

<b>Data Collection</b> Summary Products of historical biomass data (1980-2019) 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_Time_Series_V3.2_2022_02
Data Collection URL	Map services: <a href="http://mgelmaps.env.duke.edu/mdat/rest/services/MDAT">http://mgelmaps.env.duke.edu/mdat/rest/services/MDAT</a>

<b>Data Set</b>	
Data Set Title	MDAT_WS_NEFSC_FISH_SUMMARY_PRODUCTS_Time_Series_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 ( <a href="mailto:jesse.cleary@duke.edu">jesse.cleary@duke.edu</a> ) - Marine Geospatial Ecology Lab at Duke University  NEFSC Data: Dave Richardson ( <a href="mailto:david.richardson@noaa.gov">david.richardson@noaa.gov</a> ) - 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)
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<p><b>Abstract</b></p>	<p>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).</p> <p>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 <i>groups</i> 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.</p>
<p><b>Purpose</b></p>	<p>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.</p>
<p><b>Methods</b></p>	<p>See Curtice et al. (2019) Section 3 for complete methods description about original base layer products and group definitions.</p> <p>2022 V3.2 Update: Adds historical biomass data for 1980-2019 for select species groups. A new time series dataset was created using historical biomass data from 1980 to 2019 to highlight changes in distribution over time. The 5-year and 10-year average biomass was calculated for all Fish Species, Demersal Species, and Diadromous Species from both Spring and Fall trawl surveys. Summary layers were created for 1980-1989, 1990-1999, 2000-2009, 2010-2014 and 2015-2019. The changeover to 5 year increments was implemented to add additional temporal resolution to recent time periods supporting</p>

	current management decision making.
<b>Citations</b>	<p>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: <a href="http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf">http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf</a>.</p> <p>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: <a href="http://www.northeastoceandata.org/data-explorer/?fish">http://www.northeastoceandata.org/data-explorer/?fish</a></p>
<b>Data Start Date</b>	1980
<b>Data End Date</b>	2019
<b>Data Northern Boundary</b>	45.0 degrees N
<b>Data Southern Boundary</b>	34.0 degrees N
<b>Data Western Boundary</b>	76.4 degrees W
<b>Data Eastern Boundary</b>	65.0 degrees W
<b>Place Keywords</b>	North Atlantic Ocean
<b>Spatial Reference Information</b>	<p>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]]</p>
<b>Spatial Representation Type</b>	Grid
<b>Datasets</b>	NEFSC fisheries-independent bottom trawl surveys, fall and spring 1980-2019 (records for fall 2017 were not included).
<b>Update Frequency</b>	Irregular
<b>Resource Provider</b>	Marine Geospatial Ecology Lab (MGEL) at Duke University ( <a href="mailto:marinelife_data@duke.edu">marinelife_data@duke.edu</a> ), on behalf of MDAT, NEFSC, and TNC.
<b>Comment</b>	<i>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.</i>
<b>Use Limitation</b>	<i>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).</i>