



Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain

TEC Description

The community occurs in caves at sites that include Yanchep National Park and surrounds. It comprises root mats of *Eucalyptus gomphocephala* (tuart) supported by groundwater fed streams and pools that occur in the caves. The root mats support a highly diverse and distinctive assemblage of cave fauna including the critically endangered Crystal Cave Crangonyctoid *Hurleya* sp. (cave shrimp).



Distribution

Seven caves are documented and distributed over a range of ~4km, the majority located within Yanchep National Park, north of Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) Region: Swan

DBCA District: Swan Coastal

Local Government Authority: City of Wanneroo

Habitat Requirements

Caves that contain the community occur at Yanchep occur where sandy soils underlie superficial limestone and where the waters of the Gnangara Mound seep through the sand to form a system of subterranean pools and streams. The persistence of the root mat communities depends on the presence of permanent water in caves and the persistence of tuart. The streams or pools need to be sufficiently warm, and not too far below the ground-surface, for tree roots to reach and grow in the water (Jasinska 1995).

Indigenous Interests

An Aboriginal Sites Register is kept by the Department of Indigenous Affairs and lists the caves as significant sites. Two registered sites also occur within the vicinity of the occurrences. The South West Aboriginal Land and Sea Council (SWALSC), an umbrella group, covers the areas in which the community occurs. Traditional owner group: Whadjuk.

Conservation Status

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

Aquatic Root Mat Community in Caves of the Swan Coastal Plain is listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community is listed as critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Crystal Cave Crangonyctoid (*Hurleya* sp. (WAM 642-97) cave shrimp is listed as threatened under the *Biodiversity and Conservation Act 2016*.

Threatening Processes

The most major threat to the community is decline of the groundwater levels, driven primarily by regional ground water abstraction, declining rainfall, and water use by nearby pine plantations. Other threats include vegetation clearing in the immediate vicinity of the caves; pollution and nutrient enrichment; and high intensity fires that kill tuart trees and result in loss of rootlets in the cave systems.

Recovery Plan

An interim recovery plan has been produced for the Aquatic root mat community of caves of the Swan Coastal Plain and the Crystal Cave Crangonyctoid and outlines the recovery actions required to reduce the threats and seek to ensure the community's long-term survival. Recommended actions include monitoring and managing water levels and quality in cave streams that contain the community, managing fire regimes, and protecting trees with roots in caves by maintaining suitable buffer zones between caves and infrastructure, tracks and trails.

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>.

For more information see the department's website www.dbca.wa.gov.au



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Key References

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- English, V. Jasinska, E., and Blyth, J. (2003). Interim Recovery Plan No. 117 Aquatic root mat community of caves of the Swan Coastal Plain, and the Crystal Cave Crangonyctoid 2003-2008. Department of Conservation and Land Management. Wanneroo.
- Jasinska, E.J. (1995). Water Requirements of Cave Dwelling Fauna in the Yanchep Area. In: Review of proposed changes to environmental conditions. Gnangara Mound Groundwater Resources. Section 46. Appendix 3. pp 113-119. Water Authority of Western Australia.
- Kretschmer, P. and Kelsey P. (2012). Review of the hydrology and groundwater abstraction surrounding Loch McNess, Yanchep. Hydrological record series, HG 60 Department of Water, Western Australia.

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