Data Collection	
Summary Products for the Distribution and biomass data for fish species along the U.S. east coast from about Cape Hatteras north to Canadian waters, created by the Northeast Fisheries Science Center for the Northeast Regional Ocean Council, prepared by the Marine-life Data and Analysis Team (MDAT)	
Data Collection Title	MDAT_WS_NEFSC_FISH_SUMMARY_PRODUCTS_V3.2_2022_02
Data Collection URL	Map services: http://mgelmaps.env.duke.edu/mdat/rest/services/MDAT

Data Set	
Data Set Title	MDAT_WS_NEFSC_FISH_SUMMARY_PRODUCTS_V3.2_2022_02
Principal Investigators	MDAT Project: Patrick N. Halpin (PI) – Marine Geospatial Ecology Lab at Duke University; Michael Fogarty (Co-I) – NOAA/NEFSC; Arliss Winship (Co-I) – NOAA/NCCOS NEFSC Project: Dave Richardson – US DOC; NOAA; NOAA Northeast Fisheries Science Center (NEFSC)
Primary Points of Contact	MDAT Collection: Jesse Cleary (jesse.cleary@duke.edu) – Marine Geospatial Ecology Lab at Duke University NEFSC Data: Dave Richardson (david.richardson@noaa.gov) – Northeast Fisheries Science Center, NOAA
Collaborators	MDAT members: Jesse Cleary (Duke University) Corrie Curtice (Duke University) Deborah Brill (Duke University) Michael Fogarty (Co-I, NOAA/NEFSC) Patrick N. Halpin (PI, Duke University) Brian Kinlan (NOAA/NCCOS) Charles Perretti (NOAA/NEFSC) Marta Ribera (TNC) Jason Roberts (Duke University) Emily Shumchenia (NROC) Arliss Winship (Co-I, NOAA/NCCOS)
Author List	MDAT Project: Corrie Curtice[1], Jesse Cleary[2], Deborah Brill[2], Emily Shumchenia[3], Patrick Halpin[2] [1] Marine Geospatial Ecology Laboratory, Nicholas School of the Environment, Duke University Marine Lab, Beaufort, NC, US [2] Marine Geospatial Ecology Laboratory, Nicholas School of the Environment, Duke University, Durham, NC, US [3] Northeast Regional Ocean Council, US NEFSC data: Marta Ribera[1] [1] The Nature Conservancy, Boston, MA, US

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 cetacean species or species guilds and avian species, and geospatial products for fish species. Periodic updates to these base layer models and data are produced by the individual institutions in the MDAT team based on schedules set by the funders of each modeling effort. In 2019, TNC, in collaboration with OceanAdapt (a collaboration between the Pinsky Lab at Rutgers University and the National Marine Fisheries Service), provided updated geospatial products for fish species based on the NEFSC spring and fall bottom trawl survey data from 2010-2019 (records for fall 2017 were removed due to incomplete coverage of the survey area).

Because base layers total in the thousands, efforts to develop a general understanding of the overall richness or diversity in a particular area are not well served by the individual base products. To address this gap, and other potential management applications as identified by the NE RPB and others, MDAT has created several types of summary map products from these base layers. Summary products are comprised of data layers from multiple species, and were created to allow quick access to map summaries about potential biological, management, or sensitivity *groups* of interest. These summary products include total abundance or biomass, species richness, and diversity for all modeled/sampled groups of species and are useful tools for seeing broad patterns in the underlying data or model results.

An additional map product was created to highlight the core areas of highest abundance or biomass by species groups, using a 50% population threshold. Group core area richness maps aid users in identifying the "hotspots" of where certain groups of species have the highest abundance or biomass. Core area richness maps were created for three spatial extents: 1) the full US east coast; 2) the Northeast planning area and 3) the Mid-Atlantic area of interest. Because these products are dependent on the total extent of the input data, core area abundance/biomass products will differ at each extent. |
| Purpose | MDAT produced group summary products and delivered them to the Northeast and Mid-Atlantic (US) regional ocean portals and the national Marine Cadastre to inform ocean planning. All summary products are also available to the public via map services. |
| Methods | See Curtice et al. (2019) Section 3 for complete methods description. |

	2022 V3.2 Update: V3.2 adds new summary products for species Potentially Vulnerable to EMF per BOEM report (Snyder et al., 2019)
Citations	MDAT: Curtice, C., Cleary J., Shumchenia E., Halpin P.N. 2019. 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 and Analysis Team (MDAT). Accessed at: http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf. NEFSC: Ribera, M., Pinsky, M., Richardson, D. 2019. Distribution and biomass data for fish species along the U.S. east coast from about Cape Hatteras north to Canadian waters, created by The Nature Conservancy for the Marine-life and Data Analysis Team. Online access: http://www.northeastoceandata.org/data-explorer/?fish BOEM: Snyder, D., Bailey, W., Palmquist, K., Cotts, B. and Olsen, K., 2019. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England (OCS Study BOEM 2019-049). Bureau of Ocean Energy Management, US Department of the Interior: Sterling, VA, USA. Accessed at: https://espis.boem.gov/final%20reports/BOEM_2019-049.pdf
Data Start Date	2010
Data End Date	2019
Data Northern Boundary	45.0 degrees N
Data Southern Boundary	34.0 degrees N
Data Western Boundary	76.4 degrees W
Data Eastern Boundary	65.0 degrees W
Place Keywords	North Atlantic Ocean
Spatial Reference Information	Type: Geographic Geographic Coordinate Reference: GCS_WGS_1984 Well-Known Text: GEOGCS["GCS_WGS_1984", DATUM["D_WGS_1984", SPHEROID["WGS_1984",6378137.0,298.257223563]], PRIMEM["Greenwich",0.0], UNIT["Degree",0.0174532925199433], AUTHORITY["EPSG",4326]]
Spatial Representation Type	Grid
Datasets	NEFSC fisheries-independent bottom trawl surveys, fall and spring 2010-2019 (records for fall 2017 were not included).
Update Frequency	Irregular
Resource Provider	Marine Geospatial Ecology Lab (MGEL) at Duke University (marinelife_data@duke.edu), on behalf of MDAT, NEFSC, and TNC.

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	*None. If you use this dataset in a scientific publication or other formal publication, we request that you cite the Curtice et al. (2019) publication and the Ribera et al. dataset (2019).*