Bathymetry Contours
Montauk to Nantucket Shoals
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Prepared for:
Northeast Ocean Data
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1. INTRODUCTION

Bathymetry data is used by the maritime community to support navigation safety, ocean planning, renewable energy development, scientific research and fisheries management. Bathymetry contours can enhance visualization of high resolution bathymetry datasets. This data product is derived by combining high resolution (Approach_Depth_Area) and low resolution (COASTAL_DEPARE_POLYGON) datasets from National Oceanic and Atmospheric Administration (NOAA) Electronic Navigation Charts (ENCs®). Contour values are expressed in feet.

2. PURPOSE

To support coastal and ocean planning and other activities pursuant to the Coastal Zone Management Act, Energy Policy Act, Magnuson-Stevens Fishery Conservation and Management Act, National Environmental Policy Act, Rivers and Harbors Act and the Submerged Lands Act.

3. SOURCES AND AUTHORITIES

- encdirect.noaa.gov
- http://encdirect.noaa.gov/arcgis/rest/services/encdirect/enc_approach/MapServer
- http://encdirect.noaa.gov/arcgis/rest/services/encdirect/enc_coastal/MapServer

4. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase – simple feature class

Data Dictionary:

Line	Name	Definition	Type	Size
1	OBJECTID	Uniquely identifies a feature	OBJECTID	*
2	Shape	Geometric representation of the feature	geometry	*
3	depth_ft	Depth at contour measured in feet	double	*
4	SHAPE_Length	Measurement in spherical coordinates	double	*

Feature Class Name: BathymetryContours

Total Number of Unique Features: 2295

Dataset Status: Complete

5. SPATIAL REPRESENTATION

Geometry Type: vector line
Reference System: GCS North American 1983
Horizontal Datum: North American Datum 1983
Ellipsoid: Geodetic Reference System 1980

XY Resolution: 0.001m
Tolerance: .0001m

Geographic extent: -72.0 to -68.9, 40.2 to 41.8

IS0 19115 Topic Category: environment, oceans, transportation

Place Names:

Atlantic, Block Island Sound, Buzzards Bay, Cape Cod Bay, Connecticut, Long Island
Sound, Massachusetts, Montauk Point, Nantucket Shoals, Nantucket Sound, Narragansett
Bay, New York, Rhode Island, Rhode Island Sound, United States, Vineyard Sound

Recommended Cartographic Properties:
     (Using ArcGIS ArcMap nomenclature)

Simple line width 1.0. Symbolize by quantity using graduated light to dark blue palette.

Scale range for optimal visualization: 20,000 to 1,000,000

6. DATA PROCESSING

Processing environment: ArcGIS 10.2, Windows 7 Professional, Intel Core i5 CPU

	Process Steps Description
1	CLIP input polygon datasets to area of interest
2	PROJECT input datasets into UTM 19
3	EXPLODE MULTIPART POLYGONS using Multipart to Singlepart tool
4	Use Polygon to Line tool to convert polygons to line
5	Convert feet to meters using Field Calculator
6	Use SPATIAL JOIN to assign range of depth values from the polygons to the left and right of each line feature
7	Add and edit feet_depth attribute field and assign depths based on common depth values of surrounding polygons, supplementing data by crossreferencing with adjacent lines or NOAA RNCs™ where necessary.
8	In the editing environment, delete all lines that do not reference a depth value (i.e. lines denoting border areas, lines that referred to terrain elevation or lines that represented errors or gaps in multibeam data).
9	At a scale of 1:50,000, visually examine for overlaps of lines between high resolution and low resolution datasets, splitting and low resolution contour line segments at intersections.
10	DISSOLVE high and low resolution datasets to form one vector line dataset

7. QUALITY PROCESS

Attribute Accuracy: Original content was acquired from authoritative sources – visual cross-referencing with NOAA ENCs® to verify depth values was performed on an as-needed basis.

Logical Consistency: Tested through visual inspection of the geometry at a scale of 1:50,000 and through the analysis of summary statistics on field values

Completeness: All known records acquired from NOAA Office of Coast Survey.

Positional Accuracy: Positional values are determined using best available survey equipment and methodology.

Timeliness: Based on data collected from 2011 to the present.

Use restrictions: NOT FOR NAVIGATION

Distribution Liability: All parties receiving these data must be informed all caveats and limitations.