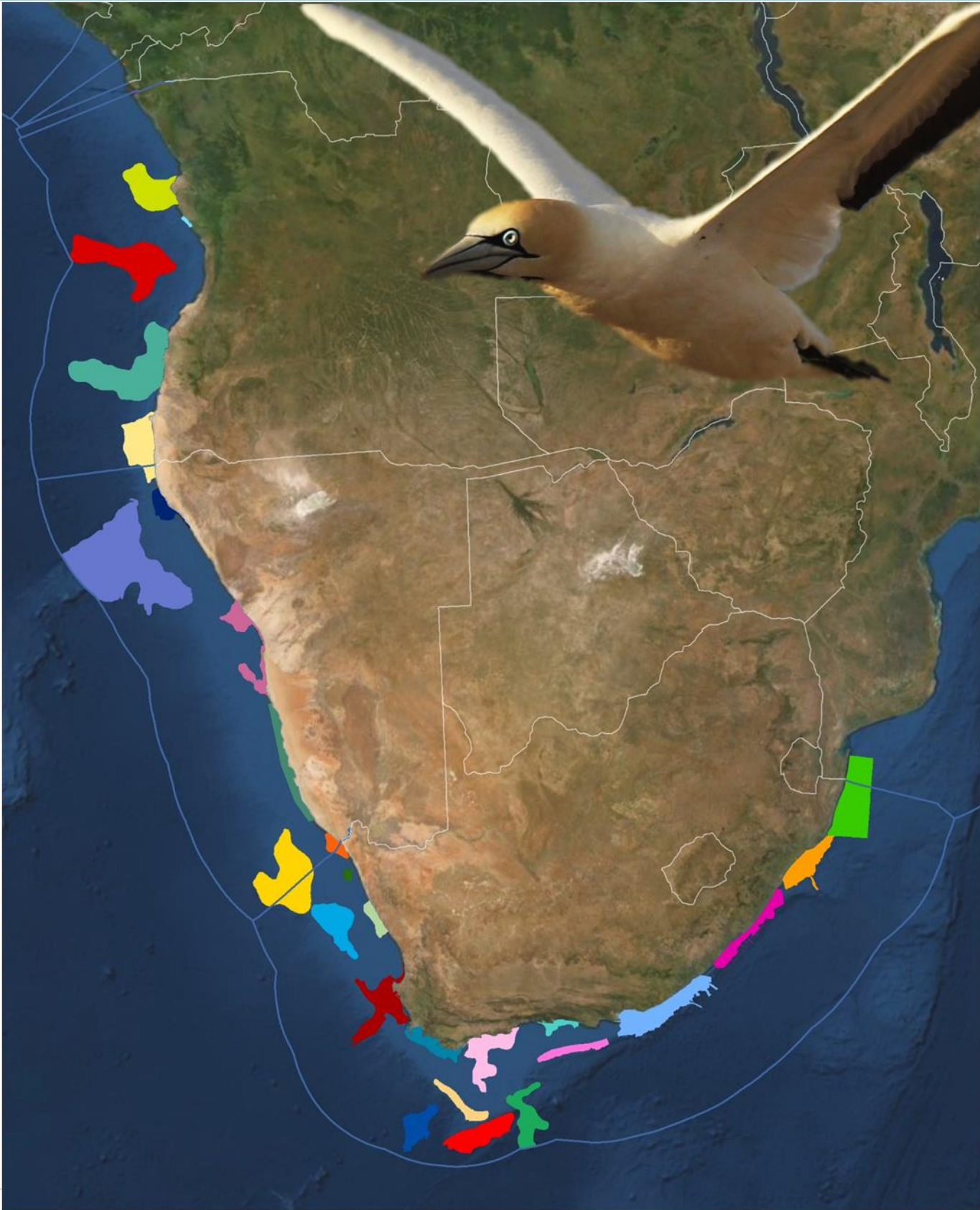


ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS

in the Benguela Current Large Marine Ecosystem



Chiloango Mangroves and Turtle Beaches

PROPOSED DESCRIPTION

Chiloango Mangroves

Proposed EBSA Description

Abstract

The Chiloango Estuary is in the Angolan province of Cabinda. The proposed EBSA is strongly coastal and includes the Chiloango Estuary and 6 km of coastline surrounding the estuary mouth. The mangroves and riverine forest are key features at this site; they are less noteworthy in a global context but are very significant in a local context. In fact, three of the four habitats represented in the area are threatened. Most importantly, this area supports many species whose growth and reproduction rates are slow, particularly globally threatened species such as olive ridley and leatherback turtles (that nest in the area) and manatees (that are resident in the area). The latter have been hunted throughout their range and, despite limited quantitative data, are showing extirpations in many places. Current anthropogenic pressure in the mangroves is also visible and worrying, with signs of advanced habitat degradation and destruction. The area is highly relevant in terms of the EBSA criteria: “Importance for threatened, endangered or declining species and/or habitats” and “Vulnerability, fragility, sensibility or slow recovery”.

Introduction

There are two estuaries in Cabinda: the Cabinda and Chiloango Estuaries in the north and south of the province, respectively. At the boundary with the Republic of the Congo in the north, the Cabinda River reaches the sea through the Massabi Lagoon. The proposed EBSA, however, lies at the mouth of the Chiloango River in the south, which flows into the sea through the estuary (Giresse and Kouyoumontzakis, 1985). The river is approximately 168 km long, originating from springs in the Democratic Republic of Congo (DRC), and in some places forms the boundary that separates DRC from the province of Cabinda in Angola (Sonangol, 2012). It is a coastal EBSA that is a discrete site centred around the mangroves and its associated threatened species, and is thus a Type 1 EBSA (sensu Johnson et al., 2018).

The Chiloango Estuary EBSA comprises four biotypes: marine, estuarine, riverine forest, and wetland areas. There are approximately 130 hectares of wetland areas encompassing small lagoons, surrounded by Endangered mangroves. The mangroves and riverine forest associated with the river were fundamental in choosing this site as a proposed EBSA; although not globally significant, these mangroves are of key local significance. Consequently, the reason this EBSA was not included in the original set of EBSAs at the South Eastern Atlantic Workshop in 2013 (UNEP/CBD/RW/EBSA/SEA/1/4) is because this local knowledge was not available at that meeting and is better than the information included in international datasets (e.g., WCMC and the World Mangrove Atlas).

In the EBSA, the mangroves and riverine forest are bounded by a sandy beach, surrounded by the estuary, and extend to the river and margins of the lagoon. The mangroves cover the alluvial areas of the Chiloango River mouth, corresponding to sites subjected to temporary flooding resulting from changing tides, and are populated by *Rhizophora mangle* (Diniz, 2006). Mangrove forest is scattered along the Angolan coastline and forms a transition ecosystem between land and sea of enormous biological and ecological importance, providing shelter and nurseries for crustaceans and fish that are of economic and tourism importance to the country (EPANB, 2006). The EBSA supports a rich diversity of avifauna, herpetofauna and ichthyofauna (MINAMB et al., 2015). Most importantly, it provides

critical habitat for threatened species, such as African manatees that are threatened throughout their range and showing signs of local extirpations (Keith Diagne, 2015), and olive ridley and leatherback turtles that nest on the adjacent beaches.

Habitat loss in the proposed EBSA is largely due to infrastructure development that has fragmented forests through the construction of roads and buildings, such as the construction of a motorway linking the Town of Cabinda with Belize. It is believed that mangrove degradation in the Chiloango Estuary is also caused by fragmentation due to road construction, among other factors (Kuedikuenda & Xavier, 2009). Nevertheless, this site is still sufficiently intact to warrant conservation attention.

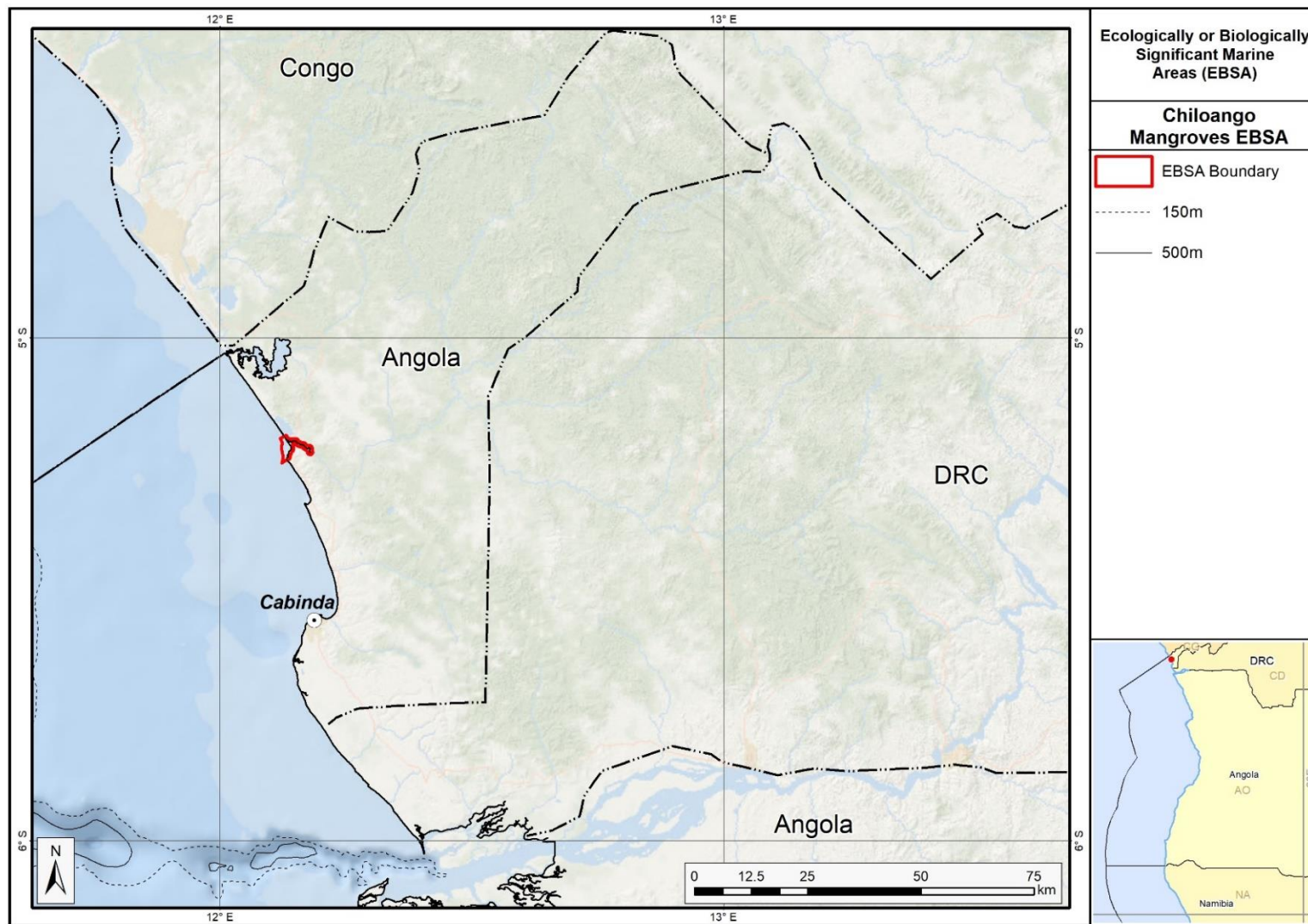
Description of the location

EBSA Region

South-Eastern Atlantic

Location

The EBSA is in the northern half of the Cabinda province of Angola, including the Chiloango Estuary and 6 km of rocky, sandy and mixed shores adjacent to the mouth. The area includes around 130 ha of wetland areas encompassing small lagoons surrounded by Endangered mangroves. The furthest extent inland is approximately 1.2 km from the coastline. The whole of the proposed area lies entirely within Angola's national jurisdiction.



Proposed delineation of the Chiloango Mangroves EBSA.

Feature description of the proposed area

The Chiloango River mouth is dominated by muds from the river. Fresh-water flow out of the Chiloango River also forms a plume of low-salinity water in the adjacent coastal area that, in turn, affects the nearshore coastal processes. These features, as well as the local extent of the turtle nesting beaches, contributed to defining the alongshore extent of the EBSA. Because this is a coastal EBSA, it is described primarily for its benthic features, although the overlying water column in the estuary, surf and inner shelf is very tightly coupled to the key features and species of this site.

The mangrove forests of the region include species such as *Rhizophora* (*R. mangle*, *R. racemosa* and *R. harrisonii*), which tolerate high levels of salinity. The mangroves cover the whole Chiloango riverbed up to the high tide mark and extend up to the wetland area associated with the river. The Chiloango River is the southern hydrographic basin included in the Lower Guinea ichthyofaunal province, which is one of the 10 ichthyofaunal provinces as defined by Roberts (cited in Darwall et al., 2011). The Lower Guinea ichthyofaunal province extends from the Chiloango River to the Cross River in the north, and shares a boundary with the Congo River basin to the east. This region contains a rich diversity of species, and more than half of the freshwater or marine fish species seen here are endemic to the region. This region also has relatively high numbers of freshwater fish species that are threatened and have limited geographic ranges (Darwall et al., 2011). Further, a species of fresh water crab belonging to the tropical African endemic family, *Potamonautidae*, is found in the rivers of Cabinda (Darwall et al., 2011). Although biodiversity data are largely limited for Angola, this region is known to have the highest diversity of dragonflies and damselflies (Odonata) within the whole of Africa.

In terms of birds, it is important to mention the rich diversity that includes resident, visiting and seasonal migratory birds that feed and rest here. Among these, it is worth mentioning the presence of cattle egrets, white chest crows, spotted kingfishers, white chested mouse birds and black bishops, among others. In terms of the most relevant reptiles, olive ridley and leatherback turtles can be observed nesting in the region. The beaches here thus provide critical habitat to support important life-history stages of these two threatened species. Marine mammals are also found along the coastline, such as the common whale, humpback whale, common dolphin and spotted dolphin (ACEPA, 2012). The West African Manatee (*Trichechus senegalensis*) is another threatened marine mammal that is important in the areas, and is classified by the IUCN as Vulnerable largely due to species declines due to hunting and habitat loss (Powell & Kouadio, 2008; Keith Diagne, 2015). Historically, its presence has been recorded in the Chiloango River, but the current distribution is unknown (MINUA, 2006; Morais, 2006), and local extirpations of this species are known across its distribution (Keith Diagne, 2015).

Feature condition and future outlook of the proposed area

Across the system, the ecological condition of the mangrove varies a lot, i.e., from pristine areas to fully deforested areas. Current anthropogenic pressure is visible and worrying, with signs of advanced habitat degradation and destruction in some places (MINAMB et al, 2015). Further, Tati Luemba regrets the level of destruction of the mangrove as a result of stagnant water caused by the limited water mixing between river and sea (Tati Luemba press comm., 2015). It is thus important that the Chiloango Mangroves are protected to prevent the extinction or extirpation of fauna and flora that contribute to the region's ecological integrity (press comm. Tati Luemba, 2015), especially the iconic

and threatened manatee and turtle species. An assessment of ecological condition based on cumulative pressures indicates that 77% of the area is in poor ecological condition and the remainder in good ecological condition, suggesting notable degradation, but that some of the biodiversity and ecological processes are still intact. This means that establishing the proposed EBSA and implementing appropriate conservation and management measures in this area will contribute to protecting the existing biodiversity.

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Other relevant website address or attached documents

Summary of types of habitats and status of threats for the Chiloango Estuary - Cabinda. Data from Holness et al. (2014).

Threat Status	Ecosystem Type	Area (km ²)	Area (%)
Endangered	Cabinda Reflective Sandy Beach	4.7	28
	Cabinda Sheltered Rocky Shore	0.3	2
Vulnerable	Cabinda Mixed Shore	4.7	27
Least Threatened	Cabinda Estuarine Shore	7.4	43
Least Threatened Total		7.4	43
Grand Total		17.1	100

Assessment of the area against CBD EBSA Criteria

CBD EBSA Criteria (Annex I to decision IX/20)	Description (Annex I to decision IX/20)	Ranking of criterion relevance
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.	Medium
<p><i>Explanation for ranking</i></p> <p>Systems comprising the complex of river, estuary, shore, mangrove and forest are relatively rare in the area, and this particular site comprises the second largest mangrove forest in the country. Further, more than half of the freshwater or marine fish species seen here are endemic to the region. It is also a biodiversity hotspot for dragonflies and damselflies: it has the highest diversity of these insects in all of Africa.</p> <p>This system has unique ecological characteristics as it associates different aquatic ecosystems. The estuary has riverine (Chiloango River), brackish (estuary), marine (Atlantic Ocean) and wetland areas (the Usanka Lagoon, as the largest wetland area). The interaction of different areas/ components of this system and its abiotic conditions allowed for the establishment of different fauna and flora species. This location has already been described as a coast sensitive location (MINAMB, 2015).</p>		
Special importance for life-history stages of species	Areas that is required for a population to survive and thrive.	High
<p><i>Explanation for ranking</i></p> <p>The proposed EBSA is important for as a foraging and resting site for multiple bird species, and as nesting grounds for olive ridley and leatherback turtles. The mangroves also provide key habitat as nursery areas for fish and crustaceans in the estuary.</p> <p>The migratory birds use the area for resting. Furthermore, the olive ridley and leatherback turtles that are threatened species are also found here. The African Manatee (<i>Trichechus senegalensis</i>) is also found within this area. The Manatee features in the IUCN Red List (in Category V) and is defined as a species that is vulnerable to extinction (Annex I) by the Convention for Threatened Species International Commerce (CITES) and at the same time features in the Annex I of Hunting Law currently in force in Angola providing total protection (MINUA, 2005b).</p>		
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.	High

Explanation for ranking

Olive ridley and leatherback turtles are both Vulnerable species that nest on the beaches in this EBSA. Given that these and green turtles nest a little further south at Malongo (monitored as part of the Cabinda Gulf Oil Company—Chevron (CABGOC) environment programme: Malongo Sea Turtle Protection Program; Fancony & Abel, 2012), it is likely that the latter species nests in Chiloango Mangroves as well. The African Manatee (*Trichechus senegalensis*) is also a Vulnerable species found within this area. Sites that support manatees are particularly important because this mammal has been extirpated from many sites in its distribution due to hunting and habitat fragmentation (Keith Diagne, 2015). For example, one hunter in Angola was identified in a 40-km area around the Congo River mouth, and said in an interview that he had hunted three manatees a week for the last 30 years, another fisherman from around the Bengo River noted that 77 manatees had been killed in the area in one year, and manatee meat has been seen for sale in Luanda (Keith Diagne, 2015). That this site supports both manatees and nesting turtles thus makes this EBSA particularly important for threatened species. In terms of ecosystems, the more than half the EBSA area comprises threatened ecosystem types, including Endangered rocky and sandy shores, and Vulnerable mixed shores.

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.

High

Explanation for ranking

The EBSA comprises several features that are fragile, sensitive to disturbance and that will take a long time to recover. Sensitive species with slow recovery include the turtles, manatee, and some of the birds; the mangroves are also sensitive, slow growing and take long to recover from disturbance.

Biological productivity

Area containing species, populations or communities with comparatively higher natural biological productivity.

Medium

Explanation for ranking

Mangroves are among the most productive ecosystems (FAO 1994) and provide highly productive coastal lagoons and estuaries and contains essential organic nutrients. Mangroves are also an important site for reproduction and growth (nursery) of larvae and juvenile stages of important species (Shumway, 1999). This is considered the second biggest mangrove section of the country (MINAMB, 2015).

Biological diversity

Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.

High

Explanation for ranking

All habitats in this site present a set of favorable conditions for the existence of different species of plants and animals. The mangroves offer areas for feeding, reproduction, development and resting for an important component of the biodiversity. This biodiversity is noticeable through the presence of a high number of shellfish and a vast diversity of species of marine and fresh water fish. The visiting and seasonal migrating birds can also be seen. The reptiles are diverse and found along all zones, including marine reptiles (olive ridley and leatherback turtle), terrestrial reptiles (pythons) and fresh water reptiles (crocodiles). In relation to mammals, cetaceans and manatees are most relevant, but the small primates, rodents and other small herbivores in the surrounding forests are worth mentioning. This site also has the highest diversity of dragonflies and damselflies (Odonata) within the whole of Africa.

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.	Medium
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Explanation for ranking

Part of the area remains natural, however, a fairly large area has been negatively impacted subsistence agriculture, opening of waterways by local people, wood cutting and coal making (wood from the mangroves), and pollution from discarded waste. A systematic assessment of ecological condition based on cumulative pressures indicates that 77% of the area is in poor ecological condition and the remaining 23% is in good ecological condition, suggesting notable degradation, but that some of the biodiversity and ecological processes are still intact.

Status of submission

Area to be submitted to the Conference of the Parties for acknowledgement of meeting EBSA criteria once review process is finalized.

COP Decision

Not yet submitted.

End of proposed EBSA description

Motivation for Submission

To be developed.