

The first listing of threatened ecological communities; *a remarkable history* By Valerie English



The Lake Clifton thrombolite TEC is a community of living rock-like structures formed through precipitation of calcium carbonate as a result of microbial activity. The structures are related to the ancient lifeforms that helped create oxygen on earth. Water quality is vital to its continued existence. Photo – Val English.

On 26 May 2023, the first 65 [threatened ecological communities](#) (TECs) were listed under Western Australia's *Biodiversity Conservation Act 2016*. Many significant milestones over nearly 30 years had to be completed before the first listing could occur. A multitude of people were involved in developing procedures, policy, legislation, and in providing expertise and advice that resulted in the momentous outcome of the first TEC listing.

The TEC listing evolved from humble beginnings when, in 1994, the Commonwealth government provided seed funding for the former Department of Conservation and Land Management's first project on developing methods to identify and conserve TECs. At that time, there were few examples of how TECs, or threatened ecosystems, could be listed anywhere in the world, and the procedures first had to be developed. This was done with advice from an advisory group comprised of expert ecologists. This first committee first met in 1995 and advised on the development of the ranking categories and criteria, nomination forms for listing TECs, and the first TEC database.

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*Cover caption: The Montane Heath and Thicket of the Eastern Stirling Range TEC is a naturally rare and restricted plant community, as Western Australia has few mountains. This plant community is threatened by issues associated with climate change, and dieback disease caused by *Phytophthora cinnamomi*. It is also home to 13 threatened and 23 priority flora taxa and five threatened and one priority fauna species, many of which are endemic to the Stirling Range. Photo – Sarah Barrett.*

The current TEC Scientific Committee (TECSC) was established in 2000. Three members of the preceding advisory committees are still on the replacement TECSC that guided and championed the first TEC listing through to completion in 2023. These committees tested and applied the categories and criteria for ranking the level of threat to TECs to a huge variety of ecological communities (ecosystems) from across the state that included 44 rare vegetation types, nine invertebrate communities of underground caves and groundwater aquifers, seven assemblages of groundwater fed springs, four communities built by microbes ('microbialites'), and a faunal assemblage of intertidal flats.

An informal TEC listing procedure was developed in 2000, with the Minister for Environment endorsing the non-statutory listing of TECs in the absence of legislation to support listing TECs in WA. A total of 69 TECs were listed through that process (65 extant, and 4 presumed totally destroyed). The 65 extant TECs were provided with a more formal level of protection when they were listed as Environmentally Sensitive Areas under the *Environmental Protection Act 1986* in 2004.

After many years work in development by a global team of ecologists, the International Union for the Conservation of Nature released categories and criteria for ranking the level of threat to ecosystems in 2014 (IUCN Red List of Ecosystem criteria – [IUCN RLE](#)). These criteria are now accepted as a global standard.

In 2016 Western Australia's *Biodiversity Conservation Act* replaced the ageing 1950 Wildlife Conservation Act. This new Act enabled the listing and legislative protection for TECs in WA for the first time. Nominations that assessed the 65 informally listed extant TECs against the new IUCN RLE criteria were developed by an expert team in the Department of Biodiversity, Conservation and Attractions (DBCA) and carefully scrutinised by the TECSC. Some stumbling blocks along the way included COVID-19 restrictions that delayed the stakeholder consultation required to complete the TEC listing process.



This threatened ecological community of marri – Kingia australis woodlands on heavy soils occurs on the outskirts of Perth on the eastern side of the southern Swan Coastal Plain. Once much more widespread, this TEC has been largely cleared for agricultural land and urban development. Photo – Val English.

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The WA Minister for Environment endorsed the first TEC listing, and it was published in the Government Gazette on 26 May 2023. The listing means that [authorisation](#) will now be required from the Minister for Environment to damage or destroy ('modify') a TEC, or significant penalties may apply.

So, the first TEC listing was 29 years in the making; and has involved many staff of DBCA and its predecessors, committee experts from universities, environmental consultancies, non-government organisations, and other government departments who volunteered vast amounts of their time and expertise, as well as a multitude of other stakeholders. The TECSC and earlier committees held 50 meetings that led up to the first TEC listing, and members past and present can be justifiably proud of this momentous outcome. Many departmental officers, including in DBCA's districts and regions were involved in identifying and documenting TECs, providing expert comment on the nominations, maintaining the TEC database, and undertaking the consultation process – all work crucial to the listing process.

A huge thank-you is due to a multitude of dedicated people who over 29 years have been involved in the many milestones towards achieving this historic first TEC listing!

Contact

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Massed everlastings are a characteristic component of the Perth to Gingin ironstone community and this TEC can become an explosion of annuals in spring. Photo – Jill Pryde.