

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

Title/Name of the area:

Atlantis Seamount

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

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Abstract (*in less than 150 words*)

Seamount lying in sub-tropical waters with a special scientific interest in that it was pivotal in the identification of ultraslow spreading ridges. It is a tectonic seamount and a guyot. Atlantis Bank is located on the South West Indian Ridge with a summit depth of 700m. The summit is covered in sand and hosts small sharks, lobsters and also solitary corals. Rock outcrops, especially near the summit rim host large stylasterids with *Dermechinus horridus*. Coral gardens are also present on the seamount and cliff habitats hosting anemones, sea spiders, large sponges and octocorals, including large *Paragorgia* colonies.

Introduction

Atlantis seamount is located within sub-tropical waters. It is a seamount of special scientific significance in that it was where the work pivotal to understanding the geology of ultraslow-spreading ridges was undertaken. Also, Atlantis Bank is a tectonic seamount and a guyot, the summit being largely flat. Atlantis Bank has been subject to fishing and there is evidence of fishing damage to some areas but it was declared a Benthic Protection Area (BPA) by the Southern Indian Ocean Deep-Sea Fisheries Association (SIODFA). The seamount includes cliff habitats characterised by large anemones, large sponges, and octocorals. Large *Paragorgia* colonies are particularly notable. This is also the only seamount on which large concentrations of pelagic armourhead (*Pseudopentaceros wheeleri*) were observed during two recent cruises and also during Russian fishing on the South West Indian Ridge.

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)

Area is outside of national jurisdiction on the high seas and is not subject to a claim to the Commission on the Limits of the Continental Shelf.

Area roughly 32°38'S - 32°48'S and 57°12'E - 57°20'E (see map below)

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Feature description of the proposed area

Atlantis Bank is a guyot with a summit depth of approximately 700m depth. The summit comprises sand, carbonate pavement and rock outcrops. The rock outcrops, particularly along the edges of the summit host large stylasterid colonies with *Dermechinus horridus*. Spines of these urchins form substratum for infauna around these outcroppings. Small sharks are also frequent on the seamount summit, all one, as yet unidentified, species. Solitary corals, also unidentified also live unattached on the seamount summit. The eastern side of the seamount comprises rocky / boulder slopes with glass sponges and octocorals scattered across the slope. The western side of the seamount includes slide features, some of which have been heavily fished and damaged. However, rocky cliff habitats located on rock buttresses flanking these slide features host rich benthic communities of large, armchair sized sponges, glass sponges, anemones and their sea spider predators. The seamount hosts populations of pelagic armourhead (*Pseudopentaceros wheeleri*) which do not occur elsewhere on the South West Indian Ridge as far as is known. There are also populations of oreo and alfonsino which occur elsewhere on the ridge. The seamount has important scientific value as the main study site leading to the proposal of a new category of ridge (ultraslow spreading ridge). The seamount is also a tectonic seamount.

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?)

As stated the feature has been declared a BPA by SIODFA. However, there was evidence of fishing on the seamount in the form of trawling scars located on landslide areas on the north western side of the seamount. We believe that several features of the seamount, including the fact it lies under sub-tropical waters, hosts high densities of pelagic armourhead and also vulnerable marine ecosystems (coral garden and cliff communities) render it a valuable EBSA.

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Assessment of the area against CBD EBSA Criteria

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 or rarity	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>					
This is the only seamount on the SW Indian Ridge known to host pelagic armourhead. It is also a tectonic seamount and sunken island which was pivotal in identification of ultraslow spreading ridges. The seamount also hosts VMEs, particularly coral garden and cliff communities					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.			X	
<i>Explanation for ranking</i>					
The area is clearly of high importance to pelagic armourhead on the South West Indian Ridge.					
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.				X
<i>Explanation for ranking</i>					
The South West Indian Ridge has been subjected to fishing since the 1980s (USSR) and has been subjected to bottom trawling for orange roughy and other species. Significant damage to the seamounts was witnessed during James Cook Cruise JC66 on Atlantis Bank. The area appears to be important for pelagic armourhead and hosts coral garden communities.					
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.				X
<i>Explanation for ranking</i>					
Coral garden habitat is highly vulnerable to damage from fishing, particularly bottom trawling.					

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Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.				X
<i>Explanation for ranking</i> Evidence of trophic blockage was identified on the seamounts and probably is responsible for the productive seamount fisheries on the South West Indian Ridge for orange roughy, alfonsino and oreo.					
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.				X
<i>Explanation for ranking</i> The benthic habitats documented on the seamounts include a very high diversity of species, especially corals and coral associates. This diversity is currently being analysed in various laboratories in the UK, France, Australia and the USA. Preliminary results for, for example, ophiuroids, indicate 50% of the species are new to science. Atlantis seamount is particularly notable for large stylasterid and Paragorgia colonies and also <i>Euplectella</i> spp (c.f.) colonised by a new species of <i>Spongiacaris</i> .					
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.			X	
<i>Explanation for ranking</i> Clearly this seamount has been damaged by fishing. However, the declaration of a BPA for this site has protected the coral and other habitats from further degradation. The pelagic ecosystem also contrasts strongly with that further south.					

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
<i>Add relevant criteria</i>	Fits VME definition according to FAO Guidelines on Implementation of UNGA Resolution 61/105.				X
<i>Explanation for ranking</i> Cold-water coral garden ecosystems fit the criteria of a Vulnerable Marine Ecosystem under the FAO Guidelines for Implementation of UNGA Resolution 61/105. Other aspects of the seamount ecosystem may also fit these criteria.					

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References

Boersch-Supan PH, Boehme L, Read JF, **Rogers AD**, Brierley AS (2012) Elephant seal foraging dives track prey distribution, not temperature: Comment on McIntyre et al. (2011). *Marine Ecology Progress Series*. doi: 10.3354/meps09890

Rogers AD, Alvheim O, Bemanaja E, Benivary D, Boersch-Supan PH, Bornman T, Cedras R, Du Plessis N, Gotheil S, Hoines A, Kemp K, Kristiansen J, Letessier T, Mangar V, Mazungula N, Mørk T, Pinet P, Read J, Sonnekus T (2009) *Cruise Report "Dr. Fritjof Nansen" Southern Indian Ocean Seamounts (IUCN/ UNDP/ ASCLME/ NERC /EAF Nansen Project 2009 Cruise 410) 12th November – 19th December, 2009*. International Union for the Conservation of Nature, Gland, Switzerland, 188pp.

Rogers AD, Taylor ML (2012) Benthic biodiversity of seamounts in the southwest Indian Ocean Cruise report – R/V *James Cook* 066 Southwest Indian Ocean Seamounts expedition – November 7th – December 21st, 2011. 235pp.

Maps and Figures

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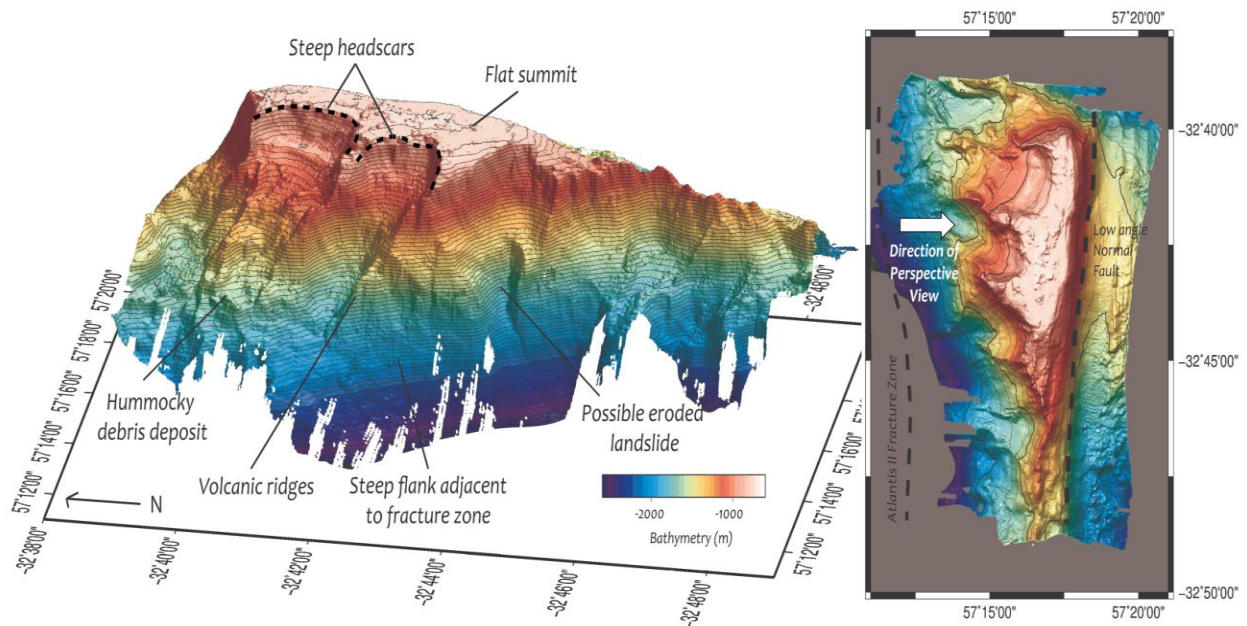


Figure 1. Map of Atlantis Seamount (Lily Muller, University of Oxford)

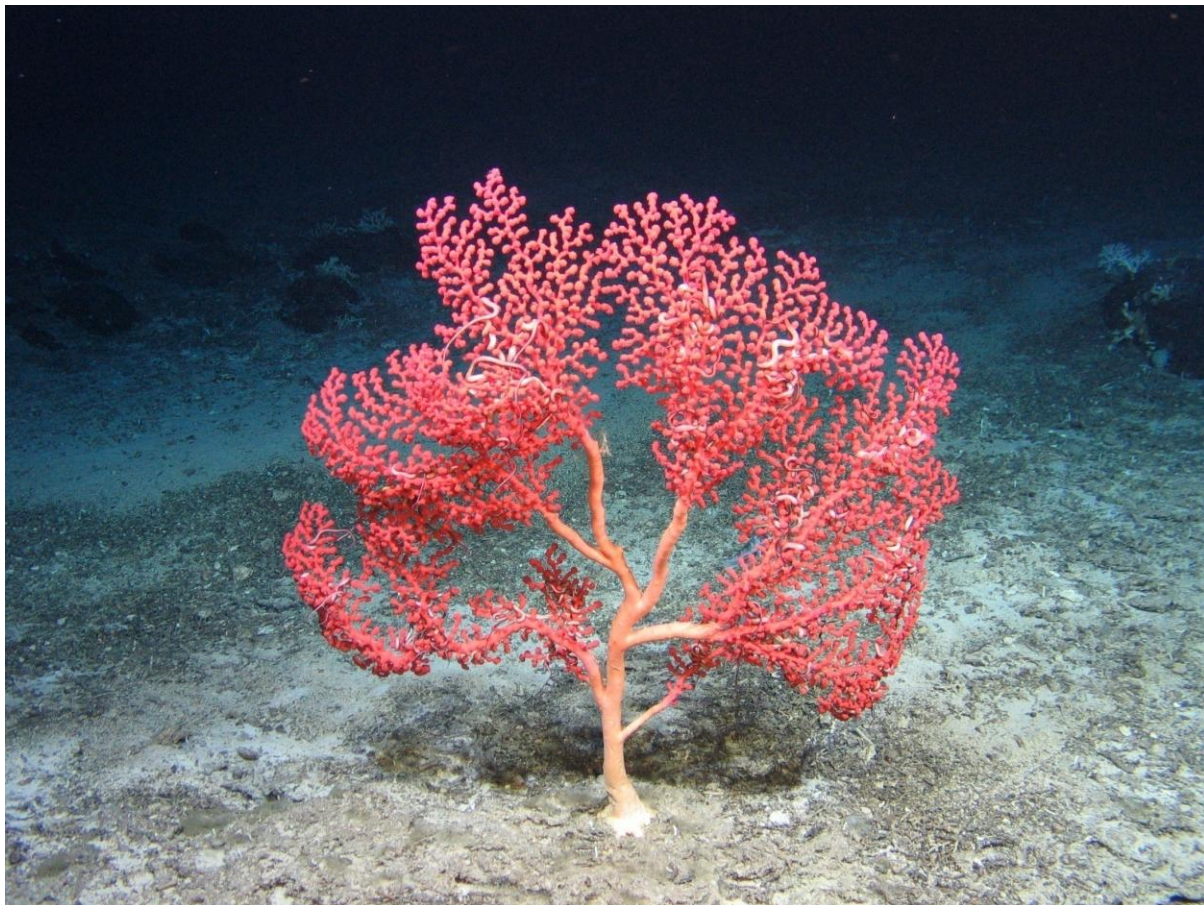


Figure 2. *Paragorgia*, ~ 700m depth, Atlantis Seamount.

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