SC-03-06.3.2(05)

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 'CORAL' fishery closure for the purpose of the protection of its bioregional representativeness and its biodiversity, and because it is an area of 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 Coral feature meets the following criteria in the SIOFA protocol for protected areas designation (see Annex H of SC2 report):

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

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.

Recommendations *(working papers only)*

It is recommended that the SC:

- **Note** that the proposed Coral feature was deemed to meet the following criteria in the protocol: 2b. Bioregional representation – The area is known to contain unique, rare or distinct, habitats or ecosystems that bottom fishing operations will disturb; 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 proposed Coral feature be designated as a fishery closure for the purpose of the protection of its bioregional representativeness and its biodiversity, with a prohibition on all forms of fishing to be reviewed after at least 10 years

Proposal for designation of the 'CORAL' fishery closure for the purpose of the protection of its bioregional representativeness and its biodiversity, and because it is an area of 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 Coral feature meets the following criteria in the SIOFA protocol for protected areas designation (see Annex H of SC2 report):

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

Name	Coral
Proponent/s	Australia (SIOFA Contracting Parties) *Prepared in collaboration with the Southern Indian Ocean Deepsea Fishers Association (SIOFA Observer)*
Geographic description	**Coordinates:** Latitude 41° 00′ S, 42° 00′ E and 41° 40′ S and 44° 00' E. **Area**:12, 376 km² **Area by depth:**

Depth (m)						
0-100	**100-300**	**300-700**	**700-1000**	**1000-1500**	**> 1500**	**Total area (Km²)**
0	8	34	50	510	11,775	12,376

Figure 1 General location and bathymetry of the Coral feature

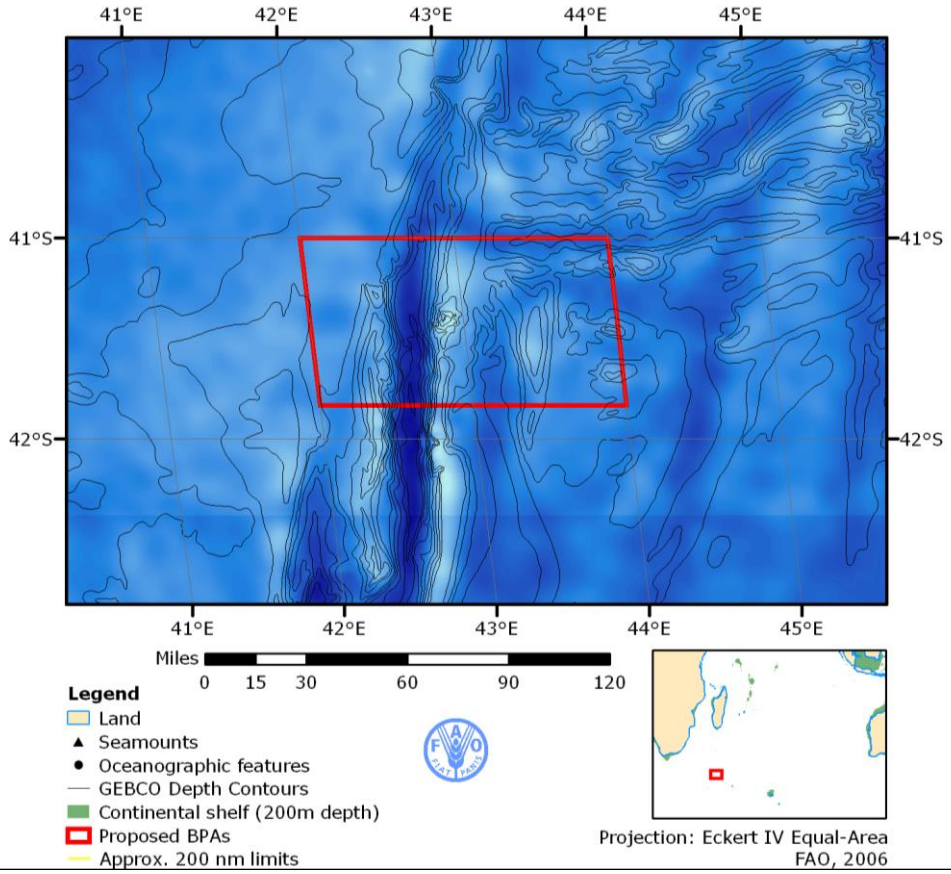


Figure 2
Bathymetry of the Coral feature

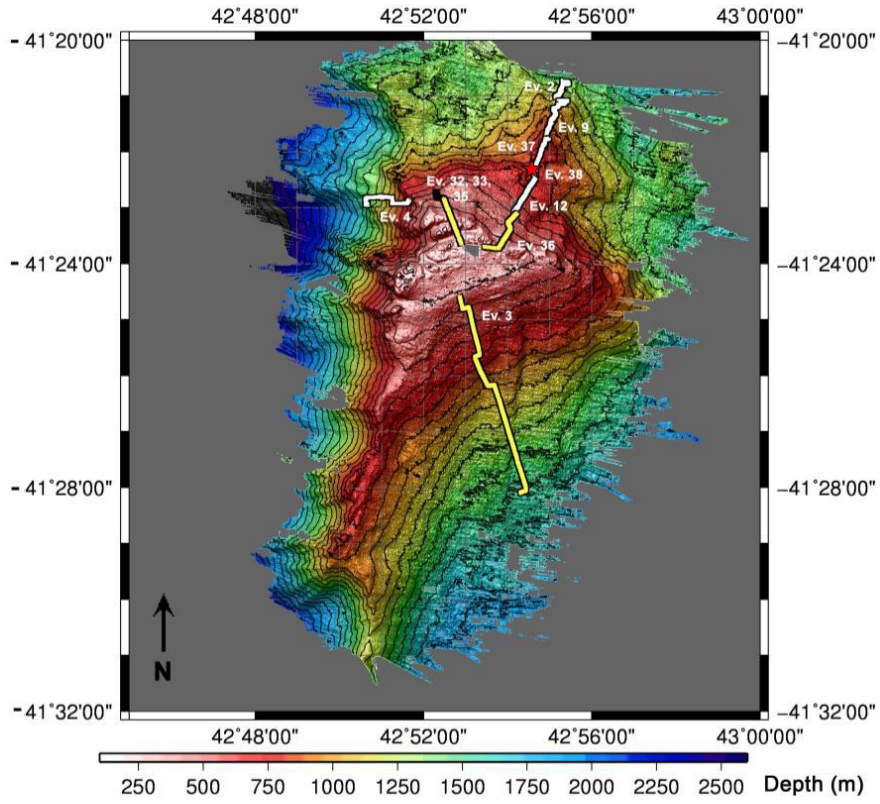
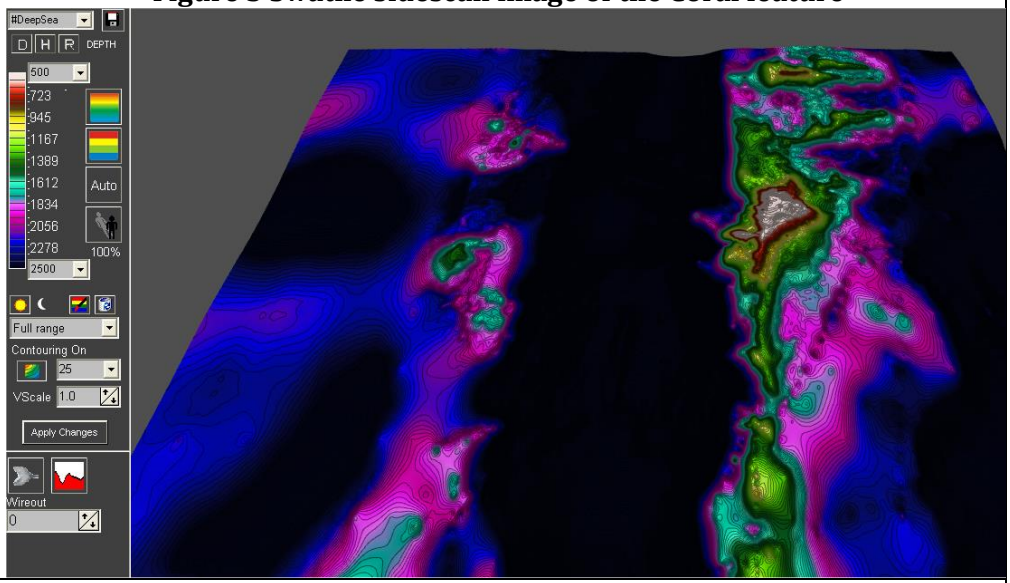


Figure 3 Swathe sidescan image of the Coral feature



Objectives	The objectives for designation of this proposed protected area are: • the protection of its bioregional representativeness; • the protection of biodiversity; and • protection of an area of special scientific interest.
Criteria that the protected area meets	This area meets the following criteria: • 2b. Bioregional representation – The area is known to contain unusual, rare or distinct habitats or ecosystems that bottom fishing operations will disturb.

	• 4b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity. • 5. 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. Feature description The Coral seafloor feature is on the Southwest Indian Ridge between the Del Cãno Rise and the Bridle feature and is located in sub-Antarctic waters. It is a spreading centre with seamounts and ridges. Depths range from 4500 m to 200 m (Read and Pollard 2017). Bioregional and biodiversity representation The *R.V. James Cook* cruise JC66 in November and December 2011 observed intact cold-water corals at ~1000 m, largely comprising dead coral framework with high densities of associated fauna including both sessile (corals, sponges) and mobile (squat lobsters, echinoderms) elements (Rogers and Taylor 2012). In shallower waters, located on the upper flanks and summit of the seamount are coral gardens comprising Scleractinia and Octocorallia (Rogers and Taylor 2012). The coral framework at 1000m largely comprised *Solenosmilia variabilis* (Rogers and Taylor 2012). The identity of Scleractinia on seamount summit and upper flanks is uncertain but could possibly be *Lophelia pertusa* (Rogers and Taylor 2012). As part of the outputs from this cruise, Nye (2013) described a two new species of hippolytid shrimps (Crustacea: Decapoda: Caridea: Hippolytidae) from the Coral seamount. Rogers (2014) notes that this is the only known example of a seamount with cold-water coral reef habitat lying in sub-Antarctic waters in the Southern Indian Ocean. The water mass overlying the seamount is Sub-Antarctic and hosts pelagic communities completely different to those further north (north of the Sub-Antarctic and Sub-Tropical Fronts). Pelagic species include Antarctic myctophids (*Electrona* spp) and also pelagic grenadiers. The benthic fauna varies depending on depth on the seamount and also the substratum slope and composition. Cold water coral reef is located on the eastern flanks of the seamount at 1,000m depth. The main framework building species appears to be *Solenosmilia variabilis*. The framework is largely comprised of dead coral but is largely intact with fissures and holes probably created through seismic activity. Live colonies of the framework-building species are also present. The coral reef hosts high densities of a range of other coral species, particularly zoanthids and octocorals. Glass sponges also occur at high density (Rogers 2014). Vertical cliffs are seen on the western side of the seamount, colonised by dense communities of sponges, octocorals, brachiopods, and benthopelagic fish, sharks and octopus (Rogers and Taylor 2012). Seabirds are very common over the seamount, particularly wandering albatross and white-chinned petrels. The water mass overlying the seamount is sub-Antarctic and hosts

	pelagic species completely different to those further north, including Antarctic myctophids, and pelagic grenadiers. Coral Seamount is listed as an Ecologically or Biologically Significant Area (EBSA) by the Convention on Biological Diversity and met the following criteria: • Uniqueness or rarity (High ranking). • Special importance for the life-history stages of species (Medium rank) • Importance for threatened, endangered or declining species and/or habitats (no information) • Vulnerability, fragility, sensitivity, or slow recovery (High ranking) • Biological productivity (No information) • Biological diversity (High ranking) • Naturalness (Medium ranking). As part of the submission for assessment, Rogers (n.d.) noted that cold-water coral reef ecosystems (such as the Coral seamount) fit the criteria of a Vulnerable Marine Ecosystem under the FAO Guidelines for Implementation of UNGA Resolution 61/105. <u>Scientific interest</u> The Coral seamount has been extensively studied. Observations were made of this seamount using a remotely operated vehicle (ROV), *Kiel 6000*, on the *R.V. James Cook* cruise JC66 in November and December 2011. In late 2009, the research vessel *Dr. Fridtjof Nansen* carried out a 6-week multi disciplinary survey of six seamounts in the Southwest Indian Ocean. Read and Pollard (2017) provide details of the physical oceanography of the Coral seamount. Pollard and Read (2017) provide details of the circulation and stratification on and around the Coral seamount. Other research supporting this criteria is cited herein. <u>Fishing history</u> Early exploratory trawling by the F.V. Will Watch indicated the presence of extensive coral formations and no subsequent fishing activities were undertaken (SIODFA 2016). Rogers (no date) notes that there was evidence of fishing on the seamount in the form of lost fishing gear, some of which looked relatively recent (lack of biofouling). Rogers and Taylor (2012) noted that ROV work as part of the *RV James Cook* cruise was stopped on at least 4 occasions due to the discovery of fishing line. On one of these incidents the gear was confirmed as a gill net. It looked very new with no overgrowth on the ropes. The net was filled with corals and coral framework and the area around it was cleared of live corals and sponges. The authors noted that this sighting was of great concern as the seamount had been placed under a voluntary closure to fishing by the deep-sea trawling industry. The authors noted that it would appear to confirm rumours of gill net fishing in the region, probably targeted at deep-sea sharks. <u>Other information to support designation</u> Industry members from Australia, the Cook Islands and Japan support the designation of Coral seafloor feature.

Social, cultural and economic interests	Any historical or recent fishing data may assist with understanding any social, cultural and/or economic costs associated with designating this as a protected area. 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.

References

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