Data Collection At-Sea Occurrence and Abundance of Marine Birds developed by the NOAA National Centers for Coastal Ocean Science (NCCOS), prepared by the Marine-life Data and Analysis Team (MDAT)	
Data Collection Title	MDAT_WS_AVIAN_MODEL_DATA_V1.0_2016_05_20
Data Collection URL	Map services: http://mgelmaps.env.duke.edu/mdat/rest/services/MDAT

Data Set	
Data Set Title	MDAT_WS_AVIAN_MODEL_DATA_V1.0_2016_05_20
Principal Investigators	NCCOS Project: Brian Kinlan, Arliss Winship, Timothy White – US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS) MDAT Project: Patrick N. Halpin (PI) – Marine Geospatial Ecology Lab at Duke University; Earvin Balderama (Co-I) - Loyola University Chicago; Michael Fogarty (Co-I) - NOAA/NEFSC; Brian Kinlan (Co-I) - NOAA/NCCOS
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Abstract

In 2014, the Marine Geospatial Ecology Lab (MGEL) of Duke University began work with the Northeast Regional Ocean Council (NROC), the NOAA National Centers for Coastal Ocean Science (NCCOS), the NOAA Northeast Fisheries Science Center (NEFSC) and Loyola University Chicago, as part of the Marine-life Data and Analysis Team (MDAT), to characterize and map marine life in the Northeast region in support of the Regional Ocean Plan. In 2015, the Mid-Atlantic Regional Council on the Ocean (MARCO) contracted with MDAT to build upon and expand this effort into the Mid-Atlantic planning area, and in support of the Mid-Atlantic Regional Ocean Plan. These research groups collaborated to produce "base layer" predictive model products with associated uncertainty products for 29 marine mammal species or species guilds and 40 avian species, and three geospatial products for 82 fish species.

MDAT member NCCOS had already begun developing a comprehensive synthesis of models and data on marine and coastal birds as part of a 5-year BEOM funded project "Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf."

The NOAA report and the full set of model products for this project can be found here:
https://coastalscience.noaa.gov/projects/detail?key=279

MDAT compiled the NCCOS long-term average abundance and occurrence model results, with two products characterizing model uncertainty. The individual species maps represent the results of predictive modeling applied to data from the 'Compendium of Avian Occurrence Information for the Continental Shelf waters along the Atlantic Coast of the U.S.' database developed and maintained by USGS and USFWS. The modeling framework enabled predictions beginning 1-2km offshore and extending to the US EEZ boundary along the entire US Atlantic coast. As a result, model predictions are not available for nearshore (0-2km) areas, embayments, or estuaries, such as Long Island.

Abundance model results are the long-term average relative abundance of individuals per strip transect segment. It is not possible to infer absolute abundance because of how the survey data were collected and compiled, and how the models were generated.

Occurrence probability model results are the long-term average relative occurrence probability per strip transect segment. As with abundance, it is not possible to infer the absolute probability of

	occurrence. For species of high conservation concern, occurrence probability maps may be more useful than abundance maps. Abundance and occurrence probability model results excluded predictions outside of the observed geographic range of sightings for each species by masking the spatial predictions. See Kinlan et al. (2016) Section 2 for more details. The 90% Confidence Interval and the Coefficient of Variation are provided as two statistical measures of model uncertainty.
Purpose	NCCOS conducted this assessment in partnership with the Bureau of Ocean Energy Management (BOEM) to inform BOEM's renewable energy policy decisions in the Outer Continental Shelf (OCS) waters and to inform marine spatial planning in the region. MDAT incorporated model results and uncertainty products into the products delivered to the Northeast and Mid-Atlantic (US) Regional Planning Bodies to inform ocean planning.
Methods	See Kinlan et al. (2016) Section 2: Methods. Pp. 2-9.
Citations	NCCOS/BOEM study: Kinlan, B.P., Winship A.J., White T.P., & Christensen J. 2016. Modeling At-Sea Occurrence and Abundance of Marine Birds to Support Atlantic Marine Renewable Energy Planning: Phase I Report. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Sterling, VA. OCS Study BOEM 2016-039. xvii+113 pp. Accessed at: https://www.data.boem.gov/PI/PDFImages/ESPIS/5/5512.pdf MDAT: Curtice, C., Cleary J., Shumchenia E., Halpin P.N. 2016. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management. Prepared on behalf of the Marine-life Data Analysis Team (MDAT). Accessed at: http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report-v1_1.pdf.
Data Start Date	1978-01-01
Data End Date	2014-04-27
Data Northern Boundary	44.8 degrees N
Data Southern Boundary	23.8 degrees N
Data Western Boundary	-83.0 degrees E
Data Eastern Boundary	-63.1 degrees E
Place Keywords	North Atlantic Ocean
Spatial Reference Information	Type: Projected Geographic Coordinate Reference: GCS_North_American_1983 Projection: All_Atlantic_Projection Well-Known Text: PROJCS["All_Atlantic_projection", GEOGCS["GCS_North_American_1983", DATUM["D_North_American_1983", SPHEROID["GRS_1980",6378137.0,298.257222101]], PRIMEM["Greenwich",0.0], UNIT["Degree",0.0174532925199433]], PROJECTION["Hotine_Oblique_Mercator_Azimuth_Center"], PARAMETER["false_easting",0.0], PARAMETER["false_northing",0.0], PARAMETER["scale_factor",0.9996],

	PARAMETER["azimuth",40.0], PARAMETER["longitude_of_center",-75.0], PARAMETER["latitude_of_center",35.0], UNIT["Meter",1.0]]
Spatial Representation Type	Grid
Datasets	Listed in Table 1 of Curtice et al. (2016)
Update Frequency	Irregular
Resource Provider	*Marine Geospatial Ecology Lab (MGEL) at Duke University (marinelife data@duke.edu), on behalf of MDAT and NCCOS.*
Comment	*This data documentation describes numerous geospatial datasets archived together as a data collection, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.*
Use Limitation	*Please note: BOEM and NOAA make no warranty, expressed or implied, regarding these data, nor does the fact of distribution constitute such a warranty. BOEM and NOAA cannot assume liability for any damages caused by any errors or omissions in these data. If you use this dataset in a scientific publication or other formal publication, we request that you cite the Kinlan et al. (2016) and Curtice et al. (2016) publications.*