

SUPPORTING STATEMENT
GATHERING OBSERVATIONAL DATA ON HISTORICAL AND CURRENT
BIOLOGICAL TRENDS AMONG POPULATIONS OF ALEWIFE (*ALOSA*
***PSEUDOHARENGUS*) AND BLUEBACK HERRING (*A. AESTIVALIS*)**
OMB CONTROL NO. 0648-XXXX

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.

Our survey will focus on the coastal states from Maine to North Carolina. Maine and North Carolina represent the northern and southern extent of where alewives and bluebacks have recently been harvested in any significant quantities in the United States. The potential respondent universe includes all individuals who have harvested river herring commercially, recreationally, or for personal use/sustenance in any of the coastal states from Maine to North Carolina for at least three years in total, at least one of which was within the past twenty years. Because the goal of this survey is to document observations of changes in river herring runs through time, we are limiting our efforts to individuals who have harvested these species for a period of time long enough to notice changes and recently enough that they will remember the changes that they noticed.

The number of individuals who meet these criteria is unknown. Our best estimates of how many individuals meet these criteria and expected response rates are displayed in Table 1. The estimates in Table 1 are based on conversations with state natural resource employees in each of the states in our focus area.

Table 1: Number of potential respondents for which we have names and phone numbers (as of 9-22-2014), estimated potential number of respondents, and estimated response rates. Expected numbers are based on conversations with state natural resource employees.

State	Current number of names and phone numbers	Estimated Number of Potential Respondents	Estimated Proportion Commercial	Expected Overall Response Rate	Explanation for Expected Response Rate
Connecticut	1	50	Very low	20%	Harvest prohibited since 2002
Delaware	45	50	Moderate	20%	Many individuals on this list caught a few river herring as bycatch but did not target them
Maine	75	85	Very high	75%	Based on prior experience interacting with Maine's commercial river herring fishermen
Maryland	47	150	Low	50%	Likely many individuals caught river herring as bycatch but did not target them
Massachusetts	21	150	Low	40%	Harvest prohibited since 2005 but was once a popular fishery
New Hampshire	1	200	Low	75%	Harvest is still allowed and a state fisheries biologist is helping to inform potential respondents of the survey
New Jersey	0	100	Unsure	Unsure	Waiting to hear back from New Jersey Fish and Wildlife employee who is working on a list of contacts for us
New York	181	200	Moderate	50%	A mix of commercial and recreational, expecting lower response rates from recreational fishermen
North Carolina	2	100	Moderate	50%	Commercial and recreational harvest prohibited since 2007, but prior to 2007 were many harvesters
Virginia	299	299	High	30%	About half of the people on this list are no longer fishing

Numbers based on overall expected rates total 619, but allowing for unavailable and nonworking telephone numbers, we do not expect more than 500 completed surveys.

Most river herring harvests take place in state waters and so we are working with state agencies and the Atlantic Coastal Cooperative Statistics Program to generate our call list. Some states (or in the case of Massachusetts, some towns) required a license to harvest river herring commercially, and in rare cases, required a license for recreational harvest as well. Where river herring harvesters can be identified from license lists, we are working with state and municipal agencies to obtain names and phone numbers of those individuals. In many locations in our focus area it is impossible to identify who harvested river herring. In other locations (e.g. New Hampshire) the appropriate natural resource management agency is not able to provide us with contact information for harvesters. In these cases we are relying on personal recommendations from state biologists and other individuals who are knowledgeable of the fishery to generate our call lists.

Recreational and personal use/sustenance harvesters will be particularly difficult to identify because these individuals usually fish under general fishing licenses and are rarely required to report catch data. We expect that the number of individuals who have harvested river herring non-commercially with enough regularity to answer most of our survey questions will be relatively small; however, we are committed to interviewing as many of these individuals as possible because we recognize that they have very valuable information to contribute to this survey effort. From talking with fisheries managers and biologists in all of the states in our focus area, we know that in some locations recreational harvest represented a major component of the fishery.

Although we have estimated a potential survey respondent universe of approximately 1400 individuals, we do not expect to obtain phone numbers for more than 800 individuals. Of those 800 numbers, we expect that many will be out of service or assigned to new owners. We will not make any efforts to stratify our call list. We will call every number on the list. We expect to successfully interview less than 500 individuals.

2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

There are no complete lists of commercial, recreational, or personal use/sustenance river herring harvesters for us to rely on for this survey. River herring are mostly harvested within state waters where most fishing takes place under general commercial or recreational fishing licenses. Recreational and personal use/sustenance harvesters are rarely required to report data on catches, which will make it impossible to locate these individuals from license lists and landings data. Recreational and personal use/sustenance harvesters have valuable knowledge to add to this survey and so we are seeking to identify these individuals by soliciting recommendations from state biologists and managers, as well as from other fishermen. In addition, because some states allow(ed) commercial harvest of river herring under general fishing licenses, we will also rely on personal recommendations to supplement our list of commercial fishermen. Though this could be considered a “sample of convenience” there is no other way to generate a complete call list of all

individuals who meet our criteria for participation in this survey.

Because we know that our call list is incomplete and is still a work in progress, we will not make any attempts to stratify or narrow down this list in any way. We expect that our final call list will be short enough that we can call every harvester on the list.

This will be a one-time survey and so there will be no periodic data collection cycles.

We will analyze survey responses with a combination of quantitative and qualitative analyses. The responses to many of the questions on our list can be easily summarized numerically; however, we expect very valuable information to come from descriptive answers that cannot be easily summarized numerically.

Qualitative assessments and summaries of fishermen's observations are commonly used in assessments of data poor species. For example, fishermen's knowledge was collected during listening sessions and used in the status reviews of both Atlantic bluefin tuna and Atlantic wolffish. Our survey effort is similar to those listening sessions in intent; however, in this case we are reaching out to harvesters instead of relying on them to come to us. We believe that harvesters can help us answer questions that cannot be answered with quantitative analyses. Sufficient numerical data simply does not exist to help us address many of the key data-gaps for this species, especially on a range-wide scale.

Our qualitative analysis will likely consist mostly of descriptive summaries of responses. We have purchased NVivo, a qualitative analysis software commonly used by social scientists, to help us analyze and describe complexities in the descriptive responses to our questions. This software was recommended to us by NOAA's Social Science Branch. One of the collaborators on this project is familiar with this software and is trained in common social science methodologies used in surveys such as this. Our analysis of survey responses will be in line with established social science methods.

3. Describe the methods used to maximize response rates and to deal with nonresponse. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses. For collections based on sampling, a special justification must be provided if they will not yield "reliable" data that can be generalized to the universe studied.

We are widely advertising the intent of this survey. Our hope is that if fishermen learn of the survey before we ask them to participate in it, they will be more likely to agree to participate. We have sent fliers and other information about the survey to over 50 state managers and biologists as well as academics who work with river herring. We asked them to help us spread the word and have already received inquiries from a handful of fishermen who are interested in participating. We have interacted with many river herring fishermen in Maine who are willing to participate. We recently gave a presentation on the intent of this project at a river herring symposium at the American Fisheries Society's Annual Meeting. We posted web stories. We have announced the survey in one newsletter and are planning to publish similar announcements in other papers. Fishermen, biologists, managers, and academics seem generally excited about this survey and are anxious to either participate or learn about our results.

We expect that personal recommendations will help to increase the response rate because individuals may be more likely to participate if they know that an acquaintance recommended them.

We will make calls at various times during the day, including evenings, and various days of the week. Up to three callbacks will be made for each individual. We will leave messages when possible.

We will examine non-response bias by comparing respondents and non-respondents using what demographic information we have available. Ideally this information will include active vs. retired status, sector (commercial, recreational, or personal use/sustenance), and state.

4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval.

Several NOAA and Sea Grant staff have provided feedback on the proposed survey questions.

In the spring of 2014 NOAA Fisheries and Maine Sea Grant collaborated on a small oral history project focusing on river herring and eels in Downeast Maine. Four river herring fishermen were interviewed and the question list used was very similar to the proposed question list for this phone survey. The oral history interviews were recorded on camera and participants were encouraged to go off on tangents and elaborate on some of their answers. The four river herring fishermen who participated in the oral history project found the questions to be straight forward and easy to answer, but they also consistently wanted to add much additional detail beyond what was asked. We expect that participants in the phone survey will also want to add additional comments to the straight-forward questions that we will ask them, which is why we have committed to doing a combination of simple quantitative analysis and more descriptive qualitative summaries of their response.

The survey implement was pre-tested on six individuals. Four are fishermen from Maine who were already familiar with the interviewer (Julia Beaty) and with the intent of the survey. One is a fisherman from New York who called Dan Kircheis after receiving an email about the survey from a friend. The sixth person is a fisherman from Maryland who had no prior knowledge of the survey.

When Julia initiated the survey with the first four participants (the four from Maine) she presented it as if it were a trial run and encouraged them to interrupt her when they had comments and to give her feedback on the introductory script and question list. Their comments were very helpful and were used to update the script before calling the final two fishermen. The participants from New York and Maryland were not informed that they were being called as part of a trial run. The survey went smoothly with these two participants.

Summary of changes made after trial run

- The first three participants in the trial run thought the introductory script was too long. It was shortened based on their feedback.

- The tone of the introductory script was changed based on participant feedback to send the message that NOAA is asking for help from the participants as opposed to trying to get information out of them.
- A line about a similar survey carried out last year by the Alewife Harvesters of Maine was added to inform participants from Maine that this survey is similar to that previous effort in some ways, but different in scope and intent.
- A sentence about how the results will be reported and how that relates to confidentiality was added to the introductory script.
- The question “Do you currently fish for alewives and/or bluebacks?” was changed to “Did you fish for alewives and/or bluebacks this year?” Survey pre-test respondents took “currently” to mean September 2014.
- Questions added based on participant feedback:
 - o Do you harvest at multiple locations?
 - Answers to several of the survey questions might be different depending on the location that respondents are thinking of when they answer.
 - o In your opinion, what do you think is the most important thing that we could do to help these populations grow and maintain themselves at a sustainable level?
 - This question is closely related to the question about the best way to address threats. Two pre-test participants thought that by asking these two similar questions we might get slightly different answers. For example, one participant thought that maintaining access to spawning habitat is the best way to keep the runs sustainable but he did not see this as an appropriate answer to the question about how to address threats. He did not see impeded access to spawning habitat as a threat because it is a problem that he works to address every year on the stream where he harvests.

- Other questions added:
 - o A question about whether they consider themselves commercial, recreational, or personal use/subsistence harvesters was added.
 - The responses from each of these categories will be summarized separately.
 - For some of the states in our focus area it is impossible to tell from the call list who considers themselves commercial as opposed to recreational fishermen. Additionally, there are some gray areas in the definition of commercial vs. recreational fishermen. This question will allow participants to sort themselves into the category they most identify with.
 - o Added question about gear type.
 - o Added question for recommendations of other people to call.

5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design, and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Dan Kircheis (project lead)
 Fisheries Biologist
 NOAA's - Maine Field Station
 Protected Resources Division
 17 Godfrey Drive
 Orono, Maine 04473
dan.kircheis@noaa.gov
 (207)866-7320

Julia Beaty (interviewer)
 Environmental Specialist I
 NOAA's - Maine Field Station
 Protected Resources Division
 17 Godfrey Drive
 Orono, Maine 04473
Julia.beaty@maine.edu
 (207)866-7262

Dan Kircheis and Julia Beaty are working together to design and implement this survey. Julia will conduct the interviews. Dan and Julia will work together to analyze and summarize the survey responses.

Both Dan Kircheis and Julia Beaty have both worked on social science surveys such as this and relied on their past experience to develop the methodology for this survey effort. Julia has been formally trained in survey methodology as part of her masters degree in marine policy and through an undergraduate sociology class.

Staff at NOAA's Social Science Branch (SSB) provided input on our survey design. Dr. Tammy

Murphy (phone: 508-495-2137), an economist with SSB, Dr. Patricia Pinto da Silva (phone: 508-495-2370), a social scientist with SSB, and Anna Henry (phone: 508-495-2262), also a social scientist with SSB, provided helpful feedback and advice which we have incorporated into our survey design.

References:

Atlantic bluefin tuna status review team. 2011. Status review report of the Atlantic bluefin tuna (*Thunnus thynnus*). National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

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Hutchins Bieluch, Karen. 2014. Planning a Future for Maine's Alewife Fisheries: Outreach and Interviews with Local Stakeholders. Alewife Harvesters of Maine (<http://www.alewifeharvesters.org/>).

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