North Atlantic Tug-Tow AIS Vessel Density 2013
Northeastern U.S.

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Prepared for:
Northeast Regional Ocean Council (NROC)
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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 tug and towing vessel traffic in 2013 from vessels with AIS transponders in 100 meter grid cells. 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 early 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, neoceanplanning.org http://neoceanplanning.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, 13042
Number of Bands: 1
Cell Size: 100 meters
Source Type: generic
Pixel Type: floating point
Pixel Depth: 32 Bit
Statistics:
    Minimum: 1.075222222207446e-019
    Maximum: 267.3937072753906
    Mean: 0.1215650571337144
    Standard Deviation: 1.557488069492258

Dataset Name: TugTowVesselDensity2013

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

IS0 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 testing was performed on the source trackline data. Data were visually inspected to confirm that the results of the density analysis were reasonable.

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.