



Management of River Herring and Shad as Stocks in the Mackerel, Squid and Butterfish Plan by the Mid Atlantic Fishery Management Council under the Magnuson Stevens Act

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October 2013**

Introduction

The dramatic decline of River Herring and Shad (RH/S) stocks came to the attention of the National Marine Fisheries Service (NMFS), the New England Fishery Management Council (NEFMC) and the Mid-Atlantic Fisheries Management Council (MAFMC), in no small part because the issue has been before the states for years. Estimates of the stocks of these species indicate greater than 90% depletion, based on information from historical data. State agencies and the Atlantic States Marine Fisheries Commission (ASMFC) had been taking actions to limit harvests and state and federal agencies (e.g. the US Fish and Wildlife Service, USFWS) have efforts to restore riverine habitat, largely via fish passages. The efforts to restore RH/S populations have focused on inshore habitat improvement and state harvest limits. Until recently, no federal actions had addressed the stocks of RH/S in federal waters, despite data that indicate RH/S are caught in several East Coast fisheries.

Consistent with the information on RH/S, the MAFMC took up the matter of what, if anything, NMFS could and should do to address the serious problem. The Council created an ad hoc committee, chaired by Chris Zeman, on River Herring to explore the problems associated with RH/S and consider the need for Council action (and subsequent NMFS action). The committee recommended via a report that Council action was appropriate and timely.

At the June 2012 Council meeting, the MAFMC took two steps regarding RH/S. The first action was to proceed with Amendment 14 (AM 14) that includes a cap on bycatch/incidental catch of RH/S. The second vote was to direct Council staff to develop an amendment (number 15) to the Squid/Mackerel/Butterfish Fishery Management Plan (SMB FMP) that would include RH/S as managed stocks in the fishery. During the discussion leading up to the June 2012 Council meeting and decision, both Council members and NMFS staff raised questions about practical aspects of including RH/S as managed stocks. Subsequent discussion and official input from NMFS repeated issues concerning how the MAFMC would implement such a decision. NMFS recommended justification that addressed specific provisions of Magnuson Stevens Act.

Council staff prepared a white paper to address the items raised by NMFS in their June 2013 letter to the MAFMC and the white paper on RH/S is part of the material before the Council for the October 2013 meeting. The Council staff memo addresses the items raised by NMFS, upon which the Council decision will presumably be based,

but does not include all of the issues raised over the past year or more of Council discussion and debate.

Background

River herring (RH), a term that applies to both the alewife and the blueback herring species, are anadromous fish species, along with American and Hickory shad. Anadromous fish spend the majority of their lives in the ocean, but return to the freshwater rivers where they were born to reproduce, or to spawn. New research by Palkovacs et al. (2013) indicates that both RH species may not be strictly faithful to natal rivers, but rather to "regions" that include adjacent rivers. RH/S have faced many challenges historically, including heavy fishing both commercially and recreationally, dams that prevent spawning, pollution, habitat loss, and depletion as incidental catch of the Mackerel and Atlantic Herring Fisheries. Since 1965, commercial RH landings have fallen drastically, from nearly 70 million pounds to under 2 million in 2007 (*ASMFC River Herring Stock Assessment Overview*, May 2012). The ASMFC completed a stock assessment for American shad in 2007 that showed that stocks have significantly declined from historic levels (1-2 million pounds, nearly two orders of magnitude lower than in the late 19th century) and were at an all-time low, and did not appear to be recovering (*ASMFC Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring (American Shad Management)* 2010).

There is a difference between bycatch and incidental catch, the former discarded and the latter are fish that are harvested in a fishery and kept, not discarded. Incidental catch can be confused with bycatch; the principal difference being that bycatch is discarded. Incidental catch of non-target organisms, or fish that are not the subject of a directed fishery, typically occurs because they school together with the targeted catch. The incidental catch of RH/S species has increasingly become a problem over the past few decades, contributing to 23 of the 52 assessed stocks earning the label of depleted. While one stock is rebounding, there are not enough data on the remaining 28 in the Atlantic to determine their status (*ASMFC River Herring Stock Assessment Overview*, May 2012). The increased data collection and analysis that will result from Amendment 15 would help fill this data gap, providing a background for more effective, substantiated management.

Currently, RH/S stocks are managed only in state waters by the states, most of which have management plans in place that have been approved by the ASMFC. Amendment 2 to the Atlantic Mackerel, Squid and Butterfish (MSB) FMP addressed river herring and Amendment 3 addressed shad. These actions required states to create sustainable management plans that address fishing mortality, monitoring, and may include habitat conservation (*ASMFC River Herring Stock Assessment Overview*, May 2012). Beginning January 1, 2013, RH/S landings would not be allowed in states without management plans. Currently, ASMFC has approved sustainable plans for Maine, New Hampshire, limited parts of New York, North Carolina and South Carolina that include restrictions on gear and river closures. Rhode Island's is currently under review, while New Jersey and Massachusetts allow incidental catches, and Virginia has a full ban on possession. Only Maine's management plan allows for the continued

directed harvest of RH/S (MAFMC *Scoping Document for Amendment 15*, Oct. 2012). While the states' plans are a foundation for RH/S management, there is no existing meaningful management in federal waters, which is needed to cohesively and effectively manage these species.

Pacific Precedents

In identifying the best tactics to manage overfished non target species, we can look to precedents set by other fishery councils. The Pacific Fishery Management Council's (PFMC) and the North Pacific Fishery Management Council's (NPFMC) plans have been forerunners in fishery management due to intensive commercial fishing activity and subsequent need for regulations and oversight, often going beyond the MSA's requirements for sustainable fisheries. Management approaches that have been tried and tested in the Pacific fisheries include non target species as managed stocks and range from seasonal area closures and protected habitat, to catch limits and gear restrictions. The two councils' actions have been a model for the nation as they have implemented conservative hard Total Allowable Catch Limits (TAC) management in many fisheries dating back over thirty years (DiCosimo 2010).

The NPFMC recognizes the importance of non-target stocks, fish that are often caught in directed fisheries as incidental catch or bycatch. Non-target stocks may have a low economic value, but have ecological importance and could be a directed commercial fishery in the future (Reuter 2010). The NPFMC's Bering Sea and Aleutian Islands (BSAI) FMP (2013) for groundfish includes multiple amendments to manage non-target stocks of this directed fishery: Pacific halibut and herring, octopus, squid, and shark. Non-target stocks have been managed by the council using ACLs since the early 1990s (Reuter 2010). These species require management since they are important to other fisheries as directed catch or as prey for directed catch. The groundfish FMP recognizes that non-target stocks can be important in a variety of ways by creating different categories for managing the stocks. The first are target species, which support species in another target fishery, and have commercial importance and adequate data to allow individual management. Otherwise, the stock is categorized as an Ecosystem component, and then either as Prohibited, meaning it must be returned immediately to the sea, or as a forage fish species, meaning it is critical prey for other marine species and cannot become a directed fishery. This ecosystem-based approach has helped control non-target stock bycatch through catch limits, area closures, gear modifications and "proactive real-time fishery closures" (Heltzel 2011). Similarly, RH/S stocks are important forage for predator fish, many of which are economically significant fisheries in the Atlantic.

For the salmon and halibut stock specifically, the groundfish FMP mentioned above set a prohibited species catch limit based on the Acceptable Biological Catch (ABC). When this limit is met, bycatch zones or specified management areas are closed for the remainder of the year or season. When unavoidable bycatch does occur, the salmon or halibut landings can be donated to economically disadvantaged individuals through the Prohibited Species Donation Program, providing a public service and presumably reducing any economic incentive not to 'fish clean'.

In managing data-poor species, as are the RH/S, the NPFMC's groundfish FMPs for the Gulf of Alaska (GOA) (2013) and BSAI (2013) has grouped such species into one complex to facilitate management. The "Other Species Complex" includes skate, shark, squid, octopus and sculpin, some of which have very little available data on abundance (Reuter 2010). Adding to the difficulty, these species, unlike RH/S, have little in common biologically. However, by using data available from a few species to create ACLs for all concerned is an effective, short-term solution while monitoring continues to accumulate numbers on the species. Once the need for stronger management is substantiated, a species can be moved from the "other species" category to the target species, as the NPFMC did for skates with its 2010 Amendments 95 and 96 to the BSAI groundfish FMP, and in Amendment 87 to the GOA FMP (NOAA Fisheries 2013). This particular arrangement of species groupings has challenging features based on the way in which NPFMC deals with categories. The MAFMC could easily improve the approach here with a simplified and streamlined category.

The NPFMC's Salmon FMP (2012) does include closures for specific areas during certain times of the year for which bycatch in that area have been determined to be the highest. The NPFMC has been using seasonal closures to manage stocks dating back to 1989 with Amendment 13 to the BSAI groundfish FMP. The salmon fishery also requires gear that allows for the release of bycatch with limited mortality. This multi-faceted approach for bycatch of the economically vital Salmon fishery shows the importance of long-term thinking in managing fisheries sustainably.

The PFM's Coastal Pelagic Species FMP (2011) also addresses incidental catch, and has been amended to set Incidental Catch Allowances for overfished stocks at 0 to 20% of the assessed stock, as recommended by the council. To insure that incidental catch species are not overfished but also that directed fisheries are not economically damaged, total incidental catch estimates are considered along with harvest guidelines for the targeted species. The plan does not implement further restrictions on incidental catch, but does recognize that future seasonal or area restrictions may be needed in the future to effectively manage bycatch or incidental catch.

Collaboration amongst agencies and councils in the Pacific fisheries has been instrumental to sustainably managing target and non-target stocks, as it similarly has been amongst the states, councils, and agencies of the Atlantic fisheries. For example, The Alaska Department of Fish and Game collaborates on FMP limits by issuing fish tickets to help manage the economically important Salmon fisheries in the Exclusive Economic Zone (EEZ). The tickets are issued to document commercial fishing activity, and must be submitted within a week of the harvest. In doing so, the current status of landings can be tracked and fisheries or management areas can be closed when the ACL is met. As a long-time aid in the tracking of commercial fishery landings, the 1989 Amendment 13 to NPFMC's BSAI groundfish FMP established the "Observer Plan" (NOAA Fisheries 2013).

The PFMC and NPFMC have both faced the predicament of managing multiple non-target stocks that occur throughout multiple management areas and for which little abundance data exist. Using a precautionary approach, the councils are effectively managing these species to insure that directed fisheries are ecologically and therefore economically sustained. By using available data, existing guidelines and regulations, the councils minimize fish mortality, both retained and discards by setting science based catch limits, up to and including complete prohibition, to protect stocks in need of conservation and management, similar to approaches already undertaken by the Atlantic states.

Benefits

Several categories of benefits result from restored stocks of RH/S, some of which are described below. These benefits will be distributed along the entire US East Coast because the RH/S are coast-wide species and are depleted throughout their range.

Commercial/Recreational

Primarily, the commercial and recreational RH/S catch has been as a bait species. However, RH are also a commercially important species and are even used in pet foods and fertilizers (Neddeau 2003). Also, counter to popular thought, establishing a healthy population of RH/S will not interfere with the population numbers of freshwater fish. Adult RH do not compete with freshwater fish for food as they essentially stop feeding during the migration and spawning period in those bodies of freshwater. They will only resume feeding on their trek back through brackish waters toward the sea (Neddeau 2003). A side benefit to their planktonic feeding habits may benefit the eutrophic estuaries the RH move through on their way back to the open ocean. Even at sea, fish comprise a very small proportion of their diet (Neddeau 2003).

Secondarily, a healthy RH/S population supports healthy populations of other commercially and recreationally caught target fish species. RH has been found to play an important role as forage fish for other species along the Atlantic coast. The herring runs in the spring provide much needed food for those animals preying on herring or scavengers after the winter. Those RH that survive the spawning run create a second wave of protein moving downstream when the young-of-the year migrate to sea (Kenney 2007). Young-of-the-year live in freshwater for three to seven months and grow to two to five inches before making their way to the ocean (Neddeau 2003). Studying the diets of predators has confirmed that RH are a primary food source for many fish, birds, and mammals (Kenney 2007).

Especially affected is the diet of striped bass, a recently restored fishery, as well as northern pike, pickerel and lake trout. Striped bass will follow migrating RH for many miles up estuaries and rivers, providing a recreational fishery in May and June (Neddeau 2003). A study of the striped bass diet along the northeast coast from Maine to New Jersey indicates their diet consists of 33% RH during the spring migration (Walter et al. 2003). In the Chesapeake Bay, the striped bass diet can consist of nearly 80% RH (Walter and Austin 2003). The diet of North Carolina striped bass can consist of up to 33% RH during the winter and 50% during the spring migration (Walter et al. 2003).

Additionally, bluefish found in the Hudson River estuary have been found to have a diet of up to 40% RH during the summer months (Buckel et al. 1999). The white perch's diet in Maine in late summer and early fall consists entirely of young-of-the-year RH (Moring and Mink 2002). Young-of-the-year RH are eaten by many important game fish such as perch, bass, salmon, and trout. In studying RH in coastal Massachusetts lakes, it was found that they are the most important prey for largemouth bass and provide a high growth potential for "trophy" largemouth bass. The RH also provide a large forage base for the valuable game fish Atlantic cod whose population decline along the Gulf of Maine has been linked to the loss of the nutritious and predictable food source that the RH provide (Hall et al. 2011). Restoration of pelagic and groundfish stocks in the Gulf of Maine would also likely benefit from restoration of RH populations (Nedea 2003).

However, taking these predatory effects on RH into account is no small part of the RH restoration efforts. There have been many river restoration programs that have targeted increasing the RH populations, including the Connecticut River. Increasing the RH runs from 200 fish in the early 1970s to 630,000 by 1985 was an impressive collaboration between state and federal agencies that created better habitat and opened up waterways for the RH. However, despite these efforts, the same river once again has low levels (Gephard and McMenemy 2004).

Ecosystem benefits

Many other organisms rely on RH, including ospreys, loons, herons, bald eagles, egrets, kingfishers, harbor seals, and river otters (Kenney 2007). Based on a study of osprey by the Connecticut Department of Environmental Protection, ospreys consistently rely on RH runs to feed their chicks (CT DEP 2007). Another benefit to a large run of anadromous RH is that they are less contaminated than the resident freshwater fish that frequently carry a higher body burden of toxic chemicals such as PCBs and dioxins. The oceanic herring (and shad) provide a food source with lower contaminant levels for growing chicks during their most vulnerable developmental stages (Nedea 2003). Also, harbor seals in Saint John Harbor, New Brunswick, are five times more abundant during the peak of the alewife run as compared to their yearly average (Brown and Terhune 2003).

Additionally, spawning RH provide nutrients to freshwater ecosystems by way of their eggs, sperm, and decaying bodies. Because the RH continue to come back to their same spawning grounds up to eight times in a lifetime, and a female can produce 60,000 to 467,000 eggs annually, the smallest of aquatic organisms benefit from these byproducts. Zooplankton, bryozoans, clams, and insect larvae feed on these important proteins, and may come back to these same areas because of the RH. Even the decaying bodies of RH are food for scavengers such as crayfish, turtles, eels, raccoons, gulls, and bald eagles (Nedea 2003).

RH also play an important and unique role in the survival of freshwater mussels, specifically the "alewife floater". The larvae of this mussel must attach to a host fish to

survive and have been found to only attach to RH/S. These freshwater mussels are important to filtering freshwater bodies along coastal rivers and lakes, and are able to remove harmful amounts of algae, bacteria, and sediments that can impede the health of these water bodies and the fish and animals that live there (Neddeau 2003).

Efficacy of federal management to protect and restore the RH/S stocks

Multiple factors may affect the stocks in the coastal and inshore waters, including fishing pressure of several categories, habitat degradation, and other factors. Past fishery management experience (given below) and abundant literature on the topic of cumulative risk demonstrates that federal management action is both appropriate and timely, even in the absence of perfect knowledge of how these multiple factors are structured. The Council can act to mitigate those factors under their control. This situation is known as cumulative risk in which the aggregate influence of multiple stresses combine to cause harmful impacts on a species, population or community. The staff memo suggests that because it is not known how multiple factors are combined, that action on part of the suite of factors – the fishing pressures- may not be timely. Actually, the converse is true and there are examples of how such cumulative risk situations are managed by taking action, not by inaction.

The MAFMC White Paper on the topic in the October 2013 Briefing book, at Tab 2 states: "The "depleted" determination was used instead of "overfished" because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but likely also habitat issues (including dam passage and water quality), predation, and climate change." But the fact that multiple factors may be involved in the current population declines does not prevent action on the part of the MAFMC.

In cases of cumulative risk or impacts, the answer is to address the identified and identifiable factors. In this case, controlling all the factors that Council staff raise – and others. This topic is addressed in EPA documents (EPA Cumulative Risk Framework and deFur and Menzie 2012).

Two examples of restoration in the face of uncertainty and multiple causes:

The Council action to designate RH/S as management unit stocks in a federal FMP status species would not be the first effort to restore an anadromous East Coast species despite uncertainty and controversy over the causes of severe population declines. In the mid 1970s, the ASMFC took the bold step of instituting a moratorium on striped bass fishing in the Chesapeake Bay region because the population was so depleted. The arguments against this management action included the one that the exact cause(s) of the decline were uncertain and might include: fishing mortality, predation on young, habitat degradation, poor water quality, and other factors. Despite the uncertainties, and the concerns over short term impacts to the commercial and recreational fisheries, the ASMFC acted to control fishing mortality in order to accomplish long-term management goals of restoration. The same factors and

arguments are applied here in the Council white paper. The ASMFC acted, instituted a moratorium, and the stocks recovered (deFur and Kaszuba 2002).

Oyster harvests in the 19th and early 20th century reached over a million bushel annually, and concerns of overharvesting fell on deaf ears. But by the mid-twentieth century when two parasitic infections plagued the Bay, it was clear that the industry was in trouble. Efforts to control everything from water quality to habitat to harvest and even the disease seemed doomed to failure as the harvests continued into a downward spiral. Sometime in the 1990's Virginia modified regulations covering oyster growing practices to increase off-bottom culture, and embarked on a habitat restoration effort with the Army Corps of Engineers. In the face of multiple threats from fishing mortality, disease mortality, habitat degradation, poor water quality, Virginia pursued restoration. In 2012, Virginia recorded an annual harvest more than 10x the harvest of a decade before (Minutes of the July 2013 VMRC posted at: http://www.mrc.virginia.gov/Commission_Summaries/cs0713.shtm item #11).

Council obligations and Council actions needed for success

First, as demonstrated in reports by the ASMFC and MAFMC, USFWS and independent analyses, the RH/S stocks of the East Coast are seriously depleted and at all-time low levels from population measurements over the past few decades (see ASMFC stock assessment 2012 and MAFMC AM 15 Scoping Document Oct 2012).

Second, the RH/S species do occur in federal waters and are caught in fisheries managed by NMFS and the MAFMC.

Third, MSA clearly indicates that NMFS has both the authority and duty to act, indicating “within each Council’s geographical area of authority” NMFS shall “identify those fisheries that are overfished or are approaching a condition of being overfished.”[16 USC 1854 (e)1]. And in cases for which a species is overfished or approaching an overfished condition, NMFS must develop a fishery management plan, plan amendment, or proposed regulations [16 USC 1854 (e)3]. Notwithstanding the overfishing status determination, councils clearly have the obligation to conserve and manage fish species populations that are important for fisheries and ecosystems (as indicated in MSA 302(h)(1). One example of such action is that taken under Amendment 16 to protect deep sea coral.

Fourth, once a fish stock is included as a managed stock in the fishery, then the council must develop management measures as required under Section 303 of the MSA. As specified in the MSA, these “measures in the plan to conserve target and non-target species and habitats, considering the variety of ecological factors affecting fishery populations.”

The question becomes how can and shall the Mid Atlantic Council conserve and manage the RH/S stocks.

The Council now takes up AM 15 that directly addresses the matter of including RH/S as federally managed stocks under Magnuson-Stevens. The Council considers that RH/S occur in federal waters as well as state waters, RH/S are caught in federal fisheries as incidental catch (and by-catch) and substantial benefits potentially accrue from replenishment/restoration of the RH/S stocks. A Council generated Draft Environmental Impact Statement (DEIS) will examine the biological, management, and economic issues in great detail. The DEIS will also afford Council members and the public the opportunity to consider a range of options that might be applied to the problem of severely depleted RH/S stocks. The options in a DEIS will range from the no action alternative, to managing the species as a unit under an FMP as required by the MSA.

The Council admittedly faces the challenge of uncertainty in any action or inaction to restore RH/S stocks. The most certain course of action is that the stocks will continue the declines of recent decades under the management scheme that has led to the present situation. Basically, unless something is done fairly soon, the RH/S stocks will remain at a small fraction of historical levels. Fortunately, the ASMFC has taken management action for state waters, inside the three mile federal limit and the Atlantic states are complying with Commission requirements. The success of Commission actions alone, without supporting federal action, in restoring RH/S is uncertain.

The MAFMC has weighed in on the management of RH/S after several years of considering action and has taken final action on Amendment 14 (AM14) to the Mackerel-Squid-Butterfish Fishery Management Plan, and on an annual specifications package for the fishery that includes an interim cap on river herring and shad. AM 14 seeks to increase observer coverage, make other monitoring improvements, and provide the RMP with the authority to adopt a cap on the incidental catch of RH/S in the fisheries for MSB. But AM 14 is not in place now, the action is in the rule-making phase, and out for public comments (due Oct 11 2013). And the catch cap action, in addition to being entirely dependent on NMFS approval of the authority under AM 14, awaits the start of NMFS rulemaking. The fate and success of the catch cap and increased observer coverage are both uncertain; rule-making is not finalized, the rule is opposed by commercial fishing entities, and the implementation remains in the future.

Thus, current management efforts and plans remain uncertain as to the likelihood of success. This uncertainty is set against the uncertainty of other management options, specifically that of using MSA to place RH/S under federal management by including these species as managed stocks in the Mackerel-Squid-Butterfish FMP. The uncertainty in the case of directly managing MSB fisheries as a component of RH/S restoration rests in the categories of management uncertainty and in whether reducing fishing mortality will result in increasing RH/S stocks.

Uncertainty exists in the efficacy of the set of actions found in both Amendments 14 and 15. This uncertainty is inherent in any set of measures to increase RH/S because the factors contributing to their decline are numerous and varied, and some are wholly unstudied or possibly unknown at present (i.e. global warming). In this case,

with such a steep and obvious decline threatening their existence as a potentially fishable species in the future, as well as their importance to the trophic structure of other organisms now, complementary measures that target both state and federal jurisdictions are prudent. RH/S rely on, and are relied upon, in both jurisdictional areas throughout their life cycle; a concerted effort is necessary across these state and federal actions to stem the uncertainty that any measures will, in fact, increase RH/S. A wait-and-see attitude on Amendment 15 may further degrade the chance to increase RH/S before other factors decrease these species' ability to buffer themselves from complete collapse. With both state and federal actions in place, further data gathering and stock assessments can best clearly delineate which best management practices to continue and which are less effective. It is possible that these measures and amendments can be reversed and modified, but a complete reversal of the commercial and recreational extinction of these fish species is not.

The Council faces competing uncertainties: taking little action with uncertain prospects of greater positive impact VS taking more direct action with uncertainty of how effective the positive impacts will be.

Resource requirements in time and budget

Council staff worked with appropriate federal and partners in an FMAT to develop materials in preparation for AM 15, including a scoping document and subsequent decision documents. The stock assessments have been completed by the Commission, with input and data from the states, NMFS and USFWS. Thus, a data collection effort does not need to start at the beginning, but rather build on existing information.

The basic work to develop AM 15 has been completed and the final steps of drafting the DEIS, accompanying documents, and the FEIS remain. Staff time (but not necessarily additional financial resources) will be needed to complete the AM 15 process.

Once in place, MAFMC will need to assign staff as coordinator for RH/S, as noted above. Ideally, NEFMC and SAFMC may be sharing this responsibility, spreading out the duties and the budget impact in terms of staff time.

FMP status would add RH/S coordinators at the level of NMFS Northeast Regional Office (NERO) and the Councils (NEFMC and MAFMC). None of these has RH/S coordinators at present, leaving the analysis work as an ad hoc effort and taking a secondary status to FMP managed species for which the Councils and NERO have statutory obligations and requirements. The cost to Councils and NERO is staff time in each case.

There are several areas in which Council efforts involve either members or staff or both in activities not directly part of an FMP but that complement FMP actions and benefit the goals in the FMP. One area where coordination among various entities is

exemplified is in the Ecosystems and Ocean Planning Committee, including EBFM and regional planning efforts.

Coordination with state programs to restore RH/S

The MAFMC has a long and successful record of coordinating with other management partners to achieve notable successes in restoring the species under Council jurisdiction. The coordination efforts with ASMFC at the state level and NEFMC at the federal level include the fisheries for surfclams; scallops; seabass, flounder and scup; bluefish and others. The most recent success in this regard is AM 16 for MSB in which under Mid Atlantic lead, the three east coast councils signed an agreement and will be implementing management programs, to secure the protection of deep sea corals at the shelf edge and in deep sea canyons.

MAFMC has the opportunity in the case of AM 15 to initiate a coast-wide, multi-agency management effort in the form of a cooperative effort with ASMFC, NEFMC and SAFMC to address coast-wide issues in the range of RH/S. All Atlantic coast states face this problem, as recognized by ASMFC and the solution needs to be coast-wide in near-shore as well as federal waters.

Summary

This report provides information and analysis concerning Amendment 15 (AM 15) to the Mackerel-Squid-Butterfish Fishery Management Plan, an amendment to provide federal management of river herrings and shads (RH/S) under MSA. This amendment considers including the four fish species (RH/S) as a group as managed stocks in the MSB Fishery Management Plan. RH/S stocks are severely depleted throughout their east coast range and ASMFC actions address fishing mortality in state waters but not federal waters/federal fisheries where fishing mortality continues. The MSA section 302(h)(1) directs the council to take action for each fishery under its authority that requires conservation and management. The action by MAFMC in amendment 14 may limit incidental and by-catch of RH/S, but that action is not completed, may not occur and remains uncertain in effectiveness.

The economic and ecosystem benefits of restored RH/S stocks include millions of dollars from fishery-related outcomes such as harvest and recreational activities. Ecological benefits are likely to include enhancing stocks of prey species and game fish, as well as numerous water-dependent species throughout the range of RH/S.

Management actions by the Pacific and North Pacific councils for more than a decade have included non-target stocks in their fisheries as FMP amendments for the purpose of restoring stocks. Indeed, the west coast councils have been successful in improving stocks of the managed non-target species.

On the east coast, uncertainty over precise causes for stock declines has not hampered management actions, with highly successful restoration efforts.

The MAFMC can work cooperatively with NEFMS, SAFMC, ASMFC and NMFS and the fishing communities in this management effort, as the Council has so successfully cooperated with their partners for many years on a range of actions.

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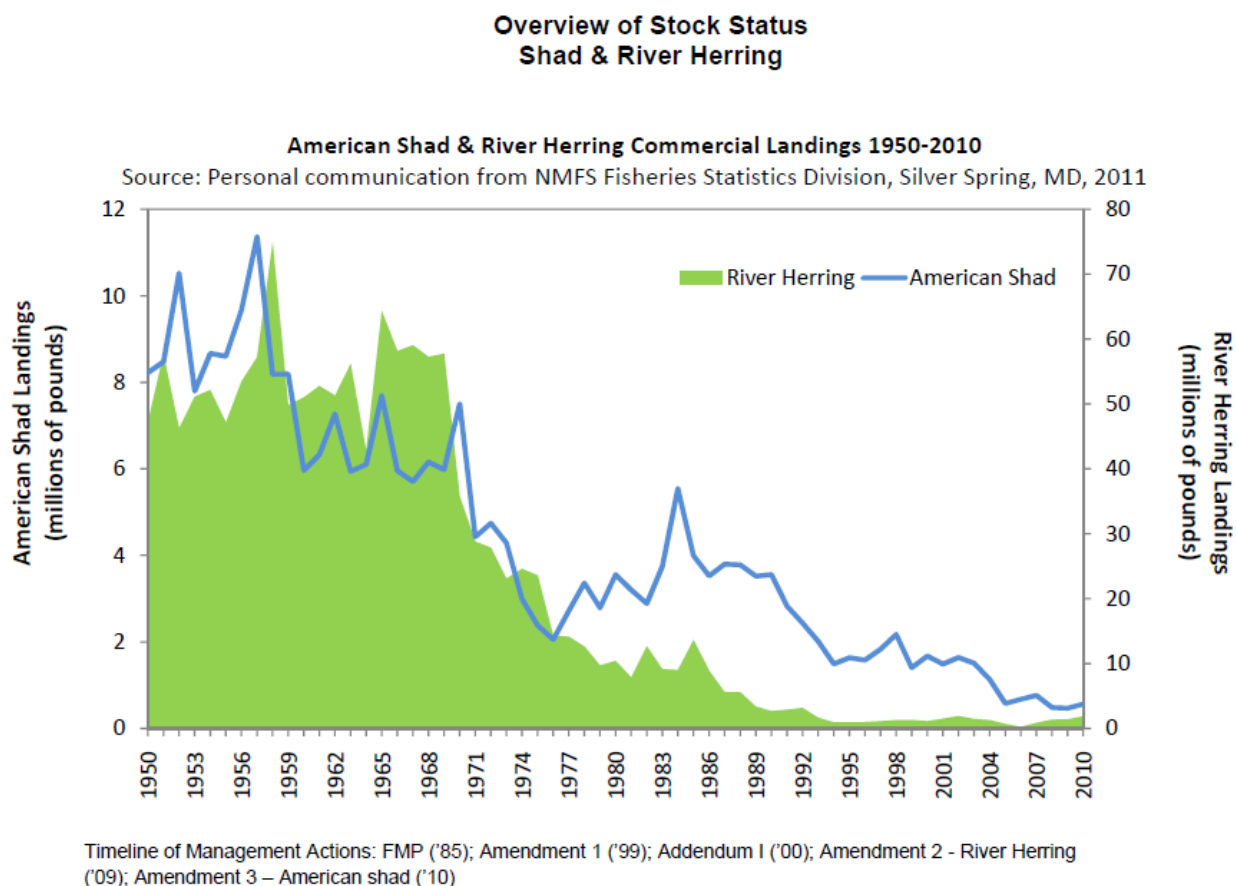


Figure 1. American shad and river herring commercial landings, 1950-2010