

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

**Title/Name of the area:** Cape Canyon and surrounds

**Presented by**

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**Abstract** (*in less than 150 words*)

Cape Canyon is one of two submarine canyons off the west coast of South Africa and this broader area has been recognized as an important area in three systematic conservation plans. Both benthic and pelagic features are included and the area is important for pelagic fish, foraging marine mammals and several threatened seabird species. The canyon and a muddy habitat on the shelf edge are habitat types of limited extent and are considered critically endangered. There is evidence that the submarine canyon hosts fragile habitat forming species and there are other unique and potentially vulnerable benthic communities in the area. The hard ground areas, particularly those outside of the trawl footprint, are also likely to be susceptible to damage and there is increasing petroleum and mining applications in this area. There are several small coastal MPAs within this area.

**Introduction**

This area extends from the Sixteen mile beach MPA to include Langebaan lagoon, Marcus, Malgas and Jutten Islands, the Cape Canyon submarine canyon and adjacent shelf edge and part of St Helena Bay. This area was identified as a priority area through a national plan to identify focus areas for offshore protection (Sink et al. 2011) and by a systematic biodiversity plan for the west coast (Majiedt et al. 2013). It was also identified as an important area for pelagic ecosystems and species (Grantham et al. 2011).

**Location**

This area is off the southwest coast of South Africa and is completely within national jurisdiction. A map is available in Sink et al. 2011. The area includes Cape canyon, the adjacent shelf edge, outer and inner shelf areas and parts of St Helena Bay. Langebaan lagoon and the islands off Saldana Bay are also included.

**Feature description of the proposed area**

*(This should include information about the characteristics of the feature to be proposed, e.g. in terms of physical description (water column feature, benthic feature, or both), biological communities, role in ecosystem function, and then refer to the data/information that is available to support the proposal and whether models are available in the absence of data. This needs to be supported where possible with maps, models, reference to analysis, or the level of research in the area)*

The Cape Canyon and surrounding area includes important benthic and pelagic habitats including a submarine canyon, sand, gravel and mud habitats. It is a dynamic area and parts of the area, particularly within St. Helena Bay experience low oxygen water with possible unique communities in these areas (Sink et al. 2011). Browns Bank area includes benthic and pelagic habitats with unconsolidated sand and gravel habitats and a pelagic habitat type that is characterised by elevated productivity and frequent fronts (Lutjeharms et al. 2000, Lagabrielle 2009) due to shelf edge upwelling. Biological communities include four distinct benthic macrofaunal communities characterized by molluscs, polychaetes, amphipods and brittle stars (Karenzi, unpublished data, and

hard ground habitats that are poorly known (Sink et al. 2012b). Cold water corals have been collected within the area. This area has been included in annual demersal fish trawl surveys conducted by the Department of Agriculture, Forestry and Fisheries.

### 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?)*

Habitat condition within this broad area ranges from good to poor (Sink et al. 2012a). Pressures are increasing although the area includes several coastal MPAs (Langebaan, Sixteen Mile Beach, Marcus Island, Malgas Island and, Jutten Island) which protect habitats and species to varying extents. It has been recommended that in the area should be considered for consolidation, extension or re-zoning to resolve existing resource conflicts, protect threatened species in core areas and minimise stakeholder impacts (Sink et al. 2011). The lagoon system is vulnerable to further impact and the islands with their associated seabird colonies are all threatened. Petroleum exploration is increasing in the area and there are new applications for seabed mining for phosphates and other minerals.

### Assessment of the area against CBD EBSA Criteria

*(Discuss the area in relation to each of the CBD criteria and relate the best available science. Note that a proposed area for EBSA description may qualify on the basis of one or more of the criteria, and that the polygons of the EBSA need not be defined with exact precision. And modeling may be used to estimate the presence of EBSA attributes. Please note where there are significant information gaps)*

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)			
		No information	Low	Medium	High
<b>Uniqueness or rarity</b>	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> Cape canyon is one of two reported submarine canyons on the west coast of South Africa and in the southern Benguela. This area was identified by two systematic plans because of rare habitat types including the canyon, rare muds and low oxygen benthic habitats (Sink et al. 2011, 2012a, 2012b, Majiedt et al. 2013). The Southern Benguela Muddy Shelf Edge comprises two patches off Saldanha comprising an estimated 567 km <sup>2</sup> .					
<b>Special importance for life-history stages of species</b>	Areas that are required for a population to survive and thrive.				X
<i>Explanation for ranking</i> The area encompasses a key foraging area for marine mammals (Barendse et al. 2012) and two marine Important Bird Areas. Closer to shore the Canyon is adjacent to several terrestrial IBAs (Bird Island, Dassen Island, Heuningnes River and estuary system and the Lower Berg river wetlands). The seas extending from these sites have been proposed as a marine IBA for the following seabird species: African Penguin, Bank Cormorant, Cape Cormorant, Cape Gannet, Caspian Tern, Crowned Cormorant, Damara Tern, Great Crested Tern, Kelp Gull and Hartlaub’s Gull. Further offshore, along the shelf edge where commercial fisheries concentrate, BirdLife International has identified a large area, which overlaps with the Cape Canyon area, as a potential marine IBA for Atlantic Yellow-nosed and Black-browed albatrosses and Cory’s Shearwater. Several other species (e.g. Shy Albatross and White-chinned Petrel) are likely to qualify as trigger species in this area, but tracking data or analyses are lacking. Grantham et al. (2011) also showed that this area had the highest density of breeding seabirds that feed on pelagic species. High densities of sardine and anchovy eggs contributed to the high selection frequency of this broader area in the offshore systematic biodiversity plan for South Africa (Sink et al. 2011). Spawning and nursery habitat for Cape hakes, <i>Merluccius capensis</i> and <i>M. paradoxus</i> , is also included in this area (Sink et al. 2011). Barendse et al. (2011) indicate that this area is an important feeding area for Humpback whales <i>Megaptera novaeangliae</i> .					

<b>Importance for threatened, endangered or declining species and/or habitats</b>	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.				X
<p><i>Explanation for ranking</i></p> <p>This area is importance for several threatened seabirds including Four Endangered seabirds – African Penguin, Bank Cormorant, and Black-browed and Atlantic Yellow-nosed albatrosses, are highly dependent on this area for some or all of their life stages, particularly for foraging. In addition, several species of somewhat lower conservation threat status are similarly dependent on this area: the Vulnerable White-chinned Petrel, Cape Cormorant and Cape Gannet. Threatened habitat types include the Southern Benguela Canyon and the Southern Benguela Muddy Shelf Edge, both assessed as Critically Endangered (Sink et al. 2012a,b) and recognized as critical habitats of concern for the trawl industry (Sink et al. 2012b). The dominant pelagic habitat within this area is considered Vulnerable and is the most threatened of South Africa's 16 pelagic habitat types (Sink et al. 2012a).</p>					
<b>Vulnerability, fragility, sensitivity, or slow recovery</b>	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
<p><i>Explanation for ranking</i></p> <p>The submarine canyon in this area is considered vulnerable to impact as cold water corals, gorgonians and other slow growing habitat forming species were observed within this area on submersible footage (Diamondfields International unpublished footage, Sink and Samaai 2009). Gilchrist (1921) reported cold water corals, black corals and two hundred large sponges in a single otter trawl in this area in 1920 and it was only in the 1990's that trawling was initiated in the hard ground habitats within this area (Sink et al. 2012b). Deep reefs and hard grounds in the area are also likely to host fragile three dimensional habitat forming species although this has not been confirmed by in-situ research. These habitats are all considered sensitive to demersal trawling and mining (Sink et al. 2011, 2012a, 2012bb).</p>					
<b>Biological productivity</b>	Area containing species, populations or communities with comparatively higher natural biological productivity.				X
<p><i>Explanation for ranking</i></p> <p>The most persistent and intense upwelling cell on the entire South African west coast is found within this area at Cape Columbine, resulting in the area downstream having the highest productivity, organic loading (Demarq <i>et al.</i> 2007) and organic carbon deposits on the seafloor (Bailey 1991). St Helena Bay has also been identified as the area having the most persistent oxygen deficient water along this coast (Bailey 1991). South of Cape Columbine a different set of oceanographic features dominate and more pulse upwelling events result in high productivity over shorter periods (Demarq <i>et al.</i> 2007). This area includes part of the area with highest copepod biomass on the west coast as identified by Grantham <i>et al.</i> (2011).</p>					
<b>Biological diversity</b>	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.			X	
<p><i>Explanation for ranking</i></p> <p>The National habitat map indicates a high number of ecosystems in this area (Sink et al. 2012 a) and this diversity of habitat types is a key driver of selection in two systematic biodiversity plans (Sink et al. 2011, Majiedt <i>et al.</i> 2013). The submarine canyon, sand and mud habitats, patches of low oxygen water, islands and the adjacent lagoon system contribute to the high habitat diversity in this area (Sink et al. 2011,2012a, Majiedt <i>et al.</i> 2013)</p>					
<b>Naturalness</b>	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	
<p><i>Explanation for ranking</i></p> <p>There is some naturalness within this area. Of the two mapped submarine canyons, there is lower trawling effort and less pressures than the Cape Canyon which is closer to the city of Cape Town (Sink et al. 2011, Sink et al.</p>					

2012a,b). Some of the canyon habitat is outside of the trawling footprint and there are adjacent hard ground areas that are also untrawled (Wilkinson 2009, Sink et al. 2012b). There is however, a port at Saldanha and several fisheries sectors that operate within this area.

### 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	Medium	High
Add relevant criteria					
Explanation for ranking					

### References

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## **Maps and Figures**

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