

Review of Proposed Circle Hook Measures with Addendum VI



October 21, 2020

Background



- Addendum VI was approved in October 2019
- Addendum VI requires the mandatory use of circle hooks when fishing with bait to reduce release mortality in recreational striped bass fisheries
- Encourages states to develop public education and outreach materials
- States are required to implement circle hook requirements by January 1, 2021



Background, cont.



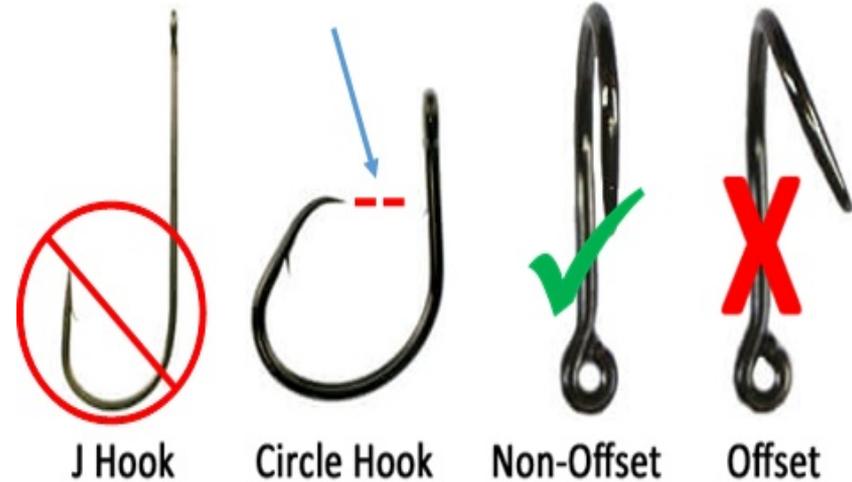
- Most states were unable to provide sufficient information in their implementation plans for Addendum VI regarding circle hook measures
- Therefore, the TC recommended states resubmit implementation plans later in the year to allow sufficient time for scoping
- The Board established August 15, 2020 as the new submission deadline



Circle Hook Requirements



- A 'circle hook' is a non-offset hook where the point is pointed perpendicularly back towards the shank



- Addendum VI provides states flexibility to specify details of the regulation to address specific needs of the state fishery



Implementation Plans



- States were asked to include the following elements in their implementation plans:
 - A copy of final (or proposed) regulatory language
 - Quantitative justification for any proposed exemptions
 - A detailed description of public education and outreach efforts to promote the use of circle hooks



Proposed Circle Hook Measures



- All states proposals require anglers to use circle hooks when fishing with bait to target striped bass
- All proposed regulations included a definition of circle hook comparable to that cited in Addendum VI

PRT Comments:

- A lot of variation; e.g., some states require all anglers to use circle hooks regardless of target species, or use of corrodible hooks



Proposed Exemptions



1. Maine:

- circle hooks required since 2013;
- anglers using rubber or latex tube rigs are exempt

2. Massachusetts:

- anglers aboard for-hire vessels; accounted for <2% of total releases in the state in 2016 and 2017)
- Anglers using artificial lures designed to be trolled, cast and retrieved, or vertically jigged with natural bait attached

3. Potomac River Fisheries Commission:

- Not required prior to May 1 during the C&R season (barbless hooks required)



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Have since proposed to extend requirements year round



Proposed Exemptions



PRT Comments:

- Due to limited guidance, the PRT cannot make a definitive recommendation regarding exemptions
 - Challenges with enforcement and compliance due to inconsistent regulations between neighboring states, fishing areas, and modes
 - Small proportions \neq small number
 - Some states are still going through process
- ➔ PRT recommends any proposed changes should be resubmit for PRT review and Board approval



Public Education and Outreach



- All states have pursued public education and outreach campaigns to garner support and compliance with circle hook requirements
- Some examples include:
 - Developing web content
 - Distributing pamphlets
 - Emailing constituents and angler groups
 - Partnering with LE and non-profits (e.g., ASA)
 - Taking out ads in local newspapers, magazines





Factors Limiting Recreational Release Mortality Calculations for Stock Assessment

Striped Bass TC Report

Kevin Sullian, TC Chair

October 21, 2020

Task from Board



Review factors limiting the accuracy of release mortality estimates for stock assessment purposes, and to identify potential actions that could improve understanding or help reduce release mortality in the fishery.

This Presentation



- Review literature estimates of release mortality and value used in the assessment
- Review MRIP estimates of live releases by year and state
- TC's recommendations for actions to improve understanding or reduce release mortality



RELEASE MORTALITY RATES

Literature Review



- The Striped Bass TC reviews the literature on hooking/release mortality for striped bass for every assessment
- Key studies:
 - Diodati & Richards (1996) – Massachusetts
 - Caruso (2001) – Massachusetts
 - Millard et al. (2005) – Hudson River
 - RMC (1990) – Chesapeake Bay
 - Lukacovi & Uphoff (2007) – Chesapeake Bay

Literature Review



- All the studies had a similar range of estimates in brackish to saltwater:
 - 2-3% mortality under the best conditions
 - 26-27% mortality under the worst conditions
- Multiple factors affected release mortality rates:
 - Temperature, salinity
 - Hook type, angler experience
 - Hooking location, presence of bleeding or injury in fish

Literature Review



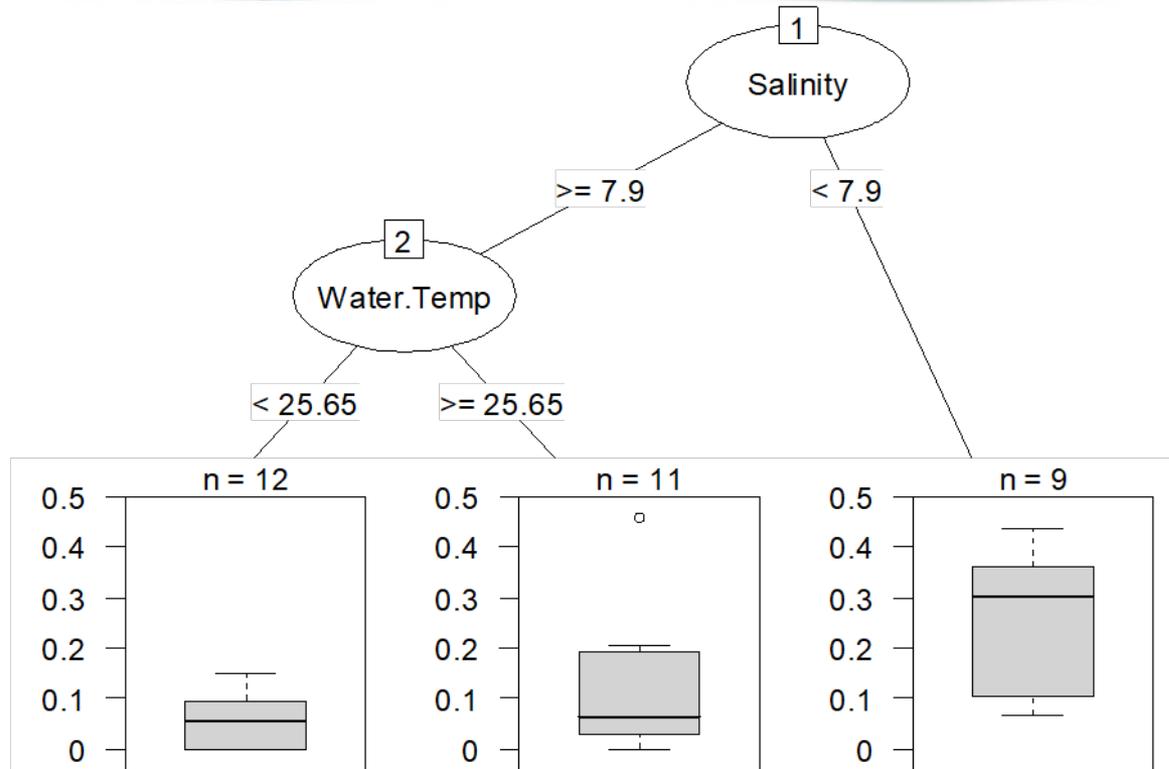
- The TC used Diodati & Richards (1996)
 - Conducted in saltwater and most releases occur in the ocean (as opposed to the Bay or Hudson River)
 - Participants had a range of experience level, more like the general angling population
 - Range of estimates was similar to other studies

Regression Approach



- The TC explored using finer scale estimates of release mortality
- Need to apply that rate to a subset of the MRIP estimates
- Multiple factors affected release mortality rates:
 - Temperature, salinity
 - Hook type, angler experience
 - Hooking location, presence of bleeding or injury in fish

Regression Approach



- Under some conditions, release mortality is higher than others
 - Low salinity = highest
 - Cool temperatures, ocean salinity = lowest

Regression Approach



- Apply that tree to average temperature of state waters by wave and average mid-Bay salinity by wave to get release mortality by state, wave, and area fished (ocean vs. Chesapeake Bay)

→ Didn't make a difference

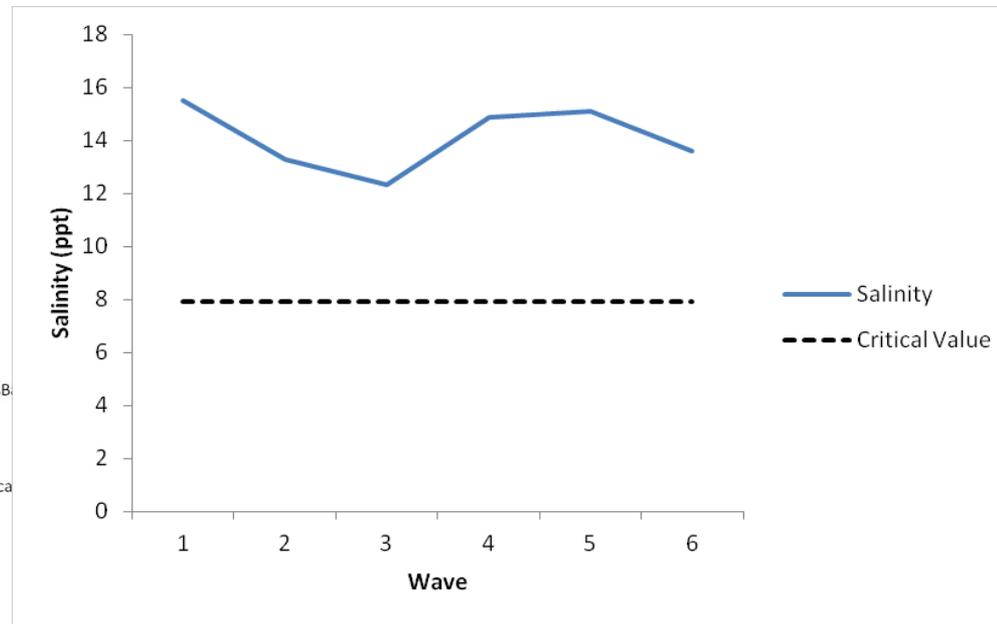
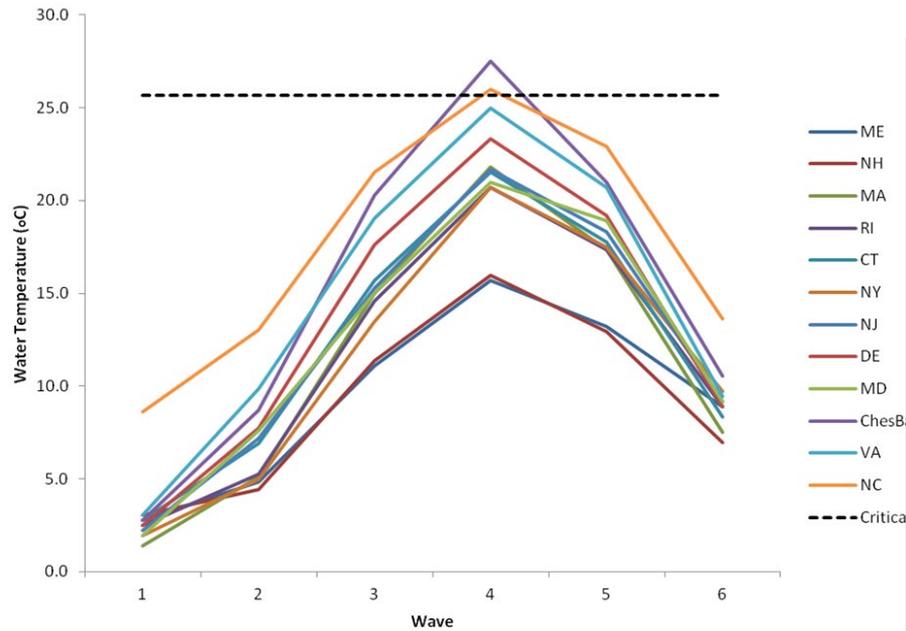
Regression Approach



- These studies collect information on a finer scale than MRIP does
 - MRIP: 2-month wave, large area fished
 - Studies: environmental conditions & other factors for each fish caught

- E.g., MRIP doesn't estimate how many striped bass are released alive from circle hooks vs. J-hooks, or how many are released alive on a very hot day in July

Regression Approach



- Temperature by wave, state, & area fished only crossed the critical value once
- Salinity never crossed the critical value

Regression Approach

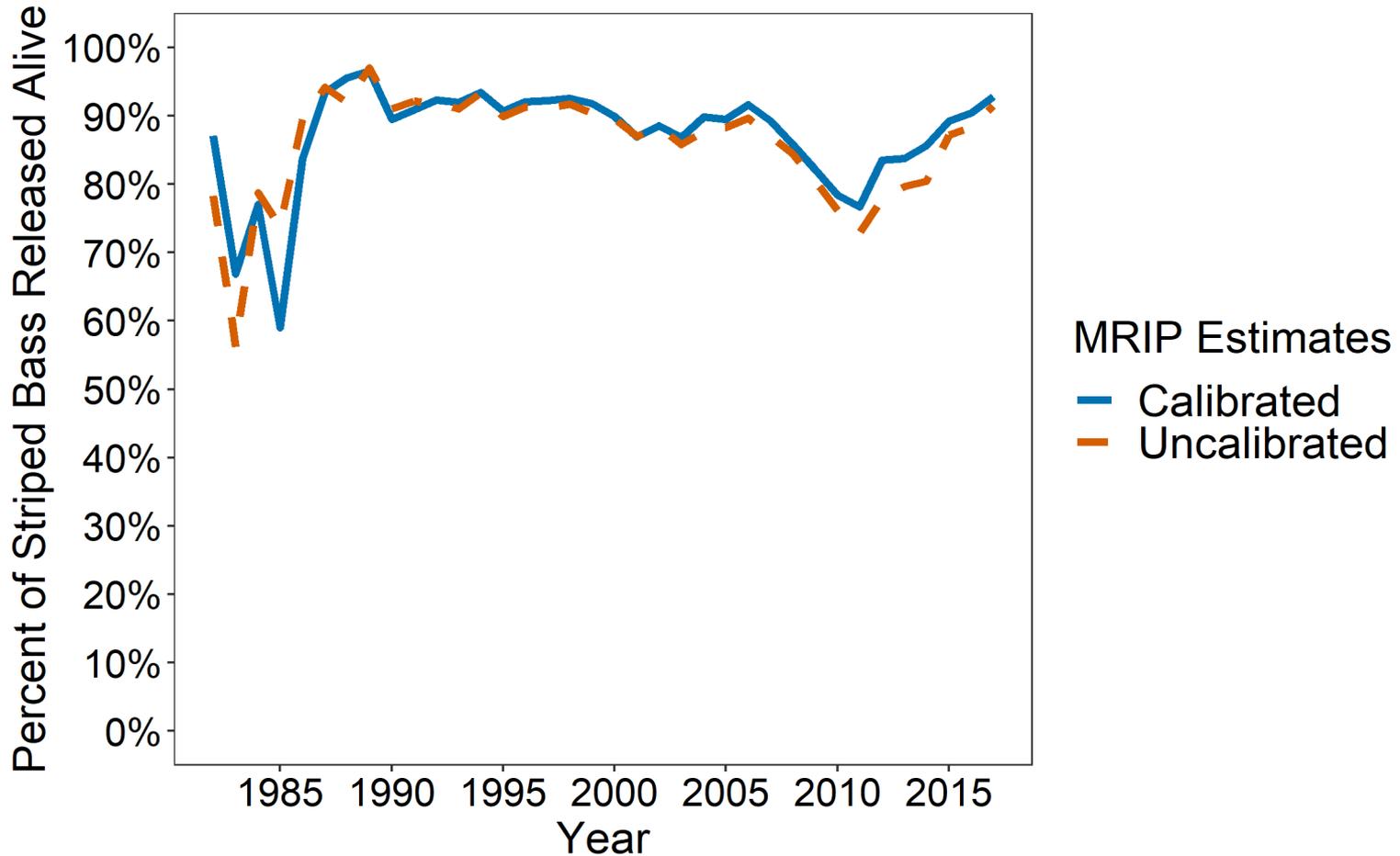


- The TC did not pursue this approach due to the uncertainties in scaling the studies release mortality estimates up to the level that MRIP estimates live releases at
- The 9% coastwide estimate was consistent with the results of this exercise



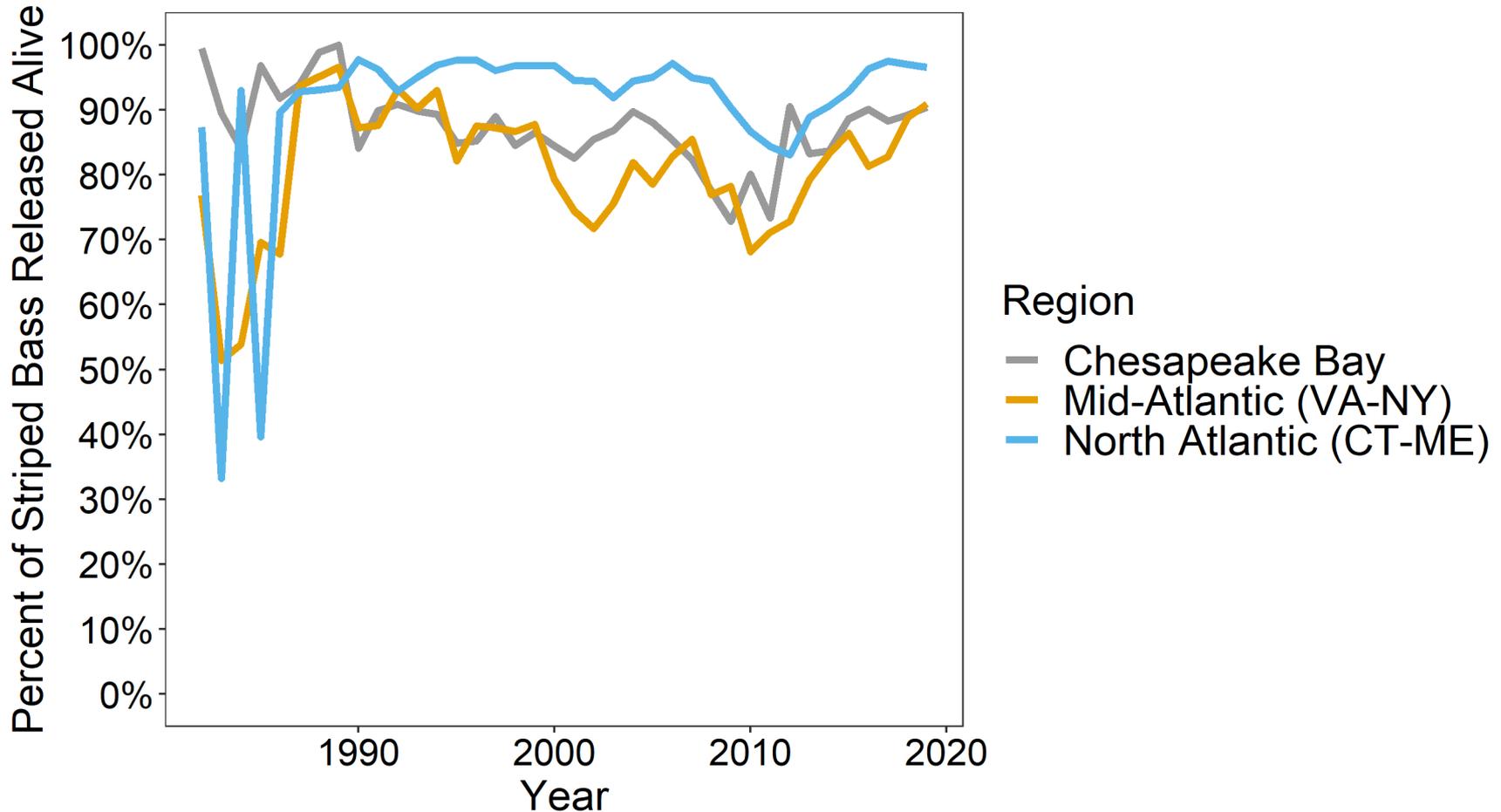
LIVE RELEASES ALONG THE COAST

Striped Bass Releases



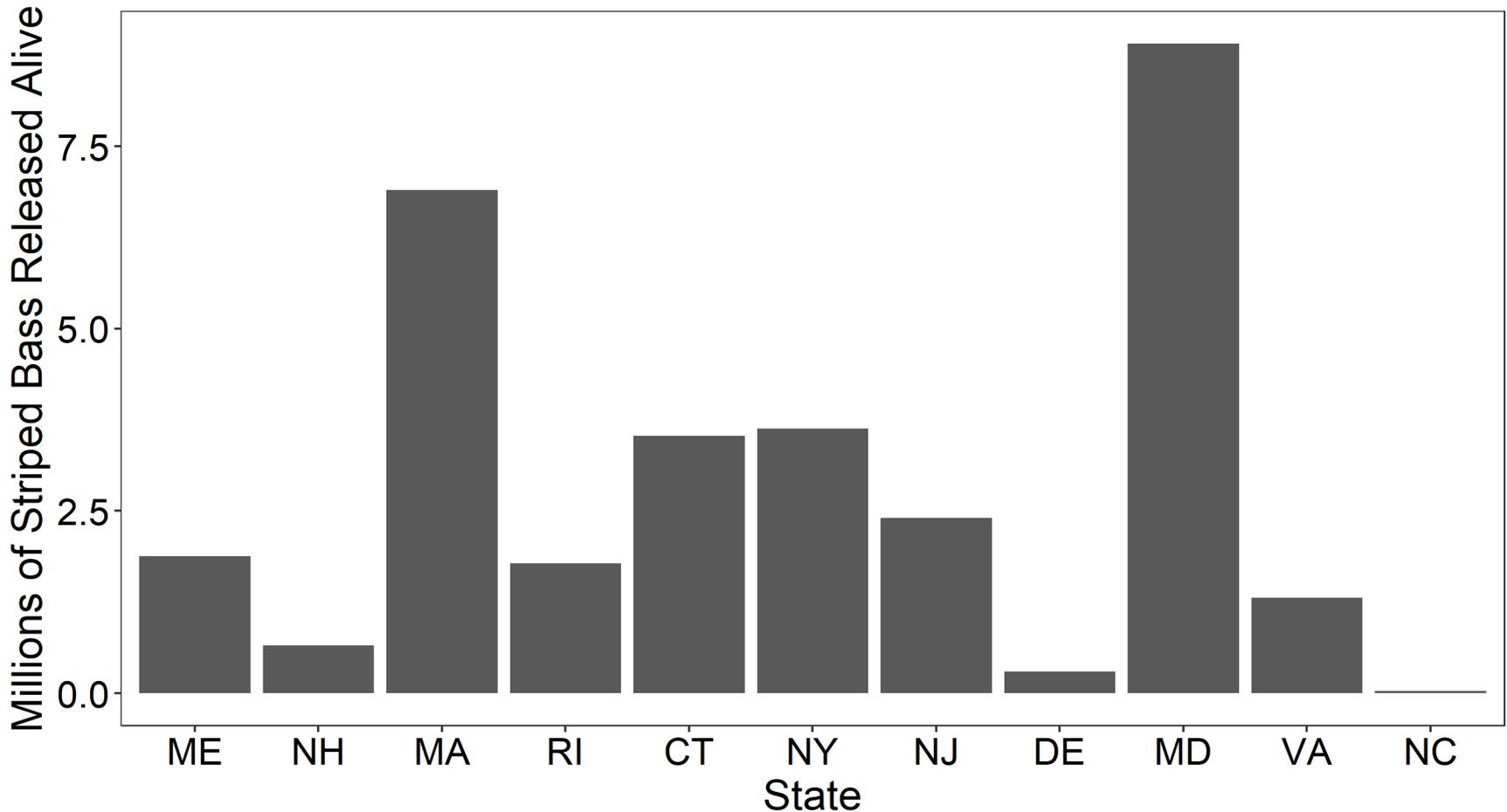
→ A large proportion of recreationally caught striped bass have always been released alive

Striped Bass Releases



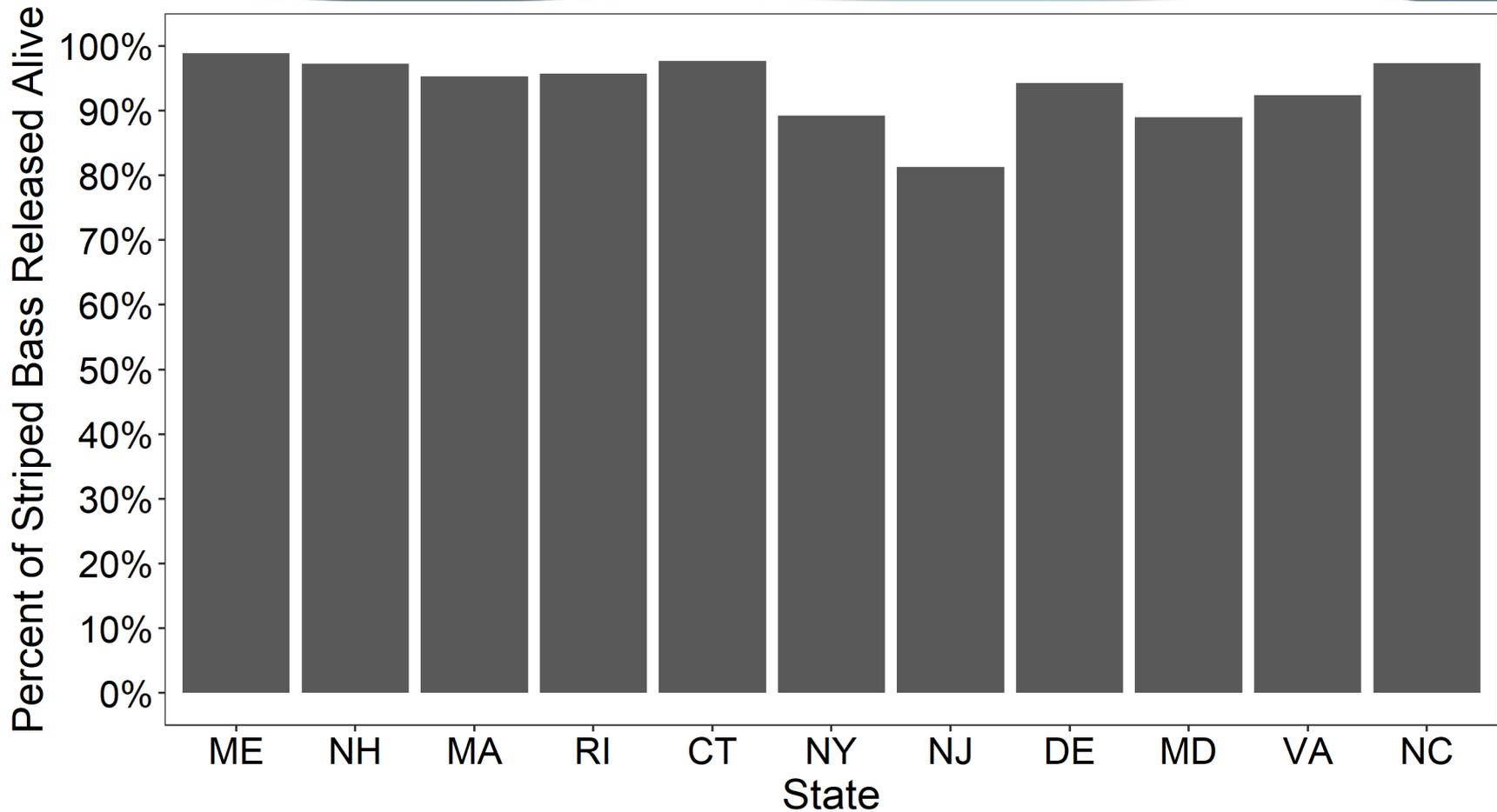
➔ Some differences across regions, but high overall

Striped Bass Releases



➔ Maryland, Massachusetts, New York, and Connecticut released the highest number of striped bass on average (2015-2019)

Striped Bass Releases



➔ New Jersey, New York, and Maryland released the lowest percentage of striped bass on average (2015-2019)



ACTIONS TO IMPROVE UNDERSTANDING & REDUCE MORTALITY

Improve Understanding



- The TC identified 3 actions to increase understanding of release mortality rate and its importance in the assessment
- Varying levels of time (short term to long term) and resources required

Improve Understanding



- ❑ **Sensitivity runs of the current model** using different estimates of release mortality to examine the potential impacts of more refined release mortality estimates on the stock assessment with the current model.
- Short term (1-2 Board meetings)
- Moderately resource intensive (TC member time)

Improve Understanding



- ❑ **Refine the regression tree approach** to produce estimates of release mortality rates at a finer scale for incorporating into the assessment.
- Moderate term (next benchmark assessment, ~2025)
- Moderately resource intensive (TC members time during a benchmark)

Improve Understanding



- ❑ **Comprehensive striped bass release mortality study along the coast** to improve understanding of factors affecting release mortality and link them to the scale of the MRIP estimates
 - Long term (next benchmark or longer)
 - Highly resource intensive (funding, TC members & research partner time)

Improve Understanding



- Actions 1 & 2 will improve understanding of the issue in the assessment, but won't reduce release mortality in practice
- Action 3 could provide better information on factors affecting release mortality to inform policy

Reduce Total Dead Releases



The overall number of dead releases can be reduced by:

1. Reducing the release mortality rate, so a higher proportion of striped bass released alive survive
2. Reducing the total number of striped bass that are caught

Reduce Total Dead Releases



1. Reduce the release mortality rate
 - Angler education & outreach on best practices
 - Regulations on best practices (e.g., circle hooks)
2. Reduce number of striped bass that are caught and released
 - Regulations to reduce effort (e.g., seasonal closures)
 - Angler education & outreach



NEXT STEPS

Next Steps for the Board



- Should the TC work on Action 1 (sensitivity runs of the model) prior to the next assessment?
- Does the Board want to prioritize the coastwide study of release mortality rates?
 - Identify funding sources
 - Have the TC develop a study design and key factors to include

Next Steps for the Board



- What are the management objectives for this fishery?
- Total removals are what matter to stock health
- How does the Board want to allocate and manage total removals?

→ Amendment 7



Draft Amendment 7

Public Information Document



Striped Bass Management Board
October 21, 2020

Amendment Process



1. Public Information Document (PID)

- broad scoping document
- provides public opportunity to identify major issues and mgmt. alternatives
- asks public how they would like to see the fishery managed

2. Draft Amendment

- a more focused document which details the suite of management options for each issue
- provides public opportunity to comment on specific management options



Timeline



October 2020	Board reviews Draft PID and considers approving for public comment <i>Current Step</i>
Nov 2020 – Jan 2021	Public comment on PID
February 2021	Board reviews public comment; directs Plan Development Team to develop Draft Amendment
March – July 2021	Preparation of Draft Amendment with input from Technical Committee and Advisory Panel
August 2021	Board reviews Draft Amendment and considers approving for public comment
August – September 2021	Public comment on Draft Amendment
October 2021	Board reviews public comment and selects final measures for the Amendment; Policy Board and Commission approve the Amendment



Issues Currently in PID



- Fishery Goals and Objectives
- Biological Reference Points
- Management Triggers
- Stock Rebuilding Target/Schedule
- Regional Management
- Conservation Equivalency
- Recreational Release Mortality
- Recreational Accountability
- Coastal Commercial Allocation



Issue 1: Goals and Objectives



- Amendment 6 was implemented in 2003
- the goal and objectives should be reviewed to ensure they are consistent with current fishery needs and priorities

Public Comment Questions:

- Are the existing goal and objectives of Amendment 6 still in line with current fishery needs and priorities?
- Which specific priorities (if any) are missing from the existing goal or objectives?
- Which of the existing objectives (if any) should be removed or refined?
- Do the existing objectives balance the need for management stability, flexibility, and regulatory consistency?



Issue 2: Biological Reference Points



- The reference points are based on SSB in 1995 and were implemented in 2003 when the stock was above the target level

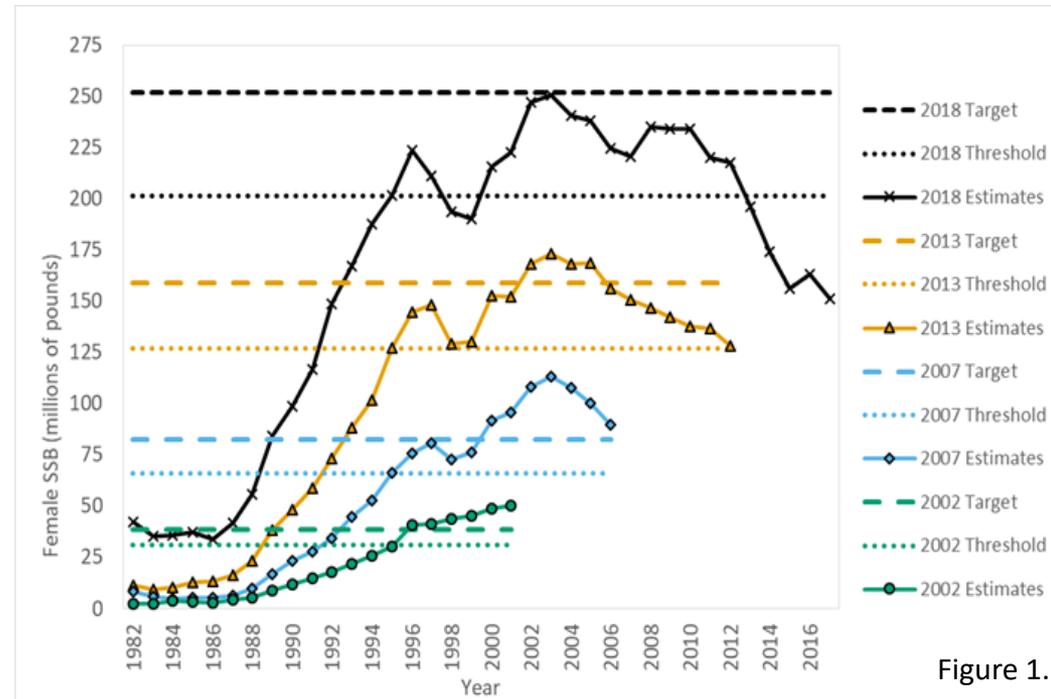


Figure 1.

- However, perceptions of stock performance has changed overtime which raises questions about whether the BRPs are still appropriate



Issue 2: Biological Reference Points



- The Board is limited to other empirical-based reference points due to current data and modeling limitations
 - Model-based reference points (e.g., SPR) may be available in the future
 - Two-stock SCAA model under development

Table 1.

	<i>Female SSB</i>	<i>F</i>
<i>Threshold</i>	$SSB_{1995} = 91,436$ mt (202 million lbs)	0.24
<i>Target</i>	$SSB_{\text{threshold}} \times 1.25 = 114,295$ mt (252 million lbs)	0.20



Issue 2: Biological Reference Points



Public Comment Questions:

- Is female SSB_{1995} still an appropriate benchmark for determining stock status?
- Is there a better empirical reference year or other empirical approach that should be considered?
- Is a 25% buffer appropriate for the SSB target?
- Should the Board prioritize development of model-based reference points and/or stock-specific reference points?
- What stock characteristics (abundance of large fish, broad age structure, etc.) should the BRPs attempt to achieve?



Issue 3 and 4: Mgmt. Triggers/Stock Rebuil



- The management triggers are based on the BRPs and JAIs and are intended to keep the Board accountable
- Triggers require action on different timelines
 - F-based triggers require quick corrective action (1-year)
 - SSB-based triggers allow changes over longer period of time (up to 10-years)
 - JAI-based triggers are tripped when a JAI shows 3 consecutive years of recruitment failure

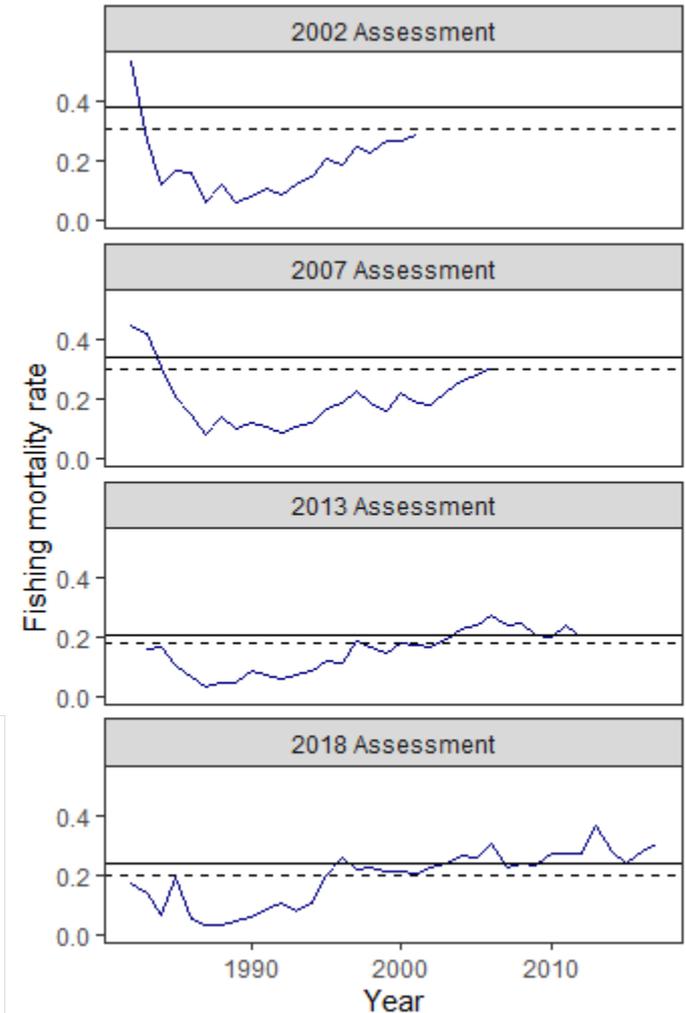
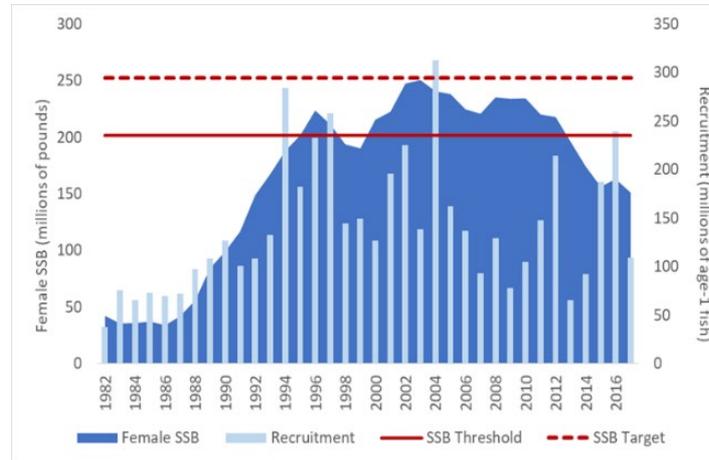


Issue 3 and 4: Mgmt. Triggers/Stock Rebuild



Shortfalls with how the triggers are designed have emerged

- Variable nature of F can result in the continued need for management action
- Extended period of variable, but below average recruitment (**AP feedback**)



Public Comment Questions:

- Which management triggers should be revisited?
- What is an appropriate timeframe to respond to overfishing or overfished determinations?
- Should the F-based triggers account for annual variability in fishing mortality?
- What is more important, rebuilding the stock quickly, or mitigating impacts to fisheries?



Issue 5: Regional Management



- The stock is managed on a coastwide basis, but fisheries operate very differently in different parts of the species range
- Amendment 6 addressed this by managing regions of the fishery under different F rates
 - Chesapeake Bay and the A/R in North Carolina
 - Since Addendum IV (2014) all areas managed under the same F rate (i.e., the F reference points)
 - 2-stock SCAA model under development; Chesapeake Bay stock and the ocean region (which includes the DE Bay/Hudson River complex)



Issue 5: Regional Management



- There are assessment tools available to pursue separate management programs
 - SCAA model separates removals into 2-fleets
 - Chesapeake Bay stock and an ocean region (includes the DE Bay/HR stock complex)
 - F reference points would be set for the entire coastwide stock complex
 - Board would decide how to allocate total F to each region and how to implement accountability



Issue 5: Regional Management



Public Comment Questions:

- Should separate regional management programs be pursued for the Chesapeake Bay and the ocean region?
- If so, how should the Board determine the appropriate allocation of F between the two regions?
- Should development of similar assessment tools be prioritized to support regional management programs for other areas of the coast?



Issue 6: Conservation Equivalency



- FMP strives for coastwide consistency while providing for flexibility
- CE allows states to pursue alternative measures that achieve the same quantified level of conservation for the resource.
- The intent and application of CE is detailed in the ASMFC's Guidance Document
- All proposals are subject to technical review and Board approval, and effectiveness review following implementation



Issue 6: Conservation Equivalency



Concerns/Challenges (AP Feedback):

- Creates inconsistency between neighboring states and within shared waterbodies
- Difficult to evaluate the effectiveness of CE programs once implemented, primarily due to changes in angler effort/behavior and the availability of fish
 - Re Issue 7 and Issue 8
- Recreational CE proposals rely on state-level MRIP data which are less precise (higher PSEs) than regional or coast-wide estimates
- Limited guidance for how/when CE can be pursued (stock status considerations; # of proposals)
- Ad hoc decision of what constitutes equivalency



Issue 6: Conservation Equivalenc



Public Comment Questions:

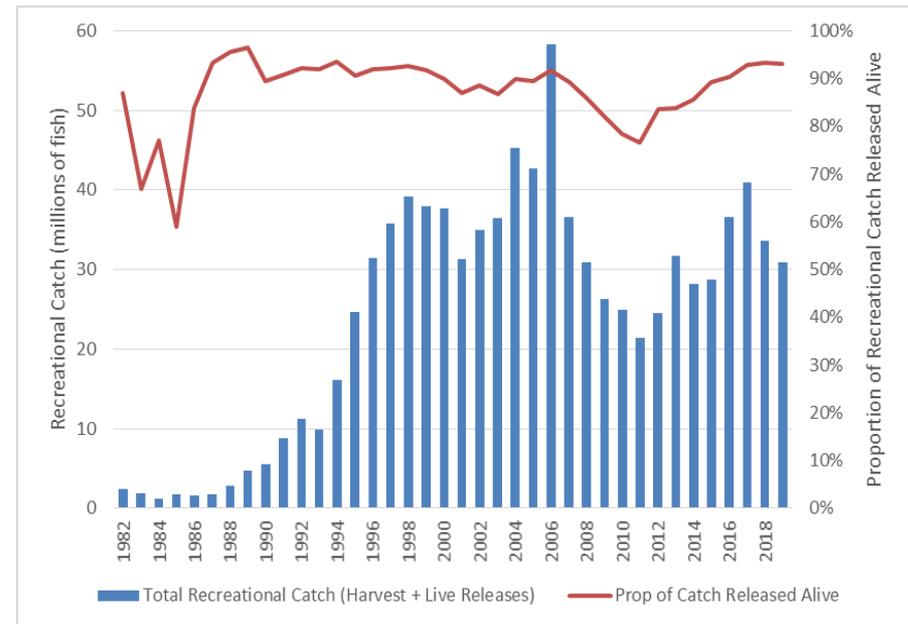
- Should CE be part of the striped bass FMP?
- Should the Board restrict the use of CE based on stock status, data usage, differences from neighboring state, etc.?
- Should more quantitatively rigorous and clearly defined data requirements for proposals be required?
- Should the Board provide a strict definition for 'equivalency'?
- Should there be limitations to how many CE proposals a state can submit?



Issue 7: Recreational Release Mortality



- ~90% of recreational catch is released alive due to regulation, or angler preference
 - 9% of fish caught and released alive are assume to die
- Size and bag limit are used to control harvest, but are not designed to control the number of fish caught and released



Issue 7: Recreational Release Mortality



- In order to reduce release mortality in the fishery, the Board can implement:
 - Alternative gear restrictions (i.e., measures to reducing the rate at which fish die after being released)
 - Improve awareness, or
 - Effort controls to reduce the number of trips interacting with striped bass
- There is a perceived value in the ability to catch striped bass regardless of whether it can be retained (**AP Feedback**)
 - The source of mortality does not matter to the health of the stock, as long as overall F is sustainable
 - What is the acceptable level of release mortality for this stock?



Issue 7: Recreational Release Mortality



Public Comment Questions:

- Should management focus on measures to reduce the rate at which fish die after being released alive?
- Should management focus on reducing effort in the fishery in order to reduce the total number of striped bass caught and released?
- What are some ways to improve awareness and stewardship of the resource?



Issue 8: Recreational Accountability



- Not managed via a quota system (e.g., RHL)
- Catch is variable due to changes in effort, year class strength, availability, angler behavior, etc.
- RHLs require annual regulatory changes to payback or liberalize regulations

Public Comment Questions:

- Should the Board consider implementing an RHL for recreational striped bass management? How should overage/underage be addressed?
- Should stock status be considered when addressing overage/underage?
- Are there other measures the Board should consider for managing the recreational striped bass fishery?



Issue 9: Coastal Commercial Allocation



- The basis for current allocation (1972-1979) may not be appropriate given concerns about data quality
- State-by-state quotas were fixed in pounds in Amendment 6 and only changed through Add IV and Add VI in response to overfishing

Public Comment Questions:

- Is the 1972-1979 landings period still an appropriate baseline for the coastal commercial allocation?
- Should other allocation approaches be considered?
- Should the coastwide quota be explicitly set on an annual basis, or following an updated stock assessment or benchmark?



Issue 10: Other Issues



“How would you like management of the Atlantic striped bass fishery to look in the future?”

Examples of other issues include (**AP Feedback**):

- Impacts due to climate change
- Impacts from habitat degradation
- Resources for Law Enforcement
- Research priorities

➔ What actions can managers take to address these concerns?

