Please note that this template is provided to facilitate information submission on a voluntary basis, only when the information provider finds this template appropriate. If the available information does not fit the format of this template, information can be submitted in another format, in consultation with the Secretariat.

Appendix

Template for Submission of Scientific Information

to Describe Ecologically or Biologically Significant Marine Areas

*Note: Please **DO NOT** embed tables, graphs, figures, photos, or other artwork within the text manuscript, but please send these as separate files. Captions for figures should be included at the end of the text file, however.*

Title/Name of the area: Puerto Rico Trench

Presented by (*names, affiliations, title, contact details)*

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Abstract (*in less than 150 words)*

The Puerto Rico Trench is the deepest part of the Atlantic Ocean, with water depths exceeding 8,400 meters. Its depth is comparable to the deep trenches in the Pacific Ocean. Trenches in the Pacific are located in places where one tectonic plate subducts or slides under another one. The Puerto Rico Trench, in contrast, is located at a boundary between two plates that slide past each other with only a small component of subduction. The trench is less deep where the component of subduction is larger. The unusually deep sea floor is not limited to the trench, but also extends farther south toward Puerto Rico. The Puerto Rico Trench is also associated with the most negative gravity anomaly on earth, -380 milliGal, which indicates the presence of an active downward force. Finally, a thick limestone platform, which was originally deposited in flat layers near sea level, is now tilted northward at a uniform angle. Its northward edge is at a depth of 4,200 m, and its southern edge can be found on land in Puerto Rico at an elevation of a few hundred meters. Many tectonic models have been proposed to explain this geologically fascinating, tectonically active region; however, none have gained acceptance, and the region remains poorly understood, largely because its underwater location makes it difficult to study.

The geologic settings of Puerto Rico and the Virgin Islands have created or contributed to several pressing societal issues related to human safety, environmental health, and economic development. Over 4 million U.S. citizens live on these islands, mostly along the coast. Because the island lies on an active plate

boundary, earthquakes are a constant threat, and the densely populated coastal areas are vulnerable to tsunamis. The region has high seismicity and large earthquakes. Because of its high population density and extensive development near the coast, Puerto Rico has a significant risk for earthquakes and tsunamis.

Source: http://oceanexplorer.noaa.gov/explorations/03trench/trench/trench.html

Author: Uri ten Brink, USGS

Introduction

(To include: feature type(s) presented, geographic description, depth range, oceanography, general information data reported, availability of models)

Location

(Indicate the geographic location of the area/feature. This should include a location map. It should state if the area is within or outside national jurisdiction, or straddling both. It should also state if the area is wholly or partly in an area that is subject to a submission to the Commission on the Limits of the Continental Shelf)

http://woodshole.er.usgs.gov/project-pages/caribbean/

Feature description of the proposed area

(This should include information about the characteristics of the feature to be proposed, e.g. in terms of physical description (water column feature, benthic feature, or both), biological communities, role in ecosystem function, and then refer to the data/information that is available to support the proposal and whether models are available in the absence of data. This needs to be supported where possible with maps, models, reference to analysis, or the level of research in the area)

http://woodshole.er.usgs.gov/project-pages/caribbean/background.html

Feature condition and future outlook of the proposed area

(Description of the current condition of the area – is this static, declining, improving, what are the particular vulnerabilities? Any planned research/programmes/investigations?)

Contact: Uri ten Brink, USGS Woods Hole, MA

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 candidate EBSA may qualify on the basis of one or more of the criteria, and that the boundaries 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)			
		Don't Know	**Low**	**Some**	**High**
Uniqueness	Area contains either (i) unique ("the only one				

or rarity	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.				
Explanation for ranking					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.				
Explanation for ranking					
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.				
Explanation for ranking					
Vulnerability, fragility, sensitivity, or slow recovery	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.				
Explanation for ranking					
Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.				
Explanation for ranking					
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.				
Explanation for ranking					

Naturalness	Area with a comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation.				
Explanation for ranking					

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**	**Some**	**High**
Add relevant criteria					
Explanation for ranking					

References

(e.g. relevant documents and publications, including URL where available; relevant data sets, including where these are located; information pertaining to relevant audio/visual material, video, models, etc.)

Educational Film

Title: *The Puerto Rico Trench: Exploring the deepest place in the Atlantic Ocean*
14-minute educational film about sea floor mapping and tsunami and earthquake hazards, 2004, by Joram ten Brink
This movie is available for download in two formats:
• Download the medium-resolution QuickTime Movie version, 77.5 MByte
• Download the high-resolution MP4 version, 163 MByte
Or, for a DVD copy of the movie, please contact:
Dr. Uri ten Brink
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http://soundwaves.usgs.gov/2007/12/

http://oceanexplorer.noaa.gov/explorations/03trench/trench/trench.html

http://woodshole.er.usgs.gov/project-pages/caribbean/

Maps and Figures

http://oceanexplorer.noaa.gov/explorations/03trench/trench/trench.html

http://woodshole.er.usgs.gov/project-pages/caribbean/seafloor.html

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(Indicate if there are any known issues with giving permission to share or publish these data and what any conditions of publication might be; provide contact details for a contact person for this issue)

Contact: Uri ten Brink, USGS Woods Hole, MA