



Assemblages of Bunda Bunda organic mound springs

TEC Description

The community comprises a complex system of organic mound springs on tidal mudflats in Carnot Bay on the Dampier Peninsula north of Broome. Peaty mounds rise 2 to 3 m above the surrounding tidal flats and are composed of accumulated leaf litter and living vegetation, supporting a dense closed rainforest and tall shrubland, with mangroves forming a concentric form on the surrounding mudflats. The smaller mound is dry in the centre but encircled by a moat, fed by permanent freshwater seepage. The larger mound is wet and incompletely enclosed by a very fine scale channel or moat of variable depth, which broadens to a microscale saline lake on the north side. The moats and pools are saline and occasionally inundated during large tides. The western end of the large mound is covered by a very dense closed forest dominated by evergreen *Carallia brachiata* trees and a bracken-like layer of the fern *Cyclosorus interruptus* (swamp shield-fern). *Timonius timon* and *Sesbania formosa* (dragon tree) also occur. The eastern portion of the mound is covered by tall closed forest of *Melaleuca cajuputi*, *Timonius timon*, *Sesbania formosa* with fewer *Carallia brachiata* with an understorey of *Cyclosorus interruptus*. Climbers including *Cassytha filiformis* (love vine) and *Secamone elliptica*, drape from trees with ferns *Lygodium microphyllum* (climbing maidenhair) forming a curtain filtering the light. A moat-like channel surrounding the large mound contains mangroves, predominantly *Rhizophora stylosa* (spotted-leaved red mangrove) and *Avicennia marina* (white mangrove) with *Acrostichum speciosum* (mangrove fern).



Distribution

Department of Biodiversity, Conservation and Attractions (DBCA) Region: Kimberley
DBCA District: West Kimberley
Local Government Authority: Shire of Broome

Habitat Requirements

The mound springs lie on a shallow aquifer of surficial sediments, over a major unconfined freshwater aquifer in the Broome Sandstone which meets a saltwater wedge along the coast. The community is dependent on maintenance of hydrological processes including continuous flow of freshwater seepages to support the peaty springs.

Indigenous Interests

An Aboriginal Sites Register is kept by the Department of Indigenous Affairs. Traditional owner group: Djaberadjabera.

Conservation Status

Listed as vulnerable under WA Minister Environmentally Sensitive Areas list in policy.

Threatening Processes

The major threats to the community are hydrological change, destruction by cattle including trampling of vegetation and damage to soil structure, too frequent fire and weed invasion particularly *Passiflora foetida* (passion vine) and fruit trees.

Recovery Plan

A recovery plan is recommended for this community. Priority recovery actions include mapping and control of high priority weeds, erection of fencing to restrict cattle access, designing and implementing a project to determine the hydrological drivers of the mound spring ecosystem, and regular monitoring.

Citation

Department of Biodiversity, Conservation and Attractions. (2020). Recovery plans and interim recovery plans <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities>

Key References

Department of Water (2017) Groundwater dependent ecosystems of the Dampier Peninsula. Royalties for Regions groundwater investigation. Environmental Water Report series No. 29.

Department of Environment, Water, Heritage and the Arts (2008). A report on the application of draft criteria for identification of High Conservation Value Aquatic Ecosystem (HCVAE) on mound springs in Western Australia. A. Shanahan and M. Coote, Department of Environment and Conservation, Western Australia.

Environment Australia (2001). A Directory of Important Wetlands in Australia, Third Edition. Environment Australia, Canberra.

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