North Atlantic Tanker AIS Vessel Density 2012
Northeastern U.S.

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Prepared for:
Northeast Regional Ocean Council (NROC)
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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 tanker vessel traffic in 2012 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 trackline data produced by the National Oceanographic and Atmospheric Administration Coastal Services Center (NOAA CSC). AIS data for 2012 were processed by NOAA CSC using the NOAA Trackline Builder tool in ArcGIS.

2. PURPOSE

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

3. SOURCES

- North Atlantic Vessel Tracks 2012, NOAA CSC
  ftp://ftp.csc.noaa.gov/temp/MarineCadastre/NorthAtlantic_AIS_2012_Public.zip
- Nationwide Automatic Identification System, United States Coast Guard

4. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase Raster
Columns and Rows: 16675, 17436

Number of Bands: 1
Cell Size: 100 meters
Source Type: generic
Pixel Type: floating point
Pixel Depth: 32 Bit
Statistics:
    Minimum: 1.403402640822086e-023
    Maximum: 31.16553497314453
    Mean: 0.02112281048667302
    Standard Deviation: 0.1868268733039981

Dataset Name: TankerVesselDensity2012

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: -8659707.82141 to -6916207.82141, 4124764.51724 to 5909364.51724

IS0 19115 Topic Category: oceans, transportation, environment

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)
    Stretch, Standard Deviations (2.5), Precipitation color ramp (inverted)

    Scale range: Optimal at 1:1,000,000

6. DATA PROCESSING

Processing environment: ArcGIS 10.1 SP1, Windows 7 Professional, Intel Core i5 CPU

	Process Steps
1	SELECT to extract trackline features where vesselGroup is equal to 'tanker'
2	Perform KERNEL DENSITY using Spatial Analyst on NOAA CSC 2012 AIS trackline dataset. Search Radius = 100; Resolution = 100, Units = SQUARE_METERS
3	SET NULL to change all zero values to NoData

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 2012. 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: 2012

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.