

North Atlantic Total AIS Vessel Density 2013
Northeastern U.S.

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Prepared for:
Northeast Regional Ocean Council (NROC)
Northeast Ocean Data
www.northeastoceandata.org

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1. INTRODUCTION

Automatic Identification Systems (AIS) are a navigation safety device that transmits and monitors the location and characteristics of many vessels in U.S. and international waters in real-time. This dataset represents the density of vessel traffic in 2013 from vessels with AIS transponders in 100 meter grid cells in the Northeastern and Mid-Atlantic regions of the U.S. The dataset is best interpreted using a high to low density scale and does not represent actual vessel counts.

This dataset was created using vessel density products from the National Oceanographic and Atmospheric Administration (NOAA) Office for Coastal Management (OCM). NOAA created the density grids from trackline features, which were generated from NOAA's TrackBuilder tool in ArcGIS using AIS data from 2013.

These data products were informed and reviewed by the port and shipping sectors and the US Coast Guard during outreach conducted from New York to Maine in 2015. More information on outreach is available in the final report on the Northeast Ocean Planning site, listed in Section 3.

2. PURPOSE

To support efforts for regional coastal and ocean planning by the Northeast Regional Ocean Council (NROC).

3. SOURCES

- Atlantic Vessel Density 2013, NOAA OCM
- MarineCadastre.gov, <http://marinecadastre.gov/ais/>

- Nationwide Automatic Identification System, United States Coast Guard
- Northeast Regional Ocean Planning White Paper Update: Overview of the Maritime Commerce Sector in the Northeastern United States – Appendix A, <http://neooceanplanning.org/wp-content/uploads/2015/07/Maritime-Commerce-Overview-July-2015.pdf>

4. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase Raster

Columns and Rows: 13312, 13260

Number of Bands: 1

Cell Size: 100 meters

Source Type: generic

Pixel Type: floating point

Pixel Depth: 32 Bit

Statistics:

Minimum: -1.366037806626077e-018

Maximum: 647.5346069335938

Mean: 0.08884112476288632

Standard Deviation: 1.493076216614799

Dataset Name: AllVesselDensity2013

Dataset Status: Complete

5. SPATIAL REPRESENTATION

Reference System: WGS 1984 Web Mercator Auxiliary Sphere

Horizontal Datum: WGS 1984

Linear Unit: Meter (1.0)

Angular Unit: Degree (0.0174532925199433)

False Easting: 0.0

False Northing: 0.0

Central Meridian: 0.0

Geographic extent: -7318886.8927 to -8650086.8927, 4360927.7857 to 5686927.7857

ISO 19115 Topic Category: environment, oceans, transportation

Place Names:

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

Recommended Cartographic Properties:

(Using ArcGIS ArcMap nomenclature)

Classification, 8 classes, color mode: HSV

| | | |
|------------|-------------|--------------|
| < 0.1: | blue | (222-91-48) |
| 0.1 – 0.2: | blue-green | (187-82-63) |
| 0.2 – 0.4: | green | (126-97-83) |
| 0.4 – 0.6: | light green | (89-100-93) |
| 0.6 – 1.0: | yellow | (60-100-100) |
| 1.0 – 2.0: | orange | (40-100-100) |
| 2.0 – 5.0: | orange-red | (20-100-100) |
| > 5.0: | red | (0-100-90) |

Scale range: Optimal at 1:2,000,000 to 1:500,000

6. DATA PROCESSING

Processing environment: ArcGIS 10.3, Windows 7 Professional, Intel Core i5 CPU

| Process Steps | |
|---------------|--|
| 1 | CLIP 2013 Atlantic Vessel Density from NOAA OCM to Northeast and Mid-Atlantic U.S. |

7. QUALITY PROCESS

Logical Consistency: No new testing was performed on the source density data.

Completeness: Data are complete based on all known Nationwide Automatic Identification System records from 2013. Source data were created using the NOAA Trackline Builder tool which created separate trackline features using filter settings for 30 minutes and 1 nautical mile. The gridded raster identifies density based on the results of that analysis.

Positional Accuracy: Horizontal accuracy is dependent on the location of the transmitted AIS locations from GPS and includes errors associated with this technology.

Timeliness: 2013

Use restrictions: NOT FOR NAVIGATION.

Distribution Liability: Data are provided as is. NROC and RPS ASA are not liable for any interpretations, assumptions, or conclusions based on these data.