



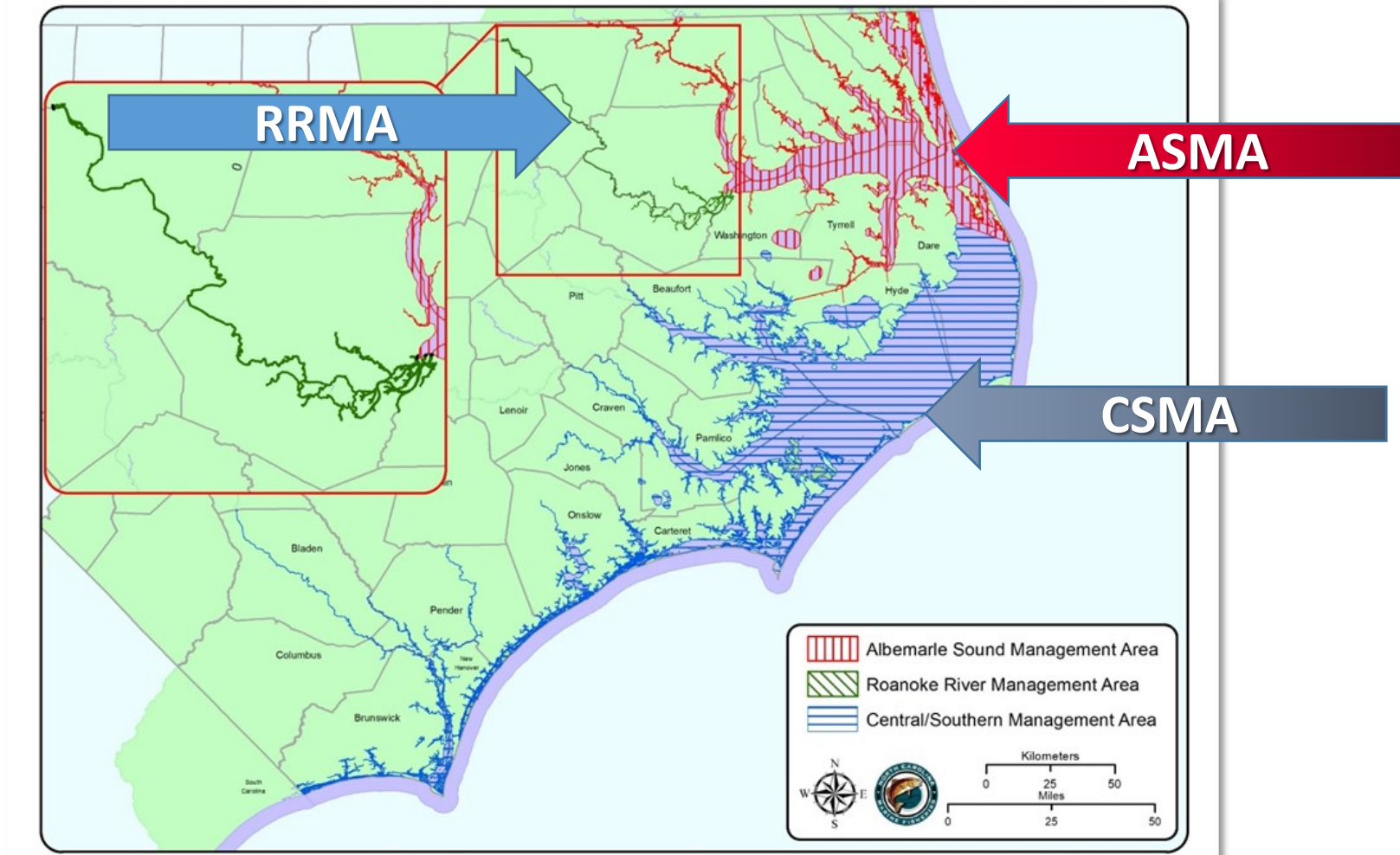
Photo By: Buzz Bryson

Striped bass spawning in the
Roanoke River, Weldon, NC

Assessment of Albemarle Sound- Roanoke River Striped Bass in North Carolina

ASMFC 2021 Spring
Meeting
5 May 2021
Webinar

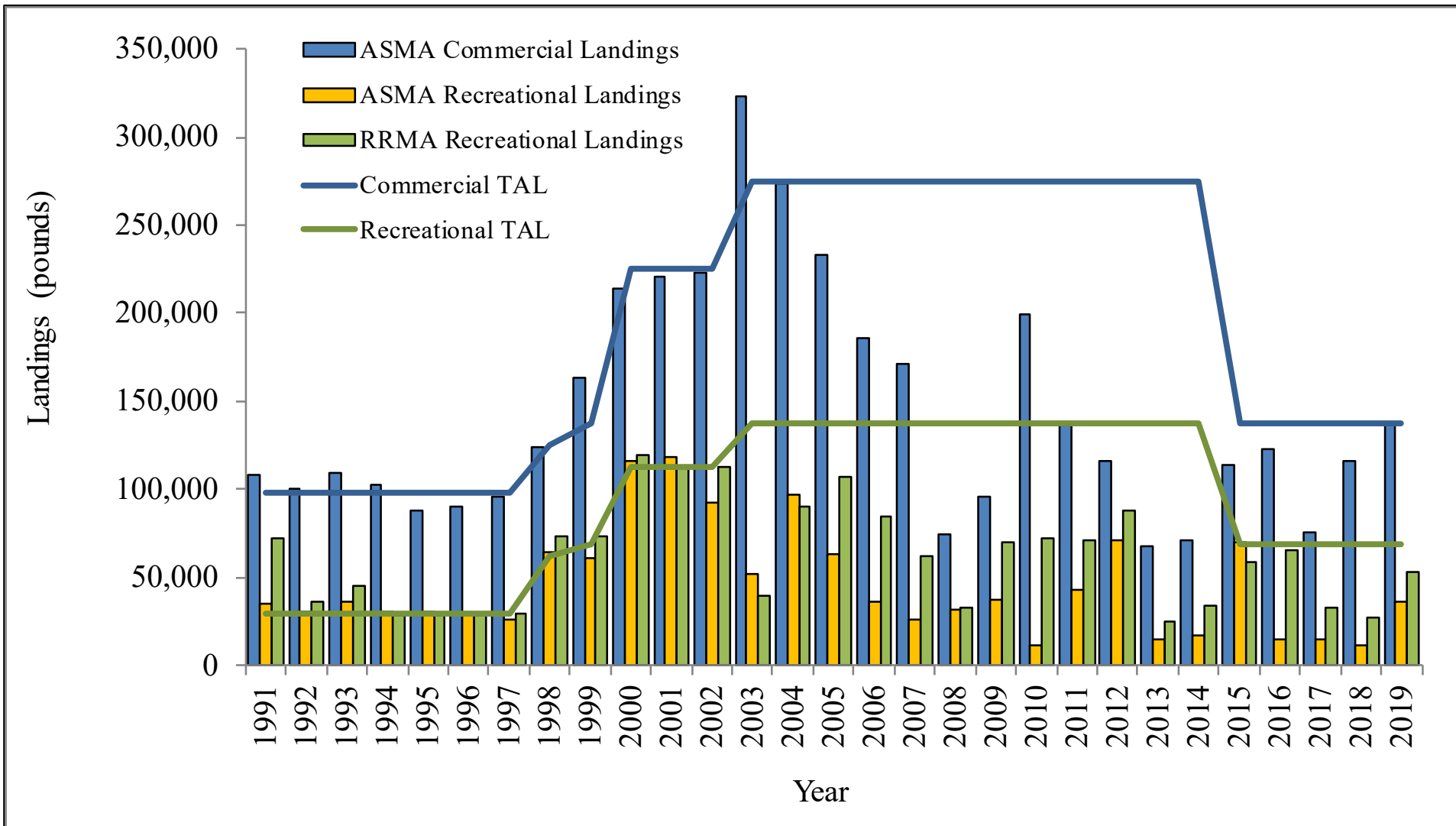
Striped Bass Management Areas



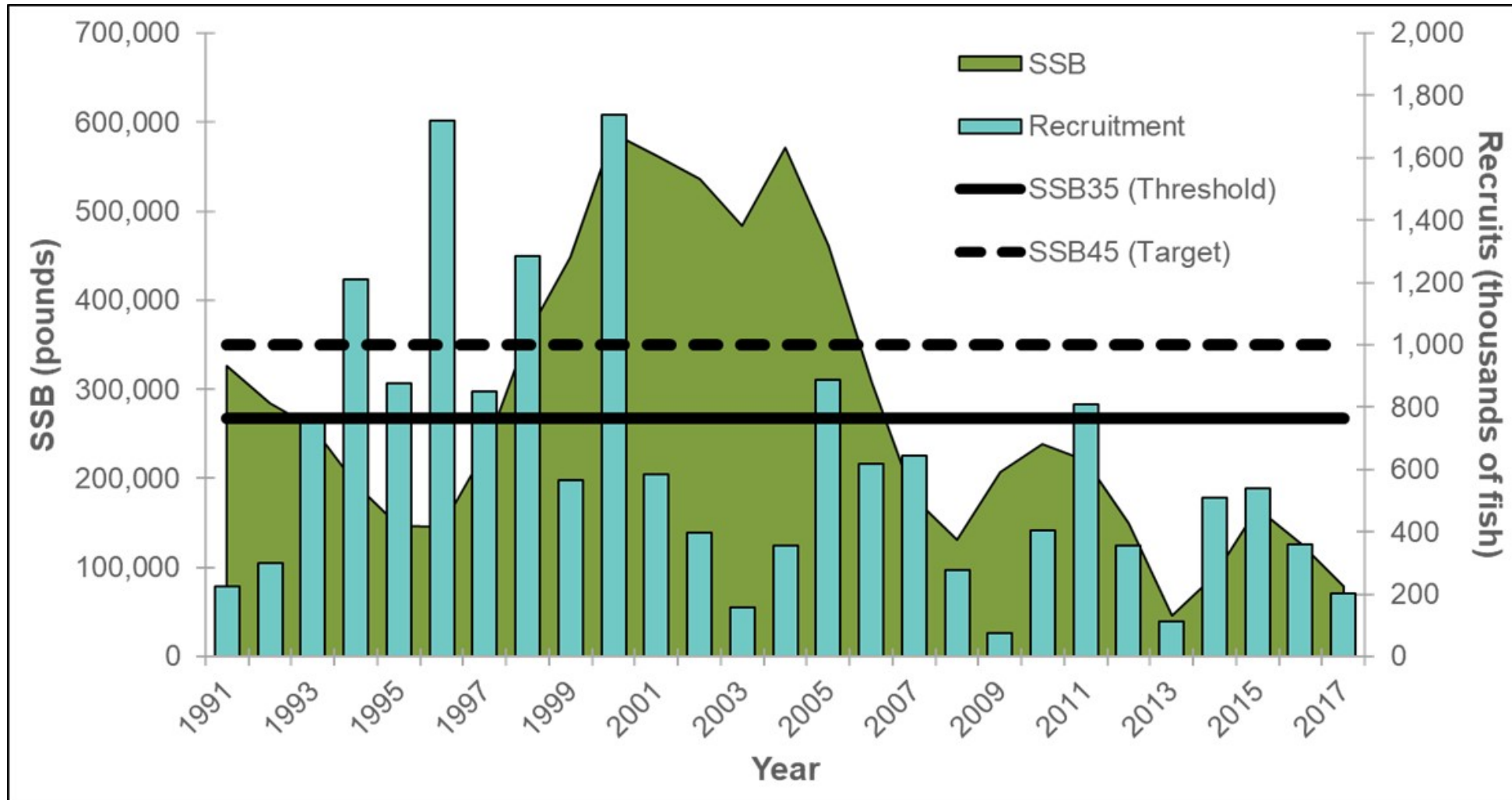
Input Data

- Time series: 1991 through 2017
- Fisheries-Dependent
 - Commercial landings and dead discards
 - Recreational harvest and dead discards
 - Biological samples (length, weight, age)
- Fisheries-Independent
 - Juvenile survey
 - Fall gill net survey
 - Spring gill net survey
 - Electrofishing survey
 - Biological samples (length, weight, age)

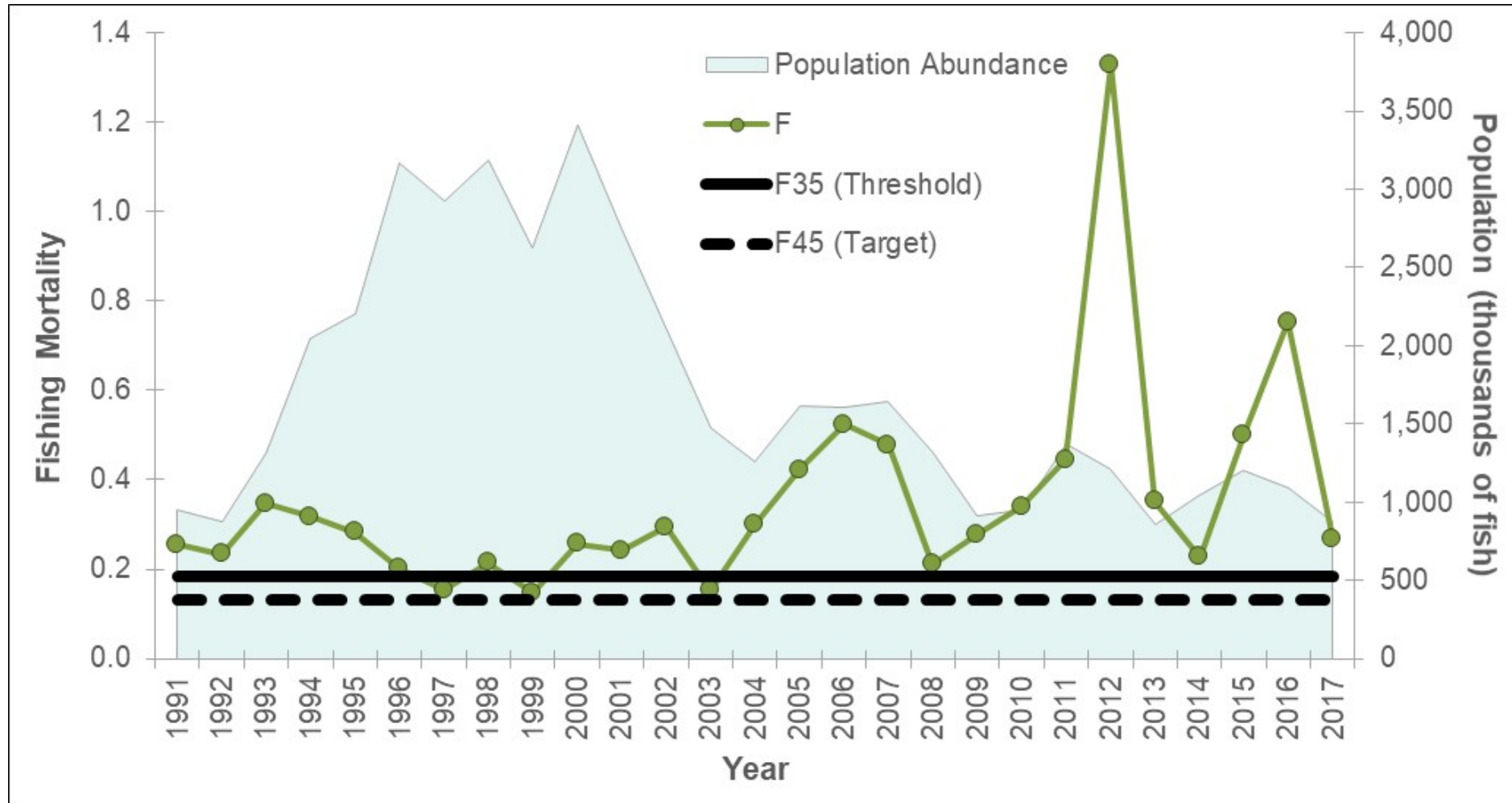
Data—Landings/Harvest



Model—Spawning Stock Biomass & Recruitment



Model—Fishing Mortality & Population Abundance



Stock Status 2017

Biological Reference Points		Terminal Year (2017) Estimate
SSB 45% Target	350,371 (lb)	78,576 (lb)
SSB 35% Threshold	267,390 (lb)	(Overfished)

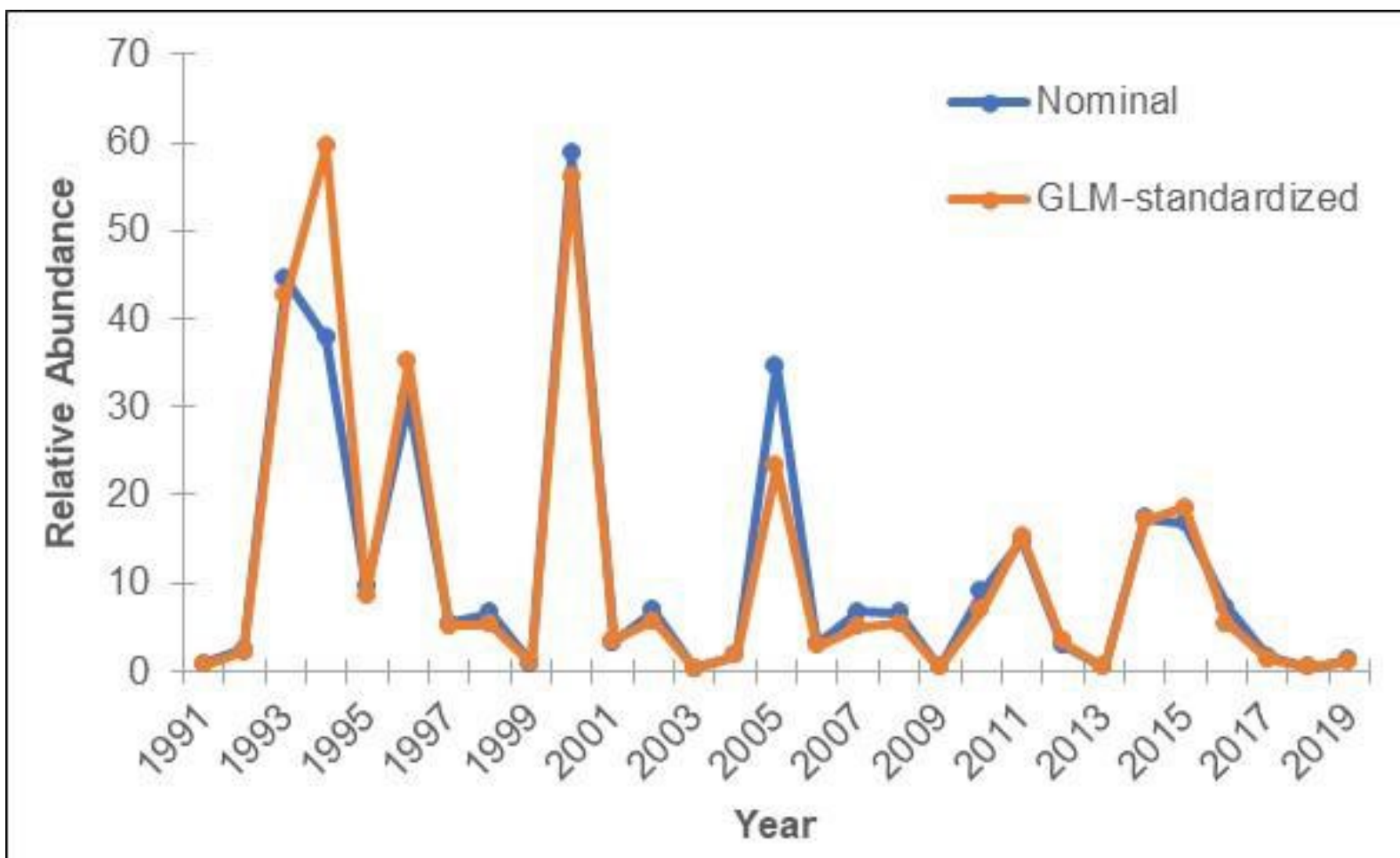
Biological Reference Points		Terminal Year (2017) Estimate
F 45% Target	0.13	0.27
F 35% Threshold	0.18	(Overfishing)

- $SSB_{2017} < SSB_{\text{Threshold}} \rightarrow$ stock is overfished
- $F_{2017} > F_{\text{Threshold}} \rightarrow$ overfishing is occurring

Peer Review Workshop—June 2020 (web)

- Panel endorsed results for management use for at least next five years
- Stock status determination consistent with professional opinion and observations
- Recommendations
 - Future assessments consider key abiotic and biotic drivers of poor recruitment
 - Collection of sex-specific growth data from juveniles and old fish

Decline in Recruitment

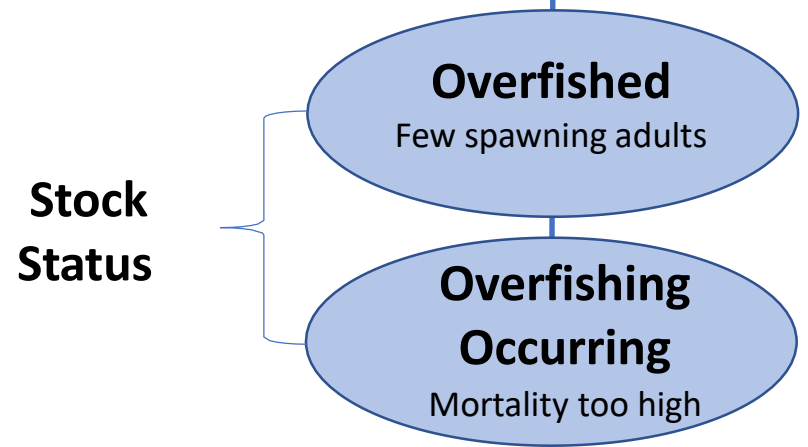


Decline in Recruitment

- Not solely attributable to overfishing
- Potential causes
 - Changes in river flow
 - Prevalence of the non-native blue catfish → predation and competition
- Recommendations
 - Formally incorporate the flow-recruitment relationship into the model
 - Consider factors that may influence abundance that are not tied to striped bass harvest such as blue catfish

Amendment 1—Adaptive Management

Albemarle-Roanoke Striped Bass
Stock Assessment



Landings Reduction
2021 and 2022

Management
Measures in 2023
Plan

2020 Revision
Amendment 1

Amendment 2

Amendment 1—Adaptive Management

- 2020 Revision to Amendment 1 will lower the TAL in 2021 and 2022
- Based on the required reduction to lower F to the F Target
- Calculation involved reducing 2017 landings (119,244 lb) by 57%
- 2020 Revision will meet the Adaptive Management in Amendment 1 that states:
“should the target F be exceeded, then restrictive measures will be imposed to reduce F to the target level”

Amendment 1—Adaptive Management

- 2021 and 2022 TAL for the Albemarle Sound and Roanoke River Management Areas:
 - ASMA Commercial 25,608 lb
 - ASMA Recreational 12,804 lb
 - RRMA Recreational 12,804 lb
- ASMA Commercial
 - Close season when TAL is reached
- ASMA and RRMA Recreational
 - Evaluate lowering the daily creel, harvest days reduction, and shorter seasons

Questions?





TC Report on the 2020 Albemarle Sound-Roanoke River Stock Assessment



Kevin Sullivan, TC Chair

May 5, 2021

TC Task



- Review the 2020 Albemarle Sound-Roanoke River (A-R) striped bass stock assessment
- Under Addendum IV, the A-R stock is managed by the State of North Carolina using reference points from the latest A-R stock assessment accepted by the TC and approved for management use by the Board
- TC met on March 9, 2021
- Presentation by NCDMF and TC discussion



TC Recommendations



The TC recommends the Board approve the 2020 Albemarle Sound-Roanoke River striped bass stock assessment for management use.

The TC provided recommendations to NCDMF to consider for future A-R stock assessments.



Future A-R Stock Assessments



TC recommendations for consideration in future A-R stock assessments:

- Continue discussion on natural mortality estimates
- Continue exploring factors contributing to peaks in F and high variability of the stock
- Consider impacts of movement of fish into and out of management area
- Explore alternative targets/thresholds for female SSB that are less conservative if recruitment is largely driven by environmental factors



Future A-R Stock Assessments



TC recommendations for consideration in future A-R stock assessments (continued):

- Continue exploring factors that impact recruitment
- Consider developing interim projections for the time between assessments
- Consider using tagging data to validate the growth curve
- Continue reviewing historical data for insight on what could be considered normal for the stock





QUESTIONS?



Amendment 7 Public Information Document (PID) Public Comment Summary & Advisory Panel Report



Atlantic Striped Bass Management Board
May 5, 2021

Overview



- Background
- Timeline
- Amendment 7 PID Issues 1-10
 - Public Comment Summary (PC)
 - Advisory Panel Report (AP)



Background



- 2018 benchmark stock assessment indicated striped bass resource is overfished and experiencing overfishing
- In response, Addendum VI was initiated in 2019 to end overfishing and bring fishing mortality to the target level in 2020
- Addendum VI measures are designed to achieve at least 18% reduction in coastwide removals and were implemented in 2020
- Circle hook requirement when fishing with bait for the recreational fishery implemented in 2021



Background



- In August 2020 the Board initiated development of Amendment 7
- The last plan amendment to the Striped Bass FMP was adopted in 2003 (Amendment 6)
- The status and understanding of the striped bass stock and fishery has changed considerably
- Concern that the current management program no longer reflects current fishery needs and priorities



Amendment 7 Timeline



Note: The timeline is subject to change per the direction of the Board.

August 2020	Board initiates development of Amendment 7
February 2021	Board approves PID for public comment
February - April 2021	Public comment on PID
 May 2021	Board reviews public comment and AP report; directs Plan Development Team to develop Draft Amendment
May - September 2021	Preparation of Draft Amendment
October 2021	Board reviews Draft Amendment and considers approving for public comment
November 2021- January 2022	Public comment on Draft Amendment
February 2022	Board reviews public comment and selects final measures for the Amendment; Policy Board and Commission approve the Amendment
<i>Summer-Fall 2022</i>	<i>Stock assessment update</i>

Amendment 7 PID Issues



1. Fishery Goals and Objectives
2. Biological Reference Points
3. Management Triggers
4. Stock Rebuilding Targets & Schedule
5. Regional Management
6. Management Program Equivalency
(Conservation Equivalency)
7. Recreational Release Mortality
8. Recreational Accountability
9. Coastal Commercial Quota Allocation
10. Other Issues



Am7 PID Public Comment Summary



Public Hearings

- 11 webinar hearings for 11 jurisdictions
- 491 individuals* attended the hearings
- Some individuals attended multiple hearings

**not including state staff, ASMFC staff, or Commissioners/Proxies*

Written Comment

- Total of 3,063 comments received
- 50 organizations submitted comments
- 2,397 comments received through 14 form letters
- 616 comments from individual stakeholders



Advisory Panel Meeting



- The AP met on April 13 via webinar to discuss the Am7 PID
- *Attendees:*
 - Louis Bassano (Chair, NJ – recreational)
 - Dave Pecci (ME – for-hire/recreational)
 - Bob Humphrey (ME – comm. rod and reel/for-hire)
 - Peter Whelan (NH – recreational)
 - Patrick Paquette (MA – rec/for-hire/comm)
 - Andy Dangelo (RI – for-hire)
 - Michael Plaia (RI – comm/rec/for-hire)
 - Bob Danielson (NY – recreational)
 - Nathaniel Miller (NY – commercial)
 - Kelly Place (VA – commercial)
 - Dennis Fleming (PRFC – fishing guide/seafood/processor/dealer)
 - Jon Worthington (NC nominee – recreational)





Public Comments (PC) and Advisory Panel (AP) Report by Issue

Issue 1 (PC): Goals & Objectives



- **Status quo/remove from Am7 consideration (*majority*)**
 - Majority support maintaining Am6 goal and objectives
 - Goal/objectives are sound but Board hasn't adhered to them
- Include in Draft Am7
 - A few comments support changing goal or objective(s)
- Other comments:
 - Support managing for abundance
 - For management themes, some general support for regulatory consistency (more comments under Issues 5-6)
 - Management themes should not override the goals/objectives

	Maintain Goal/Obj	Change or Add Goal/Obj	Manage for Abundance	Support Regulatory Consistency	Stability and/or flexibility should not override goal
Individual	119	11	119	37	24
Form Letter	1530	4	163		1259
Organization	27	7	13	6	9
Written Total	1676	22	295	43	1292
Hearing Total	43	6	47	4	15



Issue 1 (PC): Goals & Objectives



General public comments:

- Concern that a rebuilding plan has not been put in place yet; focus on rebuilding
- Concern about changing management before knowing how Addendum VI measures performed
- Important to recognize the long-term economic value of the fishery and want to have the resource available for future generations



Issue 1 (AP): Goals & Objectives



AP recommends including Issue 1 in Draft Am7.

- Opportunity to evaluate and reconsider objectives
 - Stricter objective to address declining stock trends could be considered
 - Existing objective addressing flexibility may need to be addressed given public concern
- If changing the objectives, language should be general enough so it does not restrict changes to management in the future



Issue 2 (PC): BRPs



- **Status quo/remove from Am7 consideration (*majority*)**
 - Overwhelming majority support maintaining current BRPs
 - 1995 is an appropriate reference year
 - Target should not be lowered
 - No scientific justification for changing the BRPs
- **Include in Draft Am7**
 - A few comments support changes to the BRPs

	Maintain 1995 BRPs	Change BRPs
Individual	237	6
Form Letter	2389	
Organization	42	4
Written Total	2668	10
Hearing Total	78	8



Issue 2 (AP): BRPs



AP recommends removing Issue 2 from Am7 consideration.

- Clear public support for maintaining the current BRPs based on 1995 reference year
- Important to communicate that the SSB target may be difficult to attain but it should be the target to rebuild the stock



Issue 3 (PC): Management Triggers



- **Status quo/remove from Am7 consideration**
(majority for SSB and F triggers; split on recruitment trigger)
 - Majority support the current SSB and F triggers
 - Some support for maintaining current recruitment trigger
- **Include in Draft Am 7** *(split on recruitment trigger)*
 - Some support for changing the recruitment trigger to better reflect variability
 - Some comments note the required action responding to the recruitment trigger should be more specific

	Maintain All Current Triggers	Modify Recruitment Trigger, Maintain SSB/F Triggers	Modify SSB and/or F Triggers
Individual	54	78	4
Form Letter	146	96	
Organization	9	11	9
Written Total	209	185	13
Hearing Total	9	28	5



Issue 4 (PC): Stock Rebuilding Timeline



- **Status quo/remove from Am7 consideration (*majority*)**
 - Majority support maintaining 10-yr rebuilding timeline
 - Board needs to adhere to the rebuilding requirement
- Include in Draft Am7
 - A few comments support a faster timeline
- General concern there is not a rebuilding plan currently in place to address the overfished stock

	Maintain 10-yr Rebuilding	Faster Rebuilding
Individual	170	29
Form Letter	289	
Organization	28	3
Written Total	487	32
Hearing Total	42	13



Issues 3-4 (AP): Mgmt Triggers & Rebuilding Timeline



AP recommends removing SSB and F triggers and rebuilding schedules from Am7 consideration.

- Public support for maintaining SSB and F triggers and 10-year rebuilding timeline; stricter adherence

AP recommends including the recruitment trigger in Draft Am7.

- Concern the recruitment trigger has not been tripped given recent low recruitment
- Importance of recruitment needs to be apparent
- YOY may not be the best or only proxy for the recruitment trigger; account for env. conditions
- Board should improve communication about their response to management triggers to address public concern



Issue 5 (PC): Regional Management



- **Status quo/remove from Am7 consideration (*majority*)**
 - Majority do not support pursuing regional management at this time
 - Science (i.e., two-stock assessment model) is not yet available
 - Some opposed to regional management in general; striped bass as a migratory fish should be managed as one unit
- **Include in Draft Am7**
 - Some support for pursuing regional management at this time to account for differences for spawning and nursery areas

	Oppose Regional Mgmt or Not at this Time	Pursue Regional Management in Am7
Individual	145	23
Form Letter	599	4
Organization	26	9
Written Total	770	36
Hearing Total	50	14



Issue 5 (AP): Regional Management



AP recommends removing Issue 5 from Am7 consideration.

- There is enough flexibility in current management to implement different measures (e.g., size limits, gear restrictions, effort control) in different states
- Two-stock assessment model is not ready for management use



Issue 6 (PC): Conservation Equivalency



- Status quo/remove from Am7 consideration
 - A few comments generally support the use of CE
- **Include in Draft Am7 (majority)**
 - Majority support the use of CE only when the stock is not overfished and not experiencing overfishing
 - Notable number of comments support eliminating CE
 - Concern about lack of accountability, inability to quantify and measure effectiveness, and the lack of consistency among states
- Importance of accountability measures

	Keep CE in FMP	Only Use if Not Overfished/Not Overfishing	Importance of Accountability if Using CE*	Eliminate CE from FMP
Individual	21	114	105	100
Form Letter	4	1394	1345	503
Organization	10	19	13	9
Written Total	35	1527	1463	612
Hearing Total	11	35	37	38

*Subset of comments that support keeping CE or only using CE when the stock is not overfished and not experiencing overfishing.



Issue 6 (AP): Conservation Equivalency



AP recommends including Issue 6 in Draft Am7.

- Concerns about MRIP data and its application to CE
- Stronger accountability measures are needed
- Discussion about required data/data standards to implement CE accountability measures
- Clear public concern about CE
- CE can be an effective tool but need to address concerns about it being a loophole



Issue 7 (PC): Rec. Release Mortality



- Status quo/remove from Am7 consideration
 - A few note recreational release mortality should be treated the same as other sources of mortality
- **Include in Draft Am7 (majority)**
 - Support for increased outreach and education, additional gear restrictions beyond circle hooks, and seasonal closures during conditions associated with higher mortality rates
- Some support for additional research and updated release mortality rate estimates

	Angler Outreach/ Education	Additional Gear Restrictions	Additional/ updated Research on Mortality Rates	Seasonal Closures for Env Conditions
Individual	154	87	74	24
Form Letter	1345	1257	96	1245
Organization	27	12	11	11
Written Total	1526	1356	181	1280
Hearing Total	58	25	39	17



Issue 7 (AP): Rec. Release Mortality



AP recommends including Issue 7 in Draft Am7.

- Need to consider a variety of options including gear restrictions and effort control measures
- Unique conditions in certain regions should be taken into account when considering different measures
- Public support for pursuing this issue
- Importance of continued outreach and education
- Recreational release mortality is part of the fishery



Issue 8 (PC): Rec. Accountability



- **Status quo/remove from Am7 consideration (*majority*)**
 - Majority note this is too complex for Am7; applies to multiple species and/or would distract from other issues
 - Some opposed to RHL at this time due to insufficient data; some opposed to RHL in general for the striped bass rec. fishery
- **Include in Draft Am7**
 - Some support to address rec. accountability in general (e.g. improved reporting, implementing a tag system)
 - A few support pursuing an RHL or quota system in Am7 to hold the rec. sector to the same standard as the comm. Sector
- **General concern about the reliability of MRIP data**

	Too complex for Am 7 (e.g. multispecies)	Oppose RHL/quota or not at this time	Start addressing rec accountability in general (e.g. better reporting, tag system)	Support pursuing RHL/quota system
Individual	73	20	36	16
Form Letter	96	4	10	
Organization	11	14	12	3
Written Total	180	38	58	19
Hearing Total	14	14	14	6



Issue 8 (AP): Rec. Accountability



AP could not come to consensus on whether to remove or include Issue 8 in Draft Am7.

- AP Comments in support of removing Issue 8:
 - There is accountability through existing measures
 - Quotas are not as applicable to the predominantly recreational striped bass fishery
 - Sector-wide accountability could be considered in the future but not in Am7
 - This issue could be discussed by the ISFMP Policy Board for multiple species but not in Am7
 - Concern about how this issue is presented



Issue 8 (AP): Rec. Accountability



AP could not come to consensus on whether to remove or include Issue 8 in Draft Am7.

- AP Comments in support of including Issue 8:
 - Needs to be discussion about what recreational accountability would look like since most removals are from the recreational sector
 - Opportunity to explore options for recreational accountability
 - Recreational accountability at the sector level is in place for other species



Issue 9 (PC): Comm. Quota Allocation



- Status quo/remove from Am7 consideration
 - A few comments support maintaining status quo allocation at this time or do not think the issue should be addressed in Am7
- **Include in Draft Am7 (majority)**
 - Majority support updating the commercial quota allocation to be based on a more recent timeframe to better align with current fishery conditions

	Status Quo Allocation or Not in Am7	Update Quota Allocation
Individual	4	102
Form Letter		96
Organization	6	7
Written Total	10	205
Hearing Total	3	25



Issue 9 (AP): Comm. Quota Allocation



The majority of the AP recommend Issue 9 be removed from Am7 consideration with one objection.

- AP comments in support of removing Issue 9:
 - No better data available as baseline for commercial allocation since the current system has been in place since 1995
 - Concern that changing allocation may penalize states who have not been achieving their quota due to conservative measures
 - Have not heard the commercial sector ask for an update
 - Could be addressed in the future but not Am7



Issue 9 (AP): Comm. Quota Allocation



The majority of the AP recommend Issue 9 be removed from Am7 consideration with one objection.

- One AP member supports including Issue 9:
 - Supports a mechanism for states to transfer unused quota to other states
- AP discussion on states that receive quota but do not have a commercial fishery
 - Concern that some states use commercial quota to support rec. bonus program
 - States have the authority to decide how to use their quotas
 - Opposition to allowing transfer of unused quota to other states; support for allowing transfer





Issue 10: Other Issues

Issue 10 (PC): Other Issues



Harvest Control

	Reduce Comm Quota or Temporary Ban on Comm Harvest	Eliminate Comm Harvest (Gamefish status)	Moratorium on Comm & Rec Harvest	Permanent C&R only
Individual	31	66	130	20
Form Letter		4	10	
Organization	2	5	1	
Written Total	33	75	141	20
Hearing Total	6	2	29	12

Other comments on harvest control included:

- General support for a 1 fish bag limit for the entire coast with a variety of size limits proposed
- Support of daily bag limits per boat instead of per person for charter boats



Issue 10 (PC): Other Issues



Enforcement, Slot Limits, Commercial Gear

	Stronger Penalties for Poaching	Increased Enforcement/ Funding	Slot limit concerns/Protect 2015 Year Class	Ban Comm Gill Nets/Comm H&L only
Individual	46	52	25	41
Form Letter	10			10
Organization	2	3	1	2
Written Total	58	55	26	53
Hearing Total	8	22	12	0

Other comments on commercial gear included:

- Support for developing a metric for commercial discard mortality



Issue 10 (PC): Other Issues



Spawning Protection and Spawning Stock Research

	Spawning Area Closures	Individual Stocks Research
Individual	31	52
Form Letter	12	96
Organization	2	3
Written Total	45	151
Hearing Total	6	10

Public comments identified a variety of measures to protect spawning fish and large females:

- Spawning area closures
- Spring season restrictions or closure
- Eliminate trophy fishery
- Ban harvest of fish over a certain size limit
- Address commercial harvest of large fish
- Enhance and protect spawning habitat



Issue 10 (PC): Other Issues



Environmental Factors, Social Science Research

	Climate Change/ Env Factors	Habitat	Menhaden, Forage Base	Human Dimensions Research
Individual	27	16	46	45
Form Letter	1298	1247	1645	96
Organization	13	10	14	3
Written Total	1338	1273	1705	144
Hearing Total	5	4	11	18

- Management needs to respond to climate change and environmental factors that impact striped bass mortality
- Importance of menhaden and forage species to striped bass health; some comments support
 - Reduce menhaden harvest
 - Connection between striped bass BRPs and menhaden ERPs
- Human dimensions research to better understand the value of the recreational fishery and changes in angler behavior



Issue 10 (AP): Other Issues



AP members identified other issues to consider for potential inclusion in Draft Am7:

- Protect the 2015 year class
 - Change the slot or move to a minimum size limit
 - Discuss the use of slot limits
- Protect spawning and pre-spawn fish
 - Consider area closures or other measures, which may be region-specific
- Increased and stronger enforcement
- Predation and shifting stock distribution



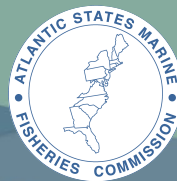
Amendment 7 PID Issues



1. Fishery Goals and Objectives
2. Biological Reference Points
3. Management Triggers
4. Stock Rebuilding Targets & Schedule
5. Regional Management
6. Conservation Equivalency
7. Recreational Release Mortality
8. Recreational Accountability
9. Coastal Commercial Quota Allocation
10. Other Issues



Amendment 7 PID Issues



1. Fishery Goals and Objectives
2. Biological Reference Points
3. Management Triggers (recruitment trigger)
4. Stock Rebuilding Targets & Schedule
5. Regional Management
6. Conservation Equivalency
7. Recreational Release Mortality
8. Recreational Accountability
9. Coastal Commercial Quota Allocation
10. Other Issues

Red:
Public comment
(PC) majority
and/or Advisory
Panel (AP) support
including this issue
in Am7



Amendment 7 Timeline



Note: The timeline is subject to change per the direction of the Board.

August 2020	Board initiates development of Amendment 7
February 2021	Board approves PID for public comment
February - April 2021	Public comment on PID
 May 2021	Board reviews public comment and AP report; directs Plan Development Team to develop Draft Amendment
May - September 2021	Preparation of Draft Amendment
October 2021	Board reviews Draft Amendment and considers approving for public comment
November 2021- January 2022	Public comment on Draft Amendment
February 2022	Board reviews public comment and selects final measures for the Amendment; Policy Board and Commission approve the Amendment
<i>Summer-Fall 2022</i>	<i>Stock assessment update</i>



Questions?