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DEPARTMENT OF COMMERCE
RESEARCH PERFORMANCE PROGRESS REPORT (RPPR)

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AWARD INFORMATION	
1. Federal Agency: Department of Commerce / NOAA	2. Federal Award Number: NA19NMF4740097
3. Project Title: Portside Commercial catch sampling and comparative bycatch sampling for Atlantic herring (Clupea harenc	
4. Award Period of Performance Start Date: 07/01/2019	5. Award Period of Performance End Date: 06/30/2021
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR	
6. Last Name and Suffix: Uraneck , null	7. First and Middle Name: Christopher ,
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9. Email: chris.b.uraneck@maine.gov	10. Phone Number: 207-350-6040
AUTHORIZING OFFICIAL	
11. Last Name and Suffix: Nutting , null	12. First and Middle Name: Rochelle ,
13. Title: Resource Administrator	
14. Email: rochelle.nutting@maine.gov	15. Phone Number: 207-624-6556
REPORTING INFORMATION	
Signature of Submitting Official: N/A	
16. Submission Date and Time Stamp:	17. Reporting Period End Date: 06/30/2021
18. Reporting Frequency: ○ Annual ◉ Semi-Annual ○ Quarterly	19. Report Type: ◉ Not Final ○ Final
RECIPIENT ORGANIZATION	
20. Recipient Name: MARINE RESOURCES, MAINE DEPARTMENT OF	
21. Recipient Address: 32 BLOSSOM LN, AUGUSTA, ME 04330-5780 USA	
22. Recipient DUNS: 809045826	23. Recipient EIN: 016000001

ACCOMPLISHMENTS

24. What were the major goals and objectives of this project?

1. Continuation of the portside bycatch survey
a. Expand the coverage of landed herring, mackerel and menhaden monitored for bycatch.
b. Increase the percentage of unobserved at-sea sampling offloads.

2. Continuation of commercial catch sampling and species collection upon request.

25. What was accomplished under these goals?

Due to COVID-19 only one bycatch sampling event was performed. From March 2020 through May 2021 staff have been unable to leave the state as part of efforts to prevent the spread of COVID-19 and protect the health of staff. Some sampling and landings do occur in NH, MA and RI during this reporting period.

Despite this issue, the project was still able to secure 5 herring, 3 mackerel, and 12 menhaden samples. One portside bycatch trip was also sampled shore-side. Additionally, while the data have been collected and uploaded, analysis has been slowed for the reason mentioned above.

It is anticipated that both sampling and analysis will be caught up to usual levels once more normal operations are resumed in the wake of COVID-19 restrictions.

ACCOMPLISHMENTS *(cont'd)*

26. What opportunities for training and professional development has the project provided?

N/A

27. How were the results disseminated to communities of interest?

In general, the herring spawn data gathered from the commercial catch samples are shared with the Atlantic States Marine Fishery Commission (ASMFC) for spawn monitoring for Maine, NH, and MA http://www.massmarinefisheries.net/herring/. The herring, mackerel and menhaden age data are used for each of their stock assessments http://www.asmfc.org/species/atlantic-herring. The herring and mackerel bycatch data are used for bycatch quota monitoring for ASMFC and NMFS https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/reports_frame.htm. Data from the portside bycatch study are uploaded to our federal partners, but biological sample data is not due to ASMFC or NOAA until the next reporting period.

ACCOMPLISHMENTS *(cont'd)*

28. What do you plan to do during the next reporting period to accomplish the goals and objectives?

COVID related travel bans have now been lifted and personnel have been vaccinated so sampling will resume in the full range of the fishery.

PRODUCTS

29. Publications, conference papers, and presentations

Nothing to Report

PRODUCTS *(cont'd)*

30. Technologies or techniques

Nothing to Report

31. Inventions, patent applications, and/or licenses

Nothing to Report

Attach a separate document if more space is needed for #6-10, or #24-50.

PRODUCTS *(cont'd)*

32. Other products

Nothing to Report

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

33. What individuals have worked on this project?

Name: Chris Uraneck
Total Number of Months: (12)
Project Role: Marine Resource Scientist I
Contribution to Project: Collects and coordinates collection of samples in Maine and other states where the fisheries occur. Conducts portside bycatch studies and writes reports.

Name: Lisa Pinkham
Total Number of Months: No change
Project Role: Marine Resource Specialist I
Contribution to Project: Conducts all lab analysis of herring samples. Processes menhaden samples and sends scale samples to the NOAA lab for ageing.

Name: Matt Cieri
Total Number of Months: No Change
Project Role:
Contribution to Project: No Change
Name: Erin Summers
Total Number of Months: No Change
Project Role:
Contribution to Project:
Name: Carl Wilson
Total Number of Months: No Change
Project Role:
Contribution to Project:
Name: Amy Dumeny
Total Number of Months: No Change
Project Role:

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS *(cont'd)*

34. Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Nothing to Report

35. What other organizations have been involved as partners?

The state agencies in New Hampshire, Massachusetts and Rhode Island have assisted in collecting and storing portside biological samples of herring when there has been landings in those states. These samples will be collected and then processed at the ME DMR lab when COVID travel restrictions are lifted.

NMFS combines our portside bycatch data with their at-sea observer program to estimate bycatch and discards for both the herring and mackerel quota monitoring systems. Data are also used for herring, mackerel and menhaden stock assessments.

The Atlantic Coastal Cooperative Statistics Program (ACCSP) use our herring spawn data, gathered from the commercial catch samples to overlook, monitor and administer the spawn forecast model used for the corresponding closures within the GoM.

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS *(cont'd)*

36. Have other collaborators or contacts been involved?

Herring sample data are shared with the Gulf of Maine Research Institute (GMRI) to be applied for spawn monitoring and future regulation.

IMPACT

37. What was the impact on the development of the principal discipline(s) of the project?

The bycatch program for herring and mackerel plays a significant role in not only establishing a monitoring system to protect bycatch and incidental species but influences herring and mackerel fishing landings throughout the year. For example, when a certain amount of river herring (Alewife and Blueback herring) are landed and a set quota for these is surpassed, portions of these directed fisheries are closed until the quota resets in the following year. This protects these nontargeted species from overharvesting but impacts the revenues generated for these directed fisheries.

Also, the biological data collected via the commercial catch sampling program of herring, mackerel, and menhaden are directly used for their stock assessments and catch-at-age matrices. These data are used to estimate the size and age structure, 2020-2023 fishing quotas, recruitment, and ultimately the health of their population.

IMPACT *(cont'd)*

38. What was the impact on other disciplines?

During this time period three menhaden fish kill events were reported in Maine. They all appeared relatively minor in scale, amounting to a few hundred fish in each event. But due to concerns from menhaden fish kills in southern New England and the mid Atlantic over the previous winter and disease being the suspected cause, samples of fish were tested in Maine to try and identify any pathogens.

From the first event, around June 2nd in Yarmouth, Maine, fisherman reported distressed looking fish which were bobbing up and down and that no sea birds or seals would eat them. These fish were tested and found to have a possible pathogen Vibrio anguillarum.

The second event occurred around June 23-24 in Bremen, Maine. Marine Patrol interviewed local fisherman who believed the fish were chased into a shallow cove by some predator and then suffocated.

The third event was on June 26 in Friendship, Maine next to a commercial lobster pier. After an investigation by Marine Patrol they believed the fish probably came from a spilled barrel of bait.

The fish from the second event were tested for pathogens but came back negative. They only had bacteria consistent with spoiled fish. Fish from the third event were found to be too decomposed to be able to test.

Overall, due to the small amount of fish kill events and with only one confirmed case where disease was the cause it is not thought to be a large problem in Maine at this time. However, the presence of V. anguillarum is concerning, although we are still waiting on further lab analysis for the actual strain. State officials working with aquaculture and fish health have been notified. There is some concern since menhaden are migratory fish that they could transmit diseases to fish aquaculture facilities. Private aquaculture facilities have been notified.

39. What was the impact on the development of human resources?

Nothing to Report

IMPACT *(cont'd)*

40. What was the impact on teaching and educational experiences?

Nothing to Report

41. What was the impact on physical, institutional, and information resources that form infrastructure?

Nothing to Report

Attach a separate document if more space is needed for #6-10, or #24-50.

IMPACT *(cont'd)*

42. What was the impact on technology transfer?

Nothing to Report

43. What was the impact on society beyond science and technology?

Bycatch data collection and biological sampling have influenced fishing behaviors. With catch cap monitoring of river herring, shad and haddock in two directed fisheries, implemented partly by our sampling program, fishing locations can be chosen accordingly. To prevent closing areas of these fisheries due to choke species, the fishing spatial activity can shift to areas where the cumulative bycatch is lower and less likely to shut down landings. For example, if it is known that portside sampling is to occur on a certain herring or mackerel offload, the captain may decide to fish an area that typically contains less haddock, to prevent closing the fishery.

A similar spatial shift occurs during the rolling spawn closures within the GoM. As that herring typically spawn from north to south, harvesters move out of the areas that are approaching peak spawning as to not land significant amounts of ripening females, to halt samples that may trigger a closure. Harvesters may also fish a certain spawn closure, providing DMR with spawn samples and a real-time look at the status of the ovaries in an effort to close the area as soon as possible.

Bycatch quotas and spawn closures can reduce harvest and directly impact revenue as well as income for captain and crew. This can have indirect effects on dealers and other businesses.

IMPACT *(cont'd)*

44. What percentage of the award's budget was spent in foreign country(ies)?

0 , null

CHANGES/PROBLEMS

45. Changes in approach and reasons for change

Nothing to Report

Attach a separate document if more space is needed for #6-10, or #24-50.

CHANGES/PROBLEMS *(cont'd)*

46. Actual or anticipated problems or delays and actions or plans to resolve them

Nothing to Report

47. Changes that had a significant impact on expenditures

The COVID related travel ban continued to restrict out of state travel for most of this reporting period. This reduced expenditures drastically. Much of the biological and bycatch sampling coverage occurs in MA, NH and RI.

Attach a separate document if more space is needed for #6-10, or #24-50.

CHANGES/PROBLEMS *(cont'd)*

48. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Nothing to Report

49. Change of primary performance site location from that originally proposed

Nothing to Report

Attach a separate document if more space is needed for #6-10, or #24-50.

PROJECT OUTCOMES

50. What were the outcomes of the award?

All objectives and goals were met for this report period. The portside bycatch survey has continued to prove very successful since its inception in August of 2003. The results of this survey have revealed extremely small levels of bycatch in the directed herring fishery, and minor levels of bycatch in the mackerel and menhaden fisheries for all gear types sampled. The results of this project are useful in quantifying and understanding the extent of retained bycatch in the herring, mackerel, and menhaden fisheries. However, the species encountered as bycatch varied spatially by NMFS Statistical Area, and conclusions drawn regarding the spatial nature of the bycatch encountered should be interpreted cautiously due to the small sample sizes. It is important to remember that bycatch in these fisheries can be episodic and can be isolated to one fishing event in one specific spatial location during only a handful of trips.

Herring, mackerel, and menhaden are harvested as large volume fisheries, which results in mass handling techniques like pumping the catch from the nets into the vessel holds and again into the processing facilities. Because of the nature of these fisheries, there are limited opportunities to observe and/or sample bycatch at-sea. However, vessels can discard some or all of the catch at-sea and there are some methods of sorting out large bycatch i.e. mammals before or during the pumping process. For these reasons the portside component is not designed to quantify all bycatch in these fisheries, but only retained and landed bycatch.

Since the spring of 2011, the portside bycatch sampling protocol shifted towards analyzing entire boatloads only and eliminating partial boat or lot sampling. This change in approach and the results of the co-occurring trip analyses have revealed that aligning portside data between DMR, MA DMF, and the NEFOP at-sea program offer more statistically sound estimates of bycatch and allows for the increase of sampling coverage across these fisheries. These efforts will complement and supplement, but not replace the NEFOP at-sea observer program. This bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way.

The data collected from both the Portside Bycatch Program and Commercial Catch Sampling Program were useful for the herring stock assessment update in 2020. In-particular the herring samples used for the catch-at-age matrix helped to determine spawning stock biomass, the 2019 - 2021 area fishing quotas and specifications, and spawn closure regulations. Data from Commercial Catch Sampling is also used in menhaden stock assessments to calculate the catch-at-age matrix. This is used to determine spawning stock biomass and develop fishing quotas. In addition, portside bycatch data from this project was used in conjunction with the at-sea data to calculate the river herring and haddock bycatch quotas for the 2020/2021 herring and mackerel fisheries.

DEMOGRAPHIC INFORMATION FOR SIGNIFICANT CONTRIBUTORS (VOLUNTARY)

Gender:

- ◯ Male
- ◯ Female
- ◯ Do not wish to provide

Ethnicity:

- ◯ Hispanic or Latina/o Not
- ◯ Hispanic or Latina/o Do not
- ◯ wish to provide

Race:

- ◯ American Indian or Alaska Native Asian
- ◯ Black or African American
- ◯ Native Hawaiian or other Pacific Islander
- ◯ White
- ◯ Do not wish to provide

Disability Status:

- ◯ Yes
  - [ ] Deaf or serious difficulty hearing
  - [ ] Blind or serious difficulty seeing even when wearing glasses
  - [ ] Serious difficulty walking or climbing stairs
  - [ ] Other serious disability related to a physical, mental, or emotional condition
- ◯ No
- ◯ Do not wish to provide

Attach a separate document if more space is needed for #6-10, or #24-50.