

Research Performance Progress Report

Northern Gulf Institute

NA22OAR4050190

July 1, 2022 to March 31, 2023

School of Bluefin Tuna
NOAA



NGI
NORTHERN GULF INSTITUTE
a NOAA cooperative institute



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: NA22OAR4050190
3. Project Title: Northern Gulf Institute - Parallel Award	
4. Award Period of Performance Start Date: 07/01/2022	5. Award Period of Performance End Date: 09/30/2026
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REPORTING INFORMATION	
Signature of Submitting Official: N/A	
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18. Reporting Frequency: <input checked="" type="radio"/> Annual <input type="radio"/> Semi-Annual <input type="radio"/> Quarterly	19. Report Type: <input checked="" type="radio"/> Not Final <input type="radio"/> Final
RECIPIENT ORGANIZATION	
20. Recipient Name: MISSISSIPPI STATE UNIVERSITY	
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22. Recipient UEI: NTXJM52SHKS7	23. Recipient EIN: 646000819

ACCOMPLISHMENTS

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

This report period covers activities from July 1, 2022 to March 31, 2023 for NA22OAR4050190 to the Northern Gulf Institute (NGI) for two research efforts, one focused on bluefin tuna restoration and the other on data and technical support for the restoration of mesophotic and deep benthic communities (MDBC) (<https://coastalscience.noaa.gov/science-areas/restoration/gulf-mdbc-restoration/>).

The bluefin tuna project addresses the NOAA strategic goal of Healthy Oceans by supporting the National Marine Fisheries Service (NMFS) Office of Habitat Conservation and Restoration Center through the NGI research theme of Climate Change and Variability Effects on Regional Ecosystems.

The goal of the bluefin tuna project is to reduce Gulf of Mexico (GoM) bluefin tuna interactions with pelagic longline (PLL) gear, leading to decreased bluefin tuna bycatch and bycatch mortality. The objective of this project is to conduct a demonstration study within the GoM PPL fishery to evaluate the effects of setting PLL gear deeper in the water column than typically fished by 1) evaluating yellowfin and bluefin tuna interactions and bluefin tuna mortality rates and 2) determining the restoration benefit of this fishing practice.

The MDBC data management and technical support project addresses the NOAA strategic goals of Healthy Oceans and Resilient Coastal Communities and Economies by supporting the National Environmental Satellite, Data, and Information Service (NESDIS) National Center for Environmental Information (NCEI) through the NGI research themes of Effective and Efficient Data Management Systems Supporting a Data-driven Economy and Ecosystem Management.

The goal of the MDBC support project is to ensure robust and agile procedures for effective involvement of stakeholders and dissemination of the project results. The objective of this project is to provide technical support for observation and monitoring activities for successful execution of the MDBC project goals for the four MDBC project teams 1) Mapping, Ground-truthing, and Predictive Habitat Modeling (<https://www.gulfspillrestoration.noaa.gov/project?id=234>); 2) Habitat Assessment and Evaluation (<https://www.gulfspillrestoration.noaa.gov/project?id=232>); 3) Coral Propagation Technique Development (<https://www.gulfspillrestoration.noaa.gov/project?id=235>); and 4) Active Management and Protection (<https://www.gulfspillrestoration.noaa.gov/project?id=233>).

25. What was accomplished under these goals?

Accomplishments for the bluefin tuna project include 1) conducting a virtual "Kick Off" meeting with 17 attendees to introduce all project collaborators and discuss project logistics, details, and updates; and 2) recruitment of a pelagic longline captain to participate in the demonstration study during the 2023 fishing season.

Accomplishments for the MDBC support project include 1) leading and attending bi-weekly cross-team meetings to communicate data management updates and look for gaps in communication and answer team questions; 2) working across the four MDBC teams to prepare standard operating procedures (SOPs) and a cruise data management plan and to provide archival guidance documents for data products submitted to NCEI; 3) beginning organization of raw data moved from hard drives to the NCEI servers and working through the archival process for each cruise; 4) writing a submission agreement with ArcGIS Service Directories/Bathymetry, Space Weather, Geophysics NCEI-CO (<https://gis.ngdc.noaa.gov/arcgis/rest/services>) and meeting with their contacts to discuss coordination and archival hand off of the mapping and bathymetry data; and 5) archiving three MDBC data packages at NCEI and creating one data collection package.

ACCOMPLISHMENTS (cont'd)

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

Members of the MDBC support project team attended a virtual data management session with MDBC partners to help answer questions about the NCEI data management strategy presentation given by an NCEI co-lead for the MDBC project at the Smithsonian in Washington, D.C.

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

Members of the MDBC support project team communicated results to stakeholders via meetings with project leads, individual teams, and the data management cross-team. NCEI-NGI data managers will also develop and maintain a dataset inventory spreadsheet on the Data Integration Visualization Exploration and Reporting (DIVER) Explorer web site on a page with links to workspaces for the four MDBC project teams (<https://www.diver.orr.noaa.gov/web/guest/dwh-mdbc-portfolio>), providing a snapshot of the work/products the MDBC projects have developed to date and hosting documents that do not necessarily fit into the NOAA Institutional Repository (IR) or NCEI archives. The team will update this site annually. Currently, this site is a private workspace, but a public-facing version is being designed and will be added to the DIVER public project portfolio page (<https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/14409>).

ACCOMPLISHMENTS (cont'd)

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

The bluefin tuna project team will 1) oversee compliance of and compensation for the pelagic longline captain who was recruited for the demonstration study during the 2023 fishing season, 2) hold monthly coordination meetings with project collaborators, 3) retrieve, enter, and QA/QC all 2023 fishing data, and 4) begin preliminary data analysis.
The MBDC support project team will 1) begin archiving raw cruise data from the 2022 cruise season at NCEI, 2) submit mapping and bathymetry data to ArcGIS Service Directories/Bathymetry, Space Weather, Geophysics NCEI-CO (<https://gis.ngdc.noaa.gov/arcgis/rest/services>) for the archived cruises, 3) continue coordinating and communicating across all MDBC team groups, and 4) begin support for 2023 field cruise season.

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

The MDBC support project produced a Gantt chart; a frequently asked questions sheet (in English and Vietnamese); a scoring rubric used to rank vessel captains; and an initial Timeline, Milestones, and Deliverables plan.

NOTE: The project should be the Bluefin Tuna Project

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

33. What individuals have worked on this project?

The bluefin tuna project PI is Marcus Drymon (MSU/MASGC/GRIHMS). Co-PIs are Jay Rooker (Gulf Research Institute for Highly Migratory Species GRIHMS/TAMU), David Wells (GRIHMS/TAMU), Michael Dance (GRIHMS/LSU). Others include Amy Piko, Dan Foster, James Reinhardt, Dan Van Nostrand, Eric Weissberger, Read Hendon, Eric Orbesen, Derek Orner, Randy Blankinship, Peter Cooper, Scott Leach, Sascha Cushner, Laurie Rounds, Whitley Alford, Natalie Young, Amanda Jargowsky, and Abby Vaughn.

The MDBC support project PI is Paul Mickle (NGI) and project leads are Madalyn Newman (NGI) and Errol Ronje (NCEI). Lauren Jackson (NCEI, currently under detail with NCCOS) is task lead for archiving and David Sallis (NGI) is task lead for programming.

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?

The MDBC support project lost two key NCEI data managers.

35. What other organizations have been involved as partners?

The bluefin tuna project involved: NOAA Fisheries Office of Habitat Restoration, NOAA Fisheries Southeast Fisheries Science Center, NOAA Fisheries Office of Sustainable Fisheries, NOAA Fisheries Southeast Fisheries Science Center Observer Program, NOAA Fisheries Deepwater Horizon Restoration Center, and the Gulf Research Institute for Highly Migratory Species (GRIHMS). The MDBC support project involved: US Geological Society National Centers for Coastal Ocean Science (NCCOS), NOAA National Marine Fisheries Service (NMFS), NCEI, and the Bureau of Ocean Energy Management (BOEM).

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS (cont'd)

36. Have other collaborators or contacts been involved?

The bluefin tuna project collaborated with Coastal Communities Consulting Inc., as they network with several Vietnamese pelagic longline fishermen in Louisiana.

IMPACT

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

The MDBC support project is building stronger communication ties with their partners and showing the value of data management.

IMPACT (cont'd)

38. What was the impact on other disciplines?

Nothing to Report

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?

The MDBC support project includes working with the members of the MDBC project's outreach and education team to deliver highlight videos and imagery for outreach purposes and to provide support for real-time data stats for social media while cruises are happening.

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

Nothing to Report

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?

Nothing to Report

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

The bluefin tuna project initially anticipated the participation of four pelagic longline captains in the 2023 fishing season. However, only one captain was recruited due to a delayed start in the project.

CHANGES/PROBLEMS (cont'd)

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

The bluefin tuna project experienced a delayed start, resulting in only one of the anticipated four captains to be recruited for the 2023 fishing season. Also, interested captains requested higher compensation due to the likelihood of increased gear damage; therefore, compensation was allotted for damaged gear and post-season interviews.

The MDBC support project experienced fewer staff than anticipated, which leads to slower data processing times. The addition of more employees would help with the workload and to staff ships during the field season.

47. Changes that had a significant impact on expenditures

The bluefin tuna project had a reduction in the amount of contractual funds spent because only one captain was recruited for the 2023 fishing season. However, this reduction will likely be balanced out by the additional compensation for gear damage and post-season interviews.

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

PROJECT OUTCOMES

50. What were the outcomes of the award?

The expected outcome of the bluefin tuna project is to restore pelagic fish biomass through pelagic longline fishing methods that should reduce bluefin tuna bycatch and bycatch mortality in the pelagic longline fishery operating in the Gulf of Mexico.
The expected outcomes of providing data management and technical support to the MDBC projects are 1) the collection and archival of valuable data related to deep sea coral community health through leveraging strong data management starting at the planning phase of projects, and 2) stronger partnerships with NOAA and other federal institutions.

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.