

SC-04-18

4<sup>th</sup> Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific  
Committee

25–29 March 2019, Yokohama, Japan

## Proposal for a Research and Management Plan for the ‘Middle of What’ protected area

*Relates to agenda item: 6*

Working paper  Info paper

### Delegation of Australia

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#### **Abstract**

The purpose of this paper is to propose a Research and Management Plan for the Middle of What protected area, as designated by the SIOFA Meeting of the Parties in June 2018. The proposed research and management plan has been developed in response to the request from MoP5 (paragraph 91 MoP5 report) and the Guidance for SC recommendations to the Meeting of the Parties (which is part of the [SIOFA standard protocol for protected areas designation, Annex H SC3 report](#)).

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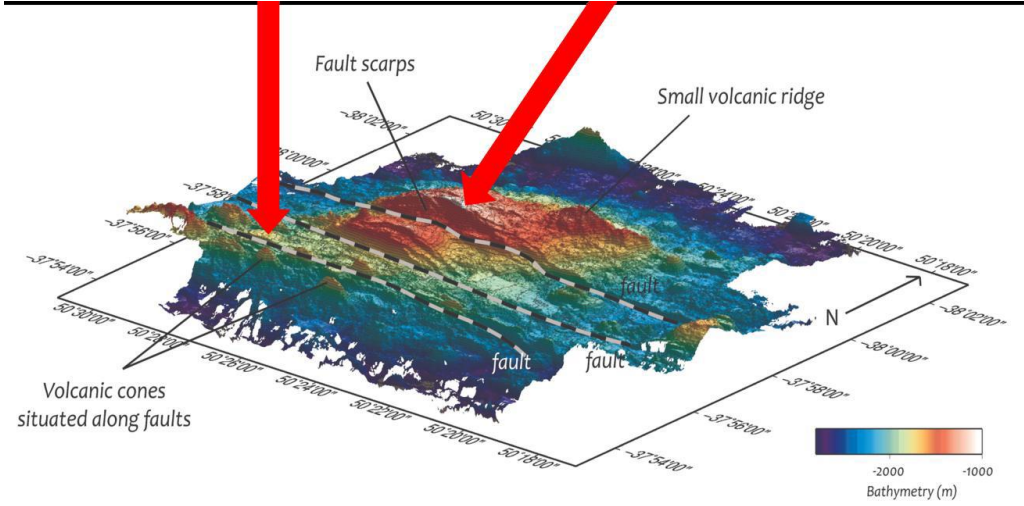
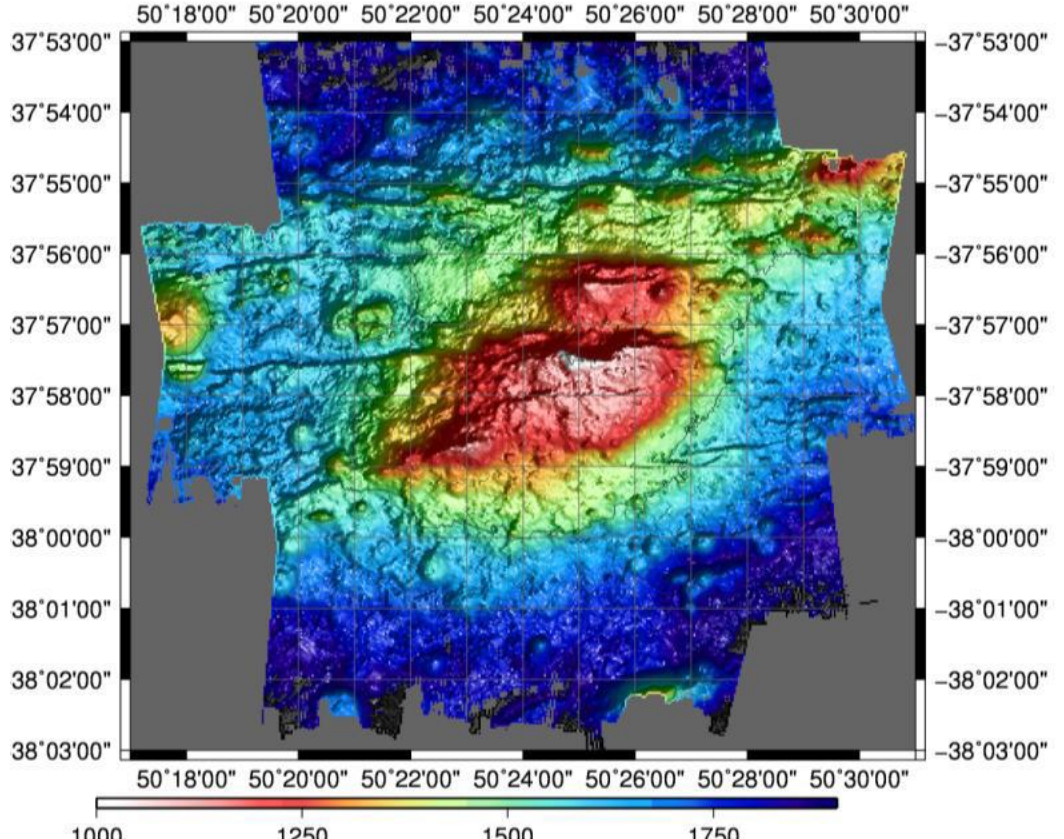
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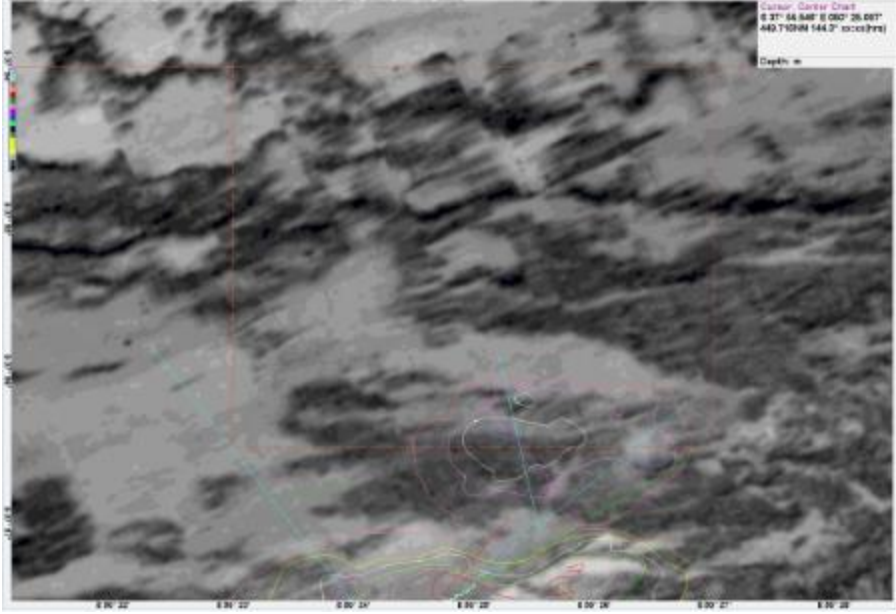
## Recommendations *(working papers only)*

It is recommended that the SC:

- **Note** that the Middle of What feature has been designated as a protected area because it meets the following criteria in the SIOFA protected areas designation protocol: 3b. Bioregional representation - Area with a comparatively higher degree of naturalness due to zero or a low level of human-induced disturbance or degradation from, for example, historical fishing activity.
  - **Note** that MoP5 agreed that the SC would provide advice on research and management plans for each area listed in Annex 2 of MoP5 report by 2019.
  - **Recall** the Guidance for SC Recommendations to the Meeting of the Parties outlined in the standard protocol for protected areas designation (Annex H SC3 report), which states that:
    - *If the proposal documents the necessary data and scientific information to support a protected area using protocol, different measures could be applied, such as management measures, technical measures, closures.*
    - *In case of an area becoming protected, a management and research plan shall be associated to it on the year to come. It will include:*
      - *The measures in place in the protected area;*
      - *The time of review of the protected area;*
      - *If needed, the research that should be undertaken in the area.*
  - **Consider** whether the proposed Research and Management Plan for the Middle of What Protected Area meets the requirements outlined in the Guidance for SC Recommendations to the Meeting of the Parties (Annex H SC3 report), and if these requirements have been met, **recommend** to the Meeting of the Parties that the proposed research and management plan be adopted for the Middle of What protected area.
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**Research and management plan for the Middle of What protected area**

<p><b>Name</b></p>	<p>Middle of What (MOW)</p>
<p><b>Geographic description</b></p>	<p><b>Coordinates:</b> Latitude 37° 54' S, 50° 23' E and 37° 56.5' S and 50° 27' E.  <b>Area:</b> 6084 km<sup>2</sup></p>
<p style="text-align: center;"><b>Figure 1</b>  <b>General bathymetry of the MOW seafloor feature</b></p> 	
<p style="text-align: center;"><b>Figure 2</b>  <b>The small volcanic ridge to the side of the main MOW seafloor feature</b></p> 	

	<p style="text-align: center;"><b>Figure 3</b> <b>Low resolution mapping of MOW seafloor feature</b></p> 
<p><b>Objectives for this protected area</b></p>	<p>In line with the protocol for protected areas designation, the objective for this area is the protection of its bioregional representativeness.</p>
<p><b>Objectives for this plan</b></p>	<p>In accordance with the Guidance for SC Recommendations to the Meeting of the Parties outlined in the standard protocol for protected areas designation (Annex H SC3 report), the objectives for this research and management plan are to describe:</p> <ul style="list-style-type: none"> <li>- Management measures in place in the protected area</li> <li>- The time of review of the protected area</li> <li>- If needed, the research that should be undertaken in the area.</li> </ul>
<p><b>Criteria that the protected area meets</b></p>	<p>The area meets the following criteria:</p> <p>3b. Bioregional representation - Area with a comparatively higher degree of naturalness due to zero or a low level of human-induced disturbance or degradation from, for example, historical fishing activity.</p> <p><u>Feature description</u></p> <p>The location of the MOW seafloor feature is towards the southern end of the South Indian Ridge in waters forming a dynamic boundary region between sub-Antarctic and sub-tropical waters and has a deep summit (~900-1000m depth). Strong currents sweep over the seamount. It is a spreading centre with seamounts and ridges with depths from 4500 m to 180 m. This area was surveyed by the R.V. James Cook during November - December 2011 and by RV <i>Dr Fridtjof Nansen</i> in 2009 (Rogers et al. 2009).</p> <p>Read and Pollard (2017) provide details of the physical oceanography of the MoW feature. Pollard and Read (2017) provide details of the circulation and stratification on and around the feature.</p>

### Bioregional and biodiversity representation

The area has been proposed as an Ecologically and Biologically Significant Area (EBSA) for consideration by the Convention on Biological Diversity (Rogers n.d.). The proposal notes that this is the only known example of a seamount with cold-water coral reef habitat lying in the boundary region of sub-Antarctic and sub-tropical water masses in the Southern Indian Ocean. The water mass overlying the seamount hosts pelagic communities typical of sub-tropical waters. 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 peak of the seamount at ~1,000m depth.

The proposal notes that the main framework building species appears to be *Solenosmilia variabilis*. The framework is largely comprised of dead coral and is highly degraded probably as a result of trawling damage. However, more intact stony coral reef is present on parasitic sub-cones located on the Southern flanks of the seamount. Very broken ground around these sub-cones also host coral garden habitat with large (2m tall) bamboo corals and stylasterids particularly notable. Lantern sharks are very abundant around Middle of What Seamount, especially around the sub-cones, but note this is from a single set of observations. Live colonies of the framework-building species are also present. The coral reef hosts high densities of a range of other coral species, particularly octocorals and sponges. Glass sponges also occur at high density.

The proposal notes evidence of fishing on the seamount in the form of highly degraded and damaged coral habitat on the summit of the main feature of the seamount to the extent that this area could be viewed as compromised as an area for conservation. However, the parasitic cones located on the southern flanks of the seamount host intact cold-water coral reef and rough ground to the south and also the northeastern part of the seamount host extensive coral garden habitat. High numbers of sharks were observed in the southern area.

The benthic habitats documented on this seamount includes a very high diversity of species, especially corals and coral associates. Rogers (n.d) noted that 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.

The EBSA proposal notes the area as meeting the following EBSA criteria:

- Uniqueness or rarity (High ranking)
- Special importance for the life-history stages of species (Medium 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 (Medium ranking).

### Scientific interest

The MoW feature has been the subject of a number of research cruises, cited herein.

### Fishing history

	<p>This general area tends to be an area of much past fishing activity (SIODFA 2016). This fishing ground was one targeted by inexperienced vessels during the ‘race for fish’ which occurred in the period of 2000-2001, but there has been limited fishing since then (SIODFA 2016).</p> <p><u>Other information to support designation</u> Industry members from Australia, the Cook Islands and Japan support the designation of the MOW feature. No trawling by SIODFA vessels is permitted.</p>
<b>Social, cultural and economic interests</b>	<p>Historical 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.</p>
<b>Management measures</b>	<p>In accordance with CMM 2018/01, the following management measures apply:</p> <p><i>35. The areas included in Annex 2 are provisionally designated as protected areas.</i></p> <p><i>36. CCPs shall provisionally apply the following measures in the areas listed on Annex 2 until the adoption of a dedicated research and management plan, referred to in paragraph 6(e), for each area at MoP6:</i></p> <p><i>(a) CCPs shall prohibit all vessels flying their flag from engaging in bottom fishing, excluding line and trap methods; and</i></p> <p><i>(b) For all other gears, CCPs shall ensure each vessel flying their flag has a scientific observer onboard at all times while fishing inside those areas.</i></p> <p><i>37. When the Meeting of the Parties adopts a revised SIOFA protocol for protected area designation after advice from the Scientific Committee arising from its review referred to in paragraph 6(d), the Meeting of the Parties shall also review Annex 2 of this CMM, taking into account advice of the Scientific Committee.</i></p> <p>All other relevant SIOFA CMMs apply within this protected area.</p>
<b>Management needs</b>	<p>No additional management needs have been identified for this area.</p>
<b>Review periods</b>	<p>Given the compelling justification for closure to fishing using trawl gears, designation should be reviewed at least every 10 years, or more frequently if new information becomes available that enhances or degrades the justification for its designation as a protected area.</p>
<b>Outline of monitoring and/or research needed</b>	<p>The following monitoring and/or research needs have been identified:</p> <ul style="list-style-type: none"> <li>- Goldsworthy (2017) noted that as this is an area of fishing interest, an analysis of impact on existing/future fishing interests should be undertaken.</li> <li>- A desk-top compilation of publications from research undertaken within this area would assist with future reviews of the designation</li> </ul>
<b>Compliance</b>	<p>Compliance-related issues are outside of the remit of the SIOFA SC.</p>

## References

Pollard, R & Read, J 2017. Circulation, stratification and seamounts in the Southwest Indian Ocean, *Deep-Sea Research II* 136 (2017) 36–43

Read, J & Pollard, R 2017. An introduction to the physical oceanography of six seamounts in the southwest Indian Ocean. *Deep-Sea Research II* 136 (2017) 44–58.

Rogers AD no date. Template for Submission of Scientific Information to Describe Ecologically or Biologically Significant Marine Areas: Middle of What Seamount, available here <https://www.cbd.int/doc/meetings/mar/ebsa-sio-01/other/ebsa-sio-01-uk-01-en.pdf>

Rogers, A., Alvheim, O., Bemanaja, E., Benivary, D., Boersch- Supan, P., Bornman, T., Cedras, R., DuPlessis, N., Gotheil, S., Høines, A., Kemp, K., Kristiansen, J., Letessier, T., Mangar, V., Mazungula, N., Mørk, T., Pinet, P., Read, J., Sonnekus, T. (Eds.), Secondary “Dr. Fritjof Nansen” Southern Indian Ocean Seamounts (IUCN/UNDP/ASCLME/NERC/EAF Nansen Project 2009 Cruise 410) 12th November – 19th December. Gland, CH, International Union for Conservation of Nature, 12/2009, 188 pp.

Rogers, A.D. 2012. An Ecosystem Approach to Management of Seamounts in the Southern Indian Ocean: Volume 1 – Overview of Seamount Ecosystems and Biodiversity. Gland, Switzerland, IUCN, for a history of scientific exploration in the region.

Rogers A.D. & M.L. Taylor. 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. [http://www-odp.tamu.edu/publications/prelim/176\\_PREL/176OBJT.HTML](http://www-odp.tamu.edu/publications/prelim/176_PREL/176OBJT.HTML)

SIODFA 2016, Southern Indian Ocean Deepwater Fisheries Association (SIODFA), Benthic Protected Areas in the Southern Indian Ocean. SIODFA Technical Report XVII 16/01. 40 pp