



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

Summary 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 cave shrimp *Hurleya* sp. (WAM 23193; Crystal Cave crangonyctoid).



Distribution

Seven caves are documented and distributed over a range of approximately 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 where sandy soils underlie superficial limestone and where the waters of the Gngangara 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

Traditional Owner group: Whadjuk Noongar

A register of Aboriginal cultural heritage sites kept by the Department of Planning, Lands and Heritage lists several sites of Aboriginal significance within or nearby this community's occurrences, including Yonderup Cave.

The area is covered by the Whadjuk People Indigenous Land Use Agreement as part of the South West Native Title Settlement, which recognises Noongar people as the Traditional Owners of the south-west region. The Whadjuk region is supported by the Whadjuk Aboriginal Corporation and umbrella group, the South West Aboriginal Land and Sea Council.

Conservation status

State: The community is listed as a critically endangered ecological community under the *Biodiversity Conservation Act 2016*. Threatened ecological communities are declared environmentally sensitive areas under the *Environmental Protection Act 1986*. The Crystal Cave crangonyctoid (*Hurleya* sp. (WAM 23193) cave shrimp is listed as threatened under the *Biodiversity and Conservation Act 2016*.

National: '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*.

Threatening processes

The main threat to the community is decline of the groundwater levels, driven primarily by regional groundwater 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, introduction of exotic fauna, vandalism, cave collapse, and the destruction of tree roots by clearing, frequent or very hot fires, or pathogens.

Recovery plan

An interim recovery plan has been produced for this community, outlining the recovery actions that are required to reduce threats and maintain or improve its overall condition. Priority 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.

Key references

English, V., Jasinska, E., & Blyth, J. (2003). *Aquatic root mat community of caves of the Swan Coastal Plain, and the Crystal Cave Crangonyctoid Interim Recovery Plan 2003–2008* (Interim Recovery Plan No. 117). Department of Conservation and Land Management.

Environmental Protection Authority. (1987). *Gnangara Mound groundwater resources: Report and recommendations of the Environmental Protection Authority* (Bulletin 295, August 1987). Environmental Protection Authority.

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. & Kelsey, P. (2016). *Loch McNess hydrogeology and causes of water-level decline (1975–2011)* (Hydrogeological record series, HG60). Department of Water.

Disclaimer: The information contained in this document is current as at September 2023. The State of Western Australia and its employees do not guarantee that this publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence that may arise from you relying on any information in this publication.

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



Department of Biodiversity,
Conservation and Attractions