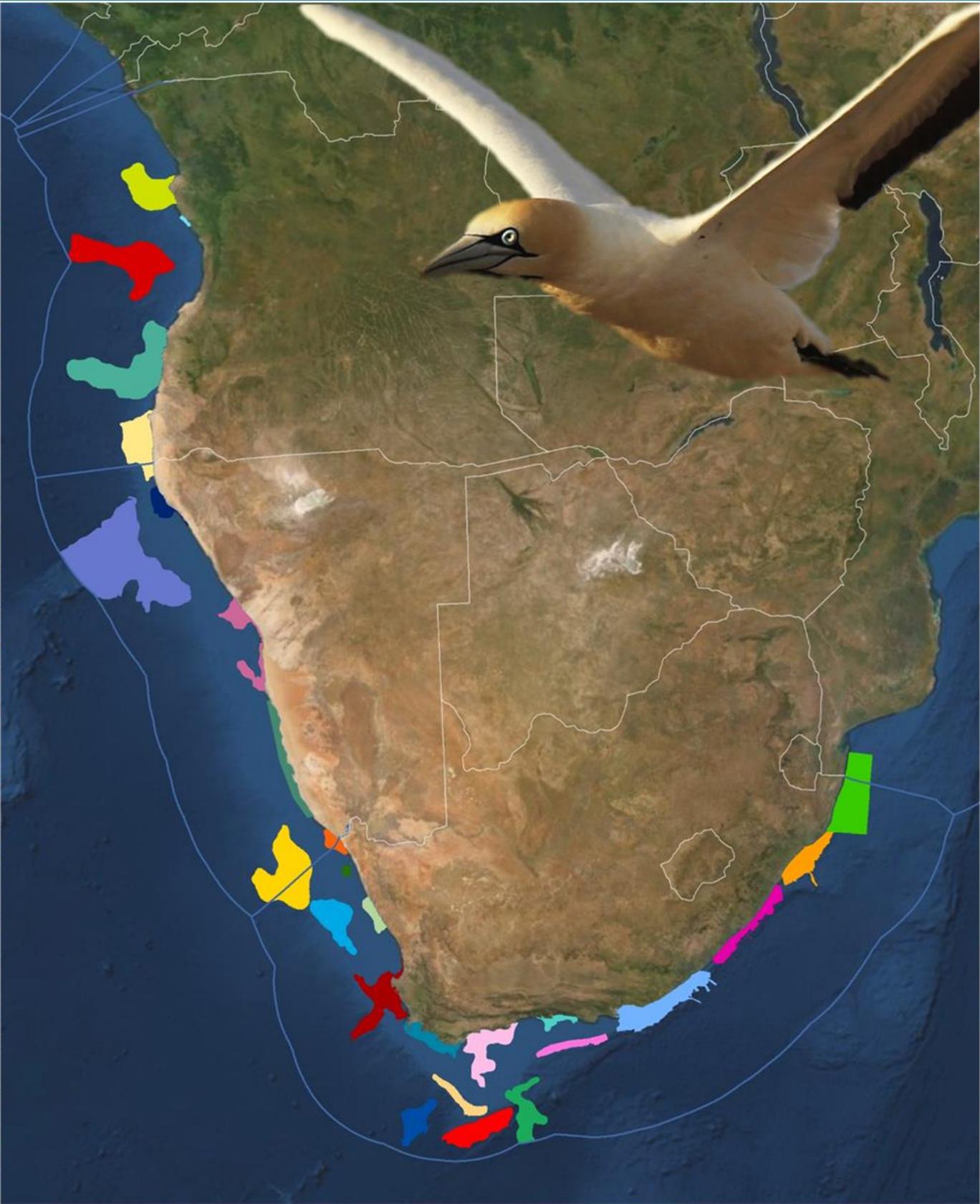


# ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS

in the Benguela Current Large Marine Ecosystem



**Namibian Islands**  
REVISED DESCRIPTION

## Namibian Islands

### Revised EBSA Description

#### General Information

##### Summary

The Namibian Islands are located offshore in the central region of the Benguela Current Large Marine Ecosystem (BCLME) within the intensive Lüderitz Upwelling Cell. These islands and their surrounding waters are described primarily in terms of their significance for life history stages of threatened seabird species. The islands are crucial seabird breeding sites within the existing Namibian Islands Marine Protected Area (NIMPA). The surrounding waters are also key foraging grounds for these seabirds for both the adults and as they provide for their chicks, and for Critically Endangered leatherbacks from the Western Indian Ocean that nest in South Africa. The boundaries of the NIMPA are largely based on the foraging ecology of key threatened, breeding seabirds. These features were used here too to expand the boundary of the Namibian Islands EBSA to include the full ecological and biological significance of the islands and adjacent marine environment, not just to represent the islands themselves.

##### Introduction of the area

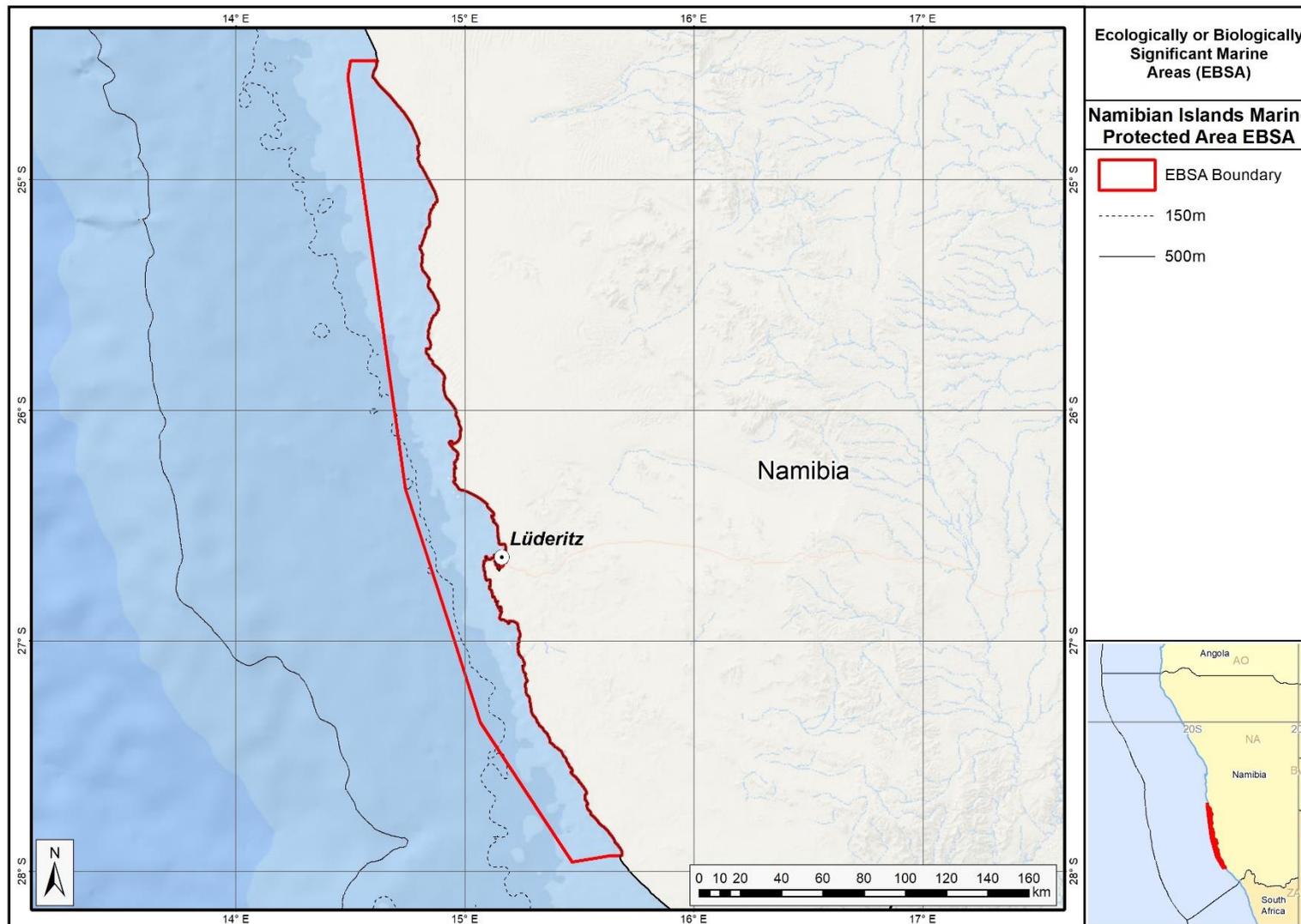
The Namibian Islands is a coastal EBSA that is located in the central region of the BCLME within the Lüderitz Upwelling Cell. This upwelling cell plays a significant role in regulating the biomass of fish stocks of central Namibia. Consequently, the islands and adjacent productive waters provide important breeding and foraging habitat for threatened seabirds and marine mammals, and includes important nursery grounds for the commercially important west coast rock lobster, *Jasus lalandii* (Currie et al., 2008). It is also recognized as a foraging site for regionally Critically Endangered leatherbacks from the Western Indian Ocean that nest in South Africa (Harris et al., 2017). Thus, although the focus of this EBSA is on seabird breeding and foraging, there are several other important species for which this site is important.

The key ecological value of this site was recognised prior to the EBSA process, and in 2009, the Namibian Ministry of Fisheries and Marine Resources (MFMR) gazetted the Namibian Islands Marine Protected Area (NIMPA). The NIMPA covers nearly 1 million ha of coastal waters that encompass all the natural seabird breeding islands in Namibia and the key supporting seabird foraging areas in the surrounding sea. It was later recognised that the original EBSA delineation had focussed on only the breeding islands, and had omitted the critical foraging grounds surrounding the islands that provide fish for the adult birds and as they provision for their chicks. Consequently, the EBSA boundary was revised to include the full extent of this significant ecological feature, following a similar delineation process to how the NIMPA was defined. Because this site comprises a collection of features and ecosystems that are connected by the same ecological processes, it is proposed as a Type 2 EBSA (sensu Johnson et al., 2018).

##### Description of the location

###### EBSA Region

South-Eastern Atlantic



*Revised delineation of the Namibian Islands EBSA.*

## **Description of location**

The original boundary of the Namibian Islands EBSA has been extended to include key seabird foraging areas, much like how the boundary of the NIMPA was defined. It extends alongshore about 400 km from Meob Bay to Chameis Bay and, on average, 30 km offshore from the high-water mark. It is located between the latitudes of 24°S and 28°S, within the national jurisdiction of Namibia.

## **Feature description of the area**

The Namibian Islands EBSA is described for both benthic and pelagic features, primarily as a key breeding and foraging area for threatened seabirds, but also as breeding, nursery or foraging areas for several other species that are iconic, threatened or of commercial importance. Eleven seabird species breed on the islands, of which eight are endemic to southern Africa (Kemper et al., 2007). Of these, the African Penguin (*Spheniscus demersus*), Bank Cormorant (*Phalacrocorax neglectus*) and the Cape Cormorant (*P. capensis*) are listed as globally Endangered; the Cape Gannet (*Morus capensis*) is listed as globally Vulnerable and locally Critically Endangered (Simmons et al., 2015, IUCN 2016). The Namibian populations of African Penguins, Cape Gannets and Bank Cormorants breed exclusively within this EBSA. Productivity at this site is also particularly high because it is situated in the Lüderitz Upwelling Cell in the Benguela Current, which plays a significant role in regulating the biomass of fish stocks of central Namibia. However, the depletion of small pelagic fish stocks in the late 1960s through over-fishing, particularly in southern Namibia, has negatively impacted this area (Roux et al., 2013). This provides special justification for protecting this area to conserve the important threatened species that are so dependent on it.

In recognition of the ecological significance of this area, the design of the NIMPA took seabird tracking data into account to ensure inclusion of critical foraging areas of resident breeding birds (Ludynia et al., 2010a, 2012). Three rock lobster sanctuaries, one linefish sanctuary and key calving areas of southern right whales were also included (Currie et al., 2008). This site is a foraging area for regionally Critically Endangered leatherbacks from the Western Indian Ocean that nest in South Africa (Harris et al., 2017). The NIMPA, which adjoins the Namib-Naukluft and Tsau//Khaeb national parks on the landward side, is sectioned into zones of increasing protection levels, with the highest protection status afforded to the islands. Six of the islands are also designated as Important Bird and Biodiversity Areas (IBAs; Simmons et al., 2015). Altogether, 140 species have been recorded in the EBSA (OBIS 2017).

## **Feature conditions and future outlook of the proposed area**

A lack of quality food poses the greatest threat to seabird populations breeding on Namibia's islands (Ludynia et al., 2010b, Simmons et al., 2015). The collapse of sardine stocks in the 1960s and anchovy populations in the 1990s (Roux et al., 2013), both significant prey species, threaten the viability of African Penguin, Cape Gannet and Cape Cormorant populations in particular. The recovery of small pelagic fish stocks in southern Namibia is therefore crucial to the continued survival of these species. The coast is vulnerable to marine pollution, especially oil spills, and even a small oil spill at a key breeding site such as Mercury Island could put a significant proportion of the global population of

African Penguin, Cape Gannets and/or Bank Cormorants at risk. Namibia's National Oil Spill Contingency Plan is currently being updated, and a process to draft the Oil Spill Sensitivity Mapping is underway for improved monitoring and prevention. Breeding habitat degradation and associated disturbance (e.g. from guano harvesting) has further rendered breeding seabirds, particularly African Penguins and Cape Gannets, at risk. An increasing emphasis on marine mining, including inshore and coastal mining south of Lüderitz may pose additional threats to seabirds, rock lobsters and marine mammals, such as prey displacement and modification of key marine habitats.

Holness et al. (2014) estimated habitat threat status by assessing the weighted cumulative impacts of various pressures (e.g., extractive resource use, pollution, development and others) on each ecosystem type for Namibia (Table in Other relevant website address or attached documents section). The results identified small areas of two Critically Endangered ecosystem types (*viz.* the Namaqua Intermediate Sandy Beach and Namaqua Reflective Sandy Beach) within the Namibian Islands EBSA. The Critically Endangered status implies that very little ( $\leq 20\%$ ) of the total area of these habitats are in natural/pristine condition, and it is expected that important components of biodiversity pattern have been lost and that ecological processes have been heavily modified. Furthermore, one Endangered ecosystem type (*viz.* the Kuiseb Mixed Shore) and three Vulnerable ecosystem types (*viz.* the Lüderitz Outer Shelf, Namaqua Exposed Rocky Shore, and Namaqua Inshore) were identified. In particular, the Namibian Islands EBSA is very important for the Lüderitz Outer Shelf, Namaqua Inshore and Kuiseb Mixed Shore ecosystem types. Overall, Holness et al. (2014) classified 91% of the Namibian Islands area as being in good condition, which is consistent with the inclusion of the entire area in the NIMPA as part of the EBSA's boundary revision.

## References

- Boyer, D.C., Hampton, I. 2001. An overview of the marine living resources of Namibia. *South African Journal of Science*, 23: 5-35.
- Currie, H., Grobler, K., Kemper, J. 2008. Concept note, background document and management proposal for the declaration of Marine Protected Areas on and around the Namibian islands and adjacent coastal areas.
- Griffiths, C.L., Van Sittert, L., Best, P.B., Brown, A.C., Clark, B.M., Cook, P.A., Crawford, R.J.M., David, J.H.M., Davies, B., Griffiths, M.H., Hutchings, K., Jerardino, A., Kruger, N., Lamberth, S., Leslie, R.W., Melville-Smith, R., Tarr, R., van der Lingen, C.D. 2005. Impacts of human activities on marine animal life in the Benguela: a historical overview. *Oceanography and Marine Biology: Annual Review*, 42: 303-392.
- Harris, J.M., Branch, G.M., Elliott, B.L., Currie, B., Dye, A.H., McQuaid, D.D., Tomalin, B.J., Velasquez, C. 1998. Spatial and temporal variability in recruitment of intertidal mussels around the coast of southern Africa. *South African Journal of Zoology*, 33: 1-11.
- Harris, L.R., Nel, R., Oosthuizen, H., Meyer, M., Kotze, D., Anders, D., McCue, S., Bachoo, S. 2017. Managing conflicts between economic activities and threatened migratory marine species towards creating a multi-objective blue economy. *Conservation Biology*, in press.

- Holness, S., Kirkman, S., Samaai, T., Wolf, T., Sink, K., Majiedt, P., Nsiangango, S., Kainge, P., Kilongo, K., Kathena, J., Harris, L., Lagabrielle, E., Kirchner, C., Chalmers, R., Lombard, M. 2014. Spatial Biodiversity Assessment and Spatial Management, including Marine Protected Areas. Final report for the Benguela Current Commission project BEH 09-01.
- IUCN. 2016. IUCN Red List of Threatened Species. Version 2016-3. [www.iucnredlist.org](http://www.iucnredlist.org). Downloaded on 1 February 2017.
- Johnson, D.E., Barrio Froján, C., Turner, P.J., Weaver, P., Gunn, V., Dunn, D.C., Halpin, P., Bax, N.J., Dunstan, P.K., 2018. Reviewing the EBSA process: Improving on success. *Marine Policy* 88, 75-85.
- Kemper, J. 2006. Heading towards extinction? Demography of the African penguin in Namibia. PhD thesis, University of Cape Town, Cape Town, South Africa, 241 pp.
- Kemper, J., Underhill, L.G., Crawford, R.J.M., Kirkman, S.P. 2007. Revision of the conservation status of seabirds and seals breeding in the Benguela ecosystem. In: Kirkman, S.P. (Ed.), Final Report of the BCLME (Benguela Current Large Marine Ecosystem) Project on Top Predators as Biological Indicators of Ecosystem Change in the BCLME. Avian Demography Unit, Cape Town, pp. 325–342.
- Kolberg, H. 1992. Untersuchungen bei, und Zählung der Billenpinguine (*Spheniscus demersus*) auf der Insel Halifax. *Mitteilungen: Namibia Wissenschaftliche Gesellschaft* 33: 57-71.
- Ludynia, K., Jones, R., Kemper, J., Garthe, S., Underhill, L.G. 2010a. Foraging behaviour of bank cormorants in Namibia: implications for conservation. *Endangered Species Research*, 12: 31-40.
- Ludynia, K., Roux, J-P., Jones, R., Kemper, J., Underhill, L.G. 2010b. Surviving off junk: low-energy prey dominates the diet of African penguins *Spheniscus demersus* at Mercury Island, Namibia, between 1996 and 2009. *African Journal of Marine Science*, 32: 563-572.
- Ludynia, K., Kemper, J., Roux, J. 2012. The Namibian Islands' Marine Protected Area: Using seabird tracking data to define boundaries and assess adequacy. *Biological Conservation*, 156: 136-145.
- OBIS. 2017. Summary statistics of biodiversity records in the Namibian Islands EBSA. (Available: Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. [www.iobis.org](http://www.iobis.org). Accessed: 2017-07-27).
- Pallett J. (ed.) 1995. The Sperrgebiet: Namibia's least known wilderness. DRFN & NAMDEB, Windhoek, Namibia. Roux J-P (2003) – Risks. In: Molloy F. & T. Reinikainen (eds.). Namibia's marine environment. Directorate of Environmental Affairs of the Ministry of Environment and Tourism, Windhoek, Namibia, pp. 137-152.
- Roux, J-P., Best, P.B., Stander, P.E. 2001. Sightings of southern right whales (*Eubalaena australis*) in Namibian waters 1971-1999. *Cetacean Resource Management (Special Issue)*, 2: 181-185.
- Roux, J-P., van der Lingen, C.D., Gibbons, M.J., Moroff, N.E., Shannon, L.J., Smith, A.D.M., Cury, P.M. 2013. Jellyfication of marine ecosystems as a likely consequence of overfishing small pelagic fishes: lessons from the Benguela. *Bulletin of Marine Science*, 89: 249-284.

- Sakko, A. 1998. The influence of the Benguela upwelling system on Namibia's marine biodiversity. *Biodiversity and Conservation*, 7: 419-433.
- Simmons, R.E., Brown, C.J., Kemper, J. 2015. *Birds to watch in Namibia: red, rare and endemic species*. Ministry of Environment and Tourism and Namibia Nature Foundation, Windhoek, Namibia.
- Van der Lingen, C.D., Shannon, L.J., Cury, P., Kreiner, A., Moloney, C.L., Roux, J-P. Vaz-Velho, F. 2006. Resource and ecosystem variability, including regime shifts, in the Benguela Current System. In: Shannon, V., Hempel, G., Malanotte-Rizzoli, P., Moloney, C.L., Woods, J. (eds) *Benguela: Predicting a Large Marine Ecosystem*. Elsevier, Amsterdam, pp 147–185.

## Other relevant website address or attached documents

*Summary of ecosystem types and threat status for the Namibian Islands EBSA. Data from Holness et al. (2014).*

Threat Status	Ecosystem type	Area (km <sup>2</sup> )	Area (%)
Critically Endangered	Namaqua Intermediate Sandy Beach	2.1	0.0
	Namaqua Reflective Sandy Beach	0.3	0.0
Endangered	Kuiseb Mixed Shore	10.1	0.1
Vulnerable	Lüderitz Outer Shelf	706.7	7.4
	Namaqua Exposed Rocky Shore	3.6	0.0
	Namaqua Inshore	62.6	0.7
Least Threatened	Central Namib Inner Shelf	1 074.8	11.3
	Kuiseb Dissipative-Intermediate Sandy Beach	3.2	0.0
	Kuiseb Exposed Rocky Shore	3.1	0.0
	Kuiseb Inshore	586.0	6.2
	Kuiseb Intermediate Sandy Beach	40.1	0.4
	Kuiseb Reflective Sandy Beach	13.1	0.1
	Lüderitz Dissipative Sandy Beach	4.7	0.0
	Lüderitz Dissipative-Intermediate Sandy Beach	4.3	0.0
	Lüderitz Exposed Rocky Shore	42.6	0.4
	Lüderitz Inner Shelf	4 654.8	49.0
	Lüderitz Inshore	356.2	3.8
	Lüderitz Intermediate Sandy Beach	40.8	0.4
	Lüderitz Island	1 331.5	14.0
	Lüderitz Lagoon Coast	3.2	0.0
	Lüderitz Mixed Shore	35.0	0.4
	Lüderitz Reflective Sandy Beach	13.5	0.1
	Lüderitz Sheltered Rocky Shore	4.1	0.0
	Lüderitz Very Exposed Rocky Shore	1.0	0.0
	Namaqua Dissipative-Intermediate Sandy Beach	7.6	0.1
	Namaqua Inner Shelf	486.0	5.1
Namaqua Mixed Shore	0.2	0.0	
<b>Grand Total</b>		<b>9 491.1</b>	<b>100.0</b>

## Assessment of the area against CBD EBSA criteria

C1: Uniqueness or rarity **High**

Justification

The entire Namibian population of African Penguins (25% of the global population), Cape Gannets (11%) and Bank Cormorants (89%) breed in the EBSA (Kemper et al., 2007, Ludynia et al., 2012). Cape Gannets breed on only six islands globally; three of these are in Namibia, all of which form part of the EBSA. Of the eleven seabird species that breed on the islands, eight are endemic to southern Africa (Kemper et al., 2007).

C2: Special importance for life-history stages of species **High**

## Justification

The islands (and two coastal caves) support the entire Namibian breeding populations of three threatened seabird species. Due to their inaccessibility by terrestrial predators, these sites offer safe breeding and moulting habitat (Kemper 2006, Kemper et al., 2007). Breeding penguins and cormorants forage almost exclusively within the boundaries of the EBSA; breeding gannets have larger foraging ranges, but core feeding activities take place within the EBSA (Ludynia et al., 2010a, 2012). In Namibia, the majority of calving sites for Southern Right Whales (a species that was nearly hunted to extinction in Namibia and has only recently returned to Namibian waters to breed) fall within the EBSA (Roux et al., 2001). Namibian Islands also provides crucial breeding and feeding habitat to a large proportion of the global population of Heaviside's dolphins at the centre of its distribution (Roux et al., 2001). Furthermore, the extensive kelp beds between Sylvia Hill and Chameis Bay provide important habitat for rock lobsters, including juveniles, immature and egg-bearing females (Currie et al., 2008). Leatherbacks from the Western Indian Ocean also use the EBSA as a foraging ground (Harris et al., 2017).

C3: Importance for threatened, endangered or declining species and/or habitats **High**

## Justification

The Namibian Islands EBSA constitute crucial breeding habitat for several seabird species endemic to the southern African region, including the globally Endangered African Penguin, Cape Cormorant and Bank Cormorant, as well as the locally Critically Endangered Cape Gannet (Simmons et al., 2015). The breeding populations of these species continue to decline globally, and certainly the depletion, and lack of recovery, of small pelagic fish stocks (e.g., sardine, anchovy) in southern Namibia continue to play a key role in the decline of these species locally (IUCN 2016). Also, some regionally Critically Endangered leatherback turtles from the Western Indian Ocean that nest in South Africa use this area as a foraging ground (Harris et al., 2017). Furthermore, the Namibian Islands EBSA includes important threatened habitats (Holness et al., 2014). These include two Critically Endangered ecosystem types (Namaqua Intermediate Sandy Beach and Namaqua Reflective Sandy Beach), one Endangered type (Kuiseb Mixed Shore), and three Vulnerable types (Lüderitz Outer Shelf, Namaqua Exposed Rocky Shore, Namaqua Inshore; Table in the Other relevant website address or attached documents section.).

C4: Vulnerability, fragility, sensitivity, or slow recovery **High**

## Justification

Breeding seabirds, particularly penguins, are vulnerable to extreme environmental events such as heat waves or severe storms, in part because the nesting habitat has been modified by historic and, to a limited extent, more recent guano harvesting. This may be exacerbated further by the effects of climate change (Griffiths et al., 2005; Kemper et al., 2007). Sea-level rise will threaten the existence and/or spatial extent of the low-lying islands (Roux 2003). In addition, the lack of good-quality small pelagic prey (because of stock depletion followed by a lack of recovery) has led to degraded seabird foraging habitats. These habitats may be further degraded through increasing marine mining activities

and coastal industrialization, as well as changes in climate (including warm-water and/or low-oxygen events) in the vicinity of the islands and in key foraging areas.

#### C5: Biological productivity **Medium**

##### Justification

The Namibian Islands EBSA is situated within the intensive Lüderitz Upwelling Cell, which induces high levels of productivity and thus abundant fish and higher trophic level populations. However, the depletion of small pelagic fish stocks in the late 1960s through over-fishing, particularly in southern Namibia, has resulted in a degraded marine ecosystem (Roux et al., 2013), characterized by a decrease in productivity and changes in the overall trophic function in this area.

#### C6: Biological diversity **Low**

##### Justification

As a cold-water and predominantly sandy-bottomed marine environment, the northern Benguela Current ecosystem is considered relatively poor in biological diversity compared to more tropical or substrate-diverse marine ecosystems. However, the coastline and near-shore waters along which the EBSA is situated are characterized by both rocky and sandy substrates, which support a limited (and poorly studied) array of micro- and macroscopic benthos, including seaweeds and invertebrate species (Sakko 1998, Harris et al., 1998). The biodiversity in the inter-tidal zones of the islands tends to be greater than elsewhere in the area, possibly due to high nutrient input from seabird guano. Altogether, 140 species have been recorded in the EBSA (OBIS 2017).

#### C7: Naturalness **High**

##### Justification

The islands themselves have been modified from their pristine states through anthropogenic impacts such as intensive guano scraping activities on the islands (Griffiths et al., 2005). However, the area overall is in good and improving condition, and is fully included in the Marine Protected Area. The surrounding marine environment is well within the Namibian 200 m no-trawl protection zone. Purse-seining is prohibited within the EBSA (as per NIMPA regulations) in order to encourage the recovery of small pelagic fish stocks that are vital to the area's ecosystem health and functioning. A commercial and recreational lobster fishery is located along the southern coast of Namibia. Coastal development and marine mining in the area have been limited but are expected to expand. Although there have been significant historical impacts (especially on the islands specifically) and there are regional risks from adjacent areas, 91% of the Namibian Islands EBSA was classified as being in good condition, based on current levels of impacting activities (Holness et al., 2014). This is consistent with the inclusion of the entire area in the NIMPA as part of the EBSA's boundary revision.

## **Status of submission**

The Namibian Islands EBSA was recognized as meeting EBSA criteria by the Conference of the Parties. The revised description and boundaries still need to be submitted to COP for approval.

## **COP Decision**

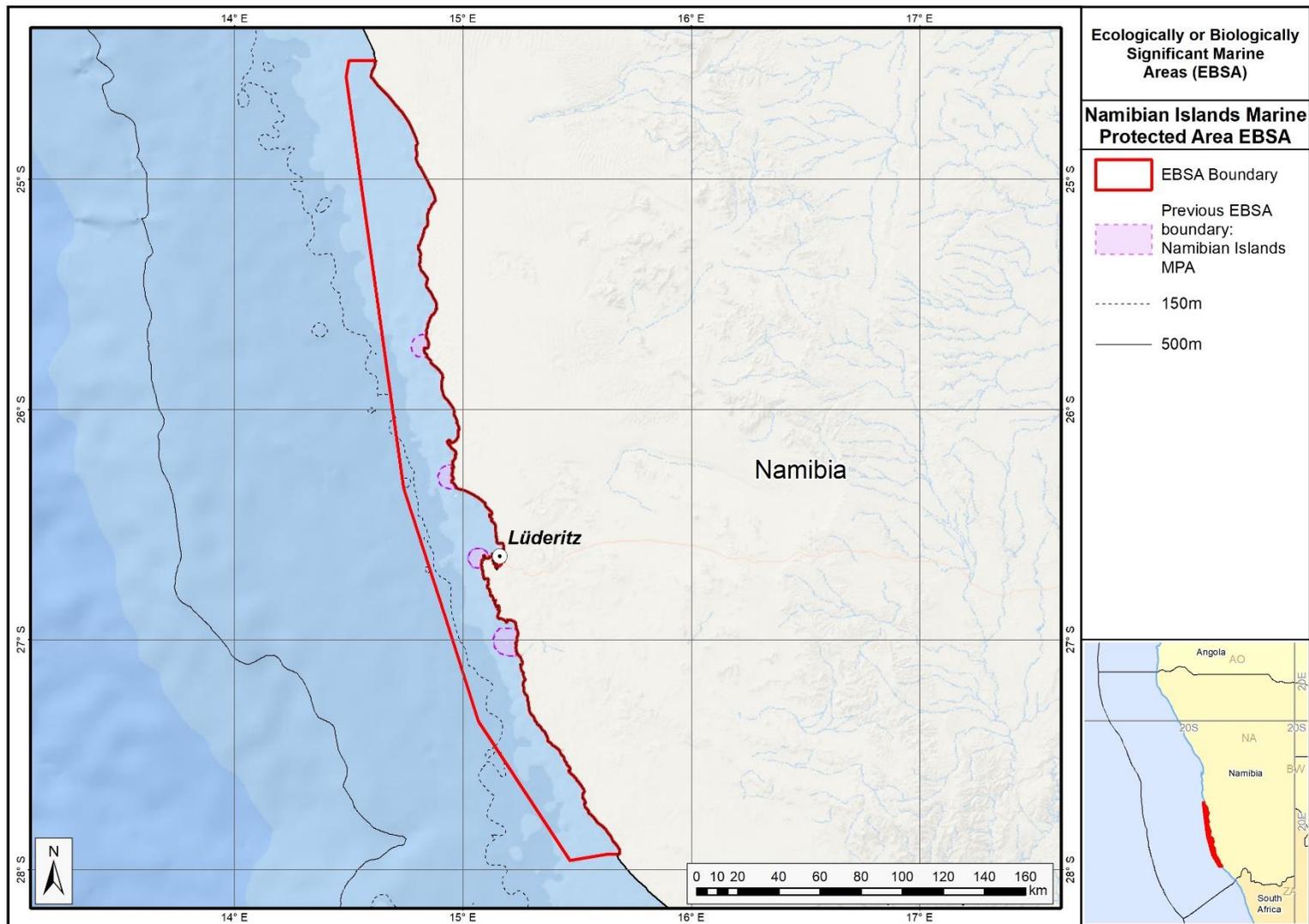
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### *End of proposed EBSA revised description*

#### *Motivation for Revisions*

The main change was to include the previously omitted important bird foraging areas surrounding the islands, which also represent foraging, breeding and nursery areas for other significant species. A robust process was used in the delineation of the NIMPA (e.g. consideration of foraging distances of key species and ecological process areas around the islands - see Currie et al., 2008 for specifics). This scientific and technical process was combined with the public, political and administrative processes required for gazetting of protected areas. Therefore, the boundary of the original EBSA has been extended to include key foraging areas, such that it now matches that of the NIMPA boundary.

Eleven new references were added to the Namibian Islands EBSA description, as part of an updated literature search for relevant information. Following the description update, two criteria were upgraded in ranks, largely due to the change in the EBSA boundary, which now spans the full extent of the Namibian Islands MPA. Uniqueness and rarity were upgraded from Low to High (especially linked to the inclusion of large portions of the global range of species, such as bank cormorant, and full inclusion of the Namibian Islands), and Naturalness was upgraded from Medium to High.



*The original and revised boundaries of the Namibian Islands EBSA.*