

SC-03-06.3.2(02)

3rd Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific
Committee
20-24 March 2017, Saint Denis, La Reunion

Proposal for designation of the 'ATLANTIS BANK' fishery closure for the
purpose of protecting its biodiversity and for its special scientific
interest

Relates to agenda item: 6.3.2

Working paper Info paper

Delegation of Australia

Abstract

The purpose of this paper is to propose that the Atlantis Bank feature satisfies the following criteria in the SIOFA Standard protocol for future protected areas designation (see Annex H of SC2 report):

- 4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.
 - 5a. Scientific interest – The area, excluding existing fishing grounds, has a history of scientific research associated with understanding ecosystem and biodiversity processes in the SIOFA region and fishing activities would compromise current and future research.
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Recommendations *(working papers only)*

It is recommended that the SC:

- **Note** that the proposed Atlantis Bank feature meets the following criteria in the protocol: 4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity; and 5a. Scientific interest – The area, excluding existing fishing grounds, has a history of scientific research associated with understanding ecosystem and biodiversity processes in the SIOFA region and fishing activities would compromise current and future research.
 - **Recall** Article 4(c) of the Agreement which obliges Contracting Parties to apply the precautionary approach in accordance with the FAO Code of Conduct for Responsible Fisheries and the 1995 UN Fish Stocks Agreement, whereby the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.
 - **Recommend** to the Meeting of the Parties that, in line with the precautionary approach and because it is an area of special scientific interest, the Atlantis Bank feature be designated as a fishery closure for the purpose of protecting biodiversity, with a prohibition on all fishing to be reviewed after at least 10 years
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Proposal for designation of the 'ATLANTIS BANK' fishery closure for the purpose of protecting its biodiversity and for its special scientific interest

Australia

Acknowledgement

Australia have prepared this proposal in consultation with the Cook Islands, SIODFA, Ms Lynda Goldsworthy AM, and an informal steering committee of SIOFA SC members who met to advise Australia on its review of the SIOFA Standard protocol for future protected areas designation.

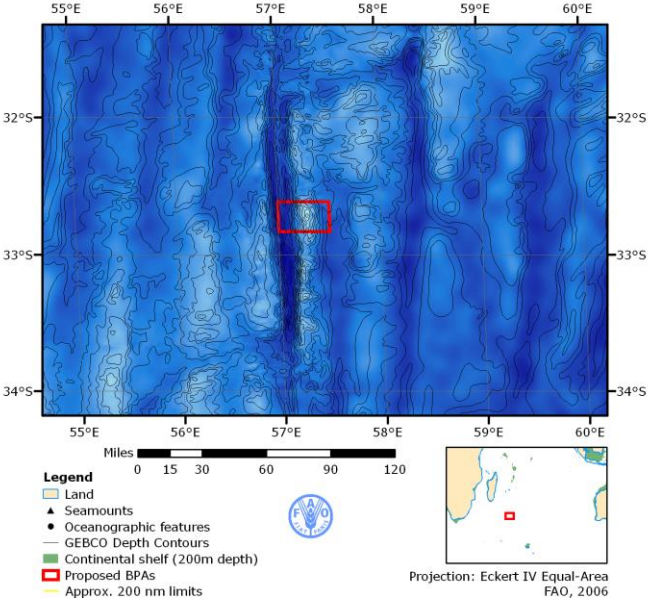
Purpose and rationale

The purpose of this paper is to propose that the Atlantis Bank feature satisfies the following criteria in the SIOFA Standard protocol for future protected areas designation (see Annex H of SC2 report):

- 4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.
- 5a. Scientific interest – The area, excluding existing fishing grounds, has a history of scientific research associated with understanding ecosystem and biodiversity processes in the SIOFA region and fishing activities would compromise current and future research.

Background

At the 4th Meeting of the Parties in 2017, Australia signalled its intention to review the SIODFA 'benthic protected areas' against the protocol for protected area designation. The proposal follows a template suggested at the intersessional meeting of the informal SIOFA steering committee in November 2017.

<p>Name</p>	<p>Atlantis Bank</p>
<p>Proponent/s</p>	<p>Australia (SIOFA Contracting Parties) <i>Prepared in collaboration with the Southern Indian Ocean Deepsea Fishers Association (SIOFA Observer)</i></p>
<p>Geographic description</p>	<p>Total area: 8,694 km² Coordinates: 32°00'S-57°00'W : 32°50'S-58°00'E Bathymetry: 0-300m 0 km²; 300-700m 1 km²; 700-1000m 36 km²; 1000-1500m 82 km²; > 1500m 8,575 km²</p>  <p>The map displays bathymetric contours in shades of blue, with a red rectangular box highlighting the proposed BPA area. The map is bounded by 55°E to 60°E longitude and 32°S to 34°S latitude. A scale bar below the map indicates distances up to 120 miles. The legend identifies various features: Land (yellow), Seamounts (black triangle), Oceanographic features (black dot), GEBCO Depth Contours (white line), Continental shelf (200m depth) (green), Proposed BPAs (red box), and Approx. 200 nm limits (yellow line). An inset map shows the location of the Atlantis Bank in the Southern Indian Ocean. The projection is Eckert IV Equal-Area, FAO, 2006.</p>
<p>Objectives</p>	<p>The objectives for the designation of this area are:</p> <ul style="list-style-type: none"> • the protection of biodiversity; and • protection of an area of special scientific interest.
<p>Criteria that the protected area meets</p>	<p>This proposed area meets the following criteria:</p> <ul style="list-style-type: none"> • <u>4b. Biodiversity representation</u> – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity. • <u>5a. Scientific interest</u> – The area, excluding existing fishing grounds, has a history of scientific research associated with understanding ecosystem and biodiversity processes in the SIOFA region and fishing activities would compromise current and future research. <p><u>Feature description</u></p> <p>This tectonic guyot seamount covers an area of approximately 8694 km² and is in sub-tropical waters (Rogers et al. 2012). The guyot</p>

<p>rises from 4000 m to a depth of 700 m below the surface. The summit measures at least 25km². It is an ancient fossil island with 11-million-year-old fossil beaches and lagoons, a submerged headland, 'sea cliffs', limestone ripple 'beaches' lithified as rock, gabbro, fossil sea-stacks, fossilized corals, clams, snails and sea urchin spines in the limestone, oolitic limestone (Baines et al. 2003; 2007).</p> <p>There have been extensive tectonic studies since 1950s, including as a drilling site within the Ocean Drilling Programme, with several marine expeditions including 1987 Woods Hole Oceanographic Institute (WHOI) survey using JOIDES <i>Resolution</i> (Dick et al. 1991), seismic studies led by Cambridge University in the 1980s-1990s, the 1997 WHOI survey using JOIDES <i>Resolution</i> and the 2009 International expedition using RSS <i>James Clark Ross</i>.</p> <p><u>Biodiversity representation</u></p> <p>The benthic habitats support a very diverse deep-sea fauna (Rogers et al. 2012). This includes diverse coral gardens and complex sea-cliff deep-sea communities characterised by large anemones, large sponges and octocorals. The large Paragorgia colonies are unique. Rock outcrops, particularly along the edges of the summit host large stylasterid colonies, including the echinoid <i>Dermechinus horridus</i>. Spines of these urchins form substratum for infauna around the outcroppings. The eastern side of the seamount comprises rocky/boulder slopes with glass sponges and octocorals. The western side has rock buttresses flanking rock-slide features hosting rich benthic communities of large, armchair-sized sponges, glass sponges, anemones and sea spider predators. Large populations of lobsters, crabs, sharks, sea fans, siphonophores, orange roughy and big-eye dory have been reported from surveys (Rogers & Taylor 2012). These scientific surveys have identified new species and endemism (e.g. Taylor and Rodgers 2017).</p> <p>JAMSTEC (2000) made observations on near-bottom and/or mesopelagic communities at depths from 750 to 5365 m. Among other results, JAMSTEC reported on the vertical stratification of Crow Shark (<i>Etmopterus pusillus</i>), Gilchrist's Orange Roughy (<i>Hoplostethus gilchristi</i>) and the Big-eye Dory (<i>Alloctytus verrucosus</i>). They also found a number of deepwater chondrichthyans species (including <i>Etmopterus pusillus</i> and <i>Pseudotriakis microdon</i>) but not all were able to be identified. This bank has provided a significant mid-water trawl fishery for alfonso and reportedly, catches of 1000 t have been taken; small catches of orange roughy have also been taken (G. Patchell, pers. comm. 2018).</p> <p>Acoustic studies of zooplankton and micronekton over seamounts indicate that seamounts focus trophic resources owing to the interaction of pelagic communities with the topography and local physical oceanography. Rogers et al. (2012) found evidence of trophic focusing on the Atlantis Seamount, leading to higher biological productivity than in the surrounding pelagic waters.</p> <p><u>Scientific interest</u></p> <p>It has been extensively studied (e.g. Baines et al. 2002, 2007; JAMSTEC 2000; Rogers et al. 2012; Taylor and Rogers 2017) and is reportedly</p>
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	<p>the first tectonic guyot ever studied to consider geology of ultraslow-spreading ridges (Baines et al. 2003). It has a unique paleontological record and has been a drilling site within the Ocean Drilling Programme (ODP) (Dick et al. 1991). It has also been studied as part of the International Ocean Discovery Program’s ‘Expedition 360’ (MacLeod et al. 2017).</p> <p>The feature is being studied as part of the IUCN (2013) Seamounts Project: An Ecosystem Approach to Management of Seamounts in the Southern Indian Ocean.</p> <p><u>Fishing history</u></p> <p>There are areas that can be fished on Atlantis using bottom trawls and about 60 tows are reported to have been made on this feature (SIODFA 2016). Videos have reportedly shown abandoned trawls on the bottom, presumably from Soviet-era fishing (R. Shotton, pers. comm. 2018). Most of the sea floor is reportedly untouched by bottom trawling (SIODFA 2016). There are many ancient sea-stacks, boulders, rock slides, and gravel beds that make the bottom rugged and difficult to bottom trawl (SIODFA 2016).</p> <p>Romanov (2003) provides a summary and review of Russian and Ukrainian scientific and commercial fishing operations on the deepwater ridges of the southern Indian Ocean.</p> <p><u>Other supporting information</u></p> <p>SIODFA has closed this location to fishing by vessels that are members of its association because of the historical and scientific interest.</p> <p>It is listed as an Ecologically and Biologically Significant Area (EBSA) by the Convention of Biological Diversity (CBD) based on the following criteria:</p> <ul style="list-style-type: none"> C1 Uniqueness or rarity (High ranking). C2: Special importance for the life-history stages of species (Medium rank) C4: Vulnerability, fragility, sensitivity, or slow recovery (High rank) C5: Biological productivity (Medium rank) C6: Biological diversity (High rank) C7: Naturalness (Medium rank) <p>The areas is identified by UNESCO as a priority site of Outstanding Universal Value (OUV) for protection through a listing equivalent to World Heritage Listing (see Freestone et al. 2016). It is proposed to satisfy World Heritage Criteria VIII (major stages in earth’s history and geological processes), IX (significant ecological and biological processes in the evolution of ecosystems, communities of plant and animals), X (significant biological diversity and threatened species of OUV).</p>
<p>Social, cultural and economic interests</p>	<p>Some historical fishing data are available (e.g. Romanov 2003), which may assist with understanding any social, cultural and/or economic costs associated with designating this as a protected area. The area is the location of a productive fishery. It is possible that designation could</p>

	have adverse social, cultural or economic impacts in terms of forgone opportunity for fishing.
Proposed activities to be restricted or prohibited	Fishing within this proposed area with all gears could detrimentally impact the biodiversity and scientific interest of this area. The MoP should consider closure to all fishing.
Review periods	The proposal documents and provides information to support a closure. It is recommended that this designation be reviewed at least every 10 years, or more frequently if new information becomes available that enhances or degrades the justification for its protection.
Outline of monitoring and/or research needed	A desk-top compilation of publications from research undertaken within this area would assist with future reviews of the designation.
Compliance	Compliance-related issues are outside of the remit of the SIOFA SC.

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