



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

February 12, 2015

Dr. William Karp, Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

RE: Atlantic Herring RSA Research Priorities

Dear Bill:

This letter is to inform you of the New England Fishery Management Council's recommendations for cooperative research priorities for the 2016-2018 fishing years under the Atlantic herring research set-aside (RSA) program. At its January 27-29, 2015 meeting, the Council approved a motion (14/0/1) to recommend the following four research priorities under any RSAs that may be allocated in the upcoming Atlantic herring fishery specifications (without ranking, i.e., equally-important):

1. Portside Sampling
2. River Herring Bycatch Avoidance
3. Electronic Monitoring
4. Research to Support/Enhance the Atlantic Herring Stock Assessment

In addition, the Council unanimously passed a motion to request input from the NEFSC regarding the fourth cooperative research priority. The Council is seeking your guidance regarding the specific kinds of research projects that could provide information to support/enhance the stock assessment, given the constraints (timing, available funds) of the Atlantic herring RSA program.

Thank you for your attention to this matter. We look forward to your response. Please feel free to contact me if you have any additional questions.

Sincerely,

Thomas A. Nies
Executive Director

cc: John Bullard, NMFS Regional Administrator
Council Members



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

March 4, 2015

Mr. Thomas A. Nies
Executive Director
New England Fishery Management Council
50 Water Street
Newburyport, MA 01950

Dear Tom:

Thank you for your letter of February 12, 2015, which has provided us with the Herring RSA priorities approved by the NEFMC for the 2016-2018 fishing year. I have passed this to the cooperative research staff who assures me that these equally important priorities will be included in the Federal Funding Opportunity (FFO) notice that we will prepare for the next herring RSA award cycle. The current target is for a Mid-April release and your note will help us get legal pre-approval in advance of publication.

Regarding your fourth priority, "Research to support/enhance the Atlantic herring stock assessment," is it the Council's intent to have those recommendations referenced in the RSA FFO? Given the deadline for the FFO, the answer to this question is important. Cooperative Research staff will seek legal advice relative to how much time we might be able to delay the FFO so that the additional assessment research tasks can be explicitly identified, if that is what the Council desires.

As I mentioned relative to an earlier letter on cod assessment questions, I have a steering group that is focused on interdisciplinary, cross-cutting research to support stock assessments (CEHAGS or Climate, Ecosystem, and Habitat Assessment steering group). We will supplement that steering committee with the herring assessment staff from population dynamics, as well as the oceanography and cooperative research staff that are currently working on river herring bycatch habitat modeling. I hope that we can provide specific recommendations by the end of March, so that the FFO is not delayed.

Sincerely,

William A. Karp, Ph.D.
Science and Research Director

cc: R. Beal
J. Bullard
C. Moore





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E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

March 9, 2015

Dr. William Karp
Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543

RE NEFSC Recommendations for Cooperative Research Projects to Enhance the Atlantic Herring Stock Assessment

Dear Bill:

In response to your March 4, 2015 letter regarding the timing of the Council's request for NEFSC recommendations for cooperative research projects to enhance the Atlantic herring stock assessment under the research set-aside (RSA) program, it is the Council's intent to have these recommendations referenced in the Federal Funding Opportunity (FFO) for the 2016-2018 Atlantic herring RSAs. However, the publication of the FFO should not be delayed if the NEFSC cannot provide these recommendations in the available time frame (mid-April publication of FFO). If specific recommendations cannot be provided, then the FFO should be published with the Council's four equally-important RSA priorities for 2016-2018, including a general priority for cooperative research to enhance the Atlantic herring stock assessment.

Thank you for your attention to this matter. We look forward to your response. Please feel free to contact me if you have any additional questions.

Sincerely,

Thomas A. Nies
Executive Director

cc: John Bullard, NMFS Regional Administrator
Council Members



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

March 18, 2015

Mr. Thomas A. Nies
Executive Director
New England Fishery Management Council
50 Water Street
Newburyport, MA 01950

Dear Tom:

A number of NEFSC staff met to discuss the specific kinds of research projects that could provide information to support/enhance the stock assessment given the constraints of the Atlantic Herring RSA Program. The discussion included Jon Deroba (the lead stock assessment scientist), several other Population Dynamics staff, and staff representing other parts of the NEFSC including the Ecosystem Assessment Program, the Cooperative Research Program, the Ecosystem Processes Division, the Fisheries and Ecosystems Monitoring and Analysis Division, and the Aquaculture Enhancement Division. The meeting was held under the auspices of the NEFSC Climate, Ecosystem, Habitat and Assessment Steering Group, which seeks to provide structure and direction to NEFSC efforts pertaining to climate, ecosystem, and habitat research, and the integration and inclusion of this research into the assessments of living marine resources.

Four research topics were identified that would support or enhance the Atlantic Herring assessment, while at the same time being appropriate for the Atlantic Herring RSA. The topics are: stock structure/spatial management, availability and detectability, fishery acoustic indices, and volume-to-weight conversion; these are described in more detail below. Any of these projects should be conducted in collaboration with the NEFSC to ensure utility in the stock assessment and should include oversight by the Plan Development Team and representatives of the NEFMC and MAFMC SSCs.

NEFSC staff also agreed that the other three items identified in your letter (Portside Sampling, River Herring Bycatch Avoidance, and Electronic Monitoring) are important to the management of the Atlantic Herring fishery.

Thank you for your request for NEFSC input and please let us know what else we can to do to assist the NEFMC with the Atlantic Herring RSA.

Sincerely,

William A. Karp, Ph.D.
Science and Research Director

Enclosure

cc: R. Beal
J. Bullard
C. Moore



ENCLOSURE

Potential Research to Support/Enhance the Atlantic Herring Stock Assessment under the Atlantic Herring Research-Set-Aside

Stock Structure / Spatial Management

- Is there mixing of Gulf of Maine-Georges Bank complex with the Scotian shelf stock? Assessment assumes no mixing.
- Do Atlantic Herring form contingents? Are schools segregated based on size, age, spawning location? Is mixed-stock catch an issue?
- Evaluate assumptions for developing spatial allocations (sub-ACLs) based on different stock structure models.

These issues could be evaluated using genetics, otolith characteristics, morphometrics, and/or presence of spawning adults. Commercial catch could be used but there may need to be directed sampling to ensure that sampling covers the range of Atlantic Herring spawning grounds in the Northeast U.S. including Georges Bank, Gulf of Maine, U.S. waters, Canadian waters, fall-spawning and spring-spawning.

Availability and Detectability in Surveys and the Fishery

- Does predation potential (e.g., cod) or school size affect the location of Atlantic Herring in the water column?
- Does distribution of thermal habitat affect availability to the survey or to the fishery

The first question would require targeted sampling across a gradient of predators. Acoustics could be used in combination with trawling. The second question could follow the approach used in the Mid-Atlantic for Butterfish.

Fishery acoustic indices

- Can a fishery-independent abundance survey using commercial vessels and fishery acoustics be developed and applied using a scientific design?

To use fishery acoustic to develop indices of abundance, a scientific survey would need to be designed. The acoustics from the survey could be ground truthed using the vessels fishing gear. The effort would likely need to be constrained to have reasonable objectives under the limitation of the available funds. The effort could also be coordinated with a similar effort using lobster vessels conducted by GMRI

(http://www.gmri.org/sites/default/files/resource/herring_acoustics_handout.pdf).

Volume to Weight Conversion

- Conversion of herring catch volume to herring weight. Herring catch is measured in volume and converted to weight on the boat's VTR. Dealers also convert from volume to weight.
- Density-dependent growth/trade-off with reproduction affecting volume to weight conversions.

Although mundane, the issue of volume to weight conversion is important. Atlantic Herring catches are recorded in volume. Boat captains and dealers then make an estimate of the weight. The conversion could depend on the condition of the fish and the condition of the catch, and could vary among dealers and among boat captains. Understanding the magnitude of variability in this conversion could be important to the assessment. A project could ground truth the weight of catch and compare to the estimates provided by dealers and/or captains, and could also examine the importance of reproductive condition of the fish as a factor in the conversion.



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E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

March 19, 2015

Dr. William Karp, Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

Dear Bill:

Thank you for your March 18, 2015 letter with suggestions for cooperative research projects to support/enhance the Atlantic herring stock assessment that could be supported under an Atlantic herring research set-aside (RSA), if RSA is allocated for the 2016-2018 fishing years. I want to clarify that the RSA process does not include project oversight by either the Plan Development Team (PDT) or the Scientific and Statistical Committee (SSC), as suggested in your letter. However, in the future, the Herring PDT and SSC may utilize the data provided by these research projects to the extent that they may support the stock assessment and/or enhance the Atlantic herring management program.

Thank you again for your attention to this matter. Please feel free to contact me if you have any additional questions.

Sincerely,

Thomas A. Nies
Executive Director

cc: John Bullard, NMFS Regional Administrator
Council Members

