NOAA Fishing Footprints

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Data Products and Documentation Prepared by RPS for NOAA Fisheries and the Northeast Ocean Data Portal from NOAA Fisheries Fishing Footprint Annual Data

1. INTRODUCTION

NOAA's Northeast Fisheries Science Center (NEFSC) developed a collection of commercial fishing activity maps called Fishing Footprints. These data summarize fishing activity from Vessel Trip Report (VTR) data and dealer report data and modeling the probability of a vessel's fishing location using observer data. Data provided comply with data confidentiality requirements under the Magnuson-Stevens Act, where areas with fewer than three contributing vessels have been obscured. The data was summarized to show activity by Fishery Management Plan (FMP), species, fishing gear type, and year, and the data is summarized to show pounds of fish landed ("landings") or value ("revenue"). Data was summarized on a 500 x 500 meter grid, showing activity within each grid cell. The original data was developed by NOAA's Northeast Fisheries Science Center (NEFSC). For more information on the Fishing Footprints methodology, please see DePiper G.S. 2014. Statistically assessing the precision of self-reported VTR fishing locations. NOAA technical memorandum NMFS-NE-229 and Benjamin S, Lee MY, DePiper G. 2018. Visualizing fishing data as rasters. NEFSC Ref Doc 18-12; 24 p.

Here revenue and landings have been summarized for two time periods 2011-2015 and 2016-2020, for both FMP and gear type. The values represent annual averages over each 5 year period. The data shown here has been filtered from the original data. Areas where revenue was less than $25 was excluded from both the revenue and corresponding landings data. Additionally, some of the "other" gear types with very little fishing activity were excluded from this set of data. Landings and revenue are each displayed using a classification scheme of up to 7 ranges. The range for each bin varied for each layer based on the distribution of the data to best show the spatial variability of fishing activity. Layers with a small range in landings or revenue used fewer bins as needed. Data are grouped into categories for time period, gear type/FMP, and revenue/landings.

It is important to note that these public datasets have suppressed certain information due to confidentiality concerns and are meant to present general patterns of commercial fishing activity. To obtain the most accurate estimates of fishing activity, particularly in the case of offshore wind development, please see the region's socioeconomic impacts page or contact NMFS.GAR.Data.Requests@noaa.gov.

To view these and other fishing data related to offshore wind planning and leasing, please visit this web page: https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development

The following table lists all the gear types (10) and FMPs (15) included, each is presented both as landings and revenue, and for each of the two 5-year time periods, for a total of 98 layers.

Gear Type	Fishery Management Plans (FMP)
• Dredge - Clam	• Atlantic States Marine Fisheries Commission FMP
• Dredge - Scallop	• Atlantic Herring
• Gillnet - Sink	• Bluefish
• Handline	• Highly Migratory Species
• Longline - Bottom	• Mackerel/Squid/Butterfish
• Pot - Lobster	• Monkfish
• Pot - Other	• Northeast Multispecies
• Seine - Purse	• Other (Revenue Only)
• Trawl - Bottom	• Sea Scallop
• Trawl - Midwater	• NOAA Southeast Regional Office FMP
	• Skates
	• Small Mesh Multispecies
	• Spiny Dogfish
	• Summer Flounder/Scup/Black Sea Bass
	• Surfclam/Ocean Quahog

2. PURPOSE

These products are intended to show broad fishing patterns over the entire northeast and Mid-Atlantic regions, to support coastal and ocean planning in the northeast region of the United States. If specific, more accurate analysis is needed, please contact NOAA's Northeast Fisheries Science Center (NEFSC) directly.

3. SOURCES

- Socioeconomic Impacts of Atlantic Offshore Wind Development - https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development
- Fishing Footprints in the Northeast, NOAA Northeast Fisheries Science Center, 2023 - https://www.fisheries.noaa.gov/resource/map/fishing-footprints-northeast

4. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase Raster
Columns and Rows: *variable*
Number of Bands: 1
Cell Size: 500 meters
Pixel Type: floating point
Pixel Depth: 32 Bit

Dataset Status: Complete

5. SPATIAL REPRESENTATION

Data:

Reference System: Albers Conic Equal Area
Horizontal Datum: NAD 1983
Linear Unit: Meter (1.0)
Angular Unit: Degree (0.0174532925199433)
False Easting: 0
False Northing: 0
Central Meridian: -96.0
Standard Parallel: 28.0, 42.0
Origin Latitude: 40.0

Map Service:

Reference System: WGS 1984 Web Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Linear Unit: Meter (1.0)
Angular Unit: Degree (0.0174532925199433)
False Easting: 0
False Northing: 0

Geographic extent: -7,976,185.2 to -7,699,846.1, 5,175,965.9 to 5,379,204.3

IS0 19115 Topic Category: environment, oceans, economy

Place Names:

Atlantic Ocean, Cape Cod Bay, Cape May, Chesapeake Bay, Connecticut, Delaware, Delaware Bay, Georges Bank, Gulf of Maine, Long Island Sound, Maine, Maryland, Massachusetts, Massachusetts Bay, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Rhode Island Sound, United States, Virginia

Scale range: Optimal at 1:1,000,000 to 1:10,00,000

6. DATA PROCESSING

Processing environment: ArcGIS Pro 3.2, Windows 10 Enterprise, 12th Gen Intel(R) Core i7 2.10 GHz CPU, 32GB RAM

	Process Steps
1	Imported original TIF raster files into a Filegeodatabase
2	Filtered the revenue data using a cutoff of $25: all cells less than that were set to No Data (including zeros).
3	Filtered the landings data to the same coverage as the corresponding filtered revenue data (conditional overlay), all excluded areas were set to No Data.
4	Classified the raster data using up to 7 bins. The range for each bin varied for each layer based on the distribution of the data to best show the spatial variability of fishing activity. Layers with a small range in landings or revenue used fewer bins as needed.

7. QUALITY PROCESS

Logical Consistency: None.

Completeness: Data is based on Vessel Trip Report (VTR) data, fishing activity not captured by VTR data will not be included. This dataset is consistent with measures used in collecting VTR data. Areas with fewer than three contributing vessels have been obscured to comply with data confidentiality requirements under the Magnuson-Stevens Act. Some gear types were excluded due to limited activity as confidentiality could not be assured.

Positional Accuracy: Horizontal accuracy is dependent on the location of the transmitted VTR data.

Timeliness: 2011 – 2020

Use restrictions: These products are intended to show broad fishing patterns over the entire northeast and Mid-Atlantic regions, to support coastal and ocean planning in the northeast region of the United States. If specific, more accurate analysis is needed, please contact NOAA's Northeast Fisheries Science Center (NEFSC) directly.

Distribution Liability: The information should not be used for legally binding purposes.