Updating BioNet plant community types (2024)

Department of Climate Change, Energy,
the Environment and Water

NSW GOVERNMENT

Acknowledgement of Country

The Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

Cover photo: New England Peppermint (*Eucalyptus nova-anglica*) Woodland on Basalts and Sediments in the New England Tableland Bioregion. Peter Richards/DCCEEW

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Summary

This report accompanies the Integrated BioNet Vegetation Data (IBVD) release of November 2024. In the IBVD 2024 release, **no changes were made to the plant community type (PCT) master list**. PCT master list version C2.0 remains current, as at November 2024. No changes were made to any PCT vegetation formation or vegetation class. The 2024 release includes threatened ecological community (TEC) association additions for a small number of PCTs. The Commonwealth TEC Kurri sand swamp woodland of the Sydney Basin Bioregion, listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in December 2023, was assessed and is associated with 2 PCTs in BioNet. In addition, an additional existing PCT has been associated with the NSW TEC Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.

Updates to the State Vegetation Type Map in the IBVD 2024 release are documented in DCCEEW (2024).

1. Introduction

1.1 Purpose of the Integrated BioNet Vegetation Data update reports

The annual update reports provide an account of any changes to the NSW PCT master list and associated data in the updates of IBVD. The reports record any amendments to vegetation formations and vegetation classes, and any changes in associations between PCTs and pre-existing TECs. They document new or revised TEC listings made under New South Wales or Commonwealth biodiversity laws, and the associations made with PCTs and published in BioNet in the IBVD update.

The purpose of the IBVD update cycle is to regularly improve the PCT master list by responding to user feedback, to augment the list with new types where evidenced by new data, and to enhance the robustness of existing types and/or remove low confidence types no longer evidenced by data. The cycle timing also aim to ensure that PCT data, PCT associations with threatened ecological communities, and related biodiversity attributes are current and remain suitable for dependent land-management and land-use decision applications, including the Biodiversity Offsets Scheme.

1.2 Background

PCTs are the finest level of classification in the NSW vegetation classification hierarchy. They identify and describe recurring patterns of native plant species assemblages in relation to environmental conditions. A master typology of PCTs in New South Wales is defined in BioNet and known as the 'PCT master list'.

In June 2022, the IBVD program released the first fully integrated version of the PCT master list and State Vegetation Type Map (SVTM). That release (PCT master list version C1.1) included major revisions to PCTs for eastern New South Wales (see DPE 2022a, 2022b, 2022c). PCT master list version C1.1 introduced a plot-based and data-driven 'quantitative' PCT typology for the coast and tablelands bioregions, replacing the regionally sourced PCTs in operation between 2011 and 2022. Version C1.1 did not amend the PCTs in the western slopes bioregions or western bioregions of New South Wales.

In December 2023, the IBVD program released the first update to the integrated PCT master list and SVTM. Changes in that release (PCT master list version C2.0) resulted from user feedback and a systematic evaluation of quantitative PCTs based on the audit and incorporation of new plot data in the Flora surveys module of BioNet Atlas. Nine quantitative PCTs were added to the approved PCT master list and approximately 2,000 previously unclassified plots were assigned to approved PCTs (see DPE 2023). Version C2.0 made a single PCT amendment in the western bioregions.

The update summarised in this 2024 report does not involve amendments to the PCT master list or any PCT data, hence PCT master list version C2.0 remains current as at November 2024. The 2024 IBVD has updated TEC associations for a small number of approved PCTs (see below).

1.3 Bioregional study areas

A major revision of PCTs is progressing from east to west (see DPE 2022a, 2022b) and is being managed in 3 broad bioregional study areas (Figure 1).

'Coast and tablelands bioregions' include the NSW parts of the Australian Alps, New England Tablelands, NSW North Coast, South East Corner, South Eastern Highlands, South Eastern Queensland and Sydney Basin IBRA v7 bioregions (DAWE 2021). New 'quantitative' PCTs covering this area were published in June 2022 in version C1.1 and updated in December 2023 in version C2.0.

'Western slopes bioregions' comprise the Brigalow Belt South, Nandewar and NSW South Western Slopes IBRA v7 bioregions. PCTs across this area are currently being reviewed as part of the IBVD program, with quantitative PCTs scheduled to replace the existing qualitative PCTs in a subsequent version of the PCT master list.

'Western bioregions' cover the remainder of New South Wales. Qualitative PCTs currently apply in this area. A survey program is under way to collect new standard floristic survey plot data to support future revisions in this region, however, no revision timetable is in place at this stage. In the meantime, qualitative PCTs across this area may be subject to minor updates in response to user feedback.

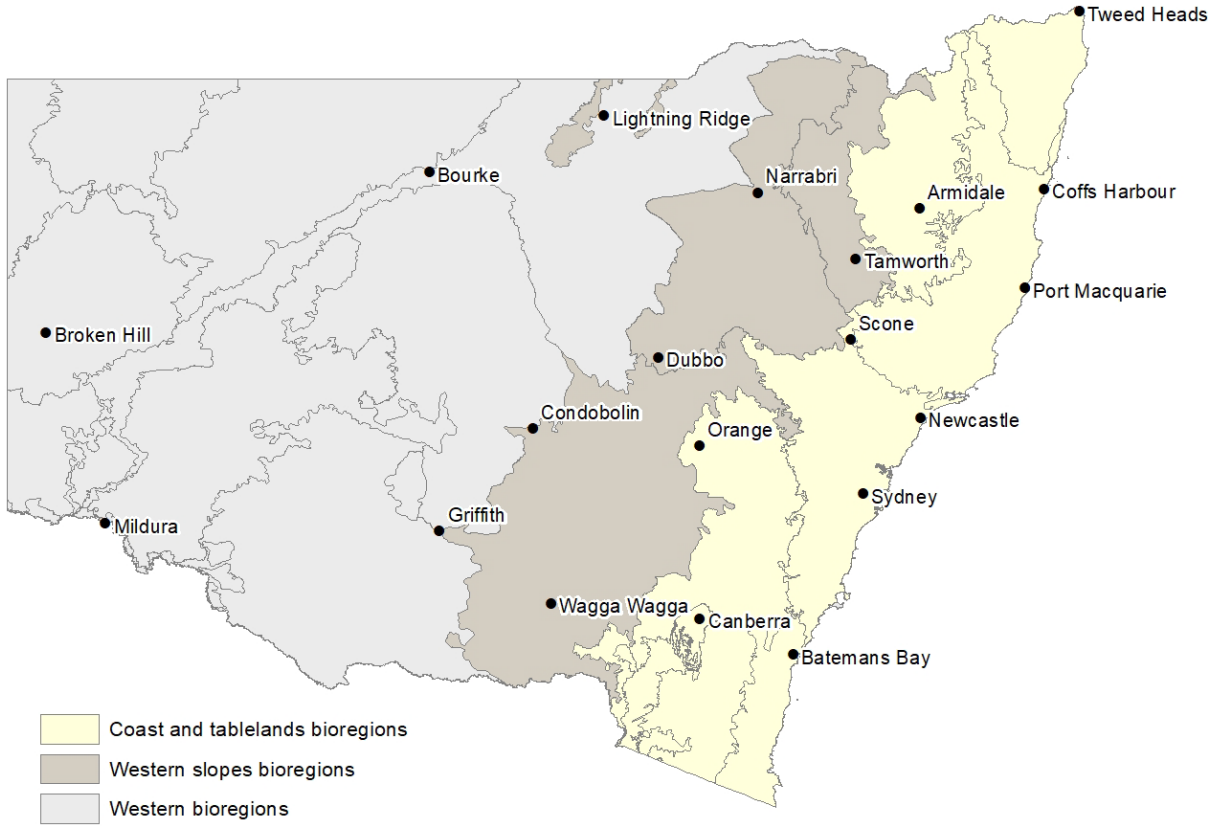

Figure 1 **NSW plant community type bioregional study areas**

1.4 BioNet data repositories

PCT data are held in the BioNet biodiversity data repository. Quantitative PCT data are available to the public in 2 applications, as described in DPE 2022c and summarised in Table 1. Most PCT data are also accessible in machine-readable form via the BioNet web service.

Table 1 PCT data in BioNet for quantitative PCTs

BioNet application name	PCT information held
Flora surveys module of the BioNet Atlas application	PCT identification number (PCT ID) PCT name Vegetation class Authority Classification type Plot membership (site and replicate) Floristic, environmental and geospatial data for member plots (species composition, IBRA region and subregion, local government area (LGA), environmental variables) PCT classification taxonomic assignment file
BioNet Vegetation Classification public application	References and profile source Vegetation description Species summary data Median native species richness per plot Environmental summary data Spatial summary data Number of member plots (replicates) Classification confidence level Associations with TECs Percent cleared data Vegetation condition benchmark data Lineage information

2. Review of plant community type master list C2.0

2.1 Audit and incorporation of new plot data

There have been no additions or revisions to the datasets used in the PCT definitions of PCT master list C2.0.

2.2 User feedback

Users submit comments and feedback on the PCT master list and data via the BioNet mailbox. Comments are compiled in a log then assessed and incorporated into the update cycle of classification data as appropriate. User feedback has not led to PCT data changes for this update. However, one set of user feedback led to a change in the TEC association of one PCT (see section 6).

3. Amendment of plant community types – coast and tablelands bioregions

No changes were made to the PCT master list in 2024. PCT master list version C2.0 remains current as at November 2024. No changes were made to PCT plot membership, PCT names, vegetation formations or vegetation classes, vegetation descriptions, species summary data, environmental or spatial summary data, or classification confidence level.

4. Amendment of plant community types – western slopes bioregions and western bioregions

No changes were made to the PCT master list in 2024. PCT master list version C2.0 remains current as at November 2024. No changes were made to PCT names, vegetation formations or vegetation classes, vegetation descriptions, species summary data, environmental or spatial summary data, or classification confidence level.

5. Plant community type master list C2.0

There are a total of 1,846 approved PCTs in PCT master list C2.0, as maintained in the BioNet Vegetation Classification application. These include:

- 1,075 quantitative PCTs
- 771 qualitative PCTs. These primarily occur in the western and western slopes bioregions, with just 4 qualitative PCTs in the coast and tablelands bioregions.

A list of the approved PCTs in PCT master list C2.0 is available in BioNet and downloadable from the BioNet Plant Community Type data webpage (see link below).

When using the downloadable power query please be sure to refresh the power query to obtain C2.0 PCT data as at November 2024, and filter column C ‘status’ to ‘Approved’ to list only approved PCTs.

Note that refreshing this power query following subsequent updates to the PCT master list will refresh the spreadsheet with updated information from BioNet, aligned to whichever PCT master list version is current at the time.

6. Threatened ecological communities

Threatened ecological communities (TECs) are listed under either the NSW *Biodiversity Conservation Act 2016* (BC Act) or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The PCT update cycle aims to identify changes to TEC listings (new listings, revised listings and de-listings) since the previous release, and to update the PCT–TEC association data in BioNet. The PCT–TEC associations available in the BioNet Vegetation Classification public application are source data for the BioNet Atlas Threatened Biodiversity Data Collection and the Biodiversity Assessment Method Calculator (BAM-C) that underpin components of the Biodiversity Offsets Scheme.

6.1 Commonwealth threatened ecological communities listings

There was one new or revised EPBC Act listings of TECs in NSW between 1 September 2023 and 30 June 2024 inclusive (Table 2).

A total of 52 EPBC Act TECs are now associated with C2.0 approved PCTs in New South Wales.

Table 2 Summary of Commonwealth TEC listings since DPE 2023

TEC name	In effect from date
Kurri sand swamp woodland of the Sydney Basin Bioregion	7/09/2023

6.2 NSW threatened ecological communities listings

There were no new or revised BC Act listings of TECs between 1 September 2023 and 30 June 2024 inclusive.

A total of 109 BC Act TECs are associated with C2.0 approved PCTs, which excludes TECs listed for Lord Howe Island.

6.3 Relationships to plant community types

6.3.1 New or revised TECs

DPE 2022c describes the method for assessing relationships between TECs and approved PCTs. This method was followed to assess the relationship between the Commonwealth Kurri sand swamp woodland of the Sydney Basin Bioregion and approved PCTs. Two PCTs were found to relate to the TEC (PCT IDs 3630 and 3631) and the associations have been added to BioNet.

6.3.2 Revised associations

User feedback prompted a review of the TEC association of PCT 267. The review was undertaken in accordance with the principles outlined in DPE 2022c. This review resulted in the addition to BioNet of an association of PCT 267 with NSW TEC Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.

References

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DPE (Department of Planning and Environment) (2022a) *Evaluation of BioNet plant community types (2018) of Eastern New South Wales*, NSW Department of Planning and Environment, Parramatta.

DPE (2022b) *A revised classification of plant communities of Eastern New South Wales*, NSW Department of Planning and Environment, Parramatta.

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DPE (2023) *Updating BioNet plant community types: PCT master list C2.0 (2023)*, NSW Department of Planning and Environment, Parramatta.

Sivertsen D (2009) *Native vegetation interim type standard*, Department of Environment, Climate Change and Water NSW, Sydney.

Further information

BioNet Plant Community Type data

Glossary

Term	Definition
BioNet	The NSW biodiversity data repository administered by the Department of Climate Change, Energy, the Environment and Water (the department)
BioNet Vegetation Classification public application	The application (user interface) where public users can access the PCT master list and PCT summary data
coast and tablelands bioregions	Parts of New South Wales that fall within one of the following 7 IBRA v7 bioregions (DAWE 2021): the Australian Alps, New England Tablelands, NSW North Coast, South East Corner, South Eastern Highlands, South Eastern Queensland, Sydney Basin
Flora surveys module of the BioNet Atlas application	The application (user interface) where users can access and edit flora survey data in the Systematic Surveys data collection
member plot	A plot that is assigned to a quantitative PCT in BioNet
PCT	Plant community type. The finest level of classification in the NSW vegetation classification hierarchy
PCT master list	The cumulative set of PCTs in the BioNet Vegetation Classification applications, including 'PCT definition status' of Approved, Draft-Working, Decommissioned
PCT master list C1.1	The PCT classification published in BioNet in June 2022
PCT master list C2.0	The PCT classification published in BioNet in December 2023
qualitative PCT	A qualitative PCT in the BioNet Vegetation Classification public application. Qualitative PCTs have been determined from a wide range of sources and methods, but do not have plot membership defined in the Flora surveys module of the BioNet Atlas application. Qualitative PCTs are distinguished by having a PCT ID below 3000
quantitative PCT	A quantitative PCT in the BioNet Vegetation Classification public application. A quantitative PCT has its plot membership defined in the Flora surveys module of the BioNet Atlas application. PCT profile data are based on the data of member plots. Quantitative PCTs are distinguished by having a PCT ID above 3,000

Term	Definition
standard floristic survey plot	A plot that represents a search of a bounded area, usually in the range of 400–1,000 m^2, within which all vascular plants are identified to the finest taxonomic level possible, with standardised estimates made of the abundance and projected foliage cover of each taxon present, and where those estimates can be reliably converted to a common cover–abundance scale of modified Braun-Blanquet (BB) cover–abundance 1–6. This includes plots that follow the survey standards defined by Sivertsen (2009)
western slopes bioregions	Parts of New South Wales that fall within one of the following 3 IBRA v7 bioregions (DAWE 2021): Brigalow Belt South, Nandewar and NSW South Western Slopes