

CAPE TOWN'S UNIQUE BIODIVERSITY ENDEMIC ECOSYSTEMS

5. Cape Flats Dune Strandveld

General: Cape Flats Dune Strandveld (CFDS) differs from both Fynbos and Renosterveld in that it does not normally burn as frequently; the fire cycle is typically 20-100 years. It is far more prone to browsing, and many species have thorny defences. It occurs on the more recent dunes, which still have an alkaline pH, and usually have shell fragments visible in the sands. It is therefore confined mainly to the coastal margins, only extending inland on dune fields. Historically, this was a series of dunes and dune slack wetlands, inhabited by hippopotami and rhinoceroses.

Distribution: CFDS is endemic to Cape Town and occurs in two major blocks: on the western shoreline from Cape Town to Bokbaai (including the Atlantis dune field), and on the False Bay shoreline from Muizenberg to Gordons Bay, being most extensive in the Philippi to Kuils River area. A very narrow fringe occurs on the Cape Peninsula itself, mainly on the western side. For conservation purposes, this veld type is considered as two separate units. North of the city bowl, one finds the West Coast form, and south and east of the city bowl, the False Bay form. The altitude at which CFDS occurs is 0-80 m above sea level.

Landscape features: A flat, slightly undulating landscape, either as steep, vegetated dune fields from a drier, windier recent past, or as a more subdued landscape further inland. The dunes tend to run northwest to southeast in False Bay Dune Strandveld and southwest to northeast in West Coast Dune Strandveld. The slacks are usually winter wetlands or vleis, but are often dry in summer.



False Bay Dune Strandveld

Geology and soils: Tertiary or Recent calcareous sands of marine origin, mainly blown in as sand dunes. These cover various rock types, but mainly the Tygerberg Formation of the Malmesbury Group. Outcrops of limestone from the Sandveld Group occur at Silwerstroomstrand, on the Peninsula, and in the Macassar-Wolfgat area. Soils may be deep, but can be very thin on the limestones.

Climate: Winter-rainfall regime, with rainfall peaking from May to August, and varying from 350 mm per annum at Atlantis to 560 mm at Gordons Bay. The mean daily maximum temperature is 26.7°C in February, and the mean daily minimum is 7.5°C in July. Frost is not very common. Mists occur frequently in winter, especially on the West Coast.

Vegetation: A short to tall, evergreen, hard-leaved and succulent shrubland, with abundant annual herbs and grasses in the gaps and understorey. After fire, it may have a 'Fynbos' phase dominated by Fynbos elements, but most thicket species regenerate from underground stems. The West Coast form tends to have more succulent elements. The False Bay form occasionally has dense Milkwood Forests, such as those that historically occurred at Noordhoek, Olifantsbos, Macassar and Gordons Bay.



Hippopotami have been reintroduced to Rondevlei

What is left? This is a relatively intact ecosystem, with 48% still remaining. As the national target is 24%, it is still possible to conserve this veld type adequately. However, the False Bay form is rapidly approaching Critically Endangered status. Only 30% remains, with only 19% in a good condition. Of the West Coast form, 83% remains.

Threats: Urban sprawl poses the biggest threat to CFDS. Dunes are flattened to fill in wetlands, and the False Bay form is situated on the southeast growth axis of Cape Town. Sand mining is the second biggest threat. The invasive alien Rooikrans is a serious threat and



Candelabra in the back dunes

occurs over large areas, with Port Jackson wattle being more of a problem inland. Molerats can become a major problem in disturbed areas where overstorey plants are removed, converting the area to grasslands. The vegetation is often used as illegal dumps for builder's rubble, and animal hunting is also a problem. Too frequent fires and year-round grazing of livestock degrade the vegetation, and cause invasion by alien grasses.

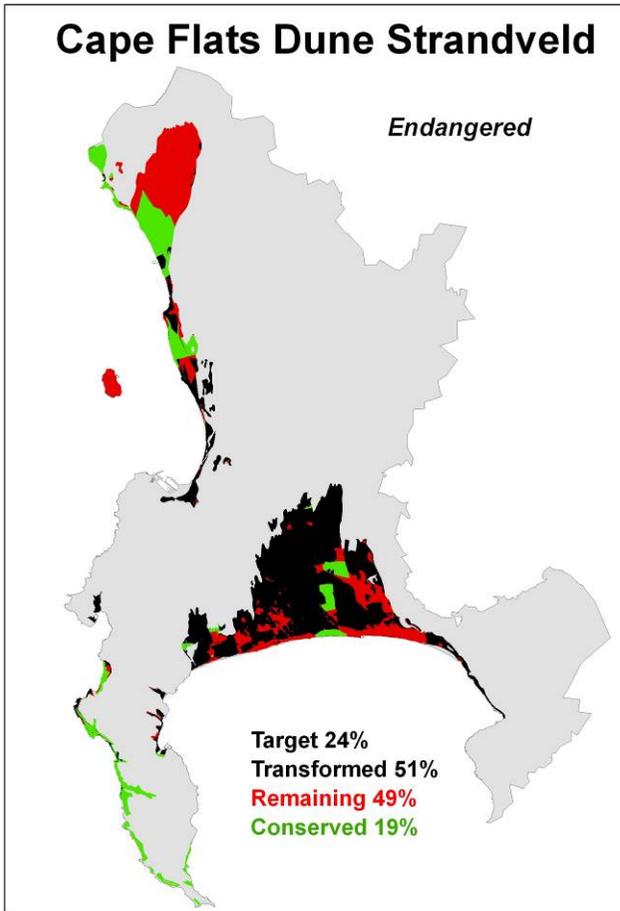
Conservation status: CFDS is Endangered. It is poorly conserved, with 7% left in proclaimed reserves. Some 7% of the False Bay and 7% of the West Coast form are in proclaimed reserves, the latter also having 16% in the private Koeberg Nature Reserve, although without secure conservation status. This veld type contains 26 threatened Red List plant species.

Where conserved? The West Coast form of CFDS is conserved in Blaauwberg Conservation Area. A large area also occurs in Koeberg Private Nature Reserve. The False Bay form is conserved in Table Mountain National Park and Driftsands, Wolfgat, Zandvlei and Rondevlei nature reserves (as well as the Macassar and Swartklip Denel Private Nature Reserve, although with no formal conservation status).

Endemic taxa: Only one species is endemic to CFDS: the Narrow-leaf Brightfig (*Lampranthus tenuifolius*).

What can be done to prevent CFDS from becoming more threatened? As the biggest threat is urban sprawl, it is up to urban spatial planners to strike a balance between the conservation of this veld type and urban development. Remnants are being lost through

Cape Flats Dune Strandveld



Strandveld in spring after a fire

poor reserve management. A large portion of Driftsands Nature Reserve has, for example, been illegally settled on, and the vegetation is now degraded. Dumping and other illegal activities have to be controlled. CFDS is highly threatened by peoples' desire to live close to the beach and sea; in fact, a buffer of up to 2 km between the sea and any development is needed to mitigate the effects of potential sea-level rise and storm surge. However, this is often waived for short-term financial gains associated with beachfront developments.

Benefits: CFDS is the barrier between the sea and inland communities, and, as such, provides protection against storm surge inundations and sea-level rise. Aesthetically and spiritually, it creates a natural ambience between the sea and the city, forming natural and remote beaches that are sought-after for recreation. Popular scenic drives and tourist routes, such as Baden Powell and Otto du Plessis Drive, traverse CFDS. This veld type contains many important species in terms of horticulture and medicinal value, but these are easily harvested at levels that are not naturally sustainable. The vegetation also protects properties and people from sandblasting when the summer southeaster blows. Of the Cape Flats veld types, this is the most productive in terms of animals. It was presumably heavily utilised during spring by large herbivores and grazers, and at other times by smaller animals, including the still present Steenbok, Grysbok and Porcupine. Wolfgat is an important Kelp Gull breeding site. Being close to the sea and many townships, the educational potential of these reserves is paramount, both for introducing young children to nature, and for teaching about sustainable development. One of the most important ecological corridors identified within the city is in False Bay Dune Strandveld along the coast from Muizenberg to the Lourens River mouth.



Narrow-leaf Brightfig (Vygie Family)

Other, similar veld types in Cape Town: None. There are no other Dune Strandveld types in the city. The nearest equivalents are north of Yzerfontein, where Langebaan Dune Strandveld occurs, and east of Rooi Els, where Overberg Dune Strandveld occurs.



Wolfgat Nature Reserve: the only natural link remaining between the Cape Peninsula and the Hottentots Holland mountains

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