Environmental Studies Program: Ongoing Study

Title	Atlantic Marine Assessment Program for Protected Species III (AT 19-07)
Administered by	Office of Renewable Energy Programs
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Conducting Organization(s)	NOAA/ NMFS
Total BOEM Cost	$1,500,000
Performance Period	FY 2019–2024
Final Report Due	August 30, 2024
Date Revised	January 28, 2020
PICOC Summary	
Problem	Broad scale and long-term data on protected species in the Atlantic are limited. Collection of these data are essential in order to understand the potential effects of BOEM-related activities on these species relative to long-term climatological changes in the environment.
Intervention	Aerial observations, shipboard observations and oceanographic sampling, telemetry and passive acoustic monitoring can be used to collect ecological data, covering all major species of interest.
Comparison	This study will build upon the 10 years of baseline data collected previously and provide a comparative data set with which to assess the potential effects of changing environmental conditions and BOEM-related activities on offshore species of interest in the Atlantic.
Outcome	To understand and differentiate between the potential effects of changing environmental conditions and BOEM-related activities on offshore species of interest in the Atlantic.
Context	Halifax, Nova Scotia to the southern tip of Florida, from the coastline to the US EEZ.

BOEM Information Need(s): Long-term, broad scale ecosystem-based studies are needed in order to provide updated scientific information on the status of the Atlantic ecosystem for NEPA and ESA consultations, especially when considering potential impacts from BOEM-related activities.

Background: Atlantic Marine Assessment Program for Protected Species (AMAPPS) was initially conceived as a long-term research and monitoring program, partnering with the US Fish and Wildlife Services, National Marine Fisheries Service and the US Navy. A new potential partner could be Fisheries and Ocean Canada. The first 5-year phase ended in FY2015 and the second phase ends in FY2019. Data collected in association with AMAPPS I developed a better understanding of the distribution and characteristics of the species of interest in the Atlantic, as well as the Atlantic oceanic environment itself. Strong annual variability was detected in the NE Atlantic (Palka et al., 2017).

Moving forward it is imperative to continue this broad scale ecological data collection, as well as some fine scale focus on areas and species of interest. These data are needed in order to detect any climatological or other effects on this ecosystem that may be happening with or without the influence of BOEM-related activities on the outer continental shelf.

Objectives: To collect broad scale and site specific ecological data to enable the identification of possible climatological trends and/or potential effects to marine protected species in the US Atlantic, as well as the potential stressors, including the highly endangered North Atlantic right whale.

Methods: Standard line transect surveys from aerial and vessel-based platforms, potentially using drone technology; oceanographic sampling of the water column using standardized techniques; passive acoustic monitoring using appropriate hydrophone recorders, arrays and analytical software. Telemetry tagging and/or suction cup tagging for species of interest.

Specific Research Question(s):

1. What is the trend in environmental variability along the Atlantic?
2. Can changes in species distribution or behavior be attributed to any BOEM-related activities or other factors?
3. A. Where and when are protected species, for example, North Atlantic right whales and sea turtles, detected?
   B. Why are they located in these areas?

Current Status:

The NOAA Ship *Gordon Gunter* will conduct a 67-day AMAPPS abundance survey between February and May 2020. The survey will start in the Gulf of Mexico and follow a track up the East Coast to Rhode Island.

Observers will also collect distribution and abundance data of seabirds, marine mammals, and sea turtles on spring, summer and fall Northeast Ecosystem Monitoring Surveys (EcoMon).

Publications Completed:

Chavez-Rosales, S., Palka, D. L., Garrison, L. P., & Josephson, E. A. (2019). Environmental predictors of habitat suitability and occurrence of cetaceans in the western North Atlantic Ocean. *Scientific reports*, *9*(1), 5833.

White, T. P., and R. R. Veit. 2020. Spatial ecology of long-tailed ducks and white-winged scoters wintering on Nantucket Shoals. Ecosphere 11(1):e03002. 10.1002/ecs2.3002

Affiliated WWW Sites:

1) https://www.nefsc.noaa.gov/psb/AMAPPS/

2) https://www.fisheries.noaa.gov/feature-story/surveys-collect-data-year-round-marine-life-along-us-east-coast

3) https://www.fisheries.noaa.gov/feature-story/2019-northeast-fall-ecosystem-monitoring-cruise-concludes

4) https://www.fisheries.noaa.gov/feature-story/monitoring-northeast-shelf-ecosystem

References:

Davis, Genevieve E., Mark F. Baumgartner, Julianne M. Bonnell, Joel Bell, Catherine Berchok, Jacqueline Bort Thornton, Solange Brault et al. "Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (Eubalaena glacialis) from 2004 to 2014." *Scientific reports* 7, no. 1 (2017): 1-12.

Pace, R.M, Corkeron, P.J and Kraus S.D. 2017. State–space mark–recapture estimates reveal a recent decline in abundance of North Atlantic right whales. Ecology and Evolution. DOI: 10.1002/ece3.3406.

Palka, D.L., Chavez-Rosales, S., Josephson, E., Cholewiak, D., Haas, H.L., Garrison, L., Jones, M., Sigourney, D., Waring, G. (retired), Jech, M., Broughton, E., Soldevilla, M., Davis, G., DeAngelis, A., Sasso, C.R., Winton, M.V., Smolowitz, R.J., Fay, G., LaBrecque, E., Leiness, J.B., Warden, D.M., Murray, K. and Orphanides, C. 2017. Atlantic Marine Assessment Program for Protected Species: 2010-2014. US Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, DC. OCS Study BOEM 2017-071. 211 pp.