

**Template for Submission of Scientific Information  
to Describe Areas Meeting Scientific Criteria for  
Ecologically or Biologically Significant Marine Areas**

**Title/Name of the area:** **Canyons and Seamounts of the Northwest Atlantic Ocean within and beyond national jurisdiction**

**Presented by:**

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**Introduction:** *Submarine canyons and seamounts off the Atlantic coast of the United States and Canada provide foraging, breeding, and/or nursery habitats for hundreds of fish and crustacean species, including swordfish, tuna, and sharks; marine mammals including endangered sperm whale, beaked whales, and dolphins; and isolated invertebrate communities including those dominated by deep sea corals and sponges.*

**Location:** *Submarine canyons off the Atlantic coast of the United States and Canada occur mostly within the zones of national jurisdiction. Four of the New England Seamounts are within the jurisdiction of the United States. The remaining New England Seamounts and all of the Corner Rise Seamounts are located in ABNJ. See maps (links below).*

**Feature description of the proposed area**

*The varied seafloor topography and complex oceanographic influences of canyons and seamounts combine to create unique habitat for many species of corals, sponges and other invertebrates on the benthos and fish, marine mammals and birds in the pelagic realm.*

*Deepwater canyons are a striking feature of the continental margin off the east coast of the United States and Canada. There are 15 major canyons in the United States alone, ranging in depth from about 200 meters to about 3,500 meters. Benthic habitat complexity is high due to a combination of steep canyon walls, rocky outcrops, and sediments ranging from boulders to mud in patches that were, in part, formed or maintained by complex currents. These complex seafloor environments support diverse communities of organisms including those dominated by corals, sponges and other benthic species. Cohesive sediments in most canyons support extensive burrows produced by crabs, tilefish, burrowing anemones, and other species that function as habitat engineers. Cold seep communities have been found in at least two locations on the east coast continental slope. The steep topography of the canyons creates currents and upwelling that in turn provide important feeding habitat for a variety of pelagic organisms above the canyons.*

*The “Great Meteor” or “New England” hotspot formed both the New England and Corner Rise seamounts, with a pause in volcanism 83 million years ago as evidenced by the morphological gap between chains. The New England and Corner Rise seamounts together have 45 major peaks, with summit reliefs from 400 m to more than 5000 m. Under highly diverse oceanographic settings, the New England and Corner Rise seamounts harbor complex coral and sponge ecosystems. More than 200 species of invertebrates have been identified in the Atlantic submarine canyons and seamounts, including dozens of species of stony corals, black corals, soft corals, sea pens, anemones, and sponges.*

*Portions of most of the submarine canyons and a number of seamounts have been surveyed (see supporting references below).*

**Feature condition and future outlook of the proposed area:** *A number of the seamounts and canyons have been subject to bottom trawl fishing, which can be enormously destructive to corals,*

sponges and other benthic habitats. Offshore oil and gas development may be an increasingly important issue in the region.

### Assessment of the area against CBD EBSA Criteria

(Discuss the area in relation to each of the CBD criteria and relate the best available science. Note that a proposed area for EBSA description may qualify on the basis of one or more of the criteria, and that the polygons of the EBSA need not be defined with exact precision. And modeling may be used to estimate the presence of EBSA attributes. Please note where there are significant information gaps)

CBD EBSA Criteria (Annex I to decision IX/20)	Description (Annex I to decision IX/20)	Ranking of criterion relevance (please mark one column with an X)			
		No information	Low	Medium	High
<b>Uniqueness or rarity</b>	Area contains either (i) unique (“the only one of its kind”), rare (occurs only in few locations) or endemic species, populations or communities, and/or (ii) unique, rare or distinct, habitats or ecosystems; and/or (iii) unique or unusual geomorphological or oceanographic features.				X
<i>Explanation for ranking</i> The seamounts and canyons of the NW Atlantic contain uniquely complex habitats in an otherwise huge area of abyssal sediment.					
<b>Special importance for life-history stages of species</b>	Areas that are required for a population to survive and thrive.			X	
<i>Explanation for ranking</i> The canyons and seamounts provide virtually the only hard substrate habitat in the NW Atlantic for deep water corals, sponges and other benthic dwellers.					
<b>Importance for threatened, endangered or declining species and/or habitats</b>	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.				X
<i>Explanation for ranking</i> <i>Sperm whales</i>					
<b>Vulnerability, fragility, sensitivity, or slow recovery</b>	Areas that contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.				X
<i>Explanation for ranking</i> The corals, sponges and other benthic habitats of both the seamounts and canyons of the NW Atlantic are exceedingly vulnerable to disturbance and very slow to recover.					
<b>Biological productivity</b>	Area containing species, populations or communities with comparatively higher natural biological productivity.		X		
<i>Explanation for ranking</i>					
<b>Biological diversity</b>	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or				X

	has higher genetic diversity.				
<i>Explanation for ranking</i> The canyons and seamounts provide much more diverse habitats than the surrounding abyssal sediment					
<b>Naturalness</b>	Area with a comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation.			X	
<i>Explanation for ranking</i> Some of the seamounts and canyons have been subject to bottom trawl fishing, which has destroyed an unknown amount of coral and sponge habitat. Deep canyon and seamount environments (greater than 2000 m) currently remain unimpacted by direct human-caused disturbances.					

### Sharing experiences and information applying other criteria (Optional)

Other Criteria	Description	Ranking of criterion relevance (please mark one column with an X)			
		Don't Know	Low	Medium	High
<i>Add relevant criteria</i>					
<i>Explanation for ranking</i>					

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### Maps and Figures

See: <http://www.whoi.edu/oceanus/v2/article/images.do?id=33769>  
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