

Threatened Ecological Communities in WA

Zerianna Edwards—Environmental Scientist (Graduate)

An ecological community is a group of distinct species living in the same habitat, which interact with each other (Cornell, 2013). These interactions are unique to the specific community, such that no two communities are entirely the same. However, when they are at risk (Newton, 2021) or are geographically restricted, they may be classified as a Threatened Ecological Community (TEC) (DBCA, 2023a).

TECs within Western Australia are protected under the *Biodiversity Conservation Act 2016* (BC Act) according to their conservation status, vulnerable, endangered or critically endangered (Figure 1).

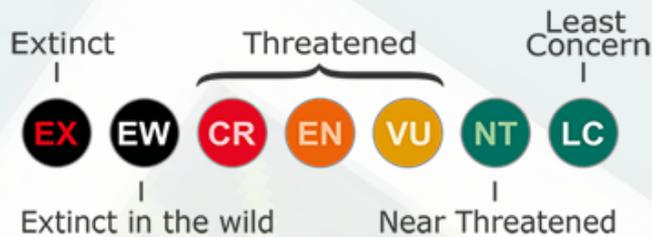


Figure 1—IUCN Conservation Status Classifications

Source: (George, 2016)

The BC Act defines the conservation status of a TEC using the International Union for Conservation of Nature's (IUCN's) Red List of Ecosystems criteria (DBCA, 2023b). The criteria evaluate the level of risk for the community to collapse by compiling and validating available data with further fieldwork, if required (IUCN, 2023). Under this system, the Camerons Cave Troglotic Community, located near Exmouth (Figure 2), is considered critically endangered (Government of WA, 2023). This was due to the community containing eight species only found within the cave, including *Stygiochiropus peculiaris* (Camerons cave millipede) and vulnerable species, *Milyeringa veritas* (Blind gudgeon; Figure 3) (Government of WA, 2023).

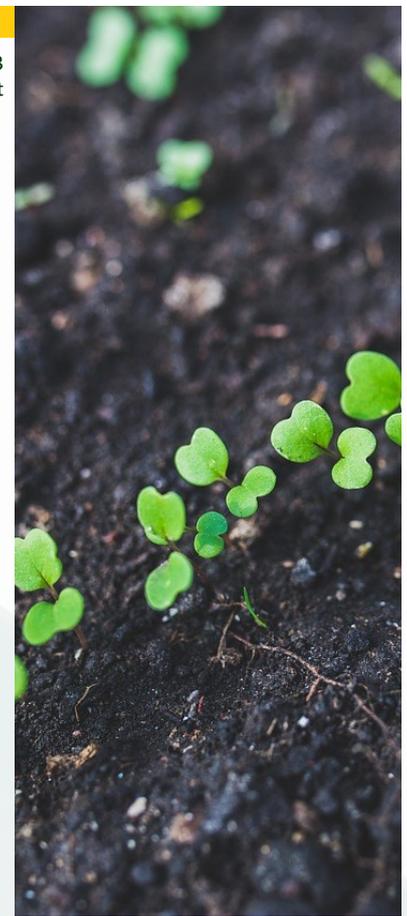


Figure 2 - Camerons Cave's location in relation to Exmouth.



Figure 3 - Blind gudgeon, vulnerable species found in Camerons Cave, a critically endangered TEC

Source: (Fishes of Australia, 2023)



Source: Pixabay.com

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This Insight is the discussion of how ecological communities in WA are classified as Threatened Ecological Communities (TECs) and what makes them important when it comes to land use and development approvals. We also provide an InSight into how they are protected.



Some TEC in Western Australia can be protected under both the BC Act and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This is the case for *Corymbia calophylla* – *Kingia australis* woodlands (Figure 4) on heavy soils of the southern Swan Coastal Plain TEC (DCCEEW, 2023a). Under the BC Act, it is considered critically endangered due to containing six priority species and the critically endangered *Caladenia heugelii* (Grand Spider orchid) (DCCEEW, 2023b). While under the EPBC Act, it is an endangered TEC with the endangered Grand Spider orchid. Regardless of the difference in conservation status for the TEC, recovery plans have been developed to improve the TEC's health (DCLM, 2000) (DEC, 2011).



Figure 4 - Marri-Kingia woodland. It is a critically endangered threatened ecological community

Source: (Urban Bushland Council WA, 2023)



Figure 5- Leafy Sundew found in the Priority 1 ecological community Central Whicher Scarp Jarrah woodland

Source: (Fierce Flora, 2020)

Are there other Ecological Communities of note in WA?

Some ecological communities while not currently at risk of collapse may be poorly known. These communities may be classified as a Priority Ecological Community (PEC) (DBCA, 2023a). Similar to TECs, PECs are also categorised, but it is based on their conservation priority for research from P1 to P5 (DBCA, 2023c). The lowest priority is for P4 and P5 PECs as they are regularly monitored and part of a specific conservation program, respectively, but will become threatened if these efforts stopped (DBCA, 2023c). For P3 PECs, some information has been gathered, such as existing threats however, they are still considered inadequately defined. While P1 and P2 PECs have the highest priority due to the limited number of occurrences and range of occurrences sighted (DBCA, 2023c).

Communities considered P1 PECs are those with roughly five known occurrences or the sighted range is within 100ha (DBCA, 2023c). The occurrences are also under threat due to their size or their location to cleared areas for agriculture, urban development or mine sites. P1 PECs include the Central Whicher Scarp Jarrah woodland and the stygofaunal community of the Bungaroo aquifer (DBCA, 2023d). The Jarrah woodland contains a large abundance of rare southern flora including *Drosera stolonifera* (Leafy Sundew) (Figure 5). Similarly, the Bungaroo aquifer has a unique group of aquatic subterranean fauna such as eels, snails and other stygofauna (DBCA, 2023d).

How to List TECs

Under the BC Act, the public is able to make a nomination for the inclusion, amendment or removal of a TEC to the Minister. This is done through nominees providing information on the biology, ecology, threats and necessary management systems for the TEC's conservation status to be assessed (DBCA, 2018).

If the Minister finds that a nomination was made for a joke or senselessly, it can be rejected without notification to the nominee (BC Act). When, a reasonable nomination is made then the Minister passes it to the Threatened Ecological Communities Scientific Committee for scientific advice (DBCA, 2018). This advice is primarily focused on determining whether the nominee provided enough information for the community to be listed or if it should be deferred until more is gathered. The nominee is then given notice about the Minister's decision, those rejected are accompanied by reasons for the rejection (BC Act).

How Does Listing Protect TECs?

For proposed activities within a TEC area, extra consideration is provided to ensure it is not impacted (DBCA, 2023a). For instance, clearing of native vegetation should not occur if part of a TEC will be affected (*Environment Protection Act 1986*) unless approved under the BC Act. This provides greater protection as it ensures smaller species such as non-flowering plants, invertebrates and micro-organisms, and their interactions are protected (DBCA, 2023a). The process is then more cost effective and efficient at protecting non-threatened species so they don't become threatened in the future.



Determination of TECs also leads to information from surveys and environmental reports being collated by DBCA into a database (DBCA, 2023e). When it finds that a TEC is present on private property, the landowner is notified (DBCA, 2023b). However, if the landowner finds that the TEC is unlikely on their property, the Threatened Ecological Communities Scientific Committee will be contacted to review the available knowledge to make a decision (DBCA, 2023b). The database also allows for companies or the public to request for a search of an area to determine if a TEC is present (DBCA, 2023e).

Relevance to Landowners

Landowners are obligated to not modify/clear/damage/harm a TEC without approval under the BC Act (DMIRS, 2020). To obtain approval to modify/clear/damage/harm, the landowner will need to describe the activities that will impact the TEC, describe the TEC involved, document the any avoidance or mitigation measures they plan to adopt (DBCA, 2023g). Only when the chief executive officer of the Department (CEO) has approved the application, can modification occur (BC Act). It should be noted that if the modification/harm is to mitigate the risk of bush fires on non DBCA managed land, this can occur without approval (DBCA, 2023f). DBCA should be notified as soon as possible after the impact occurs.

Integrate Sustainability Pty Ltd understands the importance of ecological communities in Western Australia and how they can become a Threatened or Priority Ecological Community, so if your company wants more information on TECs, what activities modify TECs and when authorisation to modify is necessary, please call us on 08 9468 0338 or email us at enquiries@integratesustainability.com.au.

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Integrate Sustainability

Primary Business Address
Lower Ground Floor
3 Richardson St
West Perth, 6005
Western Australia
enquiries@integratesustainability.com.au
Phone: (+618) 9468 0338

