

#9

CORRESPONDENCE

Seafreeze Ltd.



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March 30, 2017



Dear Herring Committee members,

Please find below information we submitted in our written comments for the IFM amendment. We believe they warrant serious consideration at the Committee's meeting on April 5.

Two of the major goals and objectives identified by the NEFMC for increasing monitoring in the herring fishery are "accurate catch estimates for incidental species for which catch caps apply", and "affordable monitoring for the herring fishery". The catch cap species being discussed with relation to small mesh bottom trawl vessels, which include our vessels, are river herring and shad. According to analysis of small mesh bottom trawl observer data (all fisheries), approximately 5%-22% coverage is needed to obtain a 30% CV for river herring and shad catch in that gear type.¹ These coverage levels are already being covered by SBRM² and the associated CV is already below 30%. In fact the small mesh bottom trawl herring fishery RH/S catch cap CV was 28.4% in 2014, and 24.5% in 2015.³ Additionally, due to the fact that the small mesh bottom trawl fleet includes vessels with permits other than A and B permits, which are targeted by this amendment, the herring alternatives presented would never achieve a 0% CV, even at 100% coverage rates (which is why even 100% observer coverage on small mesh bottom trawl would only have a "Low Positive" on tracking catch caps)⁴. Even staff documents developed during this amendment process have indicated that even Alternative 2.2, up to 100% ASM coverage on small mesh bottom trawl, will have "Negligible" effect on catch tracked against catch caps.⁵ But it will not have a negligible economic effect, on small mesh bottom trawl vessels in general but particularly Seafreeze vessels.

¹ Industry Funded Monitoring Omnibus Amendment Discussion Document, Mackerel Alternatives, Mid Atlantic Fishery Management Council, April 12-14, 2016. See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/56fec92c04426225f77234f4/1459538223368/Tab02_MSB-RHS-Committees.pdf, page 28.

² According to the Herring PDT Meeting Summary Dec 10, 2015, revised Jan 15, 2016, in 2014 observers covered 26.2% of all small mesh bottom trawl trips targeting herring, and preliminary estimates indicated 31% coverage on trips from January-June 2015. See <http://s3.amazonaws.com/nefmc.org/3.151210-Herring-PDT-mtg-summary-REVISED.pdf>.

³ Industry Funded Monitoring Amendment Document, Mid Atlantic Fishery Management Council, May 2016. See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/57504cae746fb9ccc234ba75/1464880308912/Tab09_IFM-Amendment.pdf, page 88.

⁴ See http://s3.amazonaws.com/nefmc.org/3D_Staff-Presentation-on-Herring-Alternatives.pdf, slide 35.

⁵ Ibid.

dlb 3/31/17

Coverage target considerations, according to the development of this amendment, should ensure that “Benefits of increased monitoring should equal or outweigh the costs of monitoring”.⁶ However, the amendment does not consider the daily catch capacity of vessels in its analysis or alternatives. Small mesh bottom trawl vessels, including Seafreeze vessels, are limited in daily harvesting capacity compared to other herring fishery gear types. Therefore, the daily financial burden on smaller capacity vessels is higher than on large capacity vessels. We have repeatedly raised this issue with the Councils.⁷ The “Negligible” benefits of potential additional catch cap tracking do not outweigh the costs of monitoring for our lesser-daily-capacity small mesh bottom trawl vessels.

None of the additional monitoring alternatives in the document provide for “affordable monitoring for the herring fishery”, especially Seafreeze vessels. Our vessels do not operate solely in the herring/mackerel fisheries; we have multiple permits. We do not always know what species will be available when we leave the dock, so we complete the regulatory call in/declaration process for all appropriate fisheries. We do not fish like other “herring” vessels. If the availability of one species changes, or is not what we had anticipated, we then have the flexibility to cover our operating costs by switching over to a different species. Because our vessels freeze at sea and have limited daily capacity, our trips are also of extended duration, so any daily at sea monitoring costs would impact us disproportionately to all other herring vessels.

To demonstrate this dynamic, several trips are highlighted below. Pre-trip declaration combined with length of trip is what will determine coverage and cost, not herring landed.

For example, on this 10 day trip below, our primary pre-trip declaration was herring, but the trip consists of no herring and is primarily loligo squid. A per day monitoring cost would be very expensive on a trip of that length. And all of the cost would be borne by squid revenue. This is not unusual. The following 5 day trip was also a declared “herring” trip, but landed no herring. These types of “herring” trips, if they were to incur an at sea monitoring cost would have to be paid for not by herring revenue, but other revenue:

1/15/14-1/24/14; 10 Days

Catch: Loligo - 97.67%

⁶ Ibid, slide 38.

⁷ See for example, our letter to the Councils at

<https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/551edc4ae4b0576112dc4bf3/1428085834669/Tab+06+Industry+Funded+Observer+Amendment.pdf> and <http://s3.amazonaws.com/nefmc.org/5.-Council-Letter-Observer-Concerns.Seafreeze.pdf>.

12/20/14-12/24/14; 5 Days (Shortened trip because of Christmas)

Catch: Butterfish - 88.92%, Loligo - 11.08%

Conversely, we have trips where we expect to find other species but do not, therefore relying on the flexibility to catch herring as a way to cover our costs. For example, these two trips, during which the primary pre-trip declaration was squid, herring was the primary species landed:

12/11/14-12/18/14; 8 Days

Herring - 100%

12/27/14-1/3/15; 8 Days

Herring - 98.1%

Sub Option 5 would exempt trips landing less than 25 mt from industry funded monitoring requirements, and has been suggested at meetings of a way to address this issue. However, that option will still not account for the fact that the decision whether or not to catch more significant amounts herring will still need to be made prior to leaving the dock. As the information above demonstrates, our primary declaration/intent is not always what determines what species our vessels land, which is why we ensure that we appropriately declare into all possible fisheries in order to maintain flexibility of operations. If that flexibility were taken away, not only would our entire style of fishing would be nullified, but could result in the above trips losing rather than making money. A 25 mt landing will not cover the cost of an 8 day trip.

Pages 301-302 of the EA (attached) illustrate this dynamic. Out of declared herring days in 2014 that did not land herring, 111 are attributed to small mesh bottom trawl, as compared to only 6 single midwater trawl and 4 paired midwater trawl. That would be 111 days of industry funded monitoring on small mesh bottom trawl vessels that would have to be covered by income from other fisheries. Small mesh bottom trawl costs for declared herring trips not landing herring range from \$90,586 compared to \$3,212 at paired midwater trawl and \$5,217 at single midwater trawl for the same monitoring option. This is a function of the type of fishing style described above. Industry funded monitoring costs in this amendment are significantly heavier on small mesh bottom trawl vessels than other vessel types. This is combined with the fact that even on declared herring trips landing herring, small mesh bottom trawl

(i.e. "squid" vessels), have a 7% RTO compared to typical "herring and mackerel" vessels, which have a 15% RTO (page 299 of the EA ,attached). This is also a function of what has been previously mentioned due to daily capacity. Even at 25% ASM coverage, the cheapest cost estimate for small mesh bottom trawl, there is still a \$19,657 annual cost burden for trips that do not even land herring. This amendment is about the erosion of profitability for our vessels.

The herring and mackerel alternatives in the IFM amendment were primarily initiated to address low observer coverage in the midwater trawl herring fishery due to changes with SBRM. It was not to make an entire style of fishing economically or operationally nonviable. It is also not equitable that revenue from other fisheries be siphoned to pay for herring/mackerel monitoring. If our vessels are required to pay for a per day monitoring cost, we could be required to raise the prices on all our products to cover that expenditure. Compounding that, we compete on and against a world market with all of our products, including herring. All of our products are food grade, which means that we have developed and rely on markets that solicit international competition. We are also competing price-wise with companies and vessels from nations where the fishing industry is subsidized by their national government. If forced to raise our prices to pay for an IFM cost, Seafreeze, as well as the United States, will be put at a competitive disadvantage internationally. If we do not increase our prices and the cost were to be paid for by the vessels and crew, the per day monitoring cost may outweigh daily crew compensation, and crews would be forced to pay for "benefits (vacation and sick leave)"⁸ afforded to observers that crew themselves do not receive, all while receiving a smaller paycheck. This is inequitable.

Regardless, the industry funded monitoring amendment saddles Seafreeze vessels in particular with more economic harm than any other "herring" vessels due to the nature of our operations. This is unacceptable. Therefore, the only alternatives that we can support would be Alternative 1, No Action, or Alternatives 2.4-2.6, which would keep our vessels at SBRM coverage.

Thank you for your consideration.

Sincerely,

Meghan Lapp
Fisheries Liaison, Seafreeze Ltd.

⁸ See <http://s3.amazonaws.com/nefmc.org/150701-Discussion-Document-Appendix.pdf>, page 11.

TABLE 95. SUMMARY OF TOTAL TRIP COSTS FOR HERRING AND MACKEREL VESSELS IN 2014

Cost Category	Description	Average Percent of 2014 Gross Revenue for Herring and Mackerel Vessels	Average Percent of 2014 Gross Revenue for Squid Vessels
Variable Costs	Annual fuel, oil, food, water, ice, carrier vessel, communication, fishing supplies, crew supplies, and catch handling costs	25%	35%
Crew Share	Total annual payments to crew	28%	26%
Repair, Maintenance, Upgrades, Haulout (RMUH)	Annual cost of repairs to engines, deck equipment, machinery, hull, fishing gear, electronics, processing equipment, refrigeration, safety equipment, upgrades and haulout. Because these costs vary considerably from year to year and are typically spread out over several years, only a portion of these costs were applied to 2014 revenue	13%	11%
Fixed Costs	Annual mooring, dockage, permits and licenses, insurance, quota and DAS lease, crew benefits, vessel monitoring, workshop and storage, office, vehicle, travel, association, professional, interest, taxes, and non-crew labor costs Note: depreciation expense of the vessel is not included in fixed costs.	19%	21%
Return to Owner	Gross revenue less variable, crew share, RMUH, and fixed costs	15%	7%

The NEFMC is considering four types of industry-funded monitoring for the herring fishery, including NEFOP-level observers, at-sea monitors, EM, and portside sampling coverage. NEFOP-level and at-sea monitoring coverage would function independently, but EM and portside are intended to be used together.

Selecting Herring Alternative 2.5 rather than Herring Alternative 2.1 reduces total industry monitoring costs from \$811,000 to \$75,000 – a 91% reduction. However, Herring Alternative 2.5 only provides increased monitoring in the Groundfish Closed Areas.

Initial industry cost assumptions for Herring Alternative 2.4 estimated \$325 per sea day for electronic monitoring (cameras on every midwater trawl vessel, video collected for the duration of the trip, 100% video review) and \$5.12 per mt for portside sampling (administration and sampling cost) on close to 100% of trips. Revised industry cost assumptions for Herring Alternative 2.4 estimated \$187 per sea day for electronic monitoring (cameras on every midwater trawl vessel, video collected around haulback, 50% video review) and \$3.84 per mt for portside sampling (only sampling costs) on close to 50% of trips. Using the revised cost assumptions rather than the initial cost assumption for Herring Alternative 2.4 reduces total industry monitoring costs by 51% (\$457,595 to \$222,958) in Year 2 for paired midwater trawl vessels and reduces costs by 54% (\$134,165 to \$61,067) in Year 2 for single midwater trawl vessels.

Many of the vessels that would be impacted by industry-funded monitoring costs in the herring fishery would also be impacted by industry-funded monitoring costs in the mackerel fishery. For example, all the vessels impacted by Herring Alternative 2.1 would also be impacted by Mackerel Alternative 2.1.

A trip must be a declared herring trip in order to land 1 lb or more of herring. The economic analysis focused on trips that landed 1 lb or more of herring because those are the trips that would be subject to industry-funded monitoring. However, industry participants also requested consideration of the economic impacts associated with declared herring trips that did not land any herring.

In 2014, there were 121 sea days for 22 trips that had no herring landings. If 100% NEFOP-level observer coverage was required on those trips, then \$98,978 would have been spent monitoring those trips. If 100% at-sea monitoring coverage was required on those trips, then \$85,910 would have been spent monitoring those trips. The breakdowns of these costs by gear type as well as other coverage levels and monitoring types are provided in Table 96.

TABLE 96. MONITORING COSTS ASSOCIATED WITH DECLARED HERRING TRIPS THAT DID NOT LAND HERRING IN 2014.

	Small Mesh Bottom Trawl	Single Midwater Trawl	Paired Midwater Trawl	Total
Permit Category	A	A	A	
Total Number of Days	111	6	4	121
Total NEFOP Cost – 100% Coverage	\$90,586	\$5,217	\$3,212	\$99,015
Total ASM Cost –	\$78,626	\$4,528	\$2,788	\$85,943

100% Coverage				
Total ASM Cost – 75% Coverage	\$58,970	\$3,396	\$2,091	\$64,457
Total ASM Cost – 50% Coverage	\$39,313	\$2,264	\$1,394	\$42,971
Total ASM Cost – 25% Coverage	\$19,657	\$1,132	\$697	\$21,486
Total EM Cost, Year 2 – \$325 per day		\$2,073	\$1,276	\$3,349
Total EM Cost, Year 2 – \$187 per day		\$1,193	\$734	\$1,927

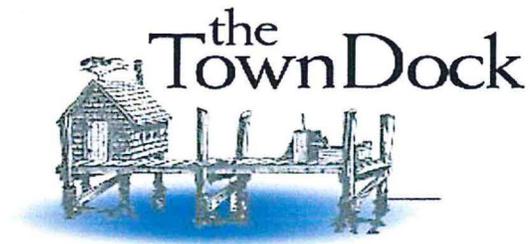
The tables and box plots on the following pages provide summarized economic data for each of the herring coverage target alternatives. The economic impact on vessels associated with paying for monitoring coverage is described as a percentage of RTO for each herring coverage target alternative in the following figures. The tables provide the mean and median number of sea days per vessel that would result from each of the alternatives, as well as the mean and median RTO that would ultimately be reduced by the industry-funded monitoring costs. Additionally, fleet level effort, revenue, and monitoring cost information for each herring coverage target alternative are also provided. Additional economic analysis is available in Appendix 8.

4.2.5.1 Impacts of Herring Alternatives 1 and 2 on Fishery-Related Businesses

Herring Alternative 1 would not specify a coverage target for an industry-funded monitoring program in the Herring FMP. Monitoring for herring vessels would be allocated according to SBRM. If there was Federal funding available after SBRM coverage requirements were met, additional monitoring for the herring fishery would be evaluated on a case-by-case basis. Under Herring Alternative 1, additional costs to vessels participating in the herring fishery associated with monitoring coverage, if there were any, would be evaluated on a case-by-case basis.

In recent years, observer coverage for the herring fishery has largely been allocated as part of the SBRM. The SBRM is the combination of sampling design, data collection procedures, and analyses used to estimate bycatch in multiple fisheries. The SBRM provides a structured approach for evaluating the effectiveness of the allocation of fisheries observer effort across multiple fisheries to monitor a large number of species. Although management measures are typically developed and implemented on an FMP-by-FMP basis, from the perspective of developing a bycatch reporting system, there is overlap among the FMPs and the fisheries that occur in New England and the Mid-Atlantic that could result in redundant and wasteful requirements if each FMP is addressed independently.

Currently, the herring resource is not overfished, and overfishing is not occurring. Additionally, in recent years, the fleet has had the ability to fully harvest the stock-wide ACL and the sub-ACLs. Selection of Herring Alternative 1 will not likely affect the setting of



March 28, 2017

Dear Herring Advisory Panel/Committee Members,

I am writing to comment on the Omnibus Industry Funded Monitoring Amendment as it pertains to herring.

I've submitted several written comments to both the New England and Mid-Atlantic Councils regarding this Amendment and made public comments at each meeting stating our opposition to this Amendment on the grounds of our vessels not being able to afford to pay for the additional monitoring. The majority of our vessels do not have the capacity to hold enough fish to offset the cost of \$700/day after the costs of simply going out to fish (ex. fuel, oil, boat tracs, food and gear) are taken off the top.

In order to curb this, would the Committee and Advisory Panel consider recommending an exemption to those vessels landing 50MT or less? We would understand that a regulation would be necessary for us to call in ahead of time stating we would not bring in any more than 50MT of herring, in order to be exempt from monitoring. This would help us keep herring an affordable fishery to participate in.

Thank you for providing us the opportunity to comment and considering my request.

Sincerely,

Katie Almeida
Fishery Policy Analyst

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NEW ENGLAND FISHERY
MANAGEMENT COUNCIL

March 30, 2017

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

Re: Atlantic Herring Amendment 8

Dear Dr. Quinn and Mr. Nies,

Please accept the following comments from the Jones River Watershed Association, located in Kingston, Massachusetts, concerning the above referenced amendment to the Atlantic Herring Fishery Management Plan.

JRWA is a non-profit membership organization that has been working for thirty years to restore the qualities of the Jones River watershed, especially fisheries habitats. With our headquarters in the Jones River estuary, we cultivate and provide daily stewardship of the environmental and historic resources important to the entire region. We work closely with local, state, and federal agencies, and the public, to provide water quality and species monitoring, and to effect protection and quality improvements in the ecosystem.

We support a year-round no-fishing "buffer zone" for mid-water trawlers in New England waters that would extend from the coastline out to 50 nautical miles. This year-round closure for mid-water trawlers would include herring management areas 1B, 2, and 3, including waters off Rhode Island, Connecticut, and the backside of Cape Cod. We also support a year-round closure of Herring Management Area 1A, including waters off Maine, New Hampshire, and eastern Massachusetts.

Many marine predators would benefit from this buffer, including tuna, cod, striped bass, birds, and marine mammals. It would also benefit Atlantic herring and river herring by preventing the localized depletion that happens when midwater trawlers drag nets close to shore. Hotspots for river herring bycatch and Atlantic herring spawning occur in the areas described above¹ -- a 50 mi. buffer would prevent high levels of bycatch and protect spawning habitat.

¹ Cournane JM, Kritzer JP, and Correia, SJ. 2013. Spatial and temporal patterns of anadromous alosine bycatch in the U.S. Atlantic herring fishery. *Fish. Res.* 141: 88-94.

River herring were once a major component of the marine and coastal freshwater forage base throughout New England and the Mid-Atlantic, but they are extremely depleted today. River herring, both alewives and bluebacks, have been listed as a species of concern since 2006, and have been considered for listing under the Endangered Species Act. Just this week, on March 25th, the DC District Court remanded consideration of the status of blueback herring back to NOAA Fisheries for further review.²

Significant declines in river herring abundance have been observed in parts of southern New England. A 2016 study found that bycatch of river herring, especially by the Atlantic herring fishery, is highest for the southern New England stock of alewife and mid-Atlantic stock of blueback herring and that reducing bycatch would benefit their conservation and recovery.³ **It is critical that the proposed buffer extend into southern New England (Area 2), where river herring are failing to recover.**

In just over 30 days, the midwater trawl fleet had caught nearly 80% of its allowable bycatch of river herring and shad in the Cape Cod Management Area since January 1st. The fleet is likely catching fish that are migrating north before they have the chance to spawn, negating conservation and recovery efforts for the species, including our organization's efforts to restore diadromous fish passage and habitats in the Jones River.

The herring run in the Jones River generally occurs from March to June, and adults migrate back to Cape Cod Bay from June to October. Juveniles out-migrate from September to November. This means that river herring are likely to be close to shore in marine waters in the early spring and through fall.

Entergy's Pilgrim Nuclear Power Station is located on the coast of Cape Cod Bay in Plymouth, MA, and publishes annual reports on impingement and entrainment numbers for many coastal fish species.⁴ According to Entergy's 2014 report,⁵ blueback herring was one of the top five impinged species that year (3.6%). The species was impinged in March, April, August, and October through December. They were most abundant in December, when 43% of the annual total were impinged. Buffers should not be limited only to summer and early fall (June 1 – Sept 31), since it is clear that river herring are close to shore in marine waters in the spring and late fall. Year-round buffers are needed to help these important fish stocks rebound.

² NRDC v. S.D. Rauch/NMFS. March 25, 2017. Memorandum Opinion. Case 1:15-cv-00198-RDM Document 54 Filed 03/25/17. 50 pp.

³ Hasselman DJ, Anderson EC, Argo EE, et al. 2016. Genetic stock composition of marine bycatch reveals disproportional impacts on depleted river herring genetic stocks. *Can. J. Fish. Aquat. Sci.* 73: 951–963.

⁴ From 1980-2014, bluebacks and alewife have been impinged every year at Pilgrim. Atlantic herring have been impinged at least 90% of the time since 1980.

⁵ Entergy. April 30, 2015. Marine Ecology Studies: Pilgrim Nuclear Power Station. Report No. 85: January 2014 – December 2014.

We have organized dozens of local volunteers to help monitor Jones River herring since 2005. They carry out fish counts at the Elm Street fish ladder in Kingston, MA (Figure 1). Up to 50 individuals put in a combined 200 hours each year.

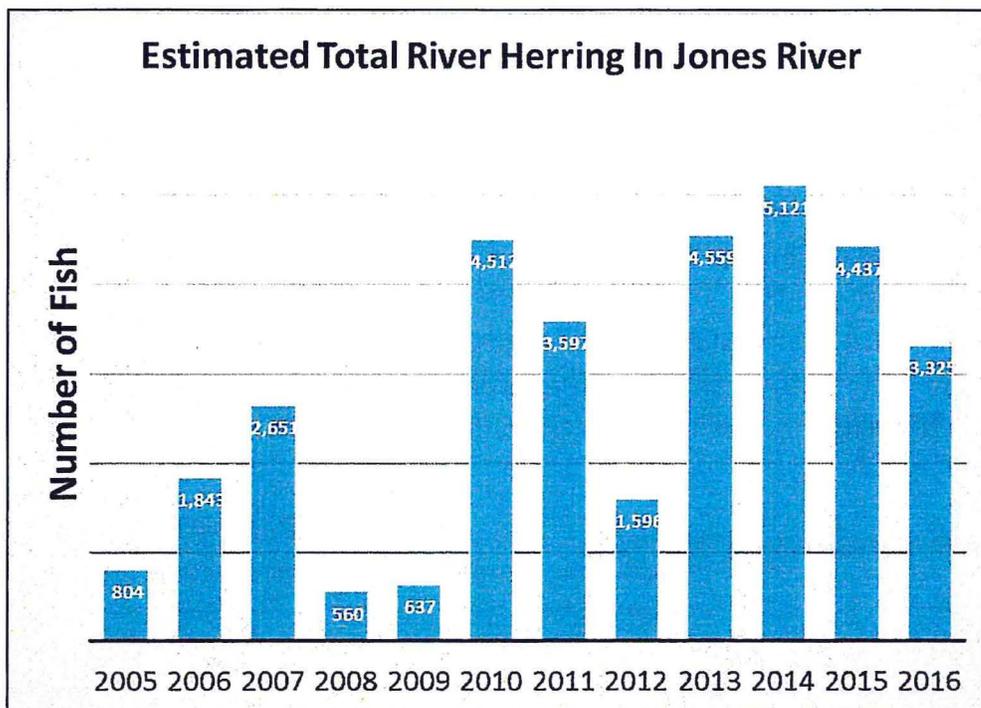


Figure 1

Our Wapping Road Dam removal project, which was completed in 2011, focused on providing river herring passage to Silver Lake headwaters. The removal project cost approximately \$750,000 in local, state, federal, and private funds to complete. Our project to remove the head of tide dam at Elm Street is currently underway and could exceed the previous dam removal costs. These two major projects for Jones River habitat restoration, in addition to our efforts to improve management at Silver Lake and the Brockton Dam, have required more than \$2M in funding over the past ten years. Support and efforts for this restoration work have come from a partnership of businesses, foundations, state, and federal entities including the Town of Kingston, MassBays, Mass. Department of Environmental Protection, Mass. Division of Ecological Restoration, Mass. Division of Marine Fisheries, Mass. Environmental Trust, Gulf of Maine Council on the Marine Environment, NOAA/NMFS, Sheehan Family Foundation, Patagonia, Stantec, and others. The head of tide dam removal and restoration project, currently underway, is on track to require a million dollars of public investment.

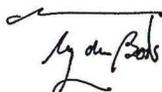
River herring bycatch in herring management areas 1A, 1B, 2, and 3 adversely impact conservation and recovery efforts throughout New England, including decades of efforts in the Jones River.

In addition, over the past few years large midwater trawlers have operated within Stellwagen Bank National Marine Sanctuary (SBNMS) under the Herring Research Set Aside program between the months of October and December (for herring and mackerel). This is having significant negative impacts on the fisheries, especially forage fish, and important habitats within SBNMS. The Sanctuary Advisory Committee recently passed a motion⁶ to protect forage fish and SBNMS from this type of research fishing in shallow areas. This type of full water column dragging is counterproductive to management and destructive to the ecosystem.

The Herring Committee should fully analyze how river herring are affected by midwater trawl gear and related bycatch at specific times and places, and how the species would benefit from a buffer zone. We fully support a year-round “buffer zone” for mid-water trawlers in New England waters that would extend from the coast out to 50 nautical miles (including herring management areas 1A, 1B, 2, and 3) in order to protect and recover river herring populations throughout New England – until improved gear, management, and elimination of by-catch is achieved.

Thank you for considering our comments.

Sincerely,



Pine duBois
Executive Director
Jones River Watershed Association
55 Landing Rd, Kingston, MA 02364

⁶ Motion: The SAC recommends or advises the sanctuary Superintendent to pursue one or both of the following potential remedies: a. Continue to work with the RSA researchers and industry representatives to revise the Responsible Fishing Agreement such that no RSA fishing would occur in less than 120 feet or 20 fathoms (but allow it elsewhere in the sanctuary); b. Continue to engage in the Fishery Council process to protect all or a portion of SBNMS from commercial fishing for forage fish.

Sherie Goutier

From: Thomas S. Kirk <tskirk53@yahoo.com>
Sent: Thursday, March 30, 2017 4:59 PM
To: comments
Subject: Amendment 8 Alternatives !!



To: Dr. John F. Quinn, Chairman + Thomas A. Miles, Executive Director - New England Fishery Management Council (NEFMC)

From: Thomas S. Kirk, Board of Directors Vice President, Red Lily Pond Project Association, Inc (RLPPAI)/Member - Herring Alliance of the Pew Charitable Trusts

Re: Amendment 8 Alternatives for Herring Bycatch + Spawning Areas.

Gentlemen,

Our Association writes in support of the following Amendment 8 Alternatives. First, on a year-round basis there should be no mid-water trawling within the 50 mile buffer zone of Herring Management Areas 1B, 2 + 3. Second, there should be year-round closure of Herring Management Area 1A. Most herring bycatch occurs within these areas and many Atlantic herring spawning areas are also within these areas. We urge the Council to adopt + enact these measures.

Briefly, RLPPAI is a small environmental non-profit located on Cape Cod. This 'Great Pond' system is in the Town of Barnstable at Centerville, MA. More properly Craigville (Beach). It's herring run flows into the Centerville River Estuary and thence into Nantucket Sound via East Bay. Our groups' efforts for restoration of the pond system have been on-going since 1972. 'We' have raised funds privately, in addition to utilizing Federal EPA Grants + MA DEP monies. Most administered with the assistance of the Conservation Commission of Barnstable. The projects run the gamut from weed harvesting + bottom relayering, to non-indigenous plant removal + embankment upkeep, to culvert replacement (improving flow + flush), to upgrading the herring run fish ladder. Craigville Village has one of the first in the Nation cluster septic systems.

My point is this, in the late 1960's thousands of river herring migrated to Red Lily Pond/Lake Elizabeth to spawn. Those numbers have dwindled to shockingly low levels of less than 100 fish/season. The reasons are at least two-fold. While RLPPAI attempts to restore spawning habitat from the 'land-side', commercial fishing is 'attacking us' from the 'sea-side'. Our 'land' based efforts have struggled for decades in attaining positive results. Now, with the present political situation upon us, things appear dire.

So, again, we/I implore the Council to assist those of us 'land-side' by enacting the Amendment 8 Alternatives within the Fishery.

The base of the food-chain must be protected + preserved. And depends upon it.

Thank You for your attention to this matter.

Sincerely, Ponderly,

Thomas S. Kirk, (VP for the RLPPAI Board of Directors)



March 30, 2017

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

Dear Dr. Quinn and Mr. Nies:

We write in support of an alternative for Amendment 8, and in support of a year-round no midwater trawl “buffer zone” extending 50 miles from the coast including management areas 1B, 2 and 3 including waters off Cape Cod, Rhode Island and Connecticut to protect Atlantic and river herring. We also ask that the closure of Herring Management Area 1A be made year-round to prevent further depletion in that locale.

River herring spend the majority of their lives at sea.¹ Because our Hudson River herring and Hudson River shad spend the bulk of their lives at sea, fisheries offshore can determine the health of the spawning populations of river herring in the Hudson River. Our river herring migrate up and down the coast with Atlantic herring and the area within 50 nautical miles of the coast is heavily used.

Hudson River biologists tell us that in recent years we have seen record low young-on-year indexes. Although we do not know all the reasons why so few young are now produced we do know that offshore bycatch is significant.²

¹ See Atlantic States Marine Fisheries Commission website text on “Shad & River Herring”
<http://www.asmfc.org/species/shad-river-herring>

² *Fishermen's Insights into River Herring Population Trends, Fisheries, and Restoration, from Maine to South Carolina* National Marine Fisheries Service, Julia Beaty and Dan Kircheis, p.4

While we do not know what percent of Hudson River herring use the requested buffer zone, we do know that a significant number do. Capture of the Hudson's river herring offshore is detrimental in a number of ways. Juvenile herring and shad are being taken as bycatch before they get the chance to spawn even once. And mature spawning-age adults that are captured do not return to the Hudson as they normally would for several spawning seasons. Midwater trawls along the coast which catch juvenile and mature adults effectively cause the loss of all the spawning runs these fish would have made over their entire lives. Increased protection of herring offshore is critical to supporting the restoration of healthy populations in the Hudson River estuary.

An authority on this subject, Professor of Biology at Queens College, Dr. John Waldman, notes that "initiatives to restore river herring in northeastern rivers of the U.S. through dam removals and construction of fish ladders are increasing. However, gains from these efforts are threatened by likely significant, but also difficult-to-quantify, bycatch in nearshore fisheries."

Professor Waldman's statement is also indicative of the effort, time and money that have gone into protecting our local Hudson River herrings' runs, and the consortia of government, concerned citizens and public interest advocates that have been involved in arranging dam removal and other measures.³

We hope that the preponderance of evidence regarding the deleterious effects of coastal bycatch of river herring will assist you in your deliberations and we thank you for your consideration of our request.

Yours sincerely,



John Lipscomb
Vice President for Advocacy and Boat Captain

³ "Herring Return to Wynantskill After 85 Years" – see Riverkeeper website, <https://www.riverkeeper.org/news-events/news/preserve-river-ecology/herring-return-wynantskill-85-years/>; and see "Dam Removal Project Allows for Return of River Herring" see <http://www.twcnews.com/nys/capital-region/news/2016/06/2/dam-removal-project-allows-for-return-of-river-herring-troy.html>; and see "NOAA Habitat Restoration Projects" on the NOAA website, <https://www.greateratlantic.fisheries.noaa.gov/protected/riverherring/conserv/research/restoration/index.html>

Sherie Goutier

From: John Waldman <John.Waldman@qc.cuny.edu>
Sent: Thursday, March 30, 2017 2:58 PM
To: comments
Subject: Atlantic Herring Amendment 8



Dear Dr. Quinn,

I am writing in support of the inshore ban on midwater trawling so as to protect river herring in marine waters. Yeoman efforts are being made to restore river herring in rivers and streams with dam removals and construction of fish ladders. But this will come to naught if there is substantial bycatch of river herring in the Atlantic herring trawl fishery, as occurs some years (apparently rather intensively prior to spring 2015 when many inland runs were greatly reduced).

River herring and Atlantic herring seem to mix to variable extents in the ocean. Even a modest bycatch of river herring could seriously harm individual populations. The vagaries surrounding this issue support the imposition of the precautionary principle—these fisheries should not continue until they are shown not to cause harm through bycatch.

I note that inshore waters in New York and New England seemed to come alive the past two years with the resurgence of menhaden. Most notably, with the appearance of a humpback whale off 42nd Street in the Hudson River, almost certainly there for outmigrating juvenile menhaden (and possibly river herring too). But also with the great schools of striped bass and bluefish showing in inshore waters. This observation points to the absolutely critical importance of baitfish in maintaining the basis of healthy inshore ecosystems. River herring included.

I urge you to support the proposed ban on inshore midwater trawling.

John Waldman, Ph.D.
Queens College, NY

From: Sandra sanfilippo [mailto:cateyes0608@hotmail.com]
Sent: Monday, March 27, 2017 8:59 PM
To: Andrew J. Applegate <aapplegate@nefmc.org>
Subject: whiting letter



Dear Fisheries Commission Council members,

My name is Ignazio Sanfilippo, Captain of the fishing vessel Cat-eyes. I have been whiting for 45 years, I have fished out of the Cultivator, Nausett Beach Stell wagon, Jeffery's and also Ipswich Bay. I strongly believe that I have enough whiting fishing experience to give an opinion regarding the Southern New England landings. The landings quota should stay at 40,000 pounds if anything it should go down to thirty to make it even across the board for Northern and Southern New England and I also think the raised foot rope trawl should be used in Southern New England as well as Northern New England in my opinion the raised foot rope trawl is the best thing that has happened to the whiting fisheries. The whole goal for these studies were to eliminate discard. I believe the whiting discard problem has been resolved. It would be the thing for the fisheries (best interest) for southern New England to use the raised foot rope as well so they also get rid of the discard to save other species. Regarding the increase in the whiting landing to be raised to 50,000 pounds would be a massive mistake. The markets can't handle what we sent then now.

Respectfully yours,

Capt. Nazio Sanfilippo

dlb 3/28/17

**WHALE AND DOLPHIN CONSERVATION
THE HUMANE SOCIETY OF THE UNITED STATES
CENTER FOR BIOLOGICAL DIVERSITY
DEFENDERS OF WILDLIFE**

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950
comments@nefmc.org



March 27, 2017

Re: Amendment 8; Alternatives to Address Localized Depletion of Atlantic Herring

Dear Dr. Quinn:

On behalf of the members and constituents of Whale and Dolphin Conservation, The Humane Society of the United States, Center for Biological Diversity, and Defenders of Wildlife, we are writing in support of the development of a year-round no-midwater trawling zone extending 50 miles from the coast which would include herring management areas 1B, 2 and 3 (Figure One).

Herring play a significant role in the ecosystem as a forage fish for a number of cetacean species which, themselves, significantly contribute both to the economy and the ecology of the Gulf of Maine. Yet, many of these species have not yet recovered from decades of targeted killing and/or continue to face man-made threats including bycatch in fishing, which impair their recovery.

Bycatch of cetaceans in pair trawl fishery

Bycatch in fisheries may be the single greatest threat to marine mammals globally and pair trawling has long been implicated in elevated levels of mortality for small cetaceans. Small cetacean bycatch—largely of dolphins—has been documented in pair trawl fisheries both in the US and in other nations. Bycaught animals are generally caught in the “bag” of the net and drowned. The assumption made in most studies is that they had entered the net to forage on the species being targeted as they are drawn into the net and the dolphins were themselves accidentally trapped as the net was pulled forward with the schools of fishing pressing in behind them, cutting off a route of escape.¹ A review of bycatch in pair trawls found varying entrapment

¹ See discussions in: Northridge, S. (2003). Reduction of cetacean bycatch in pelagic trawls. Final Report to DEFRA & JNCC, Project MF0733; and Northridge, S., A. Mackay, D. Sanderson, R. Woodcock, and A. Kingston (2004). A review of dolphin and porpoise bycatch issues in the Southwest of England. An occasional report to the Department for

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rates depending on a number of factors including target and bycatch species in the net, gear configuration, and fishing areas.²

An Irish study of pair trawls for tuna monitored 313 hauls over 160 days and recorded 145 cetaceans caught by just four pairs of trawlers. These included 127 common dolphins, with other species including striped dolphins, pilot whales and Atlantic white-sided dolphins.³ A fishery in the UK for winter sea bass caught 53 common dolphins in 12 tows; however, no bycatch was observed in the pair trawl fishery for mackerel, sardines, blue whiting and anchovy.⁴ It is important to note that the seasonality of the fishery appeared to affect bycatch.

It is likely that a fishery targeting the same small forage fish sought by small cetaceans will pose a higher risk. In the case of the herring pair trawl, it may be worth noting that both small cetaceans and large whales target herring and mackerel as a preferred fatty prey⁵ and thus may be at some risk from a mid-water trawl occurring at their swimming depths.

An experimental pair trawl for tuna that operated in the Atlantic in the 1990's had a bycatch of bottlenose, common and Risso's dolphins as well as pilot whales.⁶ In 1996, NMFS convened a Take Reduction Team (TRT) for fisheries including the Atlantic pelagic longline, the Atlantic Swordfish and Tuna drift net fishery and the Atlantic experimental pair trawl fishery—all of which had elevated levels of marine mammal bycatch. Table one of the summary report from the TRT meetings shows that between 1991-1995, the pair trawl fishery killed bottlenose, common and Risso's dolphins as well as pilot whales. On average they killed 45 offshore bottlenose dolphins each year—this single fishery, with only a handful of vessels operating, was responsible for killing *half* of the Potential Biological Removal level (PBR)⁷ for that species.

Environment Food and Rural Affairs. And Northridge S, Mackay A, Cross T (2005) Dolphin bycatch: observations and mitigation work in the UK bass pair trawl fishery 2004–2005 season. Occasional Report to DEFRA. St. Andrews: University of St. Andrews, U.K

² A Review of Cetacean Bycatch in Trawl Fisheries: Literature Review. September 2005. Prepared for the Northeast Fisheries Science Center by Erika A. Zollett and Andrew A. Rosenberg, University of New Hampshire Durham, New Hampshire. At: <http://www.nefsc.noaa.gov/nefsc/publications/reports/EN133F04SE1048.pdf>

³ Ross, A and S. Isaac. 2004. The Net Effect? A review of cetacean bycatch in pelagic trawls and other fisheries in the north-east Atlantic. A report for Whale and Dolphin Conservation and Greenpeace. At <http://uk.whales.org/sites/default/files/net-effect.pdf>

⁴ Id.

⁵ See: McMillan CJ. How important are herring to humpback whales? The role of herring in meeting the energetic requirements of humpback whales in a British Columbian feeding ground. 2005. Simon Fraser University/UBC School of Resource and Environmental Management. This study found that herring were preferred by pregnant and lactating females whose diet was often 50% herring when sufficient quantities were available.

⁶Table 1. Marine mammals incidentally taken by commercial fishery, years total take estimates. In Atlantic Marine Mammal Stock Assessments At: <http://www.nefsc.noaa.gov/publications/tm/tm114/pdfs/244.pdf>

⁷ The PBR is defined in the Marine Mammal Protection Act (MMPA) as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

In the Pacific northwest, where pair trawling has been used by the NMFS Northwest Fisheries Science Center in targeting and capturing juvenile salmon and eulachon, mitigation measures to deter bycatch included a mandate for marine mammal watches to be conducted by trained observers for at least ten minutes prior to the beginning of the planned set and throughout the tow and net retrieval to assure no sightings of marine mammals within 500 meters or as far as can be reasonably observed.⁸ One study, requiring installation of exclusion grids and top-opening escape hatches near the cod end appeared to reduce small cetacean bycatch whereas the use of acoustic pingers had no effect.⁹

These authors stated that “trawling-related mortality cannot be assessed in the absence of an ongoing and robust observer program and without information on trawler-associated dolphin community size, broader dolphin population size and connectivity with adjacent populations.”¹⁰ The problem with pair-trawl fishing is that, to be effective, independent observers must be on the boat that is hauling the net in order to verify bycatch. Observers can be thwarted if the net is hauled by a different vessel.

In the most recent final NMFS Marine Mammal Stock Assessment Reports (SAR),¹¹ Appendix 1, lists species bycaught in trawl fisheries including pair trawls in the Mid-Atlantic mid-water trawl fishery and the Northeast mid-water trawl fishery. During the most recent 5 year period in the SAR, long-finned pilot whales, short-beaked common dolphins and both harbor and gray seals were captured, though none of these species was captured in significant numbers. It is not unreasonable to assume that some of the reduction in marine mammal bycatch in trawl fisheries has been due to highly restricted fishing effort. For example, NMFS reports the number of trips in the NE trawl fishery declined from 2,000 trips in 2004 to only 291 in 2014 and bycatch similarly declined.¹² For marine mammals, increased fishing effort results in increased exposure to risk.

Economic impacts of displacing whales

Multiple studies have repeatedly demonstrated that distribution and density of whales in a foraging habitat is directly correlated to prey abundance.¹³ A number of important whale foraging habitats in

⁸ 81 FR 38515, 06/13/2016

⁹ Simon J. Allen, S. J. Tyne, H. Kobryn, L. Bejder, K. Pollock, N. Loneragan. (2014) Patterns of Dolphin Bycatch in a North-Western Australian Trawl Fishery. PLOS. April 2, 2014. At: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0093178>

¹⁰ Id.

¹¹ Waring et al. 2016. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2015. US Department of Commerce NOAA/NMFS-NEFSC. NOAA Technical Memorandum NMFS-NE-238. At: http://www.nmfs.noaa.gov/pr/sars/pdf/atlantic2015_final.pdf

¹² Id.

¹³ Payne, P.M., Wiley, D.N., Young, S.B., Pittman, S., Clapham, P.J. and Jossi, J.W. 1990. Recent fluctuations in the abundance of baleen whales in the southern Gulf of Maine in relation to changes in selective prey. Fishery Bulletin 88: 687-696; Moran et al. Humpback whales as indicators of herring movements in Prince William Sound found at https://access.afsc.noaa.gov/pubs/posters/pdfs/pMoran05_humpback-indicators-herring-pws.pdf; Friedlaender A. S. Halpin P. N. Qian S. S. Lawson G. L. Wiebe P. H. Thiele D. et al. 2006b Whale distribution in relation to prey abundance

the Gulf of Maine are located within 50 miles of the coast including the waters of the Stellwagen Bank National Marine Sanctuary (Figure Two). These areas serve as important destinations for commercial whale watch operations departing from Maine, New Hampshire, and Massachusetts operating annually from as early as March to as late as November. A 2010 study suggests that localized depletion of herring would have a detrimental effect on whale watch search times.¹⁴

It is important to note that both search times and search areas are limited for most whale watching vessels. Scheduling requirements restrict the amount of time that a vessel can search before it must return to the dock. However, whale watch vessels are typically also limited in their search area as a result of the vessel's Certificates of Inspection (COI). The COI for most of these passenger vessels restrict their ability to operate within 20 miles of a harbor or safe refuge¹⁵. As a result, the localized depletion of a forage species could result in whales moving to offshore areas where whale watch boats cannot operate. Given that whale watching in New England brings in a total expenditure estimated at \$126 million dollars annually¹⁶, the inshore removal of herring can be detrimental to the local economy.

Whales and fish as ecological contributors

The ecosystem benefits of piscivorous large whales in the area as a result of herring abundance should not be dismissed. Emerging research¹⁷ demonstrates that whales act as ecosystem engineers both through transferring nutrients within the water column and across latitudes supporting plankton blooms on which the marine food web, including herring, relies as well as sequestering carbon, limiting the effects of climate change. According to Roman and McCarthy (2010)¹⁸, the recovery of whale populations can counter “the decline in nutrients for phytoplankton growth caused by ocean warming.” In fact, they estimated that whales and seals in the Gulf of Maine are responsible for the release of approximately 2.3×10^4 metric tons of nitrogen per year into the ecosystem.¹⁹

and oceanographic processes in shelf waters of the Western Antarctic Peninsula. *Marine Ecology Progress Series* 317:297-310 doi:10.3354/MEPS317297

¹⁴ Lee, M.-Y. Economic tradeoffs in the Gulf of Maine ecosystem: herring and whale-watching, *Marine Policy*, 2010, vol. 34 (pg. 156-162)

¹⁵ <https://www.uscg.mil/hq/cg5/cg5212/loadlines.asp>

¹⁶ O'Connor, S., Campbell, R., Cortez, H., & Knowles, T., 2009, *Whale Watching Worldwide: tourism numbers, expenditures and expanding economic benefits*, a special report from the International Fund for Animal Welfare, Yarmouth MA, USA, prepared by Economists at Large

¹⁷ Nicol, S., Bowie, A., Jarman, S., Lannuzel, D. Meiners, K.M. and Van Der Merwe, P. (2010) Southern Ocean iron fertilization by baleen whales and Antarctic krill. *Fish and Fisheries*, 11: 203-209; Roman J, McCarthy JJ (2010) The Whale Pump: Marine Mammals Enhance Primary Productivity in a Coastal Basin. *PLoS ONE* 5(10): e13255. doi:10.1371/journal.pone.0013255

¹⁸ Roman J, McCarthy JJ (2010) The Whale Pump: Marine Mammals Enhance Primary Productivity in a Coastal Basin. *PLoS ONE* 5(10): e13255. doi:10.1371/journal.pone.0013255

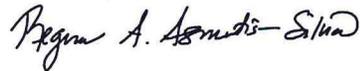
¹⁹ Id.

Research also shows that, by enhancing primary productivity, whales sustain the growth of their own prey.²⁰ As evidenced by documented areas frequented by whale watch boats in the Gulf of Maine, there is significant overlap of whale distribution with herring fishing within 50 miles of shore. The removal of herring and resulting redistribution of whales could negatively impact long term abundance of herring and therefore adversely impact the sustainability of both the fishery and a vibrant whale watching industry.

Conclusion

Both herring and whales play a significant role in the Gulf of Maine's ecosystem by contributing both to the economy and the ecology of the Gulf of Maine. However, as increasing evidence indicates that whales enhance the primary productivity of their habitats, the need to ensure that forage species are available to them is increasingly important. We strongly urge the Council to consider an ecosystem approach to its planning and we support the development of a year-round no-midwater trawling zone extending 50 miles from the coast as a means to benefit protected whale and dolphin species and the forage fish on which they rely. Doing so can ultimately benefit the economic sustainability.

Sincerely,



Regina Asmutis-Silva
Executive director, Whale and Dolphin Conservation, North America
Regina.Asmutis-Silvia@whales.org



Sharon B. Young
Marine Issues Field Director, The Humane Society of the United States



Sarah Uhlemann
Senior Attorney, Center for Biological Diversity



Jane Davenport
Senior Attorney, Defenders of Wildlife

²⁰ Lavery TJ, Roudnew B, Seymour J, et al. 2014. Whales sustain fisheries: blue whales stimulate primary production in the Southern Ocean. *Mar Mammal Sci*; doi:10.1111/mms.12108.

Figure One. Map showing 12, 25, and 50 nautical mile “closure buffers” that could be imposed to control localized depletion of Atlantic herring by the midwater trawl fleet.

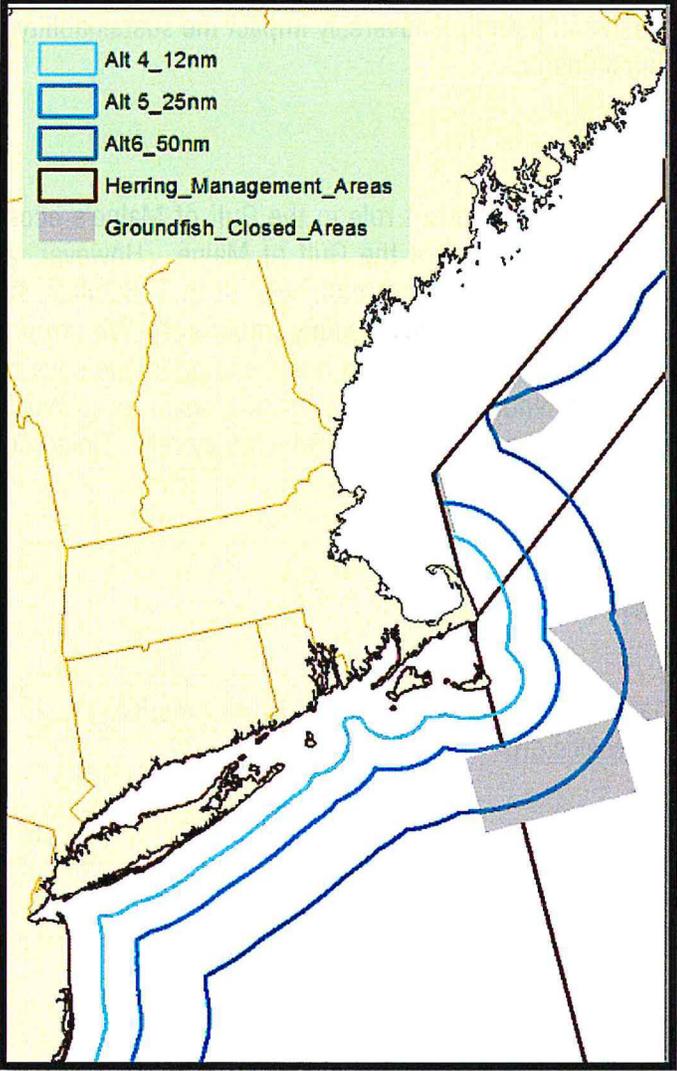


Figure Two. Map showing whale watching areas in the Gulf of Maine
<http://www.northeastoceandata.org/>

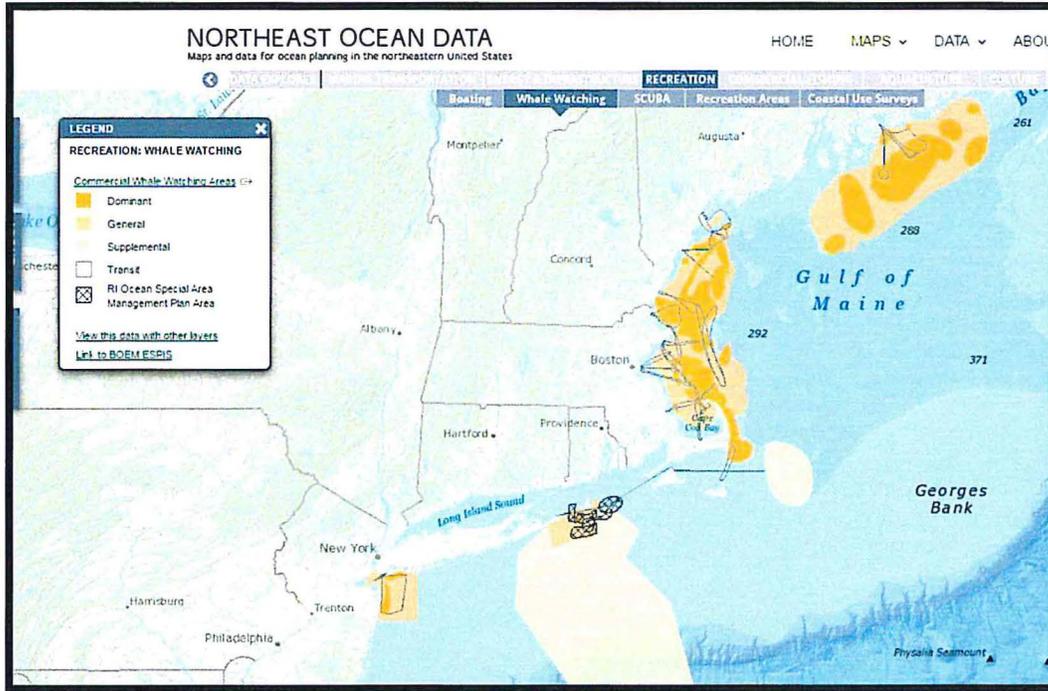
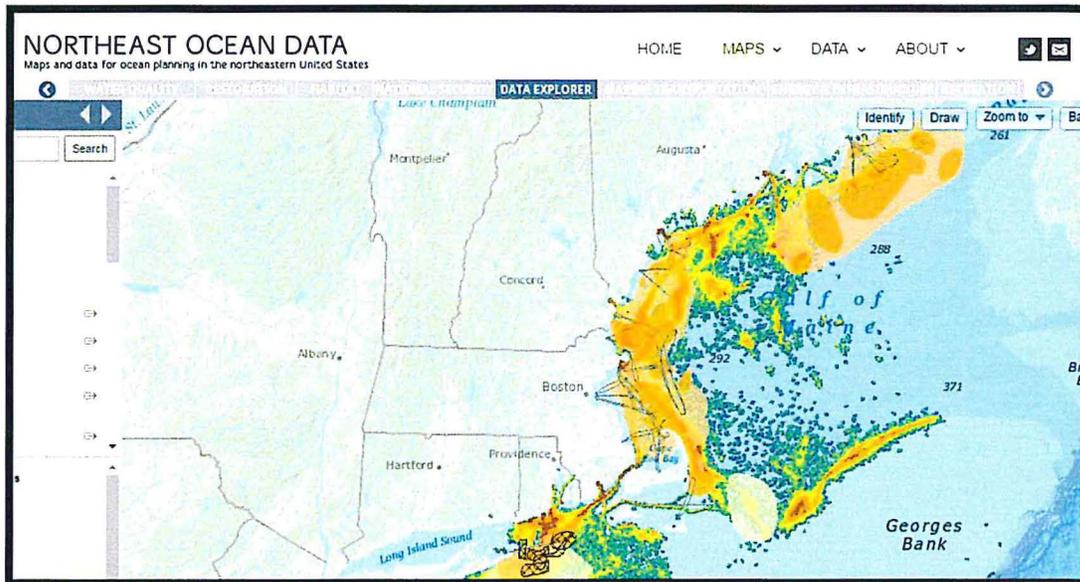


Figure Three. Map showing overlap of whales as evidenced by whale watching areas with the herring fishery in the Gulf of Maine
<http://www.northeastoceandata.org/>





Herring Ponds Watershed Association
P.O. Box 522, Sagamore Beach, MA 02562
Preserving our Ponds and Watershed



Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

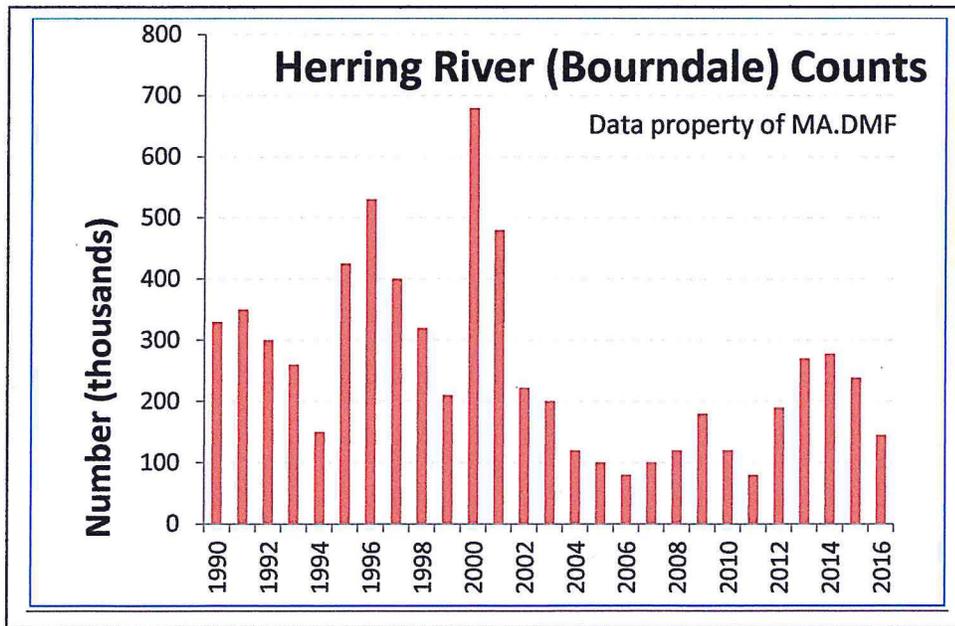
24 March 2017

To: Whomever is concerned
From: Brian Harrington, Pres., the Herring Ponds Watershed Association

BH

The Herring Ponds Watershed Association in Plymouth and Bourne, Massachusetts advocates that stronger measures are needed to stop declines in numbers of river herring that we have witnessed in our historic and well-monitored Herring/Monument River run, and that others have seen in nearby watersheds.

Continuous electronic monitoring of the Massachusetts "sentinel" Herring/Monument River shows seriously diminished counts of river herring since 1990 (see Figure).



The Herring/Monument River Run is particularly important because it is relatively free of pollutants, because of its accessibility to the public (with a Corps of Engineers visitor's center along the Cape Cod Canal, and because it is used as a primary source for transplanting

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herring to other watersheds needing restoration. This run also has a unique place in American history, dating back to its critical use in sustaining native peoples and European settlement.

Our local spring herring run, with counts sometimes in the hundreds of thousands, typically peaks between early and late May. So far as we know, there are no public data reporting numbers of herring fry that leave this same watershed. However, at any moment on most days between early September and November, schools of fry by hundreds [and often thousands] stage and pass through pools at the Cape Cod Canal outfall of the River. The abundance of fry that pass from the Herring River into the canal is probably in the millions.

The reasons for declining numbers of river herring in the Herring River Watershed are unknown. But given the good health of the watershed, and the huge number of fry that it produces, it seems unlikely that a cause of population decline originates within the Watershed. The most likely causes of declines are in regional marine waters, and related to by-catch in mid-water trawls in strategic areas.

A recent study (Hasselman et al., in litt.) found that river herring by-catch is mostly occurring in southern New England where populations have declined the most. The authors suggest that reducing this by-catch should be a priority for river herring conservation.

In the first few months of 2017, almost 80% of the allowable annual herring by-catch has accrued in Cape Cod mid-water trawls. Given the high rate of regional river herring declines, and the seriously diminished state of our key sentinel river population in a state-designated Area of Critical Environmental Concern, it is logical to implement measures to stop the declines, and, hopefully, to begin recovery.

With this background, we are advocating for a **year-round closure** to mid-water trawl gear in Herring Management Area 1A—i.e. designated waters off Maine, New Hampshire, and eastern Massachusetts (trawling is already prohibited June 1 through September 30).

We also believe that there should be a year-round “no midwater trawling zone” (a buffer) that extends 50 miles from the coast and includes herring management areas 1B, 2, & 3—including waters off the back of Cape Cod, Rhode Island, Connecticut.

Thank you for your consideration.

Sherie Goutier

From: Patrick Herron <patrick@mysticriver.org>
Sent: Monday, March 27, 2017 5:29 PM
To: comments
Subject: Mystic River Watershed Association comments on Amendment 8
Attachments: NoMidWaterTrawling_RiverHerring_MyRWA_Mar2017.pdf



To Whom it May Concern at NEMFC,

Our organization has been documenting river herring populations, and improving and extending habitat within the Mystic River Watershed near Boston.

The outcome of our efforts includes documentation of a significant increase in the run size within the past five years.

Like many others, we are concerned about river herring stocks and the level of by-catch still occurring with trawling activities. We respectfully request that the NEFMC assist us and do its part by creating a “no midwater trawling zone” that extends 50 miles from the coastal states of Massachusetts (including the back of Cape Cod), Rhode Island and Connecticut. Herring Management. Area 1A should be included in this ban as well.

Thank you for your careful review of our letter on alternatives to Amendment 8.

Our organization is happy to provide additional data on river herring populations within our system should it assist the work of NEFMC.

We would appreciate email acknowledgement of receipt of this letter.

Sincerely yours,
Patrick

--
Patrick Herron, PhD
Executive Director
Mystic River Watershed Association
20 Academy St.
Arlington, MA 02476

(781) 316 3438
www.mysticriver.org



Mystic River Watershed Association
your community • your watershed

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

Dear Mr. Quinn and Mr. Nies,

The Mystic River Watershed Association (MyRWA) is a non-profit organization dedicated to the preservation and enhancement of the ecology of the Mystic River Watershed, which flows into Boston Harbor. MyRWA, as well as many other organizations and agencies within our watershed, are actively engaged in efforts to dramatically improve our habitat for spawning alewives and bluebacks because of the vital and foundational role river herring play in our ecosystem.

With the support of our Massachusetts Division of Marine Fisheries, the Massachusetts Department of Conservation and Recreation, the Massachusetts Water Resources Authority (MWRA) and thousands of volunteers, MyRWA has been directly addressing freshwater impediments that have been cited as playing a part in the great decline of river herring over the last six decades—dams, pollution and predation.

- In 2015, MWRA completed a several-year project substantially reducing the volume of combined sewage overflows (CSOs) discharged to Alewife Brook during heavy rainstorms. Also, MWRA constructed a 3.4-acre stormwater wetland to filter environmental contaminants before they enter the Little River, which flows into Alewife Brook.
- MyRWA has been working for several years to eliminate the water chestnut, which is an invasive species that deprives our herring of dissolved oxygen. Last year alone, over 800 volunteers removed water chestnut plants from the Mystic River.
- MyRWA right now is engaged in a Total Maximum Daily Load (TMDL) study in order to address phosphorous pollution throughout our watershed.
- Because striped bass cannot pass through the fish ladder at our Upper Mystic Lake dam, river herring predation in our watershed has been reduced.
- Our river herring's final obstacle, the Center Falls Dam on the Aberjona River, has been removed as a fish ladder was completed December 2016.
- Thanks to dozens of volunteers, we completed last year our 6th annual count of river herring at the fish ladder within the Upper Mystic Lake dam. Our sampling's count was 62,562 herring, which gives us an estimated run of 448,060 fish. This is greater than a twofold increase over the first year's count of river herring!
- This spring with the assistance of our Division of Marine Fisheries we are installing a video camera at the Upper Mystic Lake dam's fish ladder. Now we will be able to count our river herring passing through the ladder at night as well as during the day.

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Our population increase gives direct evidence on how our restoration efforts for river herring can have a major impact. We urge the NEFMC to protect our river herring where they school in the ocean.

For financial reasons onboard monitoring of all midwater trawlers has not been put in place to document and reduce river herring bycatch and slippage. Therefore, the only path forward towards the protection of our depleted river herring population, while in the ocean, is to restrict midwater trawling where river herring school. The proposed year-round “no midwater trawling zone” that extends 50 miles from the coastal states of Massachusetts (including the back of Cape Cod), Rhode Island and Connecticut is necessary to protect and restore our river herring population. Additionally, the seasonal closure of Herring Management Area 1A, (waters off eastern Massachusetts, New Hampshire and Maine) should be extended for the full year.

These measures need to be done for the following reasons:

- A 2016 study states, “bycatch in the marine fisheries, particularly the southern New England Atlantic herring fishery, may be a contributing factor in the persistent depression of population abundances observed for the most depleted river herring generic stocks.”¹ Within its genetic study of alewife bycatch, scientists found that between the northern New England, the southern New England and mid-Atlantic genetic stocks of alewife; the southern New England stock had the highest total proportion (67%) of alewife bycatch. As southern New England areas have indeed reported serious population declines, the midwater trawling within this region should be restricted.
- River herring bycatch occurs mostly within the region of the 50-mile coastal buffer zone and Herring Management Area 1A.²
- NOAA’s scientists assessed the climate vulnerability of fish and invertebrate species in the Northeast region and concluded that the overall vulnerability for both alewife and blueback herring is “very high.”³ This is the time to rebuild the population, not to allow more river herring to be killed.
- Midwater trawling where river herring school directly undermines the hard-fought progress that the Mystic River Watershed Association and other watershed stewards up and down the New England coast have made to restore our river herring population.

We respectfully request that the NEFMC assist us and do its part by creating a “no midwater trawling zone” that extends 50 miles from the coastal states of Massachusetts (including the back of Cape Cod), Rhode Island and Connecticut. Herring Management Area 1A should be included in this ban as well.

Sincerely,



Patrick Herron, Executive Director
Mystic River Watershed Association

¹Hasselman, et.al. 2016. Genetic stock composition of marine bycatch reveals disproportional impacts on depleted river herring genetic stocks. Canadian Journal of Fisheries and Aquatics Science. 73: 1–13.

²Cournance, et al, 2013. Spatial and temporal patterns of anadromous alosine bycatch in the US Atlantic herring fishery. Fisheries Research 141:88-94

³<https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/inde>

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March 27, 2017

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950



RE: River Herring buffer zone and Year Round closure for Herring Management Area 1A

Dear Dr. Quinn and Mr. Nies,

We fully support a year-round “no midwater trawling zone” (a buffer) that extends 50 miles from the coast and includes herring management areas 1B, 2, & 3—including waters off the back of Cape Cod, Rhode Island, and Connecticut. We also support a year-round closure of Herring Management Area 1A—waters off Maine, New Hampshire, and eastern Massachusetts, to midwater trawl gear.

River herring populations have suffered a significant decline in abundance in recent years, specifically in southern New England where they are often caught as bycatch. Herring caught in these waters are thought to be en route north to spawn and are denied the opportunity to replenish their populations when caught early in southern waters.

Once a main foraging component of the New England and Mid-Atlantic ecosystems, river herring populations have been heavily depleted. Continuing to allow mid-water trawls to fish in these near shore areas can lead to localized depletion and have serious implications on the survival of this species as well as those relying on river herring for food, such as larger fish, whales and seabirds. Many fish that feed on river herring are also, in turn, species that we rely on as a source of food.

Action is required to protect key species such as river herring, taking a more ecosystem-based approach to managing our Ocean and protecting these delicate resources for future generations.

We are fortunate that we currently have the time to make decisions ensuring protection of these resources and ecosystems moving forward. Please take this time to enact management that is necessary, before waiting too long and exhausting the opportunity that stands before us.

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A Voice For Nature

Sincerely,

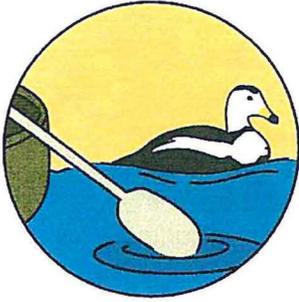
A handwritten signature in black ink, appearing to read "Carl Safina". The signature is fluid and cursive, with the first name "Carl" being more prominent than the last name "Safina".

Carl Safina, PhD
Founding President, The Safina Center
Endowed Research Professor, Stony Brook University

A handwritten signature in black ink, appearing to read "Shelley Dearhart". The signature is very stylized and abstract, with several overlapping loops and a long horizontal stroke extending to the right.

Shelley Dearhart
Sustainable Seafood Program Director, The Safina Center

A Voice For Nature



Ocean River
INSTITUTE

Protecting the Commons



"All at last return
to the sea—to Oceanus,
the ocean river, like the
ever-flowing stream of
time, the beginning
and the end."

— Rachel Carson,
The Sea Around Us

February 7, 2017

Dr. John Quinn, Chairman of the Herring Committee
New England Fisheries Management Council
50 Water Street, Mill 2
Newburyport, MA 01950

Dear Council Chairman Dr. John Quinn,

The Ocean River Institute respectfully submits this letter of comment on the New England Fishery Management Council Herring Committee's draft Amendment 8 to the Atlantic Herring Fishery Management Plan. A purpose of Amendment 8 is to propose measures to address potential localized depletion of Atlantic herring and potential user conflicts.

The Ocean River Institute is networked with many watershed groups throughout New England. We see the management being addressed by the fishery council as recognized by Amendment 1: "significant damage to a keystone species like herring could result in long-term and possibly irreversible damage to many other components of the...ecosystem." For us the keystone species of great economic importance are the river herring.

Since 1976, when the Magnuson Stevens Fisheries Management Act was passed, New England communities have improved river conditions for alewives, blueback herring, and shad. Watershed associations throughout coastal New England have worked with state and federal agencies to restore conditions for river herring. Not only have dams been removed, pools and ripple areas have been built, and shade trees planted. \$8 billion has been spent by government improving conditions for river herring. Private investments have also been spent on improving river conditions for the game fish that forage on river herring. Substantial funds have been spent by anglers and recreational fishermen.

Despite all the efforts to restore river herring, there is mounting evidence that blueback herring may be a threatened species. River herring lay down spawning marks on their scales so that the number of times an individual fish has spawned in its lifetime is indicated. Blueback herring (age 10) have been seen with as many as 5 and 6 marks on a scale, evidence that bluebacks returned to the river to spawn for 5 or 6 years.

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And then the river herring go to sea. Alewives are thought to spend seven years at sea. River herring often school with Atlantic herring. Spending as much as 85% of their lives swimming with other forage fish. Much research has been done on the make-up of herring schools in the Gulf of Maine. Researchers have identified seasonal hotspots for finding river herring including some of the seasonal schools found close to Cape Cod.

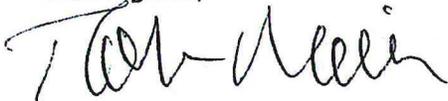
The North Atlantic herring fishery is the fourth largest by weight in the world.¹ The biggest fishing ships in New England waters are the herring "mid-water trawling" vessels that reach 160 feet in length. They set massive nets six stories high. One set of the trawl can haul in 800,000 pounds of fish. The problem is a matter of scale where one misplaced trawl could destroy the entire population of one river's herring. All the millions spent on that river's herring could be for naught when a river community's herring population do not return because they are gone.

The user conflict of concern here is with the coastal communities and watershed groups working to restore herring in New England's rivers and those making expenditures on behalf of the predators of river herring, including smallmouth bass, striped bass, and bluefish. They are in conflict with sea herring fishing whenever nets are set on schools composed of both sea and river herring.

It is out of concern for the river herring, and with a deep respect for river restoration work that has been accomplished, that I urge the Council to take the precautionary approach in amending the herring plan, to support year-round closures to midwater trawlers extending 50 miles from shore. This is the only alternative under consideration that protects all identified river herring hotspots.

Thank you for your attention and for your due considerations resulting in recommendations and actions that will sustain both Atlantic herring and river herring (alewife, blueback herring and shad) populations.

Best regards,



Rob Moir, Ph.D.
Executive Director, the Ocean River Institute
Plaintiff in the Flaherty Case

¹ "Atlantic herring (*Clupea harengus*) is a dominant small pelagic species, and currently supports the fourth largest fishery, by weight, in the world."
Dawicki, Shelley, 2011. Atlantic Herring Population Trends Linked to Egg Predation by Haddock. Science Spotlight, Northeast Fisheries Science Center, NOAA, August 8, 2011.
http://www.nefsc.noaa.gov/press_release/2011/SciSpot/SS1103/

Sherie Goutier

From: Caroline Snyder <carlice.snyder@gmail.com>
Sent: Wednesday, March 22, 2017 12:36 PM
To: comments
Cc: douglas.grout@wildlife.nh.gov
Subject: amendment 8/buffer zone for mid-water herring trawlers

Citizens For Sludge-Free Land
www.sludgefacts.org



Dear Dr. Quinn and Mr. Neis.

Citizens for Sludge-Free Land strongly advocates for a 50 mile year-round buffer zone from mid-water trawler fishing. The incidental bycatch is collateral damage our marine web cannot tolerate. Allowing this to happen is a serious setback in ongoing efforts to restore this valuable resource.

We believe a precautionary approach should be firmly adhered to, especially when keeping in mind the dire predictions that climate change will have and is having on our ocean health, fisheries and environment.

Caroline Snyder, Ph.D
President
PO Box 38
North Sandwich NH 03259
603-284-6998

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Joan O'Leary

From: Josh Arnold <josh@galacommunity.org>
Sent: Wednesday, March 22, 2017 7:55 PM
To: comments
Cc: Doug Grout
Subject: Amendment 8, buffer zone: for mid-water herring trawlers

Global Awareness Local Action

PO Box 2267, Wolfeboro, NH 03894
603.539.6460 | contact@galacommunity.org | www.galacommunity.org

Dear Dr. Quinn and Mr. Neis.

G.A.L.A is a New Hampshire non-profit whose mission is to provide education and opportunity that help people thrive in the face of economic, environmental, and social challenges.

We are very disturbed by the wasteful bycatch that results from mid-water herring trawlers fishing too close to shore. At a time when climate change threatens all living systems, we urge the Council to strongly adopt regulations that prevent these fleets from all fishing within 50 nautical miles of the shoreline year-round-no exceptions.

Climate change is here-and-now, impacting all species and further exacerbating the threats of infectious disease from indigenous and tropical sources. We have no idea how the ripple effects of climate change will play out on the entire marine foodweb, disrupting prey-predator competition/relations and the imbalance that will result. Species with a low thermal range will become less available to provide forage for those with a higher tolerance and migrating north to colder waters. We've seen this disruption in southern waters with an overwhelming influx of jelly fish and algae. Not only is it bad for the environment it is costly to coastal dollars.

Decisions made by the Council *must* consider these factors in every decision made.

Sincerely,

Josh Arnold
Executive Director, G.A.L.A.

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Joshua Arnold / Director
josh@galacommunity.org / 603-344-5009

Global Awareness Local Action (G.A.L.A.)
603-539-6460
PO Box 2267

db ✓ 3/23/17

Woneta Cloutier

From: Voices of Wildlife <voicesofwildlifeinnh@gmail.com>
Sent: Saturday, March 18, 2017 12:00 PM
To: comments
Cc: Doug Grout
Subject: Comments, Amendment 8, mid-water herring trawlers



Dear Dr. Quinn and Mr. Neis,

Voices Of Wildlife in NH is an all volunteer non-profit to help *all* the wild animals of New Hampshire.

We do not support killing animals on land, air or sea. We believe that allowing the reckless actions of mid-water herring trawlers fishing too close to shore is not prudent and unacceptable. The death of valuable marine species provide forage for whales, birds, tuna, cod and striped bass.

We call upon the Council to implement a year-round 100% buffer, in all New England waters, out to 50 nautical miles.

Bycatch resulting from mid-water herring trawlers is a waste of precious marine life.

Sincerely,

Elizabeth Marino, Secretary

--

Voices of Wildlife in NH (VOW)
PO Box 5802
Manchester, NH 03108
www.voicesofwildlifeinnh.org

cc: Douglas Grout, Chief Marine Fisheries, NH Fish and Game Department

dlb 3/20/17

Woneta Cloutier

From: NH Animal Rights <nhanimalrightsleague@gmail.com>
Sent: Saturday, March 18, 2017 12:34 PM
To: comments
Cc: Doug Grout
Subject: Comments, Amendment 8, mid-water herring trawlers



Dear Dr. John F. Quinn and Thomas A. Nies,

The New Hampshire Animal Rights League strongly and adamantly opposes the negligent and unnecessary wasteful killing and torture of all creatures.

We believe that allowing mid-water herring trawlers to fish within 50 nautical miles of shore results in wasteful bycatch of valuable marine life.

Therefore, we call upon the Council to mandate and fully implement a ban on mid-water herring trawlers within 50-nautical miles of shore year-round.

NHARL was founded in 1977 to help the animals of New Hampshire, be they on land, in the air, or in the water; and to protect all animals world-wide.

Sincerely,

Linda Dionne, President
New Hampshire Animal Rights League
PO Box 4211
Concord, NH 03302-4211
t. 603-377-0225

cc: Douglas Grout, Marine Division Chief, NH Fish and Game Department

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NHARL is an all-volunteer 501(c)3 non-profit. Your donations are tax-deductible.

Woneta Cloutier

From: JAN PENDLEBURY <jan_pendlebury@yahoo.com>
Sent: Friday, March 17, 2017 3:46 PM
To: comments
Subject: Amendment 8, buffer zone: for mid-water herring trawlers



Citizens for a Future New Hampshire

Dear Dr. Quinn and Mr. Neis,

Citizens for a Future New Hampshire is concerned with river herring bycatch resulting from mid-water herring trawlers. River herring are critical to the marine food web, providing forage for many marine species including whales, birds, tuna, cod and striped bass. We believe that continuing to allow this waste of a valuable resource is reckless and thoughtless and will further threaten these important members of the marine food web.

We are calling for the following:

- A **year-round “no midwater trawling zone” (a buffer) that extends 50 miles** from the coast and includes herring management areas 1B, 2, & 3—including waters off the back of Cape Cod, Rhode Island, Connecticut. (See Map 1 below)
- A **year-round closure of Herring Management Area 1A**—waters off Maine, New Hampshire, and eastern Mass. to midwater trawl gear (trawling is already prohibited June 1 through Sept. 30).

We can no longer waste our natural resources.

Yours truly,

Derek Owen, President
580 Brockway Rd.
Hopkinton, NH 03229

Woneta Cloutier

From: Weldon Bosworth <bosworthw@gmail.com>
Sent: Tuesday, March 21, 2017 10:53 AM
To: comments
Cc: Doug Grout
Subject: River Herring Fisheries Management

Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950



Dear Sirs:

I urge you to consider additional fisheries management practices that will contribute to the sustainability of the river herring species populations, including closure of Herring Management Area 1A to midwater trawling and a year round 50 mile buffer zone prohibiting inshore midwater trawling in Herring Management Areas 1B, 2 & 3. These herring species are already experiencing significant pressure on their localized populations through targeted harvest and bycatch and their populations are extremely vulnerable to collapse were factors, in addition to fishing pressure, that contribute to the success or failure vary in ways that are not anticipated in your fisheries models. Indeed, for these reasons, NOAA already considers them "species of concern". We know that "unplanned-for" variation in macroenvironmental variables (or failure to adequately consider them in fisheries population models) has resulted in significantly diminished populations and fisheries closures for other fisheries stocks, e.g. the Atlantic cod. Let's not let it happen to these species!

River herring are also an important food source for many upper trophic level fish and diminishing their population through continued over-harvest will undoubtedly have cascading effects on populations of other commercially valuable species such as tuna, striped bass, bluefish and shark species. Until fisheries managers can develop a sufficiently sensitive population model that can be accurately validated over a reasonably long time, say 10 plus years, it is your duty as stewards of these populations to initiate conservative measures and make decisions on harvesting that favor the environment and not the short term commercial interests of a limited number of fishermen.

Sincerely,

Weldon Bosworth, Ph.D. (Marine Ecology)
45 Hillside Drive
Gilford, NH 03249

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Dr. John F. Quinn, Chairman
Thomas A. Nies, Executive Director
Peter T. Kendall
Deirdre Boelke, Planning Development Team Chair
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950



Re: Scientific Information on Localized Depletion

Dear Mr. Nies, Mr. Quinn, and Ms. Boelke,

We are writing on behalf of the Herring Alliance to provide additional scientific support for alternatives under development in Amendment 8 that address localized depletion.¹ At the most recent Herring Committee Meeting, staff reported that it would compile available literature on localized depletion for the April 5th Committee Meeting and the draft environmental impact statement for Amendment 8. To help facilitate this process we are providing a summary of relevant scientific information that we have identified since scoping. This information shows that localized depletion is widely recognized and defined in several related ways, can result in negative biological, ecological, and socioeconomic impacts, and many different management actions have been taken to address localized depletion including time and area closures, spatial and seasonal catch limits, and ecosystem-based strategies informed by spatial modeling of predator-prey dynamics.

The referenced scientific information adds to the foundation of support for taking action to address localized depletion in Amendment 8, and should be incorporated into the alternatives analysis consistent with the Magnuson-Stevens Act's requirement to use the "best scientific information available" when developing conservation and management measures in a fishery management plan.² Please provide this information to the PDT, the Herring Oversight Committee, and the New England Council for use in developing alternatives consistent with the goals and objectives of Amendment 8 and the Atlantic Herring Fishery Management Plan.

¹The Herring Alliance provided scientific support for the issue of localized depletion during scoping for Amendment 8 to the Atlantic Herring FMP. *See* September 30, 2015 Letter from Herring Alliance to NEFMC Executive Director Thomas Nies.

²16 U.S.C. § 1851(a)(2). NMFS addressed National Standard 2 concerns when it implemented the Purse Seine Fixed Gear Only Area in Amendment 1. *See* Final Rule Amendment 1, 72 Fed. Reg. 11252, 11258 (Mar. 2, 2007) (Response to Comment 2). NMFS concluded that the Magnuson-Stevens Act gives Councils' considerable latitude when developing management measures that conserve and manage a fishery resource, and that while National Standard 2 requires the use of the best scientific information available concerning localized depletion, it does not limit the Council or NMFS to taking action only in those cases where specific scientific data support a measure. *Id.*

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* * *

Localized depletion is defined several ways depending upon viewpoint and context. In general, it is defined as a spatial and/or temporal decrease in the abundance of a species, often due to excess fishing pressure. Definitions and descriptions in the literature include:

- “[A] reduction, through fishing, in abundance or biomass in a specific area (Pikitch et al. 2012).”
- “[A] situation where a species occupies a range of separate regions and where the density of animals in one or more of these regions is reduced more than in the other regions by fishing or habitat modification (Walker 1998).”
- “[A] ‘hole’ within the geographic extent of a panmictic [widely mixed] population, especially when migrants cannot refill that vacuum of space at the same rate at which individuals are being removed and/or when the habitat has been compromised (Ciannelli et al. 2013).”
- “Managing resources at a spatial scale larger than that of the system dynamics means that the fishing intensity on individual populations may be too high in some locations, e.g. locations close to a fishing port, and too low in others, leading to the possibility of localized depletions or forgone catch (McGilliard et al. 2011).”
- “Two types of local depletion have been identified – depletion within a season, and depletion between seasons. Within-season depletion has been described by users as a decline in abundance indicated by catch rates, often accompanied by a decrease in average size. Between-season depletion is usually described the same way, but with changes happening on larger time scales (Meyer and Stock 2002).”
- “[R]eduction in local prey abundance (i.e., availability) by fishing to below levels that allow whales and other marine life to feed optimally or near maximally within the sanctuary” (SBNMS Management Plan 2010 at p. 124).
- “We also differentiate two types of localized depletion. Serial depletion, or depletion that persists year after year, is a conservation concern because it may reduce spawning biomass to levels that are unsustainable for a distinct stock. Conversely, ecological depletion, or depletion that only occurs during a short fishing season, is an ecological concern because it may disturb predator-prey dynamics or alter schooling behavior” (Hanselman et al. 2007).

Localized depletion can result in negative biological (effect on target species), ecological (effect on predators) and socioeconomic impacts. The literature demonstrates that localized depletion can cause biological effects including loss of geographic stock sub-components or altered age structure (Ciannelli et al. 2013; Barbeaux et al. 2014; Neat et al. 2014). The ecological effects include disruption of normal predator-prey dynamics (Witherell et al. 2000; Hewitt et al. 2004; Plagányi & Butterworth 2012; Rindorf et al. 2000; Engelhard et al. 2008; Bertrand et al. 2012; Pikitch et al. 2012). Economic effects include forcing other fisheries to alter their fishing grounds or change gears to exploit predator species, and when whale watching or bird watching trips are forced to use more fuel or cancel trips due to difficulty in finding animals (Lee 2010).

Management actions taken to address localized depletion include time and area closures, spatial and seasonal catch limits, and ecosystem-based strategies informed by spatial modeling of predator-prey dynamics. These include:

1. Area-based management. Scientists have noted that temporal and spatial approaches are key in forage fish management, especially where predators are dependent on localized prey (i.e., spatially constrained) and when fishing is the main cause of the depletion.

Examples:

- NMFS and the New England Council implemented a seasonal closure in the Gulf of Maine as a precautionary measure to reduce concentrated fishing effort on Atlantic herring (NEFMC 2006).
- NMFS and the North Pacific Council implemented spatial closures around Stellar sea lion haul outs, rookeries and foraging areas in Alaska to reduce potential of localized depletion of key prey, like walleye pollock, Pacific cod and Atka mackerel (Heltzel et al. 2011).
- In the North Sea, ICES provides management advice for the sand eel fishery in seven separate areas, each assessed individually, to mitigate the potential depletion of local populations (ICES 2011, Kerr et al. 2016).

2. Catch Allocation:

- NMFS sets total allowable catches in Alaska for walleye pollock and Atka mackerel that are spatially and seasonally divided into smaller sub-TACs to prevent removals from occurring all at once in localized areas. In the Aleutian Islands region, all pollock fishing has been prohibited to eliminate competition with sea lions (Heltzel et al. 2011).
- In Canada's Pacific region, TACs for groundfish are set spatially, either on a coast-wide basis or within sub-areas. Area allocation is used to achieve yields appropriate to the productivity of the areas and to prevent concentration of fishing effort within an area that might lead to localized and/or serial depletion of resources (PFMC 2004 at p. 10).
- The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) subdivides a precautionary catch limit for Antarctic krill into small-scale management units to minimize the impact that the fishery has on predators and to address concerns of localized depletion (Hewitt et al. 2004; (Plagányi & Butterworth 2012; CCAMLR, 2016). The scale of these spatial units is defined by taking into account the needs of the predators in a given area (Constable & Nicol 2002).
- The ASMFC implemented a catch cap on Atlantic menhaden in the Chesapeake Bay due to concerns that the purse seine fishery caused localized depletion (Maryland Sea Grant 2009; Lozano 2011). Research has linked declines in menhaden availability with reductions in osprey population growth in the lower Bay (Glass 2000). Similar concerns have been raised about other menhaden dependent predators including striped bass, bluefish, and bald eagles (Maryland Sea Grant 2009).

Concerns about localized depletion have prompted extensive discussion in the scientific and management literature:

- In the Gulf of Maine: Managers in the Stellwagen Bank National Marine Sanctuary - a hotspot for prey abundance that attracts whales and other wildlife central to supporting tourism and recreation activity - have been concerned for years that fishing for Atlantic herring reduces the prey aggregations needed for optimal foraging and cite that local depletions could be a factor in determining the abundance of whales and other wildlife in sanctuary (SBNMS Management Plan 2010 at pp. 123-127; SBNMS Amendment 8 scoping comments at p. 178). Others have noted that localized depletions of herring in heavily fished inshore areas of the Gulf of Maine could have detrimental effects on inshore predators (Bakun et al. 2009; Kress et al. 2016).
- In Alaska: Stakeholders and managers have expressed concern that intense trawl fishing of Atka mackerel and Atlantic pollock within Steller sea lion critical habitat reduced local prey availability necessary for the recovery of sea lions. NMFS implemented measures to exclude fishing in areas near rookeries and haulouts, together with other spatial and temporal effort restrictions (Witherell et al. 2000; Barbeaux et al. 2014). In the western Gulf of Alaska, Atka mackerel experienced temporary localized depletion (likely due to a combination of fishing pressure and predation), as demonstrated by seasonal reductions in CPUE. The 2015 assessment update noted that depletions may last for weeks after the vessels leave the area (Lowe 2015). Additionally, stakeholder knowledge has been important in identifying localized depletion of Pacific herring in Southeast Alaska. Syntheses of historical and local knowledge (e.g., Alaska native tribes) reveal declines in local herring abundance and the extent of spawning over time, suggesting that herring are now managed under a “significantly depleted state (Thornton et al. 2010).”
- In the North Sea, localized depletion of sand eel, an important prey species and the target of the largest single species fishery in the area, has been linked to reduced reproduction and population abundance of seabirds (Daunt et al. 2008; Rindorf 2000; Frederiksen et al. 2004; Frederiksen et al. 2008; Pikitch et al. 2012).
- In Antarctica, trawl fishing for krill has concentrated heavily in coastal areas, leading to localized depletions and potential negative impacts on food webs and ecosystems (Croll and Tershy 1998; Alonzo et al. 2003; Santora et al. 2009; Werner 2015).
- Localized depletion from fishing has also been reported for surf clams in the U.S. Mid-Atlantic (McCay et al 2011), sandbar, dusky, hammerhead and bull sharks in Florida (Hueter et al. 2005), halibut and rockfish species in Alaska (Meyer & Stock 2002; Hanselman et al. 2007), deep-water snappers, groupers and jacks in the Hawaiian Islands (Moffitt et al. 2006), Atlantic cod stocks around the British Isles (Neat et al. 2014), monkfish off the coast of Brazil (Perez et al. 2005), and pink snapper (Thurstan et al. 2014) and numerous shark species off Australia and New Zealand (Last et al. 2011).

3. Ecosystem-Based Fishery Management:

- Ecosystem models that incorporate spatial processes should be used to provide guidance on management strategies for important species groups like forage fish. For example, models developed for the Southern Ocean krill fishery explicitly consider krill-predator fishery dynamics to help allocate total krill catch among small scale management units (SSMUs), with a goal to reduce fishing impacts on predators (Essington and Plagányi 2014). Recent study indicates that interactions between predators and fisheries occur at scales smaller than SSMUs, suggesting more precautionary management of krill catches are needed to prevent concentration of fishing effort, particularly where localized fishing overlaps with foraging areas used by predators (Hinke et al. 2017).
- In Canada, the Department of Fisheries and Oceans (DFO) provides the foundation for an ecosystem-based and precautionary approach to fisheries management (Sustainable Fisheries Framework), including a “Policy on New Fisheries for Forage Species” that specifically acknowledges the need to manage forage fish differently to prevent localized depletion in its guiding principles (DFO 2009). See Principle 6: “Forage species should be managed in ways which ensure local depletion of population components does not occur. Local depletion of the forage species could result in food shortage for the dependent predators, even if the overall harvest of the forage species was sustainable.”

Thank you for reviewing this scientific information and incorporating it into the Amendment 8 analysis. Please let us know if you have questions or if we can be of assistance locating copies of the referenced materials.

Sincerely yours,



Erica A. Fuller
Roger M. Fleming
Attorneys
Earthjustice
508 – 400 – 9080 (C)

On behalf of the Herring Alliance