



**Biodiversity
Council**

Submission to the Natural Resources Commission (NSW) Reviews:

Strengthening the management and protection of
widespread CEECs

Identification and assessment of native grasslands and
non-woody vegetation

2 April 2025

About The Biodiversity Council

The Biodiversity Council brings together leading experts including Indigenous knowledge holders to promote evidence-based solutions to Australia's biodiversity crisis. The Council was founded by 11 universities with the support of Australian philanthropists.



Introduction

The Biodiversity Council welcomes the opportunity to provide feedback to the Natural Resources Commission regarding two reviews:

- Strengthening the management and protection of widespread Critically Endangered Ecological Communities ('CEECs Review')
- Identification and assessment of native grasslands and non-woody vegetation ('Non-woody Vegetation Review').

Our understanding

The Natural Resource Commission received a Terms of Reference for both reviews in January 2025.

The [CEECs Review's purpose](#) is: 'to provide advice on options for strengthening the management and protection of widespread Critically Endangered Ecological Communities (CEECs) under the *NSW Land Management (Native Vegetation) Code 2018* (the Code). The Terms of Reference also asks for options to support and incentivise landholders to protect, restore and improve CEECs.'

The [Non-woody Vegetation Review's purpose](#) is: 'to provide advice on options for improving outcomes for areas containing exclusively or predominantly non-woody vegetation (grasslands and ground cover)'.

The issues papers contain some information and questions that are common to both reviews.

Context of the CEECs Review

The [2023 review of the Local Land Services Act 2013](#) (LLS Act) identified that CEECs should have stronger protections and recommended:

1. improved identification and mapping of CEECs and support from Local Land Services (LLS) for landholder management of CEECs
2. specified amendments to the Code
3. expanded delivery of incentives to landholders to retain and enhance native vegetation through a nature positive approach.

The [2023 review of the Biodiversity Conservation Act 2016](#) (BC Act) recommended improvement to regulatory maps, through development of a single spatial tool incorporating the Native Vegetation Regulatory Map, the Biodiversity Values Map and priority investment areas. Like the LLS Review, the BC Act Review recommended increased landholder incentives as well as substantial increases in investment to achieve nature positive outcomes.

Context of the Non-woody Vegetation Review

The [2023 review of the Local Land Services Act 2013](#) identified high levels of unallocated¹ clearing of native grasslands and other non-woody vegetation and concerns about mapping these ecosystems.

The LLS Act Review made several recommendations to improve identification and mapping of native grasslands and other non-woody vegetation types.

The Biodiversity Council welcomes the review of regulatory settings for protection and management of CEECs and non-woody vegetation. However, we have several concerns that are outlined below.

Key concerns

1. Overall regulatory approach to clearing of native vegetation

The regulation of native vegetation removal is complex with many aspects having their roots in earlier statutes. For instance, there are three main mechanisms by which a rural landowner may not require approval to clear native vegetation:

- 1) The land is '[exempt](#)'. This may be because it had been legally cleared in the past, contains native vegetation formally recognised as regrowth, or contains 'low conservation value grasslands'.
- 2) The clearing constitutes an '[allowable activity](#)'.
- 3) The clearing meets the requirements under the Native Vegetation Code. This includes clearing of '[invasive native species](#)', or clearing in exchange for '[set aside areas](#)'.

The complexity of this approach is not designed for effective compliance for several reasons:

- a) it is difficult for a lay person to clearly understand their requirements and whether they are compliant,
- b) it makes it more likely for allegations of illegal clearing to be disputed if enforcement action is taken, and
- c) it is difficult to track rates of illegal clearing.

The latter is reflected in the high levels of clearing recorded as '[unallocated](#)' because it is too difficult for the environment department to distinguish between lawful vegetation clearing on regulated land that does not require an approval, notification and/or keeping of records;

¹ Unallocated clearing is vegetation clearing for which the Department of Climate Change, Energy, the Environment and Water has not been able to identify a formal authorisation or is unable to presume authorised or allowable using visual cues in the imagery..

vegetation clearing for which the department does not have access to information or spatial records that authorise, explain or allocate the clearing to a particular land management activity, and areas of vegetation that have been cleared unlawfully or are not fully compliant with approvals.

If the NSW government wants to meet its stated ambition “to protect, restore and improve biodiversity in NSW will contribute to ‘nature positive’ aims established at the national and international levels,”² then the entire legislative framework relating to native vegetation clearing would need a systematic review, rather than consideration piece-by-piece.

2. Key issues related to CEECs

Relates to CEEC Issues Paper Questions 1 & 2

Alongside abatement of threatening processes, conservation and management of threatened ecological communities is one of the key mechanisms for addressing the problem of biodiversity loss and species conservation.

There is considerable focus on listing threatened species and preparing conservation strategies or recovery plans for them. However, there are many taxa that are in decline but are not listed, including many invertebrates (insects, spiders, snails etc.). Recent research estimates that the number of invertebrates that have gone extinct since European settlement is a tenth of the number of invertebrate extinctions formally recognised.³ The best way to ensure that these species persist in the wild is through protection of their habitat. NSW needs a stronger and more direct effort on ecosystem protection, consistent with the renewed global emphasis on ecosystem approaches to biodiversity conservation under the [Kunming-Montreal Global Biodiversity Framework](#).

Although provisions to protect remaining areas listed as CEECs are a step towards this end, the limited focus on ecological communities that are closest to the brink of collapse is counter-productive. In effect this facilitates largely unmitigated depletion of threatened ecological communities until they reach a critically endangered status, when rescue becomes expensive and improbable. A more cost-effective proactive approach is needed before our ecosystems reach degraded states that are impossible and/or prohibitively expensive to repair, with concomitant losses of biodiversity, ecosystem services and human well-being. Hence, measures to protect these public assets under the BC Act and LLS Act should be extended to all Threatened Ecological Communities (including those that are

² [NSW Plan for Nature](#)

³

<https://www.cambridge.org/core/journals/cambridge-prisms-extinction/article/this-is-the-way-the-world-ends-not-with-a-bang-but-a-whimper-estimating-the-number-and-ongoing-rate-of-extinctions-of-australian-nonmarine-invertebrates/D0DCAA03EBA7ACC25F98F7BF5D87A2A6>

endangered and vulnerable) as well as those likely to be listed as such under current trends. Co-operative state and national government leadership is pivotal to support these measures.

Successful outcomes sought for CEECs and other Threatened Ecological Communities should align with Targets [2](#) and [3](#) of the [Kunming-Montreal Global Biodiversity Framework](#). These targets require that by 2030, at least 30% of degraded terrestrial ecosystems are effectively restored and at least 30% of terrestrial areas are effectively conserved and managed within ecologically representative, well-connected and equitably governed protected areas. To achieve these targets would require:

- 1) cessation of clearing of threatened ecological communities now
- 2) incentives and resourcing to promote well-targeted and effective restoration measures, and
- 3) strategic expansion of the protected area network with sufficient management funding.

The NSW Government should invest in ground-truthing native vegetation models and maps. There should also be greater transparency about methods and results from mapping and modelling.

Misapplication and poor compliance with existing invasive native species provisions is resulting in accelerated rates of clearing and degradation of biodiversity assets that have statutory protection, including CEECs. In some cases, dominant species of CEECs and EECs are misclassified as invasive native species without any credible scientific basis, enabling unregulated clearing operations in sensitive regenerating areas and facilitating associated impacts on old trees and shrubs amongst the regeneration. This has resulted in substantial ongoing and unmitigated losses and degradation of threatened ecosystems over the past decade, e.g. listing of iconic coolabah as invasive native species soon after the ecosystem was listed as an EEC. Conflicts between the LLS Act and BC Act need to be resolved so that statutory protections achieve their intended outcomes and cannot be subverted by regulatory exceptions or blanket exemptions.

Although provisions for greater incentives for restoration of degraded ecosystems are laudable and necessary, there is a need for much greater protection of remaining remnant vegetation. This need relates to the high risk of failure and high cost of effective restoration⁴ relative to protection options. Consequently, stronger emphasis and resourcing needs to be allocated to protection and avoidance of impacts, rather than repair and restoration. In addition, efforts need to be focused on the actions that produce the most effective outcomes for risk reduction.

⁴ <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.14008>
<https://www.sciencedirect.com/science/article/pii/S0006320724002337?via%3Dihub>

3. Defining CEECs

Relates to CEEC Issues Paper Question 3

The Issues Paper notes that the term ‘widespread CEECs’ (as used in the CEEC Review Terms of Reference) is not defined in the Terms of Reference, nor in relevant policy or legislation. In the absence of a definition, the Issues Paper proposes the following:

Widespread CEECs are those that are at least partially located on Category 2 – Regulated land where there is potential interaction with the Code.

This proposed definition captures a broader range of CEECs than if considering geographical distribution alone, which would exclude some CEECs with a large interaction with agriculture and relevance to key stakeholders.

Currently, 11 CEECs meet the proposed definition, including three in the wheat–sheep belt that have a large interaction with agriculture (i.e. box gum grassy woodland, Monaro and Werriwa Grassy Woodlands).

This definition is inappropriate as it does not reflect the common meaning of widespread which is ‘occurring over a wide area’. The 11 CEECs meeting the proposed definition include many communities that do not occur over a wide area:

1. [Artesian Springs Ecological Community in the Great Artesian Basin](#) which is “naturally restricted to the artesian springs of the Great Artesian Basin in north-western NSW.”
2. [Hunter Valley Weeping Myall Woodland](#) which “occurs within a region in which native vegetation has been extensively cleared and persists only as very small remnants of less than one-hectare or as isolated trees.”
3. [Marsh Club-rush sedgeland in the Darling Riverine Plains Bioregion](#) which “has a very highly restricted and fragmented geographic distribution ... the cumulative area remaining is much less than 800 ha (most estimates suggest < 400 ha).”
4. [Porcupine Grass-Red Mallee-Gum Coolabah hummock grassland/low sparse woodland in the Broken Hill Complex Bioregion](#) which “is known from two areas of approximately 300ha and 200ha on leasehold land; it is not known from any conservation reserves.”
5. [Robertson Basalt Tall Open-forest in the Sydney Basin and South Eastern Highlands Bioregions](#) for which “about 400 hectares, or less than 15% of this community's original occurrence has been estimated to remain.... Most remnants are small and isolated pockets on private land.”

6. [Sun Valley Cabbage Gum Forest in the Sydney Basin Bioregion](#) for which “about 15 hectares of the community remains, mostly in poor condition.”

If the intent is to identify those CEECS that are located on Category 2 - Regulated Land where there is potential interaction with the Code, it would be more appropriate to refer to them as ‘farmland CEECs’ or another term that reflects their occurrence in agricultural landscapes.

It is unclear why it is necessary to delineate those CEECS that occur on Category 2 - Regulated land. Small, but significant occurrences of CEECS occur on Category 1 - Exempt land. To conserve CEECS, the regulatory approach should consider how they are protected and managed over their entire distribution.

4. Characterising CEECs as higher risk or higher investment priority

Relates to CEEC Issues Paper Question 4-6

There is no need to prioritise particular CEECs because all are extremely high risk and require both urgent mapping and protection.

As noted in the Issues Paper, CEECS are:

Ecological communities that are, in the opinion of the Threatened Species Scientific Committee, facing an extremely high risk of extinction in Australia in the immediate future.

In terms of climate change impacts, the direct and indirect threats arising are likely to be of a similar magnitude across all CEECs, although the mechanisms of threat, and hence the required adaptation measures, are likely to vary among CEECs.

5. Land Management Framework

Relates to CEED Issues Paper Questions 7 & 8

Evidence from the [2021 NSW State of the Environment Report](#) and the BC Act Review shows that the land management framework is not providing sufficient protections for high conservation value areas such as CEECs. Moreover, vegetation clearing and other land use intensification activities accelerated with the adoption of previous reforms under the BC Act, and it is likely that more ecological communities will become eligible for CEEC status as a consequence of this accelerated loss and degradation.

As implied in Section 1 of this submission (‘Overall regulatory approach to clearing of native vegetation’), the regulatory approach is not designed to protect CEECs. A more preventative approach would require:

- accurate mapping of where CEECs are found
- prohibiting clearing of CEECs (unless there are exceptional circumstances which would require assessment and approval)
- compliance activities to monitor clearing and communicate requirements to landowners
- strong enforcement action taken for clearing CEECs with penalties that provide sufficient disincentive to other landowners
- incentives and/or other financial support for landowners to protect and manage CEECs and reduce opportunity costs resulting from not clearing.

6. Monaro and Werriwa Grassy Woodlands

Relates to CEED Issues Paper Questions 9 & 10

Monaro and Werriwa Grassy Woodlands are highly depleted. It is estimated that only 5% of the estimated pre-1750 distribution of Monaro Grasslands⁵ and 4-10% of the estimated pre-1750 distribution of Werriwa Grasslands,⁶ remains.

Legacies of past clearing are compounded by ongoing losses and episodic dieback triggered by complex interactions between climate variations, extensive eutrophication, insect outbreaks and invasive species. Their current treatment as exceptions under the Code is an artefact that offers less protection than afforded to other CEECs, accelerating their trajectory towards ecosystem collapse.

Requirements for additional assessments by Local Land Services add to regulatory burden and cost with little benefit, relative to other CEECs afforded unencumbered protection under the Code. Therefore, if the objectives of the legislation are to be achieved, the anomalous exceptions should be removed from Monaro and Werriwa Grassy Woodlands and similar provisions should not be extended to other CEECs.

7. Native Vegetation Regulatory Map

These comments are relevant to both the Non-Woody Vegetation Issues Paper and the CEEC Issues Paper

Relates to CEEC Issues Paper Questions 11-15

The Biodiversity Council supports the need to roll out the Native Vegetation Regulatory map.

⁵ <https://www.environment.nsw.gov.au/sites/default/files/monaro-tableland-final-determination-CEEC.pdf>

⁶ <https://www.environment.nsw.gov.au/sites/default/files/werriwa-tableland-final-determination-CEEC.pdf>

The [draft Native Vegetation Regulatory map](#) is now available for all areas of New South Wales but does not impose any new legal obligations and is not binding. The draft map should be formalised as soon as possible. When the map is released the government should make a clear, time-bound commitment to updating the map to address our recommendations outlined below.

The Biodiversity Council recommends that following actions be taken to improve the Native Vegetation Regulatory map:

1. The map itself and the methods used to develop it would benefit from comprehensive peer review and improvement of aspects identified as problematic. The NRC states, “The map has been prepared using peer-review scientific methods”. However, only a portion of the map workflow is based on methods that are published in peer-reviewed scientific literature. The workflow as a whole has not been peer-reviewed at a satisfactory scientific standard. Other methods and many of the assumptions on which the map workflow is based are untested and require thorough
2. Requests for review should not be restricted to landholders. Many others in the broader community, including, but not limited to scientists, have local knowledge and skills that could and should contribute to map improvements.
3. Processes for managing conflicts of interest in the self-assessment process should be improved. Even where consultants are engaged, there are instances where clients have sought alternative advice and not reported earlier advice that may not have aligned with their personal interests. Such practices are illegal in other sectors, such as financial markets and public health, and should not be permitted in environmental management.
4. There must be ground truthing (training and validation observations) of maps. Increased resourcing for this component would certainly produce cost-effective improvements in accuracy.
5. Mapping of CEECs should not be based on [Plant Community Type mapping](#). There are problems with the Plant Community Types mapping that are partly the result of very poor pre-1750 models of native vegetation extent. These errors have serious implications for CEECs because this mapping underpins the identification of over-cleared vegetation types. Rather than use Plant Community Type mapping, CEECs should be mapped using abundant ground observation data and rigorous peer-reviewed methods based on the description of the CEEC in the [determination made by the NSW Threatened Species Scientific Committee](#).
6. The regulatory process should also recognise, and promote understanding among stakeholders, that some level of mapping error will be inevitable, despite the best efforts and methods applied. Landholder requests for revision of the map may be expected to identify map errors of commission more than errors of omission for sensitive lands, yet the latter type of error has greater implications for CEEC outcomes. Thus, on-ground inspections should always be an essential part of the

assessment process and action should be taken to improve landholder awareness that Category 2 – Sensitive land provisions apply to CEECs even if they remain unmapped.

8. Viability Considerations

Relates to CEEC Issues Paper Questions 16 & 17

Monaro and Werriwa Grassy Woodlands may be cleared under the Code if they are determined 'non-viable' by a Local Land Services Officer. Monaro and Werriwa Grassy Woodlands are considered 'viable' if they are in 'good condition' and 'non-viable' if they are in 'low condition and not likely to survive in the long term'.

This is not ecologically sound, driven more by pragmatism as noted in the Issues Paper that:

the NSW Government has developed an approach to balance flexible land management, while conserving good condition areas of these two CEECs.

Viability assessments and a range of associated methods are fraught with technical issues that limit their accuracy, compound inconsistencies between assessors, and conflate short-term variability in conditions, such as rainfall, grazing activity and dieback symptoms. Their use in the manner currently applied to Monaro and Werriwa Grassy Woodlands also encapsulates perverse incentives to allow or promote passive degradation processes in order to minimise the area of 'viable' vegetation subject to regulatory provisions.

9. CEECs and derived non-woody vegetation

Relates to CEEC Issues Paper Question 18

Derived non-woody vegetation, usually grassland or shrubland ecosystems that once had trees, can have very large conservation values even if the trees have been removed and there are some native species.

A key challenge is that the conservation value of derived non-woody vegetation is often not recognised, as visually these areas may resemble cleared land and may include a variable component of non-native species. A further challenge is posed by the limited remote sensing signals that distinguish native and non-native non-woody vegetation and the variation in proportion of native and non-native species and biomass detectable on ground due in part to variation in antecedent rainfall, as well as recent grazing activity.

The same grassland site may therefore appear to be in markedly different condition states depending on when it is surveyed in relation to environmental and management factors. An important concept not addressed by current assessment methods is the **potential** for an area to contribute to native biodiversity through time, which accounts for times when that contribution may be masked by a transient abundance of non-native species. Correct

identification of this potential contribution is needed to ensure that viable occurrences are distinguished from occurrences that are more permanently transformed by weed invasion and other processes such as eutrophication that exclude native species. As well as improved survey and assessment methods, this will require additional research to establish the temporal relationships between native expression and local conditions such as rainfall and grazing. This understanding is essential as a basis for more robust on-ground assessment methods and for improvement of mapping.

10. Code exclusions and effective environmental management

Relates to CEEC Issues Paper Questions 19 & 20

Over more than a decade since invasive native species provisions were included in native vegetation regulations, there has been a net negative effect on threatened ecological communities and native vegetation in degraded landscapes. This is because:

1. Perceptions of ecological degradation are incorrectly conflated with suitability for livestock production.
2. Initial increases in abundance of invasive native species are not recognised as symptoms of ecosystem repair after soil degradation, but instead misdiagnosed as the cause of degradation.
3. Continuing disturbance and soil decline involved in repeated clearing of invasive native species disrupts soil repair processes, promotes further shrub recruitment and locks the ecosystem into a costly management cycle where clearing promotes increased abundance of shrubs in need of further clearing.
4. Crucial regenerative processes of long-lived species (such as those reliant on rare flood events), essential to ecosystem structure and function, are often misdiagnosed as invasions.

Physical works to control invasive native species are therefore appropriate in much more restricted circumstances than currently perceived. Most often these approaches do not protect rangeland environments from environmental degradation, but expose them to more prolonged trajectories of degradation and prevent ecological repair. Additional guidance to landholders is critical breaking the cycle of disturbance and woody thickening. The prolonged decline of extension services to farmers has fueled misperceptions and limited access of land managers to crucial research advances in understanding the role of native shrubs and trees in long-term repair of historically degraded rangeland systems and their soils. Limited disturbance and moderated grazing regimes are essential to achieve ecosystem repair and sustainable production. Misrepresentation of practices as allowable activities for environmental protection works will perpetuate and exacerbate the causes of degradation problems and barriers to restoration. Twenty-first century ecologically sustainable management and production will be possible only with a swift transition from outdated command and control approaches to managing native shrubs to incentivising one that is

more aligned with the ecological processes that characterise Australian rangeland ecosystems.

11. Allowable activities

Relates to CEEC Issues Paper Question 21

Several listed allowable activities potentially involve irreversible transformations of native vegetation or ecosystem degradation, including electricity transmission infrastructure, water supply and gas supply infrastructure, fencing, telecommunications infrastructure and farm access tracks. Clearance of CEECs should be subject to assessment and approval in exceptional circumstances. Regulatory measures and incentives should be designed to ensure impact avoidance outcomes, rather than minimisation, restoration, set asides or offsetting.

12. Set asides

Relates to CEEC Issues Paper Question 22

Set asides offer a limited means of securing higher levels of protection and management for CEECs. Protections are limited because certain destructive activities are 'allowable' as provided under regulated lands, there is little or no mandated monitoring and compliance of biodiversity, clearing approvals still involve net loss, given that set asides by nature cannot balance loss by protecting a portion of the remaining extent, and multipliers are insufficient as noted by Natural Resources Commission. The overall benefit is likely to be marginal.

13. Incentive-based approaches to support conservation

These comments are relevant to both the Non-Woody Vegetation Issues Paper and the CEEC Issues Paper

Relates to CEEC Issues Paper Questions 23 & 24

The portfolio of incentives on offer in NSW is diverse. For threatened ecological communities, emphasis should be placed on investments in secure, in-perpetuity agreements that regularly report biodiversity outcomes of an agreed management plan.

14. Investment principles

These comments are relevant to both the Non-Woody Vegetation Issues Paper and the CEEC Issues Paper

Relates to CEEC Issues Paper Questions 25

The investment principles and priorities appear sound.

15. Extension, education and communication

These comments are relevant to both the Non-Woody Vegetation Issues Paper and the CEEC Issues Paper

Relates to CEEC Issues Paper Questions 27

Agricultural extension services have declined in NSW over an extended period. Face to face visits and knowledge sharing on-site is the most effective means of communication and changing management practice. The workforce of skilled and trusted extension officers should be substantially boosted across NSW, with appropriate training in land and biodiversity conservation management, as well as sustainable production.