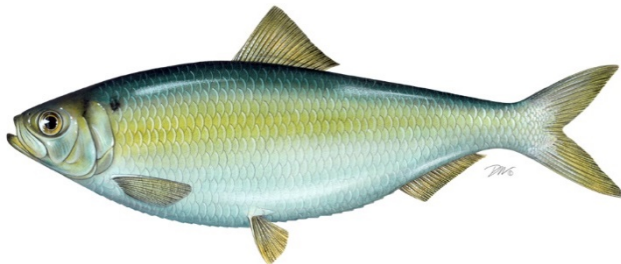
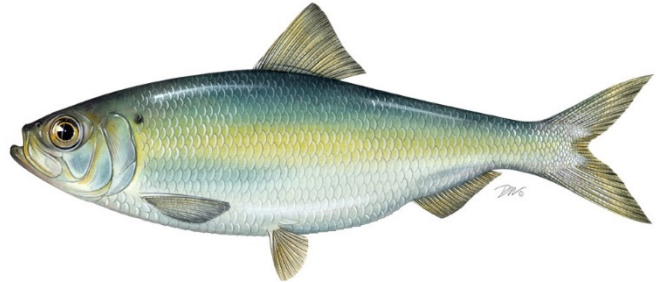
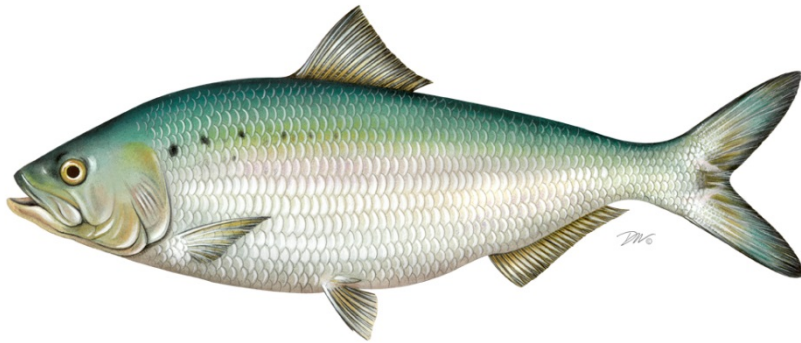


Technical Guidance for Implementation of Amendments 2 and 3 to the Shad and River Herring Fishery Management Plan



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Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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I. INTRODUCTION

In the fall of 2017, the Shad and River Herring Technical Committee (TC) identified several inconsistencies between state SFMPs and the requirements of Amendments 2 and 3. As a result, the Shad and River Herring Management Board (Board) tasked the TC with developing proposed improvements to Amendments 2 and 3 with regard to the five items:

1. Management and monitoring of rivers with low abundance and harvest of shad and river herring
2. Standardization of SFMP requirements: content, metrics, and management responses to triggers
3. Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans
4. Clarification of *de minimis* requirements as they pertain to SFMPs
5. Review of the number of years of data are required before developing a SFMP

The Board reviewed the TC recommendations in February 2021. The Board subsequently directed the TC to develop this technical guidance document to ensure that implementation of the Amendment 2 and 3 requirements related to the issues outlined above is consistent with the TC recommendations. The guidance in this document was reviewed and approved by the Board in May 2021 and will be used by the TC moving forward to evaluate state and jurisdictional implementation of Amendments 2 and 3.

II. MANAGEMENT OVERVIEW

Shad and river herring are managed under the Atlantic States Marine Fisheries Commission's (Commission) Interstate Fishery Management Plan (FMP). River herring (alewife and blueback herring) are managed under Amendment 2 to the FMP (2009), while American shad are managed under Amendment 3 to the FMP (2010). The management unit covers state waters along the U.S. Atlantic coast from Maine to Florida, and includes all 15 Atlantic coastal states as well as the Potomac River Fisheries Commission (PRFC) and the District of Columbia (DC).

Amendment 2 was approved by the Board in May 2009 with the goal of restricting the harvest of river herring due to observed declines in abundance. The Amendment prohibited commercial and recreational river herring harvest in state waters beginning January 1, 2012, unless a state or jurisdiction has a sustainable fishery management plan (SFMP) reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as "a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment." Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs for river herring have been approved by the Management Board for Maine, New Hampshire, Massachusetts, New York, and South Carolina. Amendment 2 also required states to implement fishery-dependent and independent monitoring programs.

In February 2010, the Board approved Amendment 3 in response to the 2007 American shad stock assessment, which found most American shad stocks at all-time lows. The Amendment requires similar management and monitoring for shad as Amendment 2 does for river herring.

Specifically, Amendment 3 prohibits commercial and recreational harvest of shad in state waters after January 1, 2013, unless a state or jurisdiction has an SFMP reviewed by the Technical Committee and approved by the Board. Amendment 3 uses the same definition for a sustainable fishery as Amendment 2, and also allows for catch and release only fisheries in any river system (irrespective of an approved SFMP). SFMPs for shad have been approved by the Board for Massachusetts, Connecticut, the Delaware River Basin Fish Cooperative (on behalf of New York, Delaware, New Jersey, and Pennsylvania), PRFC, North Carolina, South Carolina, Georgia, and Florida. All states and jurisdictions are also required to produce American shad habitat plans, which identify local significant threats to American shad critical habitat and include a plan for mitigation and restoration.

III. TECHNICAL GUIDANCE FOR IMPLEMENTATION OF AMENDMENTS 2 AND 3

The following sections include guidelines recommended by the TC for developing and evaluating state management programs for shad and river herring.

A. Guidance for Management and Monitoring of Rivers with Low Abundance and Harvest

Regardless of their size, commercial fisheries should continue to be addressed as indicated in the FMP (i.e. directed commercial harvest should always require an approved SFMP or Alternative Management Plan [AMP] if appropriate).

With regard to recreational fisheries, the FMP is somewhat ambiguous as to the conditions that necessitate approval of an SFMP. Amendments 2 and 3 require that all recreational fisheries that do not have an approved SFMP in place must be closed (or catch and release only). However, for a state that has no known recreational fishery targeting a particular species, but has historical records of that species' presence, the FMP is not clear on whether a lack of regulations restricting recreational harvest conforms to the requirements of the FMP.

To provide states with additional guidance on the management of recreational fisheries in systems with unknown or low abundance and harvest, the TC developed a framework for determining the appropriate management program for recreational fisheries based on harvest and monitoring information available for a given fishery or stock. The following matrix summarizes the framework, which is further explained below.

Recreational Harvest Information	Monitoring Data to Support SFMP	
	Sufficient	Insufficient
None (Species Absent)	1. NA	2. AMP
Unknown (Species Present)	3. SFMP	4. AMP/Catch & Release
Known/ Suspected	5. SFMP	6. Catch & Release

The status of information on recreational harvest and fisheries-independent (FI) monitoring data produce one scenario for species absence and five possible scenarios for a system where

shad or river herring species may be present. The TC should evaluate the appropriateness of a particular management approach (i.e. no regulations, catch and release regulations, AMP, or SFMP) for each of these scenarios according to the following characterization of harvest information and monitoring data. It should be noted that catch and release only regulations or other regulations that explicitly prohibit recreational harvest are acceptable in any of these scenarios, as per the FMP.

Scenario 1: The species is considered absent or functionally absent, and this is based on sufficient monitoring data to detect the species.

→ In this scenario, the species is considered “functionally absent” if it is documented at such low levels or encountered so infrequently that it is reasonable to assume current environmental or habitat conditions cannot support a population at any level. For systems that fit this description, there should be no recreational harvest of the species due to its absence, and that should be supported by monitoring data. Therefore, the TC concluded that no regulations for recreational fisheries are needed. If the species in question were to become present (e.g., population restoration), the state must notify the Board and pursue one of the management approaches described below.

Scenario 2: The species is thought to be functionally absent, but there are insufficient monitoring data to support or confirm this conclusion.

→ For systems that fit this scenario, where there is no known population of the species, and consequently no suspected recreational harvest, but where the FI data are not adequate to determine the validity of the assumption that the species is functionally absent, the TC agreed that a state or jurisdiction must take one of two approaches. The first approach is that the state or jurisdiction could implement regulations that prohibit harvest, (i.e. catch and release only regulations) as a precautionary measure. This approach may prevent possible harvest from occurring in the absence of appropriate monitoring. The second approach is that recreational harvest in the system could remain unregulated or allowed (e.g., under statewide harvest regulations for the species) through a Board-approved AMP). Use of AMPs is described in more detail later in this document, but generally, the AMP should include a justification for maintaining an unregulated status or regulations that permit recreational harvest, such that it is clear to the Board’s satisfaction that the proposed regulations, or lack thereof, will be conservationally-equivalent to catch and release only regulations. If new information or monitoring data were to indicate that the species had become present, the state must notify the Board and resubmit the proposal to the TC with updated information and rationale for evaluation.

Scenario 3: The species is present but recreational harvest information is unavailable to determine whether harvest occurs. There are monitoring data that can be used to monitor trends in the population and/or develop SFMP metrics.

→ For systems with known populations of the species where recreational harvest is unable to be determined due to a lack of recreational monitoring, the state may use an SFMP as long

as there are sufficient monitoring data to develop appropriate sustainability metrics, as determined by the TC. If there are sufficient system-specific FI monitoring data and/or data from commercial monitoring such that trends in abundance or indices of abundance (e.g., CPUE) could be monitored and a sustainability metric could be developed, management under a Board-approved SFMP with system-specific metrics would be appropriate. Additionally, an SFMP may also be appropriate for a system without sufficient system-specific monitoring data if the TC agrees it would be appropriate to use data from other systems to develop regional or statewide sustainability metrics. The TC is responsible for determining whether monitoring data are sufficient or insufficient for their proposed uses.

Scenario 4: The species is present, recreational harvest information is unavailable to determine whether harvest occurs, and there are insufficient monitoring data that can be used to monitor trends in the population and/or develop SFMP metrics.

→ For systems with known populations of the species where recreational harvest is unable to be determined due to a lack of recreational monitoring, and there are insufficient system-specific monitoring data or appropriate data from other systems (FI or rec/commercial fishery-dependent), the state or jurisdiction must either prohibit harvest through catch and release only regulations or other measures, or allow recreational harvest under a Board-approved AMP. In the case that the TC does not think system-specific data or state-level data are appropriate for use in an SFMP, but may provide sufficient justification that allowing recreational harvest will not contribute to overfishing of the resource or inhibit restoration of the resource, then the state may propose an AMP to permit recreational harvest. However, if the TC does not believe there is adequate information to demonstrate that permitting recreational harvest will not contribute to overfishing or inhibit restoration of the resource, then catch and release only regulations are recommended.

Scenario 5: The species is present and recreational harvest is either known to occur or suspected. There are monitoring data that can be used to monitor trends in the population and/or develop SFMP metrics.

→ For systems with known populations of the species where recreational harvest is known or suspected, and where the TC agrees that there are sufficient monitoring data to develop appropriate sustainability metrics, management of recreational harvest under a Board-approved SFMP is appropriate. “Known” harvest is that which is recorded in official surveys or reports, whereas “suspected” harvest is identified through anecdotal or historic information in systems without official monitoring of recreational harvest. If there are sufficient system-specific FI monitoring data and/or data from commercial monitoring such that trends in abundance or indices of abundance (e.g., CPUE) could be monitored and a sustainability metric could be developed, defining system-specific sustainability metrics and targets/thresholds in the SFMP would be appropriate. Alternatively, if there are not adequate system-specific data to develop SFMP metrics, then an SFMP using data from other systems to develop regional or statewide sustainability metrics may be appropriate.

The TC is responsible for determining whether monitoring data are sufficient or insufficient for their proposed uses.

Scenario 6: The species is present and recreational harvest is either known to occur or suspected, but monitoring data are unavailable or insufficient for developing SFMP metrics.

→ For systems with known populations of the species where recreational harvest is known or suspected, if the TC does not agree that there are sufficient monitoring data to develop appropriate sustainability metrics, then recreational harvest should be explicitly prohibited under catch and release only regulations or other measures. This is consistent with Amendments 2 and 3, which require an approved SFMP that demonstrates the stock could support a recreational fishery that will not diminish potential future stock reproduction and recruitment in order to allow recreational harvest.

B. Standardization of Sustainable Fishery Management Plan Requirements

To increase consistency across states and jurisdictions in the content, metrics, and management responses to triggers that are included in SFMPs, the TC recommended guidelines for SFMPs related to the following three issues: 1) the level of detail required in SFMPs on the management response that would be implemented should the stock fall below a defined sustainability target or threshold; 2) when a state may relax restrictions implemented in response to a stock falling below the sustainability target/threshold; and 3) management of interjurisdictional waterbodies.

1. Management Responses to SFMP Triggers

Currently, Amendment 2 states that “If a stock is below optimum level the management plan must detail restrictions that will be enacted to allow for an increase in spawning stock abundance and juvenile recruitment” (p. 93). Amendment 3 includes an approved framework for SFMPs, which includes “discussion of management measure(s) to be taken if sustainable target is not achieved within indicated timeframe” (p. 41). However, the Amendments do not provide additional guidance on the level of detail that SFMPs should include when describing the management measures that will be taken should the stock fall below a defined sustainability target or threshold. To improve the strength and consistency of SFMPs for shad and river herring, the TC recommends that management responses in SFMPs and AMPs be developed and evaluated in accordance with the following guidance; the underlined portions are modified from the original language in the Amendments to provide more detail on acceptable management responses and the process for notifying the Board and implementing responses:

“States and jurisdictions must also submit a sustainable fishery management plan (SFMP) that describes how the fishery will be conducted and annually monitored in order to show that the sustainability target(s) are being achieved. The frame of reference for determining the optimum level at which to set the sustainability target(s) will vary from system to system, but should be based on an appropriate time scale. States should develop their sustainability targets within this general framework. The Technical Committee is responsible for developing a standard optimum level and timeframe basis.”

If a stock is at optimum levels, then that level will need to be sustained. The SFMP must detail restrictions that will be enacted to allow for an increase in spawning stock abundance and juvenile recruitment if a stock is, or falls below, the optimum level. Such restrictions may include any of the following: fishery closures, harvest or effort restrictions, catch and release only regulations (for recreational fisheries), season changes, area closures, gear restrictions, etc. A plan may provide multiple options for restrictions that will be enacted if a stock falls below the optimum level, however, each option should allow for an increase in spawning stock abundance and juvenile recruitment.

If a stock falls below the sustainability target or threshold identified in the SFMP, the state must notify the Board in the next annual compliance report, and pursue implementation of the specified management response for the following calendar year.

The TC did not recommend additional requirements or restrictions be placed on the type of sustainability metrics that can be used in SFMPs. The group agrees that states/jurisdictions should be able to propose the most appropriate metrics for their specific systems, which would then be subject to TC evaluation and Board approval.

2. Relaxing Management Restrictions

The TC also developed additional guidance on when a state may relax restrictions implemented in response to a stock falling below the sustainability target/threshold. Currently, Amendments 2 and 3 include language to this effect: “Proposals to reopen closed fisheries may be submitted as part of the annual Compliance Report, and will be subject to review by the Plan Development Team, Technical Committee and Management Board.” In addition, the TC recommends states and jurisdictions adhere to the following standard for relaxing restrictions:

“If a state has implemented a management restriction in response to the stock falling below the sustainability target(s), the management restriction must stay in place until the sustainability target(s) have been met for at least 5 consecutive years of sufficient data collection.”

3. Interjurisdictional Management Guidance

Regarding management of waterbodies shared by one or more jurisdictions, Amendments 2 and 3 provide limited guidance. Amendment 2 states, “Targets for river systems managed by more than one state/jurisdiction should be cooperatively developed” (p. 92). Amendment 3 states, “For states and jurisdictions which share a river or estuary, agencies should include those monitoring programs conducted or planned by the agencies, applicable agency regulations, and habitat and habitat threats applicable to the state or jurisdiction’s waters. In shared water bodies where there is a management cooperative, the cooperative or a member state or jurisdiction can be appointed to write the Implementation Plan” (p. 40). To further clarify and streamline the process for developing SFMPs for waterbodies shared by one or more jurisdictions, the TC recommends the states and jurisdictions adhere to the following guidance:

“Targets for river systems managed by more than one state or jurisdiction should be cooperatively developed, such that shared systems are not managed independently by each

jurisdiction using unique targets and/or monitoring data. Instead, one shared management plan may be submitted cooperatively by multiple jurisdictions sharing one system, including details on management measures and monitoring for/by each jurisdiction. Alternatively, one jurisdiction may be appointed to submit the plan for a shared system; for example, if one state/jurisdiction is the primary source of fishery-dependent and/or fishery-independent data for a shared system, that state may include the shared system in their state management plan, and include information for the other jurisdictions which share the water body. When possible, fisheries conducted in shared water bodies by harvesters permitted by different jurisdictions should be subject to consistent management measures.”

C. Incorporation of Stock Assessment Information into SFMPs and Plan Renewal Timeline

The TC will continue to review information on required and ongoing monitoring efforts performed by states and jurisdictions for each species and system, and develop recommendations for improvements to data for use in SFMPs and assessments. Some concern has been expressed among TC members that for many systems there is inconsistency between the information used to assess stock status through the stock assessment and that used to develop sustainability metrics for SFMPs. However, the TC did not conclude that states/jurisdictions should be required to use the stock assessment information to develop sustainability metrics for SFMPs (e.g. benchmarks based on total adult mortality).

Amendments 2 and 3 require all SFMPs to be regularly reviewed, assessed and updated as needed on five-year basis. The TC discussed the timeline for updating plans and recommended maintaining the five-year timeline for renewing both SFMPs and AMPs.

D. Clarification of *De Minimis* Requirements as They Pertain to SFMPs

The TC recommends maintaining the current *de minimis* criteria and exemptions for states with *de minimis* status. Under Amendments 2 and 3, states that report commercial landings of river herring or American shad, respectively, that are less than 1% of the coastwide commercial total are exempted from sub-sampling commercial and recreational catch for biological data. *De minimis* states are still required to implement an approved SFMP or AMP consistent with the FMP requirements in order to maintain any commercial or recreational fishery where harvest is permitted.

E. Years of Data Required Before Developing an SFMP

The TC discussed how many years of data in a time-series are acceptable in order to establish a sustainability metric in an SFMP. The TC recommended development and evaluation of SFMP sustainability metrics consistent with the following standards for each species, based on species biology and statistical value:

- For shad, a minimum of ten years of data should be required to establish a primary sustainability metric in an SFMP or AMP. The TC may have some discretion in evaluating state proposals that include sustainability metrics derived from fewer than ten consecutive years of data.

- For river herring, the standard for acceptable time-series length for data being used to establish a sustainability metric should be ten consecutive years. If additional information is provided to justify the use of a shorter time-series for establishing an SFMP metric, the TC may accept a time series trend of 7-9 years, with consideration of exploitation rate, stock size, or other relevant factors.

F. Additional Recommendations for Implementation of the Shad and River Herring FMP

Beyond the five areas identified in the original Board task, the TC discussed two additional areas of the FMP that could benefit from additional guidance: the use of AMPs and statewide recreational possession limits.

1. Use of Alternative Management Plans

The TC discussed the Amendments' characterization of the use of "alternative management" regimes or programs. Both Amendments essentially provide the same language, which states that the Board can approve an alternative management program proposed by a state or jurisdiction if the state or jurisdiction can show to the Board's satisfaction that the alternative proposal will have the same conservation value as the measure contained in the amendment or any addenda prepared under adaptive management. The Amendments also indicate that the TC, under the direction of the Plan Review Team, will review any alternative management program proposals and provide the Board its evaluation of the adequacy of the proposals. However, the Amendments do not contain further guidance on when it is appropriate to apply an alternative management program or what type of information such a plan should include. In order to establish a more standard process for reviewing proposed AMPs, especially when applied to recreational fisheries, the TC developed the following guidelines:

- The TC recommends that AMPs include the following components:
 - A statement explaining why an SFMP cannot be used (e.g. data availability)
 - Justification that the proposed management program will have the same conservation value as the current FMP measures. For commercial fisheries, this is equivalent to the use of an SFMP as described in the FMP and in accordance with the additional guidance in this document. For recreational fisheries, this is permitting recreational harvest under an approved SFMP, or catch and release only regulations, consistent with the guidance provided in Section III.A of this document.
 - Explanation of how the state will determine if or when an AMP is no longer appropriate, including description of the data sources that will be monitored, and the trigger that will be used based on those data sources. For example, for a recreational AMP justified on the assumption that no harvest is occurring despite being permitted, a condition such as three years of recorded recreational harvest, or a defined level of abundance from fishery-independent surveys could be used as a trigger to reevaluate the AMP.
 - Description of the management response that will be implemented if this trigger is met. For example, if harvest is documented through a creel survey for three consecutive years, the AMP could specify that catch and release only regulations

will be implemented statewide or for specified systems until an SFMP is developed and approved.

- If a management trigger identified in the AMP is met, the state must notify the Board in the next annual compliance report, and pursue implementation of the specified management response for the following calendar year.

2. *Statewide Recreational Possession Limits*

The TC also discussed the use of statewide recreational possession limits for shad and river herring. In previous TC and Advisory Panel (AP) meetings, some TC and AP members had raised the question of whether it would be appropriate to allow limited recreational harvest in systems without an SFMP/AMP using a low statewide bag limit. Ultimately, the TC agreed that this would not comply with the requirement and intent of Amendments 2 and 3, and that any recreational harvest should be managed under an approved SFMP or AMP. The rationale is that unmonitored systems could experience unchecked recreational fishing pressure which could be detrimental to small stocks. If a state wishes to apply a statewide recreational bag limit, the state must have an approved SFMP or AMP, and all unmonitored systems must be subject to management responses (e.g. closures, harvest restrictions) that are triggered by available sustainability metrics. For example, if a state has a statewide recreational bag limit, the SFMP should require the closure of recreational harvest (e.g. catch and release only regulations) for all unmonitored systems if any of the approved SFMP metrics falls below the sustainability target. Additionally, the TC recommends that AMPs that include statewide recreational bag limits or no recreational regulations must include a trigger (e.g., observed recreational harvest, or an increase in a fishery-independent abundance index) to implement catch and release only regulations or to propose an SFMP (if sufficient data are available).