest and abundance, over three consecutive years. The thresholds were maintained in Addendum III but the trigger mechanism was changed as described below.

Addendum III incorporated the following changes into the TLA:

1. Incorporation of indices from the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the South Carolina Department of Natural Resources (SCDNR) Trammel Net Survey into the adult composite characteristic index, in addition to the currently used indices from the Northeast Fishery Science Center (NEFSC) Multispecies Bottom Trawl Survey and Southeast Area Monitoring and Assessment Program (SEAMAP).

2. Use of revised adult abundance indices from the surveys mentioned above, in which age-length keys and length composition information are used to estimate the number of adult (age 2+) individuals caught by each survey.

3. Use of regional metrics to characterize the fisheries north and south of the Virginia-North Carolina state border. The ChesMMAP and NEFSC surveys will be used to characterize abundance north of the border, and the SCDNR Trammel Net and SEAMAP surveys will be used to characterize abundance south of the border.

4. Change/establish the reference time period for all surveys to be 2002-2012.

5. Change the triggering mechanism to the following: Management action will be triggered according to the current 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded in any three of the four terminal years.

Addendum III retained the TC's ability to alter the TLA as needed to best represent trends in Atlantic croaker harvest and abundance, including selection of surveys and methods to analyze and evaluate these data. Such changes may be made without an addendum, but Addendum III was necessary because of the change to the management-triggering mechanism.

This report includes the harvest and abundance composite indices in Section 2 which are the TLAs that trigger management action. Individual TLAs for commercial and recreational harvest by region, which go into the harvest composite, as well as effort and discards of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery, which are included as supplementary information to be reviewed by the TC and are not included in harvest composite indices, are described in Section 4. TLAs for each fishery-independent index that go into the abundance composite are described in Section 5. Supplemental information with NEAMAP incorporated into the TLAs is provided in Section 6.

2 TRAFFIC LIGHT ANALYSIS (COMPOSITE INDICES)

2.1 Harvest Composite Index

• The harvest (recreational and commercial landings) composite TLA index for the Mid-Atlantic indicates that the management response trigger would have been tripped for the fourth year in a row at the 30% threshold (Figure 1).

• The mean red proportion for the most recent three year time period (2017-2019) in the Mid-Atlantic was 68.3% with the red proportion being above 60% in 2018 and 2019 which indicates a significant level of concern (Figure 1).

• The harvest composite TLA index for the South Atlantic also triggered in 2019 at the 30% threshold and represented the seventh consecutive year above 30% (02).

• The mean red proportion in the South Atlantic for 2017-2019 was 46.2% (02).

• The important trend to point out in both regions is the continuing decline in recreational and commercial landings for Atlantic croaker with increasing red proportions in the TLA.

Figure 1. Annual color proportions for harvest composite TLA of Mid-Atlantic region (NJ-VA) for Atlantic croaker recreational and commercial landings

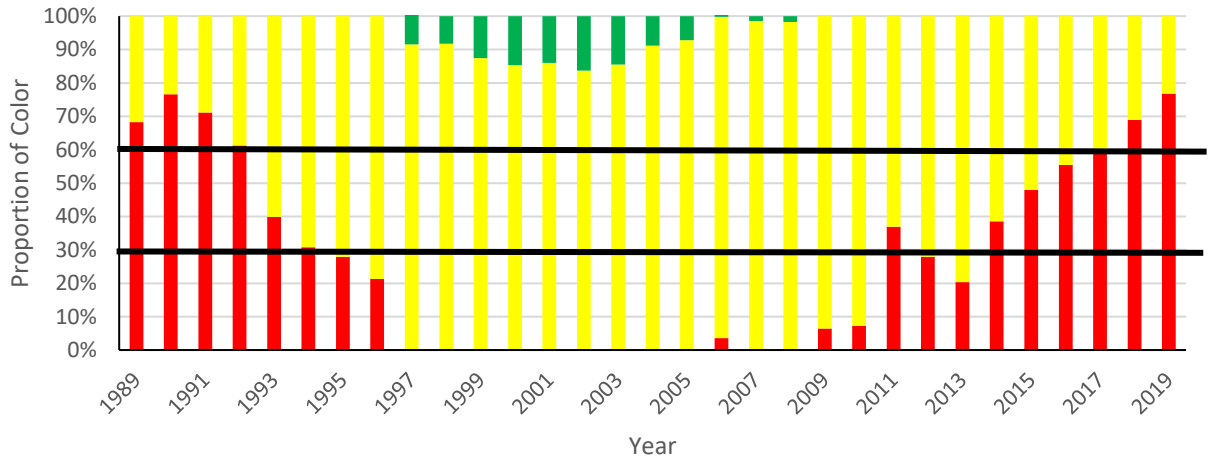
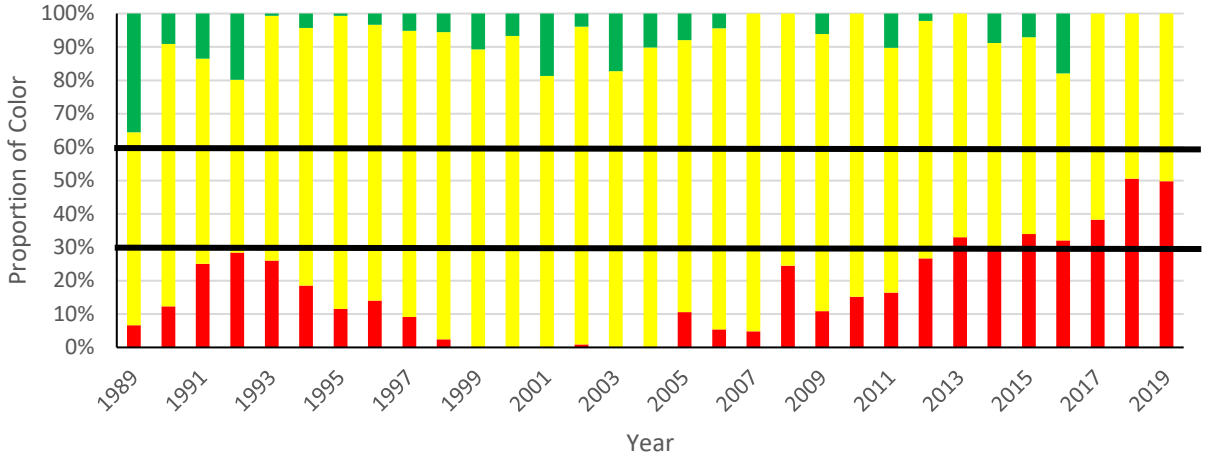


Figure 2. Annual color proportions for harvest composite TLA of South Atlantic region (NC-FL) for Atlantic croaker recreational and commercial landings using a 2002-2012 reference period

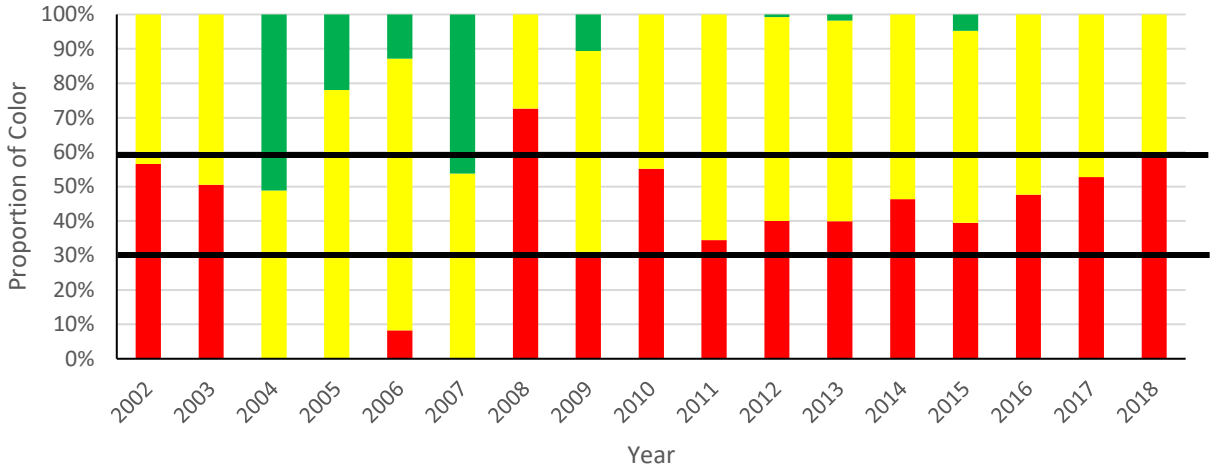


2.2 Abundance Composite Characteristic Indices

The abundance composite TLA index was broken into two components based on age composition in each region. The adult composite index was generated from the NEFSC and ChesMMAP surveys for the Mid-Atlantic and SEAMAP and SCDNR trammel net survey in the There was not a Mid-Atlantic adult composite TLA in 2019 owing to the lack of an index for ChesMMAP. ChesMMAP should return to use for the 2020 sampling year, with a 2019 index once survey calibrations are complete. One additional survey that is available in the Mid-Atlantic is the North East Area Monitoring and Assessment Program (NEAMAP) which samples from Block Island Sound south to Cape Hatteras. The NEAMAP survey has been considered for use in the TLA but is currently not used due to the shorter time frame (2007-2019) compared to the other surveys. It is anticipated that this survey will come into use with the TLA once it reaches a 15 year sampling time span, which corresponds approximately to the max life span of Atlantic croaker. There is a supplemental section at the end of this report that describes the trends in the NEAMAP survey and gives composite characteristics that include NEAMAP. Only adult abundance will be used to determine if management action is triggered, but the juvenile composites are available as supplementary in section 5.7

- The adult composite TLA characteristic for the Mid-Atlantic (Figure 3) showed a trend of increasing red proportions over the last four years. There was not a 2019 data point for the Mid-Atlantic adult composite, as the ChesMMAP index was not available.
- The composite index has been above the 30% threshold since 2008 (Figure 3).
- The adult composite TLA for the Mid-Atlantic meets the 30% threshold of moderate concern and it did trigger at that level in 2019, as three of the four terminal years exceeded the 30% threshold.

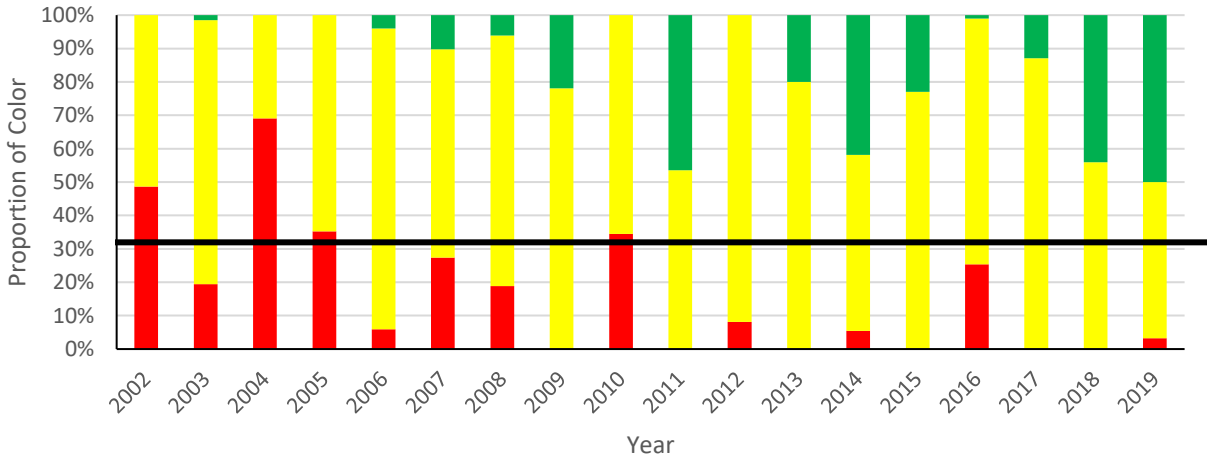
Figure 3. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the Mid-Atlantic (NEFSC and ChesMMAP surveys, no 2019 ChesMMAP value included)



Both the adult abundance and harvest TLA composite characteristics triggered in the Mid-Atlantic at the 30% threshold in 2019. Both the adult abundance and harvest composite showed a continued declining trend which is cause for concern in the Mid-Atlantic region. The continued declining trend in the juvenile composite does not bode well for a positive change in the adult population if recruitment continues to decline (Figure 17).

- The adult composite TLA characteristic for the South Atlantic (Figure 44) showed an increasing trend with a relatively high proportion of green in both 2018 and 2019.
- This index did not trigger any management response in 2019 for the South Atlantic region.

Figure 4. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the South Atlantic (SEAMAP and SCDNR trammel survey)



3 SUMMARY AND MANAGEMENT MEASURES

The harvest composite TLA characteristic triggered in both the Mid-Atlantic and South Atlantic in 2019 at the 30% threshold indicating moderate concern. The continued declining trend in the commercial and recreational harvests for the Atlantic coast is a concern since the decline has become greater in the last two years. The adult abundance characteristics for the Mid-Atlantic exceeded the threshold in 2019 while the South Atlantic abundance composite characteristic did not exceed the trigger in 2019. An implementation of the management guidelines in Addendum III have been triggered in the Atlantic croaker management unit coastwide due to the Mid-Atlantic region composite harvest and abundance TLAs exceeding the 30% threshold for at least three of the past four years. Based on management guidelines, bag limit regulations of no more than 50 Atlantic croaker per person per day and a reduction in commercial harvest of 1% of the average state commercial harvest from the previous 10 years will be required in non-*de minimis* states.

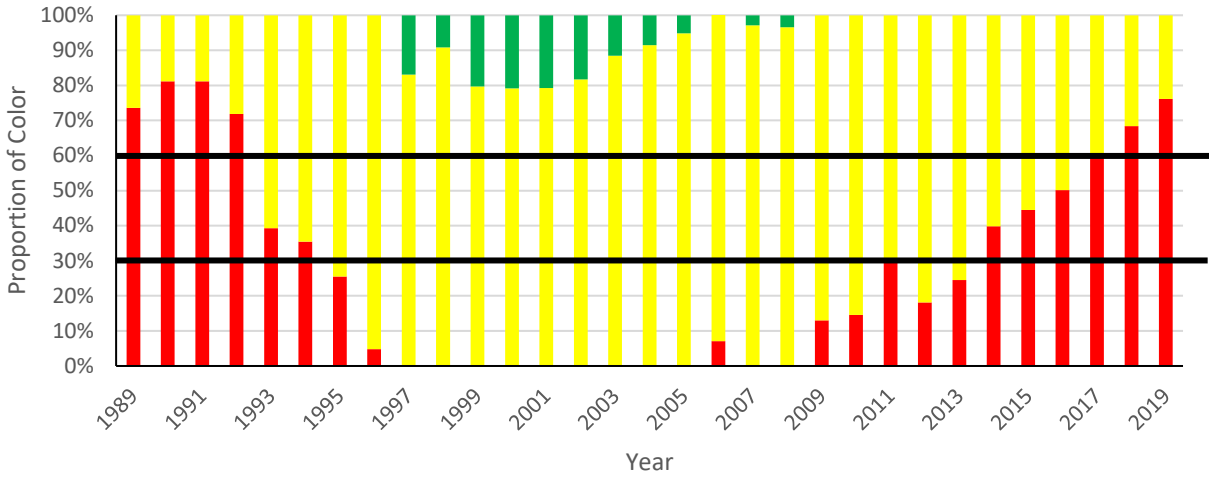
4 TRAFFIC LIGHT ANALYSIS (FISHERY DEPENDENT)

4.1 Commercial Landings

4.1.1 Mid-Atlantic

- Commercial landings in the Mid-Atlantic declined 54.2% in 2019 (385.9 metric tons) from 2018 (1,619 metric tons) and represented the 14th year of decline in commercial croaker landings (Figure 5).
- The TLA for commercial landings has been above the 30% threshold every year since 2014 and 2019 was the 6th year in a row where landings were above the 30% threshold.
- More concerning is that the red proportion has been above the 60% red threshold for the last two years of the series (2018-2019) and was just under 60% in 2017 (59.5%).
- The three year mean red proportion for croaker has exceeded 30% since 2010 and exceeded 60% in 2019. The continued steady decline in croaker landings in recent years represent some of the lowest landings levels in the time series.

Figure 5. Annual TLA color proportions for Atlantic croaker commercial landings for the Mid-Atlantic (NJ-VA) coast of the US



4.1.2 South Atlantic

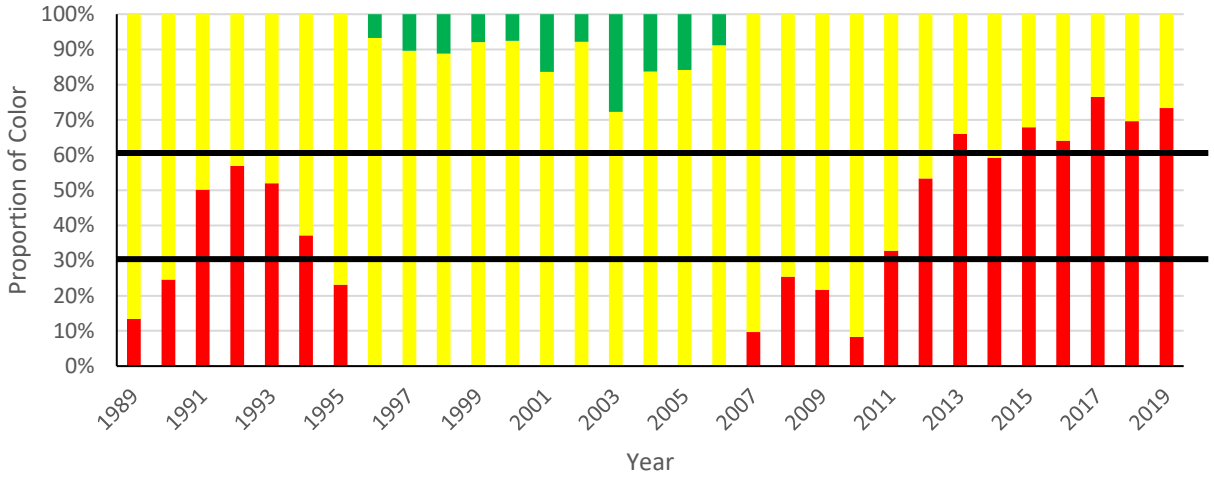
• Commercial landings in the South Atlantic declined 20.4% in 2019 (618.1 metric tons) from 2018 (776.1 metric tons) and represented the 11th year of decline in commercial croaker landings in the South Atlantic (Figure 6).

• The TLA for commercial landings in the South Atlantic has been at or above the 60% threshold every year since 2014 (Figure 66) and 2019 was the 9th year in a row where landings were above the 30% threshold.

• More concerning is that the red proportion has been near or above the 60% red threshold for six of the past seven years of the series (2013-2019) and was only just under 60% in 2014 (59.1%).

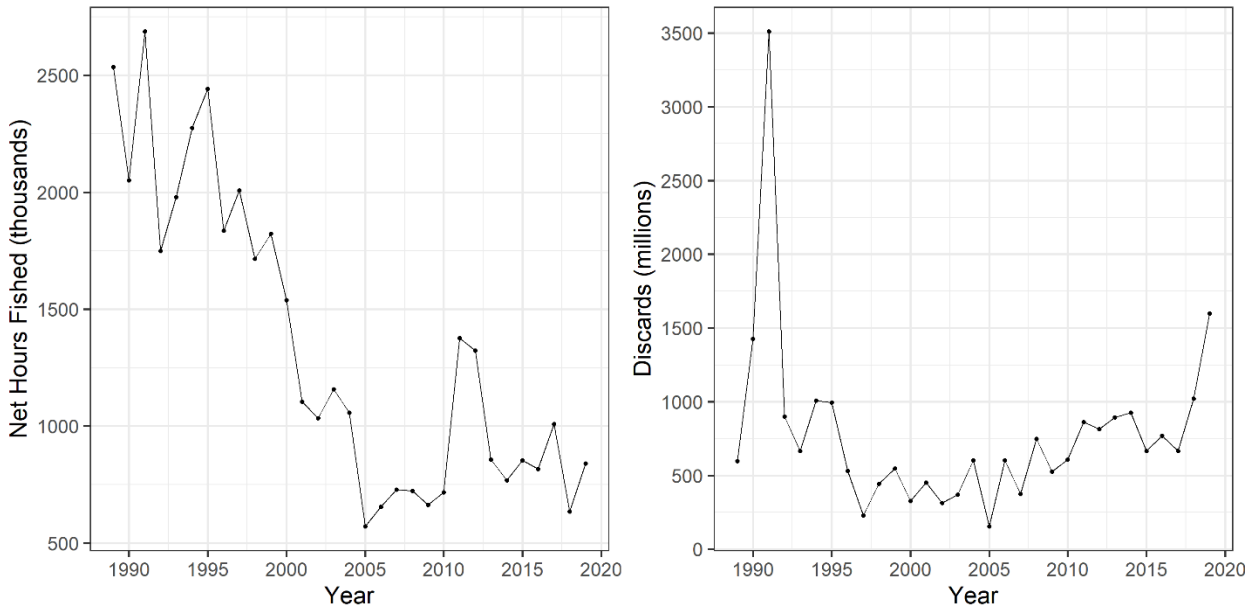
• The three year mean red proportion for croaker has exceeded 30% since 2011 and exceeded 60% for the past five years. The continued steady decline in croaker landings in recent years represent some of the lowest landings levels in the time series.

Figure 6. Annual TLA color proportions for Atlantic croaker commercial landings for the South Atlantic (NC-FL) coast of the US



- Total effort (net hours) in the South Atlantic Shrimp Trawl Fishery declined from a time series high in 1991 to a time series low in 2005 and varied around an increasing trend through the remainder of the time series (Figure 7; left).
- Total discards of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery were high during the late 1980s and early 1990s, declined to relatively low levels in the early to mid-2000s, and then increased to levels similar to the beginning of the time series during the 2010s (Figure 77; right). Discards during the final two years of the time series were the highest since 1991 and included the second highest number of the time series in 2019.

Figure 7. Total net hours fished (left) and discards of Atlantic croaker (right) in the South Atlantic Shrimp Trawl Fishery.



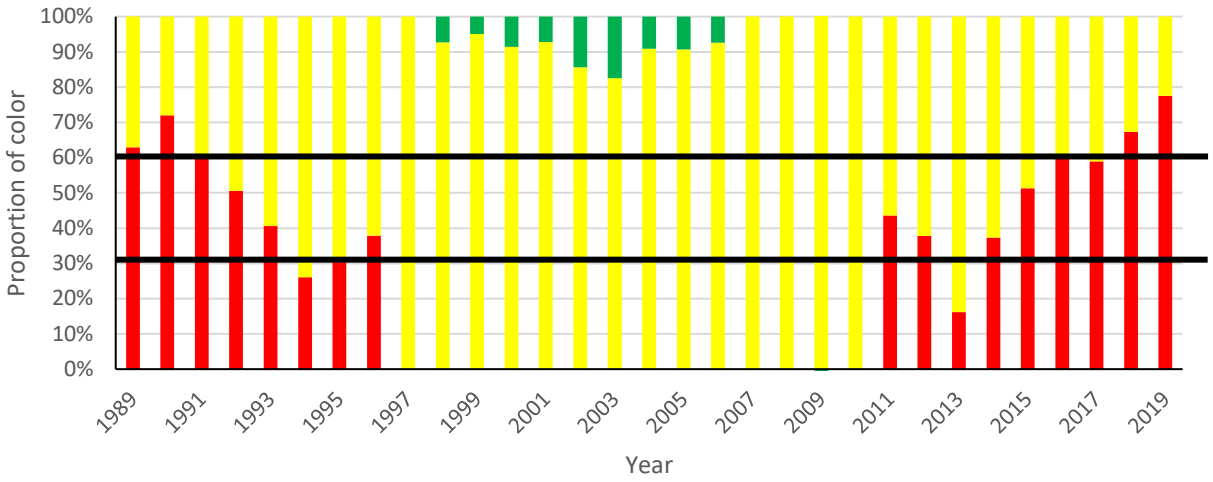
4.2 Recreational Harvest

In July 2018, the Marine Recreational Information Program transitioned from the catch estimates based on effort information from the Coastal Household Telephone Survey (CHTS) to effort information from the mail-based Fishing Effort Survey (FES). FES estimates are used in this and future reports, so recreational estimates and analyses may be different from previous years that used CHTS estimates.

4.2.1 Mid-Atlantic

- The recreational harvest index continued to decline in 2019, down 58% (468.2 metric tons) from 2018 (1,113.6 metric tons).
- The recreational harvest level in 2019 was the lowest annual harvest in the entire time series (1981-2019) for the Mid-Atlantic.
- The proportion of red in the TLA was 77.5% in 2019 increasing from 64.1% in 2018 (Figure 8), indicating the recreational index has exceed the 30% threshold level for the last six years (Figure 8).
- As with commercial landings, the continued decline in harvest levels for Atlantic croaker in the recreational fishery are cause for concern.

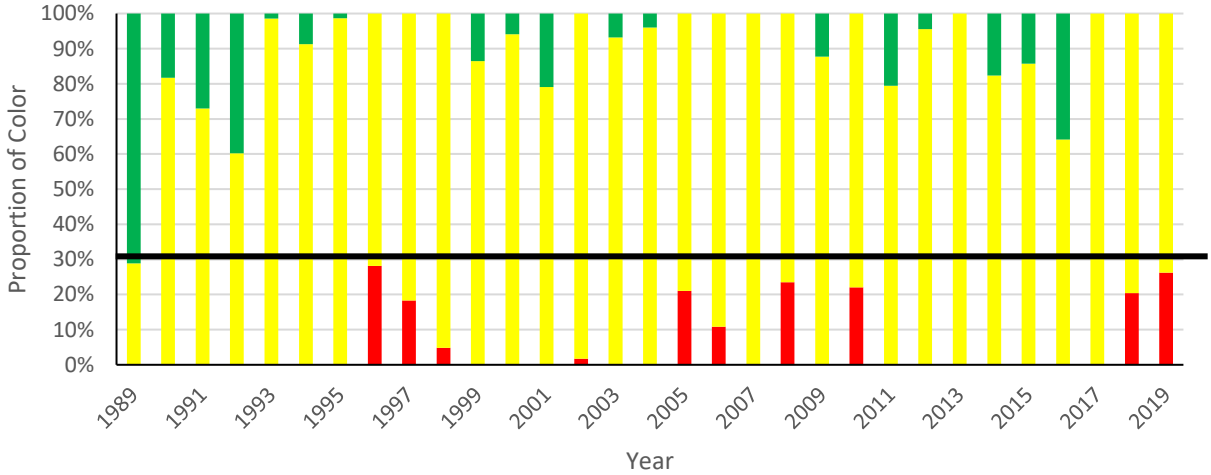
Figure 8. Annual TLA color proportions for Atlantic croaker from the Mid-Atlantic (NJ-VA) coast recreational harvest of the U.S. based on a 2002-2012 reference period



4.2.2 South Atlantic

- The recreational harvest index for the South Atlantic declined 9.3% in 2019 to 429.5 metric tons from 473.4 metric tons in 2018.
- While recreational landings in the South Atlantic have declined over the past two years, red proportion levels have remained below the 30% threshold (Figure 99).

Figure 9. Annual TLA color proportions for Atlantic croaker for the South Atlantic (NC-FL) recreational harvest of the U.S. based on a 2002-2012 reference period



5 TRAFFIC LIGHT ANALYSIS (FISHERY-INDEPENDENT SURVEYS)

5.1 NEFSC Fall Groundfish Survey

• The index value for 2019 was 269.8.0 fish per tow and represented a 31.5% decrease from 2018 (394.0 fish per tow).

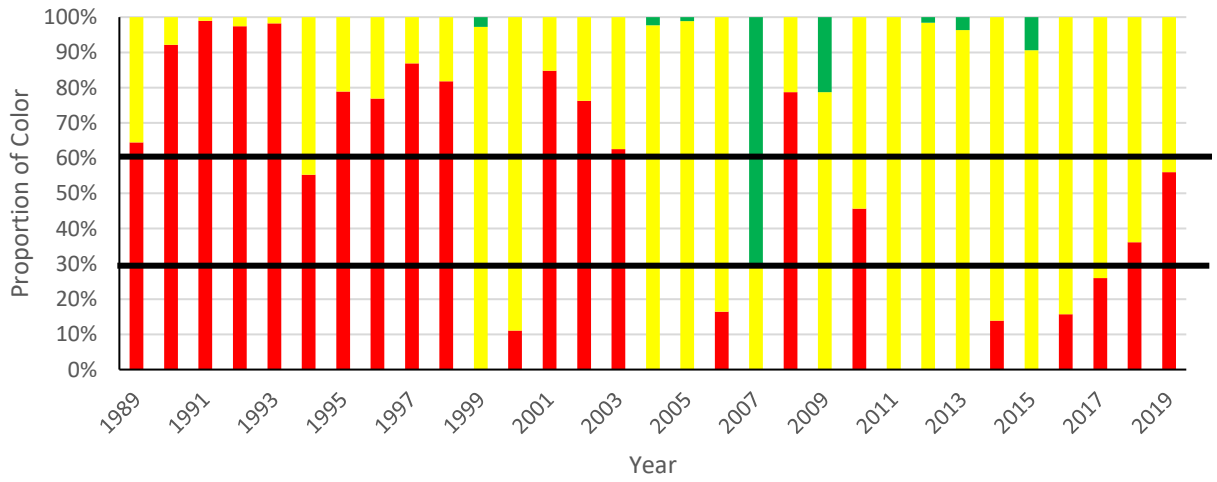
• The NEFSC was not carried out in 2017 due to mechanical problems with the RV Bigelow. An imputed index for 2017 was calculated as the mean of 2015-2016 and 2018 (Figure 1010).

• The index has been below the long term mean (452.7 fish per tow) for the past four years.

• The general trend for the index has been declining since the series peak in 2007.

• The red proportion of the TLA has exceeded the 30% threshold for the last two years with the 3 year red proportion average being 39.4%.

Figure 10. Annual TLA color proportions for adult Atlantic croaker from the Mid-Atlantic NEFSC ground-fish trawl survey based on 2002-2012 reference period



5.2 ChesMMAP Survey

• The ChesMMAP survey made major changes to the survey in 2019 (vessel change, gear change, altered protocols, etc.) but maintained the same sampling strata and design. Side-by-side comparison tows were made between the new and old vessels/gears and the survey is in the process of producing conversion factors by species so that historic survey index values can be compared to ongoing survey values in the future. Since the conversion factor determination won't likely be finished until the end of 2020, the ChesMMAP index is only available through 2018 for the adult and juvenile TLA composite characteristics.

• The overall declining trend in catch of Atlantic croaker was evident in both the adult (age 2+) and juvenile (ages 0-1) indices, although the adult index was higher than the juvenile index in the early years of the survey (Figure 11 and Figure 1212). The series peak for juveniles occurred in 2007 and the series peak for adults occurred in 2004. Since 2008 abundances for both age groups have remained relatively low.

• The TLA reflected these trends with high proportions of red since 2008 (Figure 1111 and Figure 1212).

• Proportionately, the decline was slightly greater for juveniles than for adults in recent years.

Figure 11. Mid-Atlantic ChesMMAP survey annual TLA color proportions for juvenile Atlantic croaker ages 0-1 using a 2002-2012 reference period

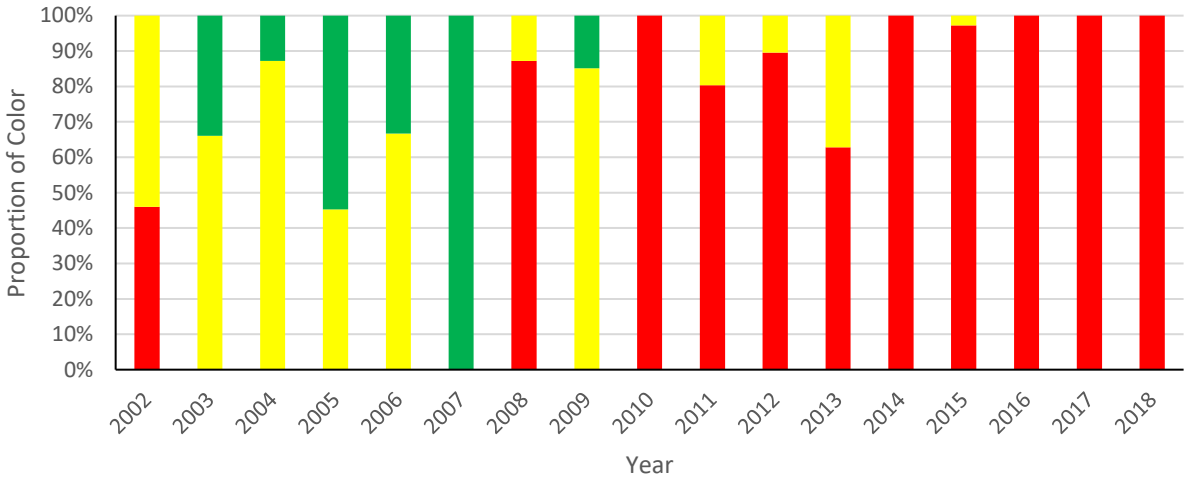
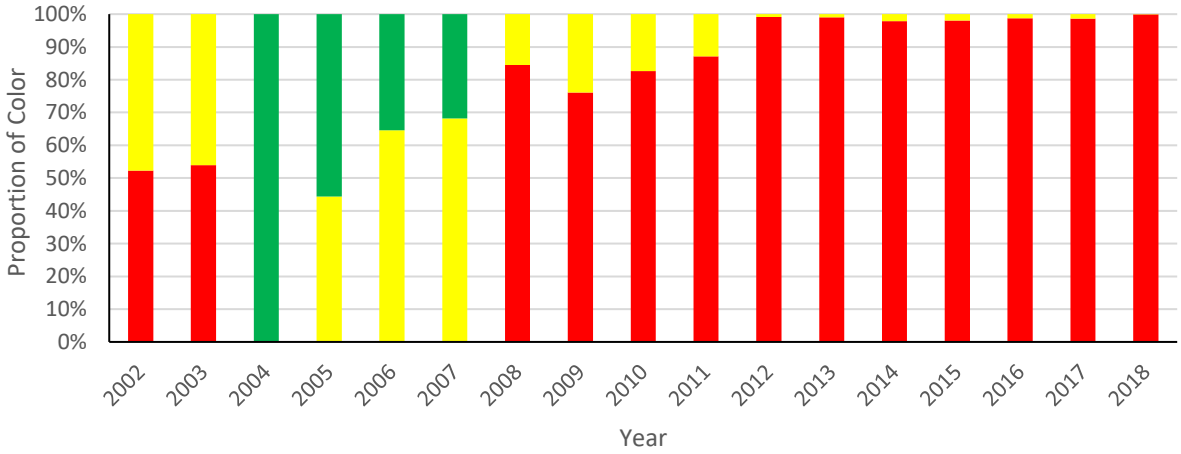


Figure 12. Mid-Atlantic ChesMMAP survey annual TLA color proportions for adult Atlantic croaker ages 2+ using a 2002-2012 reference period



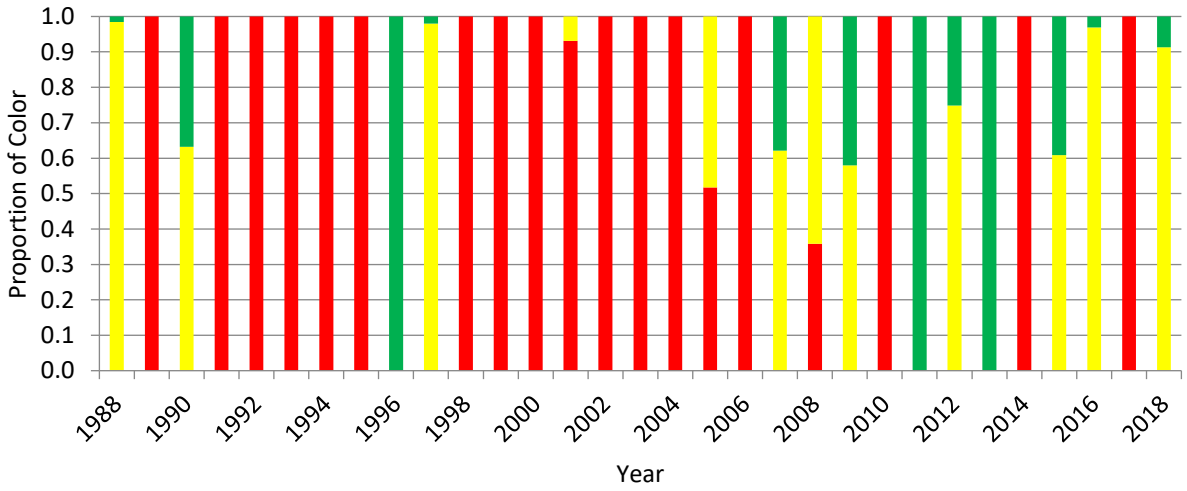
5.3 VIMS Survey

• The inability to do field work in June of 2020 due to work restrictions from the COVID-19 pandemic resulted in no juvenile VIMS index for 2019. The VIMS juvenile trawl survey uses the relative catch levels of 1-year-old juvenile croaker as the proxy for the previous year's recruitment index. The results from the 2018 report were left in this report as a placeholder, although the VIMS index was not used in the composite indices in this report.

• The VIMS index increased significantly (2447%) in 2018 from 2017 going from 0.614 fish per tow in 2017 to 15.64 fish per tow in 2018. High variability in the TLA color proportions was likely due to annual recruitment variations, which would not be uncommon for a juvenile index (Figure 1313).

• The index value was above the long term mean in 2018 with a red proportion of 6.8%.

Figure 13. Annual TLA color proportions for juvenile Atlantic croaker ages 0-1 from Mid-Atlantic VIMS spring trawl survey using 2002-2012 reference period



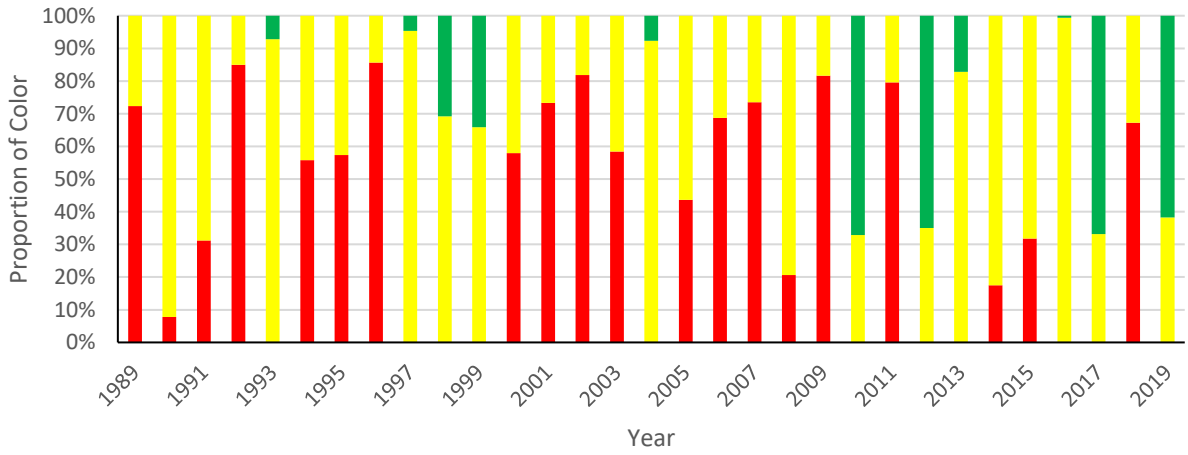
5.4 SEAMAP Survey

• The SEAMAP spring season survey index used was for the spring season when more adult Atlantic croaker (ages 2+) are captured than in the fall season.

• The SEAMAP index increased 12.7% in 2019 (34.7 kg/tow) from 2018 (30.7 kg/tow).

• Index values have remained above the long term mean since 2011 so there was no red in the TLA for 2019 (Figure 14).

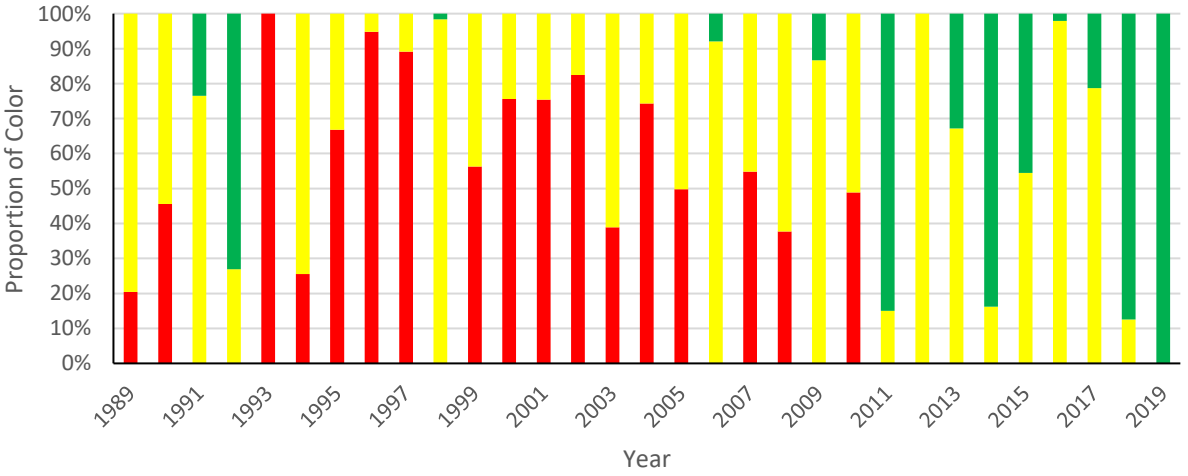
Figure 14. Traffic Light Analysis for South Atlantic SEAMAP catch data by weight in spring for Adult Atlantic croaker using a 2002-2012 reference period



5.5 North Carolina Program 195

- The North Carolina index increased significantly in 2019 (88.1%) to 1,110.8 fish/tow (versus 136.7 fish/tow in 2018) and was well above the long term mean (290.3 fish per tow) resulting in a green proportion of 1.0 in the TLA (Figure 155).
- The increase in CPUE and resulting high green proportion was likely due to a very strong year-class for Atlantic croaker in 2019 in North Carolina.

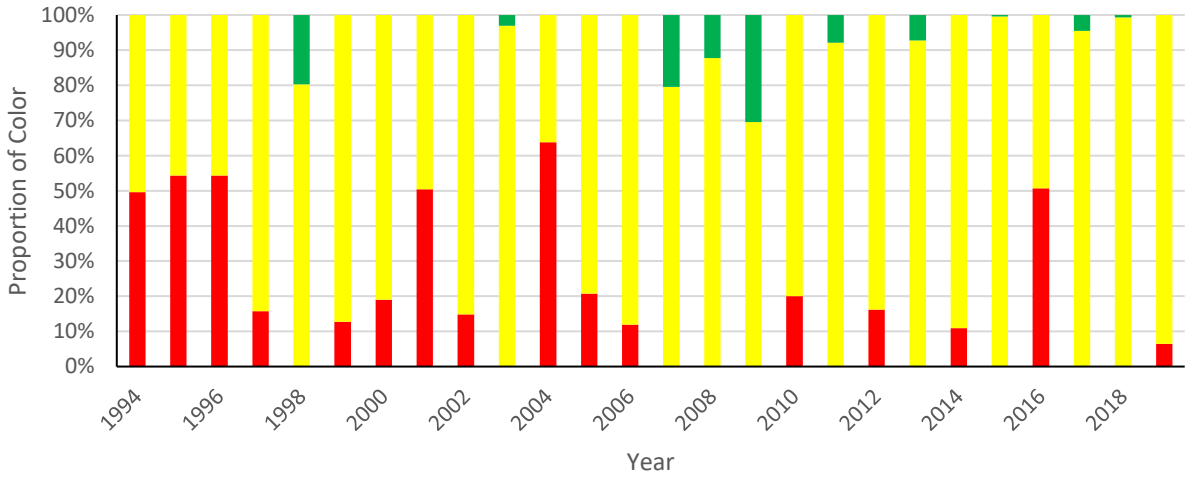
Figure 15. South Atlantic NCDMF Program 195 TLA color proportions for juvenile Atlantic croaker using 2002-2012 reference period



5.6 SCDNR Trammel Net Survey

- The SCDNR trammel index declined 12.7% in 2019 (1.35 fish per set) compared to 2018 (1.54 fish per set). Annual CPUE has been variably above and below the long term mean (1.34 fish per set) since 2009, indicated by annual alterations between red and green proportions in the TLA (Figure 166).
- The 2019 index value was only just below the long term mean.

Figure 16. South Atlantic SCDNR trammel net survey TLA color proportions for adult Atlantic croaker using a 2002-2012 reference period.



5.7 Juvenile Abundance Composites by Region

The juvenile composite index in the Mid-Atlantic was generated from the ChesMMAP and VIMS surveys because VIMS is a juvenile survey and ChesMMAP has an age specific index for ages 0-1. There was not a Mid-Atlantic juvenile composite TLA in 2019 owing to the lack of indices for both ChesMMAP and VIMS. Both of these indices should return to use for the 2020 sampling year, with a 2019 index for ChesMMAP but not VIMS. The advisory juvenile composite characteristic was above the 60% threshold in the Mid-Atlantic, but not in the South Atlantic.

- The juvenile composite TLA characteristic (Figure 17) in 2018 was above the 60% red threshold using ChesMMAP and VIMS for the third year. The Mid-Atlantic juvenile composite exceeded the 60% level of concern in 2019 regardless of whether index values had been available since it exceeded the threshold in three of the previous four years.
- The high red proportions in recent years are indicative of continued poor Atlantic croaker recruitment in the Mid-Atlantic region.
- The juvenile index for the South Atlantic TLA has been below the 30% red threshold, and uses only the NC Program 195 index (Figure 18).

Figure 17. Juvenile croaker (ages 0-1) TLA composite characteristic index for the Mid-Atlantic (ChesMMAP and VIMS through 2018)

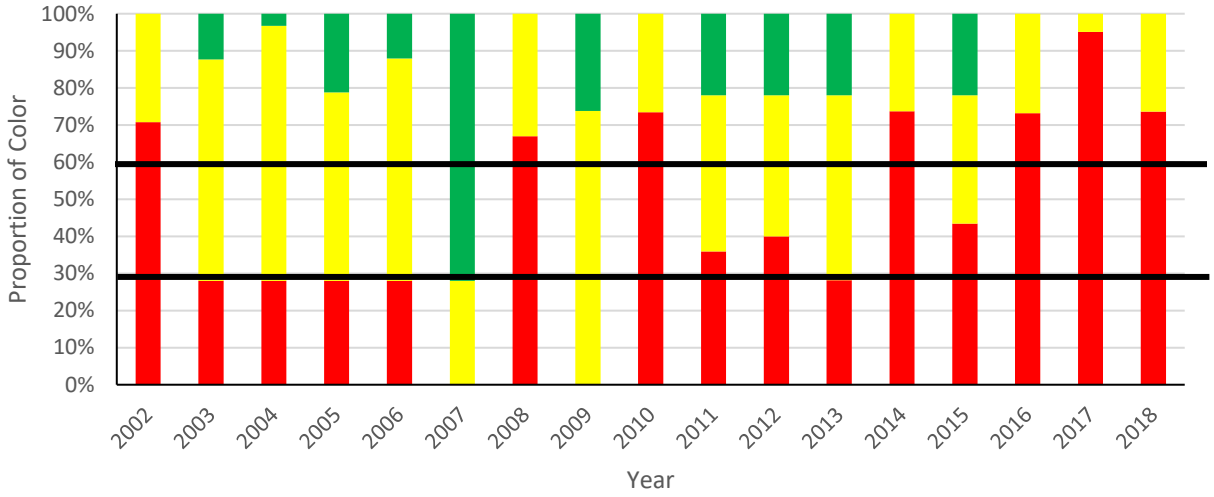
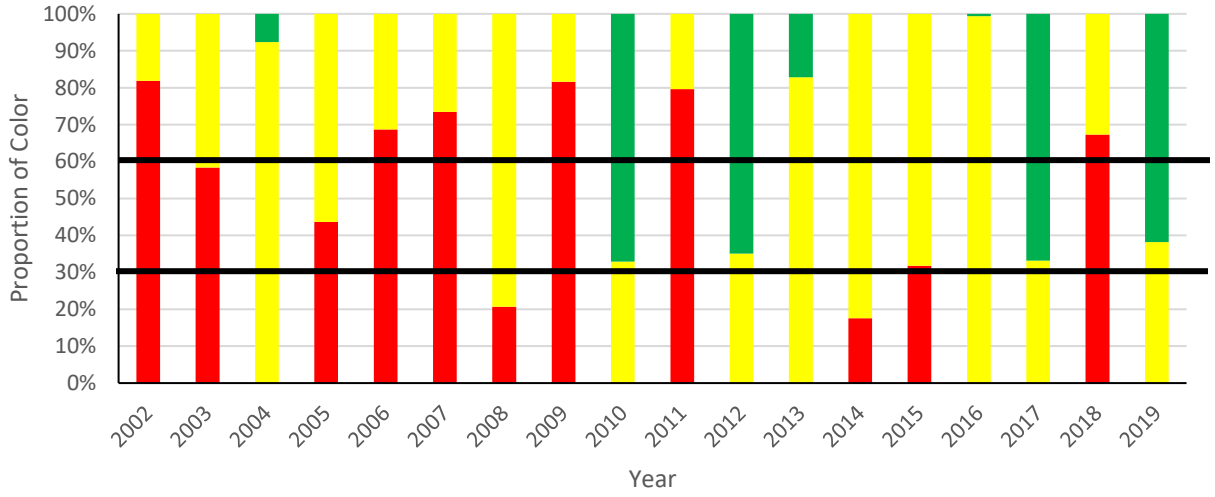


Figure 18. Juvenile (ages 0-1) Atlantic croaker composite characteristic index for the South Atlantic (NC Program 195)

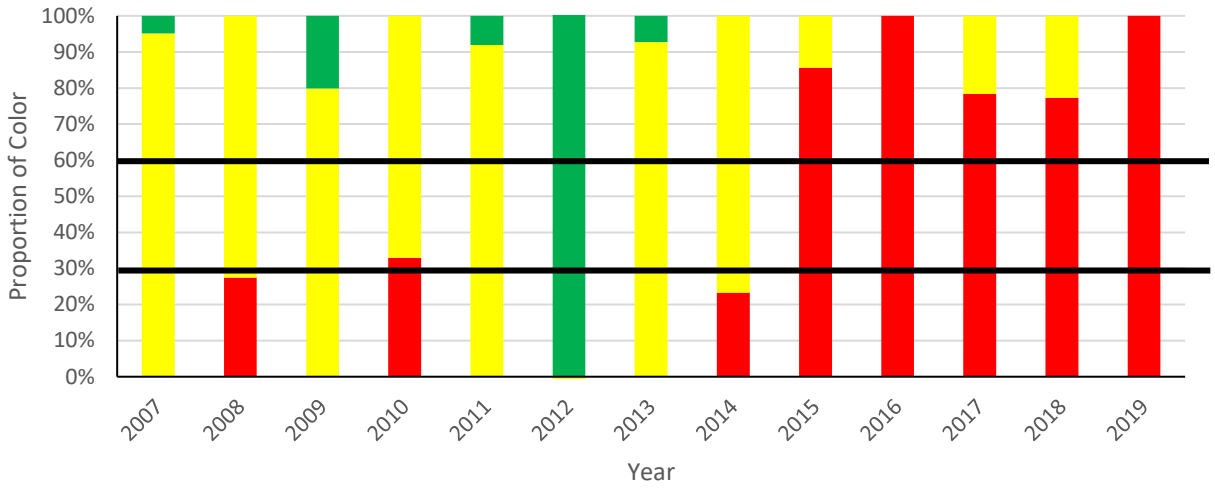


6 SUPPLEMENTAL MATERIAL

6.1 NEAMAP Survey

- Juvenile recruitment has been on a declining trend since 2012 as indicated by high red proportions above the 60% threshold for the last five years (Figure 19).
- This corresponds well with the decline seen in the ChesMMAP survey for juveniles in recent years as well.

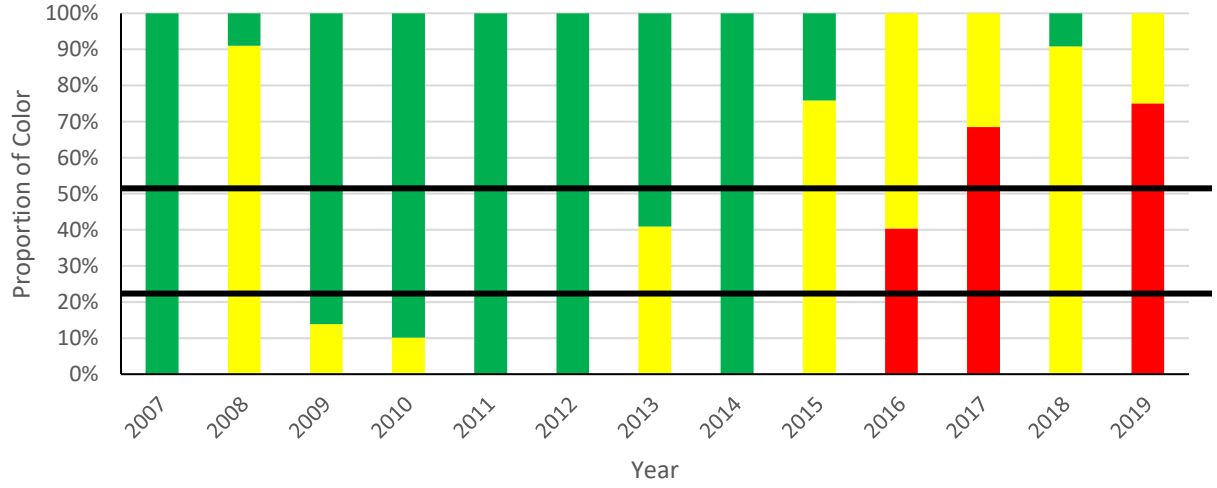
Figure 19. Juvenile (ages 0-1) TLA color proportions for Atlantic croaker from NEAMAP survey using a 2007-2019 reference period



• The adult Atlantic croaker index for NEAMAP also showed a declining pattern in recent years (Figure 20), although not as much of decline as that seen in the juvenile fish.

• The NEAMAP survey adult TLA had red proportions above the 30% threshold for three of the four previous years (Figure 20). Red proportions in 2017 and 2019 exceeded the 60% threshold as well.

Figure 20. Adult (ages 2+) TLA color proportions for Atlantic croaker from the NEAMAP survey using a 2007-2019 reference period



6.2 Composite TLA Characteristic for Mid-Atlantic including NEAMAP

In order to generate the composite TLA index that included NEAMAP in the Mid-Atlantic, the other Mid-Atlantic indices (NEFSC, ChesMMAP, VIMS) had to be recalculated using the common time period of all three surveys (2007-2019) in order to have a common reference.

- The addition of NEAMAP to the Mid-Atlantic TLA composite characteristic for juvenile Atlantic croaker showed the same general trend of declining recruitment and high levels (> 60%) of red in recent years (Figure 21). While the composite only went through 2018 in order to correspond to data available from the ChesMMAP and VIMS surveys, red proportions were still above 60% for just the NEAMAP survey (Figure 21).
- The adult Atlantic croaker composite characteristic for the Mid-Atlantic with NEAMAP included also showed increasing proportions of red and would have triggered in 2019 at the 30% threshold (0).

Figure 21. Juvenile Atlantic croaker (ages 0-1) TLA composite characteristic index for the Mid-Atlantic through 2018 using NEAMAP, ChesMMAP, and VIMS with a 2007-2018 reference period

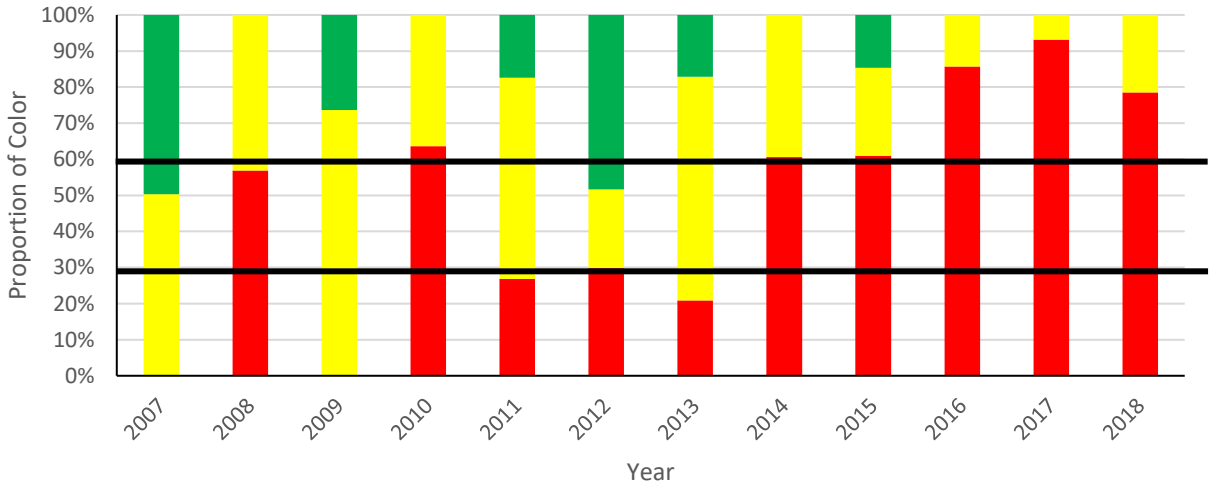
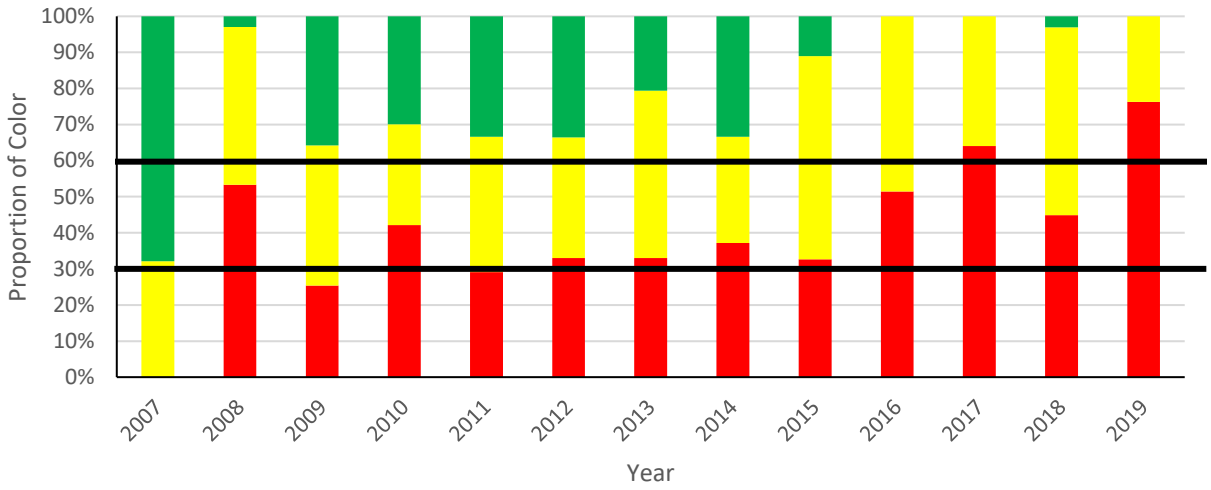


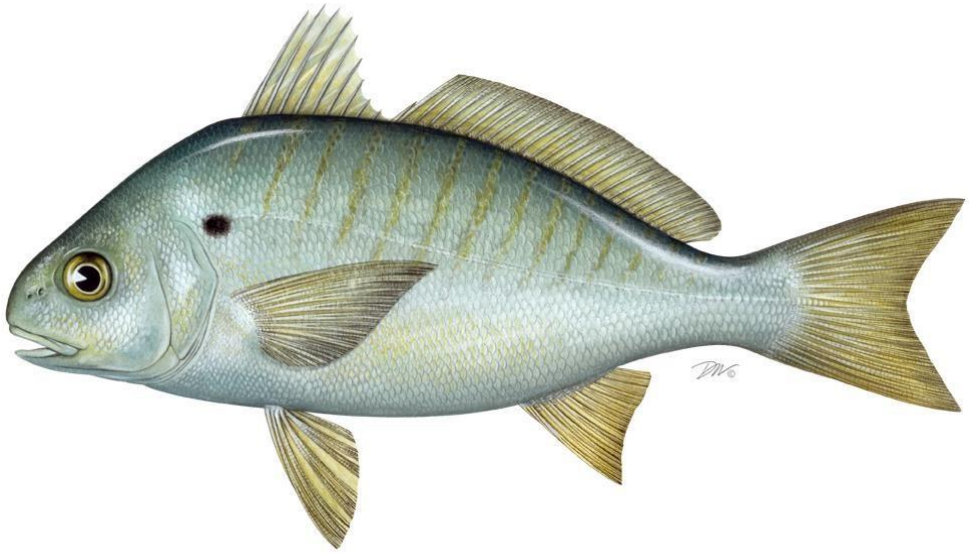
Figure 22. Adult Atlantic croaker (ages 2+) TLA composite characteristic index for the Mid-Atlantic (NJ-VA) through 2018 using NEFSC, NEAMAP and ChesMMAP with a 2007-2019 reference period



The addition of the NEAMAP survey to the Mid-Atlantic composite characteristics supports trends seen with the other indices used in the composite characteristic. The only limitation on the NEAMAP survey is a more limited time frame compared to the other surveys. The NEAMAP survey may be added to the TLA data sets after either the next benchmark assessment for Atlantic croaker (currently scheduled for completion in 2024) or after it has 15 years or more of index values.

2020 Traffic Light Analysis of Spot (*Leiostomus xanthurus)* for the Atlantic States Marine Fisheries Commission Fishery Management Plan Review.

2019 Fishing Year



Spot Technical Committee

*Chris McDonough, South Carolina Dept. of Natural Resources
Harry Rickabaugh, Maryland Dept. of Natural Resources, Chair
BJ Hilton, Georgia Department of Natural Resources
Michael Greco, Delaware Division of Fish and Wildlife
Morgan Paris, North Carolina Division of Marine Fisheries
Somers Smott, Virginia Marine Resource Commission
Stacy VanMorter, New Jersey Division of Fish and Wildlife

*Prepared analysis and report

1 INTRODUCTION

Spot is managed under the Omnibus Amendment for Spot, Spotted Seatrout, and Spanish Mackerel (2011), Addendum II (2014), and Addendum III (2020). The Omnibus Amendment updates all three species plans with requirements of the Atlantic States Marines Fisheries Commission's (ASMFC) Interstate Fisheries Management Program (ISFMP) Charter. The benchmark stock assessment for spot in 2017 was not recommended for management use due to uncertainty in biomass estimates from conflicting signals among abundance indices and catch time series, as well as sensitivity of model results to assumptions and model inputs.

Previously, in the absence of a coastwide stock assessment, the South Atlantic Board (SAB) approved Addendum II to the Spot Fishery Management Plan (FMP) in 2014. The Addendum established the use of a Traffic Light Analysis (TLA), similar to that used for Atlantic croaker, to evaluate fisheries trends and develop state-specified management actions (e.g., bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded for two consecutive years. The TLA is a statistically-robust way to incorporate multiple data sources (both fishery -independent and -dependent) into a single, easily understood metric for management advice. It is often used for data-poor species, or species which are not assessed on a frequent basis. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of indicators on the condition of the fish population (abundance metric) or fishery (harvest metric). For example, as harvest or abundance increase relative to their long-term mean, the proportion of green in a given year will increase and as harvest or abundance decrease, the amount of red in that year becomes more predominant. The TLA improves the management approach as it illustrates long-term trends in the stock and includes specific management recommendations in response to declines in the stock or fishery. Under Addendum II, state-specific management action would be initiated when the proportion of red exceeds specified thresholds (30% or 60%), for both harvest and abundance, over two consecutive years.

Starting in the late 2000s, there were inconsistent signals in the data used to examine the resource. While strong declines in harvest and reports of poor fishing prompted concern, management action was not triggered through the TLA because similar declines were not observed in abundance indices. These conflicting signals suggested the abundance indices being used in the TLA may not adequately represent coastwide adult abundance and the TLA may not be sensitive enough to trigger management action if declines in the population and fishery occur. Additionally, management lacked specificity in what measures to implement if a trigger did occur and how the fishery should be evaluated following management action. In February 2020, the SAB approved Addendum III to the Spot FMP. Addendum III addressed these issues by modifying the TLA to better reflect stock characteristics and identify achievable management actions based on stock conditions.

Addendum III incorporated the use of a regional approach to better reflect localized fishery trends and changed the TLA to trigger management action if two of the three most recent years of characteristics exceed threshold levels. These changes to management allow the TLA to better detect population and fishery declines. Addendum III also defined management

responses for the recreational and commercial fisheries and a method for evaluating the population's response to TLA-triggered management measures.

The following changes were incorporated into the TLA by Addendum III:

- Incorporation of indices from the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the North Carolina Division of Marine Fisheries (NCDMF) Pamlico Sound Survey (Program 195) into the adult composite characteristic index, in addition to the currently used indices from the Northeast Fisheries Science Center (NEFSC) Multispecies Bottom Trawl Survey and the South Atlantic component of the Southeast Area Monitoring and Assessment Program (SEAMAP).
- Use of revised adult abundance indices from the surveys mentioned above, in which age-length keys and length composition information are used to estimate the number of adult (age 1+) individuals caught by each survey.
- Use of regional metrics to characterize the fisheries north and south of the Virginia-North Carolina state border. The ChesMMAP and NEFSC surveys will be used to characterize abundance north of the border, and the NCDMF Program 195 and SEAMAP surveys will be used to characterize abundance south of the border.
- Change/establish the reference time period for all surveys to be 2002-2012.
- Change the triggering mechanism to the following: Management action will be triggered according to the current 30% and 60% red thresholds if both the abundance and harvest thresholds are exceeded in any two of the three terminal years.

Addendum III also established a Spot Technical Committee (TC) with the ability to alter the TLA as needed to best represent trends in spot harvest and abundance, including selection of surveys and methods to analyze and evaluate these data. Such changes may be made without an addendum, but Addendum III was necessary because of the change to the management-triggering mechanism. The TC will evaluate state implementation of management responses triggered through the TLA.

This report includes the harvest and abundance composite indices in Section 2 which are the TLAs that trigger management action. Individual TLAs for commercial and recreational harvest by region, which go into the harvest composite, as well as effort and discards of spot in the South Atlantic Shrimp Trawl Fishery, which are included as supplementary information to be reviewed by the TC and are not included in harvest composite indices, are described in Section 4. TLAs for each fishery-independent index that go into the abundance composite are described in Section 5. Supplemental information with NEAMAP incorporated into the TLAs is provided in Section 6.

2 TRAFFIC LIGHT ANALYSIS (COMPOSITE INDICES)

2.1 Harvest Composite Characteristic Index

- The harvest (recreational and commercial landings) composite characteristic TLA shows the general decline in landings since 2008 in both the Mid-Atlantic and South Atlantic (Figure 1 and Figure 2).
- The composite characteristic for the Mid-Atlantic has exceeded the 30% threshold for four of the last five years (Figure 1) with an average red proportion of 40.4%. The red proportion in 2019 was 34.7%.
- The composite characteristic for the South Atlantic has exceeded the 30% threshold for three of the last four years (Figure 2) with an average proportion of 35.6%. The red proportion in 2019 was 41.6%.
- The declining trend in spot fishery landings continues to occur coastwide.
- The TLA composite index triggered in 2019 at the 30% threshold for both regions.

Figure 1. Annual TLA color proportions for harvest composite (commercial and recreational landings) in the Mid-Atlantic coast (NJ-VA) for spot using a 2002-2012 reference period.

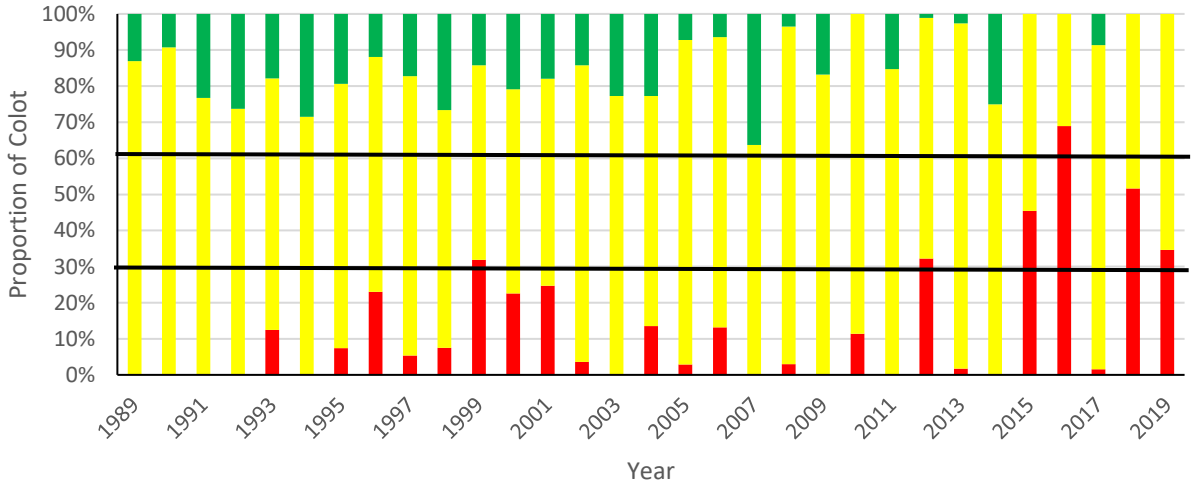
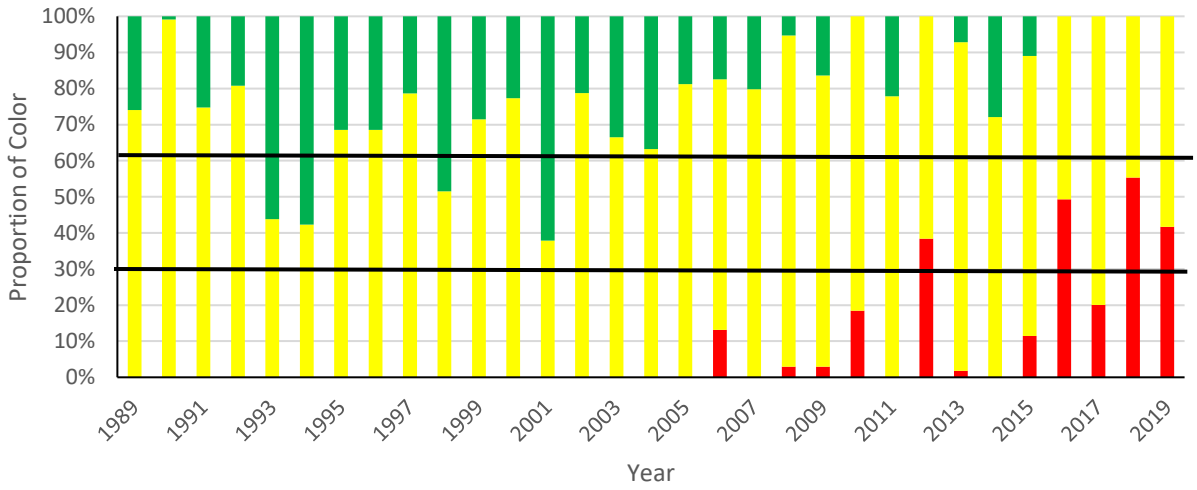


Figure 2. Annual TLA color proportions for harvest composite (commercial and recreational landings) for the South Atlantic coast (NC-FL) for spot using a 2002-2012 reference period.



2.2 Abundance Composite Characteristic Index

The abundance composite TLA index was broken into two components based age composition in each region. The adult composite index was generated from the NEFSC and ChesMMAP surveys for the Mid-Atlantic and SEAMAP and NCDMF Program 195 in the South Atlantic since the majority of spot captured in these surveys were ages 1+. The Mid-Atlantic abundance composite TLAs in 2019 could only be estimated using the MD and NEFSC surveys for the juvenile (Section 5.7) and adult TLAs, respectively, owing to the lack of indices from ChesMMAP. ChesMMAP should return to use for the 2020 sampling year, including calibrated indices for 2019. One additional survey that is available in the Mid-Atlantic is the NorthEast Area Monitoring and Assessment Program (NEAMAP) which samples from Block Island Sound south to Cape Hatteras. The NEAMAP survey has been considered for use in the TLA but is currently not utilized due to the shorter time frame (2007-2019) compared to all the other surveys. It is anticipated that this survey will come into use with the TLA once it reaches a 15 year sampling time span. There is a supplemental section at the end of this report that describes the trends in the NEAMAP survey and gives composite characteristics that include NEAMAP for the Mid-Atlantic. Only adult abundance will be used to determine if management action is triggered. Juvenile data is presented as supplementary information.

2.2.1 Mid-Atlantic

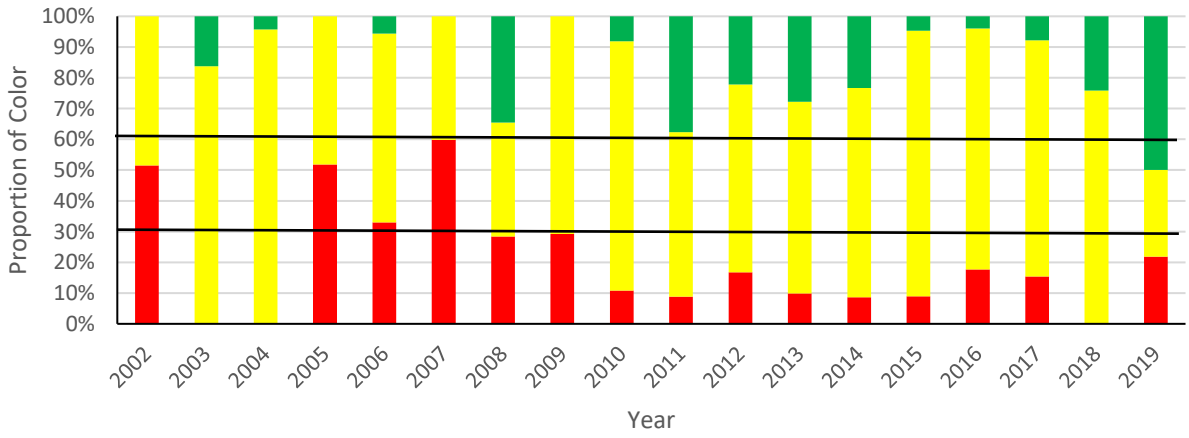
- The TLA composite characteristics for spot abundance (NEFSC and ChesMMAP surveys) in the Mid-Atlantic did not have 2019 data points owing to the fact that the ChesMMAP survey indices were not available (Figure 33).
- The adult index still triggered at the 30% threshold because the red proportions in the index have exceed the 30% threshold for the previous five years (Figure 3).

Figure 3. Annual TLA for adult (age 1+) spot for composite characteristic of adult fishery independent surveys in the Mid-Atlantic (NJ-VA) (NEFSC and ChesMMAP) using a 2002-2012 reference period.

2.2.2 South Atlantic

- The South Atlantic adult abundance composite characteristic did not trigger in 2019 since none of the red proportions in recent years have exceeded the 30% red threshold (Figure 4). There has been a bit of conflict in the index with both red and green proportions in the same years. This has been due to the NCDMF Program 195 index having higher red proportions and SEAMAP having relatively high green proportions in recent years.

Figure 4. Annual TLA composite characteristic for adult spot (age 1+) in the South Atlantic (SEAMAP and NCDMF Program 195) using a 2002-2012 reference period.



3 SUMMARY

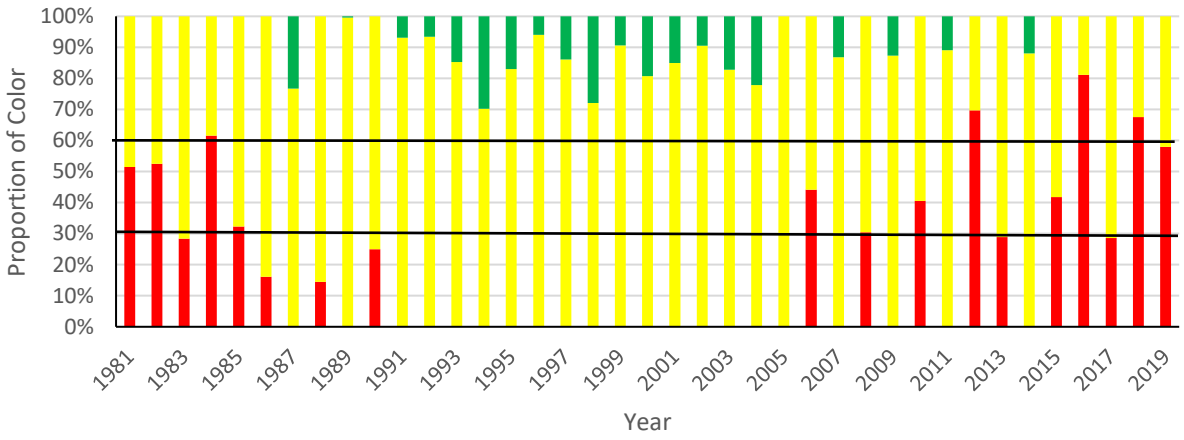
- The harvest composite TLA for spot exceeded the 30% threshold in both regions and triggered in 2019.
- The Mid-Atlantic abundance composite characteristic did not have a 2019 data point, but did trigger the two previous years thus triggering in two of the three terminal years.
- The South Atlantic abundance composite characteristic did not trigger in 2019 for adults with red proportions in the terminal three years either not present or below the 30% threshold of concern.
- With the harvest TLAs triggering at 30% for both regions and the abundance composite TLA triggering at the 30% threshold in the Mid-Atlantic region in 2019, management action outlined in Addendum III has been triggered coastwide for both the commercial and recreational fisheries in 2021.

4 TRAFFIC LIGHT ANALYSIS (FISHERY DEPENDENT)

4.1 Commercial

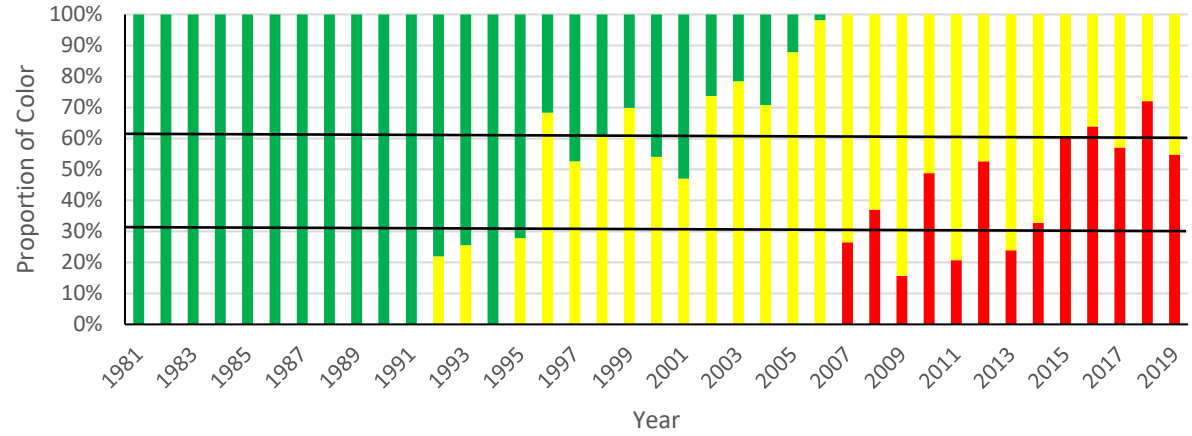
- Commercial landings of spot on the Atlantic coast decreased 59.5% in 2018 from 2017, but increased 44.7% in 2019 from 2018. Landings were still well below the long term mean although they were up from the time series low which occurred in 2016. Long term, there is still a declining trend in commercial landings that has been occurring since 2003. Total annual landings have declined 86.7% from 2004 to 2018 (Figure 5).
- The TLA for commercial landings in the Mid-Atlantic peaked in the 1990s and early 2000s (Figure 55). The general trend has been a decline since 2005, although there is some year-to-year variability between red and green proportions. In the last five years the red proportion has been above the 30% threshold in all but one year.
- The TLA commercial index was above the 30% threshold level in 2019 and represents the fourth year since 2012 where this has happened.

Figure 5. Annual TLA color proportions using 2002-2012 reference period for spot from commercial landings for the Mid-Atlantic (NJ-VA) coast of the US.



- In the South Atlantic, commercial spot landings were high from the 1980s through the mid-2000s (Figure 66). Commercial spot landings began to decline steadily from 2005 onward and red proportion levels have been above the 30% threshold for most years since 2010 and above the 60% threshold three of the last five years.
- The continued decline in commercial landings may be due to changes in effort in some other fisheries (most notably the shrimp trawl fishery) so it is difficult to determine the exact cause of the general decline in commercial landings in the South Atlantic.

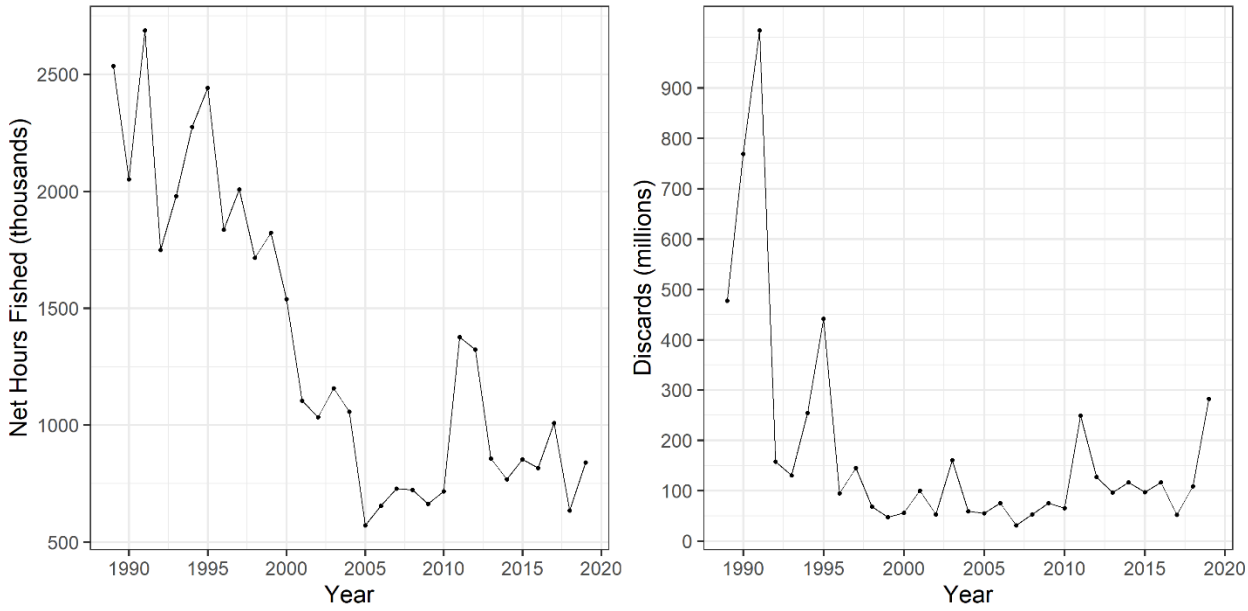
Figure 6. Annual TLA color proportions using a 2002-2012 reference period for spot from commercial landings for the South Atlantic (NC-FL) coast of the US.



- Total effort (net hours) in the South Atlantic Shrimp Trawl Fishery declined from a time series high in 1991 to a time series low in 2005 and varied around an increasing trend through the remainder of the time series (Figure 7; left).

- Total discards of spot in the South Atlantic Shrimp Trawl Fishery were highest during the late 1980s and early 1990s, declined to relatively low levels in the 2000s, and then increased to slightly higher levels in the 2010s (Figure 7; right). Discards increased in the terminal year of 2019 to the highest number since 1995.

Figure 7. Total net hours fished (left) and discards of spot (right) in the South Atlantic Shrimp Trawl Fishery.

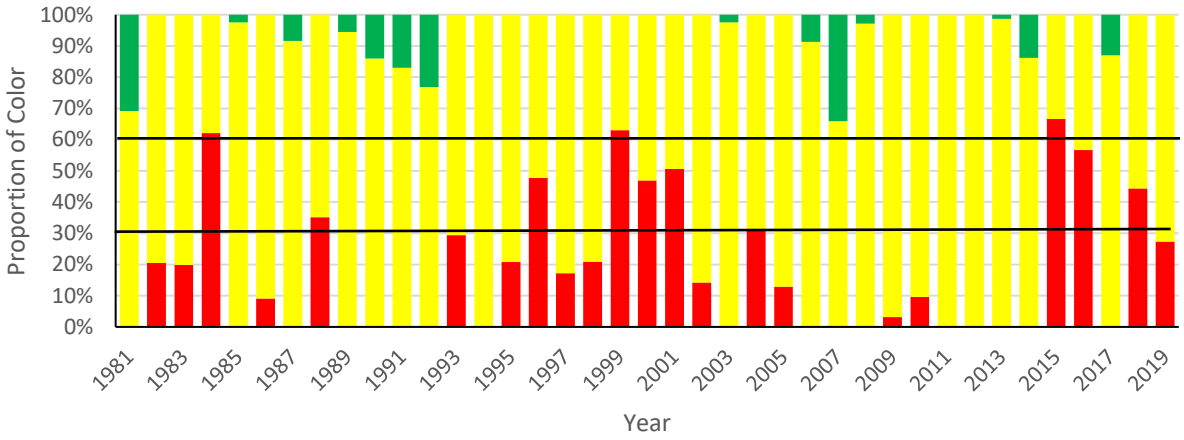


4.2 Recreational

In July 2018, the Marine Recreational Information Program transitioned from the catch estimates based on effort information from the Coastal Household Telephone Survey (CHTS) to effort information from the mail-based Fishing Effort Survey (FES). FES estimates are used in this and future reports, so recreational estimates and analyses may be different from previous years that used CHTS estimates.

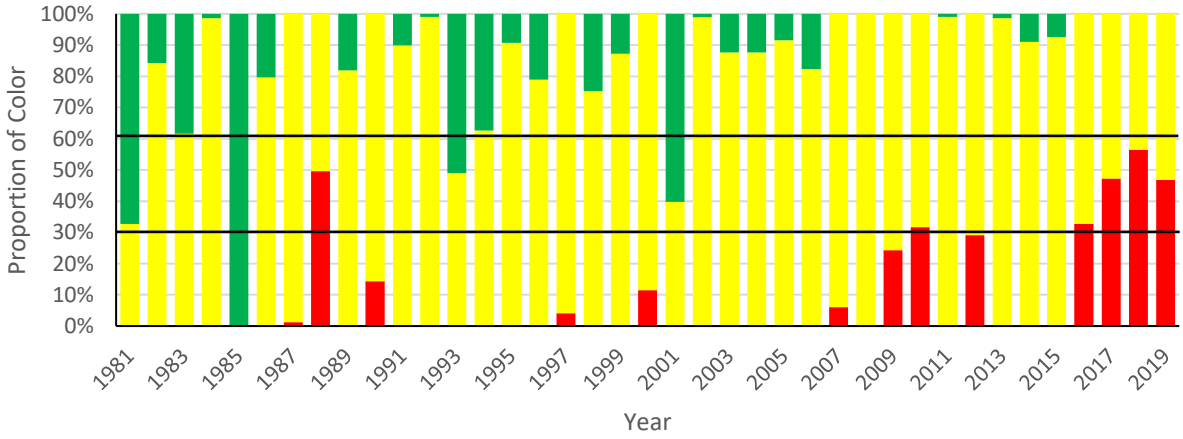
- The recreational harvest of spot on the Mid-Atlantic coast increased 42% in 2019 from 2018, with values of 2,991,200 pounds and 2,105,999 pounds, respectively.
- Annual harvest in the recreational fishery has been below the long term mean (LTM) for the last five years (with the exception of one year, 2017).
- The red proportion of the TLA declined to 27.3% in 2019 compared to 44.3% in 2018. The recreational TLA only exceed the 30% threshold in one of the last three years (2018; Figure 88).

Figure 8. Annual color proportions for the Mid-Atlantic (NJ-VA) coast of the US for recreationally harvested spot using a 2002-2012 reference period.



- In the South Atlantic, recreational harvest increased 35% in 2019 (1,531,869 lbs) from 2018 (1,132,145 lbs).
- Recreational harvest in 2019 was still below the long term mean with a red proportion of 46.9%. Red proportions have been above the 30% threshold since 2016 (Figure 99).

Figure 9. Annual color proportions for the South Atlantic (NC-FL) coast of the US for recreationally harvested spot using a 2002-2012 reference period.



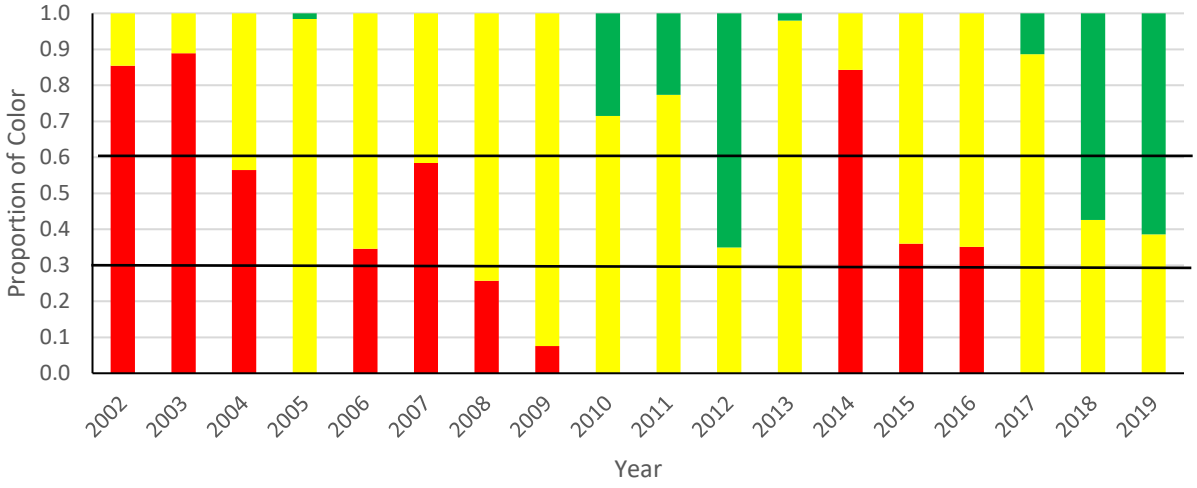
5 TRAFFIC LIGHT ANALYSIS (FISHERY INDEPENDENT)

5.1 NEFSC Fall Groundfish Trawl Survey

- The CPUE for spot in 2019 increased 4.4% from 2018 and was in a similar range to the series peak value seen in 2012.
- There was no red in the TLA index for 2019, so this index did not exceed the 30% threshold (Figure 1011).

- The NEFSC was not carried out in 2017 due to mechanical problems with the RV Bigelow. An imputed index for 2017 was calculated as the mean of 2015-2016 and 2018.

Figure 10. Annual TLA color proportions for adult spot (age 1+) from Mid-Atlantic NEFSC fall groundfish trawl survey using a 2002-2012 reference period.



5.2 ChesMMAP Trawl Survey

- The ChesMMAP survey made major changes to the survey in 2019 (vessel change, gear change, altered protocols, etc.) but maintained the same sampling strata and design. Side-by-side comparison tows were made between the new and old vessels/gears and the survey is in the process of producing conversion factors by species so that historic survey index values can be compared to ongoing survey values in the future. Since the conversion factor determination won't likely be finished until the end of 2020, the ChesMMAP index is only available through 2018 for the adult and juvenile TLA composite characteristics.
- The juvenile spot index showed a declining trend from the late 2000s through the present (Figure 111) with high proportions of red. Red proportions exceeded the 30% threshold for all years since 2011 and exceeded the 60% threshold for six of the last eight years in the data series.
- The adult spot index also showed a similar declining trend during the same time period (2010-2018) with red proportions exceeding the 60% threshold in the terminal four years of the time series (Figure 1212).
- Even with the currently missing values for 2019, the ChesMMAP index would have exceeded the 60% threshold in two of the previous three years for adults, and the 30% threshold for juveniles given the high red proportions in 2017 and 2018 (Figure 11 and Figure 1212).

Figure 11. Annual TLA color proportions for juvenile spot (age 0) from the Mid-Atlantic ChesMMAP survey using a 2002-2012 reference period.

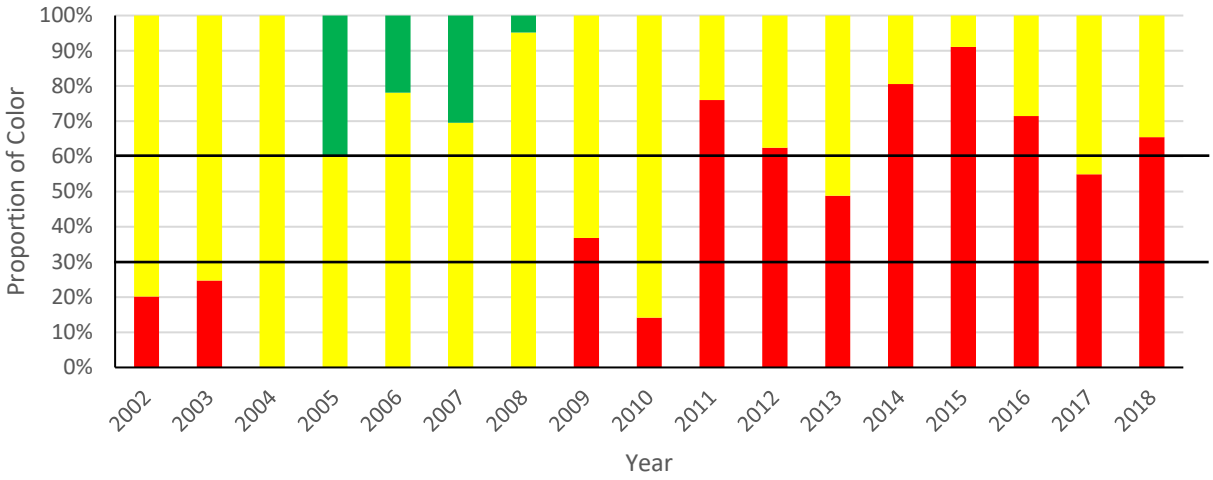
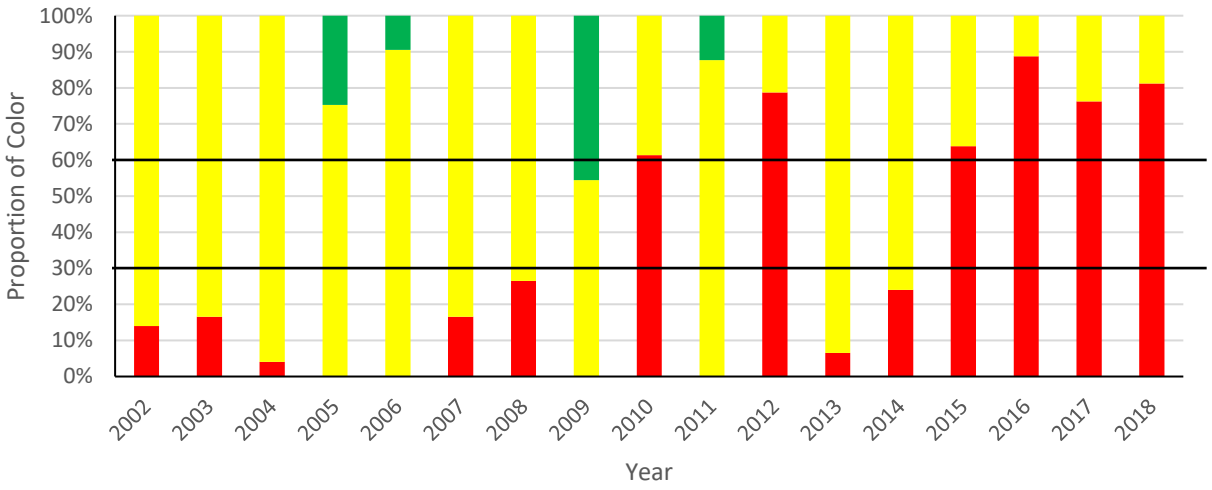


Figure 12. Annual TLA color proportions for adult spot (age 1+) from the Mid-Atlantic ChesMMAP survey using a 2002-2012 reference period.

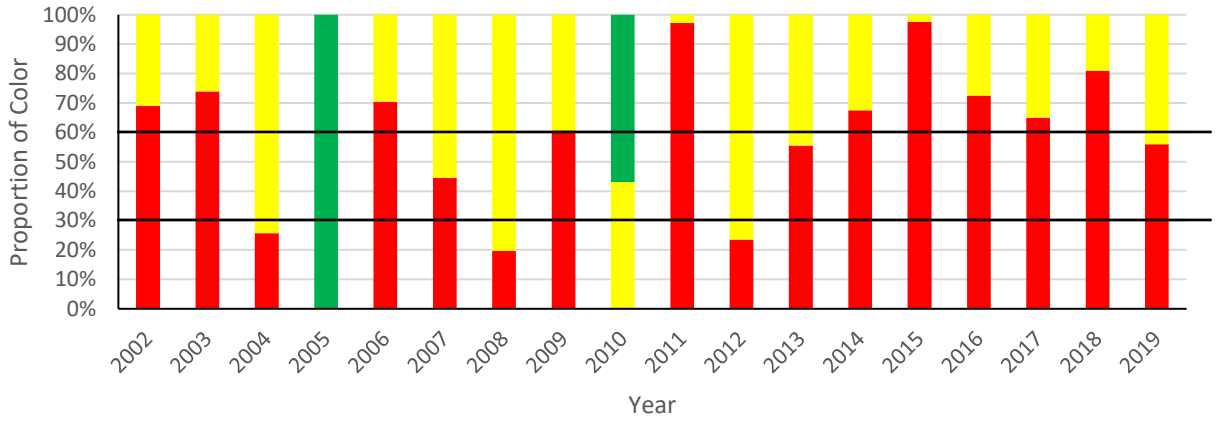


5.3 Maryland Juvenile Fish Seine Survey

- The Maryland CPUE increased 111% in 2019 from 2018 but was still well below the long-term mean.
- CPUE was below the long-term mean for the ninth year in a row, indicating annual recruitment and year-class strength remain poor in the Maryland portion of the Chesapeake Bay.
- The TLA exceeded the 30% threshold for the seventh year in a row with a red proportion of 55.9% in 2019 (Figure 133).

- The index exceeded the 60% threshold level for the 2017-2019 time-period indicating cause for concern as the general decline in this index indicates a decline in spot recruitment has been occurring in Maryland waters.

Figure 13. Annual TLA color proportions for the Mid-Atlantic Maryland seine survey juvenile spot (age 0) index using a 2002-2012 reference period.



5.4 NCDMF Program 195 (Pamlico Sound Survey)

- The NCDMF Program 195 survey saw declines in both juveniles and adults as indicated by declining green proportion (juvenile) (Figure 144) and increasing red proportions (adults) (Figure 156).
- In the juveniles, CPUE was greater than the long term mean with mostly yellow and only a little green proportion (0.30%) in the index (Figure 144). This index has not exceeded any red threshold since 2016. This could indicate increased spot recruitment in recent years in the Pamlico Sound area of North Carolina.
- The adult TLA continued to show a declining trend that has been occurring since 2008, with a red proportion in 2019 of 43.6% (Figure 155). The adult TLA red proportions have exceeded the 30% threshold for three of the last four years.

Figure 14. Annual TLA color proportions for juvenile spot (age 0) from the South Atlantic NCDMF Program 195 Survey using a 2002-2012 reference period.

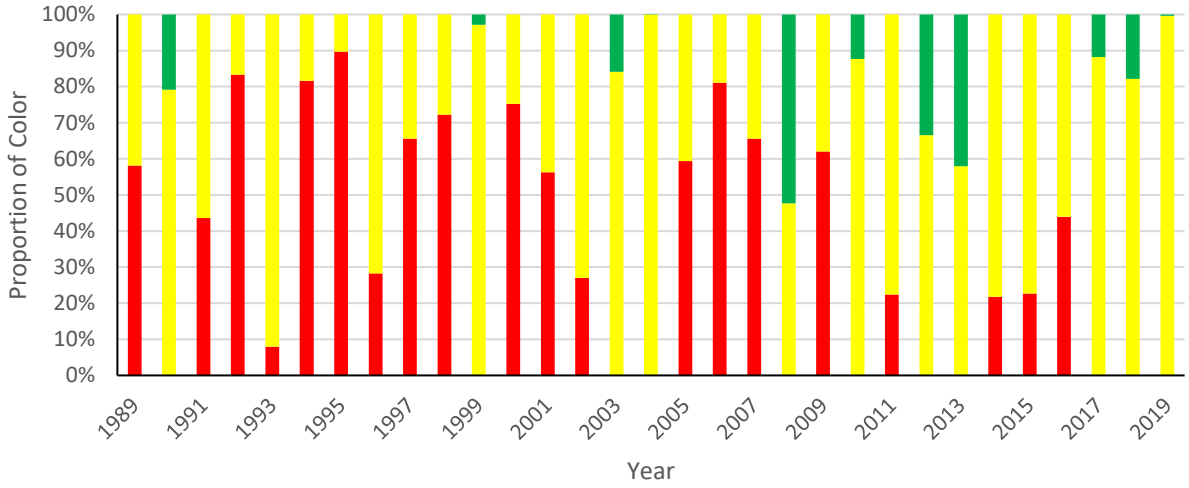
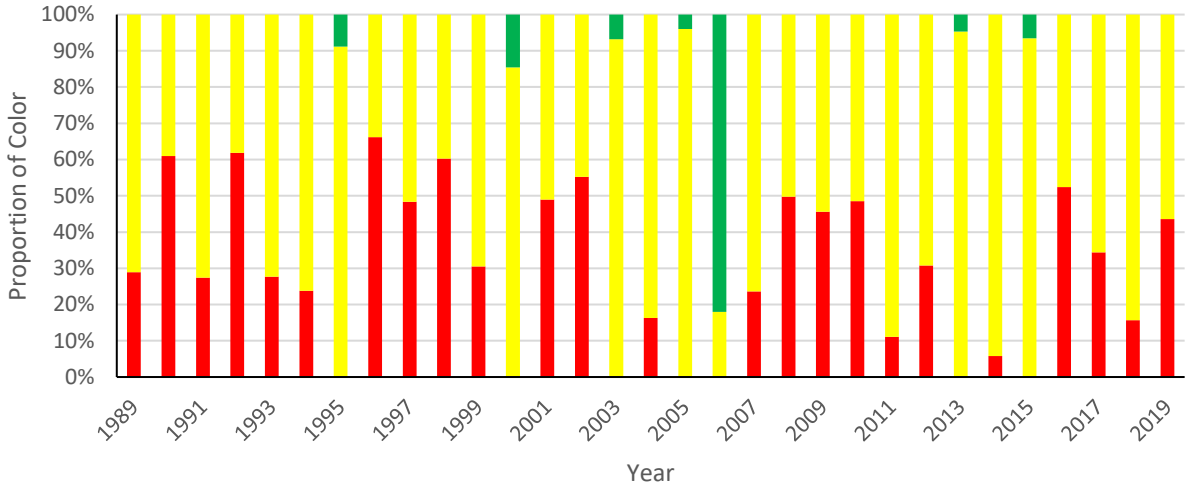


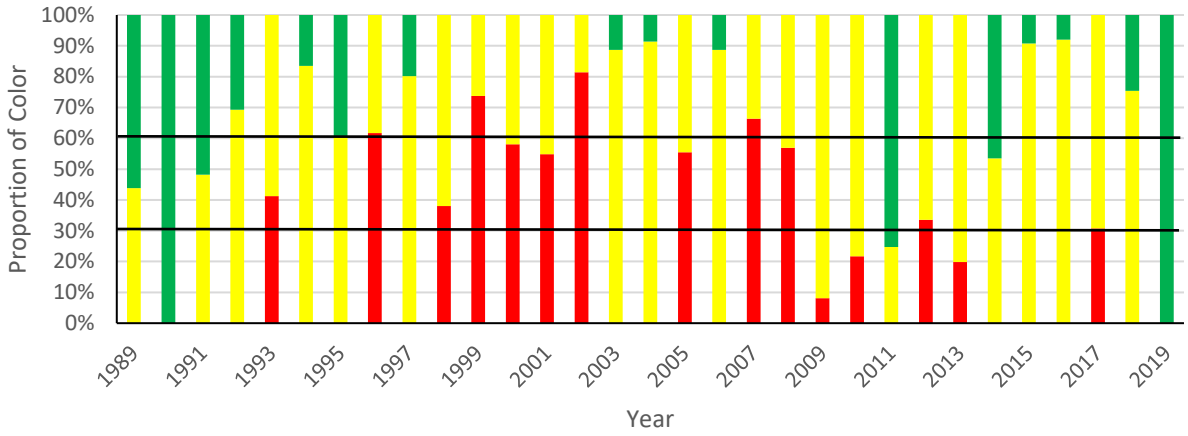
Figure 15. Annual TLA color proportions for adult spot (age 1+) from the South Atlantic NCDMF Program 195 Survey using a 2002-2012 reference period.



5.5 SEAMAP Trawl Survey

- The SEAMAP index used the spring season CPUE because it only catches adult spot (age 1+) during that season.
- The annual CPUE increased 265% in 2019 (48.6 kg/tow) from 2018 (13.3 kg/tow) and was the highest value in the time series.
- The TLA index has only exceeded the 30% threshold once in the past seven years (2017; Figure 166).

Figure 16. Annual color proportions for Adult spot (age 1+) TLA from the fall South Atlantic SEAMAP survey using a 2002-2012 reference period.

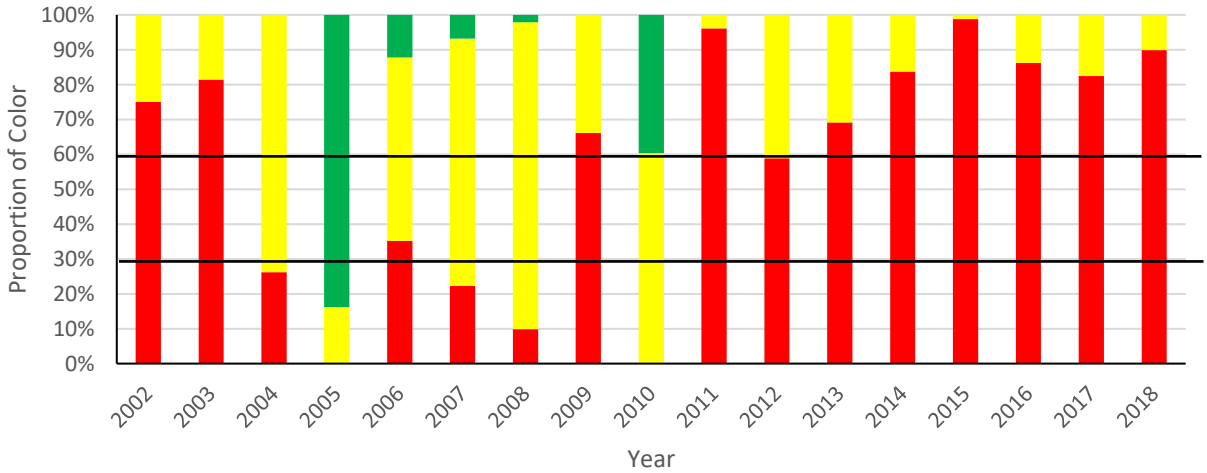


5.6 Juvenile Abundance Composite Indices

The juvenile composite index in the Mid-Atlantic was generated from the ChesMMAP and the Maryland juvenile fish seine survey. ChesMMAP has an age specific index for ages 0 which allowed its use as a juvenile index.

- The juvenile spot TLA for the Mid-Atlantic (MD survey and ChesMMAP) also showed a general decline in recruitment with very high red proportions for the last 8 years (Figure 17).
- The juvenile composite index was above the 30% threshold in two of the three terminal years (Figure 17).

Figure 17. Annual TLA for juvenile (age 0) spot for composite characteristic of fishery independent suveys in the Mid-Atlantic (NJ-VA) (MD seine survey and ChesMMAP) using a 2002-2012 reference period.



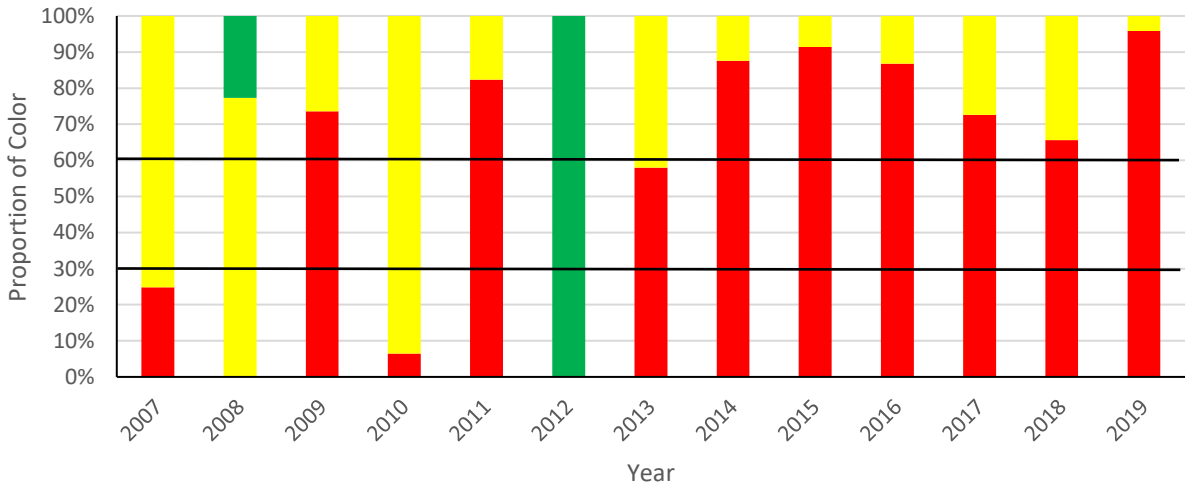
- The South Atlantic juvenile spot index (NCDMF Program 195) has not had any red proportion greater than 30% in the last three years (Figure 14) and has not had a red proportion exceeding the 30% threshold since 2016.

6 SUPPLEMENTAL MATERIALS

6.1 NEAMAP Survey

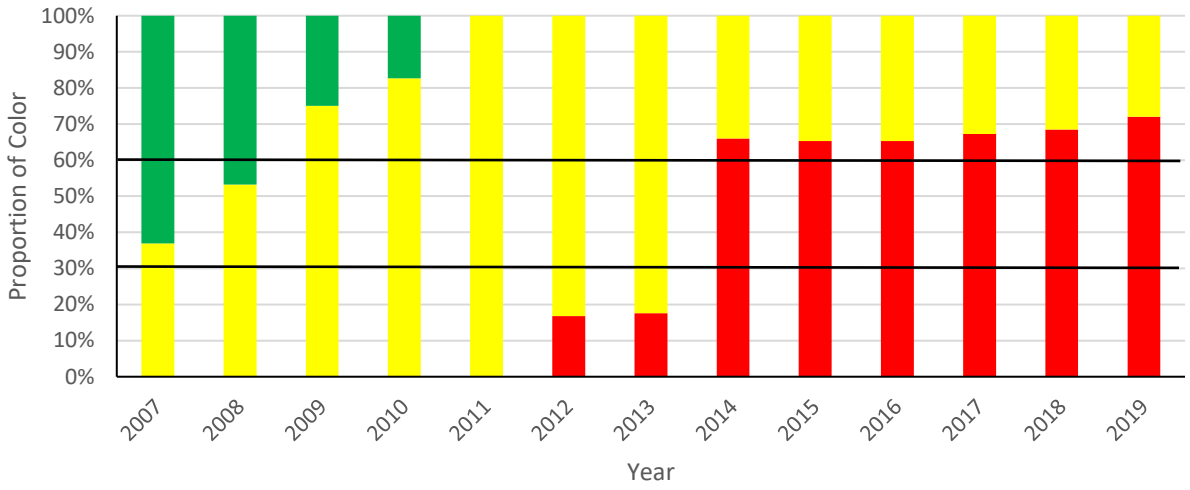
- The juvenile spot TLA index shows the evidence of low recruitment across all years except 2008 and 2012. This is similar to the declining trends seen in the MD seine survey and the ChesMMAP survey across the same years.
- Red proportions have exceeded the 60% threshold across all years since 2014 (Figure 18).

Figure 18. Annual color proportions from TLA for juvenile (age 0) spot from the Mid-Atlantic NEAMAP survey using a 2007-2019 reference period.



- The adult spot TLA index supports the general declining trend that has occurred since 2010 with red proportions exceeding the 60% threshold for the last six years of the survey (Figure 19).
- The trend in higher red proportions was very similar to the trends seen in the ChesMMAP survey across years where the surveys overlapped, but did not correlate with the NEFSC survey in terms of general trends.
- Both the juvenile and adult spot TLA indices exceeded the high level of concern threshold for the last several years.

Figure 19. Annual color proportion from TLA for adult (age 1+) spot from the Mid-Atlantic NEAMAP survey using a 2007-2019 reference period.



6.2 Composite TLA Characteristic for Mid-Atlantic including NEAMAP

In order to generate the composite TLA index that included NEAMAP in the Mid-Atlantic, the other Mid-Atlantic indices (NEFSC, ChesMMAP, and MD Seine Survey) had to be recalculated using the common time period of all three surveys (2007-2019) in order to have a common reference. The figures give the TLA composite characteristics through 2019 with no 2019 ChesMMAP data, but it was thought useful to still provide the composite index through 2019 with the indexes that were available.

- The juvenile spot composite characteristic (Figure 20) supported the general decline in recruitment in the Mid-Atlantic region with red proportions in excess of the 60% threshold in nine of the thirteen years common to all the separate indices.
- The adult spot composite characteristic (Figure 21) showed a similar declining trend, although the adult composite characteristic did not exceed the 60% threshold except in 2017. It did, however, exceed the 30% threshold every year since 2014. The one contrasting trend in the adult composite characteristic was between NEFSC and the other surveys, where the NEFSC survey contributed the green proportions seen in 2018 and 2019 due to the significant increase in catch levels seen in the NEFSC survey.

Figure 20. Juvenile spot (age 0) TLA composite characteristic index for the Mid-Atlantic (NJ-VA) using NEAMAP, ChesMMAP, and MD Seine surveys with a 2007-2019 reference period.

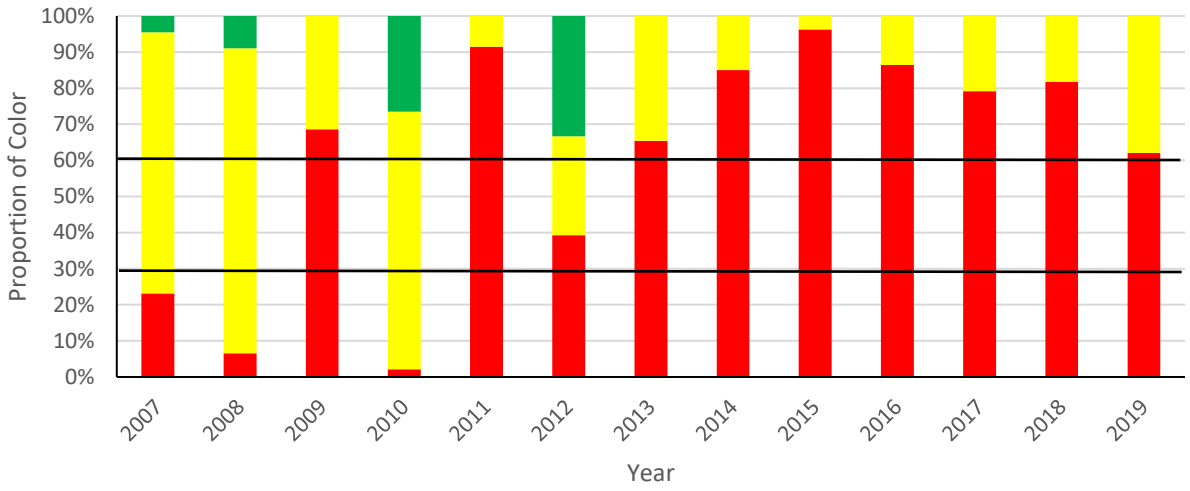
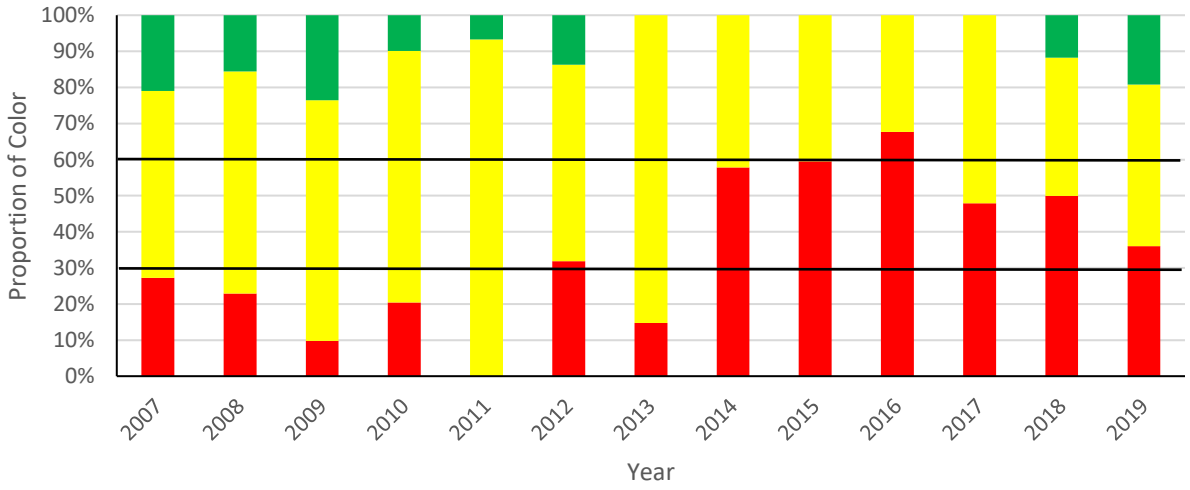


Figure 21. Adult spot (age 1+) TLA composite characteristic index for Mid-Atlantic (NJ-VA) using NEFSC, ChesMMAP, and NEAMAP surveys with a 2007-2019 reference period.



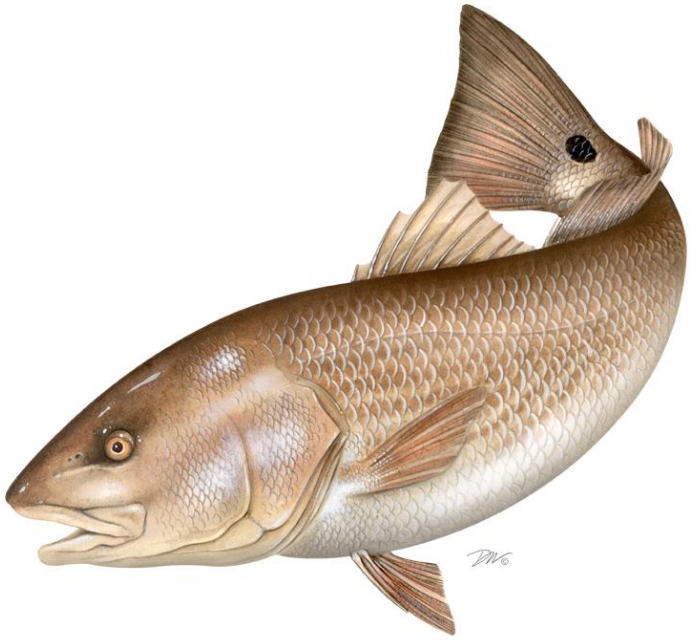
6.3 Summary

The addition of the NEAMAP survey generally supported the declining trends in recent years seen in the harvest composite characteristic as well as the fishery-independent surveys (with the exception of the NEFSC survey). The TC might consider adding the NEAMAP survey to the Traffic Light Analysis for the 2020 sampling year and re-evaluate the use of the NEFSC survey for use in the TLA. This could be done for next year's report or after the next benchmark assessment (currently scheduled for completion in 2024).

DRAFT 2020 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR

RED DRUM (*Sciaenops ocellatus*)

2019 FISHING YEAR



The Red Drum Plan Review Team
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October 2020

DRAFT DOCUMENT FOR BOARD REVIEW

Table of Contents

I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments:	Amendment 1 – October 1991 Amendment 2 – June 2002 Addendum 1 – August 2013
Management Areas:	The Atlantic coast distribution of the resource from New Jersey through Florida Northern: New Jersey through North Carolina Southern: South Carolina through the east coast of Florida
Active Boards/Committees:	South Atlantic State/Federal Fisheries Management Board, Red Drum Technical Committee, Stock Assessment Subcommittee, Plan Development Team, Plan Review Team, South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an Interstate Fishery Management Plan (FMP) for Red Drum in 1984. The original management unit included the states from Maryland to Florida. In 1988, the Interstate Fisheries Management Program (ISFMP) Policy Board requested that all Atlantic coastal states from Maine to Florida implement the plan's recommended management regulations to prevent development of northern markets for southern fish. The states of New Jersey through Florida are now required to follow the FMP, while Maine through New York (including Pennsylvania) are encouraged to implement consistent provisions to protect the red drum spawning stock.

In 1990, the South Atlantic Fishery Management Council (Council) adopted a FMP for red drum that defined overfishing and optimum yield (OY) consistent with the Magnuson Fishery Conservation and Management Act of 1976. Adoption of this plan prohibited the harvest of red drum in the exclusive economic zone (EEZ), a moratorium that remains in effect today. Recognizing that all harvest would take place in state waters, the Council FMP recommended that states implement measures necessary to achieve the target level of at least 30% escapement.

Consequently, ASMFC initiated Amendment 1 in 1991, which included the goal to attain optimum yield from the fishery over time. Optimum yield was defined as the amount of harvest that could be taken while maintaining the level of spawning stock biomass per recruit (SSBR) at or above 30% of the level which would result if fishing mortality was zero. However, a lack of information on adult stock status resulted in the use of a 30% escapement rate of sub-adult red drum to the off-shore adult spawning stock.

Substantial reductions in fishing mortality were necessary to achieve the escapement rate; however, the lack of data on the status of adult red drum along the Atlantic coast led to the adoption of a phase-in approach with a 10% SSBR goal. In 1991, states implemented or maintained harvest controls necessary to attain the goal.

As hoped, these management measures led to increased escapement rates of juvenile red drum. Escapement estimates for the northern region of New Jersey through North Carolina (18%) and the southern region of South Carolina through Florida (17%) were estimated to be above the 10% phase-in goal, yet still below the ultimate goal of 30% (Vaughan and Carmichael 2000). North Carolina, South Carolina, and Georgia implemented substantive changes to their regulations from 1998-2001 that further restricted harvest.

The Council adopted new definitions of OY and overfishing for red drum in 1998. Optimum yield was redefined as the harvest associated with a 40% static spawning potential ratio (sSPR), overfishing as an sSPR less than 30%, and an overfishing threshold as 10% sSPR. In 1999, the Council recommended that management authority for red drum be transferred to the states through the Commission's Interstate Fishery Management Program (ISFMP) process. This was recommended, in part, due to the inability to accurately determine an overfished status, and therefore stock rebuilding targets and schedules, as required under the revised Sustainable Fisheries Act of 1996. The transfer necessitated the development of an amendment to the interstate FMP in order to include the provisions of the Atlantic Coastal Fisheries Cooperative Management Act.

ASFMC adopted Amendment 2 to the Red Drum FMP in June 2002 (ASMFC 2002), which serves as the current management plan. The goal of Amendment 2 is to achieve and maintain the OY for the Atlantic coast red drum fishery as the amount of harvest that can be taken by U.S. fishermen while maintaining the sSPR at or above 40%. There are four plan objectives:

- Achieve and maintain an escapement rate sufficient to prevent recruitment failure and achieve an sSPR at or above 40%.
- Provide a flexible management system to address incompatibility and inconsistency among state and federal regulations which minimizes regulatory delay while retaining substantial ASMFC, Council, and public input into management decisions; and which can adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by area.
- Promote cooperative collection of biological, economic, and sociological data required to effectively monitor and assess the status of the red drum resource and evaluate management efforts.
- Restore the age and size structure of the Atlantic coast red drum population.

The management area extends from New Jersey through the east coast of Florida, and is separated into a northern and southern region at the North Carolina/South Carolina border. The sSPR of 40% is considered a target; an sSPR below 30% (threshold level) results in an overfishing determination for red drum. Amendment 2 required all states within the management unit to implement appropriate recreational bag and size limit combinations needed to attain the target sSPR, and to maintain current, or implement more restrictive, commercial fishery regulations. All states were in compliance by January 1, 2003. See Table 1 for state commercial and recreational regulations in 2019.

Following the approval of Amendment 2 in 2002, the process to transfer management authority to ASMFC began, including an Environmental Assessment and public comment period. The final rule became effective November 5, 2008. It repeals the federal Atlantic Coast Red Drum Fishery Management Plan and transfers management authority of Atlantic red drum in the exclusive economic zone from the South Atlantic Fishery Management Council to the Atlantic States Marine Fisheries Commission.

The Board approved Addendum I to Amendment 2 in August 2013. The Addendum revised the habitat section of Amendment 2 to include current information on red drum spawning habitat and life-stages (egg, larval, juvenile, sub-adult, and adult). It also identified and described the distribution of key habitats and habitats of concern.

II. Status of the Stocks

The 2017 Red Drum Stock Assessment and Peer Review Report indicate overfishing is not occurring for either the northern or southern stock of red drum (ASMFC 2017). The assessment was unable to determine an overfished/not overfished status because population abundance could not be reliably estimated due to limited data for the older fish (ages 4+). In 2020, the next benchmark assessment was initiated and will comprise of a simulation assessment prior to the benchmark assessment.

Northern Region (NJ-NC)

Recruitment (age 1 abundance) has varied annually with a large peak occurring in 2012 (Figure 1). The trend in the three-year average sSPR indicates low sSPR early in the time series with increases during 1991 – 1997 and fluctuations thereafter (Figure 2). The average sSPR has been above the overfishing threshold ($F_{30\%}$) since 1994, and at or above the target ($F_{40\%}$) since 1996, except during one year (2002). Fishing pressure and mortality appear to be stabilized near the target fishing mortality. The average sSPR is also likely above the target benchmark.

Southern Region (SC-FL)

Recruitment (age 1 abundance) has fluctuated without apparent trend since 1991 (Figure 1). A high level of uncertainty exists around the three-year average sSPR estimates for the southern region. While the 3-year average sSPR estimate in 2013 was above both the target ($F_{40\%}$) and the overfishing threshold ($F_{30\%}$), indicating that overfishing is not occurring, the high level of uncertainty around this estimate indicates that this conclusion should be considered with extreme caution (Figure 2).

NOTE: In 2018, the Marine Recreational Information Program transitioned from estimating effort using the Coastal Household Telephone Survey (CHTS) to the mail-based Fishing Effort Survey (FES). The 2017 stock assessment used CHTS data to estimate recreational harvest. However, as red drum is not managed by a quota and to accommodate the transition, recreational harvest estimates based on the FES data or calibration are shown in this report. Due to differing estimation methodologies, these harvest data should not be compared to reference points from the 2017 stock assessment. Harvest estimates based on either effort survey can be compared at: https://www.st.nmfs.noaa.gov/st1/recreational/queries/.

III. Status of the Fishery

Total red drum landings from New Jersey through the east coast of Florida in 2019 are estimated at 4.8 million pounds (Tables 2 and 3, Figure 3). This is roughly 3.4 million pounds less than was landed in 2018. 2019 total landings are below the previous ten-year (2009-2018) average of 6.9 million pounds. The commercial and recreational fisheries harvested 1% and 99% of the total, respectively. The southern region includes South Carolina through Florida's east coast, while the northern region includes New Jersey through North Carolina. In 2019, 80% of the total landings came from the southern region where the fishery is exclusively recreational, and 20% from the northern region (Figure 4).

Coastwide commercial landings comprise a small portion of the total harvest. Landings have ranged from approximately 55,000 pounds (2004) to 423,000 pounds (1984) since 1981 (Figure 3). In 2019, red drum were commercially landed only in Maryland, Virginia, and North Carolina (Table 2). Coastwide commercial harvest decreased from 145,349 pounds in 2018 to 58,075 pounds in 2019, with 97% harvested by North Carolina. Historically, North Carolina and Florida shared the majority of commercial harvest, but commercial harvest has been prohibited in Florida under state regulation since January 1988. South Carolina and Georgia designated red drum as a gamefish, banning commercial harvest and sale since 1987 and 2013, respectively.

In North Carolina, a daily commercial trip limit and an annual cap of 250,000 pounds with payback of any overage constrain the commercial harvest. Unique to this state, the red drum fishing year extends from September 1 to August 31. In 2008, the Board approved use of this fishing year to monitor the cap. During the 2009/2010 and the 2013/2014 fishing years, North Carolina had overages of 25,858 pounds and 12,753 pounds, respectively. The commercial harvest for each following fishing year remained well below the adjusted cap allowance, providing sufficient payback.

Recreational harvest of red drum peaked in 1984 at 2.9 million fish (or 10.1 million pounds; Tables 3 and 4). Following this peak and a subsequent decline, the recreational fishery has shown an increasing trend from the late 1980s through the present, both in terms of harvest and catch (Figures 3 and 5). Recreational harvest decreased in number from 2.3 million fish (8.2 million pounds) in 2018 to 1.5 million fish (4.8 million pounds) in 2019. The 2019 harvest is below the previous 10-year average (2009-2018) for recreational harvest in numbers (1.9 million) and pounds (6.9 million). Florida anglers landed the largest share of the coastwide recreational harvest in numbers (40%), followed by South Carolina (22%) and Georgia (18%).

Anglers release far more red drum than they keep; the percent of the catch released has been over 80% during the last decade (Figure 5). Recreational releases show an increasing trend over the time series, due to an increasing trend in catch with roughly stable release proportions for the last 20 years. The proportion of releases in 2019 was 89% (versus 81% in 2018), and the overall number of fish released was 11.6 million in 2019 (Figure 5, Table 5). It is estimated that

8% of released fish die as a result of being caught, resulting in an estimated 931,263 dead discarded fish in 2019 (Table 5). Recreational removals from the fishery are thus estimated to be 2.4 million fish in 2019 (Figure 6).

IV. Status of Assessment Advice

Current stock status information comes from the 2017 stock assessment (ASMFC 2017) completed by the ASMFC Red Drum Stock Assessment Subcommittee (SAS) and Technical Committee (TC), peer reviewed by an independent panel of experts through ASMFC's desk review process, and approved by the South Atlantic State-Federal Fisheries Management Board for use in management decisions. Previous interstate management decisions were based on the last coastwide assessment, SEDAR 18 (SAFMC 2009), and prior to 2009, decisions were based on regional assessments conducted by Vaughan and Helser (1990), Vaughan (1992, 1993, 1996), and Vaughan and Carmichael (2000) that reflected the current stock structure, two stocks divided at the North Carolina-South Carolina border. Several states have also conducted state-specific assessments (e.g., Murphy and Munyandorero 2009; Takade and Paramore 2007 [update of Vaughan and Carmichael 2000]).

In 2017, a state-specific stock assessment was completed by South Carolina, which indicated that the South Carolina population of red drum was experiencing overfishing (Murphy 2017). This assessment result prompted new state management regulations, which went into effect on July 1, 2018 (Table 1).

The 2017 coastwide stock assessment uses a statistical catch at age (SCAA) model with age-specific data for red drum ages 1 through 7+. This model is similar to that used in the 2009 assessment, with data updated through 2013. Data from 1989-2013 were included from the following sources: commercial and recreational harvest and discard data, fishery-dependent and -independent biological sampling data, tagging data, and fishery-independent survey abundance data.

The Peer Review Panel considered the use of a SCAA model appropriate given the types of data available for red drum. For the northern region, the Review Panel agreed that the model was informative of age 1-3 abundance and exploitation rates, but not for older age groups. The model was also found to be informative of annual trends in sSPR and the 2011-2013 average sSPR. For the southern region, the Review Panel agreed that estimates of age 7+ fish seemed to be more consistent with the population biology, leading to a large fraction of biomass being unavailable to exploitation. For both regions, most of the sSPR is contained within the larger, fully mature, age 7+ fish, thus even a small increase in fishing mortality on older red drum (due to harvest or other factors) could quickly lead to a decrease in sSPR and overfishing.

At the Winter meeting of ASMFC, the Board reviewed a proposal from the SAS that recommended a population simulation model be developed to simulate the full red drum population. The simulated population would be used to test a variety of assessment modeling techniques to determine which model would be the most applicable for the next benchmark stock assessment. Due to the work and modeling expertise needed for the simulation

assessment, the benchmark assessment has be postponed until 2024. The simulation population modeling is scheduled to be completed in 2022.

V. Status of Research and Monitoring

No monitoring or research programs are annually required of the states except for the submission of a compliance report. The following fishery-dependent (other than catch and effort data) and fishery-independent monitoring programs were reported in the 2019 reports.

Fishery Dependent Monitoring

- Delaware DFW – Commercial monitoring through mandatory logbook reports, supplemented by federal dealer reports (SAFIS). No samples collected in 2019.
- Maryland DNR – Commercial pound nets sampled bi-weekly in the Chesapeake Bay from early summer to late fall (2019, n=6). Only three of the 27 years of sampling exceeded 20 fish, and no red drum were encountered in ten of the survey years. Seafood dealer sampling was conducted in 2019, but no red drum were encountered.
- PRFC – Red drum are harvested incidentally in the commercial pound net and haul seine fisheries. The mandatory commercial harvest daily reporting system, which collects harvest and discards/releases, reported 30 lbs of red drum released alive in 2019
- Virginia MRC – Volunteer anglers have participated since 1995 in the Virginia Game Fish Tagging Program (2019: 2,916 fish tagged, 178 reported recaptures). Carcasses are collected through the Marine Sportfish Collection Project since 2007 (2019, n=2). VMRC collects samples from commercial fish packing operations for length (2019, n=72) and weight (2019, n=72).
- North Carolina DMF – Commercial cap monitored through trip ticket program. Commercially-landed red drum sampled through biological monitoring program since 1982 (2019, n=91 fish measured, primarily gill net). Recreational lengths from MRIP sampling (2019, n=87).
- South Carolina DNR – State finfish survey conducted in January and February (2019, n=325 caught and 34 harvested, mean catch rate: 0.70 red drum/targeted angler hour). Charter Vessel Trip Reporting (2019 caught (targeted and non-targeted): 60,566 red drum; live release rate: 93.3%). SC Marine Game Fish Tagging Program studies movement patterns, growth rates, and release-mortality rates (in 2019 fish tagged: 6,346; recaptured: 1,271). SCDNR Sub-Adult Red Drum Tagging Program tags fish caught by the SCDNR electrofishing and trammel net fishery-independent surveys and other fishery-independent sampling efforts (in 2019 fish tagged: 2,298; recaptured: 604). SCDNR Adult Red Drum Tagging Program tags fish caught by the SCDNR inshore fisheries research section longline fishery-independent survey (in 2019 tagged: 531; recaptured: 9). Tournament and freezer fish programs (2019 n=25).
- Georgia CRD – Age, length, and sex data collected through the Marine Sportfish Carcass Recovery Project (2019, n=805).
- Florida FWC – MRIP CPUE for 2019 showed large fluctuations with overall increasing trends in both regions along the Atlantic coast of Florida.
- NMFS – Length measurements and recreational catch, harvest, release, and effort data are collected via the Marine Recreational Information Program.

Fishery Independent Monitoring

- New Jersey DFW – Five annual nearshore trawl surveys conducted since 1988, in January/February, April, June, August, and October. Length and weight data, and catch per unit effort (CPUE) in number of fish per tow and biomass per tow recorded for all species. Only two red drum were caught in entire time series (single tow, 2013).
- Delaware DFW – 30-ft bottom trawl survey and 16-ft bottom trawl survey. Neither survey has ever captured red drum.
- North Carolina DMF – Seine survey since 1991 produces age-0 abundance index (2019, n=783; CPUE of 6.53, above long-term average). Gill net survey in Pamlico Sound since 2001 characterizes size and age distribution, produces abundance index, improves bycatch estimates, and studies habitat usage (CPUE of 2.55, near long-term average). Longline survey since 2007 produces adult index of abundance and tags fish (2019, n=133; CPUE of 2.22 well below long-term average). The longline survey was impacted by Hurricane Dorian.
- South Carolina DNR – Estuarine trammel net survey for subadults (2019 CPUE below 10-year average). Electrofishing survey in low salinity estuarine areas for juveniles/subadults (2019 CPUE below 10-year average). Inshore and coastal bottom longline survey for biological data and adult abundance index (531 tagged, 78 sampled for life history in 2019). Genetic sub-sampling and tagging conducted during these three surveys.
- Georgia CRD – Estuarine trammel net survey for subadult biological data and abundance index (2019, both areas n=86). Estuarine gill net survey for young-of-year (YOY) biological data and abundance index (2019, both areas n=383). Bottom longline survey for adult biological data and abundance index (2019, n=31 in GA).
- Florida FWC-FWRI – Seine surveys characterizing young-of-year (YOY) (<40 mm standard length) and sub-adult (>299 mm) abundance along the northeast (NE) and southeast (SE) Florida coasts. 2019 NE YOY index declined from 2018. 2019 NE sub-adult index was similar to 2018. 2019 SE YOY index was similar to that of 2018. 2019 SE sub-adult index was similar to 2019.

VI. Status of Management Measures and Issues

Fishery Management Plan

Amendment 2 was fully implemented by January 1, 2003, providing the management requirements for 2018. Requirements include: recreational regulations designed to achieve at least 40% sSPR, a maximum size limit of 27 inches or less, and current or more stringent commercial regulations. States are also required to have in place law enforcement capabilities adequate to successfully implement their red drum regulations. In August 2013, the Board approved Addendum I to Amendment 2 of the Red Drum FMP. The Addendum revises the habitat section of Amendment 2 to include the most current information on red drum spawning habitat for each life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies the distribution of key habitats and habitats of concern, including potential threats and bottlenecks.

De Minimis Requests

New Jersey and Delaware requested *de minimis* status through the annual reporting process. While Amendment 2 does not include a specific method to determine whether a state qualifies for *de minimis*, the PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit. New Jersey and Delaware each harvested zero percent of the two-year average of total landings. *De minimis* status does not exempt either state from any requirement; it may exempt them from future management measures implemented through addenda to Amendment 2, as determined by the Board.

VII. Implementation of FMP Compliance Requirements for 2020

The PRT finds that all states have implemented the requirements of Amendment 2.

VIII. Recommendations of the Plan Review Team

Management and Regulatory Recommendations

- Consider approval of the *de minimis* requests by New Jersey and Delaware.
- Support a continued moratorium of red drum fishing in the exclusive economic zone.

Prioritized Research and Monitoring Recommendations (H) = High, (M) = Medium, (L) = Low

Stock Assessment and Population Dynamics

- Implement surveys (e.g. logbooks, electronic methods, etc.) in each state throughout the management unit to determine the length composition (and age data, if possible) of recreational discards (B2) of red drum. This information has been highlighted as the single largest data gap in previous assessments. (H)
- Further study is needed to determine discard mortality estimates for the Atlantic coast, both for recreational and commercial gears. Additionally, discard estimates should examine the impact of slot-size limit management and explore regulatory discard impacts due to high-grading. Investigate covariates affecting discard mortality (e.g., depth, size, seasonality), and explore methods of determining *in situ* mortality (as opposed to tank studies) and mitigating mortality (e.g. gear types, handling methods, use of descending devices on adults). (H)
- Improve catch/effort estimates and biological sampling from recreational and commercial fisheries for red drum, including increased intercepts of night fisheries for red drum. (H)
- Expand biological sampling based on a statistical analysis to adequately characterize the age/size composition of removals by all statistical strata (gears, states, etc.). (H)
- Each state should develop an on-going red drum tagging program that can be used to estimate both fishing and natural mortality and movements. This should include concurrent evaluations of tag retention, tagging mortality, and angler tag reporting rates. The importance of each state's tagging data to the assessment should be evaluated, including analysis of historical tagging data to determine if existing and historic recreational data sources (e.g., tagging) can be used to evaluate better B2 selectivity. (H)
- Establish programs to provide ongoing estimates of commercial and recreational discard mortality using appropriate statistical methods. Discard estimates should examine the

impact of slot-size limit management and explore regulatory discard impacts due to high-grading. (M)

- Evaluate the broader survey needs to identify gaps in current activities and provide for potential expansion and/or standardization between/among current surveys. (M)
- Review all available stock structure data (genetics, tagging, etc.) to determine stock structure and most appropriate management boundaries. (M)

Biological

- Explore methods to effectively sample the adult population in estuarine, nearshore, and open ocean waters, such as in the ongoing red drum long line survey, and to determine the size, age and sex composition of the adults. (H)
- Continue genetic analyses (i.e., SC DNR analyses) to evaluate stock structure and mixing and temporal changes in genetic composition of the red drum population and other applications. (H)
- Refine maturity schedules on a geographic basis. Thoroughly examine the influence of size and age on reproductive function. Investigate the possibility of senescence in female red drum. Archive histological specimens across sizes to look for shifts in maturity schedules and make regional comparisons. Standardize histology reading methods of slides across states conducting such studies. (For reference, see SEDAR 44-DW02). (H)
- Determine habitat preferences, environmental conditions, growth rates, and food habits of larval and juvenile red drum throughout the species range along the Atlantic coast. Assess the effects of environmental factors on stock density/year class strength. Determine whether natural environmental perturbations affect recruitment and modify relationships with spawning stock size. (H)
- Continue tagging studies to determine stock identity, inshore/offshore migration patterns of all life stages (i.e. basic life history research). Specific effort should be given to developing a large-scale program for tagging adult red drum. (M)
- Fully evaluate the effects and effectiveness of using cultured red drum to facilitate higher catch rates along the Atlantic coast. (M)
- Conduct a tagging study using emerging technologies (i.e., acoustic tagging, satellite tagging, genetic tags) to evaluate stock mixing and identify movement of sub-adult fish transitioning to maturity. (M-L)
- Otolith microchemistry analysis should be considered for exploring links between sub-adult estuarine habitats and adult stock structure. (L)

Social (Unless otherwise indicated, the collection of sociological and/or economic data, also sometimes collectively described as "socioeconomic data," would be based on Atlantic Coastal Cooperative Statistics Program [ACCSP] standards.)

- Encourage the NMFS to fund socioeconomic add-on questions to the recreational fisheries survey that are specifically oriented to red drum recreational fishing. (H)
- States with significant fisheries (over 5,000 pounds) should periodically (e.g. every five years) collect socioeconomic data on red drum fisheries through add-ons to the recreational fisheries survey or by other means. (H)

- Using a human dimension analysis perspective, explore Atlantic red drum historical catch-release trends and explanatory factors such as the possible impacts of changes in recreational fishing technology and/or angler behavior on red drum catchability and selectivity over time. (H)
- Conduct applied research to evaluate the various projected (forecasted) social impacts on red drum fishery stakeholders of possible regulatory options (e.g. changing minimum sizes, etc.). (M)

Economic

- Using available secondary data and other information, develop models to estimate the local (community), state and regional level economic impacts (e.g. sales, jobs, income, etc.) of recreational red drum fisheries-related activities including the for-hire sector component (e.g. fishing guides). (H)
- Where appropriate, encourage individual member states to conduct studies to project and evaluate the estimated comparable net economic values associated with current and possible future regulatory regimes that could impact red drum recreational anglers, including those preferring catch and release fishing. (M)
- Using risk adjusted benefit-cost analysis protocols, project the estimated public sector-oriented net economic values over a time for various cultured red drum stocking scenarios compared to possible changes in other fishery management alternatives. (M)
- Encourage NOAA Fisheries to periodically conduct special surveys and related data analysis to determine the economic and operational characteristics of the recreational fishing for-hire component targeting red drum, especially fishing guide-oriented businesses in the South Atlantic states. (M)

Habitat

- Identify spawning areas of red drum in each state from North Carolina to Florida so these areas may be protected from degradation and/or destruction. Explore relationships between spawning activity (e.g. spawning sounds) and environmental parameters (e.g. temperature). (H)
- Identify changes in freshwater inflow on red drum nursery habitats. Quantify the relationship between freshwater inflows and red drum nursery/sub-adult habitats. (H)
- Determine the impacts of dredging and beach re-nourishment on red drum spawning and early life history stages. (M)
- Investigate the concept of estuarine reserves to increase the escapement rate of red drum along the Atlantic coast. (M)
- Identify impacts of water quality, environmental, and ecosystem changes on red drum stock dynamics for potential incorporation into stock assessment models. (M)
- Quantify relationships between red drum production and habitat and implications for future management planning. (L)
- Determine methods for restoring red drum habitat and/or improving existing environmental conditions that adversely affect red drum production. (L)

IX. References

Atlantic States Marine Fisheries Commission (ASMFC). 2002. Amendment 2 to the Interstate Fishery Management Plan for Red Drum. ASMFC, Washington, DC, Fishery Management Report No. 38, 141 p.

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X. Figures

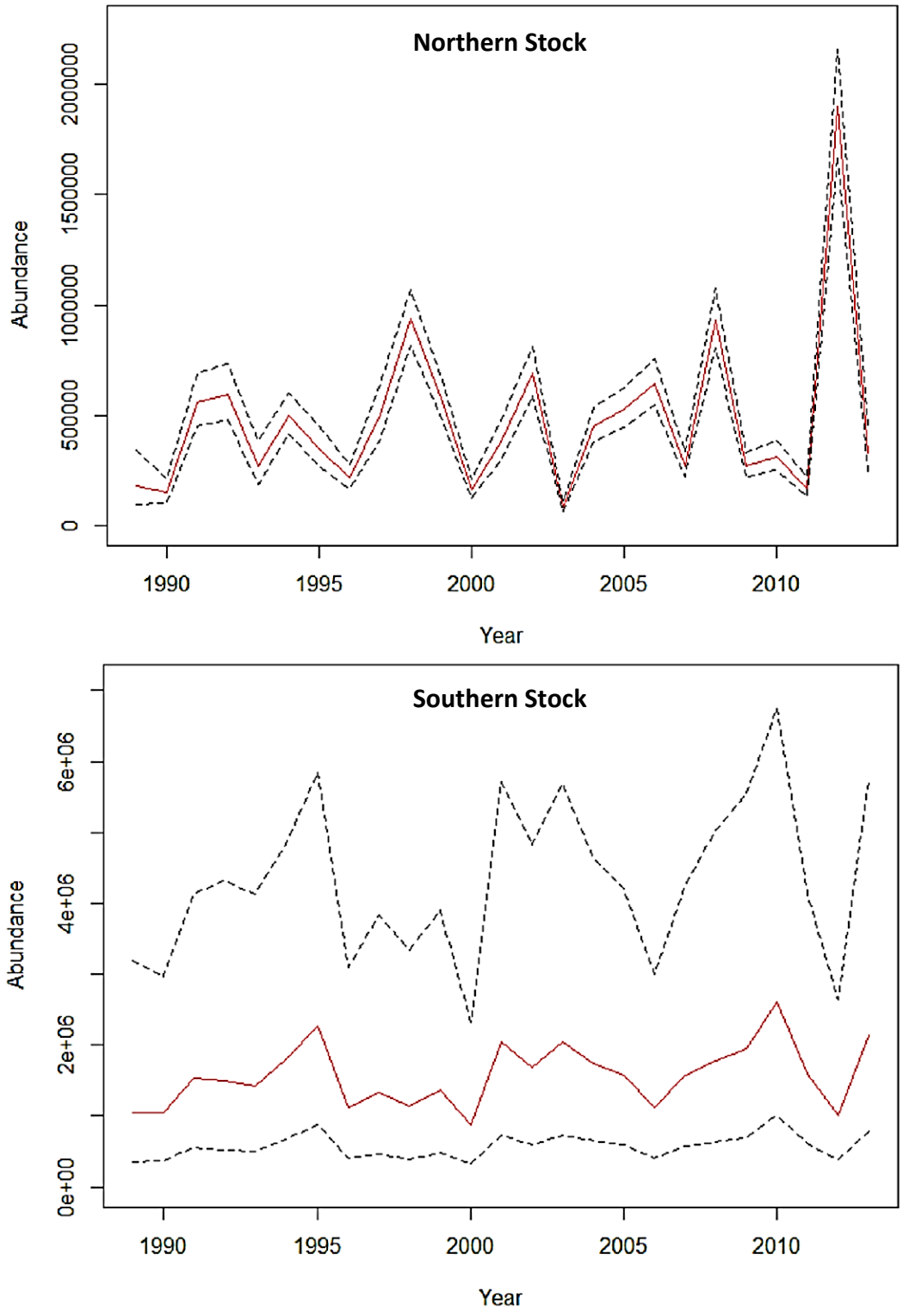

Figure 1. Predicted recruitment (age-1 abundance, red lines) with 95% confidence intervals (dashed black lines) for the northern (top) and southern (bottom) regions (Source: ASMFC 2017).

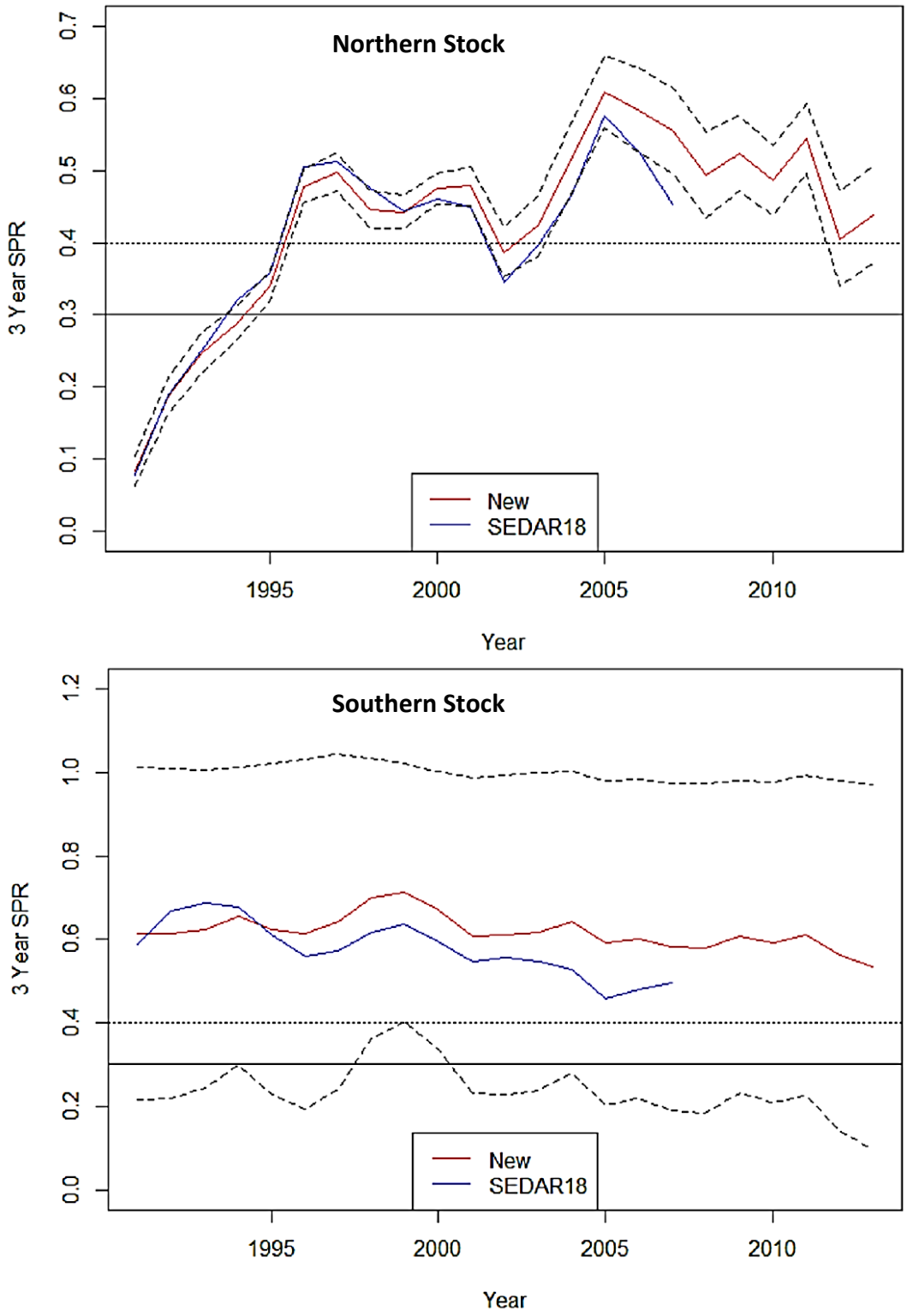

Figure 2. Three year average sSPR (red lines) for the northern (top) and southern (bottom) stocks with 95% confidence intervals (dashed black lines). Point estimates from the previous benchmark assessment (SEDAR18) are included for comparison. The target sSPR (dotted black line) is 40% and the threshold sSPR (solid black line) is 30% (Source: ASMFC 2017)**.**

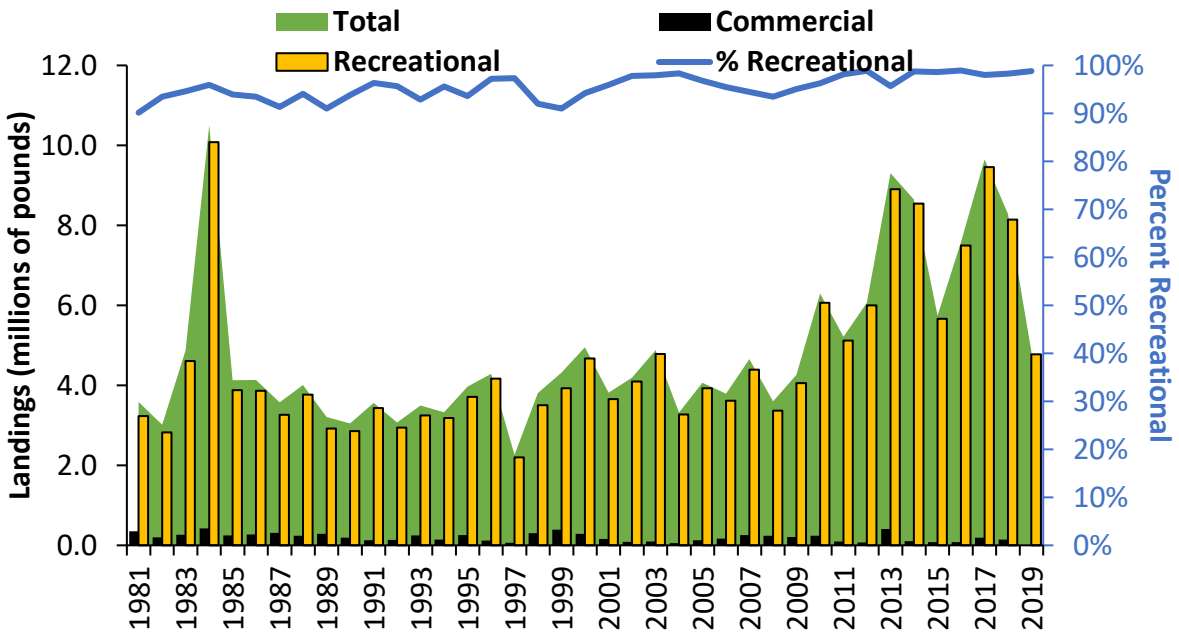

Figure 3. Commercial and recreational landings (pounds) of red drum. See Tables 2 and 3 for values and data sources.

*Recreational weight data for NC-FL in 1988 is unavailable. Recreational harvests in pounds were estimated for these states in this year by multiplying each state's 1988 harvest in numbers of fish by its time series average weight.

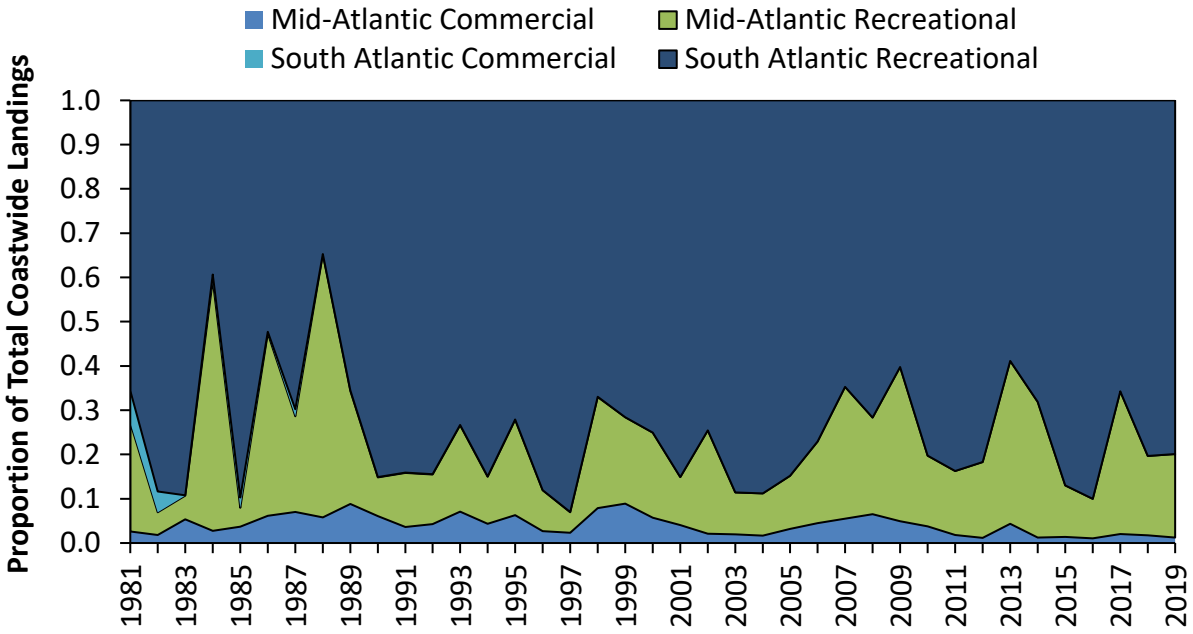

Figure 4. Proportion of regional, sector-specific landings to total coastwide landings (pounds). See Tables 2 and 3 for data sources.

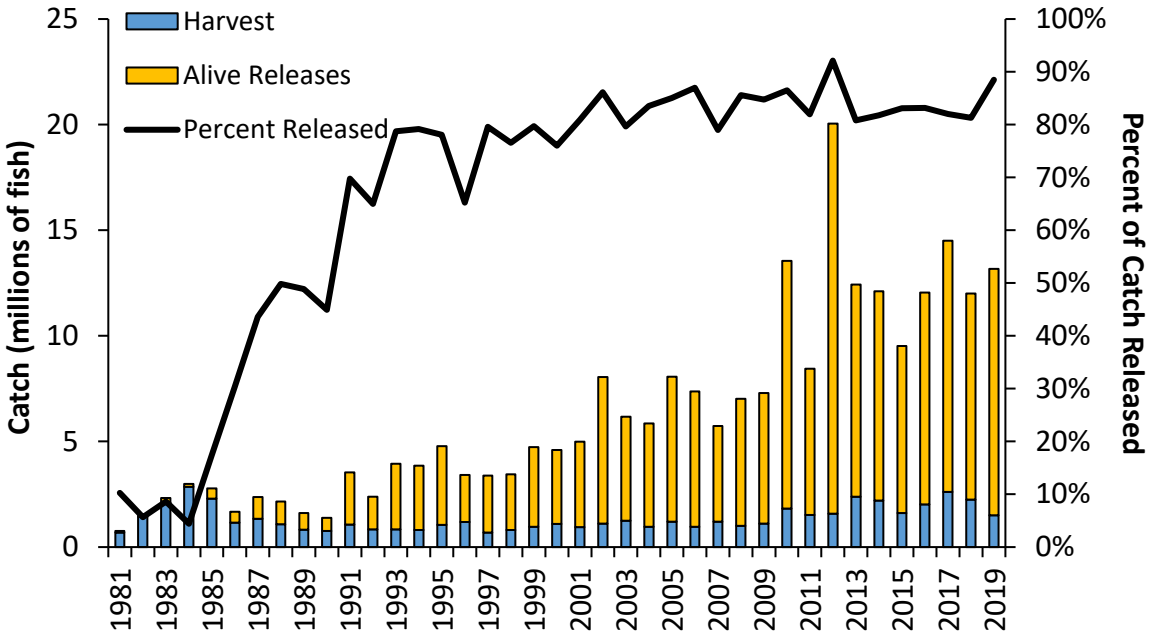

Figure 5. Recreational catch (harvest and alive releases) of red drum (numbers) and the proportion of catch that is released. See Tables 4 and 5 for values and data sources.

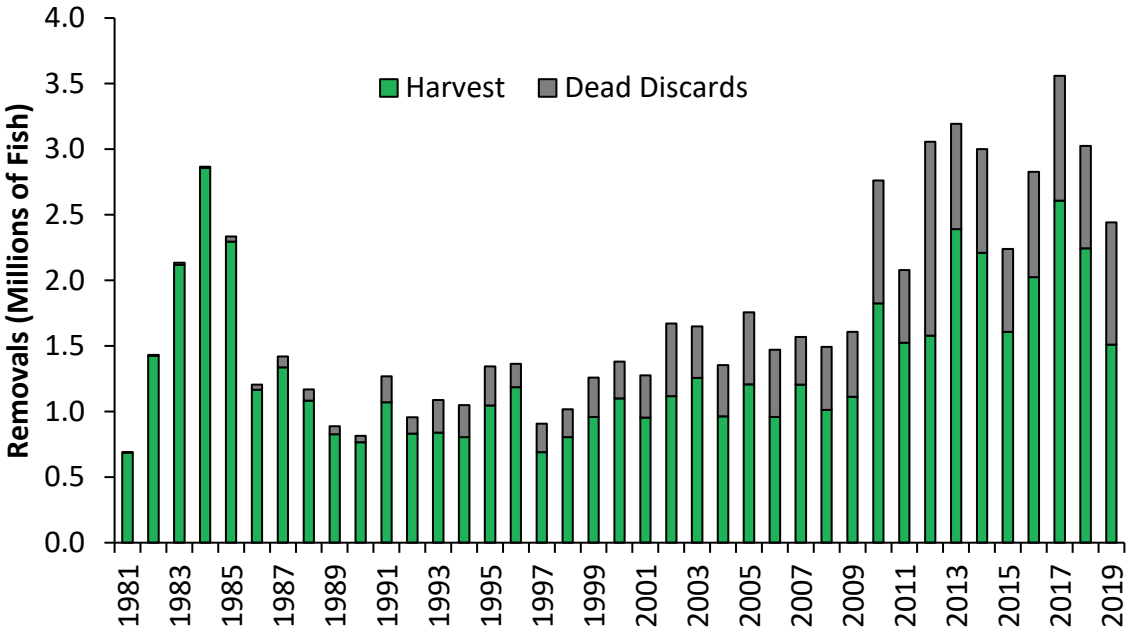

Figure 6. Recreational removals (harvest and dead discards) of red drum (numbers). Dead discards are estimated by applying an 8% discard mortality rate to alive releases. See Tables 4 & 5 for values and data sources.

XI. Tables

Table 1. Red drum regulations for 2019. The states of New Jersey through Florida are required to meet the requirements in the FMP; states north of New Jersey are encouraged to follow the regulations. All size limits are total length.

State	Recreational	Commercial
NJ	18" - 27", 1 fish	18" - 27", 1 fish
DE	20" - 27", 5 fish	20" - 27", 5 fish
MD	18" - 27", 1 fish	18" - 25", 5 fish
PRFC	18" - 25", 5 fish	18" - 25", 5 fish
VA	18" - 26", 3 fish	18" - 25", 5 fish
NC	18" - 27", 1 fish	18" - 27"; 250,000 lb harvest cap with overage payback (150,000 lbs Sept 1- April 30; 100,000 lbs May 1-Aug 31); harvest of red drum allowed with 7 fish daily trip limit; red drum must be less than 50% of catch (lbs); small mesh (<5" stretched mesh) gill nets attendance requirement May 1 - November 30. Fishing year: September 1 – August 31.
SC	15" - 23", 2 fish per person per day bag limit and 6 fish per boat per day boat limit	Gamefish Only
GA	14" - 23", 5 fish	Gamefish Only
FL	18" - 27"; Northern Region – 2 fish per person per day, 8 fish vessel limit, Southern Region – 1 fish per person day bag limit, 8 fish vessel limit	Sale of native fish prohibited

Table 2. Commercial landings (pounds) of red drum by state, 2010-2019. (Source: personal communication with ACCSP, Arlington, VA, for years prior to 2019 and state compliance reports for 2019, except as noted below.)

Year	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
2010			C	22	3,966	231,828		C		235,816
2011				3	4,397	91,980		C		96,380
2012	C		334	81	2,786	66,519				69,720
2013	C		2,696	268	30,137	371,949				405,050
2014	C		295	3	14,733	90,647				105,677
2015			C	0	814	80,282				81,095
2016			C	0	1,898	77,833				79,731
2017	C		626	0	6,971	186,411	C			194,023
2018			C	0	885	144,464				145,349
2019			C	0	1,650	56,393		0		58,043

Notes: PRFC landings from agency reporting program; "C" indicates confidential landings.

Table 3. Recreational landings (pounds) of red drum by state, 2010-2019. (Source: personal communication with MRIP for data prior to 2019; state compliance reports for 2019)

Year	NJ	DE	MD	VA	NC
2010				173,622	835,143
2011	15,567				737,853
2012		9,948	158,313	225,732	648,342
2013		13,536	12,086	1,185,572	2,214,045
2014				979,388	1,674,595
2015				98,329	567,730
2016				45,451	633,496
2017			6,782	1,628,692	1,475,852
2018				31,566	1,452,358
2019	4,107		2,113	470,940	436,219

Year	SC	GA	FL		Total
2010	1,137,142	719,068	3,196,674		6,061,649
2011	1,058,774	433,306	2,871,989		5,117,489
2012	1,007,542	221,044	3,727,020		5,997,941
2013	682,544	452,283	4,341,545		8,901,611
2014	921,971	387,367	4,582,561		8,545,882
2015	656,747	394,787	3,949,000		5,666,593
2016	536,550	586,235	5,694,370		7,496,102
2017	1,048,249	826,857	4,470,905		9,457,337
2018	643,213	1,186,306	4,829,344		8,142,787
2019	862,124	630,294	2,372,773		4,778,570

Table 4. Recreational landings (numbers) of red drum by state, 2010-2019. (Source: personal communication with MRIP for data prior to 2019; state compliance reports for 2019)

Year	NJ	DE	MD	VA	NC
2010				44,123	179,828
2011	5,432				156,484
2012		2,256	62,444	90,856	152,005
2013		3,734	4,766	333,590	520,758
2014				251,501	324,303
2015				22,102	143,876
2016				15,866	169,195
2017			4,943	347,145	353,716
2018				6,334	299,577
2019	1,331		1,258	205,824	97,186

Year	SC	GA	FL		Total
2010	437,219	442,578	721,011		1,824,759
2011	373,083	200,521	787,958		1,523,478
2012	296,380	96,354	877,569		1,577,864
2013	282,688	236,760	1,007,729		2,390,025
2014	393,424	212,193	1,027,980		2,209,401
2015	258,493	201,049	981,685		1,607,205
2016	241,224	289,928	1,309,505		2,025,718
2017	455,887	467,522	978,520		2,607,733
2018	262,725	606,836	1,069,604		2,245,076
2019	333,315	271,970	599,348		1,510,232

Table 5. Recreational alive releases and dead discards (numbers) of red drum by state, 2010-2019. Dead discards are estimated based on an 8% release mortality rate. (Source: personal communication with MRIP for data prior to 2019; state compliance reports for 2019)

Year	NJ	DE	MD	VA	NC
2010			6,801	88,328	1,670,693
2011				156,584	587,369
2012		42,738	1,250,726	8,323,032	4,939,534
2013		1,325	7,125	576,743	1,892,171
2014		264	659	1,108,646	1,086,967
2015			1,456	78,590	1,308,072
2016		2,598	47,908	164,575	3,203,452
2017			14,148	1,722,618	2,165,656
2018	4,715		21,384	85,338	1,729,260
2019		474	5,740	865,957	2,976,601

Year	SC	GA	FL	Total Releases	Dead Discards
2010	2,269,230	926,494	6,759,301	11,720,847	937,668
2011	1,617,509	370,451	4,191,567	6,923,480	553,878
2012	1,083,096	220,312	2,614,554	18,473,992	1,477,919
2013	1,864,510	504,759	5,196,513	10,043,146	803,452
2014	1,874,809	750,619	5,074,602	9,896,566	791,725
2015	1,432,754	961,277	4,132,461	7,914,610	633,169
2016	1,266,931	601,153	4,734,303	10,020,920	801,674
2017	2,094,199	1,176,524	4,727,411	11,900,556	952,044
2018	1,493,803	1,045,570	5,375,011	9,755,081	780,406
2019	2,911,653	1,206,707	3,673,651	11,640,783	931,263