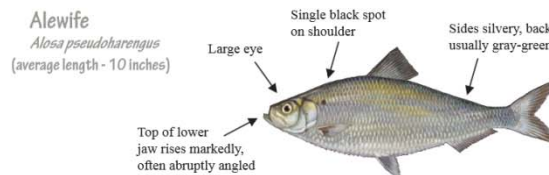
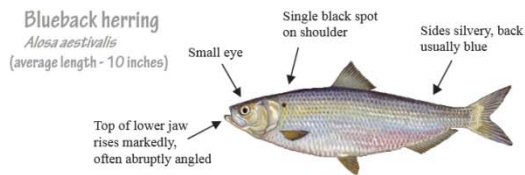
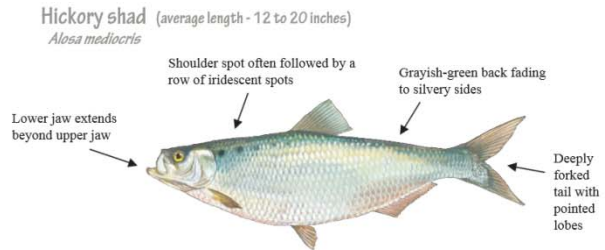
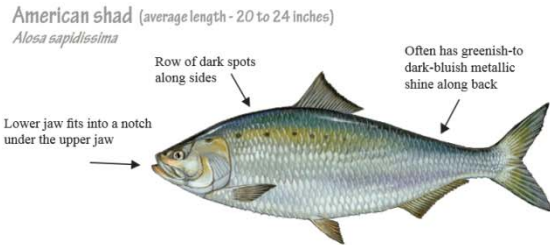


**RIVER HERRING AND SHAD - POTENTIAL MANAGEMENT BY THE
MID-ATLANTIC FISHERY MANAGEMENT COUNCIL**

2016 Draft Decision Document
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Fish illustrations: Duane Raver/U.S. Fish and Wildlife Service, Source:
http://www.ncwildlife.org/Portals/0/Fishing/documents/Herring_Shad_ID_guide_sm.pdf



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1.3 COMMON ACRONYMS AND ABBREVIATIONS

ABC	– Acceptable Biological Catch
ACL	– Annual Catch Limit
ACFCMA	– Atlantic Coastal Fisheries Cooperative Management Act
AM	– Accountability Measure
ASMFC	– Atlantic States Marine Fisheries Commission
Commission	– Atlantic States Marine Fisheries Commission
Corps	– U.S. Army Corps of Engineers
Council	– Mid-Atlantic Fishery Management Council
EA	– Environmental Assessment
EFH	– Essential Fish Habitat
FERC	– Federal Energy and Regulatory Commission
FMP	– Fishery Management Plan
Lb.	– pounds
Kg	– kilograms
MAFMC	– Mid-Atlantic Fishery Management Council
MT	– Metric Ton (~2204.6 pounds)
Nm	– Nautical Mile
NEFMC	– New England Fishery Management Council
NMFS	– National Marine Fisheries Service (also known as NOAA Fisheries)
NOAA	– National Oceanic and Atmospheric Administration
TEWG	– Technical Expert Working Group
U.S.	– United States
U.S.C.	– United States Code

1.4 WORDING CONVENTIONS

In this document, "catch" refers to all fish caught in a fishery (whether targeted or not and whether retained or discarded). Targeted fish are those intended to be caught. Non-target species are those caught but not targeted. Bycatch usually refers to discards but is a term often used in fishery management to refer to several different things and so it is not used in this document except where unavoidable (for example a statute, report title, program name, etc.). Instead, fish caught and then discarded at sea are called "discards." Landings are fish caught and retained. Fish that are not targeted but are landed are called "incidentally landed catch."

In this document, "river herrings" include blueback herring and alewife. "Shads" include American shad and hickory shad. "RH/S" refers to river herring and/or shads.

The Magnuson-Stevens Fishery Conservation and Management Act is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976 and amended in 1996 and in 2006. In this document, "MSA" refers to the Magnuson-Stevens Fishery Conservation and Management Act as currently amended.

The term "mortality cap" refers to a management system whereby directed fishing for one species may be stopped or limited when catch of some other species reaches a pre-set limit. Similar terms include bycatch caps or discard caps, but these would only apply to discarded fish, while a mortality cap would track all catch (retained or discarded).

“Mackerel” refers to Atlantic mackerel unless otherwise noted.

2.0 INTRODUCTION

This document is designed to accompany the staff white paper that was also presented to the RH/S Committee on August 1, 2016.

In October 2013, the Council determined that additional management of RH/S under a Council FMP was neither required nor appropriate at that time. Instead, the Council adopted a motion to establish a working group composed of regional, state, and Federal management partners to comprehensively address river herring and shad mortality and stock status throughout their ranges. Since then the Council and its RH/S Committee have collaborated with the River Herring Technical Expert Working Group (TEWG - <http://www.greateratlantic.fisheries.noaa.gov/protected/riverherring/tewg/>) to address a variety of related issues. The Council also committed itself in 2013 to conducting a formal evaluation of the effectiveness of the approved working group approach in three years (which will be October 2016) to determine if a different approach is required and/or appropriate. Orders from U.S. District Judge Gladys Kessler reinforced the Council’s planned evaluation and provided additional guidance for what that evaluation should consider, so that the Council’s decisions, and NOAA Fisheries’ review of those decisions are appropriate given NMFS’ responsibility for ensuring that the requirements of the MSA, NEPA, and any other applicable laws are met. This document facilitates the Council’s (and NOAA Fisheries’) evaluation of the RH/S management issue.

Related to Judge Kessler’s order, the draft decision document was ordered to “include an analysis of the regulatory course Plaintiffs advocate.” That regulatory course was also analyzed in the staff white paper, i.e. immediately adding River Herring and Shad to the fishery and managing it by use of proxies. Based on the Council’s evaluation of the analysis in the staff white paper, the only decision before the Council in October is whether or not to begin an action that could add RH/S as Council-managed stocks. However, for sake of completeness and compliance with the Court order, that analysis is repeated below. The staff white paper has substantial additional background information to support the analysis of immediately adding (or not adding) River Herring and Shad as a Council-managed fishery and managing it by use of proxies.

3.0 MAGNUSON-STEVENSON ACT (MSA) REQUIREMENTS

3.1 DEFINITION & NEED FOR CONSERVATION AND MANAGEMENT

The MSA provides for management of fish by the Council. It states that “[e]ach Council shall...for each fishery under its authority that requires conservation and management, prepare and submit to the Secretary (A) a fishery management plan” [16 U.S.C. § 1852(h)(1)].

The MSA provides a definition of conservation and management in its definition section:

- (5) The term "conservation and management" refers to all of the rules, regulations, conditions, methods, and other measures
- (A) which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment; and
- (B) which are designed to assure that—
- (i) a supply of food and other products may be taken, and that recreational benefits may be obtained, on a continuing basis;
 - (ii) irreversible or long-term adverse effects on fishery resources and the marine environment are avoided; and
 - (iii) there will be a multiplicity of options available with respect to future uses of these resources.

The MSA also includes a set of findings, purposes, and policies which help provide perspective on Congress’s intent (staff has excerpted the most relevant).

“Findings”

(1) The fish off the coasts of the United States...and the anadromous species which spawn in United States rivers or estuaries, constitute valuable and renewable natural resources. These fishery resources contribute to the food supply, economy, and health of the Nation and provide recreational opportunities.

(2) Certain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened as a consequence of (A) increased fishing pressure, (B) the inadequacy of fishery resource conservation and management practices and controls, or (C) direct and indirect habitat losses which have resulted in a diminished capacity to support existing fishing levels.

(3) Commercial and recreational fishing constitutes a major source of employment and contributes significantly to the economy of the Nation. Many coastal areas are dependent upon fishing and related activities, and their economies have been badly damaged by the overfishing of fishery resources at an ever-increasing rate...

(5) Fishery resources are finite but renewable. If placed under sound management before overfishing has caused irreversible effects, the fisheries can be conserved and maintained so as to provide optimum yields on a continuing basis.

(6) A national program for the conservation and management of the fishery resources of the United States is necessary to prevent overfishing, to rebuild overfished stocks, to insure conservation, to facilitate long-term protection of essential fish habitats, and to realize the full potential of the Nation's fishery resources.

(8) The collection of reliable data is essential to the effective conservation, management, and scientific understanding of the fishery resources of the United States.

(9) One of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States.

“Purposes”

(1) to take immediate action to conserve and manage the fishery resources found off the coasts of the United States, and the anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone ...

(4) to provide for the preparation and implementation, in accordance with national standards, of fishery management plans which will achieve and maintain, on a continuing basis, the optimum yield from each fishery;

(5) to establish Regional Fishery Management Councils to exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring, and revision of such plans under circumstances (A) which will enable the States, the fishing industry, consumer and environmental organizations, and other interested persons to participate in, and advise on, the establishment and administration of such plans, and (B) which take into account the social and economic needs of the States;

(7) to promote the protection of essential fish habitat in the review of projects conducted under Federal permits, licenses, or other authorities that affect or have the potential to affect such habitat.

“Policies”

(3) to assure that the national fishery conservation and management program utilizes, and is based upon, the best scientific information available; involves, and is responsive to the needs of, interested and affected States and citizens; considers efficiency; draws upon Federal, State, and academic capabilities in carrying out research, administration, management, and enforcement; considers the effects of fishing on immature fish and encourages development of practical measures that minimize bycatch and avoid unnecessary waste of fish; and is workable and effective;

(6) to foster and maintain the diversity of fisheries in the United States

3.2 NATIONAL STANDARDS (NS)

U.S. marine fisheries are managed under the MSA with a number of requirements, including ten National Standards. The National Standards are principles that must be followed in any fishery management plan (FMP) to ensure sustainable and responsible fishery management. As mandated by the MSA, NOAA Fisheries has developed guidelines for each National Standard. When reviewing FMPs, FMP amendments, and regulations, the Secretary of Commerce must ensure that they are consistent with the National Standard guidelines. The ten National Standards are summarized below, and then additional details are provided on several that are most relevant to the decision of whether to manage a stock.

3.2.1 National Standard 7 details & applicability

National Standard 7 states that "[c]onservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication." 16 U.S.C. §1851(a)(7). Guidelines for National Standard 7 begin by stating that "[t]he principle that not every fishery needs regulation is implicit in this standard." National Standard 7 guidelines advise that "The Magnuson-Stevens Act requires Councils to prepare FMPs only for overfished fisheries and for other fisheries where regulation would serve some useful purpose and where the present or future benefits of regulation would justify the costs." The guidelines recommend that the following criteria be considered when deciding whether a fishery needs management through an FMP:

- (1) The importance of the fishery to the Nation and to the regional economy.
 - (2) The condition of the stock or stocks of fish and whether an FMP can improve or maintain that condition.
 - (3) The extent to which the fishery could be or is already adequately managed by states, by state/Federal programs, by Federal regulations pursuant to FMPs or international commissions, or by industry self-regulation, consistent with the policies and standards of the Magnuson-Stevens Act.
 - (4) The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.
 - (5) The economic condition of a fishery and whether an FMP can produce more efficient utilization.
 - (6) The needs of a developing fishery, and whether an FMP can foster orderly growth.
 - (7) The costs associated with an FMP, balanced against the benefits (see paragraph (d) of this section as a guide).
- (d) Analysis. The supporting analyses for FMPs should demonstrate that the benefits of fishery regulation are real and substantial relative to the added research,

administrative, and enforcement costs, as well as costs to the industry of compliance. In determining the benefits and costs of management measures, each management strategy considered and its impacts on different user groups in the fishery should be evaluated. This requirement need not produce an elaborate, formalistic cost/benefit analysis. Rather, an evaluation of effects and costs, especially of differences among workable alternatives, including the status quo, is adequate. If quantitative estimates are not possible, qualitative estimates will suffice.

There is some debate about whether National Standard 7 should apply to the question of whether to manage a fishery, or whether National Standard 7 should really only apply when considering what measures to use for a fishery that has been determined is in need of conservation and management. NMFS has proposed revisions (Jan 20, 2015) to the National Standard 1 guidelines that may help “to address the important issue of identifying stocks that require conservation and management” (http://www.fisheries.noaa.gov/sfa/laws_policies/national_standards/ns1_revisions.html), which are further described below.

3.2.2 Proposed NS1 guideline revision details relative to stock in fishery decision

The proposed new National Standard 1 guidelines that relate to the decision whether Council management would be necessary are provided below. While they are draft (in the form of a proposed rule - http://www.fisheries.noaa.gov/sfa/laws_policies/national_standards/documents/ns1_proposed_rule.pdf), it appears likely that there will be new guidance regarding whether Federal management is necessary and appropriate, so considering the proposed revisions appears appropriate, especially since the National Standard guideline are *guidelines*.

(c) Stocks that require conservation and management.

(1) Magnuson-Stevens Act section 302(h)(1) requires a Council to prepare an FMP for each fishery under its authority that requires (or in other words, is in need of) conservation and management. Not every fishery requires Federal management. Any stocks that are predominately caught in Federal waters and are overfished or subject to overfishing, or likely to become overfished or subject to overfishing, are considered to require conservation and management. In addition, the following non-exhaustive list of factors should be used by a Council when deciding whether stocks require conservation and management:

- (i) The stock is an important component of the marine environment.
- (ii) The stock is caught by the fishery.
- (iii) Whether an FMP can improve or maintain the condition of the stocks.
- (iv) The stock is a target of a fishery.
- (v) The stock is important to commercial, recreational, or subsistence users.
- (vi) The fishery is important to the Nation and to the regional economy.
- (vii) The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.

(viii) The economic condition of a fishery and whether an FMP can produce more efficient utilization.

(ix) The needs of a developing fishery, and whether an FMP can foster orderly growth.

(x) The extent to which the fishery could be or is already adequately managed by states, by state/Federal programs, by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the policies and standards of the Magnuson-Stevens Act.

(2) When considering adding a new stock to an FMP or keeping an existing stock within an FMP, Councils should prepare a thorough analysis of the factors, and any additional considerations that may be relevant to the particular stock. No single factor is dispositive, but Councils should consider weighting the factors as follows. Factors (c)(1)(i)-(iii) of this section should be considered first, as they address maintaining a fishery resource and the marine environment.

These factors weigh in favor of including a stock in an FMP. Councils should next consider factors (c)(1)(iv)-(ix) of this section, which set forth key economic, social, and other reasons contained within the MSA for an FMP action.

Regardless of whether any of the first nine factors indicates a conservation and management need, a Council should consider factor (c)(1)(x) of this section before deciding to include or maintain a stock in an FMP. In many circumstances, adequate management of a fishery by states, state/Federal programs, or another Federal FMP would weigh heavily against a Federal FMP action.

In evaluating the above criteria, a Council should consider the specific circumstances of a fishery, based on the best scientific information available; to determine whether there are biological, economic, social and/or operational concerns that can be addressed by Federal management.

(3) Councils may choose to identify stocks within their FMPs as ecosystem component (EC) species (see 50 CFR 600.310(d)(1)) if they do not require conservation and management. EC species may be identified at the species or stock level, and may be grouped into complexes.

Consistent with National Standard 9, MSA section 303(b)(12), and other applicable MSA sections, management measures can be adopted in order to, for example, collect data on the EC species, minimize bycatch or bycatch mortality of EC species, protect the associated role of EC species in the ecosystem, or for other reasons.

(4) A stock or stock complex may be identified in more than one FMP. In this situation, the relevant Councils should choose which FMP will be the primary FMP in which reference points for the stock or stock complex are established. In other FMPs, the stock or stock complex may be identified as “other managed stocks” and management measures that are consistent with the objectives of the primary FMP can be established.

(5) Councils should periodically review their FMPs and the best scientific information available and determine if the stocks are appropriately identified. As appropriate, stocks should be reclassified within a FMP, added to or removed from an existing FMP, or added to a new FMP, through a FMP amendment that documents the rationale for the decision.

In the proposed rule for these guidelines

(http://www.fisheries.noaa.gov/sfa/laws_policies/national_standards/documents/ns1_proposed_rule.pdf), NMFS notes that “the MSA and current NS guidelines indirectly touch upon” whether a fishery requires or is in need of conservation and management. The revised guidelines appear to encourage the same type of evaluation that was in the National Standard 7 guidelines (and some of the same language is proposed to be transferred), but make it more explicit that these considerations would take place when considering whether to manage in the first place by placing this guidance first, in the general section. By noting that FMPs shall be submitted for any fishery “that requires conservation and management,” there logically must be situations where Council-management through a federal FMP is not required, and both the current National Standard 7 guidelines and the proposed revisions both recommend the Council to evaluate how relevant Council management would be so that a good-faith effort is conducted to determine the answer to whether a fishery *requires* conservation and management under a Federal FMP by a Council.

4.0 THE KINDS OF ALTERNATIVES THAT RESULT FROM THE REQUIRED AND DISCRETIONARY MSA FMP CONTENTS

It is difficult to predict the full suite of alternatives that would result from FMP implementation. However, based on other Council FMPs and the requirements of the MSA, certain elements would be likely, as described below.

Management Unit

Options would be considered to define the stocks/populations to be managed and their management unit. The stocks considered would likely be tied to the Council’s representative states (NC-NY) or utilize the broader populations segments identified in recent genetic analyses (see above). Given the at-sea movement of RH/S, the management unit could be all East Coast waters for the stocks the Council decided to manage.

Status Determination Criteria (SDCs)

The Council has recently built provisions into its plans to automatically incorporate SDCs from the most recent accepted assessment. Without or until such an assessment, proxies for SDCs can be utilized, and the Council’s Scientific and Statistical Committee (SSC) can be consulted in the development of proxies. Examples of possible proxies for data-poor species like RH/S could include survey abundance triggers and proportions of historical catches. The Council’s risk policy also has provisions for the SSC when determining acceptable biological catches in cases where there is very high uncertainty related to establishment of an overfishing level or proxy

thereof. National Standard 1 guidelines indicate that approval of SDCs will be based on consideration of whether the proposal:

- (A) Has sufficient scientific merit;
- (B) Contains the elements described in paragraph (e)(2)(ii) of this section;
- (C) Provides a basis for objective measurement of the status of the stock or stock complex against the criteria; and
- (D) Is operationally feasible.

Paragraph (e)(2)(ii) states:

In specifying SDC, a Council must provide an analysis of how the SDC were chosen and how they relate to reproductive potential. Each FMP must specify, to the extent possible, objective and measurable SDC as follows:

(A) SDC to determine overfishing status. Each FMP must describe which of the following two methods will be used for each stock or stock complex to determine an overfishing status.

(1) Fishing mortality rate exceeds MFMT. Exceeding the MFMT for a period of 1 year or more constitutes overfishing. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

(2) Catch exceeds the OFL. Should the annual catch exceed the annual OFL for 1 year or more, the stock or stock complex is considered subject to overfishing.

(B) SDC to determine overfished status. The MSST or reasonable proxy must be expressed in terms of spawning biomass or other measure of reproductive potential. To the extent possible, the MSST should equal whichever of the following is greater: One-half the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years, if the stock or stock complex were exploited at the MFMT specified under paragraph (e)(2)(ii)(A)(1) of this section. Should the estimated size of the stock or stock complex in a given year fall below this threshold, the stock or stock complex is considered overfished.

Permitting and Reporting

The Council typically requires permitting and trip reporting for commercial and for-hire vessels. Federally-permitted vessels are required to sell to Federally-permitted dealers, who most also report catches.

Framework Actions

To increase flexibility, previously-considered actions that do not involve a major departure from existing measures are allowed to be implemented through a streamlines process.

Specifications and Acceptable Biological Catch (ABC) Process

The Council would develop a process for its SSC to set ABCs via annual or multi-year specifications for whatever stocks were to be added. It is likely that the current control rule and risk policy would be utilized. The risk policy guides the SSC in terms of the Council's risk tolerance for overfishing, and the control rule guides how uncertainty is handled. Additional measures that are generally used by the Council during annual specifications include specifying overfishing levels (OFLs), Acceptable Biological Catches (ABC), Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), discard set-asides, total allowable landings (TALs), commercial and recreational quotas, trip limits, bag limits, seasons, size limits, retention requirements, and/or any measure needed to ensure that the specifications are not exceeded. Time/area restrictions are typically considered through amendments or framework actions. The initial implementing Amendment would likely consider a range of options for these kinds of measures which are geared toward avoiding ABC/ACL overages.

Allocations

The Council may consider if allocations are appropriate, for example between the recreational and commercial sectors.

Essential Fish Habitat (EFH)

The Council would consider options for the designation of EFH and of the impacts on EFH from fishing and non-fishing activities.

Designating essential fish habitat (EFH) for river herrings and shads would increase NMFS's authority but not necessarily NMFS's ability to conserve habitats used by these anadromous species, especially freshwater habitats used for spawning and as juvenile nursery areas that are most affected by a wide range of human activities.

Currently, acting under the authority of the Magnuson-Stevens Act, there is a mandatory requirement that NMFS must designate essential fish habitat for managed species and issue essential fish habitat conservation recommendations to federal agencies for activities proposed, funded, permitted, or undertaken by those agencies. Designation of essential fish habitat for river herrings and shads would expand the geographic boundaries where mandatory consultations would be required including most coastal rivers and their watersheds on the Atlantic coast.

EFH Consultations (summary from <http://www.nero.noaa.gov/hcd/appguide1.html>)

Federal agencies which fund, permit, or undertake activities that may adversely affect EFH are required to consult with NMFS regarding the potential effects of their actions on EFH, and

respond in writing to NMFS's recommendations. Wherever possible, NMFS is utilizing existing interagency coordination processes to fulfill EFH consultations with federal agencies. These existing coordination procedures include the National Environmental Policy Act (NEPA), Endangered Species Act, Clean Water Act, and Fish and Wildlife Coordination Act. Use of these existing processes allows for efficient project review by NMFS and the other federal agencies.

Although the federal action agency is ultimately responsible for complying with the EFH Consultation requirements of the Magnuson-Stevens Act, the agency may designate a non-federal representative to conduct an abbreviated consultation or prepare an EFH Assessment. Generally this means that a permit applicant or consultant prepares the required EFH Assessment.

There are basically two types of consultations, abbreviated and expanded. The type of consultation necessary depends upon the magnitude of the adverse effect on EFH. Abbreviated consultations are used when a proposed project will have a less than substantial adverse impact on EFH. Expanded consultations are used when the adverse impact on EFH may be substantial. Regardless of consultation type, there are four required components to consultations:

1. Notification - The federal agency must notify NMFS regarding a proposed action that may adversely affect EFH. The notification will typically be in the form of a Public Notice, Draft Environmental Assessment (EA), or Draft Environmental Impact Statement (EIS).
2. EFH Assessment - This is a written assessment of the effects of the action on EFH. The EFH Assessment will typically be incorporated within the notification document (Public Notice or Environmental Assessment) or submitted as a separate document in cases where an expanded consultation is required.

An EFH Assessment must contain the following four sections:

- A description of the proposed action.
- An analysis of the potential adverse effects of the action on EFH, and managed species.
- The federal agency's conclusions regarding the effects of the action on EFH, and the managed species. The agency's views will usually determine the type of consultation. Examples of agency determinations are as follows: A) no adverse effect to EFH (no consultation required); B) minimal adverse effect or less than substantial adverse effect to EFH (abbreviated consultation can be conducted); or C) substantial adverse effect to EFH (expanded consultation required).
- Proposed mitigation, if applicable.

Other information may also be appropriate to include in the assessment such as: the results of an on-site inspection to evaluate habitat and site-specific effects of the project; the views of recognized experts on the habitat or species that may be affected; a review of pertinent literature and relevant information; an analysis of alternatives to the proposed action including those alternatives that avoid or minimize the adverse effects on EFH. The level of detail contained within the EFH Assessment should be commensurate with the degree of adverse impact to EFH.

3. EFH Conservation Recommendations - After receipt of the completed EFH Assessment, NMFS will provide EFH Conservation Recommendations to the federal agency detailing measures that can be taken by that agency to conserve EFH.

4. Agency Response - Within 30 days of receiving NMFS' recommendations, the federal agency must provide a detailed written response to NMFS. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case where a response is inconsistent with NMFS' recommendations, the federal agency must explain (and only explain) its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to minimize, mitigate or offset such effects.

The Magnuson-Stevens Act also states that Councils "shall comment on and make recommendations to the Secretary and any Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including essential fish habitat, of an anadromous fishery resource under its authority." While the Council's resources would likely preclude comment on every activity, this could be a component of Council coordination. However, other entities have no obligations regarding the Council's recommendations unless they prompt NMFS recommendations in the above-described consultation process.

To summarize, EFH designations provide NMFS the authority to recommend mitigation measures for proposed actions and permitting. NMFS does make such recommendations with other species' EFH and often does secure some level of mitigation. However, the agency may lack the resources to effectively implement the necessary actions related to river herrings and/or shads

Accountability Measures (AMs)

The Council would consider options for appropriate AMs, which ensure that ACLs are not exceeded, or that if they are exceeded corrective measures are taken to avoid future overages. Examples can include in-season closures and paybacks for overages.

Observer Coverage

RH/S would enter into SBRM allocation algorithms, but analysis by NMFS has previously indicated little change in observer placements would occur (see above).

4.1 How would all these work together with the ASMFC?

Coordination with the ASMFC would have to be developed as part of the development of an action that added RH/S as Council-managed stocks. However, the Council and the ASMFC engage on joint/complementary management of several species that are caught in state and Federal waters. While Commission/Council coordination for river herring and shad issues has been extensive in the last 5 years (primarily via the TEWG), the ramifications of ACLs would likely lead to additional collaboration. The Council would likely engage in complementary management with the Commission and ACLs or other catch quotas for federal management would be based on ABCs provided by its Scientific and Statistical Committee and would have to

account for any state fishing mortality beyond the control of the Council. The Council and Commission would likely negotiate (via a joint meeting) how to utilize the ABC provided by the Scientific and Statistical Committee. While the Council and Commission may come to an agreement, the Council would be bound to enact measures that keep catch at or below the ABC regardless. This could mean closing other federal directed fisheries quite earlier than would otherwise occur if state-waters catch approached (or was expected to approach) the ABC. The exact accountability measures would be developed during implementation if that is the chosen path, but since the states are not bound by the Scientific and Statistical Committee's decision, and since substantial catch may occur in state waters, and an ABC could be quite low, impacts on federal fisheries like Atlantic herring and mackerel that catch river herrings and/or shads could be substantial. Mortality caps for federal fisheries could be part of the accountability measures that are used, but they would have to be set low enough such that state waters catch plus any mortality caps were expected to restrain catch at or below the ABC. While the Council could be unable to totally control all mortality because of state fisheries and discards in state waters, mortality in federal waters would be limited.

The Council and ASMFC has different processes for amending fishery management plans, and some concern has been expressed that ASMFC-based management is subject to less oversight than Council management and could be “undone” more easily. While this may be true procedurally, the ASMFC currently appears very committed to sustainable RH/S management through the use of its sustainability plans.

5.0 ENVIRONMENTAL ANALYSIS (DIRECT, INDIRECT, AND CUMULATIVE) OF IMMEDIATELY ADDING VS NOT ADDING RIVER HERRING AND SHAD TO A FISHERY AND MANAGING IT BY USE OF PROXIES.

5.1 DESCRIBE NO-ACTION IMPACTS, INCLUDING:

Introduction

Under the no action alternative, it is presumed that state fisheries would continue to be limited subject to approved state sustainability plans, and catch in federal fisheries would continue to be limited subject to the current RH/S caps set by Amendment 14 for the Atlantic mackerel and Atlantic herring fisheries. Also, the various collaborative efforts of the TEWG would be expected to continue, as would the efforts of various other entities that engage in RH/S conservation, such as watershed associations. The impacts of Council management of RH/S versus no action are described below. While an actual action by the Council would typically examine direct, indirect, and cumulative impacts on the managed species, other non-targets, habitat, protected resources, and human communities, this white paper focuses on the impacts for

RH/S, their habitat, and related human communities. If the Council decides to proceed with an FMP/FMP Amendment then those other impact areas would be examined, but the impacts to other non-targets and protected resources are simply the impacts of effort, and if effort is reduced then impacts to other non-targets and protected resources are also reduced. Including these resources would only involve repeating this concept below. Based on the assumption that at least in the short term the only RH/S fisheries in Federal waters would be incidental, recent MSB and Atlantic herring specifications can be consulted for relevant protected resource and other non-target impacts. Since observer coverage is not expected to be different regardless of whether or not RH/S are Council-managed stocks (see above) this issue is not discussed in the impacts section.

The previous white paper documented the various positive benefits that could accrue from RH/S restoration, including several types of value such as commercial, recreational, ecological, existence, and cultural. These are not necessarily the only types of value, and this is not an exhaustive treatment of the subject, but the descriptions of these benefits below re-establishes that these fisheries likely have, or at least could have if revived, substantial importance to the nation. To the degree that RH/S stocks are improved, gains would be expected under all of these types of benefits.

First, while the historical peak commercial river herring and shad catches were likely unsustainable, these species have supported substantial commercial fisheries in the past that were, and could be important to their regional economies. Benefits of potential higher future harvests would accrue to producers in the form of profits (revenues minus costs) and to consumers in the form of higher consumer surplus (the difference between consumers willingness to pay and what they actually had to pay). Because of the lack of information about what level of harvest would actually be sustainable (as well as unknown economic factors such as production costs), it is not possible to quantify the *economic value* of these potential landings. However, given the available price data in recent river herring and shad Commission plan amendments (ASMFC 2009, ASMFC 2010), if sustainable landings of 4,000 mt (about 8.6 million pounds) of river herrings and 2,000 mt (about 4.3 million pounds) shads were possible, and if an average ex-vessel price of \$0.27/Lb. and \$1.09/Lb. is used for river herring and shad, respectively (these values were reported by Commission staff, K. Taylor, for 2012 fisheries), this example would result in about \$7 million dollars per year in ex-vessel revenues (1 mt equals about 2204.6 pounds). Based on historic landings these levels seem not unreasonable, but it is important to note that higher landings may result in lower prices per pound so the ex-vessel value of a higher quantity of fish may be lower.

Second, there is economic value in recreational fishing and subsistence fishing, which can be important to local and regional economies. Presumably each fishing trip provides some value to each angler, whether in the form of recreation or food. If fish runs increase, there can be benefits related to higher angler satisfaction from higher catch each trip and/or related to taking more trips. For river herring, recreational benefits primarily accrue related to their use as bait for other, larger fish but there is still definite value in that respect (some fishermen pay \$1-\$3 per fish for similar live baits depending on local conditions, based on personal communication with Kate Taylor (ASMFC) and staff observations at local tackle stores). For shad, they are often the primary target but may also be used as bait. Recreational catch data on these species is poor since recreational catch primarily takes place out of the geographical scope of the NMFS

recreational surveys, but harvest is currently relatively low due to the moratoria and other recreational restrictions.

The general literature on the value of recreational fishing is well developed, though little information is available specific to river herring and/or shad fishing. One study did estimate an annual aggregate "willingness to pay" (value) of \$3.2 million dollars for Delaware River shad fishing in 1986 (based on 63,000 angler days and a per angler day value of \$50 - Lupine and Miller 1987), which is equivalent to \$6.5 million in 2012 dollars. Additional reference documents on the general economic value of saltwater recreational fishing in the Mid-Atlantic may be accessed at http://www.st.nmfs.noaa.gov/st5/RecFishEcon_pubs.html. An econometric analysis is beyond the scope of this document, but based on the large existing body of recreational-demand literature, there are often substantial socio-economic benefits related to improved recreational fisheries and there is no reason to conclude that this would not be the case with river herrings and shads.

Third, there could be indirect ecological value related to recreational activities. This comes from river herrings' and shads' role as forage species for higher trophic level predators such as striped bass or whales. Higher forage populations could indirectly help predator populations, which support better recreation such as fishing or whale-watching. From this perspective the ecological benefits of healthy populations create recreational benefits, as described above. There are ways to measure these benefits but not within the scope of this paper.

Fourth, there are non-market existence values (i.e., value gained by individuals related to the knowledge that these species are being conserved successfully) that can result from successful management, especially given these species role as forage. Public interest in this issue demonstrates that a segment of the general public holds a certain value for the knowledge that these fisheries are being sustainably managed, and even if each individual's value is small the total value may be quite large when many people are involved. While there are not existing studies related to non-use benefits from river herring and shad, there are many non-use studies on other environmental issues documenting the occurrence of such values.

Finally there is cultural value, which may be thought of as a separate type of existence value. River herring and shad runs are or have been important culturally for many communities (just Google "Shad Festival" or "Herring Festival") and there can also be cultural value beyond food value related to subsistence fishing (e.g. Mashpee Wampanoag Indian Tribe on Cape Cod, Massachusetts (ASMFC 2011)). While difficult to quantify, this is another potential benefit related to river herring and shad conservation that contributes toward its importance to the Nation. The recent Commission Shad and River Herring Plans also describe that river herring and shad festivals can be important sources of regional economic activity. If the related economic activity is lost, replacement activities will mitigate the net loss, but there is still some loss of net value and certainly local or regional distributional consequences in terms of jobs.

In summary, healthier river herring and shad runs and fisheries would likely constitute substantial value to the Nation, but it is beyond the scope of this paper to estimate exactly what that value might be.

5.1.1 Full consideration of the impacts of the earlier decision by the full

Council to not add River Herring and Shad into an FMP in Amendment 14

Most portions of Amendment 14 became effective in early 2014. Given the additional steps that would have been required to integrate RH/S into an FMP, it is unlikely that implementation could have occurred before January 1, 2015 at the earliest. Thus at most the requirements of an FMP would have been in effect for approximately 18 months. It is likely that the only substantial difference in RH/S over those months would have been that the Council's SSC would have set an ABC for RH/S stocks in the management unit(s) selected by the Council and the Council would have set specifications accordingly (other possibly longer-term impacts are described below related to future decisions). Depending on the ABC set by the Council, this could have led to either higher or lower catches than have occurred. Qualitatively, higher or lower catches could have negatively or positively impacted RH/S, respectively. However, it is not clear that the scale of catches that have been occurring in recent years are substantially contributing to the current low RH/S population levels, and recent catches represent a very small fraction compared to historical catches. It is also not clear that Council action would have impacted state actions and state catches. The most likely impacts would have been for the Atlantic herring and mackerel fisheries, which are already subject to relatively low incidental catch caps. To the degree that the caps have encouraged fishermen to avoid RH/S, if Amendment 14 had been delayed (delaying the caps) then there could have been negative impacts for RH/S. However assuming implementation, with low enough ABCs the Atlantic herring and mackerel fisheries could have been more limited, which qualitatively could have had a positive impact on RH/S but the extent is unclear as described above.

Taking also into consideration the relatively high NEFSC and NEAMAP indices in the most recent years, and the mixed state indices in the most recent years, it appears likely that overall the earlier decision by the full Council to not add RH/S into an FMP in Amendment 14 has had minimal if any impacts on RH/S populations to date related to the short timeframe and other measures already in place. Likewise, there would also have been minimal impacts in terms of the various potential commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations.

5.1.2 Review success criteria and progress updates to determine course of RH/S situation over last 3 years

5.1.2.A Are RHS stocks improving?

It is uncertain whether RH/S stocks have changed from October 2013 to now. There are some indications that the overall numbers of RH/S may have increased since 2013 based on the NMFS and NEAMAP survey data described above, but state surveys appear more mixed.

5.1.2.B Any evidence that incidental catch in federal fisheries has been limited and/or reduced?

A review of cap performance

(http://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/Mackerel_RHS/Mackerel_RHS.htm) indicates that a relatively small percentage of the RH/S cap was caught in 2014, 2015, or 2016 to date. There have been no closures related to the RH/S cap so far. Low mackerel landings have contributed to the low RH/S estimates. Due to the overlap in the Atl. Herring and mackerel fisheries, their RH/S cap catches cannot be added together to produce a total catch across caps - RH/S on a trip with both Atl. herring and mackerel can count against both the Atl. herring and mackerel RH/S caps. Because the cap amounts were set considering this circumstance, double counting is not a problem for monitoring. The Monitoring Committee has not found any operational issues with the cap, other than noting that the recent low observer coverage and high RH/S catch variability means precision may be low. The Industry-Funded Monitoring Amendment has analyzed precision in the 2014/2015 mackerel RH/S caps:

Table 1. RH/S Cap CV Performance 2014-2015

Catch Cap	Fishing Year ¹ : CV (Observer Coverage)	
	2014	2015 ²
RHS-Mackerel	48.9% (37.8%)	22.7% (7.3%) ²

Source: GARFO Quota Monitoring Database as of 5/22/2016

¹Catch cap fishing year: river herring/shad = calendar year; haddock = May-April

²Fishing Year 2015 data are PRELIMINARY

Somewhat counterintuitively, the Coefficient of Variation (CV – a measure of relative precision) for 2015 was better than 2014 despite substantially lower observer coverage in 2015. CV is dependent on both coverage and the underlying data - the RH/S catches in 2015 were more similar to each other on the few 2015 observed mackerel trips compared to 2014, resulting in better CVs despite the lower coverage.

It is not clear if the cap has led to lower RH/S catches. On one hand RH/S catches have appeared low in the mackerel fishery, and perhaps the cap has provided an incentive to avoid RH/S. On the other hand, the mackerel fishery has not been very active, and that could be the main driver of cap performance.

As described above there is some evidence that the voluntary bycatch avoidance networks (SMAST) have led fishermen to avoid high RH/S areas to some degree.

5.1.2.C Has scientific information about RH/S improved (life history, abundance, etc.)?

There have been several advancements in RH/S science in recent years due in part to the attention brought to RH/S through the Council's considerations regarding RH/S. The advancements primarily concern RH related to the resources attracted by TEWG activities. The first is the data standardization workshop the Commission organized with funding support from NOAA Fisheries. If states can better align their data collection and reporting methodologies, future assessments (RH and Shad) will benefit. Another major advancement is the genetics work done on river herring, which both has better defined the natal spatial characteristics of RH as well as providing information on how bycatch may be impacting different natal areas. Recent research on assessing demographic effects of dams on diadromous fish (Nieland et al 2015) also holds promise on assessing impacts to RH/S populations under various scenarios of harvest. The work described above on environmental modeling may also offer options for avoiding RH/S in the mackerel and Atl. herring fisheries. Finally, all of the TEWG subgroups have established data gap documents, which should continue to stimulate research on RH/S, though most TEWG efforts are focused on RH.

5.1.2.D Has coordination between the entities that are involved in RHS management improved?

The primary work from staff over the last year that could affect RH/S involves the TEWG and the Joint Omnibus Industry-Funded Monitoring (IFM) Amendment. Both of these efforts involve substantial collaboration and coordination. The IFM Amendment, which could result in additional monitoring of the mackerel fishery, has led to extensive work between NMFS, MAFMC, and NEFMC staff to develop monitoring options for the Atl. herring and mackerel fisheries. The TEWG incorporates those entities plus the ASMFC and a wide variety of other management partners, interested parties, and researchers. Through the TEWG, it is relatively easy to identify the key issues and data needs for river herring, and appropriate contacts. Shad lags somewhat in this area, but most of the TEWG participants are familiar with Shad as well.

5.1.3 Full consideration of the future impacts of failing now to include River Herring and Shad in the fishery

These are the impacts of maintaining the status quo into the future. Again, under the no action, it is presumed that state fisheries would continue to be limited subject to approved state sustainability plans, and catch in federal fisheries would continue to be limited subject to the current RH/S caps set for the Atlantic mackerel and Atlantic herring fisheries. Also, the various collaborative efforts of the TEWG would be expected to continue, as would the efforts of various other entities that engage in RH/S conservation, such as watershed associations.

Two critical things will not get done under the status quo that could impact RH/S. First, Council-developed status determination criteria (SDCs or reference points) will not be set (nor resulting ABCs/ACLs/AMs), and EFH will not be designated. Each is considered separately.

Status Determination Criteria (SDCs or Reference Points) and ABCs/ACLs/AMs

SDCs lead to ABCs/ACLs/AMs which lead to other catch controls, so they may be considered together – it is really the SDCs and ABCs that matter – the other measures just operationalize the ABCs. The available evidence suggests that not setting SDCs will not have a substantial negative impact on RH/S. This is due to several factors. First, it is not clear that recent/current catches are having substantial impacts on RH/S populations as they are already a very small fraction of historical catches. Second, RH/S are already being actively managed by the ASMFC and state catches are already strictly limited within the context of approved state sustainability plans.

The states, through the Commission and its Interstate FMP for Shad and River Herring, appear to have effectively controlled directed harvest of river herrings and shads in state waters. The Commission also has a stock assessment process in place that effectively integrates data from the states, though there are a variety of data gaps. The Commission peer-reviewed stock assessment process integrates data from both the states' and federal waters and the stock assessment committee has both NMFS and U.S. Fish and Wildlife Service representatives.

The Magnuson Stevens Act precludes federal regulation of a fishery in state waters unless the fishery occurs predominantly in federal waters. 16 U.S.C. § 1856(3)(b). All river herring and American shad state fisheries that have not been designated by the Commission as sustainable were closed by January 1, 2013. The Commission has communicated to the Council (Dec 5, 2012 letter, attached) that it will take 3-5 years to determine the effect of these measures. In the same letter, the Commission encouraged exploration of the concept of Council management but also indicated a preference that the Commission would retain authority to manage in-river state-water fisheries. The Council would not have the authority to manage in-river state-water fisheries, and the potential consequences of this on annual catch limits and accountability measures are described above.

It is not clear that states/the Commission have effectively controlled discards in state waters, but they could and would be in a better position to do this given the Council's limited authorities in state waters. State regulations also appear likely to avoid redevelopment of directed ocean fisheries for river herrings and shads since outside of approved state-specific sustainable FMPs, possession is either banned or only allowed as limited incidental catch related to directed landings of other species.

When combined with the caps that are in place at the Councils to achieve a relatively low level of incidental catch and the voluntary avoidance practices of the fishery, the current management systems already in place appear likely to have a reasonable likelihood of having positive impacts moving forward even if previous management has led to a depleted condition. The existing measures also do not appear to be ephemeral. The positive impacts would extend to the various potential commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations.

The previous white paper suggested that there might be more stock assessment progress if RH/S became a Council-managed species, through additional involvement of NMFS assessment personnel. This indirectly ties to the SDCs because additional science resources could

theoretically lead to more useful SDCs that would effectively guide management, regardless of the lead entity. However, given the activities of the TEWG, and the engagement by NMFS assessment staff in the TEWG and in the last river herring assessment, continued progress on RH/S science also appears likely under no action (TEWG activities are described above). The positive impacts would extend to the various potential commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations. The ASMFC also requires states to implement fisheries-dependent and independent monitoring programs to provide data for use in future stock assessments.

EFH/Habitat

No EFH would be designated. However, as discussed in the previous white paper: A) states are already independently acting to improve riverine habitats B) NMFS has ongoing consultations with upstream dam removal/riverine habitat improvement projects (as well as funding them), and C) NMFS has already been successful in mitigating impacts to some habitats (tidal riverine waters) used by river herrings and shads because they are forage species for other federally-managed fish species (e.g., bluefish), and are, therefore, considered a component of essential fish habitat for those predatory species. River herrings, shads, and Atlantic salmon utilize the same areas for in-river dependent life stages however (where impacts are more likely due to water passage and water quality issues), and the in-river geographic range in which river herring may benefit from the designation of Atlantic salmon EFH extends from Connecticut to the Maine/Canada border. In addition to the state sustainability plan mandate, the ASMFC makes recommendations to states for the conservation, restoration, and protection of habitat. States are involved in many habitat improvement projects. These efforts at improving RH/S habitat would continue under no action and should have positive impacts for RH/S. The positive impacts would extend to the various potential commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations.

5.2. FULLY DESCRIBE THE LIKELY IMPACTS OF IMMEDIATELY ADDING RH/S AS TYPICALLY-MANAGED COUNCIL STOCKS THROUGH THE USE OF PROXY REFERENCE POINTS

5.2.1 Describe likely and/or potential impacts from FMP provisions

RH/S

As described above, it is really the Status Determination Criteria (SDCs) and Acceptable Biological Catches (ABCs) that matter for impacts to RH/S – the other measures just operationalize the ABCs. Managing RH/S through the use of Council-specified SDCs (proxies or other) is expected to have a minimal impact on RH/S and likewise for the various potential

commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations. First, it is not clear that recent/current catches are having substantial impacts on RH/S populations as they are already a very small fraction of historical catches. Second, RH/S are already being actively managed by the ASMFC and state catches are already strictly limited within the context of approved state sustainability plans. In addition, compared to the status quo, given the uncertainty that could be involved with any proxy that the Council would enact, it is possible that such a proxy would not inform the Council appropriately about whether rebuilding was necessary or about what catch should occur. When combined with the caps that are in place at the Councils to achieve a relatively low level of incidental catch and the voluntary avoidance practices of the fishery, the result of implementing Council FMP management appears unlikely to result in a substantially different outcome for RH/S compared to the status quo.

Given the ongoing efforts stimulated by the TEWG, it is also unlikely that adding RH/S as directly managed species would bring in substantially more scientific resources for assessing the stocks than will occur under the status quo. Continued progress on RH/S assessment science is likely to be similar under the status quo or if they are added as Council-managed species.

Essential Fish Habitat (EFH)

EFH designations provide NMFS the authority to recommend mitigation measures for proposed actions and permitting. NMFS does make such recommendations with other species' EFH and often does secure some level of mitigation. However, the agency may lack the resources to effectively implement the necessary actions related to river herrings and/or shads. Limited resources (staff and funding) already restrict the agency's ability to effectively manage essential fish habitat for Atlantic salmon and there is no reason to believe that this situation will be different for river herrings and shads if they became federally-managed species.

It is unclear if substantial and tangible habitat benefits would accrue beyond those already being pursued for river herring (and other species that utilize similar habitat) by the states, NMFS, and other federal agencies, especially given current funding limitations. Thus compared to the status quo, there do not appear to be substantial benefits that would accrue to RH/S from the identification of EFH and likewise for the various potential commercial, recreational, ecological, existence, and cultural benefits described above that should accrue from higher RH/S populations.

Given the minimal impacts compared to the status quo alternative, significant cumulative impacts would not be expected, but the possibility would be fully analyzed if the Council decides to move forward with an action in October.

6.0 CONCLUSION

The information in this document is designed to facilitate Council consideration of whether conservation and management, in the form of an FMP or FMP amendment, are needed for RH/S. Because the proposed revisions to the General National Standard Guidelines subsume and clarify the question at hand they are briefly revisited here:

Not every fishery requires Federal management. Any stocks that are predominately caught in Federal waters and are overfished or subject to overfishing, or likely to become overfished or subject to overfishing, are considered to require conservation and management. In addition, the following non-exhaustive list of factors should be used by a Council when deciding whether stocks require conservation and management:

While RH/S may be overfished and/or subject to overfishing, they are not predominantly caught in Federal waters. River herring are predominantly caught in directed fisheries in Maine and shad in North and South Carolina.

(i) The stock is an important component of the marine environment.

RH/S are important components of the marine environment.

(ii) The stock is caught by the fishery.

RH/S are caught incidentally to Atlantic herring, Atlantic mackerel, and other small-mesh fisheries.

(iii) Whether an FMP can improve or maintain the condition of the stocks.

It does not appear that an FMP would substantially improve or maintain the condition of RH/S stocks because existing management authorities are already managing catch at levels that are a small fraction of historical catch.

(iv) The stock is a target of a fishery.

RH/S are not targeted fisheries in Federal waters or other Council-managed fisheries.

(v) The stock is important to commercial, recreational, or subsistence users.

As described in this document, RH/S are or have been important to some commercial, recreational, or subsistence users.

(vi) The fishery is important to the Nation and to the regional economy.

While the RH/S fisheries currently operate at small fractions of former levels, the ecological, historical, and cultural importance of RH/S fisheries, as well as their potential to support future commercial and recreational fisheries, make them important to the Nation and regional economies.

(vii) The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.

There is conflict between the Atlantic mackerel/herring fisheries and non-governmental organizations seeking additional monitoring and restrictions for those fisheries. The conflict involves both catch of non-target species like river herrings and shads as well as the optimal

amount of directed harvest, but the most immediate issue is whether the at-sea catch of river herrings and shads is having a substantial detrimental impact on river herring and shad populations.

Since recreational fisheries have largely lost access to river herring harvest through state moratoria and shad catches are often very restricted as well if not totally banned, a fairness issue has been raised that all parties that catch river herrings and shads should be limited in similar fashions.

Establishing Council management of river herrings and shads via an FMP does not seem likely to immediately resolve these conflicts, especially because of the lack of absolute abundance estimates.

(viii) The economic condition of a fishery and whether an FMP can produce more efficient utilization.

The RH/S fisheries operate at only a fraction of earlier levels, but those levels may have been unsustainable. There is no information to suggest that an FMP would produce a more efficient utilization of the RH/S resource. However, an FMP could further examine the relative value of river herrings and shads across fishing interests (commercial versus recreational versus ecosystem; directed versus incidental catch) and consider efficiency in that respect.

(ix) The needs of a developing fishery, and whether an FMP can foster orderly growth.

These are not developing fisheries.

(x) The extent to which the fishery could be or is already adequately managed by states, by state/Federal programs, by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the policies and standards of the Magnuson-Stevens Act.

This issue is addressed extensively in this document. State RH/S fisheries must abide by state sustainability plans approved by the ASMFC, and the Councils have already taken actions to limit incidental catch in Council-managed fisheries to levels that are a very small proportion of historical landings. Industry bycatch avoidance programs appear to be allowing the Atlantic herring and Atlantic mackerel fisheries to operate within those limits. This document notes that a variety of entities are already working to improve habitats that are important to RH/S, and the TEWG has identified key data gaps and begun efforts to fill some of those data gaps. It is not clear that FMP management would lead to any substantial improvements in management of RH/S beyond what is already occurring.

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