Ramsar Information Sheet

Published on 26 August 2019

South Africa

Dassen Island Nature Reserve

Designation date	29 March 2019
Site number	2383
Coordinates	33°25'23"S 18°05'08"E
Area	737,00 ha

https://rsis.ramsar.org/ris/2383
Created by RSIS V.1.6 on - 9 September 2019

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Dassen Island, located 11 km offshore on the west coast of the Western Cape Province - South Africa, is the second largest South African coastal island situated on the continental shelf. This island reserve is situated within the Benguela Upwelling Ecosystem (BUE), one of four major eastern boundary current systems located within the Southern Hemisphere, extending from southern Angola to Algoa Bay on South Africa's south coast. It supports 10 of the 15 seabird species endemic to southern Africa and provides a safe haven to numerous Palearctic and sub-Antarctic migrants. Several of the bird species that occur on the island are listed under the International Union for Conservation of Nature and Natural Resources (IUCN) Red Data criteria, are listed in Appendix II of the Bonn Convention on Migratory Species and listed under the African Eurasian Waterbird Agreement (AEWA). Furthermore, Dassen Island Nature Reserve is recognised by BirdLife International as one of 103 Globally Important Bird and Biodiversity Areas (IBA ZA088) due to the role it plays in providing habitat for significant numbers of resident and migratory seabird and shorebird species.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Johan Visagie
Institution/agency	CapeNature
Postal address	PO Box 26 Porterville 6810
E-mail	jvisagie@capenature.co.za
Phone	+27 82 729 1366

Compiler 2

Name	Pierre de Villiers
Institution/agency	CapeNature
Postal address	Stony Point Research and Information Center Betty's Bay South Africa
E-mail	estuaries@capenature.co.za
Phone	+27 21 866 8000

2.1.2 - Period of collection of data and information used to compile the RIS

From year	1991
To year	2018

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Dassen Island Nature Reserve
Unofficial name (optional)	Dassen Island Nature Reserve

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<1 file(s) uploaded>

Former maps	0

Boundaries description

Dassen Island Ramsar site or Nature Reserve is located offshore approximately 55 kilometres north-west of Cape Town and 33 kilometres south-west of Saldanha Bay in the Western Cape Province of South Africa, latitude 33°25'S and longitude 18°05'E.. The closest access point by boat is from Yzerfontein harbour on the west coast, 11 kilometres to the north-east. The site consists of the actual island landmass and a marine portion. The landmass (the island) is approximately 212 hectares in size, approximately 3.2 kilometres long and 1.6 kilometres wide at its widest point. The boundary extends 500 m seawards from the island's high water mark adding a further 525 Ha to the site. The boundary of the site therefore follows the shape of the islands high water mark 500 meters out to sea.

Geographical coordinates:
Dassen Island: 33º 25' 10.00"S 18º 05' 02.00"E

2.2.2 - General location

a) In which large administrative region does the site lie?	Western Cape
b) What is the nearest town or population centre?	Yzerfontein

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes ○ No ◉

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ○ No ◉

2.2.4 - Area of the Site

Official area, in hectares (ha): 737

Area, in hectares (ha) as calculated from GIS boundaries: 737.062

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Realm: Benguela (50): Namaqua (191).
Marine Ecoregions of the World (MEOW)	Temperate Southern Africa

Other biogeographic regionalisation scheme

The marine and coastal components of Dassen Island lie within the Southern Benguela Ecoregion according to the National Biodiversity Assessment (NBA) (Sink et al. 2012). Ecozones or habitat types characterised by distinct species assemblages are nested within Ecoregions. Of the marine and coastal habitat types, 47% are threatened, with a higher proportion of coastal than offshore habitat types threatened. All rocky shelf edge and island-associated habitat types are threatened while at the National scale along the coast, many habitat types in the southwestern Cape are threatened. Offshore, the Southern Benguela and the Agulhas ecoregions have the most threatened habitat types. Only 6 % of marine and coastal habitats are well protected (Sink et al. 2012).

Dassen Island comprises the Cape Island Shore (Endangered) and Cape Kelp Forest[1] habitats (SANBI 2018, in prep). Islands and their associated subtidal habitats are recognised as distinct habitat types due to the dominance by land-breeding marine predators and associated unique features, including those related to nutrient input (e.g. from guano) and predation pressure (e.g. trophic interactions between seabirds, seals and sharks (Williams et al. 2000). As such, intertidal and subtidal biota around islands differs from shores of adjacent mainland areas (Bosman & Hockey 1986; Williams et al. 2000). Islands are thus classified as ‘major’ or ‘minor’ based on size of the island, and permanence and density of seabird colonies, that create an associated ‘zone of island influence’ resulting from biotic interactions from nutrient inputs and trophic responses. Dassen Island is classified a ‘major’ island, based on its size and conservation importance in terms of permanent dense seabird colonies the island supports, with an emphasis on the African penguin and bank cormorant, and therefore buffered by a 20 km ‘zone of island influence’ (Sink et al. 2012).

Dassen Island contributes to the protection of four habitat types, including the Cape Sandy Inner Shelf and the Endangered[2] habitat types Cape Rocky Mid Shelf Mosaic[1], and Cape Island Shore, and the Cape Kelp Forest. Dassen Island also contributes to the protection of threatened species, providing breeding habitat for Cape and bank cormorants and African penguins, and offshore foraging for Cape gannets (Majiedt et al. 2013).

1 Ecosystem Type as per NBA 2018 (SANBI, in prep)
2 Ecosystem Type as per NBA 2018 (SANBI, in prep) and Threat Status as per

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

☑ Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided	Protection against heavy seas in the lee of the Island. .
Other ecosystem services provided	The marine subtidal aquatic beds and associated kelp forest provide a barrier that reduces the height and destructive power of storm surges and prevents flooding of low-lying areas on the island. Furthermore kelp forest trap sediment, particularly seabird guano, which gets taken up by the kelp. The kelp in turn becomes food for the grazing kelp limpet, abalone and sea urchin, and habitat for West coast rock lobster. Filter feeders such as mussels, sponges, red bait and sea cucumbers rely on kelp forests. The mucous released from kelp fronds is rich in organic compounds that promote the growth of bacteria on which protozoans feed. Filter feeders consume these micro-organisms as well as phytoplankton, kelp spores and small fragments eroded from growing kelp fronds (Branch and Branch 1981). Nutrients are leached off the Island complex into the surrounding ocean which add to the nutrients provided by the oceanic upwelling events. The reserve is a centre of seabird diversity and provides breeding habitat for a number of seabirds, the details of which are provided further in the document. The rocky shore and subtidal marine environment are rich in associated invertebrate and fish biodiversity.
Other reasons	All rocky shelf edge and island-associated habitat types are threatened while at the National scale along the coast, many habitat types in the southwestern Cape are threatened. Offshore, the Southern Benguela and the Agulhas ecoregions have the most threatened habitat types. Only 6 % of marine and coastal habitats are well protected (Sink et al. 2012). Dassen Island contributes to the protection of four habitat types, including the Cape Sandy Inner Shelf and the Endangered[2] habitat types Cape Rocky Mid Shelf Mosaic[1], and Cape Island Shore, and the Cape Kelp Forest.

☑ Criterion 2 : Rare species and threatened ecological communities

☑ Criterion 3 : Biological diversity

Justification

It is an important area for breeding seabirds, several of which are sensitive to disturbance. At least 60 bird species have been recorded on the island. Threatened species include Leach's storm petrel (Critically Endangered – regionally), African Penguin (Endangered), Bank Cormorant (Endangered), Cape Cormorant (Endangered) and Great White Pelican (Vulnerable– regionally). Other species breeding on the island include Crowned Cormorant (Near Threatened), White Breasted Cormorant (Least Concern), Hartlaub's Gull (Least Concern), Kelp Gull (Least Concern), Swift Tern (Least Concern), African Oystercatcher (Least Concern), White Fronted, Kittlitz's Plover (Least Concern) and Egyptian Goose (Least Concern). The island coves examples of Cape Sandy Inner Shelf, Cape Island Shore, Cape Kelp Forest, and Cape Sandy Inner Shelf marine habitat types. The Cape Sandy Inner Shelf includes pelagic fish such as sardine and anchovy, an important food source for seabirds such as the African penguin and Cape cormorant. The Cape Kelp Forest (dominated by Sea bamboo (Ecklonia maxima), Split fan kelp (Laminaria pallida) and Spined kelp (Ecklonia radiata) supports West Coast Rock Lobster, Abalone Bank Cormorant and the Crowned Cormorant. Dassen Island is covered by Cape Seashore vegetation (Least Concern). Cape Seashore vegetation provides important nesting material for breeding sea and shorebirds. A number of cetacean species occur within and adjacent to the marine area around Dassen Island. These include the Southern right whale Eubalena australis (Least Concern), the Humpback whale Megaptera novaengliae (Least Concern), Bryde's whale Balaenoptera brydei (Data Deficient), Minke whale Balaenoptera acutorostrata (Least Concern) , Orcas Orcinus orca (Data deficient), Heaviside's dolphin, Cephalorhynchus heavisidii (Data deficient) and dusky dolphins, Lagenorhynchus obscurus (Data deficient). The following reptiles have been recorded on the island: Angulate tortoises Chersina angulata (Least Concern), marbled leaf-toed gecko Afrogecko porphyreus (Least Concern), Cape Skink Trachylepis capensis (Least Concern), Gronovi's dwarf burrowing skink Scelotes gronovii (Near Threatened).

☑ Criterion 4 : Support during critical life cycle stage or in adverse conditions

☑ Criterion 6 : >1% waterbird population

3.2 - Plant species whose presence relates to the international importance of the site

.

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA / AVES	*Haematopus moquini*	African Oystercatcher	☐	☑	☑	☐	☑	☐	☐	☐	724	1991-2017	11	LC	☐	☐		Taylor et. al. 2015
CHORDATA / AVES	*Pelecanus onocrotalus*	Great White Pelican	☐	☑	☐	☐	☐	☐	☐	☐	17	1991-2017	1.2		☐	☐	Listed regionally as Vulnerable	Bowker, 2015
CHORDATA / AVES	*Phalacrocorax capensis*	Cape Cormorant	☑	☑	☐	☐	☑	☐	☐	☐	117	1991-2017	0.5	EN	☐	☐		Birdlife International 2018
CHORDATA / AVES	*Phalacrocorax lucidus*	White-breasted Cormorant	☐	☑	☑	☐	☑	☐	☐	☐	17	1991-2017	1.2		☐	☐		Crawford et. al. 2013
CHORDATA / AVES	*Phalacrocorax neglectus*	Bank Cormorant	☑	☑	☑	☐	☑	☐	☐	☐	2500	1991-2017	13.5	EN	☐	☐		Birdlife International 2018
CHORDATA / AVES	*Spheniscus demersus*	Jackass Penguin; African Penguin	☑	☑	☑	☐	☑	☐	☐	☐	1992	1991-2017	7.6	EN	☐	☐		Birdlife International 2018
CHORDATA / AVES	*Thalasseus bergii*	Great Crested Tern; Greater Crested Tern	☐	☑	☑	☐	☐	☐	☐	☐	1250	1991-2017	6		☐	☐		Reserve Data

1) Percentage of the total biogeographic population at the site

Dassen Island supports a dense populations of resident breeding seabirds, providing a disturbance and predator free environment through various life stages, most notably during breeding and moulting when most seabirds are very susceptible to disturbance and predation. It is one of only two breeding sites for the Great White Pelican Pelecanus onocrotalus within South Africa providing habitat for on average 20% of the regional population. The White-breasted Cormorant is determined using the coastal population as opposed to the entire regional population (Crawford et. al., 2013).
The species listed and the populations supported by the Dassen Island are triggers in the designation of the site as a South African Important Bird and Biodiversity Area (Marnewick et. al. 2015)
The population size of each individual species listed above is for 2017. However in all species the annual surveys over a 27 year period indicate that in most years the population of the individual species exceeded the 1% level (Western Cape Nature Conservation Board unpublished data).

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Cape Rocky Mid Shelf Mosaic	☑		Endangered
Cape Island Shore	☑		Endangered
Cape Kelp Forest	☑		Endangered

Optional text box to provide further information

All rocky shelf edge and island-associated habitat types are threatened at the National scale along the coast, many habitat types in the southwestern Cape are threatened. Offshore, the Southern Benguela and the Agulhas ecoregions have the most threatened habitat types. Only 6 % of marine and coastal habitats are well protected (Sink et al. 2012). Dassen Island contributes to the protection of four habitat types, including the Cape Sandy Inner Shelf and the Endangered habitat types Cape Rocky Mid Shelf Mosaic, and Cape Island Shore, and the Cape Kelp Forest.

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

Dassen Island is one of 14 islands off the South African coastline. This island reserve is situated within the Benguela Upwelling Ecosystem (BUE), one of four major eastern boundary current systems located within the Southern Hemisphere (Hill et al. 1988), extending from southern Angola to Algoa Bay on South Africa's south coast (Schwartzlose et al. 1999). This ecosystem is one of the most productive areas of ocean in the world (Brown et al. 1991) and is characterised by coastal wind-induced upwelling which results in cold, nutrient rich-water being transported to the surface (Shannon, 1985). This upwelled water is the basis for the high biological productivity of the coastal waters along the west coast of southern Africa and is a rich feeding ground of a number of marine species (Shannon 1989, van der Lingen et al. 2006), making it a system of considerable biodiversity value.

The seabirds breeding and roosting on Dassen Island feed primarily on fish and invertebrates that concentrate in great quantities of nutrients in their guano. Guano enhances the nutrient status of soil and plants, as well as overall primary productivity. Nutrients are also leached into the surrounding marine environment, adding to the inshore productivity. Kelp forests trap sediment, particularly seabird guano, which gets taken up by the kelp. The kelp in turn becomes food for the grazing kelp limpit, abalone and sea urchin. Filter feeders such as mussels, sponges, red bait and sea cucumbers rely on kelp forests. The mucous released from kelp fronds is rich in organic compounds that promote the growth of bacteria on which protozoans feed. Filter feeders consume these micro-organisms as well as phytoplankton, kelp spores and small fragments eroded from growing kelp fronds (Branch and Branch 1981). Both phytoplankton and seaweeds are far more productive on the West Coast than on the South and East Coasts, and fuel more productive food chains, culminating in the lucrative fisheries that are concentrated in this region, e.g. West Coast Rock Lobster. Although productivity is much higher on the West Coast, species diversity is much lower than on the East Coast. The West Coast, including the waters around Dassen Island, is characterised by prolific kelp forests and the associated abundance of West Coast rock lobster, Jasus lalandi. The large plankton populations feed large offshore stocks of pelagic fish such as pilchard Sardinops sagax and Cape anchovy Engraulis japonicus, which are in turn preyed upon by marine predators, including African penguins, Spheniscus demersus, and numerous other seabirds, South African fur seals, Arctocephalus pusillus pusillus, and other fish such as snoek, Thyrsites atun, and giant yellowtail, Seriola lalandi.

4.2 - What wetland type(s) are in the site?

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
A: Permanent shallow marine waters		2	73.4478	Representative
B: Marine subtidal aquatic beds (Underwater vegetation)		1	442.3539	Representative
D: Rocky marine shores		3	7.6785	Representative
E: Sand, shingle or pebble shores		4	3.2565	Representative

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Saline, brackish or alkaline water > Marshes & pools >> Ss: Seasonal/ intermittent saline/ brackish/ alkaline marshes/ pools	Temporary Pan	1	0.201	Representative

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Terrestrial component of the island consisting of Cape Seashore Vegetation, rocky shores and sandy, boulder and shell be	210.628

(ECD) Habitat connectivity: Dassen Island is situated within the Benguela Upwelling Ecosystem.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
Albuca flaccida	Slymstok	
Cotula coronopifolia	Water buttons	
Crassula natans	Watergras	
Cysticapnos vesicaria vesicaria	Klappertjies	
Didymodoxa capensis		
Ferraria crispa	Spinnekopblom	
Gethyllis afra	Kukumakranka	
Oxalis pes-caprae	Yellow oxalis	
Senecio elegans	Cineraria	
Senecio glutinarius	Groundsel	
Tetragonia decumbens	Slaaibos	
Tetragonia fruticosa	Slaaibos	
Trachyandra divaricata	Tumbleweed	
Trachyandra falcata		
Zantedeschia aethiopica	Arum Lily	

Invasive alien plant species

Scientific name	Common name	Impacts	
Agave sisalana	Sisal	No impacts	No change
Amsinckia menziesii		No impacts	No change
Cirsium vulgare	Spear thistle	No impacts	No change
Cucumis myriocarpus	Bitter appel	No impacts	No change
Erodium moschatum		No impacts	No change
Exomis microphylla	Brakbossie	No impacts	No change
Fumaria muralis	Fumitory	No impacts	No change
Hordeum murinum	Wild barley	No impacts	No change
Malva parviflora	Small mallow	No impacts	No change
Myoporum insulare	Manitoka tree	No impacts	No change
Nicotiana glauca	Tobacco Tree	No impacts	No change
Phalaris minor	Canary grass	No impacts	No change
Poa annua	Blue grass	No impacts	No change
Polypogon monspeliensis	Brakgras	No impacts	No change
Sonchus oleraceus	Sow thistle	No impacts	No change
Stellaria media	Chickweed	No impacts	No change
Tagetes minuta	Khaki Bos	No impacts	No change
Urtica urens	Stinging nettle	No impacts	No change

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	*Alopochen aegyptiaca*	Egyptian Goose	1063	2013-2017		Breeding/moutling
CHORDATA/AVES	*Arenaria interpres*	Ruddy Turnstone	280	2013/2017		Summer visitor, non-breeding
CHORDATA/MAMMALIA	*Cephalorhynchus heavisidii*	Heaviside's Dolphin;Haviside's Dolphin				Endemic to the west coast of South Africa
CHORDATA/REPTILIA	*Chersina angulata*	Angulate Tortoise				
CHORDATA/AVES	*Chroicocephalus hartlaubii*	Hartlaub's Gull	450	1991-2017		Breeding
CHORDATA/MAMMALIA	*Eubalaena australis*	Southern Right Whale				Least Concern
CHORDATA/AVES	*Larus dominicanus*	Kelp Gull	3750	1992-2017		Breeding
CHORDATA/MAMMALIA	*Megaptera novaeangliae*	Humpback Whale				Least Concern
CHORDATA/REPTILIA	*Scelotes gronovii*	Gronovi's Dwarf Burrowing Skink				Red Data Book species because of restricted distribution
CHORDATA/AVES	*Sterna hirundo*	Common Tern	1250	2013-2017		Summer visitor , non-breeding
CHORDATA/AVES	*Thalasseus sandvicensis*	Sandwich Tern	116	1991-2017		Non-breeding, summer visitor

Invasive alien animal species

Phylum	Scientific name	Common name	Impacts	
CHORDATA/MAMMALIA	*Mus musculus*	House Mouse	Potentially	No change
CHORDATA/MAMMALIA	*Oryctolagus cuniculus*	European Rabbit	Actually (minor impacts)	No change

Optional text box to provide further information

.

.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Csa: Mediterranean (Mild with dry, hot summer)

Predicted sea rise due to climate change could substantially reduce the size of the island.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): 0

a) Maximum elevation above sea level (in metres): 16

- Entire river basin ☐
- Upper part of river basin ☐
- Middle part of river basin ☐
- Lower part of river basin ☐
- More than one river basin ☐
- Not in river basin ☐
- Coastal ☑

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Atlantic Ocean

4.4.3 - Soil

- Mineral ☑
- Organic ☑
- No available information ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ○ No ◉

Please provide further information on the soil (optional)

The soil is a mix of sand, shell and organic matter (Guano and nesting material)

4.4.4 - Water regime

Water permanence

Presence?	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Marine water	☐	No change
Water inputs from rainfall	☐	No change

Water destination

Presence?	
Marine	No change

Stability of water regime

Presence?	
Water levels fluctuating (including tidal)	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology:

Rain water leaches sediment and guano from island into surrounding ocean. This provides nutrients to the surrounding marine ecosystem thus sustaining large and healthy populations of marine organisms.
Due to the shallow soil layer and granitic nature of the island, rainfall seasonally collects in pools and hollows throughout the island, causing small to large temporary pans and causing extensive Arum Lilly Zantedeschia aethiopica, blooms.

(ECD) Connectivity of surface waters and of groundwater	Unsure
(ECD) Stratification and mixing regime	Prevailing ocean currents linked to the influence of tides and the prevailing winds and swell ensure upwelling and good mixing

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site ☐
Significant accretion or deposition of sediments occurs on the site ☐
Significant transportation of sediments occurs on or through the site ☐
Sediment regime is highly variable, either seasonally or inter-annually ☐
Sediment regime unknown ☑

(ECD) Water turbidity and colour	Water turbidity depends on conditions at sea, with turbidity increasing during storm surges.
(ECD) Light - reaching wetland	Light penetration depends of turbidity of ocean water.
(ECD) Water temperature	Water temperature varies between 11ºC in winter to 19ºC in summer with exceptional temperatures of 8 and 21ºC.

4.4.6 - Water pH

Acid (pH<5.5) ☐
Circumneutral (pH: 5.5-7.4) ☑
Alkaline (pH>7.4) ☐
Unknown ☐

Please provide further information on pH (optional):

N/A

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☐
Mixohaline (brackish)/Mixosaline (0.5-30 g/l) ☐
Euhaline/Eusaline (30-40 g/l) ☐
Hyperhaline/Hypersaline (>40 g/l) ☑
Unknown ☐

Please provide further information on salinity (optional):

The marine component of the reserve can be classified as Eusaline with salinities in the order of 35g/l. Pools are, however, formed on the island due to sea water washing over at extreme high tides or storms. Due to evaporation water in these pools reach hypersaline concentrations. In terms of area these pools form an insignificant portion of the site, but they can have an impact on organisms and are therefore mentioned

(ECD) Dissolved gases in water

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic ☐

Mesotrophic ☐

Oligotrophic ☐

Dystrophic ☐

Unknown ☑

Please provide further information on dissolved or suspended nutrients (optional):

Oceanic upwelling creates nutrient rich waters surrounding the Island

(ECD) Dissolved organic carbon	Unknown
(ECD) Redox potential of water and sediments	Unknown
(ECD) Water conductivity	Sea water (5 S/m)

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ◉ ii) significantly different ○

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Low
Recreation and tourism	Nature observation and nature-based tourism	High
Spiritual and inspirational	Aesthetic and sense of place values	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Long-term monitoring site	High
Scientific and educational	Major scientific study site	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High

Other ecosystem service(s) not included above:

None

Within the site:	100s
Outside the site:	10 000s

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ○ No ◉ Unknown ○

4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland ☐

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☑

Description if applicable

Dassen Island has a long and fascinating history of human involvement, dating back to the early 1600's, which include guano harvesting and African penguin egg collecting. This history has left behind numerous structures and artefacts, including several shipwrecks, a lighthouse, one of oldest Lime Kilns in the Cape, a penguin exclusion wall, at least two graves and the guano-scraper's quarters.

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☐

4.6 - Ecological processes

(ECD) Primary production	Oceanic nutrients and guano linked to upwelling
(ECD) Nutrient cycling	Oceanic nutrients and guano linked to upwelling
(ECD) Carbon cycling	N/A
(ECD) Animal reproductive productivity	Highly productive area with regards to oceanic species, e.g. WCRL, Small Pelagic Fish species, etc.
(ECD) Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.	Highly productive Kelp Forests
(ECD) Notable species interactions, including grazing, predation, competition, diseases and pathogens	Nutrient cycle and upwelling provides nutrient rick waters to support high production of crustaceans, molluscs and small pelagic species which in turn provide a link to the large pelagic species, marine birds and mammals
(ECD) Notable aspects concerning animal and plant dispersal	Highly productive area the exports a range of species via ocean currents
(ECD) Notable aspects concerning migration	Global migration routes of whale species
(ECD) Pressures and trends concerning any of the above, and/or concerning ecosystem integrity	Changing climate and ocean currents as well as over fishing will change

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Provincial/region/state government	☑	☐
National/Federal government	☐	☑

Provide further information on the land tenure / ownership regime (optional):

Dassen Island Provincial Nature Reserve was established as a Provincial Nature Reserve in terms of the Nature Conservation Ordinance, 1974, on 9 March 1998 and proclaimed in the Provincial Gazette of 18 March 1988 by Proclamation No. 23/1988;
The area of jurisdiction was extended in terms of the Nature Conservation Ordinance, 1974, on 14 November 1997 and proclaimed in the Provincial Gazette of 15 May 1998 by Proclamation No. 15/1998 (the amendment extended the Nature Reserve's restricted area and took effect on 1 June 1998).
The area around Dassen Island bounded by the latitudes 33º24.420'S and 33º26.289'S and longitudes 18º 04.161'E and 18º 06.317'E are subject to closure in terms of Section 20 of the Marine Living Resources Act, (Act No. 18 of 1998). Regulation 20(4) added by GNR375 of 4 May 2001 states that no person shall use any drift, set or staked-net for fishing within the closed area
The island is presently managed by CapeNature. Transnet manages the lighthouse.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site: Western Cape Nature Conservation Board, trading as CapeNature. Managed from local site at Mamre

Provide the name and title of the person or people with responsibility for the wetland: Johan Visagie, Conservation Manager

Postal address:
PO Box 26
Porterville
6810

E-mail address: jvisagie@capenature.co.za

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Renewable energy	Medium impact	Medium impact	☐	☑

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Aircraft flight paths	Medium impact	High impact	☑	☑
Shipping lanes	Medium impact	High impact	☑	☑

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fishing and harvesting aquatic resources	High impact	High impact	☑	☑

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Low impact	Low impact	☑	☑

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Invasive non-native/ alien species	Medium impact	Medium impact	☑	☐
Problematic native species	Medium impact	Medium impact	☑	☐

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Garbage and solid waste	Medium impact	High impact	☑	☐
Industrial and military effluents	High impact	High impact	☑	☑

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Temperature extremes	Low impact	High impact	☑	☑
Storms and flooding	Low impact	High impact	☑	☐
Habitat shifting and alteration	Low impact	High impact	☑	☑

Please describe any other threats (optional):

Disease outbreaks, such as Avian cholera, have taken place on the island in the past. Avian influenza is an emerging threat to some of the seabirds (CapeNature unpublished data). Oil spill at sea is a risk.

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Provincial Nature Reserve	Dasen Island Nature Reserve		whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Dassen Island	http://www.birdlife.org.za/conservation/important-bird-areas/iba-directory/item/251-sa109-dassen-island	whole

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve ☐

Ib Wilderness Area: protected area managed mainly for wilderness protection ☐

II National Park: protected area managed mainly for ecosystem protection and recreation ☐

III Natural Monument: protected area managed mainly for conservation of specific natural features ☐

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☐

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

<no data available>

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Habitat manipulation/enhancement	Partially implemented
Faunal corridors/passage	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented

Human Activities

Measures	Status
Harvest controls/poaching enforcement	Implemented
Regulation/management of recreational activities	Partially implemented
Communication, education, and participation and awareness activities	Implemented
Research	Implemented

Other:

Commercial line fishing, Small Pelagic net fishing and West Coast rock lobster fisheries. These activities are managed and enforcement conducted by the National Department of Agriculture Forestry and Fisheries (DAFF).

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes ◉ No ○

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ○ No ◉

URL of site-related webpage (if relevant): https://www.birdlife.org.za/get-involved/join-birdlife-south-africa/item/251-sa109-dassen-island

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, but restoration is needed

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Birds	Implemented
Animal species (please specify)	Implemented
Plant community	Proposed
Animal community	Proposed

The reserve has an ecological programme of work outlining monitoring projects implemented annually. The primary focus of monitoring is on threatened seabird species. This entails species breeding success and re-sightings of marked birds (rings and Passive Integrated Transponders) predominantly for African penguins; chick condition and growth of African penguins. Oiled, injured and diseased birds are recorded. GPS tracking is conducted to monitor foraging behaviour of African penguins and is proposed for bank cormorants. Predation by Cape fur seals and pelicans on seabirds is also monitored. In terms of plant and animal community monitoring of the rocky shores and associated kelp forests is proposed. The presence of poachers and other illegal activities is also monitored and recorded on a daily basis. Invasive plant species are monitored as part of plant community monitoring.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Best PB. 2017. Whales and dolphins of the southern African subregion. Cambridge University Press.
BirdLife International. 2018. Species factsheet: Phalacrocorax capensis, Phalacrocorax neglectus, Spheniscus demersus
Birss C, Geldenhuys D, Waller LJ and Cleaver-Christie, G. (eds). 2012. Dyer Island Nature Reserve Complex Management Plan 2013-2018
Branch, M., Branch, G. 1981. The Living Shores of Southern Africa. Cape Town: Struik Publishers
Bosman A. L., Hockey P. A. R. 1986. Seabird guano as a determinant of rocky intertidal community structure. Mar Ecol Prog Ser 32:
Bowker MB. 2015. Great White Pelican Pelecanus onocrotalus. In: The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Taylor MR, Peacock F, Wanless RW (eds). BirdLife South Africa, Johannesburg South Africa.
Branch GM et al. 2007. Two Oceans: A guide to marine life of southern Africa. Cape Town: Struik Publishers
Cook TR. 2015. Crowned Cormorant Phalacrocorax coronatus. In: The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Taylor MR, Peacock F, Wanless RW (eds). BirdLife South Africa, Johannesburg South Africa.
Crawford RJM et al. 2011. Collapse of South Africa's penguins in the early 21st century: a consideration of the possible influence of food and fishing. African Journal of Marine Science. 33: 139-156.
Crawford RJM et al.. (eds) 2011. Status of seabirds breeding in South Africa in 2011. Branch Oceans & Coasts, Department of Environmental Affairs, South Africa, Cape Town, 2012.
Crawford RJ et al. 2016. Cape Cormorants decrease, move east and adapt foraging strategies following eastward displacement of their main prey. African J. Mar. Sci. doi:10.2989/1814232X.2016.120286
Driver, A et al. 2012. National Biodiversity Assessment 2011: An assessment of South Africa's biodiversity and ecosystems. Synthesis Report. South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria
Hill AE, et al. 1998. Eastern ocean boundaries: coastal segment (E). In: Robinson AR, Brink KH (eds), The Sea II. John Wiley and Sons
Hurford, J. 1996. Vegetation survey of Dassen Island. Unpublished report to Cape Nature Conservation, March 1996
IUCN. 2014. The IUCN Red List of Threatened Species. Version 2018-1. www.iucnredlist.org
Kirkman SP et al. 2007. Making sense of censuses and dealing with missing data: trends in pup counts of Cape fur seal Arctocephalus pusillus pusillus for the period 1927-2004. Afr Jour Mar Sci 29: 161-176
Majiedt P et al. 2013. Systematic Marine Biodiversity Plan for the West Coast of South Africa. South Africa
Mucina L & Rutherford M.C. 2015. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria
SANBI. 2018. Beta version of integrated marine, estuarine and coastal ecosystem map. SANBI Marine Unit
Schwartzlose RA et al. 1999. Worldwide large-scale fluctuations of sardine and anchovy populations. African J. Mar. Sci. 21: 289–347

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>

iii. a description of the site in a national or regional wetland inventory
<no file available>

iv. relevant Article 3.2 reports
<no file available>

v. site management plan
<no file available>

vi. other published literature
<no file available>

<no data available>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:


Temporary Pan (*Marlene van Onselen, 2018*)


Pelicans with White breasted cormorants (*Johan Visagie, 2018*)


Yellow oxalis with Lighthouse (*Leshia Visagie, 2018*)


African Penguins with Shipwreck (*Johan Visagie, 2002*)


Arum Lilies (*Johan Visagie, 2008*)


House Bay with jetty (*Leshia Visagie, 2018*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation: 2019-03-29