

SC-03-06.3.2(06)

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 ‘Southern Indian Ridge (Del Caño Rise)’
fishery closure for the purpose of the protection of its bioregional and
geographic representation and its biodiversity

Relates to agenda item: 6.3.2

Working paper Info paper

Delegation of Australia

Abstract

The purpose of this paper is to propose the Southern Indian Ridge (Del Caño Rise) feature meets the following criteria under the SIOFA protocol for protected areas designation (see Annex H of SC2 report):

2b. Bioregional representation – Area is known to contain unique, rare or distinct, habitats or ecosystems that bottom fishing operations will disturb.

3a. Geographic representation – The area proposed is known to contain unique or unusual geomorphological features that fishing operations may damage

4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.

Recommendations *(working papers only)*

It is recommended that the SC:

- **Note** that the proposed Southern Indian Ridge (Del Caño Rise) feature meets the following criteria in the protocol: 2b. Bioregional representation – Area is known to contain unique, rare or distinct, habitats or ecosystems that bottom fishing operations will disturb; 3a. Geographic representation – The area proposed is known to contain unique or unusual geomorphological features that fishing operations may damage; and 4b – Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.
 - **Note** that areas adjacent to this feature are being considered for protected area status by the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR).
 - **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, the proposed Southern Indian Ridge (Del Caño Rise) feature be designated as a fishery closure for the purpose of the protection of its bioregional and geographic representation and its biodiversity, with designation to be delayed in the interests of pursuing a collaborative approach with CCAMLR.
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Proposal for designation of the 'Southern Indian Ridge (Del Caño Rise)' fishery closure for the purpose of the protection of its bioregional and geographic representation and its biodiversity

Australia

Acknowledgement

Australia have prepared this proposal in consultation with 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.

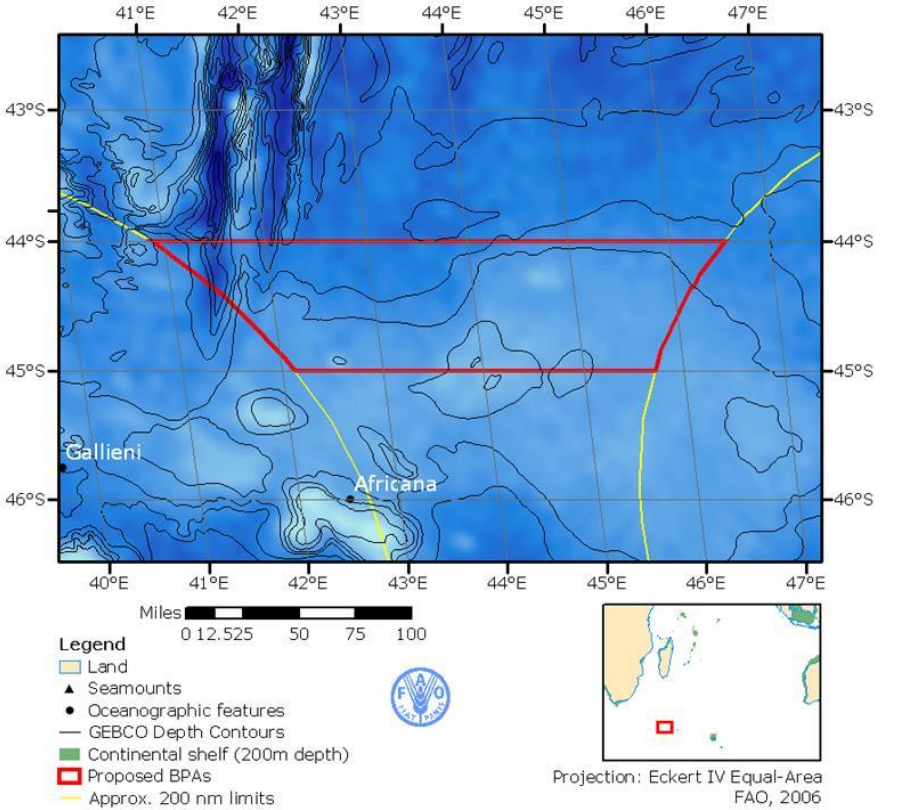
Purpose and rationale

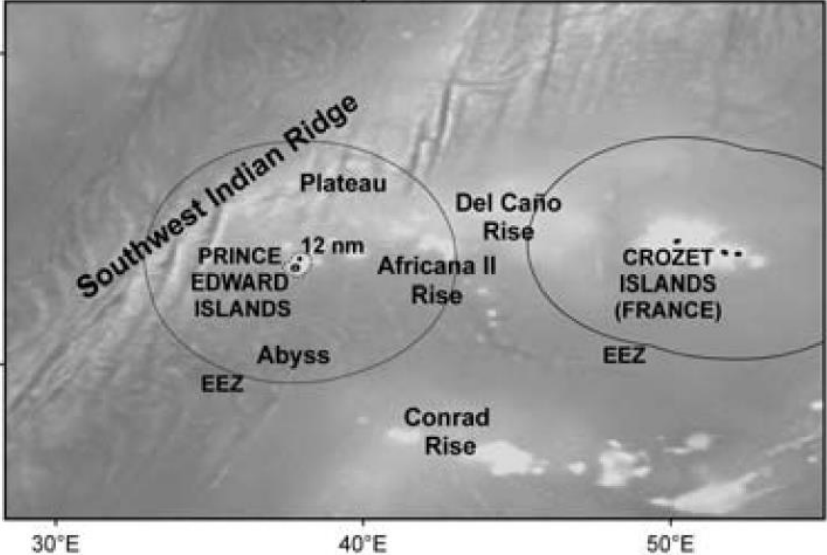
The purpose of this paper is to propose that the Southern Indian Ridge (Del Caño Rise) feature meets the following criteria under the SIOFA protocol for protected areas designation (see Annex H of SC2 report):

- 2b. Bioregional representation – Area is known to contain unique, rare or distinct, habitats or ecosystems that bottom fishing operations will disturb.
- 3a. Geographic representation – The area proposed is known to contain unique or unusual geomorphological features that fishing operations may damage
- 4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.

Background

At the 4th Meeting of the Parties in 2017, Australia signalled its intention to review the SIOFA '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>Southern Indian Ridge (Del Caño Rise)</p>
<p>Proponent/s</p>	<p>Australia (SIOFA Contracting Party)</p>
<p>Geographic description</p>	<p>Total area: 81,439 km² Coordinates: 44°00'S, 40.878° 00'E, 44°00'S, 46.544° 00'E; 45°00'S, 42.124° 00'E, 45°00'S 45.711° 00'E</p> <p>Bathymetry: 0-100 m 0 km²; 101-300 m 0 km²; 301-700 m 28 km²; 701-1000 m 53 km²; 1001-1500 m 5775 km²; > 1500 m 75,583 km².</p> <p>Figure 1 Bathymetry of the proposed area</p> 

	<p>Figure 2 Map showing general area nested between Prince Edward Island to the west and Crozet Islands to the west</p>  <p>The map shows a bathymetric view of the Southwest Indian Ridge. A large circle on the left encompasses the Prince Edward Islands, with a 12 nm distance marked between them. To the east, another circle encompasses the Crozet Islands (France). Between these island groups are several seamounts: the Del Caño Rise, Africana II Rise, and Conrad Rise. The Abyss and Plateau are also labeled. EEZ (Exclusive Economic Zone) boundaries are indicated for both island groups. The map includes latitude markers at 40°S and 50°S, and longitude markers at 30°E, 40°E, and 50°E.</p>
<p>Objectives</p>	<p>The objectives for designation of this proposed protected area are:</p> <ul style="list-style-type: none"> - Protection of its unique bioregional representativeness; - Protection of its geographic representation; and - Protection of its biodiversity.
<p>Criteria that the protected area meets</p>	<p>This proposed protected area meets the following criteria:</p> <ul style="list-style-type: none"> • <u>2b. Bioregional representation</u> – Area is known to contain unique, rare or distinct, habitats or ecosystems that bottom fishing operations will disturb. • <u>3a. Geographic representation</u> – The area proposed is known to contain unique or unusual geomorphological features that fishing operations may damage • <u>4b. Biodiversity representation</u> – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity. <p><u>Feature description</u> The Southern Indian Ridge (Del Caño Rise) feature is an area of seamounts adjacent to the CCAMLR region to the south and bounded to the east and west by the EEZs of South Africa and France. The zone comprises the northern flank of the west-east orientated Del Caño Rise such that the southern limit, around 45°S is along the ridge of this rise. The southern boundary abuts the CCAMLR-managed zone to the south and lies between the South African EEZ around Prince Edward and Marion Islands to the west and the French EEZ surrounding Crozet Island to the east. The estimated points of contact with the EEZ areas are: 44°S, 40.878°E; 44°S; 46.544°E; 45°S, 42.124°E; 45°S, 45.711°E.</p> <p><u>Geographic representation</u> The Del Caño Rise has diverse and complex bathymetry, which may be a major factor affecting productivity of this region of the Southwest Indian Ocean. The 2000 m Rise lies between the plateaus that ascend to the Prince Edward to the west and the Crozet Island groups to the east and is just southeast of the Southwest Indian Ridge, a seafloor feature that</p>

<p>includes a series of transform faults and associated fracture zones that may host hydrothermal vent communities. Lombard et al. (2006) have prepared habitat maps for this area, and has suggested this is area as generally thick to very thick sediment. The relevant zones are: i. shelf of mounts and rises 200 – 500 m ii. upper slope 500 – 1800 m iii. lower slope 1800 – 3500 m.</p> <p>Lombard et al. (2006) imply that the area of the Del Caño Rise will be subject to the Antarctic Circumpolar Current flowing from west to east. Further, as this current crosses the Southwest Indian Ridge it creates meso-scale eddies. These authors also note that increased chlorophyll concentrations are periodically observed downstream of the region of the islands delineated by the 1800 m isobath, i.e. the upper-lower slope division resulting in an area of high zooplankton biomass.</p> <p>Benthic surveys have been conducted on the shelf between the two Prince Edward islands (Beckley & Branch 1992; Branch et al. 1993), which may provide indications of the benthic characteristics of the broader area.</p> <p>Fisher and Goodwillie (1998) provide additional detail on the physiography of the region, and note its unique geographic and geological characteristics.</p> <p><u>Fishing history</u> SIODFA (2016) reported that the area is untrawled but that it is also the location of a productive fishery. Some historical fishing data may be available (e.g. Romanov 2003).</p> <p><u>Biodiversity and bioregional representation</u> Currently the Prince Edward and Crozet Islands (to the west and east, respectively) are protected as a nature reserve to safeguard the millions of birds and mammals that breed there every year. It is reported that there has been collaboration between South African and French governments, NGOs and scientists to protect the waters around the Prince Edward and Crozet Islands (SIODFA 2016). Rare species have been reported foraging in these regions, and it is documented to be a driving area in the productivity of the Southwest Indian Ocean (SIODFA 2016).</p> <p>Gon & Heemstra (1990) provide distribution data for seven fishes that can be expected to inhabit this area. Patagonian toothfish (<i>Dissostichus eleginoides</i>) are present in adjacent areas (Lombard et al. 2007), so are likely to be present in the proposed area.</p> <p>Lombard et al. (2007) and Nel and Omardien (2008) note that the southern region of this area, along the ridge of the Del Caño Rise (and between the protected areas of the Prince Edward Island to the west and the Crozet Islands to the east) provides a movement and foraging axis for seabirds, specifically white-chinned petrels (<i>Procellaria aequinoctialis</i>), wandering albatrosses and sooty (<i>Phoebetria fiscal</i>). They also note the importance of nesting the proposed Prince Edward Island marine protected area within a broader management framework in the wider</p>

	<p>region. Lombard et al. (2007) also map the Del Caño ridge as a foraging area for southern elephant seals.</p> <p>Koubbi et al. 2012 note that the Agulhas Return Current has a strong influence on this region and that the latitudinal zonation of bioregions according to frontal zones may be influenced by climate change. These authors note that this may have consequences for marine bird and mammal populations as it will change the habitat of their main pelagic prey species (e.g. euphausiids, squids, mesopelagic fish, etc.). Koubbi et al. (2012) described ichthyofauna and benthos in the region as being characteristic of the subantarctic zone with some species being endemic but note that cryptic benthic species had not yet been studied.</p> <p>The French and South African islands to the east and west support colonies of seabirds and seals. The Crozet and Prince Edward Islands together host the entire population of Crozet shag, about 70% of the world population of wandering albatross, 54% of king penguin, 33% of Indian yellow-nosed albatross, 33% of subantarctic fur seal, 27% of sooty albatross and 21% of the world's southern rockhopper penguin (Koubbi et al. 2012).</p> <p>The high productivity in the vicinity of the islands, together with the large aggregations of seabirds and seals found at the islands, reportedly attract various other animals including several cetacean species, to their vicinity (Koubbi et al. 2012). The populations of several seabirds that breed at the islands have decreased and there is evidence that decreases of albatrosses and petrels have been influenced by by-catch mortality in fisheries (Koubbi et al. 2012). Although the islands themselves are protected areas and fishing is currently excluded within 12 nautical miles of the islands, many of the seabirds and seals range well beyond the immediate precincts of the islands (Koubbi et al. 2012).</p> <p>The role this area plays in the pelagic ecosystem and where it is situated between two existing protected areas, as well as its potential to have unique benthic habitats that fishing operations would disturb, is why it is most fitting to criteria 2b. Bioregional representation.</p> <p>Prince Edward Islands, Del Cano Rise and Crozet Islands is listed as an Ecologically or Biologically Significant Area (EBSA) by the Convention on Biological Diversity and met the following criteria:</p> <ul style="list-style-type: none"> • Uniqueness or rarity (High ranking) • Special importance for the life-history stages of species (High ranking) • Importance for threatened, endangered or declining species and/or habitats (High ranking) • Vulnerability, fragility, sensitivity, or slow recovery (High ranking) • Biological productivity (High ranking) • Biological diversity (High ranking) • Naturalness (High ranking).
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Social, cultural and economic interests	Some historical fishing data may be 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. SIODFA (2016) reported that the area is untrawled but that it is also the location of a productive fishery. It is possible that designation could 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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