Atlantic States Marine Fisheries Commission

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# Striped Bass Board Work Group on Recreational Release Mortality
# Report to Striped Bass Management Board

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In May 2024, the Atlantic Striped Bass Management Board established a Board Work Group (WG) to discuss recreational release mortality (RRM) and address four specific tasks . The WG met via webinar six times from June through September 2024 to discuss these tasks. An interim report was provided to the Management Board in August 2024. This report summarizes the WG's conclusions and recommendations for each task, and the enclosed meeting summaries provide more detail on the information reviewed by the WG and the WG discussions.

***Task 1: No-Targeting Closures***
*Review existing no-targeting closures in state and federal waters, including any information on impacts to striped bass catch and effort as well as their enforceability. Identify potential angler responses/behavior change to those closures.*

The WG reviewed information on existing no-targeting closures for striped bass and freshwater species in several jurisdictions (see Table 1), including general insight on compliance, enforcement, and how anglers may have responded to the closures. The WG also reviewed information previously provided by the Law Enforcement Committee (LEC) regarding enforceability of no-targeting closures.

Based on the information reviewed and subsequent discussions, the WG developed the following conclusions:

1) **It is difficult to isolate the effects of no-targeting closures on catch and effort alone.** For example, while Marine Recreational Information Program (MRIP) data suggest that catch (harvest and live releases) and effort declined in the Maryland portion of the Chesapeake Bay after a no-targeting closure was implemented in 2020, other factors like fish size, year-class strength, and other coinciding management changes (e.g., private angler trip limit reduction from 2 fish to 1 fish) are likely contributing to the decline. Additionally, it is difficult to isolate the effect on catch and effort from the no-catch-and-release part of the closure versus the no-harvest part; i.e., no-harvest closures are likely to dissuade some level of effort (although unlikely enough to offset the increase in releases from a no-harvest closure).

2) **The effect of no-targeting closures on catch and effort will vary based on angler responses to the new measures**. The WG noted that Maryland anglers appeared to target other species more heavily during the striped bass no-targeting closure, and to target striped bass more heavily in the weeks before and after the no-targeting closure. A shift in targeting to other species during a closure may diminish the expected reduction in striped bass releases if the fishing methods are similar. Shifting the timing of effort rather than reducing it would similarly affect the expected reduction in striped bass releases but could still meet a management objective to shift releases to a time period where environmental conditions are more favorable for survival post-release. Overall, because there is limited information on how anglers respond to no-targeting closures, the added savings (in terms of releases) from prohibiting targeting are difficult to calculate and predict.

3) **Compliance with no-targeting closures seems to be best achieved through early and frequent communication, where strong stakeholder support exists, and as the closure continues into the future (i.e., remains in effect year after year).** In every example, effective communication with stakeholders to garner buy-in and support for the no-targeting closure, including the perceived problem/rationale and management objectives, were key to success. The WG discussed that stakeholder buy-in may vary by state, constituent group, and closure objective/rationale. There are potentially higher initial costs in the first years of implementation to ensure communication materials are reaching angling communities, however, compliance tends to improve as awareness and general acceptance increases over time, and thus decreasing costs.

4) **Although compliance appears to be good in all examples, no-targeting closures are widely considered difficult and resource intensive to enforce; they are generally viewed as more enforceable when implemented in discrete times and areas, and where there are few other species to target or the closure is for fishing in general.** This was evident in the Kennebec River and Hudson River examples where the extent and timing of the striped bass no-targeting closures coincides with generally low effort and/or few other species for anglers to target. In most other cases, targeting violations are issued largely in conjunction with retention violations, demonstrating the challenge with proving angler intent to target without possession or verbal admission. The enforcement of no-targeting closures that overlap with other fisheries may be aided by concurrent gear restrictions where feasible (e.g., prohibiting the possession of certain terminal tackle that demonstrates an intent to fish for striped bass). Although it is difficult to successfully adjudicate no-targeting violations in many situations (due to the need to demonstrate angler intent), the WG discussed that repeated verbal warnings alone can achieve desirable enforcement outcomes.

5) **Although no-targeting closures may be difficult to enforce, they are not without merit and should not be rejected as an effective tool to reduce release mortality (or total fishing mortality) solely due to enforcement concerns**. There is certainly a tradeoff between conservation gains and enforceability, which is ultimately a policy decision. Regardless of how enforceable a management measure might be, the WG supports exploring "every tool

in the toolbox," especially considering the limited tools available to further reduce striped bass fishing mortality, if necessary.

6) **No-targeting closures may not be a "one size fits all" approach.** The Atlantic coast states vary widely in the seasonality of their striped bass fisheries, spatial area, degree to which multiple recreational fisheries overlap, environmental conditions affecting release mortality rate, enforcement resources, and stakeholder interests, among other factors. This inherent variability between striped bass fisheries across the coast presents certain inequities (real or perceived) and feasibility concerns with mandatory no-targeting closures -- whether at the coastwide, regional, or state-level. There have also been concerns about the inequity of implementing only no-harvest closures (i.e., allowing catch-and-release fishing) since a no-harvest closure would likely only impact removals from fishing trips from anglers who intend to harvest striped bass. No-targeting closures would likely reduce removals from catch-and-release trips as well as harvest trips. This range of stakeholder values is another aspect for the Board to consider.

***Recommendation:*** **Overall, the WG finds that no-targeting closures have been successfully applied in some circumstances to achieve fishery management objectives, including reducing recreational releases. However, the mandatory implementation of no-targeting closures would have varying degrees of effectiveness, enforceability, and compliance across states. If further reductions in fishing mortality are needed, the WG supports the consideration of seasonal closures to reduce recreational effort and catch, but recommends that no-targeting closures only be pursued in a flexible manner**.

One such approach could provide a state/region the option to select between implementing a seasonal closure as either no-harvest or no-targeting to meet a certain required reduction according to standardized methods, whereby a no-targeting closure can be shorter in duration due to the additional conservation benefit of prohibiting catch-and-release fishing. Importantly, this approach would rely on the use of standardized methods to estimate the reduction from both types of closures. As of October 2024, after reviewing the outcomes of Maryland DNR's no-targeting closures implemented in 2020, the Technical Committee agreed that the method used by Maryland during the Addendum VI process to estimate the reduction from no-targeting closures is a reasonable method to apply more broadly if the Board were to consider that type of management option. Further, some WG members would support adding an uncertainty buffer to any proposed no-targeting closure options to address uncertainty around angler response to closures (i.e., noncompliance and effort shifts). Alternatively, the Board could adopt no-harvest closures but encourage states to implement them as no-targeting closures where fishery conditions are favorable or environmental conditions warrant it. However, unless there is some additional incentive to states, this option may not advance no-targeting as a means of reducing recreational releases in striped bass fisheries.

*See enclosed WG meeting summary from September 3 for more detail.*

**Table 1. Summary Information on Compliance and Enforcement of No Targeting Closures Reviewed by Workgroup**

| Spp. | Area | Closure Dates | Years | Impetus | Perception of Compliance | Perception of Enforceability |
|---|---|---|---|---|---|---|
| **Striped bass** | Maine Kennebec watershed | Dec 1 – Apr 30 | 1990+ | Spawning protection | High b/c strong stakeholder buy-in, long-term rule, and low seasonal fishing effort in general. | Enforceable b/c small spatial area, limited species availability. Labor intensive to detect, but summonses have been successfully adjudicated. |
| | New York Hudson River (above Cuomo Bridge) | Dec 1 – Mar 31 | 1983+ | Unknown | Generally good b/c long-term rule/good awareness; note lag in compliance when closure dates changed. | Enforcement benefits from few other species available to target in the area at time of closure. |
| | New Jersey all non-ocean waters | Jan 1 – Feb 28 | 1991+ | Protection of overwintering fish | Difficult to determine b/c mixed fishery area. | Very difficult. Largely enforced in conjunction with no-harvest violation. |
| | New Jersey Delaware River and tributaries | Apr 1 – May 31 | 1991+ | Spawning protection | | |
| | Maryland Chesapeake Bay | Apr 1 – Apr 30<br>Jul 16 – Jul 31 | 2020+ | Reduction in removals (through CE) | Generally good. Supported by data suggesting reduction in fishing effort, directed trips, harvest, and releases (note likely influence of other variables e.g., year-class strength, bag limit reduction). | Challenging. Largely enforced in conjunction with no-harvest violation. |
| | Potomac River | Jul 7 – Aug 20 | 2020+ | Reduction in removals (through CE) | Difficult to determine b/c mixed fishery area; possible decrease in vessel activity. | Very difficult. Largely enforced in conjunction with no-harvest violation. |
| | Exclusive Economic Zone (EEZ) | All Year | 1990+ | Rebuilding measure/ precautionary management | Generally good, aside from bad actors and hot spots, b/c long-term rule. WG note worse when large aggregations of fish in EEZ near the 3-mile line. | Largely enforced in conjunction with no-harvest violation. |
| **Small/large-mouth bass** | Pennsylvania Susquehanna and Juniata Rivers | May 1 – mid-June | 2012-2017 | Spawning protection (not intended to be permanent) | Complaints of violations and unenforceability (in addition to stock status improvement) led to repeal of closure. | |
| **All species** | North Carolina multiple discrete freshwater times/areas of concern for a particular freshwater species | | various | various | Due to overlapping species/fishing techniques and inability to enforce a species-specific no targeting closure, complete fishing closures were implemented in discrete times/areas although concern was for a particular freshwater species. | |

Note: Maryland also has spring no-targeting closures on spawning grounds that have been in place since the late 1980s. The WG did not discuss these closures.

***Task #2: Gear Modifications***
*Review the MA DMF discard mortality study and other relevant reports to evaluate the efficacy of potential gear modifications.*

The WG reviewed information on studies from the Massachusetts Division of Marine Fisheries (MA DMF) and the University of Massachusetts-Amherst (UMASS-Amherst) on evaluating post-release mortality of striped bass in the recreational fishery and received an overview of key findings regarding gear type (other than circle hooks) and release mortality for past studies on striped bass and other species. The WG also received input from the ASMFC's Law Enforcement Committee (LEC) on the enforceability of recreational gear regulations and method of take.

**Overall, the WG finds that the type of gear used to catch striped bass can impact post-release mortality, gear modifications have the potential to reduce post-release mortality of striped bass, and regulations on recreational gear types and methods of take are moderately enforceable.**

Specific WG conclusions include:

1) **Recent studies by MA DMF and UMASS-Amherst suggest lure-hook and bait-hook configurations impact post-release mortality and could be an area for education and/or regulation.** The results from the MA DMF study suggest that post-release mortality was highest using baited circle hooks followed by lures, while flies had the lowest post-release mortality rate. Among lures, those with a single hook had the lowest mortality rate and those with double treble hooks had the highest mortality rate. The UMASS-Amherst study had similar results with some differences possibly attributed to sample sizes and the different survey design than the MA DMF study.

2) **There are many variables to consider regarding gear modifications to reduce post-release mortality, and it is hard to isolate one particular gear to get the most impact (e.g., how often is a gear configuration used by anglers?).** Fight time, handling time, water and air temperatures, angler experience, and fish size also impact the post-release mortality rate and some of these variables are correlated to each other. Further analysis is needed to better understand these interrelated variables. The relative use of different gear configurations in the striped bass fishery is currently unknown, so the impact of particular gear modifications on overall post-release mortality is also unknown. However, MA DMF is conducting a tackle configuration survey in 2025 to understand how often different gear configurations are used by striped bass anglers, which should inform the impact gear modifications can have on post-release mortality.

3) **The recent study by UMASS-Amherst suggests that striped bass anglers largely support adopting science-based catch and release best practices, and adequate enforcement of the regulations.** The study also found that striped bass anglers often employ best angling practices such as proper and limited handling of fish, minimizing the fight time and using circle hooks and barbless hooks. Although it is uncertain if these results apply to the entire

striped bass recreational fishery, the study revealed fishing practices and attitudes that currently exist among at least a portion of the recreational fishery. Strong stakeholder buy-in facilitates acceptance of best management practices and compliance with regulations if gear modification regulations are considered.

4) **The Board should consider the impacts to the industry of any potential gear modification from the perspective of manufacturer, retailer, tackle store, etc.** Gear modification regulations would impact the sale of gear types that are no longer allowed for striped bass fishing and would also impact anglers and for-hire captains who possess gear types that can no longer be used for striped bass fishing. In addition, some fishing tackle manufacturers are already modifying fishing lures for striped bass that support survival of released fish.

5) **The Board should consider enforceability and how these types of gear restrictions would interact with management of other species but should not rule out gear restrictions based on enforceability alone.** The LEC's Guidelines for Resource Managers on the Enforceability of Fishery Management Measures rates gear regulations and method of take as moderately enforceable. To facilitate enforcement, the regulations must be clearly written, relatively easy for anglers to adopt (align well with fishing practices), should be in place for a long time period, and should include concerted outreach and education efforts. The regulations need to standardize gear requirements, measurement procedures, equipment, and techniques across all appropriate jurisdictions and time periods. Prohibiting the possession of gear types where feasible would also facilitate enforcement. In some cases, enforcement can consider other gear and fishing techniques to determine whether an angler is targeting a species that requires a certain gear. However, this is challenging if anglers target a variety of species in an area as opposed to anglers targeting only a few species. Although there may not be many citations written for all gear restrictions, enforcement also provides compliance assistance to help anglers understand the regulations and learn how to come into compliance instead of issuing a citation.

6) **Regardless of whether the Board chooses gear modifications as a management measure, education and outreach efforts should continue to ensure that anglers use best management practices for striped bass fishing.** Amendment 7 to the Striped Bass FMP recommends states continue to promote best striped bass handling and release practices by developing public education and outreach campaigns. Results from the MA DMF post-release mortality studies should be incorporated into best management practices states and jurisdictions communicate to their anglers.

7) **States can implement gear restrictions as they see fit (e.g., statewide, area/time-specific) without Board action.** Some states already do this for striped bass and other species. This allows for specificity for gear restrictions in a state or jurisdiction that addresses concerns about enforcement and any interactions with other recreational fisheries. However, this could also result in gear restriction regulations that are not consistent along the coast, which could minimize the impact of reducing post-release mortality of striped bass coastwide, complicate enforcement, and create regulations that are confusing to anglers. If

states choose to implement gear restrictions for their recreational striped bass fishery, then the WG recommends that they communicate with ASMFC and neighboring states and jurisdictions to minimize the inconsistency in gear restrictions in areas fished by anglers from multiple states.

If the Board considers additional recreational gear modifications as management measures, then **the WG recommends they consider modifications that support the survival of released striped bass based on release mortality study results, are easy for anglers to adopt, are consistent among states and regions, and understand that any reduction in post-release mortality is currently unquantifiable. The WG also recommends that the Board should consider impacts to the recreational anglers and fishing tackle industry, current efforts by the fishing tackle industry to produce/promote gear that supports post-release survival, potential enforcement challenges, and the uncertainty in the results from post-release mortality studies.**

*See enclosed WG meeting summaries from September 12 and September 24 for more detail.*

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***Task #3: Stock Assessment Work to Inform RRM Discussions***

*Identify assessment sensitivity runs which may inform Board discussion around release mortality (e.g., how low would you have to reduce the release mortality rate in order to see a viable reduction in removals with the same level of effort?). Consider the tradeoff of reducing the release mortality rate vs. reducing the number of releases overall.*

The WG reviewed past work by the Technical Committee (TC) in late 2020 to explore the sensitivity of the stock assessment model to different recreational release mortality rates (TC Memo M21-04). The WG noted this past TC work was valuable to understand how different constant RRM rates impact the historical time series. Notably though, none of the scenarios simulated a midstream shift in the RRM during the historical time series, such as might result from hypothetical management changes. **Given the Board's current interest in understanding how actions to reduce RRM would impact the stock moving forward, the WG recommended tasking the TC as follows. The Board approved this tasking in August 2024.**

These tasks are intended to help the Board understand the tradeoff between reducing the release mortality rate vs. reducing the number of releases overall. The WG recommends the TC address these tasks as part of the ongoing 2024 Stock Assessment.

1) If a reduction is needed to achieve rebuilding, determine how low the release mortality rate would need to be to achieve that entire reduction through the release mortality rate alone. In other words, if the number of live releases is constant, what would the release mortality rate need to be to achieve the reduction?

2) If a reduction is needed to achieve rebuilding, determine the percent reduction in number of live releases needed to achieve the entire reduction through live releases alone. In other words, using the current 9% release mortality rate, how many fewer live releases would there need to be to achieve the reduction?

   *TC Tasks 1 and 2 represent the two extremes of reducing RRM. Task 1 focuses entirely on reducing the RRM rate to achieve a reduction (i.e., decreasing mortality from the fishing interaction), while Task 2 focuses entirely on reducing the number of live releases (i.e., controlling effort). These are hypothetical scenarios, which are not necessarily realistic for management implementation but would help characterize the tradeoff between the two management approaches to reduce RRM. Recreational harvest would be assumed constant for these scenarios in order to isolate the reduction to RRM. Considering commercial harvest in the overall calculation for the reduction, the WG recommends two iterations for each scenario: one with constant commercial harvest and one with an equal reduction for commercial harvest.*

3) If a reduction is needed to achieve rebuilding, determine the percent reduction in number of live releases needed under the current 9% mortality rate, assuming there is an associated reduction in recreational harvest due to no-targeting closures.

   *TC Task 3 assumes the implementation of no-targeting closures would result in a reduction in both harvest and live releases. The TC would need to determine how to best quantify the reduction in live releases from no-targeting closures, which depends on several assumptions including how many striped bass are still caught and released as incidental catch when targeting other species. The WG again recommends two iterations for each scenario to account for commercial harvest in the calculations: one with constant commercial harvest and one with an equal reduction for commercial harvest. The WG recommends the TC also comment on how potential reductions from no-targeting closures could vary depending on season, as catch varies throughout the year and by region.*

4) Identify the tradeoffs of implementing no-targeting closures at different times of the year with different assumed release mortality rates to help inform when and where implementing no-targeting closures would result in the highest reduction. Factors could include water temperature and salinity, with the assumption that the release mortality rate is higher when the water temperature is high and the salinity is low.

   *TC The WG acknowledges that a reduction associated with specific no-targeting closures depends on several factors including assumed release mortality rate, length of closure, current level of harvest and releases, angler behavior, etc. Any guidance from the TC on the best use of no-targeting closures to achieve reductions would be helpful.*

*See enclosed WG meeting summary from July 17 for more detail.*

***Task 4: Public Scoping***

*Consider public scoping on measures to address release mortality (e.g., online public survey ahead of the October Board meeting).*

The WG discussed the scope of a potential survey of stakeholders on measures to reduce recreational release mortality. After the Board's August 2024 decision to delay survey development in order to get input from survey experts (as recommended in the WG's interim report to the Board), members from the Committee on Economics and Social Sciences (CESS) provided guidance to the WG on general survey approaches to consider (open survey, randomized survey, focus groups), as well as high-level comments on the WG's first-draft survey questions. The WG considered what type of information different survey approaches would provide, and the benefits, challenges, and resources required for each. The WG agreed to the following conclusions:

1) A survey does not seem feasible to adequately gather all the complex information on stakeholder responses to management measures, nor will a survey meet the original timeline at this point of gathering public input ahead of potential Board action in late 2024 in response to the stock assessment update. The absence of a survey or other ASMFC-led public scoping does not prevent states and/or Board members from gathering stakeholder input to understand their perspectives through state processes or other channels in advance of a potential Board action. Additionally, public comment opportunities are expected at any Board meeting when Board action is being considered.

2) If the Board is interested in public input beyond this next management action, focus groups of stakeholders representative of the recreational striped bass fishery could be a useful approach to 1) paint the landscape of potential stakeholder responses to measures being considered to address release mortality (e.g., no targeting closures, gear modifications) and 2) discuss outreach on best fishing and handling practices for striped bass.

3) Conducting an open survey could also be considered, but the inherent biases would need to be acknowledged. Survey fatigue should also be considered. For example, there is currently an open survey of striped bass stakeholders being conducted by Virginia Tech on stock structure and migration patterns, and MADMF is planning to conduct a survey on terminal tackle use in 2025.

**Ultimately, if the Board wants to gather public input on stakeholder buy-in and potential responses to management measures to address release morality outside of the public comment processes associated with an addendum or amendment, the WG recommends focus groups as the best approach to collect that information.**

If the Board were to proceed with focus groups in the future, the Board would need to address logistics, including who would be leading the focus groups and identifying stakeholders to participate. A focus group approach would likely require significant State staff time on these logistics and planning. CESS members noted they could advise the process, and the Board could

consider the benefits of leveraging a graduate student(s) in the process. Additionally, depending on the timing of focus groups, the Board could consider adding other topics for stakeholder input (e.g., assessment-related topics ahead of the next benchmark stock assessment).

*See enclosed WG meeting summary from September 20 for more detail.*