Draft document for Board review, this document is not for public comment.

Atlantic States Marine Fisheries Commission

DRAFT PUBLIC INFORMATION DOCUMENT FOR AMENDMENT 3 TO THE ATLANTIC HERRING FISHERY MANAGEMENT PLAN

This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. However, comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. Also, if approved, a public comment period will be established to solicit input on the issues contained in the document.

ASMFC Vision Statement:
Sustainably Managing Atlantic Coastal Fisheries

May 2014

The Atlantic States Marine Fisheries Commission seeks your comment on the management of Atlantic Herring

The public is encouraged to submit comments regarding this document during the public comment period. Comments will be accepted until **5:00 PM (EST) on XX, XX 2014**. Regardless of when they were sent, comments received after that time will not be included in the official record. The Atlantic Herring Section will consider public comment on this document when developing the first draft of Amendment 3 to the Atlantic Herring Fishery Management Plan.

You may submit public comment in one or more of the following ways:

1. Attend public hearings held in your state or jurisdiction.
2. Refer comments to your state's members on the South Atlantic State-Federal Fisheries Management Board or South Atlantic Species Advisory Panel, if applicable.
3. Mail, fax, or email written comments to the following address:

Melissa Yuen
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201
Fax: (703) 842-0741
myuen@asmfc.org (subject line: Atlantic Herring)

If you have any questions please call Melissa Yuen at (703) 842-0740.

Timeline for Completion of Proposed Amendment 3 to the Atlantic Herring FMP

February 2014	Section tasks the Plan Development Team to develop Public Information Document	← Current step
May 2014	Section receives the PID and considers approval for public comment	
May-July 2014	Public Comment on the PID	
August 2014	Management Board reviews PID public comment and considers initiation of Draft Amendment	
October 2014	Management Board reviews Draft Amendment for public comment	
November 2014-January 2015	Public comment on Draft Amendment	
February 2015	Management Board reviews and approves Amendment	

Atlantic States Marine Fisheries Commission
Atlantic Herring
Draft Public Information Document for Amendment 3

Table of Contents

Atlantic States Marine Fisheries Commission
Atlantic Herring
Public Information Document for Draft Amendment 3

Introduction

The Atlantic States Marine Fisheries Commission (Commission) is developing a draft amendment to the Interstate Fishery Management Plan (FMP) for Atlantic Herring, under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). Management authority for this species from zero to three nautical miles offshore, including internal state waters, lies with the Commission, and is promulgated through the Coastal States. Management authority in the Exclusive Economic Zone from 3-200 miles offshore lies with the Secretary of Commerce through a federal FMP coordinated by the New England Fishery Management Council (NEFMC).

Management Issues

In February 2014, the Commission's Atlantic Herring Section initiated an amendment to provide further protections to Atlantic herring, particularly during spawning events. The Section raised concerns about the efficacy of spawning area regulations in the inshore waters of Gulf of Maine (GOM), known as Management Area 1A (Figure 1). Specifically, the Section is concerned the default closing dates for and possible locations of the three spawning areas are not appropriate to the actual spawning events. Furthermore, the Section wished to address industry needs by reconsidering the rollover provision for the fixed gear set-aside. To better inform management of fishing effort, the draft amendment would propose an option requiring vessel owners to declare the intended gear before departing on a fishing trip. The amendment will also propose a requirement for fish holds must be empty prior to leaving the docks for a fishing trip; this measure is intended to prevent dumping of unsold Atlantic herring at sea.

Purpose of the Public Information Document

The purpose of this document is to inform the public of the Commission's intent to gather information concerning the Atlantic herring fisheries and to provide an opportunity for the public to identify major issues and alternatives relative to the management of this species. Input received at the start of the amendment development process can have a major influence in the final outcome of the amendment. This document is intended to draw out observations and suggestions from fishermen, the public, and other interested parties, as well as any supporting documentation and additional data sources.

To facilitate public input, this document provides a broad overview of the four issues identified for consideration in the amendment, as well as background information on the Atlantic herring population, fishery, and management. The underlying questions for public comment are: **"How would you like the Atlantic herring fishery and population to look in the future? How can Atlantic herring be protected during its reproductive seasons?"** The Commission is looking

for both general comments on the Atlantic herring management in state waters and/or any comments specific to the issues listed in this document.

ASMFC's Amendment Process and Timeline

The publication of this document and announcement of the Commission's intent to develop Amendment 3 to the Atlantic Herring FMP is the first step of the amendment development process. Following the initial phase of information gathering and public comment, the Commission will evaluate potential management alternatives and the impacts of those alternatives. The Commission will then develop a draft amendment, incorporating the identified management alternatives, for public review. Following the review and public comment, the Commission will specify the management measures to be included in the amendment, as well as a timeline for implementation.

This is the public's opportunity to inform the Commission about changes observed in the fishery, things the public feels should or should not be done in terms of management, regulation, enforcement, research, development, enhancement, and any other concerns the public has about the resource or the fishery. In addition, this is the public's chance to present reasons for the changes and concerns for the fishery.

A tentative schedule for the completion of Amendment 3 is included at the beginning of this document. Please note these dates are subject to change.

Background on Interstate Atlantic Herring Management

In 1983, an Interstate Atlantic Herring Management Plan (FMP) was adopted by the states of Maine, Massachusetts, New Hampshire, and Rhode Island and implemented a series of spawning closures. In 1993 the Atlantic States Marine Fisheries Commission (Commission) adopted the FMP to address the growth of the herring resource and interest in Internal Waters Processing (IWP) operations.

The U.S. Atlantic herring fishery is currently managed as a single stock with four management areas through complementary FMPs by the Commission and New England Fishery Management Council (NEFMC). Both FMPs provide a process for determining annual specifications for the fishery. The management program relies on an overall total allowable catch (TAC) for state and federal waters with effort control measures to avoid overfishing the resource. The TACs were developed for specific management areas to reflect the current state of knowledge concerning migratory behavior and mixing rates of the various sub-components of Atlantic herring. The Commission's Atlantic Herring FMP has been revised with two amendments and subsequent addenda. Management changes since Amendment 2 follows:

Amendment 2's (March 2006) essential management components are consistent with NOAA Fisheries' Amendment 1 (final rule published in March 2007). These provisions include identical management area boundaries, joint TAC specifications setting process between NEFMC and ASMFC, and closure of an area when 95% of TAC is harvested and reduction of the possession limit to a 5% bycatch allowance.

Section 5.1.1.1 of Amendment 2 to the Interstate Fishery Management Plan for Atlantic Sea Herring lists the following state regulatory requirements:

1. Each jurisdiction must enact spawning area restrictions that are at least as restrictive or more than those in (Section 4.3);
2. Each jurisdiction shall prohibit the landing of herring from a management area or sub-area when the TAC has been attained in that area or sub-area (Section 4.3);
3. Each jurisdiction shall prohibit directed fishing for herring in state waters when the TAC has been attained in that area or sub-area (Section 4.3);
4. Each jurisdiction shall prohibit the landing of herring to an Internal Waters Processing (IWP) operation that were harvested from an area or sub-area closed to directed herring fishing (Section 4.3);
5. Each jurisdiction shall require that (daily) herring landings from fixed gear fisheries be reported on a weekly basis in order to monitor progress toward attaining the TAC (Section 4.3); and
6. Each jurisdiction shall annually provide a report on any mealing activity of herring occurring in their state, specifically, the amount in weight of herring processed into meal or like product, biological sampling results and location of catch by NMFS statistical area or Management Area.

Technical Addendum I to Amendment 2 (August 2006) was developed to clarify interpretation of the Zero Tolerance provision that prohibits any vessel from fishing for, taking, landing, or possessing "spawn" herring within a restricted spawning area except for incidental bycatch and transiting provisions.

Addendum I to Amendment 2 (February 2009) was intended to address effort in Area 1A. It includes a number of tools for the Section to use in order to maintain a steady supply of herring throughout the fishing season. States adjacent to Area 1A must set quotas, but can use bi-monthly, trimester, or seasonal quotas and can distribute quota from January – May to later on in the fishing season when the demand and price is greater—as best meets the need of the fishery. This addendum also includes measures to close the fishery when 95% of the quota allocation is harvested and the ability to roll quota into later periods in the event of an under harvest. States are also required to implement weekly reporting in order to manage quotas in a timely manner.

Addendum II (December 2010) was developed to mirror Amendment 4 of the federal Atlantic Herring FMP. It revises the specifications process and definitions to be consistent with the federal management scheme, in which specifications can be set for up to three years based on best available science. Addendum II also establishes a threshold of 95% of an area's TAC for fishery closure and overage paybacks as accountability measures.

Addenda III and IV: Measures proposed in both addenda were not approved.

Addendum V (October 2012) clarifies and eliminates inconsistent spawning regulations among various interstate Atlantic herring FMP documents. It establishes provisions for determining spawning events and the implementation of area closures, and increases the sampling size from two sample of 50 fish to two samples of 100 fish or more. Addendum V also includes new boundaries for the four management areas and identifies the locations of spawning areas subject to closures (Figure 1).

Addendum VI (August 2013) was developed to complement the NEFMC's Framework Adjustment 2 (final rule published in October 2013). It established new provisions and consistent management measures for the four Atlantic herring management areas. States were allowed to seasonally split sub-ACLs for each management area to benefit the fishery. If a management area's sub-quota was under-utilized in a fishing year, up to 10% of an area's sub-ACL can be carried over to the following fishing year after data is available, provided the stockwide ACL has not been caught. Addendum VI also set new triggers: a directed fishery will close when 92% of an area's sub-ACL is projected to be reached, and the stockwide fishery will close when 95% of the total ACL is projected to be reached. There is a 2,000-lb trip limit to allow for incidental bycatch of sea herring for the remainder of the fishing year. The Addendum allows for these the directed fishery closure triggers to be set through the specification process.

Description of the Atlantic Herring Resource

Status of the Stocks

The 2012 federal benchmark stock assessment (SAW/SARC 54), which considers data through 2011, determined that **Atlantic herring in Georges Bank and Gulf of Maine is not overfished, but has rebuilt, and is not experiencing overfishing**.

Stock Definition

Although there is evidence to suggest there are at least two separate biological stocks, the resource has been divided into an inshore Gulf of Maine (GOM) and an offshore Georges Bank (GB) component. Individual spawning aggregations have been identified, but quantitative data on their relative size is lacking. Intermixing among these aggregations outside of the spawning season has led to difficulties in accurately assessing the status of individual stocks.

The U.S. Atlantic herring coastal stock complex includes two distinct spawning stocks that occupy discrete areas in the Gulf of Maine and on Georges Bank/Nantucket Shoals in the summer and fall. Fish belonging to these two components, and to smaller spawning populations within each component, migrate to continental shelf waters south of Cape Cod after spawning, then move northward in the spring to summer feeding grounds north and east of the Cape before eventually returning to their natal spawning grounds. Tagging studies suggest fish from the New Brunswick, Canada weir fishery may be part of the GOM/GB complex, based on evidence of mixing. Maximum sustainable yield (MSY) reference points were estimated to be FMSY = 0.27, SSBMSY = 157,000 mt (½ SSBMSY = 78,500), and MSY = 53,000 mt. Based on a comparison of the MSY reference points with the estimates of F and SSB for 2011, overfishing is not occurring and the stock is not overfished.

Spawning Stock and Total Biomass

Based on the ASAP model used in the 2012 stock assessment, the Atlantic herring spawning stock biomass (SSB) was estimated to be 517,930 mt (1.1 billion lbs) in 2011 (Figure 2). Over the time series from 1965 - 2011, SSB ranged from a low of 53,349 mt (117.6 million lbs) in 1978 to a high of 839,710 mt (1.9 billion lbs) in 1997. SSB generally declined during 1997-2010, but increased in 2011 to an estimated 1,322,446 mt (2.9 billion lbs). Total biomass ranged from a minimum of 180,527 mt (406.7 million lbs) in 1982 to a maximum of 1,936,769 mt (4.3 billion lbs) in 2009. Total biomass and SSB showed similar trends over time, but with 1-2 year lag because the total biomass includes immature recruits, while SSB characterizes mature fish only. There was a strong cohort in 2009 that accounts for the greater biomass in recent years.

Fishing Mortality

Atlantic herring's fishing mortality (F) peaked in 1971 at a rate of 0.79. Since then, the F rate remained high and began declining in the 1980s, following the trend of decreasing stock biomass, until it dropped to a historic low of 0.13 in 1994. Since then, F has remained below the F_{MSY} threshold of 0.27, with a slight increasing trend until overfishing occurred in 2009 (F_{2009} = 0.32). The F in 2010 and 2011 was relatively low because of the presence of a strong cohort that increased the stock biomass.

Description of the Fishery

The Atlantic herring resource occurs in waters off Canada and the United States, and fisheries exist in both countries. Based on the total catch (including discards) by the U.S. fixed gear and mobile gear and Canada's New Brunswick weir fisheries, a majority of the fish are caught by the U.S. commercial fleet (time series average of 87%).

In the U.S., the Atlantic herring fishery is predominantly commercial; recreational catch accounts for less than 1% of the overall catch. Over the time series from 1950 to 2013, annual commercial catch by the United States Atlantic herring fleet was generally flat with a slightly declining trend between 1950 through 1983, when it reached a historic low of 23,254 mt (51.3 million lbs) (Figure 3). Since then, catch has increased and peaked in 2009 with 101,859 mt (224.6 million lbs) and averaged about 69,981 mt (154.3 million lbs) (Figure 3). Annual catch averaged 82,407 mt (181.7 million lbs) from 1993, when FMP was implemented, through 2013. In 2013, catch totaled 106,375 mt (234.5 million lbs), an increase from 2012's 85,883 mt (189.3 million lbs).

Throughout the past decade, the commercial Atlantic herring industry has been consistent in terms of landing states and primary gears. Based on the 10-year average from 2004-2013, a combined 88% of total sea herring catch was landed in Maine and Massachusetts. From 2011-2013, Maine received about 50% of the total landings each year. Sea herring is primarily caught by trawl gears, which accounted for nearly 70% of total landings in the past decade, followed by purse seine for 20% of landings. Table 1 shows the primary gears (trawl and purse seine) by state from 2009-2013.

The U.S. Atlantic herring fishery is managed as four management areas: inshore Gulf of Maine (Area 1A), offshore Gulf of Maine (Area 1B), Southern New England (Area 2), and Georges Bank (Area 3). In addition to the complementary measures in the federal plan, the Interstate Atlantic herring FMP implements specific measures for Area 1A's fishery, which supplies bait for lobster, tuna, blue crab, and striped bass fisheries. Management measures include "days out" effort control, spawning area closures, and seasonal quota allocation. Using the annual specifications process, fisheries managers adapt these measures each year to provide herring between June and December, when demand for lobster bait is highest and fishermen can sell their herring catch for premium value.

Table 1. Atlantic herring landings by primary gears and state in metric tons. Due to data confidentiality, landings by other gears are not provided.

Year	State	Trawl	Purse Seine
2009	MA	54,544	1,214
2009	ME	8,639	19,139
2009	Other NE	1,035	369
2009	Mid-Atl	10,344	0
2010	MA	29,180	1,056
2010	ME	15,395	9,678
2010	Other NE	1,242	42
2010	Mid-Atl	5,504	0
2011	MA	24,919	492
2011	ME	23,536	18,513
2011	Other NE	461	225
2011	Mid-Atl	3,349	0
2012	MA	30,205	1,092
2012	ME	24,443	17,371
2012	Other NE	1,084	0
2012	Mid-Atl	5,725	0
2013	MA	29,677	568
2013	ME	22,243	22,248
2013	Other NE	708	0
2013	Mid-Atl	11,119	0

Issues for Public Comment

Public comment is being sought on a series of issues that are being considered in Draft Amendment 3. The issues listed below are intended to focus the public comment and provide the Section input necessary to develop a Draft Amendment 3. The public is encouraged to submit

comments on the issues listed below as well as any other issues that may need to be addressed in Draft Amendment 3. The Commission's Atlantic Herring Section initiated this process for the purpose of protecting spawning herring and is interested in comments on the following issues: spawning area efficacy in Area 1A, fixed-gear set-aside rollover provision, gear declaration, and discard of unsold herring at sea.

ISSUE 1: SPAWNING AREA EFFICACY

Background

Addendum V to Amendment 2 contains the comprehensive spawning regulations for Atlantic herring in Management Area 1A. Currently, there are three designated spawning areas within Management Area 1A (inshore Gulf of Maine): Eastern Maine, Western Maine, and Massachusetts/New Hampshire (Figure 1). Spawning herring are protected by closures to the fishery. To detect ripening of adult herring at the start of each spawning event, the FMP requires sampling of commercial catch no later than August 1 for the Eastern and Western Maine spawning areas, and September 1 for Massachusetts/New Hampshire.

Closure dates pertaining to spawning events are based on sufficient sampling from commercial fishing. The sufficient sample size is comprised of at least two 100-fish samples in the two length categories (i.e. greater than or equal to 28 cm and between 24 and 28 cm in length). The current regulatory language states closures in a given area will begin seven days after the determination that female herring from a specific area have reached 20% mean gonadosomatic index (GSI) for fish greater than or equal to 28 cm in length and 15% mean GSI for fish greater than or equal to 24 cm. Spawning closures last for four weeks. If catch sampling continues to detect spawning herring, then the closure will resume for another two weeks.

In the event sufficient samples are not available, then closures will begin on the following default dates and last for four weeks.

Eastern Maine	August 15
Western Maine	September 1
Massachusetts/New Hampshire	September 21

Statement of the Problem

In recent years, the analysis of commercially caught sea herring during traditional spawning seasons suggests stocks may be experiencing different patterns from expected spawning activity. The Eastern Maine spawning area was closed when no spawning herring were encountered by the Maine Department of Marine Resources (ME DMR). In 2013,

the ME DMR sampled every trip during the first two weeks of August. Sufficient samples were analyzed, but the sea herring was a combination of juvenile and non-mature adult fish. In addition, the commercial samples were collected from a small spatial area and may not represent the extent of spawning schools. The area was eventually closed approximately two weeks after the default date so all spawning areas would not be closed from early to mid-September.

Anecdotal information from previous seasons has suggested there may be disparity in the spawning season of fish collected from the northern portion (off Portland, Maine) versus fish caught to the south (off Gloucester, Massachusetts). This prompts the question, do spawning area borders appropriately delineate spawning activity?

Considerations by the Plan Development Team

The Atlantic Herring Plan Development Team (PDT) recommends extending the spawning closure by a minimum of two weeks. This adjustment of the closure period would better protect spawning sea herring.

Anecdotal reports from previous season have suggested there may be variation in the spawning season within the MA/NH area (i.e., spawning occurs earlier to the north). However, upon review of the GSI data from both the Massachusetts Division of Marine Fisheries and ME DMR sampling programs, this does not appear to be the case. In fact, both programs track each other well and the combined dataset appears well-suited to continue to inform the initiation of the MA/NH spawning closure (Figure 4). Therefore, the PDT has found the current spawning area boundaries are adequate and further sub-areas are not warranted.

Another issue remains regarding the duration of the closure period. The rules governing the spawning closure also include a mechanism to extend or re-close the area, should 25% of spawning herring be found in fishery-dependent sampling. However, there is reason to believe a substantial gear bias exists with respect to herring maturity stages; certain maturity stages may be unavailable to specific gear types, depending upon where in the water column they operate.

Atlantic herring are a pelagic species, yet become demersal during spawning. This causes a vertical stratification of maturity stages, with spawning fish residing closest to the seafloor, and developing, spent and juvenile fish above them in sequence (Figure 5). This means the composition of maturity stages in a sample of herring is largely dependent upon the gear type (i.e., bottom trawls are more likely to collect spawning fish than mid-water trawls or purse seines). This

affects scientists' ability to describe the completion of the spawning season, and calls into question the usefulness of the 25%-spawning re-closure rule. However, given the presence of some amount of spawning fish after the closure, a longer closure period may be warranted.

Management Questions

- **Are the existing provisions for spawning closure dates appropriate for protecting spawning herring? Is the default length of spawning closure (4 weeks) sufficient to protect spawning herring?**
- **If spawning herring is not detected with sufficient sampling, should there be a closure?**
- **Do the existing boundaries of each spawning area adequately protect ripe and running Atlantic herring? If not, what adjustments can be made to improve their ability to protect spawning herring (ex. delineate new boundaries)? Do the three areas reflect locations and spatial scales of distinct spawning activities?**
- **Is commercial sampling sufficient for spawning analysis?**

ISSUE 2: FIXED GEAR SET-ASIDE

Background

Amendment 2 to the Atlantic Herring FMP established that 500 mt of the Area 1A TAC is set aside for fixed gear fisheries operating in Area 1A (weirs and stop seines) west of Cutler. This set-aside is available to fixed gear fishermen in Area 1A until November 1. If the set-aside has not been utilized by the fixed gear fisheries west of Cutler by November 1, it will then be made available to the remainder of the herring fleet fishing in Area 1A until the directed fishery in 1A closes. If 92% of the Area 1A TAC has already been reached by November 1 (and the directed herring fishery in 1A is therefore closed), the set-aside will be released as part of the 5% set-aside for incidental catch in 1A (at a 2,000-lb trip limit).

The 2013 – 2015 specifications package includes a fixed gear set-aside of 295 mt. Any unused portion of this set-aside after November 1 is rolled into the Area 1A sub-total to be used by other gears. The date for this rollover was set at November 1 because historically, Atlantic herring have moved off of the Gulf of Maine coast by the end of the year.

Statement of the Problem

In recent years, Atlantic herring has been known to occur along the mid-coast of Maine through November. Fixed-gear fishermen have requested the unused fixed gear set-aside would not be rolled into the Area 1A sub-quota on November 1 in order to maintain access to a dedicated quota for the fixed gear fishery. Furthermore, fishermen expect a demand for bait in the lobster fishery through the end of the calendar year.

Considerations by the Plan Development Team

The PDT discussed the need for adjusting the fixed-gear set aside rollover provision. Historically, the fish have migrated away from the Gulf of Maine coast by November. In the past decade, fixed gear landings have not fully utilized the set aside of 295 mt (most recent 10-year average is 197.4 mt, or 67% of the set-aside) and landings after November 1 have been 0 mt (Table 1). The last year in which Atlantic herring were caught after Nov 1st occurred in 1993. Also, there have not been significant changes in the fishing behavior for sea herring or species depending upon it (ex. lobster). The PDT noted, should fixed-gear fishermen exceed the 295 mt set-aside, it has access to the total Area 1A sub-quota. There is no biological basis for or against adjusting the rollover provision of the fixed-gear set aside.

Another concern with changing the rollover provision is, if implemented, there will be inconsistent set aside measures for state and federal rules.

Table 1: Fixed gear catches (stop seine, weir, pound net) in metric tons from Maine 2004 to 2013. Note: data cannot be parsed by month given confidentiality issues. 2013 catch data is preliminary.

Year	Jan-Oct	Nov & Dec	Total
2004	49.0	0	49.0
2005	52.8	0	52.8
2006	528.4	0	528.4
2007	391.8	0	391.8
2008	24.3	0	24.3
2009	81.1	0	81.1
2010	823.4	0	823.4
2011	23.7	0	23.7
2012	0	0	0
2013*	0	0	0
Average	197.4	0.0	197.4

Management Questions

- **Should portions of the fixed gear set-aside that are not harvested by November 1 be made available to all fishing fleets in Area 1A for the remainder of the calendar year? In other words, maintain the existing provision to roll over unused fixed-gear set aside into the Area 1A sub-quota.**
- **Should the Atlantic Herring Section decide on whether the fixed-gear set-aside will be available to the Area 1A sub-quota during the specifications process each year? In other words, the FMP will keep the rollover provision, but allow managers to adapt each season as necessary to meet the needs of the Atlantic herring fishery.**

ISSUE 3: GEAR DECLARATION

Background

Draft Amendment 3 proposes include an option requiring vessel owners to declare the intended fishing gear type prior to beginning of a season. This measure is intended to provide fisheries managers with an estimate of effort for each upcoming period to inform decisions on harvest control measures.

Statement of the Problem

Having knowledge about fishing effort (i.e. number of vessels and gear) in advance of a fishing season may improve on the projections and allow managers to set appropriate regulations to meet the needs of industry throughout the season and reduce the likelihood of an early closure.

Considerations by the Plan Development Team

The PDT discussed the feasibility and benefits of gear declaration and concluded a requirement to declare gear in advance of a fishing season is not recommended at this time. First, a system by each state would have to be set up to collect information by either the states, NOAA Fisheries or both, on intended fishing effort and enforce compliance. There must be considerations for fishermen who may wish to fish with different gears and in more than one area. If fishermen intend to fish with multiple gear types or in multiple areas and declare as such, then it may not accurately reflect fishing effort.

Furthermore, the PDT does not believe this information is necessary to make projections for harvest control measures, such as “days out,” when managers traditionally hold a public meeting to collect industry input before the start of the season, and have the ability to call

additional meetings to adjust harvest control measures to respond to fishery performance and needs. In order for this to be of any assistance to the projection of effort, vessels would have to declare a specific gear type and area well in advance of the each trimester with no allowance for modifications to the declaration. If vessels were to make trip declarations as they do in other fisheries, it would not improve the ability to predict catch and effort. Vessels are already reporting area and gear type through IVR/VMS systems each trip. With the annual variation in adjusted catch rates based on weather and fish availability, there is still no guarantee declarations will make projections any more or less accurate.

Management Questions

- **Should there be a requirement for vessel owners to declare their intended fishing gear in advance of a quota period?**
- **When and how will vessel owners declare their intended gear? Who will enforce compliance to the gear declarations?**
- **What happens when vessel owners decide to change their gear of choice before the trip?**
- **Will vessel owners be able to declare more than one gear and area?**

ISSUE 4: EMPTY FISH HOLD PROVISION

Background

To address concerns about the discard of unsold herring at sea, the amendment will consider an option requiring vessel holds to be empty of fish before leaving the dock on a fishing trip. This measure is intended to discourage dumping of unsold herring that may result from a lower sales than expected, and avoid mixing of fish landed from multiple trips. A vessel is considered to have landed once it has tied to the dock. The fish are accounted for by vessel monitoring reports (VMS), vessel trip reports (VTR) and by dealer records. These reports are trip-specific, and the data is used to inform harvest control measures and bycatch avoidance programs.

Statement of the Problem

Currently, there is no management measure for emptying holds of fish prior to departing for a fishing trip in the interstate or federal Atlantic Herring management plans. There is concern that fish from multiple trips can be mixed if the holds are not completely emptied. This has the potential to compromise landings data used to inform harvest control measures and bycatch avoidance programs. Furthermore, leaving fish in the vessel's hold prevents portside samplers from observing the entirety

of a trip, which hinders the operation of bycatch monitoring and avoidance programs.

In its Draft Framework Adjustment 4, the New England Fishery Management Council approved a requirement for vessel holds to be empty of fish prior to leaving a dock. The Council adopted Alternative 2.1.2, Alternative 2, Option C: a waiver may be issued for instances when there are fish in the holds after inspection by an appropriate law enforcement officer. This alternative would only apply to Category A and B boats. The intent is for waivers to be issued for refrigeration failure and non-marketable reported fish.

Considerations by the Plan Development Team
The PDT recognizes fishermen may have surplus catch that cannot be sold and is a challenge to dispose. The proposed requirement to empty vessel holds of fish may be an incentive to curb wasteful fishing practices and harvest more efficiently to meet market demands. In addition, this provision would eliminate the practice of keeping fish in a hold from one fishing trip and mixing with catch from another trip, which would result in inaccurate VMS, VTR, and dealer reports, as well as missing data for bycatch observations. The PDT noted there needs to be consideration for enforcement, unforeseen events that make it impossible to sell fish, and vessels that land at multiple ports.

Management Questions

- **Should vessel's fish hold be empty of fish prior to departure for an Atlantic herring fishing trip?**
- **What are the enforcement considerations?**
- **What considerations should be made for unforeseen circumstances that hinder or prevent sales of the fish (ex. a waiver to be issued for refrigeration failure and non-marketable reported fish)?**

OTHER ISSUES

The public may comment on other issues for consideration in the development of Draft Amendment 3 to the Interstate Atlantic Herring Fishery Management Plan.

- **What other issue(s) should be considered in Draft Amendment 3 to the Atlantic Herring FMP?**

Figures

Figure 1. Current boundaries of the three Atlantic herring spawning areas: Eastern Maine, Western Maine, and Massachusetts/New Hampshire.

Eastern Maine Spawning Area: All waters bounded by the following coordinates:
Maine coast 68° 20' W
43° 48' N 68° 20' W
44° 25' N 67° 03' W
North along US/Canada border

Western Maine Spawning Area: All waters bounded by the following coordinates:
43° 30' N Maine coast
43° 30' N 68° 54.5' W
43° 48' N 68° 20' W
North to Maine coast at 68° 20' W

Massachusetts/New Hampshire Spawning Area: All waters bounded by the Massachusetts, New Hampshire and Maine coasts, and 43° 30' N and 70° 00' W

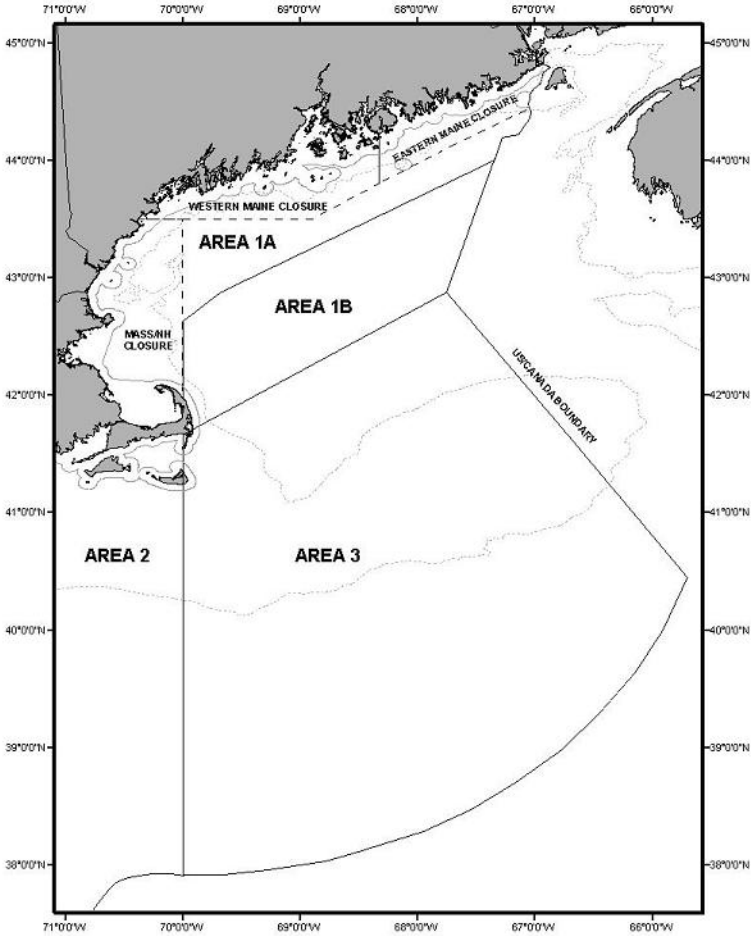


Figure 2. Total and spawning stock biomass and thresholds of Atlantic herring from 1965 to 2011. Total biomass is based on January 1 estimates.

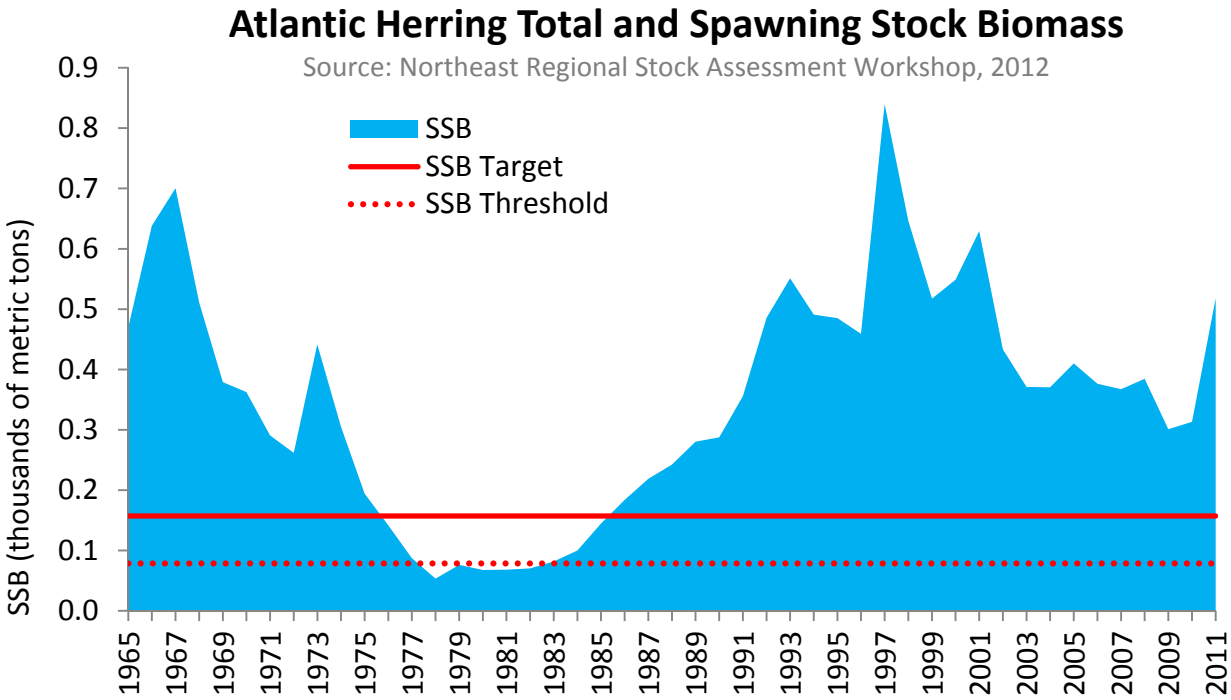


Figure 3. Atlantic herring catch from 1950 to 2013.

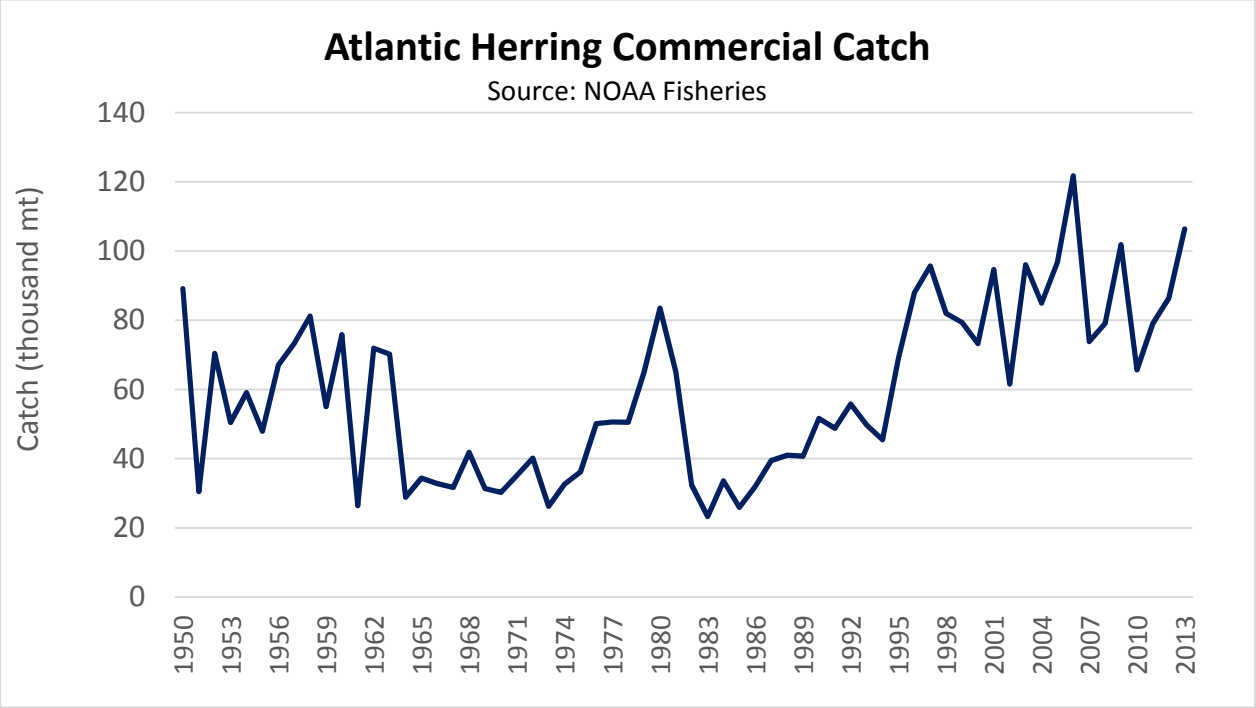


Figure 4. GSI samples for 23-27cm herring from the MEDMR and MADMF programs for the years 2005-2013. Filled circles indicate values above the closure threshold. Gray background indicates the closure period. Note that in 2011, the early closure was triggered by a second sample of larger herring above the threshold (28+ cm - not shown).

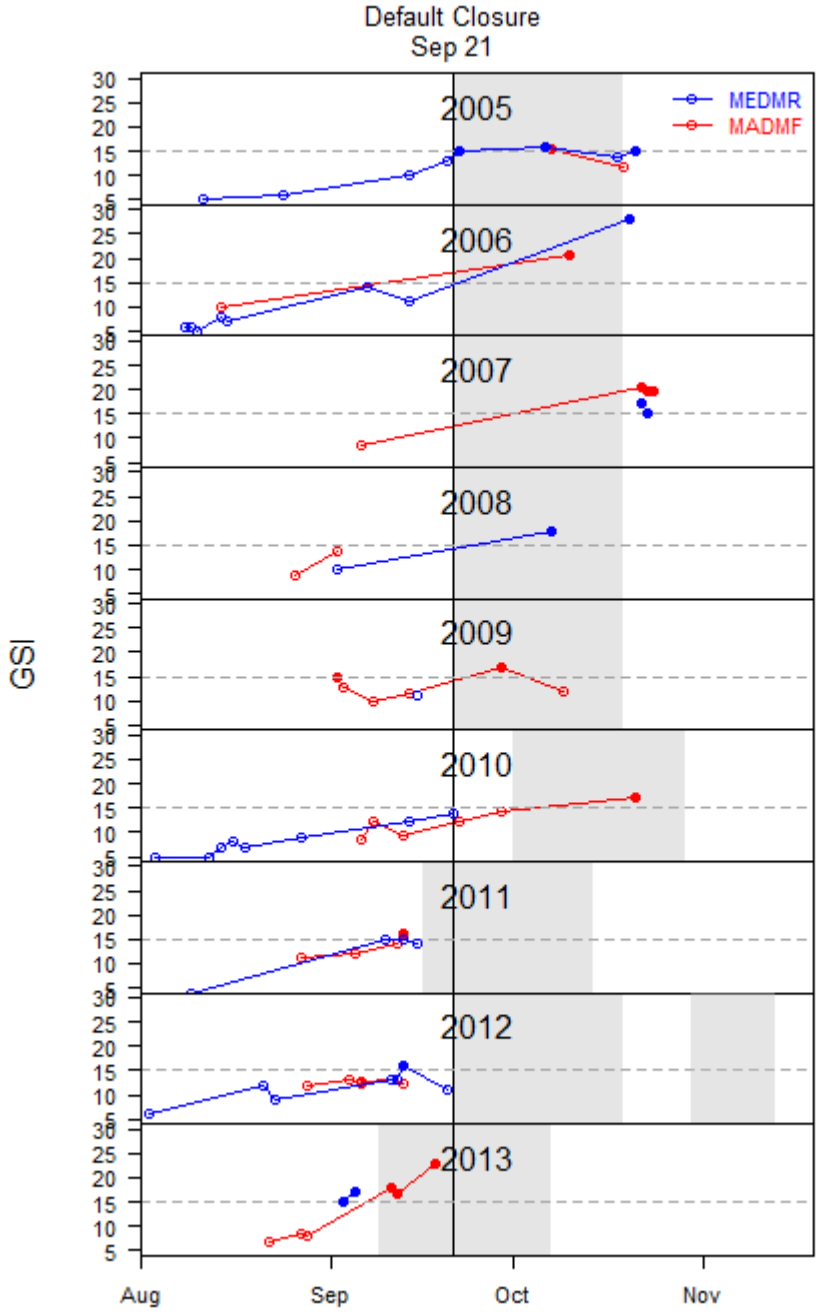
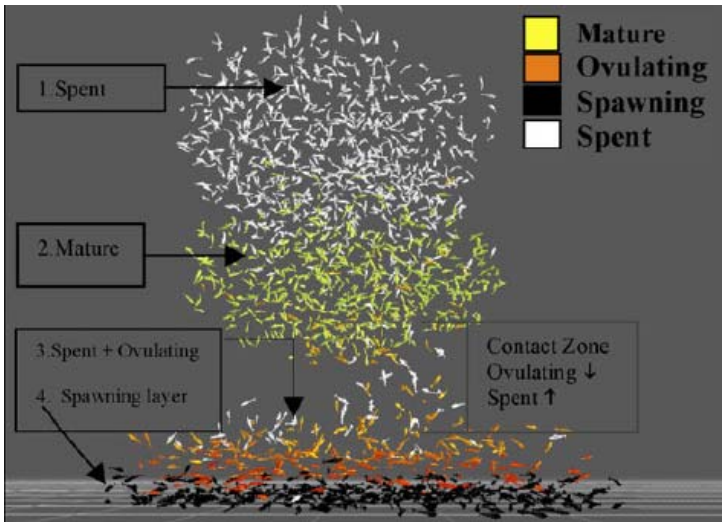


Figure 5. Vertical stratification by maturity stage within a school of spawning Atlantic herring (from Vabo and Skaret, 2008).



Appendix 1: Provisions for Spawning Area Closures

Addendum V to Amendment 2 to the Interstate Atlantic Herring FMP: Comprehensive Spawning Regulations (October 2012)

3.1.2 Management Program: Provisions revised under this Addendum
This languages replaces part of the language in section 4.2.1.2 of Addendum I to Amendment 1: *Closures in a given area will begin seven days after the determination that female herring in ICNAF gonadal stages III - V from that specific area have reached the following spawning conditions: female herring greater than 28 cm in length have reached a mean gonadosomatic index (GSI) of 20%; or female herring greater than or equal to 23 cm and less than 28 cm in length have reached a mean GSI of 15%.*

3.2.2 Management Program: Provisions revised under this Addendum
This section replaces part of the language in section 4.2.1.2 of Addendum 1 to Amendment 1. Sufficient sample information shall mean at least two (2) samples of 100 fish or more, in either length category, taken from commercial catches during a period not to exceed seven days apart.

2.2.2 Default Start Date (4.3.2.2 Spawning Closures & Default Dates of Amendment 2):
If sufficient samples are not available, closures will begin on the following dates.

Eastern Maine: August 15
Western Maine: September 1
Massachusetts/New Hampshire: September 21

2.2.3 Sampling Protocol (4.2.1.2 Determination of Starting Date for Spawning Closures of Addendum I to Amendment 1):

Closures in a given area will begin based on the spawning condition of Atlantic herring as determined from commercial catch samples. Commercial catch sampling shall begin by at least August 1 for the Eastern and Western Maine areas, and by at least September 1 for the Massachusetts/New Hampshire area. If sufficient samples are not available, closures will begin on the default dates.

Closures in a given area will begin seven days after the determination that female herring in ICNAF gonadal stages III - V from that specific area have reached the following spawning conditions: female herring greater than 28 cm in length have reached a mean gonadosomatic index (GSI) of 20% or female herring greater than 24 cm and less than 28 cm in length have reached a mean GSI of 15%. Length refers to the mean natural total length, measured from the tip of the snout to the end of the caudal fin in normal position. “GSI” shall mean gonadosomatic index calculated by the following formula. Length refers to the mean natural total length, measured from the tip of the snout to the end of the caudal fin in normal position. “GSI” shall mean gonadosomatic index calculated by the following formula:

[Gonad Weight / (Total Body Weight - Gonad Weight)] x 100 percent

2.2.5 Spawning Closure Length (4.3.2.2 Spawning Closures & Default Dates of Amendment 2):

By default, closures will last four (4) weeks. Catch sampling of the fishery will resume at the end of the initial four-week closure period. If catch sampling indicates significant numbers of spawn herring are still being harvested, closures will resume for an additional two weeks. Significant numbers of spawn herring is defined as 25% or more mature herring, by number in a catch sample, have yet to spawn. Mature or “spawn” herring are defined as Atlantic herring in ICNAF gonadal stages V and VI.

Appendix 2: Provisions for Fixed Gear Set-Aside

Regulatory language from Amendment 2 to the Interstate Atlantic Herring FMP:

4.3.4 Downeast Maine Fixed Gear Fisheries

In addition to including catch from the Downeast Maine fixed gear fishery east of Cutler as part of the assumed catch from the New Brunswick (NB) weir fishery, 500 mt of the Area 1A TAC will be set aside for fixed gear fisheries operating in Area 1A (weirs and stop seines) west of Cutler (area west of the shaded area below). This set-aside will be available to fixed gear fishermen in Area 1A until November 1. If the set-aside has not been utilized by the fixed gear fisheries west of Cutler by November 1, it will then be made available to the remainder of the herring fleet fishing in Area 1A until the directed fishery in 1A closes. If 95% of the Area 1A TAC has already been reached by November 1 (and the directed herring fishery in 1A is therefore closed), the set-aside will be released as part of the 5% set-aside for incidental catch in 1A (at a 2,000 lb trip limit).

Again, fixed gear fishermen in Area 1A will be required to report their herring catches through the Interactive Voice Response (IVR) reporting system. Currently, fixed gear fishermen are not required to report on a real-time basis through IVR reporting. However, this measure relies on real-time monitoring of fixed gear catches in Area 1A, so IVR reporting is necessary.

Under the combination of these two measures, the TAC set-aside applies to the fixed gear fisheries occurring in Area 1A west of Cutler. The fixed gear fishery occurring east of Cutler will be exempt from the Area 1A TAC.

Regulatory language from Framework 2 of the Federal Atlantic Herring FMP:

Herring regulations (§ 648.201(g)) specify that up to 500 mt of the Area 1A sub-ACL shall be allocated for the fixed gear fisheries in Area 1A (weirs and stop seines) that occur west of 44° 36.2 N. Lat. and 67°16.8 W. Long. This set-aside shall be available for harvest by the fixed-gear within the specified area until November 1 of each year; any unused portion of the allocation will be restored to the Area 1A sub-ACL after November 1. During 2010–2012, the fixed gear set- aside was specified at 295 mt. Because the Area 1A sub-ACL for 2013–2015 is not substantially different from the Area 1A sub-ACL in 2012, the Council recommended that the fixed gear set-aside remain the same. This final rule sets the fixed gear set-aside at 295 mt for 2013–2015.