Title/Name of the area:

Quirimbass-Mnzai complex (part of the Mozambique Channel)

Presented by (*names, affiliations, title, contact details)*

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Abstract (*in less than 150 words)*

The Quirimbas archipelago is a string of coastal islands extending from Pemba Bay in northern Mozambique, 400 km to the Ruvuma estuary and the Mtwara-Mnazi Bay reef system in southern Tanzania. The archipelago has the highest diversity of corals recorded in the WIO (along with northern Mozambique), with almost 300 species in 60 genera. The region has important marine and terrestrial habitats, including coral reefs, mangroves, miombo woodland, acacia savannah, coastal thicket and tropical dry forest and woodland. Charismatic species include turtles, dugongs and elephants, and many rare and endemic plant species.

Introduction

The Quirimbas Archipelago comprises some 28 islands and the offshore Lazarus Bank. The archipelago has the highest diversity of corals recorded in the WIO (along with northern Mozambique), with almost 300 species in 60 genera. The Quirimbas National Park protects a portion of the south-central part of the archipelago and mainland, including approximately 6,000 km^2 of mainland and 1,500 km^2 of marine and island habitats. Eleven coral islands lying close offshore and stretching for 100 km along the coast, are included in the Park. In the north, consortia comprising villages and private operators have established protected zones around Vamizi and Metundo Islands.

Location

The Quirimbas archipelago is a string of coastal islands extending from Pemba Bay in northern Mozambique, 400 km to the Ruvuma estuary and the Mtwara-Mnazi Bay reef system in southern Tanzania. A series of submarine canyons continue farther south in Mozambique, to approximately Nacala in Nampula province, and we use this to define this region where submarine canyons, deep sheltered bays and coastal islands interact with the South Equatorial Current (SEC) and eddies of the northern Mozambique channel.

This complex is located in the center of the East Africa Marine Ecoregion (EAME) of the WIO where the South Equatorial Current (SEC) and unique oceanographic features of the Mozambique channel meet the mainland African coast. At the northern end of this region, the EACC flows north throughout the year, forming a one-way conveyor for marine larvae dispersed northwards to Tanzania and Kenya. At the southern end of this region, upwelling and the Zambezi delta system influence marine habitats, and past the constriction in the channel at 17^{o}S flow is

predominantly southwards. Between these two points, clockwise and anticlockwise eddies may push water in any direction, and the consistent marine climate results in the highest diversity in coral reef species west of the Andaman islands in the Indian Ocean.

The Mnazi bay is enclosed by sandy shores to the west and the Ruvula-Msimbati spit and string of rock islands and reefs to the east. The bay varies in size from 67 to 150 km^2 at low and high tides, respectively, with only one major deep channel, the Ruvula channel in the south. As a result, the channel experiences very high tidal currents (up to 6 knots) creating a complex range of coral reef and other habitats, making it an unusual feature for East African reefs. The distinctness of the Mnazi Bay–Ruvuma Estuary Complex was recognized by the Tanzanian Government for its biodiversity value in 2000, and gazetted as Tanzania's second marine protected area, the Mnazi Bay – Ruvuma Estuary Marine Park (MBREMP) covering an area 650 km^2, of which, 200 km^2 is marine, including islands, coral reefs and mangrove forests.

Feature description of the proposed area

The northern Mozambique coast experiences extremely high mixing due to cyclonic and anticyclonic eddies generated in the north of the Mozambique channel, and is defined by breakpoints to the north, where the EACC touches the Tanzania coastline flowing north all hear, and to the south where the narrowest part of the Mozambique channel induces changes in currents and upwelling features on the Mozambique coast.

Three species of marine turtles are known to feed and nest in the region, namely the olive ridley and green, with high abundance off Ibo island, and hawksbills off Quilalea and Sencar. Dugong are known to reside in the Quirimbas National Park area, but are scarce and their actual numbers unknown. Dolphins, whales (namely the humback whale), sharks including bull shark, white tip shark, whale sharks and large populations of manta rays are known to frequent the islands.

Diversity: the complex is a critical node for accumulation and dispersal of marine organisms.

Fish: The highest fish diversity in the WIO, with high abundance found in deeper waters such as the St Lazarus bank

Turtles: notable nesting site for greens and hawksbills and foraging ground for olive ridleys, loggerheads and leatherbacks.

Marine mammals: important humpback whale mother/calf nursing zone.

Sharks and Rays: A superlative reef shark site between Vamizi/Metundo islands shows the influence of variable currents in aggregating the sharks, and in protecting them from use.

Birds: High densities of migrating crab plovers, and breeding populations of varied birds on remote islands and rocks.

Feature condition and future outlook of the proposed area

Threats

The region has been remote for many years, with generally low coastal population density, however active migration by fishermen has resulted in high pressures throughout the region. The more densely populated areas, such as around Pemba Bay and Mnazi Bay show severe impacts from overfishing, net dragging, gill netting, dynamiting and illegal and unregulated fishing. Migrant fishing along the coastline poses particular problems of regulation, as incentives to reduce overfishing are low. Around Mnazi Bay, historical dependence on coral mining has led to stripping of shallow reefs of the primary reef building coral, *Porites*. Climate change has impacted reefs in the region, though with very variable levels of impact, perhaps reflecting complex interactions between the variable eddies and currents, and the complex shoreline of islands, bays and adjacent mangrove ecosystems.

The northern Mozambique coast is one of the most active regions for oil and gas exploration, with significant finds of gas offshore, and existing operations in Mnazi Bay. While one of the cleanest possible extraction activities, gas mining and associated development may pose the greatest threat to marine ecosystems in the region, and any losses in this region may have run-on impacts more broadly in East Africa due to the region's importance as a source of larvae. A natural gas processing plant proposed north of Vamizi Island may provide a locus for focusing governance and conservation efforts for the region as a whole, with significant attention by the Mozambique government and the IUCN.

Management

National marine protected areas have been designated at the southern (Quirmbas National Park) and northern (Mnazi Bay – Ruvuma Estuary Marine Park, MBREMP) parts of this region, providing a foundation for trans-boundary initiatives. Further, private initiatives between villages/communities and the private sector are establishing successful

reduced- or no-take areas (e.g. Vamizi, Metundo) with benefit-sharing with the local communities. However, successful integration of these efforts, and expanding the area of well-managed parts of the region are needed, and active transboundary initiatives will be needed to deal effectively with growing threats in particular fishing, climate change and mining.

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 candidate EBSA may qualify on the basis of one or more of the criteria, and that the boundaries 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)			
		Don't Know	**Low**	**Some**	**High**
Uniqueness or rarity	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**
Key location for endemic coral species, highest diversity sites in the W Indian Ocean.					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.				**X**
Nursing/calving gournds, humpback whales					
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.			**X**	
Many key habitats under threat/declining					
Vulnerability, fragility, sensitivity, or slow recovery	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**
Coral reefs, highly susceptible and fragile to global warmin.					

Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.				**X**
Mesoscale dynamics of the Mozambique Channel drive highly productive pelagic communities, mobile with the eddies as they move through the channel.					
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.				**X**
Diversity: the complex is a critical node for accumulation and dispersal of marine organisms. Fish: The highest fish diversity in the WIO, with high abundance found in deeper waters such as the St Lazarus bank Turtles: notable nesting site for greens and hawksbills and foraging ground for olive ridleys, loggerheads and leatherbacks. Marine mammals: important humpback whale mother/calf nursing zone. Sharks and Rays: A superlative reef shark site between Vamizi/Metundo islands shows the influence of variable currents in aggregating the sharks, and in protecting them from use. Birds: High densities of migrating crab plovers, and breeding populations of varied birds on remote islands and rocks.					
Naturalness	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**		
Many locations already highly impacted, but some are still in good natural state.					

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**	**Some**	**High**
Add relevant criteria					
Explanation for ranking					

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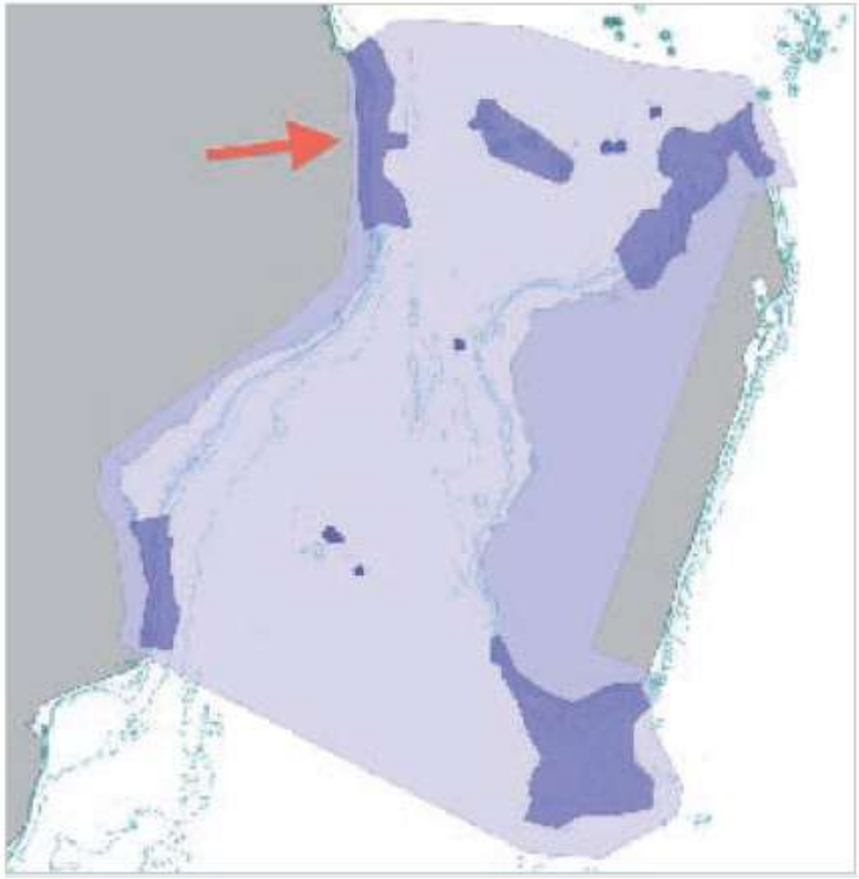
Maps and Figures

Figures below can be provided in higher resolution.



Map of northern Mozamique to southern Tanzania. The SEC touches the African coast at the northern point of the site boundary. Mangrove forests are shown in green. ©David Obura

Coral reefs of the Quirimbas-Mtwara region are among the most diverse and robust in the region, both in the shallows (left, Vamizi island) and on deeper platforms and slopes (right, Pemba Bay). ©David Obura

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