

Coral Amendment Areas – Discrete and Broad Zones (for NEFMC deliberation)
Northeast United States
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Prepared for:
Northeast Regional Ocean Council (NROC)
Northeast Ocean Data
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1. INTRODUCTION

Deep-sea corals are fragile, slow-growing organisms that play an important role in the marine ecosystem including as habitat for managed fishery species. Corals are vulnerable to various types of disturbance of the seafloor. This amendment is being developed to identify management areas where deep-sea corals occur, and restrict the use of particular types of fishing gears in those areas to preserve and protect these coral habitats. This amendment contains alternatives that aim to identify and protect concentrations of corals in select areas and restrict the expansion of fishing effort into areas where corals are likely to be present. The Council is developing this management plan amendment utilizing its discretionary authority under section 303(b) in MSA.

Locations throughout the New England region are under consideration for management. South of Georges Bank, areas under consideration include discrete canyons and seamounts as well as broad areas of the slope and abyssal plain that extend from the shelf break to the Exclusive Economic Zone boundary. In the Gulf of Maine, management areas under consideration include inshore locations along the eastern Maine coast, and offshore locations in Jordan and Georges Basins. Gear restriction options include all bottom-tending gears, with possible exemptions for red crab and other types of traps, including lobster traps, or just mobile bottom-tending gears. The Council recognizes the importance and value of commercial fisheries that operate in or near areas of deep-sea coral habitat. As such, measures in this amendment will be considered in light of their benefit to corals as well as their costs to commercial fisheries.

2. PURPOSE

To depict the spatial extent of a draft management zone to protect deep-sea corals from the negative impacts of fishing. These zones are being considered as part of the New England Fishery Management Council's Omnibus Deep-Sea Coral Amendment. These zones will continue to be modified throughout the amendment development process and should be considered a draft until a final decision is recommended by the Council to the National Marine Fisheries Service.

3. SOURCES AND AUTHORITIES

- New England Fishery Management Council, 2016.
- For questions, contact Michelle Bachman (mbachman@nefmc.org)

4. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase – simple feature class

Feature Types: Polygons

Data Dictionary:

For discrete zones:

Line	Name	Definition	Type	Size
1	FID	Uniquely identifies a feature	OBJECTID	*
2	Shape	Geometric representation of the feature	geometry	*
3	Name	Name of the discrete area	Text	*
4	East_west	Order of areas from East to West	Integer	*
5	Area_miles	Area, in square miles	Float	*
6	Area_km	Area, in square kilometers	Float	*
7	ZoneType	Type of zone (Canyon, Inshore GOM, Offshore GOM, Seamount)	Text	*
8	shortname	Abbreviation used to refer to this area	Text	*

For broad zones:

Line	Name	Definition	Type	Size
1	FID	Uniquely identifies a feature	OBJECTID	*
2	Shape	Geometric representation of the feature	geometry	*
3	Area	Area, in square kilometers	Float	*
4	Name	Name of zone	text	*

Feature Class Name: CoralAmendmentDiscreteZones, CoralAmendmentDiscreteZones2, CoralAmendmentBroadZones900m, CoralAmendmentBroadZones600m, CoralAmendmentBroadZones600mv2, CoralAmendmentBroadZones500m, CoralAmendmentBroadZones400m, CoralAmendmentBroadZones300m.

Total Number of Unique Features: 31 (for discrete zones), 12 (for additional discrete zones), 1 (for all broad zone layers)

Dataset Status: In Progress

5. SPATIAL REPRESENTATION

Geometry Type: vector polygon

Reference System: GCS North American 1983

Horizontal Datum: North American Datum 1983

Ellipsoid: Geodetic Reference System 1980

XY Resolution: XY Scale is 1000000000.0000001

Tolerance: 0.0000000089831528411952117

Geographic extent: -70.66 to -65.69, 38.04 to 44.23

ISO 19115 Topic Category: biology, environment, oceans

Place Names:

Atlantic Ocean, Georges Bank, Gulf of Maine, Wilkinson Basin

Recommended Cartographic Properties:

Discrete Zones:

Simple Fill Symbol: Picture Fill Symbol, Style: Snowfield/Ice, outline width: 1.5, outline color: 56-168-0, Fill color: 56-168-0

Additional Discrete Zones:

Simple Fill Symbol: Picture Fill Symbol, Style: Snowfield/Ice, outline width: 1.5, outline color: 56-168-0, Fill color: 0-76-115

Broad Zones:

300m:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Crosshatch, outline width: 1.5, outline color: 115-0-0, Fill color: 115-0-0.

400m:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Crosshatch, outline width: 1.5, outline color: 255-170-0, Fill color: 255-170-0.

500m:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Crosshatch, outline width: 1.5, outline color: 255-255-0, Fill color: 255-255-0.

600m:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Crosshatch, outline width: 1.5, outline color: 255-115-223, Fill color: 255-115-223.

600m Option 2:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Simple hatch, outline width: 1.5, outline color: 255-115-223, Fill color: 0-115-76.

900m:

Simple Fill Symbol: Line Fill Symbol, Style: 10% Crosshatch, outline width: 1.5, outline color: 112-68-137, Fill color: 112-68-137.

Scale range for optimal visualization: 5,000,000

6. DATA PROCESSING

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

	Process Steps Description
1	The discrete zones were developed by combining information on the presence, abundance, and locations of various types of corals, terrain data such as depth and slope, and model outputs that predict areas where suitable habitats for various coral types are likely to occur.
2	The broad zones were developed by simplifying (removing vertices) from contour lines. The original contour was generated from a 25 meter resolution digital elevation model, referred to as ACUMEN, for Atlantic Canyons Undersea Mapping Expeditions. The expeditions were conducted from NOAA's research vessels Hassler, Bigelow, and Okeanos Explorer from February 2012 through August 2012. Data were processed by NOAA National Centers for Coastal and Ocean Science staff and provided to the Council directly. The vertices were removed using the simplify line tool in ArcGIS 10.2 for desktop, with a 1000 meter tolerance (distance over ground). The resulting boundary was then adjusted manually (additional vertices removed or added) to keep the line between the adjacent 50 meter depth contours.

7. QUALITY PROCESS

Attribute Accuracy: Attribute information is based upon source material and is accurate as such.

Logical Consistency: These data are believed to be logically consistent.

Completeness: These are draft management areas and subject to change

Positional Accuracy: These zones were delineated using bathymetric contours. Accuracy based on the correct location of the source layer.

Timeliness: Data up to date as of April 2017.

Use restrictions: Not for navigation

Distribution Liability: Data provided as is. Northeast Ocean Data and NEFMC are not liable for any interpretations, assumptions, or conclusions based on these data