# The Native Vegetation of North-west Wollemi National Park and Surrounds

## Including Nullo Mountain, Coricudgy and Cudgegong Areas

## Volume 1: Technical Report

NSW GOVERNMENT
Office of Environment & Heritage
NSW National Parks & Wildlife Service

# THE NATIVE VEGETATION OF NORTH-WEST WOLLEMI NATIONAL PARK AND SURROUNDS

## INCLUDING NULLO MOUNTAIN, CORICUDGY AND CUDGEGONG AREAS

# VOLUME 1: TECHNICAL REPORT

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# OVERVIEW

North-west Wollemi National Park encompasses some of the most dramatic and breath-taking landscapes of the Sydney basin. From the high points of the Hunter Range the expanse of the sandstone plateaux extends to the horizon, interrupted only by occasional conical volcanic peaks and sheer golden cliff lines. Home of the remarkable Wollemi pine, the landscape is largely free of human disturbance and supports a remarkably diverse flora that blends a range of regional influences from dry north-west New South Wales, to the northern tablelands, north coast, central tablelands and Sydney sandstone regions.

This document describes a systematic vegetation survey and detailed mapping project undertaken across north-west Wollemi National Park and surrounding areas. The study area, situated about 150 kilometres north-west of Sydney, encompasses the section of the Park that is managed from the Mudgee Area office of the National Parks and Wildlife Service and contains over 180,000 hectares of native vegetation. In addition 50,000 hectares of state forests and private lands that adjoin the Park are included. This project is not a stand alone study and has built on preliminary vegetation survey and classification work completed by Bell (1998). However in this project, for the first time, the vegetation communities described and mapped have been derived and understood in terms of their local, regional and statewide distribution patterns and conservation status. The survey and mapping effort is part of a wider program aimed at ensuring that the management of reserves in the Sydney basin is underpinned by adequate levels of biodiversity data. Such data aids with key land management tasks relating to fire, weeds and Threatened Ecological Communities.

The project completed survey of 136 new systematic floristic sample sites within the study area, targeting previously unsampled vegetation types and addressing some of the major gaps that existed in the spatial distribution of sites. Detailed vegetation mapping was completed using stereoscopic interpretation of recent high resolution digital aerial photography to define patterns at a viewing scale between 1:10,000 and 1:15,000. A wide range of remotely-sensed data was collected, including dominant vegetation type, geology, understorey characteristics, vegetation cover and disturbance. The aerial photography interpretation phases were supported by extensive field traverses and review of existing literature and data.

A total of 62 vegetation communities have now been identified in the study area. These were primarily defined using numerical analysis of 402 systematic floristic sample sites located within or adjoining the area. The vegetation communities are referable to seven statewide vegetation formations of Keith (2004) and in this way are split into six rainforests, 11 wet sclerophyll forests, six grassy woodlands, 30 dry sclerophyll forests, two heaths, four freshwater wetlands and three forested wetlands. Dry sclerophyll forests are by far the most extensive formation of the study area. In total 1237 native vascular plant species were recorded during survey of the systematic floristic sample sites within the study area. Included in this total are 65 eucalypt species which is almost two-thirds of the current inventory of eucalypt trees known to occur in the Greater Blue Mountains World Heritage Area. In contrast, exotic species numbered only 104. Not surprisingly those vegetation communities with the greatest number of weeds were associated with richer soils preferentially targeted by agricultural land use.

The assessment of conservation status identified that eight Threatened Ecological Communities listed under the NSW *Threatened Species Conservation Act 1995* are aligned with 12 vegetation communities described within the study area. Eight of these vegetation communities are also components of Threatened Ecological Communities recognised under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The most significant vegetation types were found to include tall forests on high elevation basalt, dry grassy woodlands associated with basalt or Permian shale, and freshwater swamps on sandstone and valley flats. The Threatened Ecological Communities span multiple tenures in the study area, necessitating co-operative land management strategies to assist with their conservation. Also worthy of note is the existence of four communities that have a limited distribution, with the study area encapsulating their entire known extent in the Sydney Basin Bioregion.

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# 1 INTRODUCTION

## 1.1 Background

Information that describes the type, distribution and status of biodiversity in New South Wales is required by many arms of the Office of Environment and Heritage (OEH) for regulatory, conservation assessment and land management purposes. In the Sydney Basin Bioregion over 60 per cent of extant native vegetation occurs in reserves making OEH the largest individual custodian of native flora and fauna in the region. Since 2003, the former Central Branch of the Parks and Wildlife Group has funded a Biodiversity Survey Priorities (BSP) program with the aim of providing all reserves with an equivalent level of information on flora and vertebrate fauna, irrespective of size and location, and to ensure that biodiversity data collection is approached in a strategic and systematic way. As a result of the first five years of the program, 28 reserves have been surveyed for fauna or flora or both, addressing the largest data gaps and making data available in stand-alone, easily accessible reports and maps. This work has altered previous knowledge of the distribution of many threatened species and Threatened Ecological Communities (TECs) and now over 75 per cent of the reserves of the former Central Branch are covered by adequate standards of fauna data and over 60 per cent are covered by adequate vegetation maps.

Wollemi National Park (NP) has been identified as an area that requires substantial additional effort to bring the vegetation mapping up to an adequate standard. The north-west portion of the reserve, managed by the Mudgee Area office, was identified as a high priority for both fauna and flora survey (NPWS 2003a). Systematic fauna survey has now been completed (DEC 2007) while the new vegetation survey and mapping is the subject of this report.

## 1.2 Project Aims

The primary aim of this project is to develop a vegetation map that meets the operational needs of park management for the Mudgee Area and Blue Mountains Region of the Parks and Wildlife Group. This includes the provision of maps and aids to identify TECs listed under State and Commonwealth legislation and the provision of an authoritative data set of flora species and vegetation communities. This document is designed to assist with management of fire, management of invasive species and conservation assessment of lands. It is intended to enable future monitoring, evaluation and reporting (MER) studies and to support community education and neighbour relations programs. It will also facilitate future fauna and flora species habitat mapping for the reserve. The project aims to define and describe the native vegetation communities in a local, regional and statewide context, thus bringing greater understanding of their regional extent and conservation status.

The project planned to implement vegetation survey, classification and mapping in a manner that is broadly consistent with the standard methods described in Sivertsen (2009) and meets the information requirements of the BSP program (DECCW 2010). It makes use of existing studies, in particular Bell (1998), to raise the vegetation information resources for the Park to a standard commensurate with its size and diversity, as well as its status as part of the Greater Blue Mountains World Heritage Area (WHA).

The specific aims of the project are to:

- acquire and review existing vegetation studies completed in the study area
- carry out new multi-attribute stereoscopic aerial photo interpretation (API) using 2008 digital aerial photography
- assess the adequacy of previously existing systematic floristic sampling effort based on a stratification of environmental variables, new API mapping, and review of gaps and limitations identified in previous studies
- undertake new systematic floristic sampling to fill the gaps identified above
- analyse the compiled floristic data and identify vegetation communities
- complete detailed mapping products and reports.

## 1.3 Study Area

### *1.3.1 Location*

The centre of the study area is approximately 150 kilometres north-west of the Sydney central business district (CBD) and covers the north-west third of Wollemi NP and surrounding state forest, reserve and private tenures that border the western and northern boundaries (Map 1). It extends over 230,000 hectares of mostly native vegetation between Glen Davis in the Capertee Valley and Bylong, near the Goulburn River. The eastern boundary follows the Widden valley and reaches south to the upper reaches of the Colo River. The Hunter Range provides a high point that dissects the study area into northern and southern catchments that define parts of the Hunter River and Hawkesbury-Nepean system (Map 2). The small upper catchments around the Cudgegong valley flow west toward the Macquarie River, a tributary within the Murray Darling basin.

### *1.3.2 Tenure and land use*

Wollemi NP, comprising almost 80 per cent of the study area, is managed for nature conservation and recreation purposes. Around 17 per cent of this area is included within the Greater Blue Mountains WHA, inscribed in 2002 by the International Union for Conservation of Nature (IUCN) for its outstanding scientific and cultural values including the diversity of the genus *Eucalyptus*. Wollemi NP is also recognised as a wilderness area under the NSW *Wilderness Act 1987*. A small portion of Goulburn River NP intersects the study area near Coxs Gap and Bylong State Forest.

Nullo Mountain, Coricudgy and Bylong state forests cover around 13,600 hectares of the study area, comprising almost six per cent. These forests are set aside for native timber harvesting operations as well as for recreation and conservation purposes.

Private tenures cover most of the fertile soils associated with major valleys, slopes and plains including the Widden and Cudgegong valleys, Growee Gulph, Murrumbo Gap as well as elevated basalt caps on the ranges on Nullo Mountain. While mostly cleared and with only fragmented native vegetation cover, these tenures comprise 33,740 hectares or close to 14 per cent of the study area.

### *1.3.3 Biogeography*

The study area lies near the north-west edge of a distinct environmental region known as the Sydney Basin Bioregion (Thackway and Cresswell 1995). This Bioregion extends from just north of Batemans Bay to Nelson Bay on the Central Coast, and almost as far west as Mudgee. The Bioregion is characterised by a temperate climate with warm summers and no dry season (NPWS 2003b) and covers the Triassic sandstone plateaux and exposed Permian sediments of central coastal New South Wales. Situated close to the north-west edge of the Sydney basin, the study area shares some climatic and topographic features with adjacent bioregions, including the Brigalow Belt South, the NSW South Western Slopes and the South Eastern Highlands.

### *1.3.4 Geology and geomorphology*

The study area is a landscape dominated by sedimentary rocks much of which is coarse-grained sandstones with smaller localised areas of shales, siltstones and mudstones. There are two major depositional ages; the older Permian period and the more recent Triassic. The former lie beneath the Triassic sandstones and as a result are only exposed in very dissected valleys and escarpments. These are steep and spectacular landscapes found on the northern and western perimeter of the study area. The slopes themselves are often littered with sandstone rubble and boulders, known as talus, that have fallen from the eroding cliffs above. This stratum weathers to form moderately fertile clay loams (NPWS 1997), with fragments of sandstone or shale (Story et al. 1963). The undulating valley floor and escarpment footslopes reveal older strata in the Permian series. These are more often fine-grained sediments such as shale and mudstones. These are the most fertile materials of the Permian-aged rocks and produce the richest soils.

The Triassic sediments are overwhelmingly dominated by Narrabeen sandstones and shales with small residual Hawkesbury sandstone found outcropping on the higher elevations of the Hunter Range and south-east corner of the study area. Weathering of the Narrabeen sandstone has given Wollemi NP its characteristic dissected landscape, dominated by many deep valleys, cliffs and narrow gorges. The majority of land within the study area contains rugged hills with rounded summits, irregularly benched slopes often littered with boulders and frequent sandstone outcrops, and narrow valleys (Story et al. 1963). Soils formed from the Narrabeen sandstones are generally very shallow, characterised by low nutrient levels, particularly

of phosphorous (NPWS 1997). Hawkesbury sandstone outcrops can be difficult to distinguish in the study area as much of the strata has long since been eroded. Characteristic hard, blocky sandstone remains on knolls and a coarse-grained siliceous sand can dominate on some ridgelines (B. Wilson pers. obs.).

The extent of volcanic activity across the study area marks it as one of the more compelling landscapes of the Sydney basin. Sourced from different periods of volcanism (Galloway 1967) there are a mix of basalt flows, caps and diatremes found throughout. Tertiary basalt caps are readily distinguishable landmarks, the largest being Nullo Mountain and Mount Coricudgy. Basalt caps occurring within the study area include Kerry Mountain, Mount Coriaday, Mount Baker, Mount Towinhingy, Gospers Mountain, Mount Pomany, Mount Boonbourwa, Mount Coorongooba and the Kekeelbon Mountains, amongst others. Tayan Peak is a symmetrical cone rising 780 metres above the sandstone plateau, with a volcanic crater on its northern side (Mosley 1989). It is a unique landscape feature in the study area and has been identified as a significant geological site in New South Wales (Schon 1984 in NPWS 2001).

Basalt flows are found north of Nullo Mountain, where the slow-moving lava has oozed from vents on ridges and side slopes to cover the underlying sandstone across a range of topographic positions from exposed to sheltered slopes, ridges and into some gullies.

Also scattered throughout the study area are diatremes that hold rich basalt-derived soils. These were formed as extinct volcanic vents eroded away faster than the surrounding sandstone into which they were intruded, often leaving saucer-shaped depressions and valleys (NPWS 2001). These hollows are also known as ‘holes’, ‘craters’ or ‘clears’, and some examples within the study area are Box Hole Clearing, Swampy Hole (lying to the west and east of the Army Road respectively) and Gospers Hole. Diatremes can also be found in saddles or on the sides of ridges, identifiable only from close proximity due to the change in vegetation and the absence of sandstone outcropping (Macqueen 2005). It is estimated that hundreds of diatremes occur in north-west Wollemi NP, many more than are currently mapped (Macqueen 2005).

### *1.3.5 Elevation*

The dominant sandstone ridges of the study area span an elevation range of 500 to 850 metres above sea level (Map 2). The Hunter Range marks the highest elevations of the sandstone plateaux, exceeding 1000 metres at high points such as Bare Rock Bluff. Elevation falls as the major Triassic and Permian strata dip toward the Goulburn and Hunter rivers and again to the south-east toward the Hawkesbury-Nepean rivers. The sandstone ranges of the northern limits of the reserve lie between 250 and 550 metres above sea level. Similar ranges are experienced along Wollemi Creek and Colo River in the south and south-east of the reserve.

The highest elevations are found on the basalt caps such as Nullo Mountain and Mount Coricudgy, and at Kerry Mountain and Mount Coriaday which rise over 1200 metres above sea level. Tayan Peak also towers over the surrounding landscape, reaching 1150 metres above sea level.

### *1.3.6 Climate*

Long term climate patterns across the study area appear to be related to elevation and distance from the coast. In general terms, the western two-thirds of the study area is influenced by westerly-moving continental air masses, with more elevated areas such as the basalt-capped mountains subjected to local orographic climatic effects (Bell 1998). The south-east section is influenced more by coastal air masses, which generally carry more rain (Bell 1998).

Mean annual rainfall has been modeled across the study area (DEC 2004a). This indicates that much of the sandstone plateaux that dominate the southern half of the study area are expected to receive between 750 and 900 millimetres per annum. However, there are few rainfall stations across the study area from which to base predictions and so several anomalies and underestimations are likely to arise. Many of the stations are based on the valleys and plains that lie in escarpment rainshadows.

Glen Alice, situated on the footslopes of the western Blue Mountains escarpment in the Capertee Valley at around 330 metres above sea level, receives 625 millimetres of rainfall per annum (Bell 1998). Olinda, a little further north, is elevated at 620 metres above sea level and receives more than 650 millimetres (Bell 1998). By contrast the weather station on Nullo Mountain, just 17 kilometres to the north-east, rises 700 metres higher to 1100 metres above sea level and receives around 912 millimetres per annum (Bureau of Meteorology 2011). Higher again is Mount Coricudgy, located several kilometres to the south-east, at 1240 metres above sea level. As there is no weather station on this mountain it is not known precisely how much rainfall is received, but it is likely to be well in excess of 1000 millimetres per annum. The higher peaks also

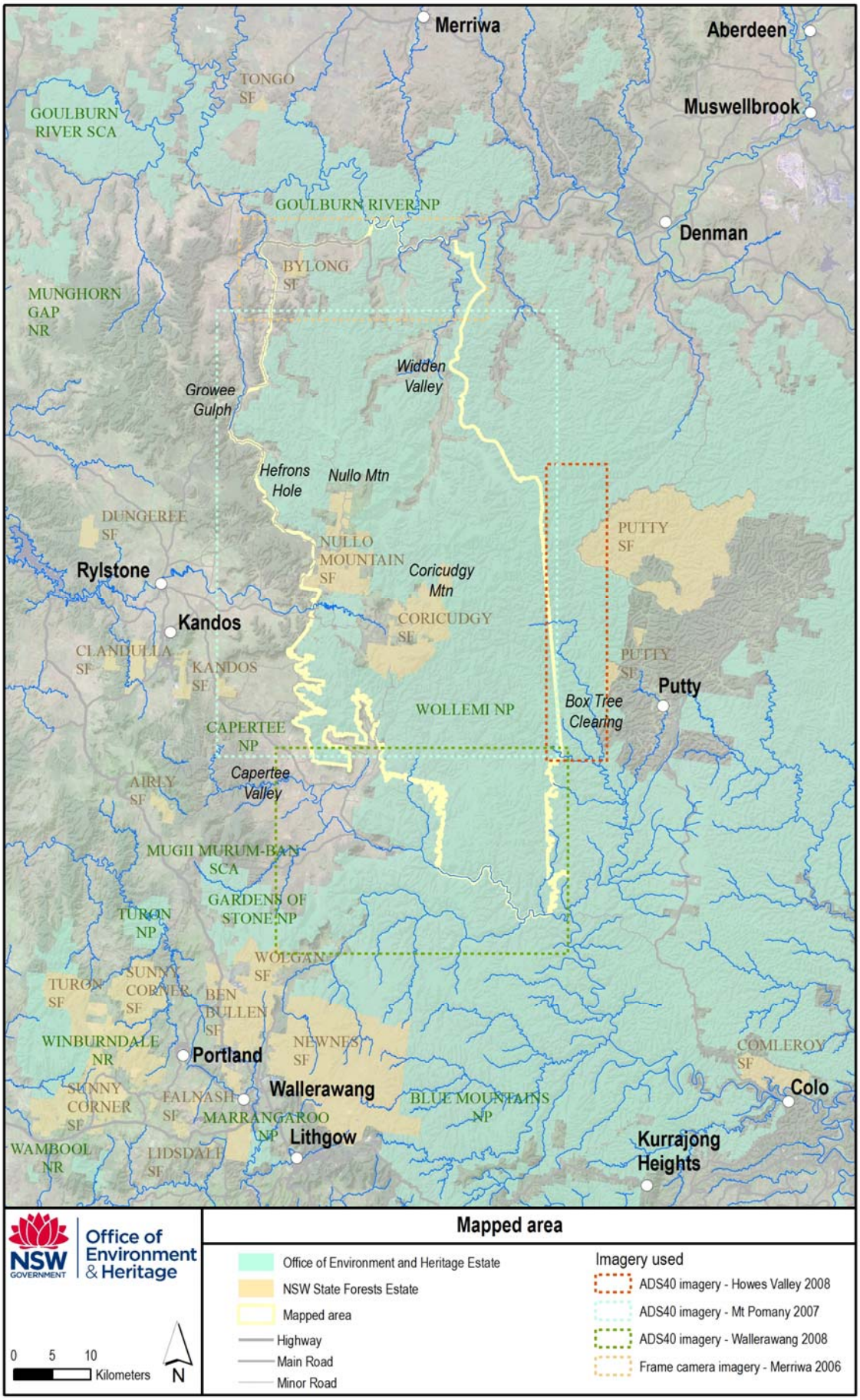
receive considerable moisture from mists that shroud the mountains during the winter period (Floyd 1984). Snow falls infrequently on the high peaks during winter months. The mean annual temperatures at Nullo Mountain are around 11 degrees Celsius (DEC 2004a)

The northern half of the study area is drier and warmer. The sandstone ranges lie between 250 and 550 metres above sea level. North from Nullo Mountain the rainfall falls from 900 millimetres per year to less than 600 millimetres at Bylong on the north-west corner of the study area. The low-lying valleys of the Widden and Goulburn rivers, which lie around 200 metres above sea level, receive a similar annual rainfall. Mean annual temperatures are around 16.4 degrees Celsius which is more than five degrees warmer than the high ranges and peaks (DEC 2004a).

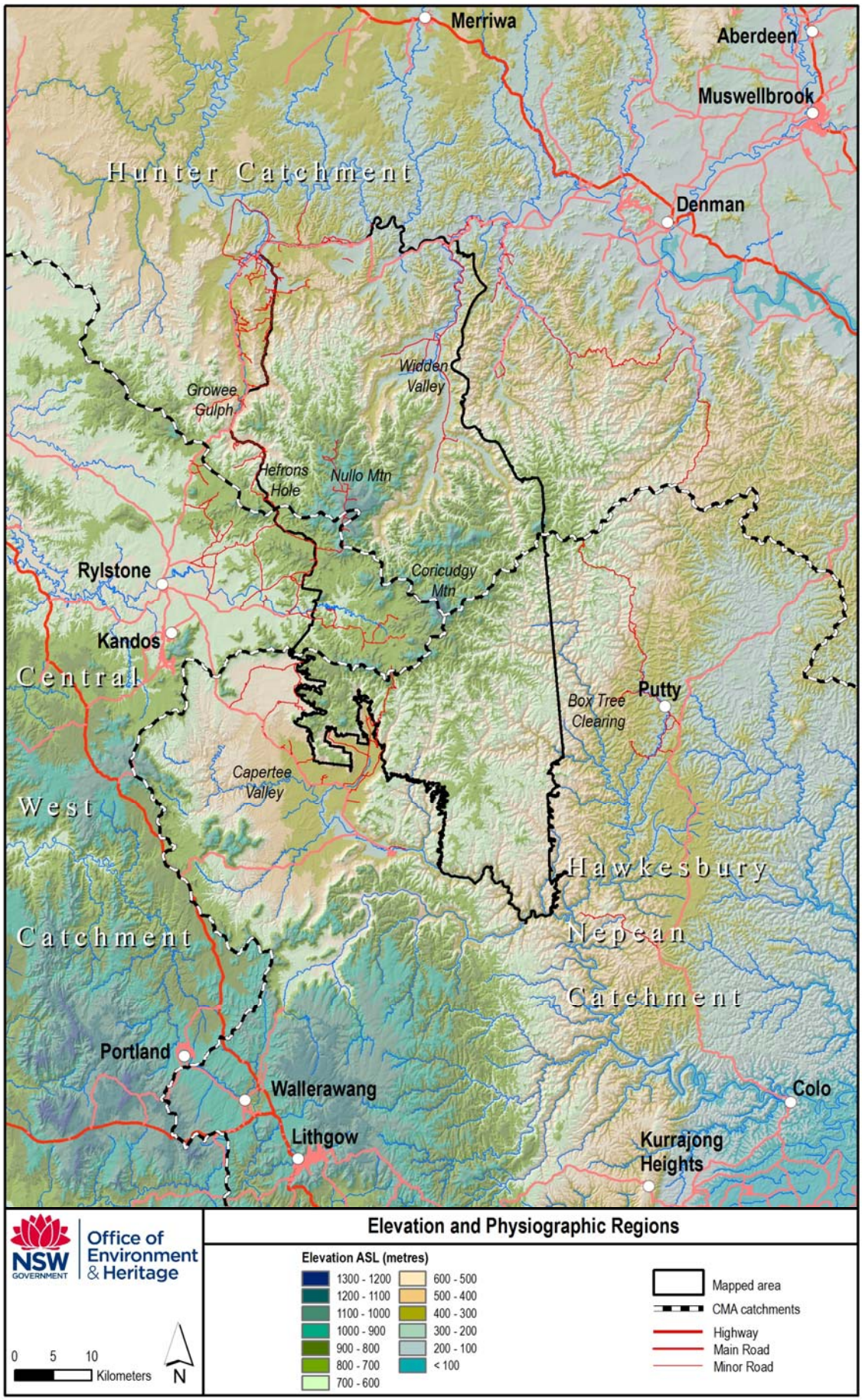
## 1.4 Project Team

This project and report was completed by the Biodiversity Survey and Assessment Section, Metropolitan Branch, OEH. The project was completed by Daniel Connolly and Renée Woodward with mapping completed by Robert Wilson. Contract botanical assistance was provided by Stephen Bell. Field assistance and support was provided by Clare O'Brien and staff from the Mudgee Area office. Elizabeth Magarey edited earlier drafts of the report. Kerry Oakes undertook document formatting and CD design.

**Map 1: Location of the study area**



**Map 2: Elevation and physiographic features of the study area**



# 2 METHODS

## 2.1 Review of Previous Botanical Studies

### *2.1.1 Reports and maps*

A comprehensive list of literature was compiled by Bell (1998) as part of a preliminary classification and mapping project for Wollemi NP. That project and those of Benson and Howell (1997), Keith and Benson (1990) and McCrae and Cooper (1985), offer the four previous broad scale mapping efforts that cover part or all of the study area. The work of Bell (1998) resulted in the first classification of native vegetation using numerical analysis of systematically collected field data. This data was stored in the OEH vegetation survey database to provide a foundation for future surveying effort. The derived vegetation communities were described in a two volume report that sought to draw a relationship between vegetation communities and the environments in which they occur. A total of 72 communities were identified in the report, of which 34 were mapped within the current study area.

Bell (1998) produced a revised map of geology at a scale of 1:25,000 in order to delineate finer patterns than those that are available from published geological and soils mapping at 1:250,000 scale (Bryan 1966, Kovac and Lawrie 1991). A separate data layer delineating major patterns in vegetation structure was also compiled using coarse scaled aerial photos. A series of intuitive rule sets based on sample site data were used to define the habitats of each community using broad elevation, rainfall and aspect data in combination with the new maps of geology and vegetation structure. The resultant maps provided a general overview of regional trends in vegetation pattern across the full extent of Wollemi NO. Similar methods were employed by Hill (2000) for Goulburn River NP. A small area of overlap between Hill (2000) and the current study occurs in the Bylong area.

Benson and Howell (1997) and Keith and Benson (1990) completed mapping of the Mount Pomany and Wallerawang 1:100,000 map sheets respectively as part of a broad assessment of vegetation communities in the Hawkesbury-Nepean catchment. About three-quarters of the Mount Pomany map sheet, and less than one-quarter of the Wallerawang map sheet, fall within the study area. This mapping produced vegetation community floristic summaries based on field traverse and intuitive classification based on dominant species and geological patterns. Some systematic floristic sample sites were completed. A total of 24 communities were described for the area of overlap with the current study. The native vegetation of the Goulburn River valley has been broadly mapped and described by McCrae and Cooper (1985) in their work on the Merriwa 1:100,000 map sheet.

There are a greater number of smaller local studies and special interest investigations that have been completed in the study area over many years. Early botanical lists were made following traverses of the Rylstone to Goulburn River areas by Cunningham in the 1820s (in McCrae and Cooper 1985) and Baker (1896). Almost a century later, Floyd (1984) undertook several field investigations looking at rainforests on basalt soils and lowland gullies as part of his statewide classification of rainforests in New South Wales (Floyd 1990). Species lists have been generated by botanists for areas of interest (e.g. Benson (1984) in Mount Pomany, Gailey (1980) in Coxs Gap). Ford (1989, 1990, 1991) provided an overview of floristic patterns in the Dunns Swamp area and the Hunter Range. Other work has been associated with environmental assessment for fuel reduction burning (e.g. Washington and Imrie 1998) including some that has involved the collection of systematic floristic data (e.g. Vollmer 1995, Bell 1995). Interested members of the public have also contributed invaluable knowledge from very remote sections of the reserve (e.g. Macqueen 2005 examining vegetation condition on diatremes).

Since then, survey work in the study area has been limited to the collection of systematic floristic data to assist with the classification of native vegetation communities across large regions. These regional mapping projects include the North-east Regional Forest Agreement Process in 1999 (NPWS 1999) and most recently to assist natural resource management across the Hunter-Central Rivers Catchment Management Authority area (Sommerville 2009). Regional scale mapping of the entire catchment is currently underway (OEH in prep b).

### *2.1.2 Floristic sample site data*

An inventory was taken of all known systematically collected floristic sample site data from within and adjoining the study area. Table 1 presents a list of the known studies previously undertaken in and adjoining the study area that included collection of systematic floristic sample site data. The sites in these data sets were examined to ensure that they conformed to a standard fixed search area (400 square metres), were

located using a grid reference to within 100 metres accuracy, assessed the cover abundance of each species using standard methods and recorded all vascular plants present. As far as practicable the heritage of all sites was traced back to original field data sheets to check for completeness in species identification and cover score method. Mismatches between database records and field proformas were corrected in consultation with field botanists. Sites were excluded where species inventories were incomplete either through limitations of the survey method, unresolved species taxon for multiple specimens found on site, or incomplete cover abundance scores. Twenty-nine sites were excluded as they did not meet data quality protocols. Table 1 presents the number of systematic floristic sample sites that were used from each source.

**Table 1: Previously existing systematic floristic sample sites**

| Source | Area | Number of Sites Used in Classification for This Study |
|---|---|---|
| Bell (1998) | Wollemi NP | 149 |
| Benson and Howell (1997) | Mount Pomany 1:100,000 map sheet | 12 |
| NPWS (1999) | Lower North-east Comprehensive Regional Assessment area | 44 |
| Gellie (1991) | Blue Mountains-Wollemi national parks | 5 |
| Hill (2000) | Goulburn River NP | 2 |
| Keith and Benson (1990) | Wallerawang map sheet | 9 |
| Washington (1999) | Wollemi NP – Nullo Mountain area | 5 |
| Sommerville (2009) | Hunter-Central Rivers Catchment Management Authority mapping area | 28 |
| DEC (2006) | Capertee and Wolgan areas | 22 |

## 2.2 Aerial Photograph Interpretation

### *2.2.1 Introduction*

API was used to identify and illustrate the spatial distribution of observable patterns in vegetation type across the study area at a scale matching that of operational topographic maps. Interpretation was undertaken by a single experienced interpreter. Extensive field traverses were undertaken to relate vegetation patterns identified in the field to patterns observable from recent three-dimensional stereo digital imagery (using a viewing scale between 1:2000 and 1:15,000). Interpretation was undertaken using a series of stages or 'visual passes' of the study area. The first seeks to understand the landscape by examining identifiable field and photo patterns and relating them to major geological, climatic and topographic features. During this stage the geological patterns, vegetation extent and broad vegetation structures (rainforest, heaths, dry woodlands etc.) are identified and mapped. Recurring patterns in vegetation structure and composition are noted.

Subsequent stages subdivide the initial line work to resolve recurring finer patterns that arise from local topographic influences such as aspect, drainage, soil depth and rockiness. Interpretation is supported by further field survey. Separate classes are made to identify repeated patterns in the dominance of the upper strata (canopy) and understorey characteristics. A label is attached to identify the degree of confidence ascribed to the interpretation attributes. The final stages separate other local habitat features and disturbance patterns.

### *2.2.2 Imagery*

Stereoscopic 50 centimetre ADS-40 digital imagery for the Mount Pomany and Wallerawang 1:100,000 tiles was flown by the NSW Department of Lands in September 2007 and December 2008 respectively. This was the imagery used for the large majority of the study area (see Map 1). Supplementary stereo digital imagery was required for a small area of the Merriwa 1:100,000 tile. This was obtained by scanning wet film negatives of 2004 Department of Lands aerial photography, and processing three-dimensional geo-referenced data to

enable digital viewing. Interpretation was completed using *Stereo Analyst*, a plug in for *ArcGIS* software that facilitates stereo viewing of digital imagery.

### *2.2.3 Field reconnaissance*

Extensive vehicle-based and foot-based traverses were undertaken through a wide range of environments in the study area. All trails navigable by four wheel drive vehicle were driven in order to relate patterns observed on imagery with those on the ground. Foot-based traverses targeted remote environments and photo patterns that could not be assessed by other means. A small hand-held global positioning system (GPS) data logger was used to record observations on the traverses. Changes in vegetation composition were noted by recording vocal descriptions of points (known as rapid observation points), including the same fields used with the mobile geographic information system (GIS) described below. Data were stored as .wav file and linked to georeferenced data points in GIS. This system was used more extensively from halfway through the project as there were considerable efficiencies in its application compared to the mobile GIS based system described below.

In the first half of the study a mobile GIS, a database system using *ArcPad7*, and an attached GPS were used in the field to record vegetation structure and composition based on changes in dominant species of the upper stratum and understorey characteristics as well as changes in substrate and topography. Data was collected at rapid observation points. A point constituted a location from which the visible extent of the vegetation was assessed. The assessable area was not fixed; the area visibly examined depended upon the density and condition of the vegetation. At each rapid observation point the cover abundance of each of the three dominant species present in the upper strata was assessed using a 1-6 Braun-Blanquet score. Predefined understorey classes were used (see Table 3) to describe the dominant shrub/small tree and ground covers present. Each rapid observation point was also allocated to a predefined broad soil type based on assessment of visible evidence on surface soil and rock outcropping.

### *2.2.4 Mapping pathway*

To ensure consistency in the interpretation of features across the study area, interpretation is tied to explicit mapping thresholds and a mapping pathway. The mapping pathway is presented in Figure 1 and discussed below.

## API ATTRIBUTES AND GIS COMPILATION

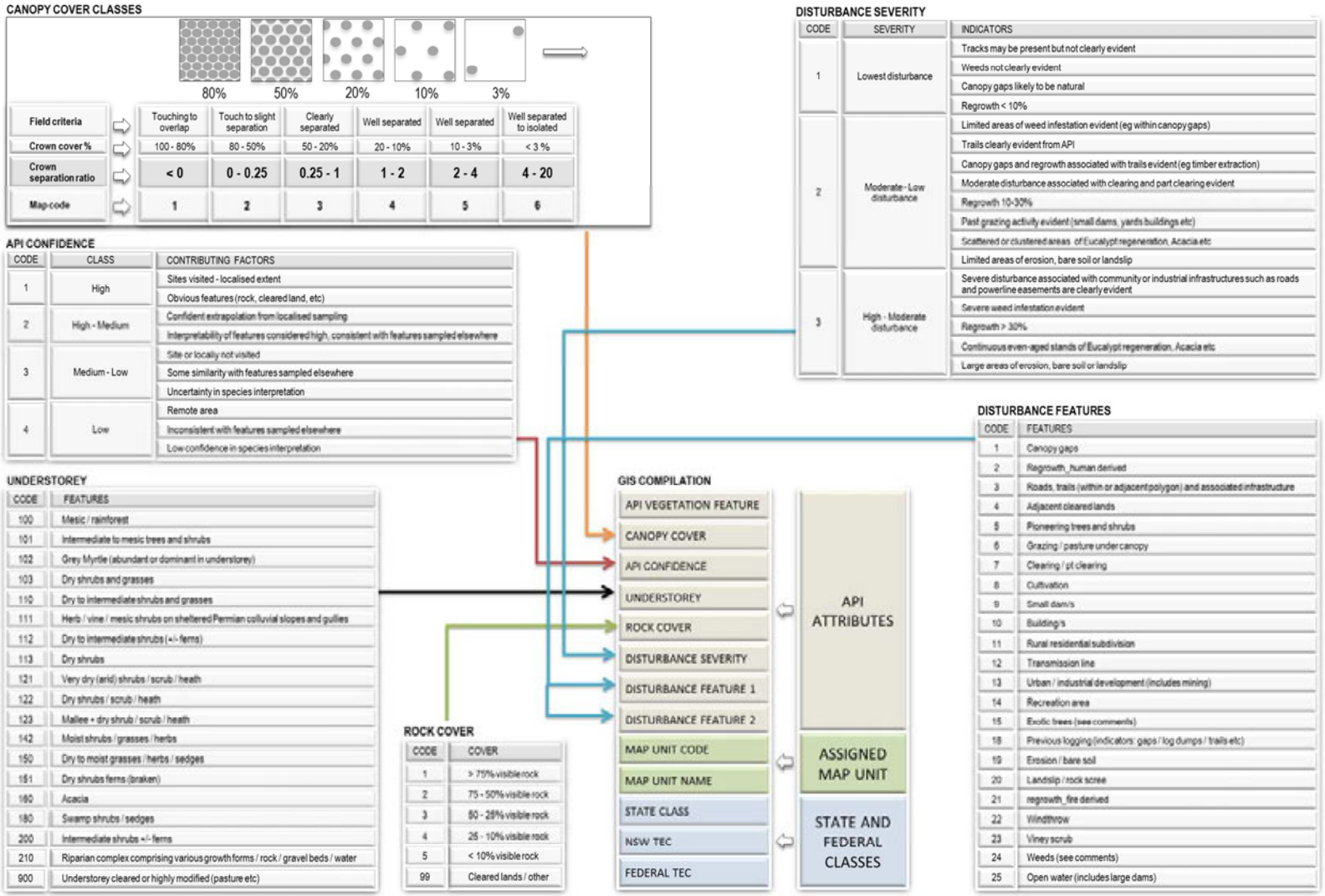



**Figure 1: API mapping pathway and features**

*Extant vegetation cover classes*

Table 2 sets out the criteria that were applied to identify a range of vegetation cover thematic classes. These classes were used to map the current extent of vegetation cover in the study area.

**Table 2: Extant vegetation cover thematic classes**

| Theme | Criteria | Minimum Size | Comment |
|---|---|---|---|
| Native Woody Vegetation | Woody cover greater than three per cent based on crown separation ration (CSR) classes ((Walker and Hopkins 1990) see discussion below and Figure 2). Native woody cover includes map codes 1-5 and upper stratum with less than 50 per cent (CSR) exotic species. | 1 ha | |
| Non-native Woody Vegetation<br><br>(Exotics and Plantations) | Discriminated from Native Woody Vegetation based on cover of non-native species that exceeded 50 per cent of the dominant upper stratum (classes 1 and 2) in Figure 2. | 1 ha | |
| Non-woody<br><br>(Grasslands and Sedgelands Swamps) | Non-woody cover defined as areas less than three per cent cover of woody vegetation based on Walker and Hopkins (1990) CSR classes (see Figure 2 map codes 5-8). | 1 ha | Grasslands were not separated into native and exotic (pasture) grasses. |

*Canopy cover classes*

An adapted eight-scale classification of crown separation ratio (CSR) was utilised as a relative measure of upper strata (canopy) cover for all native woody vegetation cover (Figure 2). Canopy Cover classes 1-4 generally describe the canopy cover characteristics of open woodlands to rainforests. Canopy Cover 5 typically describes open eucalypt stands that have been disturbed in some way, or in some instances may be naturally occurring very open woodlands. Cover Cover classes 6-8 are commonly highly disturbed environments and include derived non woody vegetation or occasionally non woody native vegetation such as wetlands.

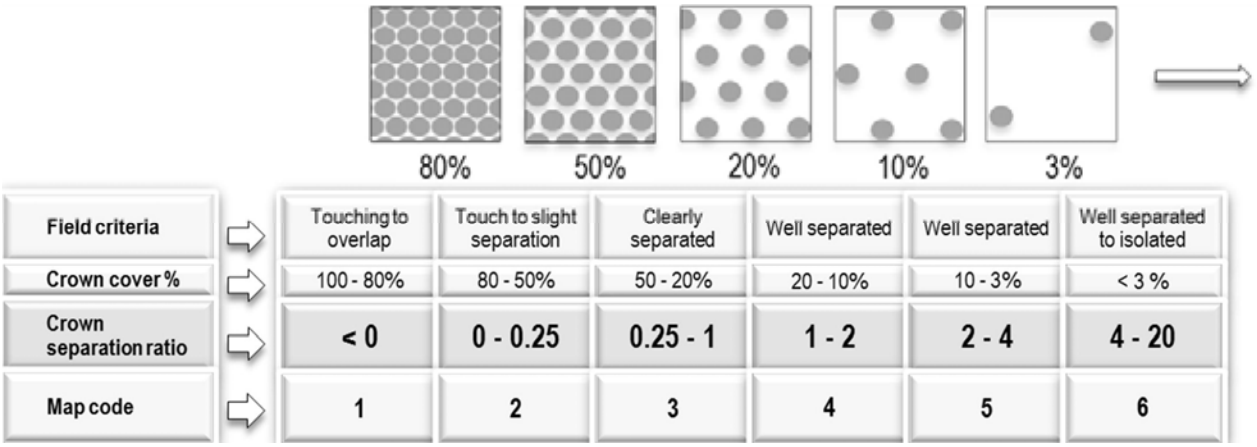



**Figure 2: Canopy cover classes**

*API feature codes*

A primary requirement of the API is to map homogenous patterns in vegetation species composition and landform using dominant upper vegetation stratum, substrate and topography. These homogenous patterns are identified in this project as feature codes. Candidate feature codes were initially drawn from the existing literature by examining the relationship between dominant canopy species and substrates using Bell (1998). A prescribed but open-ended set of criteria was used, where these pre-defined patterns were confirmed, rejected or amended during field traverse and new recurring field and photo patterns were described and added as a new feature code. Derivation of polygons, and the attribution of the vegetation characteristics, relied on a sequential set of decision rules that first considered the habitat of the area using geological and climatic characteristics before resolving internal patterns based on local variables such as aspect and canopy species dominance. A complete list of feature codes is presented in Appendix A.

All polygons classified as native vegetation cover with a crown separation ratio of less than three (five per cent projected canopy cover) and greater than 0.5 hectares in size were allocated a feature code. Exceptions included non-woody native vegetation that defined freshwater wetland communities that supported less than five per cent projected canopy cover.

*Understorey classes*

Understorey was assessed within each feature code to identify the primary lower stratum characteristics of the vegetation. A series of prescribed classes were used (Table 3). The purpose of the assessment was to identify potential variations in vegetation patterns that are otherwise masked by the dominant species assemblage and habitat parameters. The use of understorey classes is helpful in discriminating different vegetation communities that share similar dominant upper stratum but have different species amongst the lower stratum. Equally, understorey patterns are useful for finer scale fire and fauna assessment tasks.

**Table 3: API understorey codes**

| Code | Understorey | Typical Application |
|---|---|---|
| **100** | Mesic/rainforest | Various |
| **101** | Intermediate to mesic trees and shrubs | Various |
| **102** | Grey myrtle (abundant or dominant in understorey) | Various |
| **103** | Dry shrubs and grasses | Narrabeen shale caps and low rock terraces, Permian, sandmass, sandslope |
| **110** | Dry to intermediate shrubs and grasses | Semi-sheltered low rock terraces, Narrabeen, Permian |
| **111** | Herb/vine/mesic shrubs on sheltered Permian colluvial slopes and gullies | Applies **only** to sheltered Permian colluvial slopes |
| **112** | Dry to intermediate shrubs (+/- ferns) | Various |
| **113** | Dry shrubs | Rocky sandstone |
| **121** | Very dry (arid) shrubs/scrub/heath | On exposed rocky areas |
| **122** | Dry shrubs/scrub/heath | On exposed rocky/sandy areas |
| **123** | Mallee + dry shrub/scrub/heath | On exposed rocky areas |
| **142** | Moist shrubs/grasses/herbs | On basalt or basalt enriched soils (residual/colluvial ) |
| **150** | Dry to moist grasses/herbs/sedges | On sandy alluvium flats drainage lines and depressions |
| **151** | Dry shrubs ferns (bracken) | On deep sandy alluvium (infill) typically adjacent to pagodas |
| **160** | *Acacia* | Various |
| **180** | Swamp shrubs/sedges | On gully alluvium |
| **200** | Intermediate shrubs +/- ferns | Sheltered gully alluvium |
| **210** | Riparian complex comprising various growth forms/rock/gravel beds/water | On gully alluvium |
| **900** | Understorey cleared or highly modified (pasture etc.) | Various |

*API confidence classes*

Vegetation maps rarely have a consistent degree of attribute accuracy across the mapping area. This is because some areas are less well sampled or are inaccessible. To address some of these shortcomings, and guide future endeavours, one of four interpreter mapping confidence classes was applied to each polygon (Table 4). These classes enable users to assess the reliability of mapping features in a given area.

**Table 4: Interpreter confidence classes**

| Code | Confidence Class | Contributing Factors to Confidence Class Assignment |
|---|---|---|
| 1 | High | Areas visited – localised extent |
| | | Obvious features (rock, cleared land, etc.) |
| 2 | High-medium | Confident extrapolation from localised sampling |
| | | Interpretability of features considered high, consistent with features sampled elsewhere |
| 3 | Medium-low | Area or locality not visited |
| | | Some similarity with features sampled elsewhere |
| | | Uncertainty in species interpretation |
| 4 | Low | Remote area |
| | | Inconsistent with features sampled elsewhere |
| | | Low confidence in species interpretation |

*Rock cover classes*

Visible rock (Table 5) was interpreted in order to provide information that may be of interest for further scientific survey investigation (herpetological, botanical, etc.) as well as for fire management and logistics (fuel and bushfire behaviour mapping, helicopter access points etc.). This attribute delineates rocky ground cover, exposed rock plates and rock outcrops.

**Table 5: Visible rock classes**

| Code | Class |
|---|---|
| 1 | More than 75% visible rock |
| 2 | 50-75% visible rock |
| 3 | 25-50% visible rock |
| 4 | 10-25% visible rock |
| 5 | Less than 10% visible rock |
| 99 | Cleared lands/other |

*Disturbance features*

Evidence of disturbance to native vegetation cover that was visible from aerial photographs was attributed. Individual codes were allocated (as per Table 6) to describe the primary and secondary disturbance features present.

**Table 6: Disturbance features**

| Code | Disturbance Features |
|---|---|
| 1 | Canopy gaps |
| 2 | Regrowth – human derived |
| 3 | Roads, trails (within or adjacent to polygon) and associated infrastructure |
| 4 | Adjacent cleared lands |
| 5 | Pioneering trees and shrubs |
| 6 | Grazing/pasture under canopy |
| 7 | Clearing/part clearing |
| 8 | Cultivation |
| 9 | Small dam/s |
| 10 | Building/s |
| 11 | Rural residential subdivision |
| 12 | Transmission line |
| 13 | Urban/industrial development (includes mining) |
| 14 | Recreation area |
| 15 | Exotic trees (see comments) |
| 18 | Previous logging (indicators: gaps/log dumps/trails etc.) |
| 19 | Erosion/bare soil |
| 20 | Landslip/rock scree |
| 21 | Regrowth – fire derived |
| 22 | Wind throw |
| 23 | Viney scrub |
| 24 | Weeds (see comments) |
| 25 | Open water (includes large dams) |

*Disturbance severity classes*

All vegetation cover was assessed for disturbance, as noted above. A code was applied to indicate the severity of the visible disturbance, based on subjective assessment using a number of predefined indicators. A three-class system ranks the disturbance severity as lowest, moderate or high. The indicators for each disturbance severity class are shown in Table 7.

**Table 7: Disturbance severity classes and indicators**

| Code | Severity | Indicators |
|---|---|---|
| 1 | Lowest disturbance | Tracks may be present but not clearly evident |
| | | Weeds not clearly evident |
| | | Canopy gaps likely to be natural |
| | | Regrowth < 10% |
| 2 | Moderate - Low disturbance | Limited areas of weed infestation evident (e.g. within canopy gaps) |
| | | Trails clearly evident from API |

| Code | Severity | Indicators |
|---|---|---|
| | | Canopy gaps and regrowth associated with trails evident (e.g. timber extraction) |
| | | Moderate disturbance associated with clearing and part clearing evident |
| | | Regrowth 10-30% |
| | | Past grazing activity evident (small dams, yards buildings etc) |
| | | Scattered or clustered areas of Eucalypt regeneration, Acacia etc |
| | | Limited areas of erosion, bare soil or landslip |
| 3 | High - Moderate disturbance | Severe disturbance associated with community or industrial infrastructures such as roads and powerline easements are clearly evident |
| | | Severe weed infestation evident |
| | | Regrowth > 30% |
| | | Continuous even-aged stands of Eucalypt regeneration, Acacia etc |
| | | Large areas of erosion, bare soil or landslip |

## 2.3 Survey Stratification and Site Selection

The classification of vegetation communities using systematic floristic sample sites relies on there being an adequate coverage of samples across the full range of environments present in the study area. The placement of systematic floristic sample sites by Bell (1998) relied on a stratification based on combinations of "geology-aspect-physiography-alititude-broad vegetation" (Bell 1998). No sampling performance assessment is included within that report, however major survey gaps are described, many of which were addressed in the current survey design.

A new stratification layer was built for this study to spatially summarise the main environmental gradients across the study area. Table 8 presents the environmental variables and classes that were used to develop the stratification. Combinations of each variable class were produced in GIS and area figures for each combination of classes were tabulated.

**Table 8: Broad environmental stratification classes**

| Variable | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 |
|---|---|---|---|---|---|
| **Broad geology** | Alluvium | Basalt | Hawkesbury Group | Narrabeen Group | Permian |
| **Altitude (metres above sea level)** | Below 550 m | 550-850 m | 850 m and above | | |
| **Aspect** | Exposed (270-45º) | Intermediate (46-120º and 190-269º) | Sheltered (121-189º) | | |

To assess the adequacy of pre-existing survey effort, all pre-existing systematic floristic sample sites were allocated to a strata combination. At the same time, an 'expected' total number of sites was calculated (i.e. total survey effort), incorporating the total number of pre-existing sample sites and the anticipated total number of new sites that were predicted to be collected during the current project. This total survey effort was then proportionally allocated to each strata combination based on its per cent cover of the study area. For example, if the expected total number of sites for the study area was estimated to be 500, and Stratum X covered 10 per cent of the study area, then 50 sites (i.e. 10 per cent of 500) would be allocated to be completed Stratum X. Further caveats were placed on this allocation. For example, a lower limit of three sites per stratum was set, in order that all strata combinations would have sufficient power to be described; and an upper limit of 20 sites was set, as this was considered to be sufficient to adequately sample the largest strata combinations. By comparing the allocation of pre-existing systematic floristic sample sites to the allocation of total survey effort, gaps in the coverage of environmental gradients were identified.

A finer stratification was employed during, and at the end of, the API stage of the project. This additional gap analysis was completed to ensure that sampling was undertaken within API feature codes that identified candidate vegetation communities, but were overlooked in the broad environmental stratification.

Field survey effort for the current study was allocated to strata combinations that were identified as being either unsampled or undersampled by either stratification process. Sites were selected within each stratum using a GIS and API. The remoteness of the study area meant that randomness was a secondary consideration to access, and accessible areas were targeted first to ensure that sufficient replication and coverage could be achieved. Remote access was required to sample vegetation or stratum of specific interest using foot-based traverses. Walking routes were planned to ensure that undersampled or unsampled strata were sampled along the way, in order to maximise the efficiency of field data collection.

## 2.4 Systematic Floristic Sampling

New systematic floristic sampling was undertaken during 2009 and 2010. Surveys were carried out in teams consisting of one botanist and one assistant. Once the location of a sample sites was determined in the field, an initial assessment of the site was made to ensure that the vegetation present was in agreement with the purpose of the sample. Reasons not to proceed with the site were: coarse indicators (such as different vegetation formation/structures) or a degree of disturbance through clearing or weed infestation that would result in a serious underestimate of native species diversity. In the case of the latter, where possible sites were moved to adjoining areas to avoid these impacts.

Systematic floristic sample sites were fixed to 0.04 hectares in size. The area was marked out using a 20 by 20 metre quadrat, although in some communities (such as riparian vegetation) an irregular configuration of the site was required (e.g. 10 by 40 metres). Within each site all vascular plant species were recorded and assigned a 1-6 cover abundance score using a modified Braun-Blanquet scale (Poore 1955) as shown in Table 9. This 1-6 cover abundance scale was used as it matches the overwhelming majority of existing site data in both the study area and region.

**Table 9: Cover abundance score using modified Braun-Blanquet scale**

| Cover Score | Per Cent Cover |
|---|---|
| 1 | Rare, few individuals (three or less) present cover <5% |
| 2 | Common and <5% |
| 3 | Cover >5% and <25% |
| 4 | Cover >25% and <50% |
| 5 | Cover >50% and <75% |
| 6 | Cover >75% |

Species that could not be identified in the field were recorded to the nearest possible family or genus and collected for later identification. Species that could not be identified confidently were lodged with the NSW Herbarium for identification. At each site estimates were made of the height range, projected foliage cover and dominant species of each vegetation stratum recognisable at the site. Measurements were taken of slope and aspect. Notes on topographic position, geology, soil type and depth were also compiled. Estimations were made of the percentage of rock outcropping, surface rock, litter and bare soil. Evidence of recent fire, erosion, clearing, grazing, weed invasion or soil disturbance was recorded. The location of the site was determined using a GPS or a topographic map where a reliable reading could not be taken. Elevation values were recorded from a GPS. Digital photographs were also taken at each site.

## 2.5 Site Labelling and Data Storage

For the purpose of managing existing and new field data, each sample site was given an eight digit alphanumerical identification number. A separate survey identification code was also given to all data to distinguish its source. This system enables the reader to understand basic geographical information about a sample site.

For example, site number **GRW08H8M** equates to the following. The first three letters “GRW” refer to the first three consonants of the name of the 1:25,000 topographic map sheet, in this case the Growee map sheet.

The fourth and fifth characters “08” refer to the site number by map sheet, i.e. the eighth site recorded for this map sheet. The sixth character “H” refers to the geological substrate evidenced at the site, in this case Hawkesbury sandstone. The geologies found within the study area were coded as shown in Table 10. The seventh character “8” refers to the aspect observed at the site (NE in this case) using the categories shown in Table 11. The eighth and final character, “M” in this case, is used to describe the morphology. Morphology coding is shown in Table 12.

**Table 10: Systematic floristic sample site geology labels**

| Geology Code | Geology Type |
|---|---|
| N | Narrabeen sandstone |
| H | Hawkesbury sandstone |
| P | Permian Sediments |
| B | Basalt |
| A | Alluvium |
| Q | Quaternary sand |

**Table 11: Systematic floristic sample site aspect labels**

| Aspect Code | Aspect Compass Class |
|---|---|
| 1 | 67.6°-112.5° or E |
| 2 | 112.6°-157.5° or SE |
| 3 | 157.6°-202.5° or S |
| 4 | 202.6°-247.5° or SW |
| 5 | 247.6°-292.5° or W |
| 6 | 292.6°-337.5° or NW |
| 7 | 337.6°-22.5° or N |
| 8 | 22.6°-67.5° or NE |

**Table 12: Systematic floristic sample site morphology labels**

| Morphology Code | Morphology |
|---|---|
| C | Crest |
| U | Upper Slope |
| M | Mid Slope |
| L | Lower Slope |
| S | Simple Slope |
| O | Open Depression |
| D | Closed Depression |
| F | Flats |

| Morphology Code | Morphology |
|---|---|
| R | Ridge |

All data collected during field surveys was entered into the OEH vegetation survey database. This database was developed by OEH to facilitate the storage, entry and manipulation of systematic floristic sample site data. Database entry windows are similar to those used for the field pro-forma to minimise data entry errors. All species recorded were coded using the Census of Australian Vascular Plant Species (CAPS). New species or subspecies, as identified by the Royal Botanic Gardens, not previously listed in the CAPS were assigned new codes to the master CAPS database. Protocols for the access and distribution of site data to third parties are in place based on custodianship of data sets used in this project. Access to the systematic vegetation data can be made to the OEH Wildlife Data Unit through gis@environment.nsw.gov.au.

## 2.6 Vegetation Classification and Analysis for the Study Area

### *2.6.1 Taxonomic review*

The purpose of the taxonomic review was to identify errors and inconsistencies in the way floristic data was recorded or entered, and remove these from the data set on which the analysis is undertaken. If not addressed, such inconsistencies and errors can influence the resulting analysis and lead to erroneous classification outcomes. A list was compiled of systematic floristic sample sites present within the study area (and including an additional one kilometer buffer around the perimeter of the study area). A separate species list for each unique survey identification or surveyor was extracted and then combined in a spreadsheet. Species were examined for consistency, with particular focus placed on potential variations between observers. This was particularly important, as the total survey effort has been spread out over many years. Over this time large numbers of species have undergone some form of taxonomic revision. Synonyms were updated to reflect currently accepted revisions. Nomenclature was standardised to follow Harden (1990-1993, and revised editions 2000-2002). Recent taxonomic revisions have been identified using the PlantNET Website that has been developed by the Royal Botanic Gardens (2002). Supporting documentation on the ecology of plant species of the Sydney region was provided by Benson and McDougall (1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2005). The principle outcomes of the taxonomic review are as follows.

- All exotic species were identified and excluded from the analysis data set.
- The review highlighted species that were likely to have been incorrectly identified or incorrectly entered into the database. Original field sheets were reviewed to determine the status of these species, and where data entry errors were detected changes were made to the database. Where data entry errors were not detected, species were reviewed against existing literature. Where this indicated them to be outside their likely range, and no confirmation had been made, the record was deleted from the analysis data set.
- The review highlighted inconsistently collected records of species containing subspecies (subsp.) or varieties (var.). In such cases, subspecies were either lumped to species level in the analysis data set, or were assigned to a single subspecies or variant if only one variety was found to be present in the study area.
- Plant species from the family Orchidaceae were excluded from the analysis data set.
- Species identified to genus level only were excluded from the analysis data set.

### *2.6.2 Vegetation classification*

Vegetation communities were identified by analysing the similarities of species composition and abundance between sample site data using modules with the PATN (Belbin 1994) software. Initially a Bray-Curtis coefficient was generated to identify dissimilarity between sample sites. An association matrix displaying dissimilarity scores between all pairs of sites was produced. An unweighted pair group arithmetic averaging (UPGMA) clustering strategy was applied to the matrix to derive a hierarchical classification. The default beta value of -0.1 was used on all analyses.

A dendrogram was then produced to display the hierarchical relationships between individual sites and groups of sites. Each of the defined groups were then analysed to reveal finer scale floristic assemblages or

to identify outlying sites or clusters of sites. Homogeneity analysis (Bedward et al. 1992) was initially used to identify the number of groups that maximises the returns to within-group floristic variation, while minimising the total number of groups. A nearest neighbour analysis was applied (using a purpose-built program "GDFcheck") to identify possible misclassified sites within groups. To further assist with the identifying underlying patterns in the data, sites previously included in the numerical analysis of Bell (1998) were annotated in the dendrogram with the community label allocated to the site in that study.

A list of candidate communities, based on existing studies and new field work, was compiled for comparative purposes. Broad groups of sites were analysed first and were labeled with descriptors that summarised vegetation composition and major substrate, topographic and climatic characteristics. Each of the defined groups were then re-analysed to uncover finer scale floristic assemblages within the data set or to identify outlying sites or clusters of sites. New group labels were created where distinct and repeatable patterns occurred in substrate, vegetation structure and/or canopy species dominance. Finer splits were stopped when underlying patterns in the data no longer yielded consistent patterns in the floristic composition of the group. Distinctive field patterns that were not explicitly revealed in the analysis because of sampling limitations were identified if these could be reliably interpolated by the aerial photo interpreter. This was particularly applied to vegetation on the margins of the study area where changes in environmental conditions, particularly soil properties, occurred on private lands.

Provisional groups were then tested for robustness by transforming the raw species abundance scores to presence/absence data and re-running the analyses. The hierarchical structure and site grouping were qualitatively compared between the two analyses.

## 2.7 Vegetation Classification and Analysis in the Sydney Basin

Over the last decade a significant investment in vegetation survey and classification has been made across the Sydney basin. Several larger scale projects have addressed discrete subregions including the Cumberland Plain (Tozer 2003), lower Hunter and Central Coast (NPWS 2000), Illawarra (NPWS 2002), Woronora Plateau and Metropolitan drinking water catchments (NPWS 2003c), Warragamba catchment (NPWS 2003d), western Blue Mountains (DEC 2006), Yengo and Parr reserves (DECC 2008), Wollemi NP (Colo area) (DECCW 2009a) and the Sydney Metropolitan Catchment Management Authority (SMCMA) area (DECCW 2009b). All have employed standard survey and classification methods, and as result there are efforts to consolidate these studies into a single unified vegetation classification system for the Sydney basin region (OEH in prep. a).

The Sydney basin study adopts similar methods as described in Section 2.6 above, but on a much larger data set that covers the entire Sydney basin. In total there are over 10,000 systematic floristic sample sites included in this analysis data set. While work in this classification is ongoing, this analysis enabled an assessment of the relationships of data from within the north-west Wollemi area to be examined against the vegetation characteristics of the entire region. In this way vegetation classification was not based solely on local information and efforts were made to ensure that classification retained currency wherever similar vegetation occurs in the region. The regional analysis assisted in resolving the final allocation of sample sites to a vegetation community, to ensure that sites that were most closely associated with groups outside of the study area retained affinity to those groups. This was assessed by tracking the performance of each site within the study area against the large regional data set. The description of groups of sites was assisted by the allocation of vegetation labels ascribed in previous studies within each group. Vegetation communities that were defined by sites that grouped consistently within both local and regional analyses were resolved first. Those that did not were examined sequentially to determine whether new groups were potential artifacts of the analyses or were expressions of new vegetation communities that were better defined by the addition of sites from surrounding areas.

## 2.8 Cross-regional Vegetation Classification and Comparison

The study area lies near the northern and western boundary of the Sydney Basin Bioregion and spans three catchment areas, the Hunter, Hawkesbury-Nepean, and Central West (Murray-Darling Basin). There are several large vegetation classification mapping resources available for comparison for some or all of these areas including the Hunter (Sommerville 2009), south coast and tablelands (Tozer et al. 2010) and Brigalow Belt (Benson et al. 2010), although none are united in classification scale, definition and nomenclature.

The Sydney basin region data set (OEH in prep. a) was augmented with additional sample sites from studies completed from adjoining regions, particularly where environmental features were similar to those present in the study area. Sites were selected from an area up to 200 kilometres to the west and north-west of the study area and outside the Sydney Basin Bioregion. This included the Liverpool Ranges, Barrington Tops, Merriwa Plateau, Central West, Pilliga, Warrambungles and Mount Kaputa.

Allocations of vegetation communities to sites were obtained where possible from project documentation of analyses completed within adjoining regions. A new dendrogram was generated from 13,000 sites using the methods described in Section 2.6. The purpose of this analysis was to provide some indicative insights into the relationships between community classifications used in different regions. The dendrogram was annotated with the vegetation community allocation from these multiple studies and the current study. The performance of the sites located within the current study area were tracked and assessed against the relationships and clusters that formed within the cross-regional data set. Where sample sites grouped broadly with those from outside of the Sydney Basin Bioregion a note was made of the locations and areas which may offer similar vegetation characteristics and any existing vegetation labels that have been used to describe those sites previously. No further analysis was attempted, and it is recognised that considerable additional effort is required to resolve cross-regional vegetation classification issues.

## 2.9 Statewide Classification

The derived vegetation communities were allocated to the statewide vegetation formations and classes of Keith (2004) by comparing environmental gradients vegetation structure and species composition. Discussions on the distribution patterns of classes in Keith (2004) were a key factor in the final allocation of vegetation communities.

## 2.10 Description of Vegetation Communities

Vegetation communities have been described in detail using a number of features. Firstly, combinations of sites that defined unique groups in the various above analyses were used to identify characteristic flora species. While the Sydney basin region analysis informed the allocation of sites to a vegetation community, the floristic summary and environmental descriptors for the community were based only on sites located within the study area to ensure that species lists relevant to the study area were produced. Each vegetation community has been given a name that describes a broad regional descriptor for its distribution within the Sydney basin region, a geological or topographical feature and/or dominant or characteristic species (generally tree species).

Summaries known as community profiles are presented for each vegetation community in *Volume 2* of this report. Each profile provides a brief summary of key identifying features both regionally and locally. These include commonly occurring plant species and habitat characteristics. Example locations are given for the study area. A sample photograph from a site used to describe the community is displayed. The total extant area of the community within the region and within the study area have been calculated and presented in the profile, as has the area in NPWS reserves.

Vegetation community structure data (height and vegetation cover) has been compiled from the systematic floristic sample sites which define each map unit. The sample sites used in the study area analysis come from a wide variety of sources and not all sites had structural data recorded. Where structural data has been recorded, summary statistics have been compiled in the floristic summary table. The data in these tables should be used with caution, paying particular note to how many samples sites were used to derive the summary figures. It is assumed that all surveys recorded per cent cover in the same way. Floristic summary tables contain the following data for each strata:

- average height with standard deviation
- recorded minimum and maximum upper heights (metres)
- average percentage projected foliage cover with standard deviation
- recorded minimum and maximum percentage projected foliage cover
- typical species.

Variation in the recording of structural stratum has been noted in some vegetation types. This may be due in part to modified structural complexity as a result of past disturbance within sample sites, but is also the result of differences in observer methodologies in recording strata. Within some vegetation communities there was considerable overlap in height between strata, particularly between the shrub and small tree layers. Where separation between the strata could not be resolved, the two layers were combined into one shrub/small tree layer and summary figures provided for the combined layer.

Each profile includes a list of diagnostic species (except for those communities that are better documented from adjoining regions). This species list is derived from the sample site data and can be used to help define

the floristic composition of a community in relation to all others present in the study area. A concept known as 'fidelity' applied in Keith and Bedward (1999) based on Westhoff and van der Maarel (1978) provides a systematic method for identifying 'diagnostic' or 'characteristic' species within an assemblage. This approach recognises that, within a given vegetation community, a species may be conspicuous by the frequency and abundance at which it is recorded. However, in other communities the same species may only occur sparsely, at low abundance or not at all. Analysing the performance of each individual species found within each community may reveal patterns useful to classification. Table 13 describes the criteria used to define positive, negative, uninformative and constant species. Positive species are recorded more frequently within a community and/or at a higher median cover abundance than in other vegetation communities. Positive species also include those that are only recorded within the target community irrespective of their frequency of detection or abundance. A species that is present in all other communities but is less common or abundant or not present at all in the target community is defined as a negative diagnostic species. A constant species is one that occurs consistently within many communities. Uninformative species are those that are recorded at lower abundance and less frequently across all communities. The profile for each vegetation community lists species classified as positive, constant, and uninformative. However species which had a group frequency of less than five per cent and uninformative species with a group frequency of less than 10 per cent were not included in the tables.

Plant species richness was also calculated for each profile, generated from the sample sites used to define each community. Mean (and associated Standard Deviation) values were generated using the taxonomic reviewed sample site data.

**Table 13: Definitions of diagnostic species**

| | | **Occurrence of Species in Other Map Units** | | |
|---|---|---|---|---|
| | | **Frequency >=35% and C/A* >=2** | **Frequency <35% or C/A* <2** | **Frequency =0** |
| **Occurrence of Species Within Target Map Unit** | **Frequency >=35% and C/A* >=2** | Constant | Positive Diagnostic | Positive Diagnostic |
| | **Frequency <35% or C/A* <2** | Negative Diagnostic | Uninformative | Positive Diagnostic |
| | **Frequency =0** | Negative Diagnostic | Uninformative | - |

**C/A = Cover Abundance*

*Modified from Keith and Bedward (1999)*

## 2.11 Vegetation Community Mapping

### *2.11.1 Vegetation community domains*

Mapping domains were derived for each vegetation community by extracting field data describing elevation, slope and aspect from each sample site located within the study area. Climatic data (mean annual rainfall) was also obtained for each sample site by intersecting with a modeled mean annual rainfall spatial layer (DEC 2004a) using *ArcGIS*. Mapping domain data was generated for each community by summarising the environmental characteristics of each site used to classify an individual map unit. Maximum and minimum values were recorded for elevation, mean annual rainfall, aspect and slope while individual substrate classes were noted.

Temporary mapping domains for each individual community were then constructed in *ArcGIS* by intersecting digital data for each of the spatial variables within *ArcGIS*. Each of the spatial layers were constrained by the maximum and minimum values obtained from site data.

### *2.11.2 Vegetation community mapping*

Spatial representation of the distribution of each vegetation community within the study area relied on the assessment of agreement between the API feature code classes, sample sites and the derived map domains. Initially individual API feature codes that described interpreted field and photo patterns were intersected with sample sites. Feature codes that define high contrast vegetation patterns such as swamps, rainforests and heaths were addressed first as these were interpreted with a higher degree of reliability. For feature codes

that were intersected by site(s) that described a single vegetation community, and the characteristics of the sites and feature codes were in agreement, then the feature code was assigned to that community directly. Where there was disagreement, the spatial accuracy of either the sample site location or the API line work was examined to identify potential sources of error. A threshold of 50 metres was tolerated for sample site data collected before 1998 prior to the widespread application of global positioning systems in the region. Where errors in the API layer were revealed either in the spatial precision of linework or the allocation of the correct feature code then these were corrected prior to allocation of a map unit label.

Feature codes that were described by sites suggesting alternate map unit allocations were examined in a similar manner to identify potential sources of error. Where alternatives remained, the domains of the alternative communities were examined to identify variables that could be used to resolve the allocation. Expert judgment was used to identify thresholds in topographic or climatic variables based on the data ranges presented in the map domains. On occasion additional fields generated from API including rock cover classes and understorey categories were used to resolve allocations.

Individual map units produced from the API layer were then visually compared to the domains generated from independent spatial layers in order to identify major spatial discrepancies. Greater accuracy in the patterns of distribution was assumed for the API layer given the scale at which the data was captured and the coarseness of available physical data available for the study area. Major discrepancies in distribution arising from thresholds in regional scale variables, such as elevation and mean annual rainfall, were examined. Where variation in elevation exceeded 100 metres or rainfall 100 millimetres then the feature code was reinterpreted to examine accuracy of attribution. Where interpreter confidence was high based on similarity of photo patterns within the parameters suggested by the domain data then the API attribution was retained. Where the interpreter was less certain the feature code was split to the upper thresholds of the domain.

Feature codes for which there were no samples were allocated to a map unit using expert selections. These were also examined against the domains produced for the chosen unit.

## 2.12 Conservation Assessment of Vegetation Communities

### *2.12.1 Legal status under State and Commonwealth legislation*

The legal status of each community described in this report was reviewed by examining and comparing species composition, diagnostic species, habitat parameters and other distributional information presented in TEC determinations made by the Scientific Committee under Schedules 1 and 2 of the NSW *Threatened Species Conservation Act 1995* (TSC Act). Determinations are current to January 2011. A review of listings was also made for those TECs listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

### *2.12.2 Reservation status in the greater Sydney region*

Conclusions drawn on the relationship between vegetation communities found in the study area and those elsewhere in the greater Sydney region relied upon the analysis of site data. Site data from adjoining or overlapping studies were used to indicate communities of similar floristic composition, habitat and distribution. Coarse estimates of the pre-clearing and extant area (hectares) have been provided based on currently available knowledge presented in regional studies including Tozer et al. (2010), NPWS (2000, 2003c, 2003d), Bell (1998) and Peake (2006). Reservation figures are calculated using all estate managed by NPWS at the time of those reports. Where no figures are available estimates have been made based on current expert knowledge.

# 3 RESULTS

## 3.1 Aerial Photograph Interpretation

### *3.1.1 Extant vegetation cover*

Vegetation cover occupies 227,216 hectares representing 98.2 per cent of the study area. This cover has been attributed to identify native (woody and non-woody) vegetation (211,269.4 hectares/91.3 per cent of the mapped area), non-native vegetation (26.8 hectares/0.01 per cent) and cleared/derived native/exotic non-woody vegetation (15,919.8 hectares/6.9 per cent). The vegetation cover layer comprises 30,225 polygons which vary between 0.01 and 2367.0 hectares in size with a mean polygon size of 7.5 hectares.

### *3.1.2 Canopy cover*

Canopy cover classes were interpreted for all mapped vegetation cover. Map 3 illustrates the distribution of the canopy cover classes. Over 85 per cent of the mapped area falls within canopy classes 10-20% or 20-50% which indicates that much of the vegetation cover falls within an open woodland to open forest class of Walker and Hopkins (1990).

### *3.1.3 API feature codes*

A total of 125 feature codes were identified and mapped across the study area. One hundred and twenty-two of these describe unique combinations of dominant vegetation species, substrate and topography while three (occupying 1.8 per cent of the mapped area) describe land cover elements including man-made infrastructure, rock and water. A description of these feature codes is presented in Appendix A.

### *3.1.4 Understorey*

Map 4 illustrates the patterns in broad understorey characteristics across the study area. Almost 80 per cent of the mapped area is characterised by a dry shrubby understorey, with mesic and rainforest understorey restricted to narrow ribbons along gullies and gorge systems and basalt peaks.

### *3.1.5 API confidence*

Map 5 shows the distribution of interpreter confidence classes. Almost 80 per cent has been described as high or medium-high based on field observation and similarity of photo patterns to visited areas. Just over 21 per cent is of low-medium confidence.

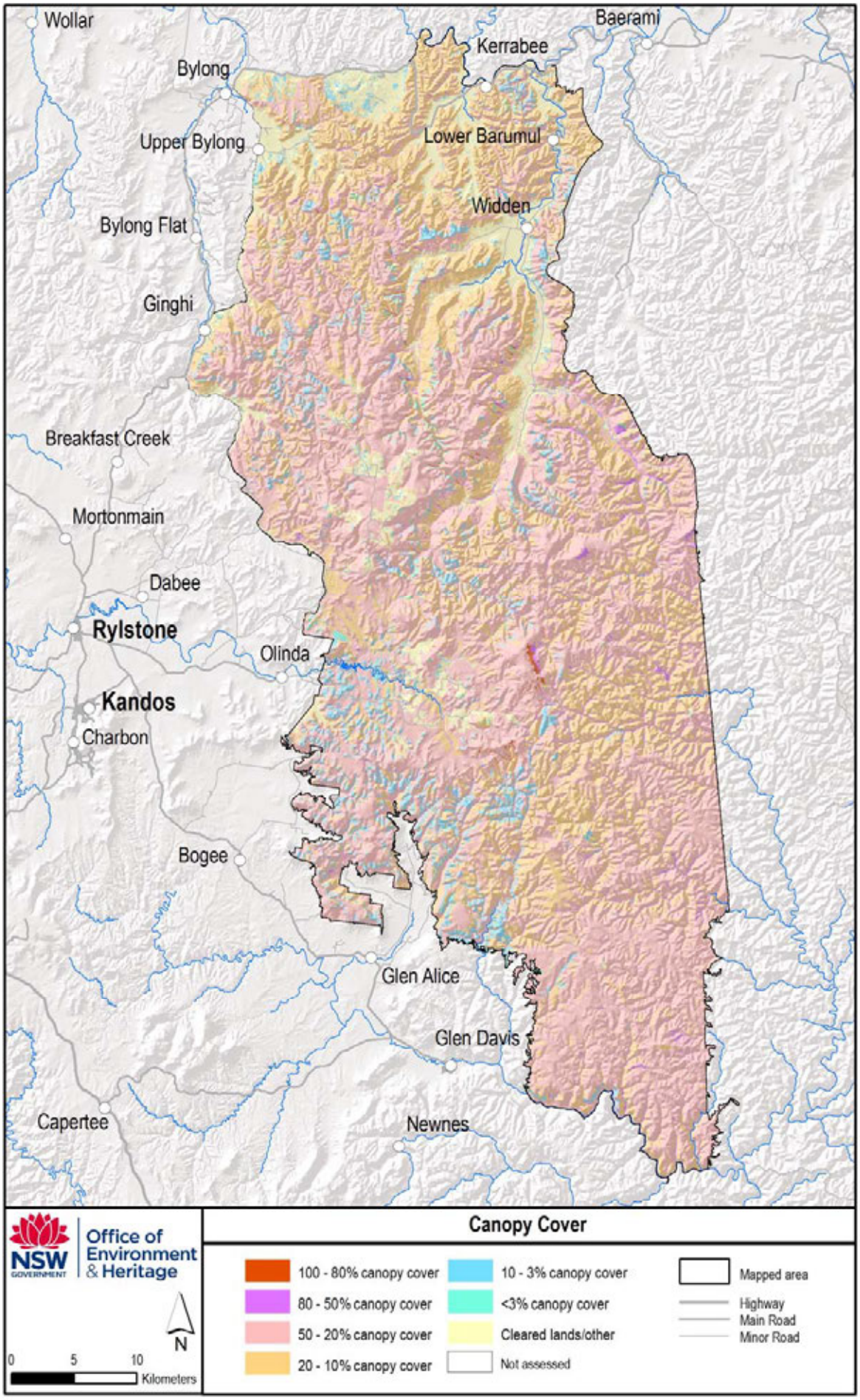
### *3.1.6 Rock cover*

Map 6 indicates the relative rockiness of the landscape. Polygons described as having greater than 50 per cent cover of visible rock occupy 8.4 per cent of the mapped area, while polygons having greater than 10 per cent visible rock occupy 72 per cent of the mapped area.

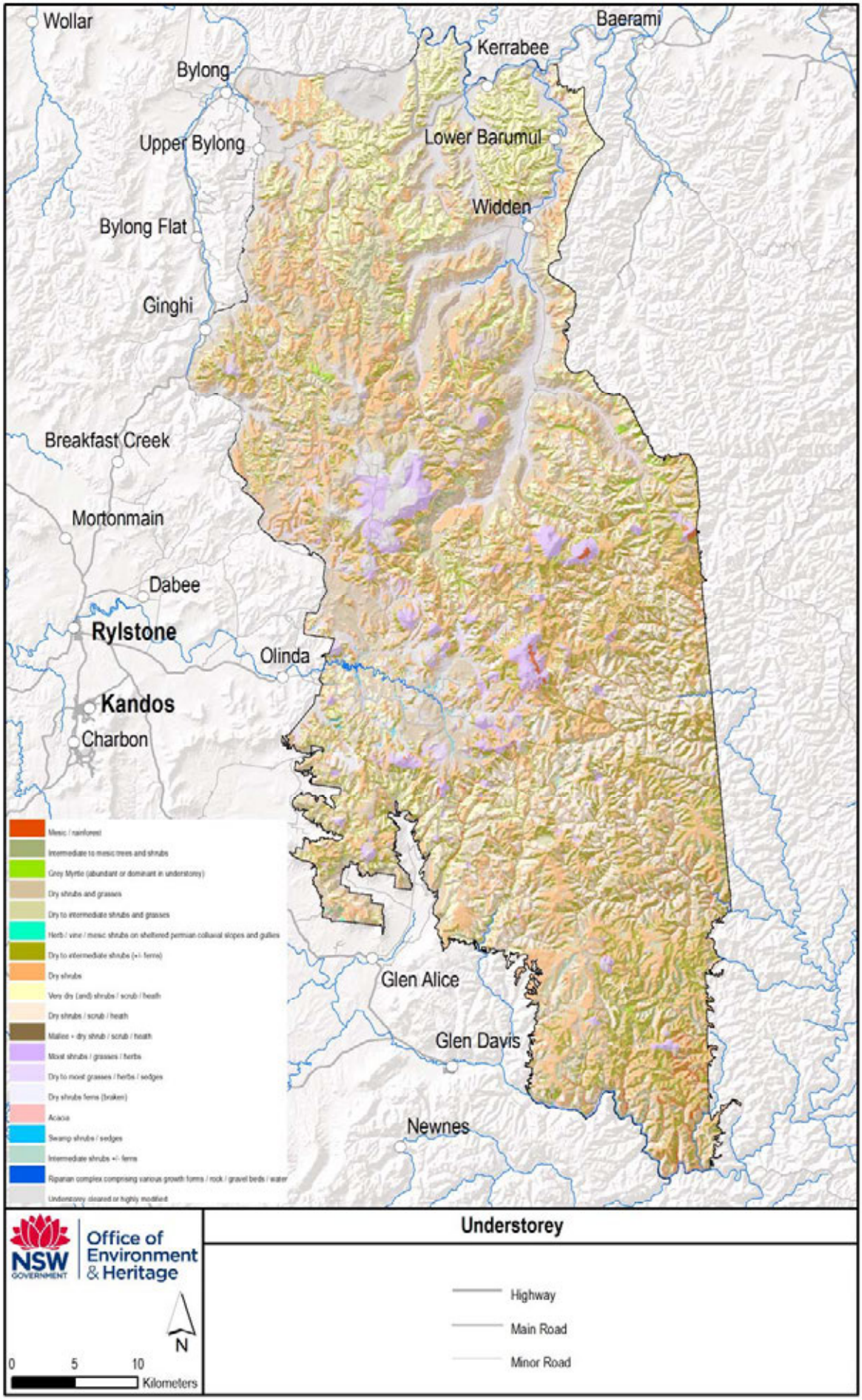
### *3.1.7 Disturbance severity*

Map 7 shows the distribution of disturbance severity classes. Remote assessment of disturbance indicates that almost 14 per cent of the mapped area has been highly disturbed. This is indicated by clearing around undulating fertile soils of the major valley systems and on the major basalt capping. Adjoining vegetation may also exhibit disturbance associated with rural landuse, including rough grazing, regrowth, dams, tracks, weeds and erosion. Evidence of logging is also present across the state forests and private lands found at Nullo Mountain and Coricudgy. This disturbance is visible in the form of regrowth stands, weeds, logging trails, snig tracks and dumps.

**Map 3: Distribution of canopy cover classes**

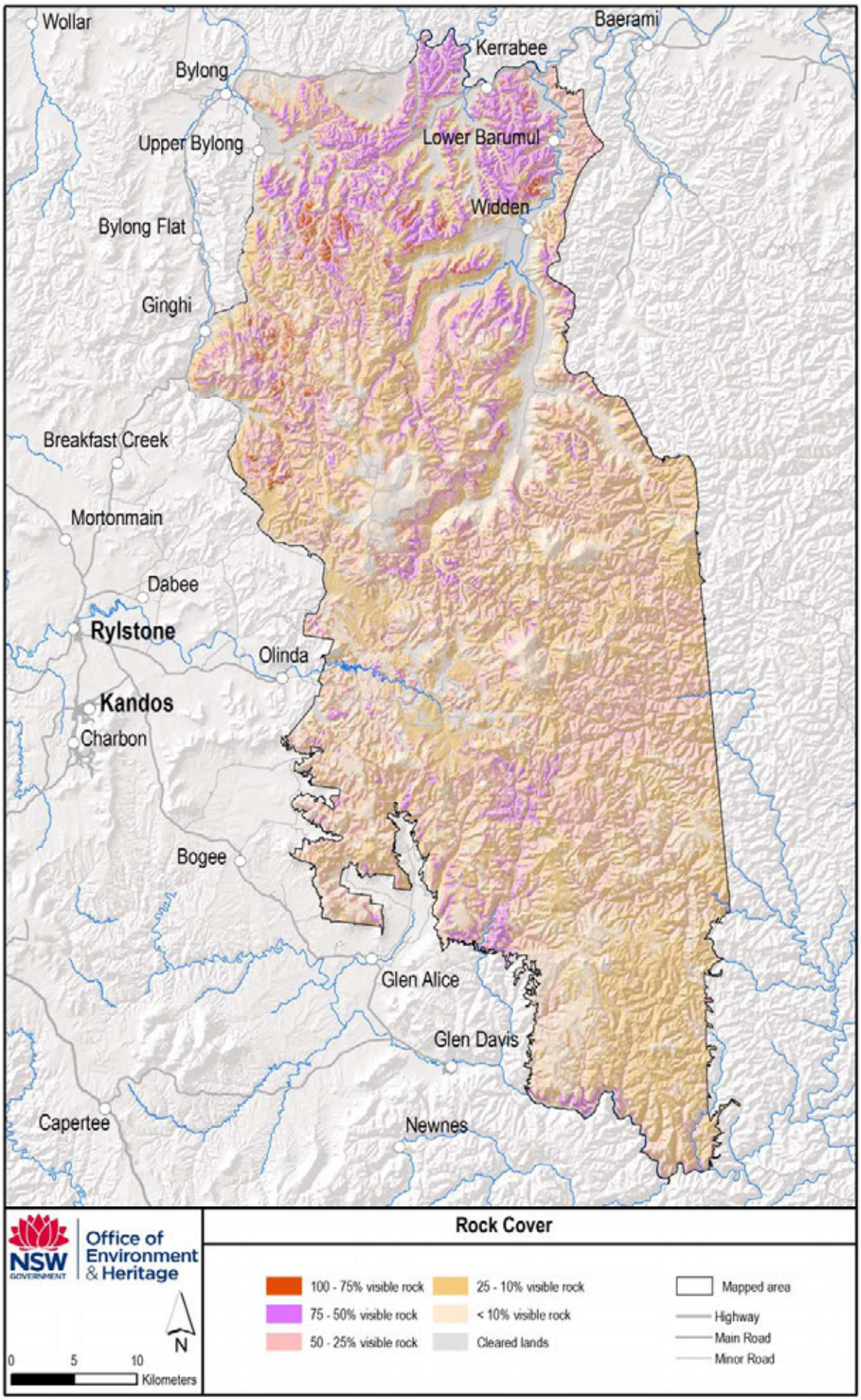


**Map 4: Distribution of understorey classes**



**Map 5: Distribution of API confidence classes**

**Map 6: Distribution of rock cover classes**



**Map 7: Distribution of disturbance severity classes**

## 3.2 Systematic Sampling Effort

A total of 305 systematic floristic sample sites were collated for the study area prior to commencement of survey for this study, and a total of 136 new sample sites were completed for this project. Of the 305 pre-existing sites, 39 were excluded from the vegetation classification as they did not meet data quality protocols. Hence a total of 402 sites were located within the boundaries of the study area or nearby, of which 340 are situated within Wollemi NP and three within Goulburn River NP.

Sampling density across Wollemi NP improved from one systematic floristic sample site per 701 hectares to one site per 476 hectares. Map 8 shows the distribution of all systematic floristic sample sites in the study area. The allocation of survey effort for north-west Wollemi NP now meets the 'adequate' category of the BSP program (DECCW 2010, NPWS 2003a). Appendix B displays the distribution of systematic floristic sample sites across the broad stratification classes. The distribution of sampling effort is now more evenly spread across the major environmental gradients and a better match has been achieved between the area occupied by a stratum and the corresponding survey effort. Gaps remain in low elevation basalt environments, sheltered Hawkesbury sediments and elevated Permian slopes. However, these sampling shortfalls are addressed by the inclusion of sites from adjoining areas in the Sydney basin analysis.

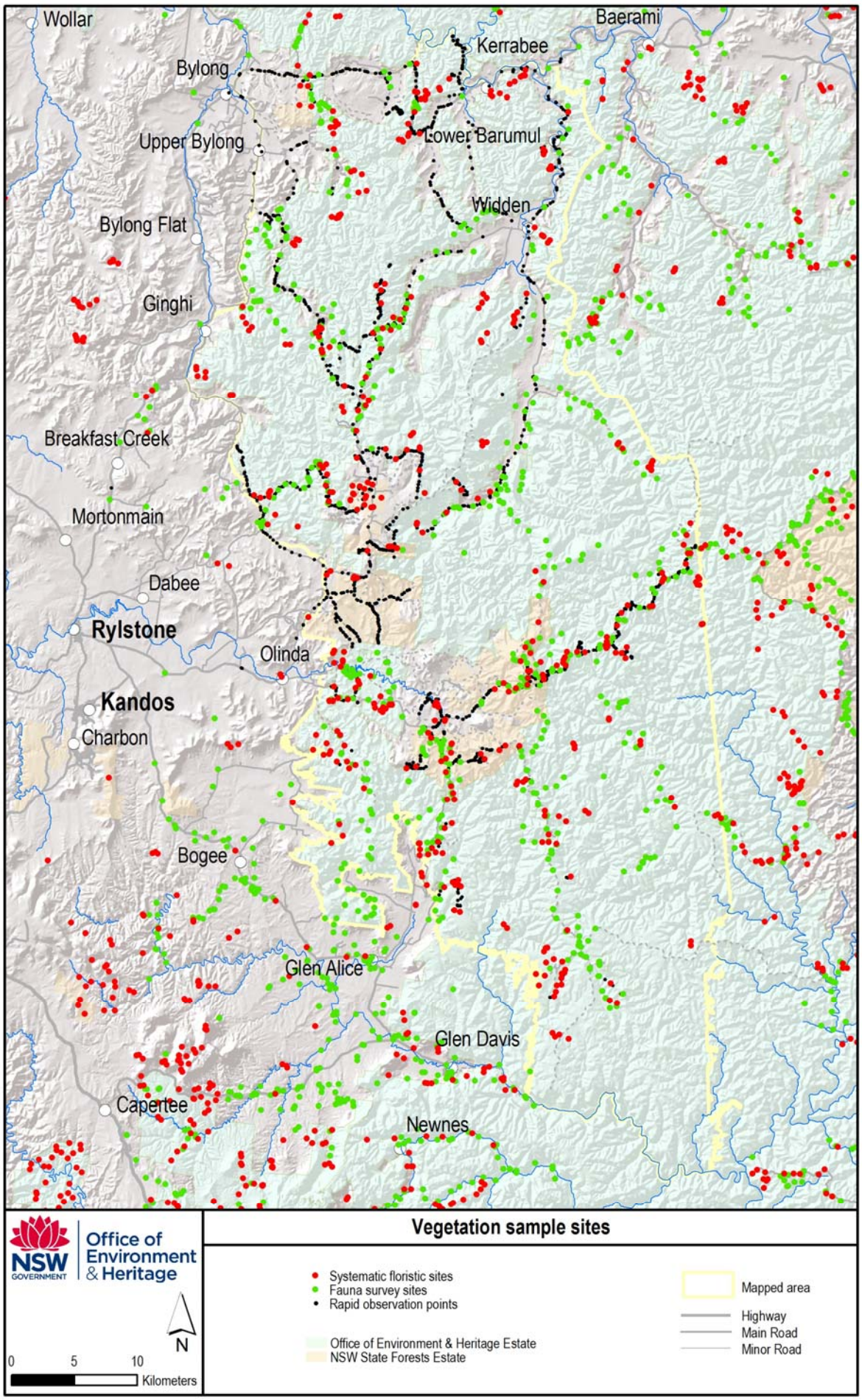
Appendix A displays the distribution of systematic floristic sample sites across API feature codes. At least one sample was located within 96 of the 120 feature codes (80 per cent) describing native vegetation patterns derived from field traverse and photo interpretation. Those not sampled collectively cover just over 4750 hectares, which is less than three per cent of the total study area. Approximately half of this area is comprised of three feature codes that describe variations on sandstone substrates, some of which are located in the most inaccessible parts of the study area in the far south-east of Wollemi NP. These shortfalls, together with those for other unsampled strata on Permian sediments, have been addressed by the inclusion of site data from adjacent study areas in the Sydney basin analysis.

While the major identifiable environmental gradients and API feature codes have been sampled, the spatial distribution of floristic sample sites remains clustered around access points. Spatial data gaps remain, but this is to be expected in an area of this size and remoteness.

## 3.3 Rapid Survey Effort

The distribution of field reconnaissance survey is also shown in Map 8. This includes rapid observation points collected during this project and site descriptors collected during systematic fauna survey (DEC 2007). While there has been no formal assessment of the distribution of rapid observation points against the broad environmental stratification or API feature codes, Map 8 shows that the spread of rapid observation points is more wide-reaching than that of systematic floristic sample sites. This is because rapid observation points are a quicker survey method, enabling more areas to be assessed in a single day. However, there remain unvisited sections of the study area, particularly in the remote and rugged south-east of Wollemi NP.

**Map 8: Location of systematic floristic sample sites and other survey points in the study area**



## 3.4 Vegetation Classification

Sixty-two vegetation communities have been described in this study. Fifty-seven of these communities were described using between one and 29 sample sites drawn from the analysis data set. Four of the communities were described using sites positioned outside the study area, but within neighbouring areas. One community description was based on qualitative descriptions available in existing literature.

A summary dendrogram is presented in Figure 3. This provides an indicative hierarchical relationship between the 57 map units that were described from sample sites that fell within the study area. These map units can be grouped into ten broad vegetation assemblages (called Summary Vegetation Label in Figure 3) that describe the major provinces and environmental features of the study area. Several of these could be aligned to current statewide classifications using either the formation or class level of Keith (2004). At the broadest levels of subdivision the flora assemblages were partitioned into two broad groups: mesophyll vegetation and sclerophyll vegetation. The former occupies the top half of the dendrogram and describes vegetation communities on richer clay soils, those soils periodically inundated by freshwater, or protected from fire and sun. These vegetation communities occupy specialised habitats in the study area and are limited in extent. The latter half of the dendrogram describes the extensive sclerophyllous forests, woodlands and heaths found across the sandstone plateaux.

The final allocation of sample sites to map unit is available from the Biodiversity Survey and Assessment Section, Metropolitan Branch. This was reliant on the interrogation of Sydney basin-wide analysis to ensure that the classification maintained its robustness following the integration of a larger data set. In some instances this resulted in the identification of new communities that were not resolved from the analyses of data restricted to the study area. The results of the larger regional analyses are not reproduced here but are part of ongoing work in the region (OEH in prep. a).

Several assemblages which were had few sample sites and could not be defined from any analyses, but never the less described a distinctive assemblage both in the field and in aerial photos, were retained as discrete map units. This includes rocky residual basalt low woodland (S_DSF44), footslopes yellow box forest (S_GW11), paperbark thickets on basalt (S_WSF30), diatreme moist forest (S_WSF23) and rocky fig rainforest scrub (S_RF15).

## 3.5 Floristic Diversity

A total of 1237 native vascular plant species have been recorded from the systematic floristic sample sites located in the study area. A list of native species is presented in Appendix C which draws on the taxonomically revised list of species generated for this study. However, varieties and subspecies have been identified where possible to indicate variations in species complexes. The ten most frequently recorded species are *Persoonia linearis, Eucalyptus punctata, Eucalyptus sparsifolia, Pteridium esculentum, Podolobium ilicifolium, Pomax umbellata, Lomandra glauca, Entolasia stricta, Lomandra longifolia* and *Dichondra repens*. Over 300 species were recorded at fewer than three sites. The native species richness for individual vegetation communities varied between a mean of 11 and 48 species at sample sites. The most diverse were the heathy forests and woodlands of the central Wollemi plateau. The species richness of the exposed sandstone woodlands appears to fall with decreasing annual rainfall. The lowest levels of species richness were associated with the montane bogs and fens, and dry sclerophyll forests that are characterised by exceptionally sparse understories such as S_DSF56 and S_DSF54.

A total of 104 introduced plant species have been recorded from systematic floristic sample sites located in the study area. These are listed in Appendix D. This list represents a biased sample in that severely weed infested or disturbed vegetation was intentionally avoided during systematic sampling. The most commonly recorded exotic species are a mix of worts, thistles and clovers including *Hypochaeris radicata, Taraxacum officinale, Hypericum perforatum, Trifolium repens, Cineraria lyratiformis* and the distinctive prickly pear *Opuntia stricta* var*. stricta.* The frequency of occurrence is highest in communities underlain by clay-rich soils such as basalts, alluviums and Permian shale. Fewer than five exotic species were recorded in the heathy woodlands and forests of the sandstone plateaux.

## 3.6 Vegetation Mapping

### *3.6.1 Vegetation community domains*

Summary statistics that define the mapping domains for each vegetation community are presented in Table 14. Maximum and minimum values are given for mean annual rainfall, elevation and slope. Summary notes on soil and geology derive from records made by field observers.

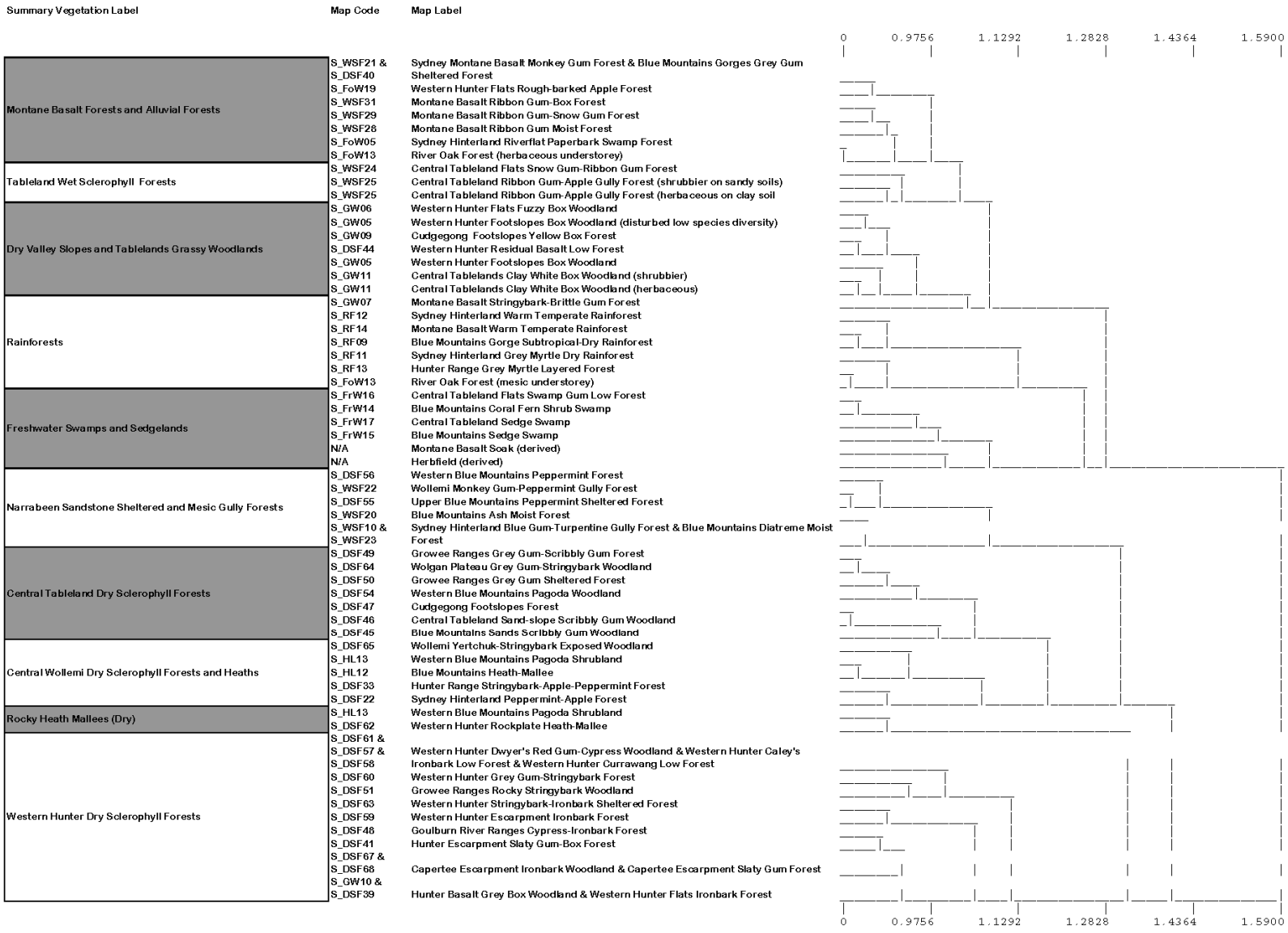



**Figure 3: Simplified dendrogram showing hierarchical structure of native vegetation communities**

**Table 14: Summary statistics defining vegetation community mapping domains**

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Rainforests | S_RF09 | Blue Mountains Gorge Subtropical-Dry Rainforest | 2 | Alluvium (basalt influence) | 690-705 | 700-702 | Sheltered | Gentle |
| Rainforests | S_RF11 | Sydney Hinterland Grey Myrtle Dry Rainforest | 5 | Narrabeen, Permian and alluvium | 334-674 | 619-686 | Intermediate to sheltered (35-135) | Gentle to moderate (2-15) |
| Rainforests | S_RF12 | Sydney Hinterland Warm Temperate Rainforest | 6 | Narrabeen | 609-887 | 730-881 | Sheltered (145-230) | Gentle to steep (1-40) |
| Rainforests | S_RF13 | Hunter Range Grey Myrtle Layered Forest | 4 | Narrabeen | 360-600 | 622-690 | Semi-sheltered to exposed (67-270) | Gentle to steep (3-33) |
| Rainforests | S_RF14 | Montane Basalt Warm Temperate Rainforest | 2 | Basalt | 1070-1100 | 955-983 | Semi-sheltered to sheltered (65-110) | Gentle to steep (6-25) |
| Rainforests | S_RF15 | Dry Ranges Rocky Fig Rainforest Scrub | 0 | Basalt | N/A | N/A | N/A | N/A |
| Wet Sclerophyll Forests | S_WSF10 | Sydney Hinterland Blue Gum-Turpentine Gully Forest | 1 | Narrabeen | 510-545 | 793-810 | Sheltered (1140-170) | Gentle to steep (4-20) |
| Wet Sclerophyll Forests | S_WSF20 | Blue Mountains Ash Moist Forest | 5 | Narrabeen | 870-987 | 858-914 | Sheltered (135-220) | Moderate to steep (8-20) |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Wet Sclerophyll Forests | S_WSF21 | Sydney Montane Basalt Monkey Gum Forest | 13 | Basalt | 967-1105 | 753-1036 | All (75-340) | Gentle to steep (6-20) |
| Wet Sclerophyll Forests | S_WSF22 | Wollemi Monkey Gum-Peppermint Gully Forest | 11 | Narrabeen | 550-870 | 740-927 | All (10-340) | Gentle to steep (3-22) |
| Wet Sclerophyll Forests | S_WSF23 | Blue Mountains Diatreme Moist Forest | 3 | Basalt | 450-650 | 704-819 | Sheltered (145-175) | Gentle to moderate (1-12) |
| Wet Sclerophyll Forests | S_WSF24 | Central Tableland Flats Snow Gum-Ribbon Gum Forest | 2 | Alluvium | 708 | 731 | 285 | Gentle (1) |
| Wet Sclerophyll Forests | S_WSF25 | Central Tableland Ribbon Gum-Apple Gully Forest | 9 | Alluvium/Narrabeen | 550-710 | 667-714 | All (34-260) | Gentle to moderate (1-8) |
| Wet Sclerophyll Forests | S_WSF28 | Montane Basalt Ribbon Gum Moist Forest | 7 | Basalt | 1009-1271 | 937-1085 | All (25-340) | Gentle to moderate (4-14) |
| Wet Sclerophyll Forests | S_WSF29 | Montane Basalt Ribbon Gum-Snow Gum Forest | 5 | Basalt | 1080-1158 | 888-937 | Semi-sheltered to intermediate (75-240) | Gentle to moderate (1-17) |
| Wet Sclerophyll Forests | S_WSF30 | Hunter Range Basalt Paperbark Thicket | 0 | Basalt | N/A | N/A | N/A | N/A |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | 12 | Basalt | 520-1008 | 713-852 | All (45-280) | Gentle to steep (1-33) |
| Grassy Woodlands | S_GW05 | Western Hunter Footslopes Box Woodland | 5 | Permian/basalt-sandstone interface | 245-560 (Permian); 573-800 (basalt) | 613-666 (Permian); 700-804 (basalt) | All (20-310) | Gentle to moderate (2-15) |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Grassy Woodlands | S_GW06 | Western Hunter Flats Fuzzy Box Woodland | 2 | Permian/Alluvium | 210-280 | 579-600 | Exposed (245-270) | Gentle (1-2) |
| Grassy Woodlands | S_GW07 | Montane Basalt Stringybark-Brittle Gum Forest | 10 | Basalt | 882-1100 | 775-908 | All (35-340) | Gentle to steep (1-20) |
| Grassy Woodlands | S_GW09 | Cudgegong Footslopes Yellow Box Forest | 3 | Permian | 695-717 | 705-730 | Exposed (200-310) | Moderate to steep (8-20) |
| Grassy Woodlands | S_GW10 | Hunter Range Basalt Grey Box Woodland | 1 | Basalt | 280 | 614 | Exposed (50) | Moderate (7) |
| Grassy Woodlands | S_GW11 | Central Tableland Clay White Box Woodland | 20 | Basalt/alluvium(basalt influence) | 490-840 | 640-758 | All (30-318) | Gentle to steep (1-31) |
| Dry Sclerophyll Forests | S_DSF22 | Sydney Hinterland Peppermint-Apple Forest | 0 | Hawkesbury | 250-680 | 840-9080 | All | Gentle to steep (1-25) |
| Dry Sclerophyll Forests | S_DSF28 | Hunter Range Ironbark Forest | 0 | Narrabeen | 250-600 | 710-930 | All | Gentle to steep |
| Dry Sclerophyll Forests | S_DSF33 | Hunter Range Stringybark-Apple-Peppermint Forest | 29 | Narrabeen | 580-900 | 739-897 | All (5-350) | Gentle to steep (1-25) |
| Dry Sclerophyll Forests | S_DSF39 | Western Hunter Flats Ironbark Forest | 1 | Alluvium/Narrabeen | 190-200 | 589-610 | Exposed (270-320) | Gentle (3-4) |
| Dry Sclerophyll Forests | S_DSF40 | Blue Mountains Gorges Grey Gum Sheltered Forest | 5 | Permian | 475-592 | 665-763 | Semi-sheltered to sheltered (90-150) | Moderate to steep (9-36) |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF41 | Hunter Escarpment Slaty Gum-Box Forest | 10 | Permian | 250-414 | 600-630 | All (35-326) | Moderate to steep (7-30) |
| Dry Sclerophyll Forests | S_DSF44 | Western Hunter Residual Basalt Low Forest | 1 | Basalt-sandstone interface | 550-778 | 690-733 | Exposed (300-340) | Gentle to moderate(5-8) |
| Dry Sclerophyll Forests | S_DSF45 | Blue Mountains Sands Scribbly Gum Woodland | 2 | Narrabeen (sand deposit residual Hawkesbury?) | 696-709 | 812-820 | Exposed (250-280) | Gentle (1-1) |
| Dry Sclerophyll Forests | S_DSF46 | Central Tableland Sand-Slope Scribbly Gum Woodland | 18 | Narrabeen (sand deposit residual Hawkesbury?) | 710-838 | 691-766 | Exposed (235-90) | Gentle to moderate (1-9) |
| Dry Sclerophyll Forests | S_DSF47 | Cudgegong Footslopes Forest | 8 | Narrabeen | 721-815 | 731-771 | All (22-320) | Gentle to moderate (4-11) |
| Dry Sclerophyll Forests | S_DSF48 | Goulburn River Ranges Cypress-Ironbark Forest | 2 | Narrabeen and Permian | 403-410 | 619-620 | Exposed (8-20) | Moderate to steep (8-20)) |
| Dry Sclerophyll Forests | S_DSF49 | Growee Ranges Grey Gum-Scribbly Gum Forest | 23 | Narrabeen | 551-1020 | 664-846 | All (110-90) | Gentle to steep (1-25) |
| Dry Sclerophyll Forests | S_DSF50 | Growee Ranges Grey Gum Sheltered Forest | 4 | Narrabeen | 394-740 | 642-706 | All (50-234) | Moderate to steep (12-34) |
| Dry Sclerophyll | S_DSF51 | Growee Ranges Rocky | 6 | Narrabeen | 580-740 | 668-706 | All (72-252) | Gentle to |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Forests | | Stringybark Woodland | | | | | | steep (3-34) |
| Dry Sclerophyll Forests | S_DSF52 | Hunter Range Peppermint Sheltered Forest | 6 | Narrabeen | 550-742 | 792-890 | Intermediate to sheltered (90-180) | Steep (18-25) |
| Dry Sclerophyll Forests | S_DSF54 | Western Blue Mountains Pagoda Woodland | 6 | Narrabeen | 790-940 | 677-828 | Intermediate to exposed (45-270) | Gentle to steep (1-40) |
| Dry Sclerophyll Forests | S_DSF55 | Upper Blue Mountains Peppermint Sheltered Forest | 17 | Narrabeen | 725-1018 | 718-949 | All (65-357) | Gentle to steep (3-30) |
| Dry Sclerophyll Forests | S_DSF56 | Western Blue Mountains Peppermint Forest | 5 | Narrabeen | 660-829 | 729-792 | Exposed to intermediate(270-55) | Moderate to steep (15-25) |
| Dry Sclerophyll Forests | S_DSF57 | Western Hunter Caley's Ironbark Low Forest | 6 | Narrabeen/Permian | 390-504 | 617-652 | Exposed (202-350) | Gentle to moderate (3-9) |
| Dry Sclerophyll Forests | S_DSF58 | Western Hunter Currawang Low Forest | 1 | Narrabeen | 250 | 602 | Exposed (308) | Moderate (6) |
| Dry Sclerophyll Forests | S_DSF59 | Western Hunter Escarpment Ironbark Forest | 12 | Narrabeen | 200-440 | 594-649 | All (40-335) | Steep (23-40) |
| Dry Sclerophyll Forests | S_DSF60 | Western Hunter Grey Gum-Stringybark Forest | 16 | Narrabeen | 252-660 | 621-755 | All (60-310) | Gentle to steep (2-35) |
| Dry Sclerophyll Forests | S_DSF61 | Western Hunter Dwyer's Red Gum-Cypress Woodland | 12 | Narrabeen | 274-480 | 600-671 | Exposed (276-10) | Gentle to steep (2-35) |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF62 | Western Hunter Rockplate Heath-Mallee | 3 | Narrabeen | 260-290 | 614-700 | Exposed (250-290) | Moderate (9-14) |
| Dry Sclerophyll Forests | S_DSF63 | Western Hunter Stringybark-Ironbark Sheltered Forest | 10 | Narrabeen | 283-520 | 599-715 | Sheltered (100-228) | Steep (24-32) |
| Dry Sclerophyll Forests | S_DSF64 | Wolgan Plateau Grey Gum-Stringybark Woodland | 7 | Narrabeen | 660-729 | 741-853 | Exposed to intermediate (240-40) | Gentle to moderate (1-15) |
| Dry Sclerophyll Forests | S_DSF65 | Wollemi Yertchuk-Stringybark Exposed Woodland | 20 | Narrabeen | 570-1000 | 747-937 | Exposed (215-88) | Gentle to steep (2-25) |
| Dry Sclerophyll Forests | S_DSF66 | Capertee Footslopes Box-Stringybark Forest | 0 | Permian | 466-473 | 678-679 | Sheltered to intermediate (190-225) | Steep (17-22) |
| Dry Sclerophyll Forests | S_DSF67 | Capertee Escarpment Ironbark Forest | 1 | Permian | 496 | 684 | Exposed (270) | Steep (27) |
| Dry Sclerophyll Forests | S_DSF68 | Capertee Escarpment Slaty Gum Forest | 1 | Permian | 321-476 | 636-681 | Exposed to intermediate (210-95) | Gentle to steep (3-35) |
| Heathlands | S_HL12 | Blue Mountains Heath-Mallee | 6 | Narrabeen | 720-1060 | 800-968 | Exposed | Gentle to moderate (1-11) |
| Heathlands | S_HL13 | Western Blue Mountains Pagoda Shrubland | 13 | Narrabeen | 660-840 | 617-788 | All (140-74) | Gentle to steep (1-35) |
| Freshwater Wetlands | S_FrW14 | Blue Mountains Coral Fern Shrub Swamp | 2 | Alluvium/Narrabeen | 608-674 | 810-817 | Sheltered (180) | Gentle (1-2) |
| Freshwater | S_FrW15 | Blue Mountains Sedge | 3 | Alluvium/Narrabeen | 754-1005 | 754-935 | Exposed | Gentle (1-3) |

| Statewide Formation | Map Unit Code | Map Unit Name | Number of Sites in This Study | Geology (Observed in the Field) | Elevation Minimum and Maximum (in metres above sea level) | Mean Annual Rainfall (Minimum and Maximum (in millimetres) | Aspect (Minimum and Maximum in degrees) | Slope (Minimum and Maximum in degrees) |
|---|---|---|---|---|---|---|---|---|
| Wetlands | | Swamp | | | | | | |
| Freshwater Wetlands | S_FrW16 | Central Tableland Flats Swamp Gum Low Forest | 3 | Alluvium | 717-740 | 737-759 | Exposed (335-35) | Gentle (1) |
| Freshwater Wetlands | S_FrW17 | Central Tableland Sedge Swamp | 1 | Alluvium | 710 | 744 | Exposed (350) | Gentle (1) |
| Forested Wetlands | S_FoW05 | Sydney Hinterland Riverflat Paperbark Swamp Forest | 2 | Alluvium | 731-811 | 709-799 | Exposed (320) | Gentle (1-2) |
| Forested Wetlands | S_FoW13 | River Oak Forest | 4 | Alluvium | 280-326 | 622-660 | Exposed (200-50) | Gentle (2-5) |
| Forested Wetlands | S_FoW19 | Western Hunter Flats Rough-barked Apple Forest | 4 | Alluvium | 200-713 | 607-682 | Exposed (242-25) | Gentle to moderate (2-5) |

### *3.6.2 Vegetation community mapping*

The allocation of API feature codes to map units is presented in Appendix A. The table also displays the number of systematic floristic sample sites located within each feature code. The following summarises the allocation of feature codes to map units.

- 16 map units could be described using a single API feature code. These describe vegetation communities with specialised habitats that are generally small in area, such as swamps, some rainforests and basalt forests, or communities that occur on the margins of the study area and are more extensive outside.
- The remaining map units were described by between two and five API feature codes. The sandstone plateaux and alluvial landscapes had the highest numbers of feature codes applied to a single map unit.
- 13 API feature codes were split by independent environmental data layers to more accurately match the mapping domains derived from sample site data and field experience. The primary data layer used was elevation, sourced from a derived 10 metre digital elevation model. The map units requiring independent elevation data were the sheltered Narrabeen sandstone forests, rocky heaths and drier basalt woodlands. Spatial representation of the distribution of mean annual rainfall was used to split two API feature codes to separate two montane basalt forests.
- Four API feature codes were split using additional remotely-sensed data describing rock cover and understorey characteristics. These were applied to identify heaths, rocky woodlands and eucalypt forests with a dense understorey of *Backhousia myrtifolia*.

## 3.7 Relationship to Other Classifications

### *3.7.1 Preliminary mapping of Wollemi NP (Bell 1998)*

There was a strong correlation between the vegetation classification of this study and the preliminary classification work of Bell (1998) which was developed using similar analysis methods (Appendix E). Around two-thirds of the map units identified in this study had a one to one relationship with a unit in Bell (1998). This is to be expected given that more than half of the analysis data set used in this study overlapped with that of Bell (1998). Minor differences in the use of data compiled during that study arose from the exclusion of some sites due to incomplete location or floristic data. However additional sampling effort during the current study has yielded a number of communities not described by Bell (1998) owing to sampling limitations. This includes several of the sandstone gully forests of the higher elevation plateaux, variations in montane basalt forests and several forests and woodlands of the Permian escarpment and valleys.

In the Bell (1998) study, several units had distinctive variations outlined within them that were not described separately. The addition of new data warranted the separation of these variations as standalone communities using the wider Sydney basin region analyses. Conversely, some units identified from few samples in the Bell study were amalgamated within broader mapping units for this study. This has arisen because different levels of dissimilarity were employed to discriminate communities.

Three units described in Bell (1998) are not described in this report. Two are found on basalt Towinhingy Dry Basalt Shrubland (SH2) has been included within the regenerating trees and shrub units of this report following interrogation of site data. Kerabee Dry Basalt Herbfield (HF1) is included within the native/exotic grassland unit of this report following differing interpretations of disturbance history of the sites.

### *3.7.2 Regional classifications*

Appendix F shows the relationship between the classification used in this study and those used in adjoining regional studies including the Hunter-Central Rivers Catchment Management Authority area (Sommerville 2009), south coast and tablelands (Tozer et al. 2010) and western Blue Mountains (DEC 2006).

The south coast study (Tozer et al. 2010) shares the least similarity of physical environments and hence fewer shared units were expected. Nonetheless where there was overlapping use of sample sites there was strong correspondence between map units, although typically a broader level of classification was employed for that study compared both to this study and the studies in other adjoining regions. Comparative units were obtained for some tablelands woodlands and wetlands, rainforests and montane sandstone heaths.

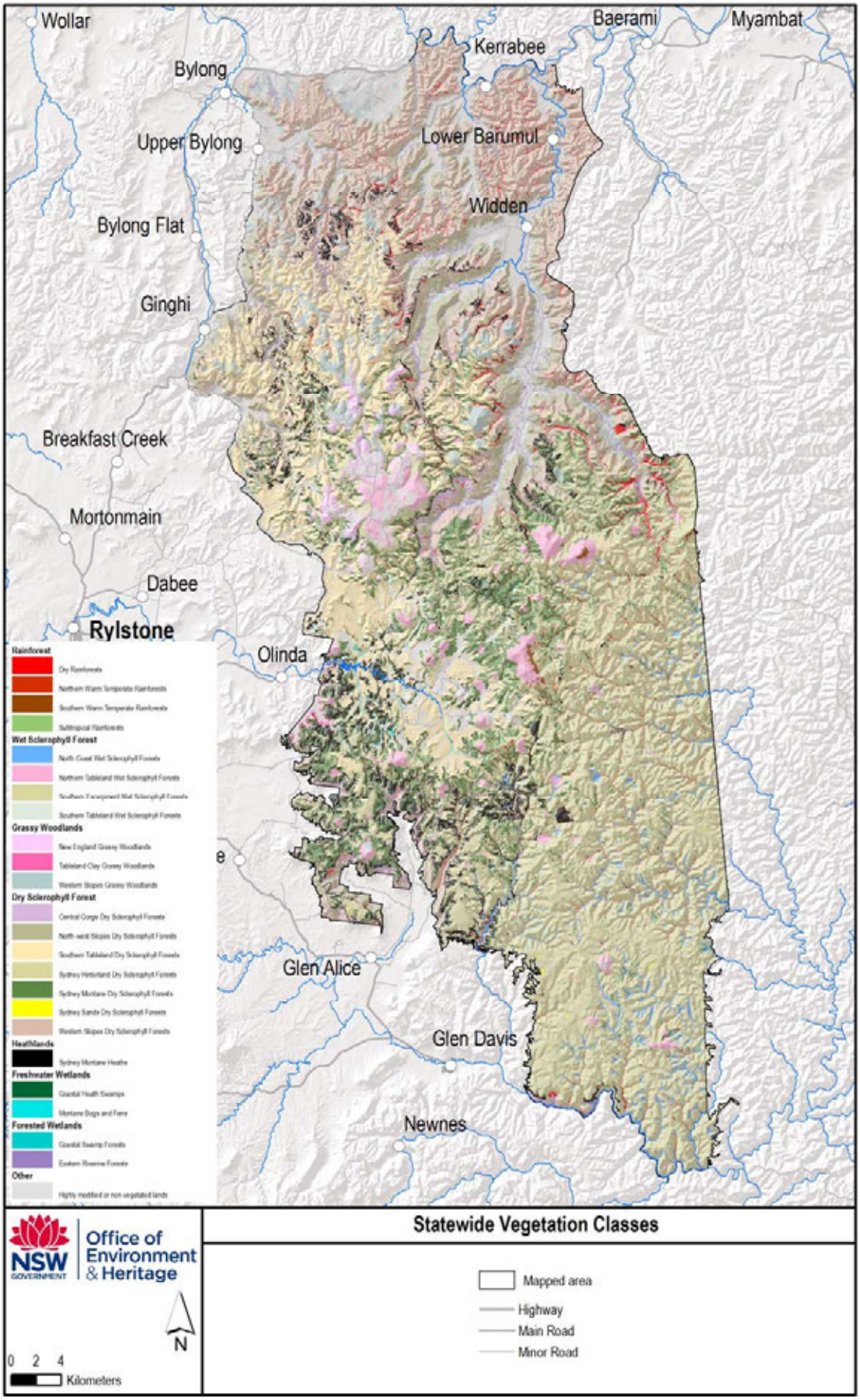
The Hunter-Central Rivers Catchment Management Authority area (Sommerville 2009) includes the area north of the Hunter Range and hence a greater congruence between map units was obtained with this study. However, the inclusion of new sample sites and a larger number of sample sites from the sandstone plateaux environments and surrounding regions, resulted in the identification of 15 communities not referable to units in that study. Conversely some units defined in this study represented an amalgamation of multiple units of that study. The primary areas of difference occurred in the description high altitude sandstone forests and wetlands, tall eucalypt forests on basalt and grassy woodlands on Permian escarpments and valleys.

Only a small area of overlap occurs between environments of this study and those of the western Blue Mountains study area (DEC 2006). Similarity between units was restricted to the montane sandstone heaths, Capertee escarpment woodlands, dry rainforest, tableland wet sclerophyll forests and forested wetlands on alluvium.

### *3.7.3 Statewide classification*

Map 9 illustrates the statewide formations and classes that occur in the study area. All together there are seven statewide formations present. There are four rainforest classes, four wet sclerophyll forest classes, three grassy woodland classes, seven dry sclerophyll forest classes, one heathland class, two freshwater wetland classes and two forested wetland classes.

**Map 9: Distribution of statewide vegetation classes of Keith (2004)**



## 3.8 Conservation Status Assessment

### *3.8.1 Threatened Ecological Communities*

The relationships between map units identified during this study and TECs listed under the TSC Act and the EPBC Act are shown in Table 15 and illustrated in Map 10. There are three nationally listed TECs that describe the grassy box woodlands, the tall forests on montane basalt and the freshwater sandstone swamps. There are eight TECs described under the TSC Act, six of which are considered endangered and two vulnerable.

The most extensive TECs are the Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion and the White Box-Yellow Box-Blakely's Red Gum Woodland. The former, considered a Vulnerable Ecological Community (VEC) under the TSC Act, is extensive on the northern and north-west boundary of the reserve and interfaces extensively with private land tenures. The latter, a Critically Endangered Ecological Community (CEEC) under national legislation and Endangered Ecological Community (EEC) under State legislation, comprises a number of map units described in this report. Most commonly associated with basalt soils of the dry ranges north of Nullo Mountain, it also includes a narrow though extensive band on the footslopes of the western Hunter escarpment.

Other TECs are more restricted in area and are outliers of communities more widespread on private tenures outside of the reserve. The Cudgegong valley supports a number of TECs that are more common across the central and southern tablelands. Similarly freshwater swamps on sandstone are limited within the study area as both the annual rainfall levels required and elevated sandstone ranges required are small in area compared to the upper Blue Mountains.

**Table 15: Relationship between TECs and vegetation communities mapped in this study**

| Threatened Ecological Community Listed Under the TSC Act | Equivalent Threatened Ecological Community Listing Under the EPBC Act | Equivalent Map Unit Name (and Map Unit Code) from This Study | Differences in Composition and Distribution Noted By This Study Compared to the Determination | Area of State Listed TEC in Study Area (hectares) | Area of State Listed TEC in North-west Wollemi NP (hectares) |
|---|---|---|---|---|---|
| Blue Mountains Swamps in the Sydney Basin Bioregion (VEC) | Temperate Highland Peat Swamps on Sandstone (EEC) | Blue Mountains Coral Fern Shrub Swamp (S_FrW14) and Blue Mountains Sedge Swamp (S_FrW15) | | 23.5 | 17.5 |
| Fuzzy Box Woodland on Alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions (EEC) | White Box-Yellow Box-Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (CEEC) | Western Hunter Flats Fuzzy Box Woodland (S_GW06) | Not currently described in the determination as occurring in the Sydney Basin Bioregion but this is likely to result from there being no previous mapping of the community in the Bioregion. Note that to qualify under the Commonwealth determination stands must have a shrub layer cover of less than 30 per cent. | 219.8 | 10.1 |
| Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion (VEC) | | Hunter Escarpment Slaty Gum-Box Forest (S_DSF41) | | 14,225.6 | 9637.2 |

| Threatened Ecological Community Listed Under the TSC Act | Equivalent Threatened Ecological Community Listing Under the EPBC Act | Equivalent Map Unit Name (and Map Unit Code) from This Study | Differences in Composition and Distribution Noted By This Study Compared to the Determination | Area of State Listed TEC in Study Area (hectares) | Area of State Listed TEC in North-west Wollemi NP (hectares) |
|---|---|---|---|---|---|
| Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps (EEC) | | Central Tableland Sedge Swamp (S_FrW17) | | 72.8 | 29.5 |
| Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions (EEC) | | Sydney Hinterland Riverflat Paperbark Swamp Forest (S_FoW05) | At 700 metres above sea level the map unit (S_FoW05) described in this report is well outside the current elevation range in the determination. But there are very strong floristic similarities. | 34.2 | 14.9 |
| Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions (EEC) | Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion (EEC) | Montane Basalt Ribbon Gum-Box Forest (S_WSF31) | The map unit (S_WSF31) described in this report occurs on basalt peaks and diatremes. Peaks conform to the Commonwealth EEC listing, but the listing explicitly excludes lower-lying basalt landscapes such as diatremes. Conversely the map unit falls within the environmental parameters of the State EEC listing where the basalt is situated below 900 metres above sea level. | 1624.7 | 1412.2 |
| Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions (EEC) | | Central Tableland Flats Snow Gum-Ribbon Gum Forest (S_WSF24) | | 336.4 | 165.2 |

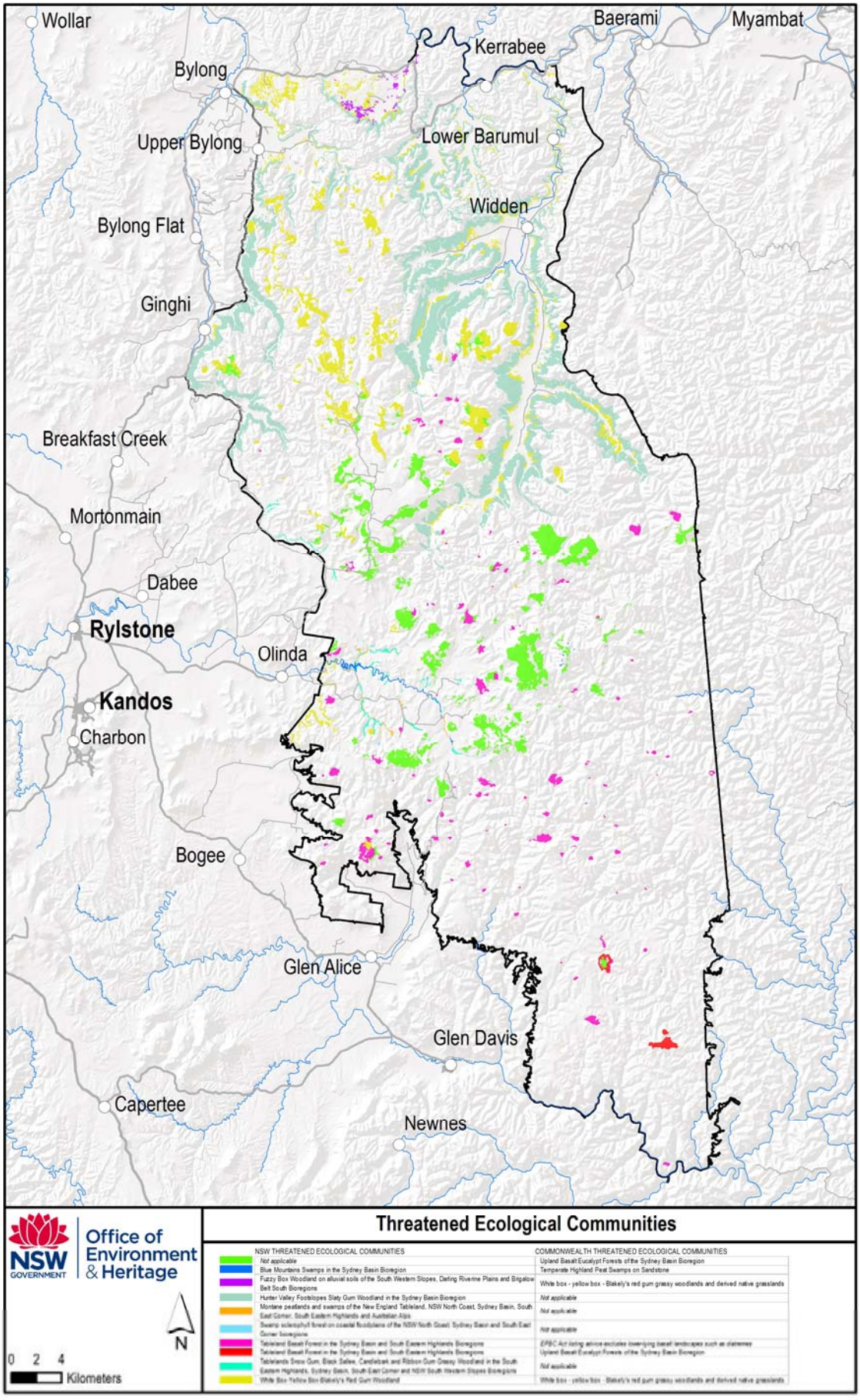
| Threatened Ecological Community Listed Under the TSC Act | Equivalent Threatened Ecological Community Listing Under the EPBC Act | Equivalent Map Unit Name (and Map Unit Code) from This Study | Differences in Composition and Distribution Noted By This Study Compared to the Determination | Area of State Listed TEC in Study Area (hectares) | Area of State Listed TEC in North-west Wollemi NP (hectares) |
|---|---|---|---|---|---|
| White Box-Yellow Box-Blakely's Red Gum Woodland (EEC) | White Box-Yellow Box-Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (CEEC) | Western Hunter Footslopes Box Woodland (S_GW05) and Cudgegong Footslopes Yellow Box Forest (S_GW09) and Hunter Range Basalt Grey Box Woodland (S_GW10) and Central Tableland Clay White Box Woodland (S_GW11) | Note that to qualify under the Commonwealth determination stands must have a shrub layer cover of less than 30 per cent. | 6183.9 | 4037.8 |

### *3.8.2 Reservation status of map units*

Appendix G shows, for each map unit, the estimated extent (hectares) found within the Sydney Basin Bioregion and the amount protected in reserves managed by NPWS. Not surprisingly, native vegetation found on sandstone is both extensive and well protected within the reserve system. However the study area includes stands of native forests and woodlands that are not found elsewhere within the Sydney Basin Bioregion, but are aligned with those described in adjoining bioregions. These outlying vegetation communities are clustered around the montane basalt tall eucalypt communities of the Coricudgy and Nullo mountain systems (S_WSF28, S_WSF29 and S_WSF31). These are floristically aligned to the wet sclerophyll forests of the Liverpool Range. Drier grassy woodlands on the montane basalts (S_GW07) have much in common with the residual basalt peaks of the Warrambungles and Mount Kaputar. Vegetation communities that are located in the dry elevated ranges of the western boundary of the study area are outlying examples of communities better known across the central tablelands. Examples include the freshwater wetlands S_FrW16 and S_FrW17.

Several map units have a small extant area because they are naturally restricted by their specialised habitat requirements. This includes the freshwater swamps, rocky heaths and rainforest communities.

**Map 10: Distribution of Threatened Ecological Communities**



# 4 DISCUSSION

## 4.1 Vegetation Classification and Landscape Patterns

### *4.1.1 Rainforests*

Five rainforest communities were discriminated from sites within the study area, with a sixth identified from wider Sydney basin analyses and existing studies. The rainforest units are united by having a closed canopy of waxy-leaved trees and shrubs, occupying sites sheltered from sun, fire and wind and often on clay-rich soil. The assemblage of rainforest communities in this study is closely matched to the statewide rainforest classification of Floyd (1990), which included investigations of rainforest in this part of Wollemi NP (Floyd 1984). The rainforests present span subtropical, northern and southern warm temperate and dry rainforest classes of Keith (2004).

*Southern Warm Temperate Rainforests*

One of the rainforests found in the study area is different in that instead of being positioned deep in sandstone gorges, it occurs on sheltered sides of basalt peaks at elevations over 1000 metres above sea level and rainfall in excess of 1000 millimetres per annum. **Montane Basalt Warm Temperate Rainforest (S_RF14)** shares species that are found in both warm temperate and cool temperate rainforests. It is moderately tall with a canopy dominated by sassafras (*Doryphora sassafras*), blackwood (*Acacia melanoxylon*) and possumwood (*Quintinia sieberi*), as well as cool-climate shrubs such as native mulberry (*Hedycarya angustifolia*) and prickly current bush (*Coprosma quadrifida*). In the study area this rainforest is restricted to small areas on the highest basalt caps of Mount Coricudgy and Mount Coriaday. It was, however, once more common on basalt peaks elsewhere in the Blue Mountains such as Mount Wilson and Mount Tomah. Some of these stands in the Blue Mountains are included within the Intermediate Temperate Rainforest classification of Tozer et al. (2010). Regional analyses also highlighted that a very similar rainforest is found on the Robertson plateau in the Southern Highlands, an area of very high annual rainfall but lower elevation. That rainforest is recognised as an EEC under the TSC Act (Robertson Rainforest in the Sydney Basin Bioregion) due to the extent of clearing and fragmentation in the region. Similar arguments could be mounted to extend this determination to include the basalt cap rainforest in the Blue Mountains.

*Subtropical Rainforests*

**Blue Mountains Gorge Subtropical-Dry Rainforest (S_RF09)** is related to S_RF14 due to basalt enrichment of the soils along a single gully north of Nullo Mountain, together with the elevated cool climate. However it has a much lower average annual rainfall, at around 700 millimetres per annum. The canopy includes an unusual combination of red cedar (*Toona ciliata*), giant stinging tree (*Dendrocnide australe*) and sassafras (*Doryphora sassafras*) along with yellow ash (*Emmenosperma alphitonioides*). Sites located in this community are equivocal between the dry/subtropical rainforest occurring on lower elevation basalt peaks on Mount Yengo and the montane basalt rainforests of Mount Coricudgy. This is largely because the canopy resembles the former, while the herb and forb layer resembles the latter. The Sydney basin analysis suggests a similarity with rainforest found at Christies Creek in basalt-enriched gullies of Kanangra Boyd. However, neither *Dendrocnide* nor *Emmenosperma* occurs there. S_RF09 has some allegiances with the subtropical to dry rainforests of the Liverpool Range foothills, as well as with the southern warm temperate rainforests on moist fertile soils on high points of the New South Wales south coast escarpment (Tozer et al. 2010).

Warm temperate rainforest dominated by coachwood and sassafras (S_RF12) is the most commonly encountered closed forest found in the narrow gorges and canyons of the central plateau. Photo © OEH

*Northern Warm Temperate Rainforests*

**Sydney Hinterland Warm Temperate Rainforest (S_RF12)** is the most common rainforest of the dissected sandstone plateaux.

It is found in narrow ribbon-like stands along sandstone gorges and gullies that have some enrichment from shale banding within the Narrabeen stratum. It is common in areas that receive more than 1000 millimetres of average annual rainfall, though it can be found in areas receiving as little as 750 millimetres in very deep protected and incised gorges. The canopy is dominated by coachwood (*Ceratopetalum apetalum*), sassafras (*Doryphora sassafras*) and lilly pilly (*Acmena smithii*).

### *Dry Rainforests*

The drier zones of the study area (less than 750 millimetres mean annual rainfall) support two related, though separate, rainforests dominated by grey myrtle (*Backhousia myrtifolia*). **Sydney Hinterland Grey Myrtle Dry Rainforest (S_RF11)** primarily occurs on gully alluvium at the headwaters of streams protected by steep sandstone cliffs, and may also occur on shale-rich escarpment benches on Permian sediments. Grey myrtle and lilly pilly are very common and may dominate at some sites, but equally stands may include muttonwoods (*Myrsine* spp.) and occasionally rosewood (*Dysoxylum fraserianum*). The community is characterised by a high diversity and abundance of woody vines and climbers. Examples in the study area are found on basalt-enriched alluvium in the headwaters of the Widden valley below emergents of eurabbie (*Eucalyptus bicostata*) and river oak (*Casuarina cunninghamiana* subsp. *cunninghamiana*).

The most impoverished rainforest in the study area, **Hunter Range Grey Myrtle Layered Forest (S_RF13)**, shares a prominence of *Backhousia myrtifolia*, however in this community there are few other rainforest trees or shrubs and instead only a dry shrub layer above an open ground cover of very hardy ferns. There are few vines and at times the rainforest appears as a closed low thicket beneath a tall emergent layer of eucalypts such as grey gum (*Eucalyptus punctata*). The infertile Triassic and Permian sandstones offer a skeletal rocky soil that supports this rainforest of low species diversity. This rainforest community is common, though patchily distributed, along the northern boundary of Wollemi NP where mean annual rainfall falls to 650-700 millimetres per annum.

**Dry Ranges Rusty Fig Rainforest Scrub (S_RF15)** is a dry rainforest that has been not been identified from systematic samples in the study area but from existing descriptions of rainforest in the reserve by Floyd (1984). A small basalt diatreme that pierces the escarpment wall in the Capertee River gorge carries a low scrub on the rocky exposed scree. The description of this rainforest stand matches no other community sampled in the study area. A low scrub of rusty fig (*Ficus rubiginosa*) and vines is suggestive of similar vegetation sampled on craggy limestone in the Capertee Valley (DEC 2006), the northern face of Mt Wareng in Yengo NP (DECC 2008) and rocky scree of the Hunter valley ranges (DEC 2004b). These communities are part of a depauperate viney scrub assemblage more widespread in the dry north-west slopes of New South Wales (Keith 2004).

## *4.1.2 Wet Sclerophyll Forests*

Wet sclerophyll forests are those communities dominated by tall to very tall eucalypts with a mesic shrub layer and/or herbaceous ground cover. Eleven different communities within this vegetation formation have been defined from sample sites. The habitats of these luxuriant forests are either sheltered sandstone slopes and gullies, or deep clay-rich soils on the highest basalt caps.

### *Southern Escarpment Wet Sclerophyll Forests*

Southern Escarpment Wet Sclerophyll Forests are found on elevated basalt or Narrabeen substrates in the study area. They are found above 550 metres above sea level and have a moderately dense mesic shrub layer and ferny ground cover. Those occurring on Narrabeen sandstone could alternately be included in dry sclerophyll forest classifications owing to the scattered presence of sclerophyll shrubs typical of sandstone environments.

**Blue Mountains Ash Moist Forest (S_WSF20)** is the most restricted of the sandstone wet sclerophyll forests, occurring on sheltered slopes in the highest elevations of the study area. It is prominent above 850 metres above sea level where it occurs in narrow protected gullies and headwaters descending from the main range. This tall forest is dominated by the tall straight white stems of Blue Mountains ash (*Eucalyptus oreades*) with an array of mesic shrubs, ferns and sclerophyllous shrubs. The most protected and elevated sites include cool-climate species such as *Quintinia sieberi* and *Eucalyptus blaxlandii*. These montane forests are the northern outlier of the forests that are also found on the sheltered escarpments that fringe the upper Blue Mountains Where elevation falls below 850 metres above sea level S_WSF20 is replaced by **Wollemi Monkey Gum-Peppermint Gully Forest (S_WSF22)**. This latter community occurs across wider bands of elevation, rainfall and exposure. Monkey gum (*Eucalyptus cypellocarpa*) and Sydney peppermint (*Eucalyptus piperita*) are the primary canopy species, above a mesic and sclerophyllous shrub layer and a very prominent ground cover of ferns including rainbow fern (*Calochlaena dubia*).

Shallower basalt soils, found on the margins of large basalt caps or small peaks, carry another tall Southern Escarpment Wet Sclerophyll Forest called **Sydney Montane Basalt Monkey Gum Forest (S_WSF21)**. The canopy frequently includes monkey gum (*Eucalyptus cypellocarpa*) and Blaxland's stringybark (*Eucalyptus blaxlandii*). Local stands of brown barrel (*Eucalyptus fastigata*) are found on Mount Monundilla and eurabbie (*Eucalyptus bicostata*) occurs in this community on Nullo Mountain. The understorey is moderately shrubby, comprised of mesic species as well as some drier shrubs such as blackthorn (*Bursaria spinosa*) and native indigo (*Indigofera australis*). The ground cover is herbaceous and ferny. This forest is one of the most widespread basalt communities of the Sydney basin and it extends across the Blue Mountains and Southern Highlands. It forms a component of Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion, an EEC under the EPBC Act.

### *North Coast Wet Sclerophyll Forests*

The gully forests on Narrabeen sandstone below 550 metres above sea level are more closely aligned to the North Coast Wet Sclerophyll Forests class of Keith (2004). At these elevations the gullies are warmer and well protected in slot canyons and gorges that cut through the main plateaux. **Sydney Hinterland Blue Gum-Turpentine Gully Forest (S_WSF10)** is common across the northern sandstone plateaux of the Sydney basin. Both Sydney blue gum (*Eucalyptus saligna*) and Deane's blue gum (*Eucalyptus deanei*) occur in this community, which grows in narrow ribbons adjoining stands of warm temperate rainforest. **Blue Mountains Diatreme Moist Forest (S_WSF23)** is closely related to this forest. It may adjoin S_WSF10 and share the same canopy species, however it occurs on distinct oval-shaped depressions found in gully headwaters. These landforms, known as diatremes, are eroded volcanic vents that carry a soil derived from a mix of basalt clays and sandstone material. S_WSF23 carries a higher number of vine, grass and fern species than S_WSF10, due to the richer soil. This is the limit of the floristic dissimilarities and alternate classifications may consider these blue gum forests to be one unit. However diatremes are a distinctive feature of the landscape of the study area, as elsewhere across the Greater Blue Mountains WHA.

Massive blue gums (*E. deanei*) can be found deep in the most protected sandstone gorges at elevations less than 550 metres above sea level. Some stands exceed 70 metres in height making them some of the tallest recorded in NSW. Photo © OEH

### *Northern Hinterland Wet Sclerophyll Forests*

Waterlogged areas of basalt caps and diatremes support a distinctive thicket of paperbark (*Melaleuca styphelioides*) where seepage flows out of the interface between the basalt and the surrounding sandstone. **Hunter Range Basalt Paperbark Thicket (S_WSF30)** is poorly described and remains unsampled in the study area, however it is distinctive to anybody traversing the peaks and diatremes of the study area. It spans topographic and elevation gradients and future work may distinguish several underlying communities within the unit. It appears to be a feature of Sydney hinterland environments, with similar patterns found in Yengo NP (DECC 2008).

Ribbon gum (*Eucalyptus viminalis*) is the common eucalypt found in the elevated gullies and alluviums of western Wollemi NP and adjoining private lands. Photo © OEH

### *Northern Tableland Wet Sclerophyll Forests*

Other wet sclerophyll forests found on basalt soils are more floristically distinct and are aligned to the Northern Tableland Wet Sclerophyll

Forests class of Keith (2004) that is extensive across the Liverpool Range. These are high elevation (greater than 1000 metres above sea level) basalt environments that experience a cool-climate and moderate to high mean annual rainfall. In the study area, the wettest of these is restricted to deep basalt soils of Mount Coricudgy and surrounding peaks. **Montane Basalt Ribbon Gum Moist Forest (S_WSF28)** is typified by canopy of tall ribbon gums (*Eucalyptus nobilis/E. viminalis*) and silver-top stringybark (*Eucalyptus laevopinea*), with a continuous ground cover of herbs and variable cover of mesic shrubs and tree ferns. Basalt caps at similar elevations but west of Mount Coricudgy experience a drier climate as they no longer receive easterly rainfall. These peaks that overlook the Cudgegong valley, such as Mount Towinhingy, Mount Baker and Tayan Peak, support similar eucalypt species but include stands of yellow box (*Eucalyptus melliodora*) and forest red gum (*Eucalyptus tereticornis*), particularly on exposed aspects. While some of the herbaceous ground covers remain they are not nearly as abundant, and the mid stratum is without mesic shrubs. This community, **Montane Basalt Ribbon Gum-Box Forest (S_WSF31)**, is also found in some of the drier, higher altitude diatremes such as Box Hole on the old Army Road. At Box Hole apple box (*Eucalyptus bridgesiana*) has been recorded amongst the canopy. Both S_WSF28 and S_WSF31 are included in a Commonwealth TEC known as Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion. S_WSF31 also has strong affinities with forests found on basalt soils elsewhere on the central and southern tablelands of New South Wales, particularly the stands in the lower-lying diatremes found within the sandstone plateau. As a result it also conforms to the Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions EEC listed under the TSC Act.

Nullo Mountain, the largest of the basalt caps in the study area, supports another community in the Northern Tableland Wet Sclerophyll Forests statewide class. The basalt of Nullo Mountain is sourced from a different volcanic event (Galloway 1967) than the Coricudgy flows. The mountain exceeds 1100 metres above sea level at its highest point. On the undulating plateau there is a moderately tall forest of ribbon gum (*Eucalyptus nobilis/E. viminalis*), silver-top stringybark (*Eucalyptus laevopinea*) and snow gum (*Eucalyptus pauciflora*). This **Montane Basalt Ribbon Gum-Snow Gum Forest (S_WSF29)** is marked by an open to sparse shrub layer and very generous cover of tussock grass (*Poa* spp.).



The three montane basalt forests of the study area exhibit a range of different understorey characteristics. On the left S_WSF29 on Nullo Mountain has a canopy dominated by *E. viminalis, E. nobilis* and *E. pauciflora* above an abundant cover of tussock grasses (*Poa* spp.). S_WSF31, in the middle photo, is common in drier locations at lower elevations such as this diatreme at Box Hole clear; box and red gum trees can co-occur with *E. viminalis*. The photo on right shows that on the wettest and most sheltered sites S_WSF28 includes a dense cover of the tree fern (*Dicksonia antarctica*) below a canopy of *E. laevopinea* and *E. nobilis*. Photos © OEH

*Southern Tableland Wet Sclerophyll Forests*

There are two communities identified from site data that align with the Southern Tableland Wet Sclerophyll Forests class of Keith (2004). Both include ribbon gum (*Eucalyptus viminalis*) as diagnostic canopy species amongst other cool-climate eucalypts. The understorey is either shrubby or open and grassy. **Central Tableland Flats Snow Gum-Ribbon Gum Forest (S_WSF24)** is a swampy woodland form of this wet sclerophyll class, which lies on or near Permian sediments. It is situated in open valleys such as alongside the Cudgegong River. In addition to ribbon gum, the canopy includes candlebark (*Eucalyptus rubida*) and snow gum (*Eucalyptus pauciflora*). Dense tussock grass (*Poa* spp.) and moisture-loving herbs characterise the otherwise open understorey. This community forms part of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions, an EEC listed under the TSC Act.

**Central Tableland Ribbon Gum-Apple Gully Forest (S_WSF25)** is situated on the elevated sandy alluviums and gully systems that lie below the Great Dividing Range in the west of the study area. The composition of the forest varies with the degree of protection. While ribbon gum (*Eucalyptus viminalis*) is often present, other species include rough-barked apple (*Angophora floribunda*), Blakely's red gum (*Eucalyptus blakelyi*), yellow box (*Eucalyptus melliodora*), grey gum (*Eucalyptus punctata*) and Sydney peppermint (*Eucalyptus piperita*). Tall wattles are common amongst a scatter of tea-tree, banksias and beard-

heath. The ground cover is dominated by weeping grass (*Microlaena stipoides*) and bracken (*Pteridium esculentum*).

### *4.1.3 Grassy Woodlands*

There are six communities recognised from the analysis of sample sites that fall into the Grassy Woodlands formation of Keith (2004). These woodlands occur on the most fertile soils of the study area that are situated in the drier rainfall zones of 550-850 millimetres per annum. They are dominated by box trees, stringybarks and red gums and have an abundant and diverse cover of grasses and herbs with a variable cover of woody shrubs. This statewide vegetation formation has suffered from widespread agricultural clearing, particularly where woodlands occur in or near undulating country near regular freshwater flows.

*Western Slopes Grassy Woodlands*

The majority of grassy woodlands found in the study area lie within the Western Slopes Grassy Woodlands statewide class. All of these communities feature box tree species. The most elevated expression of this statewide class occurs on residual basalt flows in the dry ranges of northern Nullo Mountain at elevations between 500 and 800 metres above sea level. **Central Tableland Clay White Box Woodland (S_GW11)** is dominated by white box (*Eucalyptus albens*) and its intergrade with grey box (*E. moluccana*) but may also include other box trees and stringybarks. While the ground cover includes a number of grasses, it is the herb layer that is usually more conspicuous. Outside the study area, this woodland is found in the northern parts of the New South Wales central tablelands near Mudgee, and is closely related to vegetation on the higher basalt ranges of the Merriwa plateau. **Hunter Range Basalt Grey Box Woodland (S_GW10)** also occurs on residual basalt soils. This community occupies a much lower elevation, at less than 400 metres above sea level, and falls within a dry and warm environment in the far north-east of the study area. Basalt outcropping is not as extensive as the flows around Nullo Mountain and as result the small caps and diatremes have a shallower soil. The canopy is dominated by the more coastal species grey box (*Eucalyptus moluccana*). The ground layer comprises a prominent cover of spear grasses (*Aristida* spp.), which are not common on the higher elevation basalt, and has far fewer herbs. This box woodland is transitional between the Coastal Valley Grassy Woodlands and Western Slopes Grassy Woodlands statewide classes.

Similar box woodlands occur on deeper soils on the footslopes beneath the dramatic escarpments of the western Hunter region, around the Goulburn River valley and Growee areas. These environments are dry (receiving less than 650 millimetres per annum on average) and occupy elevations less than 450 metres above sea level. **Western Hunter Footslopes Box Woodland (S_GW05)** dominates here, occurring on fine-grained Permian sediments on lower slopes and some escarpment benches. It forms an open forest or woodland with a canopy that may include white/grey box (both intergrade here), yellow box and red gums (*Eucalyptus tereticornis/E. blakelyi*). Slaty gum (*Eucalyptus dawsonii*), also known as Dawson's box, may occasionally be present. The clay loams carry a patchy to even cover of spear and wallaby grasses. The shrub layer can be sparse to open with wattles (*Acacia* spp.) and some soft-leaved shrubs such as blackthorn (*Bursaria spinosa*), *Choretrum* sp. *A* and *Cassinia* spp..

Western Hunter Footslopes Box Woodland (S_GW05) is found on the lower escarpment slopes of northern Wollemi NP adjoining cleared agricultural lands. Photo © OEH

Nearby, on the deep clays of alluvial terraces that are found on the widest part of the major valleys, remnant fuzzy box (*Eucalyptus conica*) trees are commonly encountered. The elevations of these terraces are lower again, at around 200 metres above sea level. Situated primarily on private lands, few samples were collected of this vegetation type as so much is very heavily disturbed. However the extent and frequency of occurrence suggests that a separate community occupied these terraces as the pattern is replicated from the Upper Bylong area through to Denman. A provisional mapping unit of **Western Hunter Flats Fuzzy Box Woodland (S_GW06)** has therefore been identified for this study. It is likely that this unit forms part of the Fuzzy Box Woodland on Alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South

Bioregions, an EEC under the TSC Act. However, that determination does not currently recognise that this community occurs in the Sydney Basin Bioregion. More definitively it forms a component of White Box-Yellow Box-Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands, a CEEC listed under the EPBC Act.

*New England Grassy Woodlands*

Nullo Mountain supports the only stand of this high-elevation grassy woodland class in the study area. **Montane Basalt Stringybark-Brittle Gum Forest (S_GW07)** occurs on drier parts of the mountain between 900 and 1100 metres above sea level in situations where basalt soils thin toward the underlying sandstone bedrock. The canopy is dominated by silver-top stringybark (*Eucalyptus laevopinea*) and brittle gums (*Eucalyptus praecox* and *E. mannifera*). While the density of woody shrubs varies with grazing history, the ground cover reliably comprises a diverse cover of grasses such as kangaroo grass (*Themeda australis*) and wallaby grass (*Austrodanthonia* spp.), along with a plethora of small herbs.

*Southern Tableland Grassy Woodlands*

Small areas of vegetation that conform to this statewide class are found on the western escarpment of the Wollemi plateaux on the fringe of the Cudgegong valley. The floristic sample sites undertaken in this vegetation are a marginal example of the grassy woodlands, as the sites are located on transitional soils between the Permian sediments of the flats and those of the escarpment slopes. The latter have greater sandstone talus influence. **Cudgegong Footslopes Yellow Box Forest (S_GW09)** shares many species with the grassy woodlands of the western Hunter escarpment, however the Cudgegong valley is perched at more than 630 metres above sea level, which is almost twice the elevation. Yellow box (*Eucalyptus melliodora*) dominates the canopy (rather than grey or white box) and a number of other tableland eucalypt species have been recorded including red stringybarks (*Eucalyptus macrohyncha/E. cannonii).* The grasses here are primarily plume grass (*Dichelachne micrantha*), weeping grass (*Microlaena stipoides*) and wallaby grass (*Austrodanthonia* spp.).

On the drier transitional basalt soils on Nullo Mountain grazing can reduce the cover of grasses and inhibit the growth of the shrub cover. This example of S_GW07 is dominated by *E. praecox* and *E. laevopinea*, but the ground cover is suppressed. Photo © OEH

### *4.1.4 Dry Sclerophyll Forests*

The dry sclerophyll forests form by far the most diverse and extensive statewide vegetation formation in the study area. This results from the very widespread occurrence of infertile sandy soils that extend across a wide range of environmental gradients, from the montane plateaux to the lower dry ranges of the western Hunter valley. The environmental gradients are reflected in the 30 dry sclerophyll forest communities that have been recognised from sample site data. These map units fall into seven regionally distinct statewide vegetation classes. These can be separated into eucalypt forests and woodlands that have a shrubby and grassy understorey and those with few grasses and mostly hard-leaved shrubs.

*Central Gorge Dry Sclerophyll Forests*

Only a single community in the study area has been allocated to this shrub/grass dry sclerophyll forest class. It has a very restricted distribution, occurring on sheltered and elevated niches of the Permian escarpment along the steepest areas of the western Blue Mountains between Glen Alice and the upper Widden valley. **Blue Mountains Gorges Grey Gum Sheltered Forest (S_DSF40)** is a tall eucalypt forest dominated by grey gum (*Eucalyptus punctata*), monkey gum (*Eucalyptus cypellocarpa*) and a range of box trees including slaty gum (*Eucalyptus dawsonii*). The understorey is grassy, herbaceous and ferny, and proliferates between sandstone boulders that rest on the steep slopes. Vines are common. The shrub layer has a number of characteristic tall species including broad-leaved hickory (*Acacia falciformis*) and forest oak (*Allocasuarina torulosa*). Lower-growing species are soft-leaved shrubs typical of more fertile soils such as blackthorn (*Bursaria spinosa).* The semi-mesic elements in the understorey, and the grassy and herbaceous ground

cover, are similar to those of other sheltered forests in dry gorges and valleys of the southern Blue Mountains including the Kowmung and Wollondilly valleys.

### *North-west Slopes Dry Sclerophyll Forests*

Five vegetation communities in the study area fall into this shrub/grass dry sclerophyll forest class. This statewide class is related to the dry grassy woodlands of the western slopes, however it has a consistently occurring woody shrub layer. It is typical of the steeper escarpment slopes of the north and west boundaries of the study area. **Hunter Escarpment Slaty Gum-Box Forest (S_DSF41)**, endemic to the western Hunter valley, is dominated by slaty gum (*Eucalyptus dawsonii*) sometimes co-occurring with grey box (*Eucalyptus moluccana*), grey gum (*Eucalyptus punctata*) and less frequently ironbark species (including *Eucalyptus fibrosa*). The understorey has an open to dense cover of soft-leaved shrubs such as *Cassinia* spp.*, Bursaria spinosa, Choretrum* spp*.* and *Acacia* spp*.*. The absence of vegetation from the ground layer is notable; a mixed cover of litter, bare earth and small rocks may be the most prominent feature. This community is included within Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion, an EEC listed under the TSC Act.

**Capertee Escarpment Slaty Gum Woodland (S_DSF68)** occupies similar habitat and shares canopy species with S_DSF41. However it is explicitly excluded from the EEC in the determination of Hunter Valley Slaty Gum Woodland, as it carries a different suite of shrub and grass species than its northern cousin. Shrubs such as native olive (*Notelaea microcarpa*), *Choretrum* sp. A and *Hibiscus sturtii* are not found in this forest. Conversely, grass species including *Austrostipa scabra* are recorded in the slaty gum stands in the Capertee but not in the Hunter.

Another community with a very sparse understorey is found on skeletal rocky substrates at the interface between basalt flows and sandstone bedrock. **Western Hunter Residual Basalt Low Forest (S_DSF44)** is a low scrub-like forest with low-growing eucalypts and a mix of black cypress pine (*Callitris endlicheri*) and she-oaks. It occurs at elevations between 450 and 700 metres above sea level in areas of low average annual rainfall (less than 750 millimetres). Some grass species that occur in the adjoining grassy woodlands on deep basalt caps and flows are also found in S_DSF44, but their growth is mostly very sparse and isolated.

**Capertee Footslopes Box-Stringybark Forest (S_DSF66)** occurs on lower escarpment slopes and benches, on Permian sediments that lie above 450 metres above sea level. Two tableland eucalypts are common in this forest: red box (*Eucalyptus polyanthemos*) and red stringybarks (*Eucalyptus macrorhyncha/E. cannonii*). The clay loams support a patchy to continuous cover of grasses and herbs and a variable cover of woody shrubs. This forest is more extensive just to the south of the study area, on footslopes of the sandstone mesas of the Wolgan Valley and western Capertee Valley.

**Western Hunter Flats Ironbark Forest (S_DSF39)** differs in that it is found in the lower-lying valleys at less than 250 metres in elevation rather than on the escarpment or plateaux. It occupies colluvial flats and fans near the interface of Narrabeen and Permian sediments. The forest and woodland complex is moderately tall and is dominated by narrow-leaf ironbark (*Eucalyptus crebra*). It is characterised by a dry shrub layer of native olive (*Notelaea microcarpa*), daisy bush (*Olearia elliptica*), wattles (*Acacia* spp.) and blackthorn (*Bursaria spinosa*) above a patchy cover of grasses and small herbs.

### *Sydney Hinterland Dry Sclerophyll Forests*

The most extensively distributed dry sclerophyll forests fall into the shrubby Sydney Hinterland Dry Sclerophyll Forests statewide class. This class includes a wide variety of exposed and sheltered eucalypt forests and woodlands associated with the mid-elevation Narrabeen sandstone plateaux as well as small areas of residual Hawkesbury sandstone. Three exposed or ridgetop woodlands and three sheltered forests have been discriminated from systematic floristic sample site data. One of these communities was identified during API and has been classified using sample sites that lie just outside study area.

The central sandstone plateau of Wollemi NP lies between 600 and 900 metres above sea level and receives between 750 and 950 millimetres of rainfall per year. Exposed rocky ridges, knolls, slopes and spurs extend out from the main range between Gospers Mountain and Mount Monundilla. These support a dry shrubby and heathy eucalypt woodland called **Wollemi Yertchuk-Stringybark Exposed Woodland S_DSF65**. This community includes species that are transitional between the wetter and higher Blue Mountains plateaux and the drier eastern Hunter Range. Yertchuk (*Eucalyptus consideniana*) is the most abundant species, though in the past this has probably been overlooked and confused with the similar appearance of Sydney peppermint (*Eucalyptus piperita*). The woodland has dense stands of small-diameter eucalypt trunks, a reflection of the frequent and intense fires that sweep across the plateau. The woody shrub layer is typical of many of the

sandstone woodlands of the Sydney hinterland, featuring banksias, tea-trees, geebungs, hakeas, wattles and peas.

The escarpment plateau above Glen Alice and across to the Coorongooba River exposes a harder layer in the Narrabeen sandstone stata. Mean annual rainfall is lower than the eastern plateaux. Another heathy sandstone woodland occurs here, but instead grey gum (*Eucalyptus punctata*), narrow-leaved stringybark (*Eucalyptus sparsifolia)* and inland scribbly gum (*Eucalyptus rossii*) are the dominant canopy species, with cypress pines (*Callitris* spp.) common near the escarpment edge. Described as **Wolgan Plateau Grey Gum-Stringybark Woodland (S_DSF64)**, this community shares many heathy shrub species with S_DSF65, but differs in the frequency of shrubs such as the rare *Grevillea evansiana*.

Further east across central and eastern Wollemi NP, at elevations between 550 and 800 metres above sea level, a taller ridgetop forest dominates. This forest, **Hunter Range Stringybark-Apple-Peppermint Forest (S_DSF33)**, occurs on broad ridgetops and gentle upper slopes that have a deeper soil profile with little outcropping sandstone. As a result the eucalypts grow to 25 metres or more in height and the open understorey is comprised of dry shrub species rather than the heathy species typical of the above rocky woodlands. The canopy is dominated by narrow-leaved stringybark (*Eucalyptus sparsifolia*), smooth-barked apple (*Angophora costata*) and grey gum (*Eucalyptus punctata*). Some sites include Sydney peppermint (*Eucalyptus piperita*) and yertchuk (*Eucalyptus consideniana*), while others on exposed shale bands in the Narrabeen stratum have one or two ironbarks (*Eucalyptus crebra* X *beyeriana*). Waist-high shrubs such as wattles, grevilleas and geebungs are widely spaced.

Deep gorges and gullies in the far south-east of the study area near the Colo River and Wollemi Creek expose shale bands in the Narrabeen stratum at elevations lower than 500 metres above sea level. On exposed slopes there are stands of **Hunter Range Ironbark Forest (S_DSF28)**, a dry shrubby and grassy community that is more extensive on the eastern Hunter Range through Yengo NP and the Putty valley. Typically it includes combinations of ironbark species including broad-leaved ironbarks (*Eucalyptus fibrosa* and *Eucalyptus fergusonii* subsp. *dorsiventralis*) and narrow-leaved ironbarks (*Eucalyptus crebra* and *E. beyeriana*), along with grey gum (*Eucalyptus punctata*), smooth-barked apple (*Angophora costata*) and stringybarks (*Eucalyptus sparsifolia* and *Eucalyptus prominula*). Dry shrubs such as geebung (*Persoonia linearis*) and *Daviesia ulicifolia* are typical, above a sparse ground cover that includes kangaroo grass (*Themeda australis*).

The dominant sheltered forest within this statewide class is widespread across the eastern half of the study area at elevations between 350 and 800 metres above sea level. Labeled as **Hunter Range Peppermint Sheltered Forest (S_DSF52)**, this semi mesic shrubby forest is dominated by Sydney peppermint (*Eucalyptus piperita*). The range of other eucalypt species that occur reflects the coastal influence brought by the higher rainfall experienced along the Tollagong, Wirraba and eastern Hunter ranges. These species include turpentine (*Syncarpia glomulifera* subsp. *glomulifera*), blue-leaved stringybark (*Eucalyptus agglomerata*) and red bloodwood (*Corymbia gummifera*). Other coastal species include Christmas bush (*Ceratopetalum gummiferum*) and blueberry ash (*Elaeocarpus reticulatus*).

Only small areas of Hawkesbury sandstone outcrop in the study area, on residual ridgelines in the far south-east near the Colo River. This area receives around 900 millimetres of average annual rainfall, which lies on the threshold between the Sydney Hinterland Dry Sclerophyll Forests and the Sydney Coastal Dry Sclerophyll Forests statewide classes. **Sydney Hinterland Peppermint-Apple Forest (S_DSF22)** has been discriminated from sites that lie just outside the study area. It is found on narrow ridgelines and upper slopes and at around 400 metres above sea level this forest is common in the lower Blue Mountains and across the northern Hornsby plateau of the Central Coast hinterland. Canopy species include Sydney peppermint (*Eucalyptus piperita*), smooth-barked apple (*Angophora costata*), red bloodwood (*Corymbia gummifera*) and turpentine (*Syncarpia glomulifera* subsp. *glomulifera*). Shrub layers are typically a mix of heathy species such as banksias, geebungs, wattles and tea-trees, as well as Christmas bush (*Ceratopetalum gummiferum*) and woody pear (*Xylomelum pyriforme*).

### *Sydney Sand Flats Dry Sclerophyll Forests*

Two systematic floristic sample sites near the old Gospers Mountain airstrip are located in an interesting outlying example of the Sydney Sand Flats Dry Sclerophyll Forests statewide class. Here deep sand deposits occur on gentle gully headwaters, perhaps sourced from long-ago eroded Hawkesbury sandstone. The community, described as **Blue Mountains Sands Scribbly Gum Woodland (S_DSF45)**, is dominated by narrow-leaved scribbly gum (*Eucalyptus racemosa*) with scattered Parramatta red gum (*Eucalyptus parramattensis* subsp. *parramattensis*). The shrub and ground layers are very different from other woodlands on the exposed Narrabeen sandstone ridges; thyme honey-myrtle (*Melaleuca thymifolia*) is present in the gentle drainage lines along with the small sedge *Lepyrodia scariosa.*

This woodland is of interest because stands of *Eucalyptus parramattensis* in the Sydney region are uncommon and are mostly associated with loose sand deposits found at lower elevations. The Sydney Sand Flats Dry Sclerophyll Forests comprise several different but related communities of which S_DSF45 forms part. This means that the woodlands between areas can look superficially similar because many of the genera of understorey species are identical. However the species within the genera differ between sites such as Mellong, Castlereagh, Kurri Kurri and the Blue Mountains plateaux. The regional analyses suggest that these sand deposits are a more frequent characteristic of sandstone plateau environments than previously thought, with similarity between the Gospers Mountain stands found in this study and similar woodlands at comparable elevation near Robertson in the Southern Highlands.

### *Sydney Montane Dry Sclerophyll Forests*

Two of the communities described from systematic floristic sample sites fall into this high-altitude sandstone shrubby dry sclerophyll class. Both are found above 600 metres above sea level and are typical of the higher parts of the Blue Mountains. Floristically, only the sheltered forests situated above this elevation meet the criteria for this statewide class in the study area. This is because the ridgetop woodlands of the Wollemi plateaux receive considerably less rainfall and are lower in elevation than those in the upper Mountains; hence they are described under the Sydney Hinterland Dry Sclerophyll Forests class.

Both communities identified in this study are dominated by Sydney peppermint (*Eucalyptus piperita*), however the composition of the understorey makes them readily distinguishable in the field. **Upper Blue Mountains Peppermint Sheltered Forest (S_DSF55)** is widespread on sheltered slopes that fall below the Hunter Range and near the high basalt peaks of the study area. Associated with the Sydney peppermint is rough-barked apple (*Angophora floribunda*) and less frequently some high-elevation eucalypts such as narrow-leaved peppermint (*Eucalyptus radiata*) and Blaxland's stringybark (*Eucalyptus blaxlandii*). The understorey is shrubby with wattles, peas, geebungs and hakeas all common. Bracken fern (*Pteridium esculentum*) is the common ground cover. There are few mesic shrubs, lush ferns or vines, unlike the lower-elevation sheltered peppermint forests found on the eastern ranges.

The sandstone plateaux on the western margins of the study area are still above 750 metres above sea level but rainfall can fall below 800 millimetres per annum. These drier environments support a similar forest, but there are few shrubs in the understorey and the ground cover is very sparse. **Western Blue Mountains Peppermint Forest (S_DSF56)** is dominated by a similar suite of eucalypts as S_DSF55, although grey gum (*Eucalyptus punctata*) is more prevalent. It is common beneath the escarpment cliff lines and rocky slopes between Nullo Mountain and the residual sandstone plateaus to the west of the study area such as Airly Mountain and Donkey Mountain.

### *Southern Tableland Dry Sclerophyll Forests*

Southern Tableland Dry Sclerophyll Forests are found in the west of the study area on the infertile Narrabeen sandstones in the cool dry ranges that mark the spine of the Great Dividing Range. While these ranges are equivalent in elevation to parts of the upper Blue Mountains they are too dry to conform to the Sydney Montane Dry Sclerophyll Forest class, as rainfall falls below 800 millimetres per annum in this part of the study area. Five communities are recognised from systematic floristic sample site data, three of which are associated with the sandstone ridges and slopes between the Cudgegong River catchment and Growee. The characteristic eucalypt of this statewide class is inland scribbly gum (*Eucalyptus rossii*).

Open woodlands in the Cudgegong valley carry *E. rossii* and the rare *Eucalyptus corticosa*. Photo © OEH

**Growee Ranges Grey Gum-Scribbly Gum Forest (S_DSF49)** occurs on broad Narrabeen sandstone ridges which have few areas of outcropping sandstone and lie between 720 and 900 metres above sea level. Typically the forest is dry with an open shrub layer and a sparse ground cover with patchy cover of the hardy wallaby grass (*Joycea pallida*) and small herbs. The canopy is dominated by varying combinations of inland scribbly gum (*Eucalyptus rossii*), grey gum (*Eucalyptus punctata*) and narrow-leaved stringybark

(*Eucalyptus sparsifolia*). Black cypress pine (*Callitris endlicheri*) is scattered through the canopy, becoming more prominent as rainfall decreases. This community is widespread along the western edge of Wollemi NP from Glen Davis to Growee. It extends west along the Great Dividing Range to Munghorn Gap and Mount Stormy. In the same environment there is a patchy distribution of massive outcropping sandstone blocks that at times form distinctive pagoda-like formations. **Western Blue Mountains Pagoda Woodland (S_DSF54)** is found on or near these outcrops where elevation exceeds 850 metres above sea level. It has similar canopy species as S_DSF49, although the rocky habitat supports a sparse heathy understorey with distinctive stands of Port Jackson pine (*Callitris rhomboidea*). This rocky woodland community extends south of the study area into Gardens of Stone NP and along the escarpment edge of the Newnes Plateau. It is also found in isolated outcrops to the north-west in the ranges toward Munghorn Gap NR.

Dry sheltered slopes that fall from the high points of the Great Dividing Range in the lower rainfall zones carry a taller forest dominated by grey gum (*Eucalyptus punctata*), blue-leaved stringybark (*Eucalyptus agglomerata*) and narrow-leaved stringybark (*Eucalyptus sparsifolia*), as well as occasional stands of inland scribbly gum (*Eucalyptus rossii*). **Growee Ranges Grey Gum Sheltered Forest (S_DSF50)** is a dry shrub forest that has a narrow distribution in the elevated western parts of Wollemi NP, but is more extensive within and near the Munghorn range, north-west of the study area.

The Cudgegong valley, an area of extensive private holdings adjoining the western boundary of Wollemi NP, supports an eastern incursion of the Southern Tableland Dry Sclerophyll Forests class. It encompasses one of the rarer dry sclerophyll communities of the Sydney basin region. **Central Tableland Sand-slope Scribbly Gum Woodland (S_DSF46)** is found at elevations between 700 and 800 metres above sea level in the widest parts of the Cudgegong valley, on a mantle of eroded Narrabeen sandstone that rests above the Permian sediments. Cold air drains into and along these valley environments. The environments sustain a low open shrub cover with a canopy dominated by inland scribbly gum (*Eucalyptus rossii*), stringybarks (including *Eucalyptus sparsifolia* and *E. macrorhyncha*), brittle gum (*Eucalyptus mannifera*) and the rare *Eucalyptus cannonii*. Even rarer in these parts is the scattered occurrence of the Creswick apple box (*Eucalyptus corticosa*), a tree restricted to the indurated sands on the valley floor. Nearby, another forest forms on the deeper soils that occur on footslope benches and gentle depressions around the drainage lines that descend into the Cudgegong River. **Cudgegong Footslopes Forest (S_DSF47)** is a taller forest that has a mixed combination of eucalypts on rises, including rough-barked apple (*Angophora floribunda*), Sydney peppermint (*Eucalyptus piperita*) and grey gum (*Eucalyptus punctata*), and scattered ribbon gum (*Eucalyptus viminalis*) and Blakely's red gum (*Eucalyptus blakelyi)* in depressions. A dry shrub layer typifies the understorey.

### *Western Slopes Dry Sclerophyll Forests*

As both annual rainfall and elevation fall north of Nullo Mountain and the Hunter Range, the floristic composition of the dry sclerophyll forests on exposed slopes and ridges of the plateaux changes. Below 550-600 metres above sea level the environment becomes increasingly drier, with mean annual rainfall falling from around 750 millimetres per annum on the higher ranges to 550-600 millimetres along the Goulburn River valley. The plateaux are also partitioned by Widden and Baerami valleys, between which narrow rocky ridgelines and spurs are common. Ten vegetation communities have been identified from these warm and dry environments, each having affinities with vegetation patterns found on infertile soils of the western slopes of New South Wales. The woodlands are characterised by a range of ironbarks, cypress pines, tall wattles and stunted she-oaks, along with western heathy shrubs and hardy grasses such as *Cleistochloa rigida*. Within the Sydney Basin Bioregion these woodlands are restricted to sandstone ranges of the western Hunter valley that extend between Ulan near Mudgee and east to Denman.

The dry sandstone ranges of north Wollemi NP feature a mix of low woodland (S_DSF61) with *Callitris endlicheri, Eucalyptus dwyeri* and *E. fibrosa* with patches of rockplate heath (S_DSF62) and exposed rock. Photo © OEH

The most extensive of the Western Slopes Dry Sclerophyll Forests within the study area is **Western Hunter Escarpment Ironbark Forest (S_DSF59)**. It occurs between 200 and 500 metres above sea level on the upper escarpment slopes and ridges above the Goulburn and Widden valleys not far from the interface between the Narrabeen and Permian sediments. This community is distinguished by

the dominance of red ironbark (*Eucalyptus fibrosa*), although other ironbark species may also occur. The dry shrubby forest has a sparse cover of smaller trees such as the narrow-leaved wattle *Acacia linearifolia*. Some shrubs, such as *Phebalium squamulosum*, can be particularly abundant in the shrub layer. Immediately above the escarpment slopes there are a series of rounded rocky ridgelines and benches that form a stepped sequence toward the high points of the ranges. The first of these, at elevations between 200 and 500 metres above sea level, is occupied by **Western Hunter Caley's Ironbark Low Forest (S_DSF57)** that features a broken and uneven canopy of eucalypts, cypress pine and wattle. While the distinctive blue leaves of Caley's ironbark (*Eucalyptus caleyi*) are often observed, there are other dry-country species such as brown bloodwood (*Corymbia trachyphloia*), currawang (*Acacia doratoxylon*) and black cypress (*Callitris endlicheri*). Stands of currawang may form dense closed thickets within a mosaic of this forest. This probably results from fire disturbance, as other human disturbance is unlikely on these barren ridgelines. Nevertheless the currawang thickets have been recognised as a discrete assemblage and described as **Western Hunter Currawang Low Forest (S_DSF58)**.

The rocky benches above the previous forests appear to expose a different layer within the Narrabeen stratum. **Western Hunter Dwyer's Red Gum-Cypress Woodland (S_DSF61)** is widespread across the dry exposed Narrabeen sandstone ridges of broken rock and shallow soil, between 270 and 500 metres above sea level. Brown bloodwood (*Corymbia trachyphloia*) is regularly encountered, while the mallee-like Dwyer's red gum (*Eucalyptus dwyeri*) and red ironbark (*E. fibrosa*) also frequent. Currawang (*Acacia doratoxylon*) and black cypress pine (*Callitris endlicheri*) are further indicators of the dry infertile environment. The community has a very dry shrub layer and often a very sparse ground cover. On some massive rock plates a primarily treeless community occurs in the form of a sparse to open heath or shrubland. This **Western Hunter Rockplate Heath-Mallee (S_DSF62)** features fringe myrtle (*Calytrix tetragona*), tea-trees (including *Leptospermum parvifolium*), blunt beard-heath (*Leucopogon muticus*) and *Micromyrtus sessilis*. Isolated mallees such as Dwyer's red gum (*Eucalyptus dwyeri*) are occasionally present.

Two additional communities describe the forests found on sheltered aspects and gullies of these ranges, as well on as some wider ridgelines that are distinguishable by having limited outcropping sandstone. Both communities are underlain by slightly deeper soils and as a result the trees are taller and form an even canopy and there is a sparser, less heathy, shrub cover. **Western Hunter Grey Gum-Stringybark Forest (S_DSF60)** is a moderately tall eucalypt forest that does not include the stands of cypress pine or wattle trees that are so common in the rocky exposed communities. The forest spans a wide elevation range from crests above around 650 metres above sea level to sheltered upper slopes at 240 metres above sea level. The primary tree species are grey gum (*Eucalyptus punctata*) and narrow-leaved stringybark (*Eucalyptus sparsifolia*). The shrub layer includes some heathy shrubs, such as *Isopogon dawsonii,* but heathy species are much less abundant than in the rocky areas. The most protected slopes are covered with **Western Hunter Stringybark-Ironbark Sheltered Forest (S_DSF63)**. This forest shares canopy species with the previous forest with the addition of broad-leaved ironbark (*Eucalyptus fibrosa*). The most noticeable difference is the increased cover of grasses such as *Joycea pallida* and the greater diversity of soft-leaved shrubs, small vines and hardy mesic small trees including grey myrtle (*Backhousia myrtifolia*).

At slightly higher elevations, between 600 and 800 metres above sea level, some of the outcropping rocks support a very heathy woodland in a mosaic with treeless shrublands (the latter is S_HL13 which is described in the heathlands section). **Growee Ranges Rocky Stringybark Woodland (S_DSF51)** has a very high proportion of woody shrubs, such as *Calytrix tetragona* and tea-trees (*Leptospermum* spp.), that are also found in the treeless shrublands. The woodland is dominated by low-growing narrow-leaved stringybark (*Eucalyptus sparsifolia*) and grey gum (*Eucalyptus punctata*) and includes some mallee (*Eucalyptus dwyeri*).

There are two forests that fall into this class that are found on the margins of the study area. **Goulburn River Ranges Cypress-Ironbark Forest (S_DSF48)** is found near the far north-west boundary of the study area in Bylong State Forest and in Goulburn River National Park. It is a mixed cypress and eucalypt forest with a dry very sparse ground cover, found on sandy soils associated with colluvial flats and escarpment footslopes. Black cypress (*Callitris endlicheri*) is abundant, often forming dense stands between emergent ironbarks (*Eucalyptus fibrosa*) and brown bloodwood (*Corymbia trachyphloia*). Clumps of *Acrotriche rigida* may be sparsely scattered in the understorey.

**Capertee Escarpment Ironbark Forest (S_DSF67)** occurs on the steep west-facing rocky slopes that mark the eastern boundary of the Capertee Valley. Like the escarpment of the western Hunter valley it features a canopy dominated by red ironbark (*Eucalyptus fibrosa*), however in the Capertee area there may be some eucalypts that are indicative of tablelands environments such as red stringybark (Eucalyptus macrorhyncha) or inland scribbly gum (*Eucalyptus rossii*).

### *4.1.5 Heathlands*

Two heath communities have been identified from systematic floristic sample sites, both of which conform to the Sydney Montane Heaths statewide class of Keith (2004). A third, aligned with dry rocky sandstones of the western Hunter Range, is not included as a heathland using Keith (2004) on the basis of its floristic similarity to Western Slopes Dry Sclerophyll Forests. Hence it is discussed under the dry sclerophyll forests section.

The heathlands of the study area form low open to closed communities on Narrabeen sandstone outcrops and are primarily dominated by tea-trees, banksias, she-oaks and fringe-myrtles. They may also include mallee-form eucalypts and cypress pines. The most extensive areas of heath occur on the western margins of Wollemi NP on the mid elevation sandstone plateaux between the Capertee and Bylong valleys. This area is dotted by sandstone outcroppings known as pagodas. These formations fringe the cliff edges of the sandstone escarpments and gorges within the Coorongooba catchment and extend west into the western-most Triassic sandstone ranges in Gardens of Stone NP. **Western Blue Mountains Pagoda Shrubland (S_HL13)** occurs on and near the pagodas where it forms an open shrub community. Common fringe-myrtle (*Calytrix tetragona*) and blunt beard-heath (*Leucopogon muticus*) are the dominant species, sometimes with scattered emergent cypress pine (*Callitris* spp.) and scrub she-oaks including *Allocasuarina gymnanthera.*

Massive outcropping sandstone forms pagoda -like formations on many of the dissected gorges. Here in Coorongooba Creek there is a mosaic of shrublands (S_HL13) and eucalypt woodlands (S_DSF54). Photo © OEH

On the higher elevations of the Hunter Range and old Army Road there are massive isolated residual sandstone rock outcrops that are marked by a different heath called **Blue Mountains Heath-Mallee (S_HL12)**. The elevation varies from 700 metres above sea level at Cyril Rocks to over 1000 metres at Bare Rock Bluff. These high points experience a higher average annual rainfall. The community forms a matrix of moderately dense thickets of heath-leaved banksia (*Banksia ericifolia*), tea-tree (*Leptospermum* spp.) and dwarf she-oak (*Allocasuarina nana*). A number of rare mallee eucalypts can be found amongst the rock outcrops, including *Eucalyptus laophila* and *Eucalyptus bensonii.* The study area lies at the northern limit of the Sydney Montane Heaths statewide class; more extensive areas occur on the Newnes Plateau and in the upper Blue Mountains.

### *4.1.6 Freshwater Wetlands*

The native vegetation communities that occur on poorly drained or periodically inundated soils are small in area and patchily distributed. The study area encompasses a transition in statewide freshwater wetland classes (Keith 2004) from Coastal Heath Swamps (found on the sandstone plateau) into Montane Bogs and Fens (on the open valleys of the central tablelands on the western side of the Blue Mountains).

*Coastal Heath Swamps*

Most of the wetlands are found in zones that mark changes in the permeability of the substrate, where underground seepage feeds year-round freshwater. **Blue Mountains Coral Fern Shrub Swamp (S_FrW14**) occurs on the sandy alluvial drainage channels that are found at the bottom of several gullies on the sandstone plateau near Gospers Mountain, at around 680 metres above sea level. The swamps indicate a change in substrate from the colluvial sand deposits in the gully headwaters to the rocky incised gullies that continue downstream. Water drains through the sands until it hits the hard surface of sandstone bedrock and then gathers near a change in the grade of the creek. These small patches of waterlogged soil feature a prolific cover of coral fern (*Gleichenia dicarpa*), sometimes with a woody shrub layer of tea-tree (*Leptospermum polygalifolium*).

Also on the sandstone plateau, along the watershed of the Hunter Range, are several small examples of sandstone hanging swamps. These occupy gentle slopes just below the ridgeline and highlight a change from softer more erodible rock to hard less permeable layers in the sandstone. These are restricted to the area between Mount Coricudgy and the Kekeelbon Mountains where the sandstone ridge lies above 900 metres above sea level. The combination of mist and higher annual rainfall (greater than 1000 millimetres per annum), brought by the high range, support the northern-most examples of **Blue Mountains Sedge Swamp (S_FrW15)**. This community is characterised by sedges such as button grass (*Gymnoschoenus*

*sphaerocephalus*) and the endemic shrub *Acacia ptychoclada*. An outlying example of the community is found on Narrabeen sandstone in the Cudgegong valley at around 730 metres above sea level. Also dominated by button grass, this swamp is transitional between those of the sandstone plateau and the tableland bogs and hence could equally be considered part of the latter assemblage.

Considered together, the sandstone freshwater swamps in the study area are recognised as part of a TEC described as Blue Mountains Swamps in the Sydney Basin Bioregion under the TSC Act. These swamps are also recognised under Commonwealth legislation which lists Temperate Highland Peat Swamps on Sandstone as a TEC under the EPBC Act.

*Montane Bogs and Fens*

Within the study area tableland bogs are only located in the Cudgegong valley where the supply of underground water appears to trace the change in geological strata from Narrabeen to Permian sediments. There are two swamp communities that lie on sandy peat at around 720 metres above sea level. One is a woody shrub community the other an open sedgeland. These swamps are related to those found in cooler temperatures on the central tablelands, having the distinctive *Sphagnum* moss which is a diagnostic feature of Montane Bogs and Fens (Keith 2004). **Central Tableland Sedge Swamp (S_FrW17)** has only a sparse cover of woody shrubs; sedges, herbs and grasses form a more or less continuous cover. This community can be considered part of the Montane Peatlands and Swamps TEC listed under the TSC Act.

Small depressions are found in the basalt cap of Mount Coricudgy. A range of moisture-loving herbs and sedges occur here, but it is uncertain whether this is a derived community that has followed harvesting operations. The community has been sampled but the area has not been distinguished as a separate map unit until further information is available. Photo © OEH

On slightly drier parts of the swamp complex, on less frequently inundated soils along the valley floor, there are linear stands of **Central Tableland Flats Swamp Gum Low Forest (S_FrW16).** By way of contrast this community has a much higher cover of woody vegetation, in which the low-growing eucalypt broad-leaved sally (*Eucalyptus camphora*) is dominant. Stunted candlebark (*Eucalyptus rubida*) and snow gum (*Eucalyptus pauciflora*) may also fringe the swamp. While sedge species are still present they are not as diverse or abundant as in S_FrW17; instead a profuse layer of wood shrubs such as tea-trees (*Leptospermum* spp.) is characteristic.

Above 1200 metres above sea level on the basalt soils of Mount Coricudgy there is an open flat area with sparse eucalypt cover and a ground layer of sedges and herbs. There is uncertainty as to whether this depression is a natural soak or the site of a former log dump that has been used extensively as a camping ground. Systematic floristic sampling identified taller sedges such as *Juncus australis,* with smaller *Carex inversa* and *C. appressa* common. Clumps of *Lomandra longifolia* are spread across the site with a range of herbs that prefer damp soils, such as *Gratiola pedunculata*, and weeds including *Rumex crispus*. The native vegetation present has not been formally identified as a discrete unit; this would not be done until the disturbance history of the site has been clarified. If the site is a natural soak, it may represent a disturbed example of the Montane Bogs and Fens TEC listed under the TSC Act.

### *4.1.7 Forested Wetlands*

There are several communities associated with alluvial riverflats along the north and north-west perimeter of the study area. All are more extensively distributed outside the study area and are widespread across private tenures.

*Eastern Riverine Forests*

Two communities fall within the Eastern Riverine Forests statewide class. The most distinctive is marked by the narrow ribbons of river oak (*Casuarina cunninghamiana* subsp. *cunninghamiana*) that follow the largest and rivers on the margins of the study area. **River Oak Forest (S_FoW13)** is a river bank community that occasionally extends onto alluvial terraces. The understorey composition varies with disturbance history, including clearing, grazing and flooding, as well as with landscape position. In some narrow parts of valleys,

shelter from the overshadowing clifflines encourages the growth of some mesic shrub species including grey myrtle (*Backhousia myrtifolia*).

Nearby a eucalypt dominated forest, **Western Hunter Flats Rough-barked Apple Forest (S_FoW19)**, is found on the sandy alluviums that adjoin or rest above the river banks. This forest is most extensive on the lower-lying valleys that drain the Narrabeen sandstone plateaux. Rough-barked Apple (*Angophora floribunda*) is typically dominant, with red gums (*Eucalyptus blakelyi/E. tereticornis*) and grey gum (*Eucalyptus punctata*) locally common. The ground layer is a patchy to continuous cover of weeping grass (*Microlaena stipoides*) with herbs such as (*Dichondra repens*). The mixed sand and clay material support a sparse to open shrub layer of blackthorn (*Bursaria spinosa*) and coffee bush (*Breynia oblongifolia*) and shrubs such as geebung (*Persoonia linearis*).

*Coastal Swamp Forests*

Outlying examples of freshwater Coastal Swamp Forests occur on perched, poorly drained, sandy alluviums in the Cudgegong valley. These are unusually situated in the west of the Blue Mountains at elevations around 700 meters above sea level. The community, **Sydney Hinterland Riverflat Paperbark Swamp Forest (S_FoW05)**, is more commonly found outside the study area in the coastal zone on low-lying flats up to 40 metres above sea level. The dominant species is the flax-leaved paperbark (*Melaleuca linariifolia*) which forms groves along the boggy parts of the drainage lines. There are some impressive stands of this tree in Towinhingy Creek, just near the boundary of Wollemi NP. Scattered examples remain in the valley and on private lands that adjoin the study area.

Stands of S_FoW05 in Towinhingy Creek include some of the tallest examples of the paperbark *Melaleuca linariifolia* found in the Sydney basin. This individual exceeds 30 metres in height. Photo © OEH

### *4.1.8 Other Vegetation Features*

*Mixed Derived Native and Agricultural Grasslands*

Large parts of the study area have been modified by agricultural land use. This has resulted in the loss of the upper and mid strata of vegetation communities that are associated with gentle topography, fertile soils and proximity to freshwater. In some instances the ground cover has been replaced by pasture grasses and is subject to cropping activities. A single map unit has been identified to describe this broad landscape feature and is labeled as **Mixed Derived Native and Agricultural Grasslands (S_MGL)**. Assemblages in this unit have less than three per cent cover of woody vegetation. No attempt has been made to distinguish native from exotic dominant grasslands in this study. An exception to this occurs in the Cudgegong valley where the removal of swamp flat vegetation from the low-lying parts of the valley does provide a recognisable boundary which demarcates where the former mosaic of swamps and swamp woodlands would once have occurred. In the map layer this is labeled with API feature code 3430.

*Derived Freshwater Wetlands*

Derived Freshwater wetlands are restricted to the Kandos weir. Small patches of reeds such as *Eleocharis sphacelata* are found along the banks of the reservoir. These are artificial habitats arising from flooding of the Cudgegong valley.

*Regenerating Vegetation*

**Regenerating Vegetation (S_RGS)** describes a variety of pioneering species that occupy sites that have been previously impacted by disturbance. This has resulted in modification or loss of original vegetation structure and composition. Examples include wattle scrubs on basalt soils regenerating from previous clearing and blackthorn scrubs on Permian slopes in proximity to agricultural valleys.

*Non Native Vegetation*

**Non Native Vegetation (S_NNV)** comprises stands of introduced species and plantations that are not native to the area. This includes weeds, plantation timbers, and wind throws. Small areas have been delineated on private lands and state forests.

## 4.2 Conservation Values and Reserve Management

North-west Wollemi NP presents the duality of conservation management across large and remote Sydney sandstone reserves. It contains an extensive cover of sandstone sclerophyllous vegetation, which left free of human disturbance, will continue to maintain ecological processes and functions into perpetuity, notwithstanding the impacts of human-induced climate change. On the other hand the reserve is fringed by environments that are dominated by agricultural land uses, resulting in the diminution and degradation of the native vegetation cover on these more fertile land systems. It is in these environments that legal obligations are in place to recognise the national and state conservation status of the remaining native vegetation cover. There are eight New South Wales TECs present within the study area and seven of them centre on communities found primarily on private lands or state forests. While examples are present within Wollemi NP, these are mostly either outlying stands or small parts of larger patches that extend out of the reserve boundary into private tenures and state forests.

Unlike the vast sandstone landscapes, the highest conservation priority vegetation communities are not visually spectacular. The endangered grassy box woodlands (in the study area the White Box-Yellow Box-Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands TEC) are recognised for their conservation value at a national level, but examples in the study area are often typified by a patchy and fragmented cover of regrowth eucalypts and the presence of weeds and trails irrespective of their remoteness. This is a stark contrast to the undisturbed sandstone landscapes and it actually highlights the rationale for their conservation status. The fact that some of the remote basalt caps in the reserve have been used for rough grazing is indicative of just how sought after these landscapes have been in the past.

The grassy box woodlands occur on the Permian escarpment footslopes along the west and north boundary of Wollemi NP, as well as on the basalt flows and caps north of Nullo Mountain. Woodlands in the former location have heightened conservation value because these lower elevation forms of the TEC are important habitat for a suite of bird species that are collectively known as 'declining woodland birds' (DEC 2007). This includes species such as the brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*), black-chinned honeyeater (eastern subspecies) (*Melithreptus gularis gularis*), hooded robin (south-eastern form) (*Melanodryas cucullata cucullata*) and diamond firetail (*Stagonopleura guttata*) as well as the critically endangered regent honeyeater (*Anthochaera phrygia*).

Management of grassy box woodlands requires greater investment of resources in order to enhance the biodiversity values of former agricultural lands, particularly within the constraints of surrounding landuses and tenures. For example management of key threatening processes relating to weeds and feral predators are unlikely to be successful without the co-operation of surrounding land owners. The relatively isolated stands of grassy box woodlands on the basalt outcrops are a different case, in that they are largely self-contained and, being surrounded by sandstone vegetation, are not subject to incursion of weeds from adjoining areas.

The Cudgegong valley is another area of high conservation value. This is because there are a number of TECs along the valley floor, occurring alongside woodlands that are unique in the Sydney Basin Bioregion. These vary from open bogs and depressions that support wetlands, to woodlands that trace the banks of the river. The valley is unusual in that it is perched high in the landscape, unlike the surrounding incised valleys of the Capertee and Bylong rivers. Because of this, cold air that drains from the high points of the ranges rests on the valley floor creating frost hollows. This phenomenon, in combination with the fertile alluvial soils, means the valley supports communities that have been extensively cleared from the central and southern tablelands of New South Wales. These communities include eucalypts such as snow gum, candlebark, ribbon gum and apple box. Away from the flats, and on the very margins of Wollemi NP, there are grassy woodlands dominated by yellow box. These are remnants of the vegetation on Permian terraces along the lower parts of the valley and are also recognised as a TEC. Further up the valley above the agricultural lands there are some unusual woodlands found on the sandy footslopes. While not currently identified as a TEC the valley and the adjoining Heffrons Gap area encompasses the currently known extent of the sand-slope woodland in the bioregion. The woodland includes the locally endemic and endangered tree Creswick apple box, *Eucalyptus corticosa*, included on the TSC Act.

The forests found on the high basalt peaks above the Cudgegong valley are also of high conservation value. Recently, montane basalt forests across the Sydney Basin Bioregion have been listed as an EEC under Commonwealth legislation. The forests found on the main peaks above the Cudgegong valley, such as Mount Coricudgy, Mount Darcy, Gospers Mountain and Mount Towinhingy, conform to this new determination. In contrast forests on the larger Nullo Mountain do not. Several of the former peaks are included within Coricudgy SF. More generally, these basalt caps carry examples of tall eucalypt forests that are not found elsewhere in the Sydney basin; rather they are outlying examples of Northern Tableland Wet Sclerophyll Forests which are primarily found along the Liverpool Range. The fertile basalt soils in the study

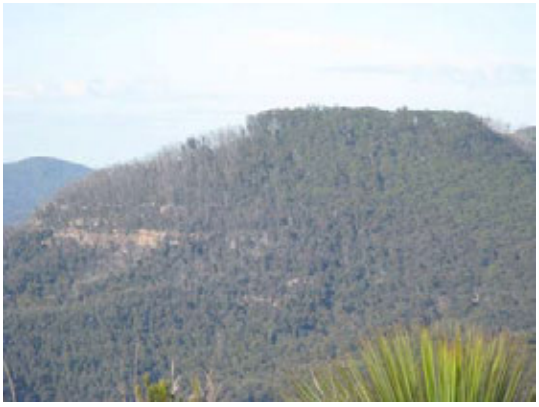
area have been targeted for timber harvesting and grazing due to the tall straight timbers and the lush grassy and herbaceous ground covers. Weeds can be particularly profuse, with infestations of blackberry being problematic in the past on Mount Coricudgy.

A number of the basalt peaks, including Mount Coricudgy, Mount Monundilla and Mount Coriaday, also carry an important temperate rainforest on sheltered slopes. These high elevation rainforests are uncommon in the Sydney basin. Stands on the larger peaks in the Blue Mountains, such as Mount Tomah and Mount Wilson, have been heavily cleared in the past. Similar rainforest occurs on basalt soils on the Robertson plateau. The Robinson rainforest has suffered similar clearing rates and has been recognised as a TEC under state legislation. Similar conservation status should be afforded to the rainforests of the Blue Mountains-Wollemi basalt peaks.

Vegetation communities on the sandstone plateaux are generally extensively distributed and well protected in formal conservation reserves; hence they are not afforded high conservation status using the criteria applied to the above communities. An exception to this is the Blue Mountains swamps which occur on poorly drained soils that form distinctive hanging swamps on sandstone ridges. These are recognised as TECs under both state and commonwealth legislation. These swamps are highly restricted in this part of Wollemi NP with the best examples found just east of Mount Coricudgy on the Hunter Main Trail. These outlying patches may represent good bell-weather sites for monitoring long term climate change impacts, as they are located on the margins of the mean annual rainfall band that is required to sustain the community. Reductions in moisture availability and increased frequency and severity of fire may result in the transition from swamps to sclerophyllous vegetation.

Fire remains an integral part of the Wollemi landscape, whether sourced from natural ignitions or man-made intervention. Much of the vegetation is fire adapted, with few vegetation types fire sensitive (Bell 1998). The impacts of fire on the broad vegetation formations present in the Greater Blue Mountains WHA have been summarised by Hammill and Tasker (2010). Within the study area fire is unlikely to result in the extinction or loss of a vegetation community from within the Sydney Basin Bioregion however it does have a greater likelihood of reducing the diversity of vegetation communities at individual sites by changing the structure or composition of those that are small in area. Fire is common across the sandstone plateaux owing to the flammable vegetation that encourages fire spread as a source of plant regeneration. On the high points of the Hunter Main Trail, however, there are several vegetation communities that may be vulnerable to a high fire frequency. The access trail along the range provides one of the few vantage points to implement fuel reduction or suppression strategies across the Wollemi plateaux. As a result more frequent burning regimes may occur here which may impact two sensitive communities.

The first of the fire-sensitive communities are the Blue Mountains swamps that are hidden off the main range between Mount Coricudgy and the Kekeelbon Mountains. These swamps have a small patch size and together comprise less than 20 hectares. Fire, during or following particularly dry seasons, has the potential to consume the peaty soils upon which the swamp vegetation depends, resulting in the encouragement of sclerophyllous vegetation to the detriment of the water-loving sedges and herbs (Hammill and Tasker 2010). The second type of community that may be vulnerable to fire is the tall sheltered Blue Mountains ash forest that is dominated by *Eucalyptus oreades*. This forest is tucked just under the clifflines of the Hunter Main Range on the highest points. This tree species is unique in the study area in that it is killed by fire, but conversely requires fire to set seed to regenerate. While wildfires separated by several decades are required, overly frequent burns can easily kill young regrowth stands before they reach maturity (Glasby et al. 1988). Following the widespread and severe 2006-2007 fires there are few unburnt stands of this community in the study area. As a result stands remain vulnerable to future fire events.



Stands of *Eucalyptus oreades* have been killed by the 2006-7 wildfires that were extensive across the southern and central ranges of the study area. Here near Mount Coricudgy the fickle burn pattern has consumed the south-west side of the mountain while the north-east side remains untouched. Photo © OEH

Rainforests on basalt peaks remain vulnerable to the most severe fires during the driest seasons. Unlike other rainforests they are not positioned deep in sandstone gully systems and hence are not afforded refuge by their landscape position. They are also usually of small patch size. On Mount Coricudgy, Mount Monundilla and Mount Coriaday fire can also encroach into stands of temperate rainforest. Overly frequent fire can result in opening of the canopy and reduction of the rainforest boundary, as smooth-barked rainforest trees are killed and give way to *Acacia melanoxylon* scrubs (Floyd 1990).

## 4.3 World Heritage Values: Eucalypt Diversity

Sixty-six eucalypt species were recorded in the study area during this study and an additional two species have been documented during previous surveys. Appendix H summarises the distribution of each eucalypt species in the study area and identifies those that are found within the boundary of north-west Wollemi NP. The diversity of eucalypts is remarkable. The study area includes less than 20 per cent of the total area of the Greater Blue Mountains WHA yet supports over two-thirds of the eucalypt species known to occur in the world heritage area (Hager and Benson 2010). The species richness is slightly lower than the 75 species known from the slightly larger Warragamba Special Area in the southern Blue Mountains (NPWS 2003d). However, north-west Wollemi NP supports over a third more species than the similarly-sized Yengo and Parr reserves (DECC 2008). Comparisons within the Sydney region, but outside the world heritage area, puts the diversity of eucalypts into context. The coastal landscapes of the SMCMA area cover around 220,000 hectares but support fewer than 52 eucalypt species (DECCW 2009b data).

The high number of eucalypt species is attributable to the range of habitats present in and around north-west Wollemi NP. Unlike other Sydney sandstone environments, north-west Wollemi NP has had a recent period of volcanism which has layered basalt above the sandstone ridges and formed local peaks and diatremes. These span a range of elevations from 200 to 1220 metres above sea level with a corresponding variation in rainfall from less than 600 millimetres per annum to more than 1000 millimetres. Speciesation across this basalt geology is remarkable in itself. The Triassic sediments found on the sandstone plateaux also carry a high number of eucalypt species because they too cover a wide range of rainfall zones and altitudes. Species typical of several broad environmental regions are represented, including the north-west slopes, northern tablelands, north coast, central and southern tablelands, and Sydney montane and coastal environments. The species total is further boosted by species that are endemic to the region such as *Eucalyptus dawsonii* found on the Permian escarpment, *Eucalyptus corticosa* in the Cudgegong valley and mallees including *Eucalyptus bensonii* and *Eucalyptus laophila.*

## 4.4 Further Survey Work

Given the size and remoteness of north-west Wollemi NP, the collection of survey data to describe biodiversity values will remain an ongoing endeavour. However, following the completion of this study, and that of DEC (2007) for fauna, significant investment in survey effort is no longer required. Greater evenness in the spread of sample sites would be best achieved by the sampling of remote areas in conjunction with ongoing park management activities such as weed control and fire management. A review of the sampling performance of the API feature codes presented in Appendix A would assist in guiding the allocation of future survey effort. Uncertainty in the confidence of the map unit attribution can also be used to identify areas that warrant further investigation. The major systematic floristic sampling gaps that remain are as follows:

- Remote sandstone areas between Gospers Mountain and the Tollagong and Wirraba ranges.
- The Bylong Labyrinth and Mount Pomany areas north of Nullo Mountain, particularly sheltered sandstone slopes.
- Box woodlands on escarpment footslopes. These will remain an ongoing priority due to their conservation value as well as the lack of reliable biodiversity condition data to assist with site assessments associated with offsetting and biobanking initiatives.

The collection and analysis of new data can be used to review and update the reliability of the vegetation map in areas not visited during this project.

## 4.5 Field Identification of Vegetation Communities

Each vegetation community profile in Volume 2 of this report includes a description of key identifying features and a list of diagnostic species. The diagnostic species lists are presented to guide users in differentiating communities from one another, or confirming the type of vegetation at a site of interest. The list of diagnostic species has been drawn from site data collected in this project. They do not represent the total list present at any given location or within any given community. The first thing to note is the number of replicates that have been used to describe the community. Vegetation communities that are described using fewer site numbers are likely to have less accuracy in the diagnostic species list than those with a higher number of replicates.

The Fidelity Class column lists three types of species: positive, constant, and uninformative. One other type of species called ‘negative’ are not presented in this list.

Table **16** provides an example from which to discuss the interpretation of the diagnostic species list. Please note that this example diagnostic species list does not correspond to any of the vegetation communities within the study area.

Group Score and Frequency: These refer to median cover abundance and the frequency at which these species have occurred in the sites that have been used to define this community. Using the table below as an example, it can be seen that *Calytrix tetragona* occurred in 25 per cent of sites that describe the example map unit below. Of these sites, the median cover abundance score was 5 (up to 75 per cent).

Non Group Score and Frequency: These provide a comparative cover abundance and frequency of occurrence for this species across all other sites (communities). In this example, *Calytrix tetragona* has been recorded in three per cent of all other sites at a cover abundance of 2.

Positive species: These are species that are recorded more frequently and at higher abundances within a given vegetation community compared to all other communities in the study area. They may also be species that are unique to that community, that is, they were not found amongst sites that defined any other community. In this example (

Table **16**) it is seen that *Baeckea imbricata* occurs at 100 per cent of the sites within this community, at a mean cover abundance of 3, while it occurred in only four per cent of all other sites, with a lower cover abundance of 2. It is also noted that *Dillwynia glaberrima* is unique to this community, and has not been recorded in any other sites (Non-Group Frequency equals 0).

Constant species: These are species that occur at relatively consistent frequencies and abundance across all communities. These species are not useful in differentiating vegetation communities, yet are useful in describing them. In the example it can be seen that *Corymbia gummifera* has occurred in 83 per cent of sites within the community, at a mean cover abundance of 3. However, this does not help to differentiate the community, as the species was recorded in 41 per cent of all other sites, with a mean cover abundance of 2.

Diagnostic species can be used as a guide only. These species can be misleading, because an apparent uniqueness to or absentia from a community may simply result from insufficient floristic sampling. However, for communities with a large number of floristic sampling replicates, diagnostic species may be used to distinguish communities from one another, only if identical vegetation sampling methods are employed. Reliability of identification will increase with the greater number of positive diagnostic species identified at a site. Confidence can also be improved with an understanding of the habitat and structural characteristics of the vegetation community of interest.

**Table 16: Example diagnostic species list**

| Species Name | Group Score (50 percentile) | Group Frequency | Non-group Score (50 percentile) | Non-group Frequency | Fidelity Class |
|---|---|---|---|---|---|
| *Acacia longifolia* subsp. *longifolia* | 3 | 25% | 2 | 19% | uninformative |
| ***Acacia longifolia* subsp. *sophorae*** | **2** | **50%** | **2** | **2%** | **positive** |
| *Acacia myrtifolia* | 1 | 13% | 2 | 13% | uninformative |
| *Actinotus helianthi* | 1 | 13% | 2 | 7% | uninformative |
| ***Allocasuarina distyla*** | **3** | **75%** | **2** | **10%** | **positive** |
| *Asplenium flabellifolium* | 3 | 13% | 2 | 4% | uninformative |
| *Austrodanthonia monticola* | 1 | 13% | 2 | 0% | uninformative |
| ***Baeckea imbricata*** | **3** | **100%** | **2** | **4%** | **positive** |
| ***Banksia ericifolia* subsp. *ericifolia*** | **3** | **63%** | **2** | **28%** | **positive** |
| *Banksia integrifolia* subsp. *integrifolia* | 6 | 25% | 2 | 7% | uninformative |
| *Banksia oblongifolia* | 3 | 13% | 2 | 14% | uninformative |
| *Billardiera scandens* | 1 | 38% | 1 | 36% | uninformative |
| ***Callistemon linearis*** | **2** | **38%** | **1** | **3%** | **positive** |
| *Calytrix tetragona* | 5 | 25% | 2 | 3% | uninformative |
| *Cassytha glabella* | 3 | 13% | 2 | 15% | uninformative |
| ***Cassytha pubescens*** | **2** | **50%** | **2** | **28%** | **positive** |
| *Cryptandra amara* | 1 | 13% | 2 | 1% | uninformative |
| ***Cyathochaeta diandra*** | **3** | **38%** | **2** | **25%** | **positive** |
| *Dampiera stricta* | 1 | 38% | 2 | 24% | uninformative |
| ***Darwinia fascicularis*** | **2** | **63%** | **2** | **6%** | **positive** |
| ***Dillwynia glaberrima*** | **3** | **50%** | **2** | **0%** | **positive** |
| *Elaeocarpus reticulatus* | 1 | 13% | 1 | 18% | uninformative |
| *Eleocharis sphacelata* | 5 | 13% | 2 | 0% | uninformative |
| *Entolasia stricta* | 2 | 75% | 2 | 58% | constant |

| Species Name | Group Score (50 percentile) | Group Frequency | Non-group Score (50 percentile) | Non-group Frequency | Fidelity Class |
|---|---|---|---|---|---|
| *Epacris longiflora* | 3 | 25% | 2 | 9% | uninformative |
| *Epacris microphylla* var. *microphylla* | 1 | 13% | 2 | 5% | uninformative |
| *Epaltes australis* | 3 | 13% | 1 | 0% | uninformative |
| *Eucalyptus obstans* | 1 | 25% | 1 | 1% | uninformative |

## 4.6 Using the Map and Report

### *4.6.1 How to use the data*

A digital vegetation attribute data layer has been built for use in *ArcView*, *ArcGIS* or *MapInfo* GIS. The data layer should be accessed for all questions regarding the distribution of vegetation communities and associated attributes. Far more information exists within the digital data layer than can be presented on a summary map of vegetation communities.

The data layer has 23 different attribute fields, summarised in Table 17. For some attributes there are separate numeric codes and text labels to aid data analysis and query.

**Table 17: Attribute fields of the data layer**

| Field Name | Type of Data | Definition |
|---|---|---|
| MU_LABEL | Text | This field contains both the Map Unit Code and Map Unit Name together as one label. This field is vey useful when querying the map layer or creating maps. **This is the primary to use when querying the data layer on vegetation community**. |
| MU_CODE | Text | This field contains a code for the vegetation community (or map unit) the polygon has been assigned to. There are 62 possible native vegetation community types, plus three other vegetation codes and four landscape feature codes. The map unit codes refer to the communities and other units defined in Volume 2 of this document. |
| MU_NAME | Text | This field contains the vegetation community name associated with the above map unit code. These are defined in Volume 2 of this document. |
| NSWTEC | Text | This field assigns polygons to NSW Threatened Ecological Communities (TECs) where appropriate, based on the information and definitions in the NSW Scientific Committee determination for each TEC.<br><br>There is not always a 1:1 relationship between map units and TECs, as defined in Table 15 of this volume, therefore any queries on NSW TECs must be run on this field rather than the MU_LABEL, MU_CODE or MU_NAME fields. |
| COMMTEC | Text | This field assigns polygons to Commonwealth Threatened Ecological Communities (TECs) where appropriate, based on the information and definitions in the determination for each TEC.<br><br>There is not always a 1:1 relationship between map units and TECs, as defined in Table 15 of this volume, therefore any queries on Commonwealth TECs must be run on this field rather than the MU_LABEL, MU_CODE or MU_NAME fields. |
| FORMATION | Text | This field contains the statewide formation that the community within the polygon has been assigned to, based on information in Keith (2004). |
| STATECLASS | Text | This field contains the statewide class that the community within the polygon has been assigned to, based on information in Keith (2004). |
| DISTSEV_C | Number | This field contains the disturbance severity code assigned to each polygon during the API process. Disturbance severity classes are defined in Table 7. |
| DISTSEV | Text | This field contains the disturbance severity class, as assigned each polygon during |

| Field Name | Type of Data | Definition |
|---|---|---|
| | | the API process. |
| CONFID_C | Number | This field contains the interpreter mapping confidence code assigned to each polygon during the API process. Confidence classes are defined in Table 4. |
| CONFID | Number | This field contains the interpreter mapping confidence class, as assigned to each polygon during the API process. |
| COVER_C | Number | This field contains the canopy cover code assigned to each polygon during the API process. Canopy cover classes are defined in Figure 2. |
| COVER | Text | This field contains the percentage canopy cover, as assigned to each polygon during the API process. |
| USTOREY_C | Number | This field contains the understorey code assigned to each polygon during the API process. API understorey codes are defined in Table 3. |
| USTOREY | Text | This field contains the understorey description, as assigned each polygon during the API process. |
| DISTFTR1_C | Number | This field contains the primary disturbance feature code assigned to each polygon during the API process. Disturbance feature codes are defined in Table 6. |
| DISTFTR1 | Text | This field contains the primary disturbance feature description, as assigned each polygon during the API process. |
| DISTFTR2_C | Number | This field contains the secondary disturbance feature code assigned to each polygon during the API process. Disturbance feature codes are defined in Table 6. |
| DISTFTR2 | Text | This field contains the secondary disturbance feature description, as assigned each polygon during the API process. |
| ROCKCOV_C | Number | This field contains the visible rock cover code assigned to each polygon during the API process. Visible rock classes are defined in Table 5. |
| ROCKCOV | Text | This field contains the percentage visible rock cover, as assigned to each polygon during the API process. |
| APIFEATURE | Number | Local vegetation community pattern code based on geology, dominant species of upper stratum, aspect. Code is explained in Appendix A. |
| HECTARES | Number | This provides the area (hectares) for each polygon. To derive a square metre area figure, multiply this figure by 10,000. |

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## Appendix A: API Feature Codes

This table summarises the individual feature codes that have been used to identify the unique combinations of physical and vegetation attributes that were identifiable during field traverse and stereoscopic API. The thresholds applied to physical attributes and presented below were extracted from interpreted data.

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volcanic** | | | | | | | | | | | | |
| 3005 | basalt cap, montane rainforest (mt corricudgy) | *dorysassa ceraapeta* | 900-1000 | low rock | mesic/rainforest | sheltered | Montane Basalt Warm Temperate Rainforest | S_RF14 | 198 | 0.09 | 1 | 0.25 |
| 3015 | basalt cap, montane moist forest (mt coricudgy) | *eucalaevo eucanobil* | 900-1050 | low rock | moist shrubs/grasses/herbs | various | Montane Basalt Ribbon Gum Moist Forest | S_WSF28 | 2272 | 0.98 | 9 | 2.27 |
| 3025 | basalt cap, montane moist forest (nullo mtn) | *eucalaevo eucanobil eucapauci* | 1050-1100 | low rock | moist shrubs/grasses/herbs | various | Montane Basalt Ribbon Gum-Snow Gum Forest | S_WSF29 | 1190 | 0.51 | 7 | 1.77 |
| 3030 | basalt cap, montane moist forest (monundilla mtn) | *eucafasti eucacypel* | 950-1150 | low rock | moist shrubs/grasses/herbs | semi-sheltered | Sydney Montane Basalt Monkey Gum Forest | S_WSF21 | 50 | 0.02 | 1 | 0.25 |
| 3035 | basalt intrusion, dry forest / woodland | *eucamollu/eucaalben stringybark +/- eucamelli* | 450-800 | low-moderate rock | dry shrubs and grasses | semi-sheltered | Central Tableland Clay White Box Woodland | S_GW11 | 3929 | 1.70 | 14 | 3.54 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3036 | basalt intrusion, dry forest / woodland | *eucamollu/eucaalben stringybark +/- eucamelli* | 200-450 | low rock | dry to moist shrubs/grasses/herbs | semi-sheltered | Hunter Range Basalt Grey Box Woodland | S_GW10 | 24 | 0.01 | 1 | 0.25 |
| 3040 | basalt residual, dry forest / woodland | *alloverti acacdoryt* | 500-550 | low-moderate rock | dry shrubs and grasses | semi-sheltered | Western Hunter Residual Basalt Low Forest | S_DSF44 | 98 | 0.04 | 3 | 0.76 |
| 3045 | diatreme, moist forest / woodland | *eucavimin +/- eucamelli eucablake* | 700-800 | low rock | moist shrubs/grasses/herbs | semi-sheltered | Montane Basalt Ribbon Gum-Box Forest | S_WSF31 | 1626 | 0.70 | 8 | 2.02 |
| 3050 | diatreme, moist forest | *eucadeane +/- eucavimin angoflori melalinar rainforest* | 550-650 | low rock | moist shrubs/grasses/herbs | semi-sheltered | Hunter Range Basalt Paperbark Thicket | S_WSF30 | 320 | 0.14 | 1 | 0.25 |
| 3055 | diatreme, warm temperate rainforest | *dorysassa ceraapeta* | 600-700 | low rock | mesic/rainforest | semi-sheltered | Sydney Hinterland Warm Temperate Rainforest | S_RF12 | 3 | 0.00 | 0 | 0.00 |
| 3060 | diatreme gully, dry forest / woodland (bylong valley) | *eucablake* | 300-350 | low rock | dry to moist grasses/herbs/sedges | exposed | Western Hunter Flats Rough-barked Apple Forest | S_FoW19 | 77 | 0.03 | 0 | 0.00 |
| 3065 | diatreme, dry forest / woodland (bylong valley) | *eucadawso* | 350-400 | low rock | dry shrubs and grasses | exposed | Western Hunter Footslopes Box Woodland | S_GW05 | 340 | 0.15 | 0 | 0.00 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3070 | diatreme, dry forest / woodland (murumbo valley) | *eucablake eucaconic* | 200-250 | low rock | dry to moist grasses/herbs/sedges | semi-sheltered | Western Hunter Flats Fuzzy Box Woodland | S_GW06 | 193 | 0.08 | 0 | 0.00 |
| 3075 | diatreme, dry forest / woodland (murumbo valley) | *ironbark eucamollu* | 250-300 | low-moderate rock | dry shrubs and grasses | semi-sheltered | Hunter Range Basalt Grey Box Woodland | S_GW10 | 153 | 0.07 | 0 | 0.00 |
| 3080 | diatreme, swamp forest / scrub | *melaleuca* | 550-650 | low rock | moist shrubs/grasses/herbs | semi-sheltered | Hunter Range Basalt Paperbark Thicket | S_WSF | 28 | 0.01 | 0 | 0.00 |
| 3085 | basalt acacia forest / scrub | *acacia* | 750-800 | low rock | moist shrubs/grasses/herbs | semi-sheltered | Regenerating Vegetation | S_RGS | 19 | 0.01 | 0 | 0.00 |
| **Basalt Proximity** | | | | | | | | | | | | |
| 3100 | basalt (proximity), warm temperate rainforest | | 650-750 | low rock | mesic/rainforest | sheltered | Montane Basalt Warm Temperate Rainforest | S_RF14 | 90 | 0.04 | 0 | 0.00 |
| 3105 | basalt (proximity) hillslope, montane moist forest | *eucabicost etc* | 900-1050 | low rock | moist shrubs/grasses/herbs | sheltered | Sydney Montane Basalt Monkey Gum Forest | S_WSF21 | 52 | 0.02 | 2 | 0.51 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3110 | basalt (proximity) hillslope, montane moist forest | *eucablaxl eucacypel eucavimin eucanobil +/- eucapiper (eucabicost nullo)* | 850-950 | low-moderate rock | moist shrubs/grasses/herbs | semi-sheltered | Sydney Montane Basalt Monkey Gum Forest | S_WSF21 | 3236 | 1.40 | 16 | 4.04 |
| 3115 | basalt (transferral) gully, moist forest | *eucapiper eucapunct eucacypel angoflori +/- eucavimin eucabicost eucablaxl* | 750-900 | moderate-high rock | dry to intermediate shrubs | semi-sheltered | Sydney Montane Basalt Monkey Gum Forest | S_WSF21 | 1181 | 0.51 | 2 | 0.51 |
| 3120 | basalt (proximity), dry forest / woodland | *eucamollu/eucaalben stringybark callendli +/- acacia alloverti eucamelli eucapunct* | 700-800 | moderate-high rock | dry shrubs and grasses | semi-sheltered | Western Hunter Residual Basalt Low Forest | S_DSF44 | 671 | 0.29 | 1 | 0.25 |
| 3125 | basalt (proximity), dry forest / woodland | *eucarossi +/- stringybark eucamacro oc eucaagglo (rare)* | 950-1000 | moderate-high rock | dry shrubs and grasses | semi-sheltered | Growee Ranges Grey Gum-Scribbly Gum Forest | S_DSF49 | 101 | 0.04 | 2 | 0.51 |
| 3130 | basalt (proximity) plateau, montane dry forest / woodland | *mann eucamacro +/- elliptica eucacypel eucamelli stringybark* | 950-1050 | low-moderate rock | dry shrubs and grasses | semi-sheltered | Montane Basalt Stringybark-Brittle Gum Forest | S_GW07 | 1760 | 0.76 | 11 | 2.78 |
| **RAINFOREST** | | | | | | | | | | | | |
| 3140 | narrabeen gully, warm temperate rainforest | *rainforest - warm temperate gullies* | 600-700 | low-moderate rock | mesic/rainforest | sheltered | Sydney Hinterland Warm Temperate Rainforest | S_RF12 | 2152 | 0.93 | 4 | 1.01 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3145 | various gully, subtropical / dry rainforest | *tooncilli* | 500-750 | high rock | mesic/rainforest | sheltered | Blue Mountains Gorges Subtropical-Dry Rainforest | S_RF09 | 52 | 0.02 | 1 | 0.25 |
| 3150 | narrabeen gully, dry rainforest | *fig present* | 350-450 | moderate-high rock | grey myrtle (abundant or dominant in understorey) | semi-sheltered | Sydney Hinterland Grey Myrtle Dry Rainforest | S_RF11 | 7 | 0.00 | 0 | 0.00 |
| 3155 | narrabeen gully, dry rainforest | *backmyrti* | 450-550 | moderate-high rock | grey myrtle (abundant or dominant in understorey) | semi-sheltered | Hunter Range Grey Myrtle Layered Forest | S_RF13 | 364 | 0.16 | 2 | 0.51 |
| 3156 | gully, dry rainforest | | 550-600 | high rock | mesic/rainforest | semi-sheltered | Sydney Hinterland Grey Myrtle Dry Rainforest | S_RF11 | 57 | 0.02 | 1 | 0.00 |
| **SANDSTONE GULLY** | | | | | | | | | | | | |
| 3165 | narrabeen gully, moist forest | *eucadeane stringybark angoflori +/- eucapiper eucapunct* | 450-600 | moderate rock | intermediate to mesic trees and shrubs | sheltered | Sydney Hinterland Blue Gum-Turpentine Gully Forest | S_WSF10 | 2638 | 1.14 | 3 | 0.76 |
| 3170 | narrabeen gully, moist forest | *eucadeane syncglomu +/- eucapunct stringybark* | 400-500 | moderate rock | mesic | sheltered | Sydney Hinterland Blue Gum-Turpentine Gully Forest | S_WSF10 | 167 | 0.07 | 0 | 0.00 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3175 | narrabeen gully alluvium, moist forest | *angoflori eucavimin eucacypel +/- casucunni eucablake eucamelli eucapiper* | 450-550 | moderate-high rock | intermediate to mesic trees and shrubs | semi-sheltered | Central Tableland Ribbon Gum-Apple Gully Forest | S_WSF25 | 1956 | 0.85 | 5 | 1.26 |
| 3180 | narrabeen gully alluvium, moist forest | *angoflori eucavimin eucacypel +/- casucunni eucablake eucamelli (eucapiper sth)* | 700-750 | low-moderate rock | dry to moist grasses/herbs/sedges | semi-sheltered | Central Tableland Ribbon Gum-Apple Gully Forest | S_WSF25 | 1893 | 0.82 | 5 | 1.26 |
| 3185 | narrabeen gully alluvium, moist forest | *eucacypel eucapiper +/- eucapunct eucavimin stringybark* | 650-750 | moderate-high rock | intermediate to mesic trees and shrubs | semi-sheltered | Wollemi Monkey Gum-Peppermint Gully Forest | S_WSF22 | 710 | 0.31 | 3 | 0.76 |
| 3190 | narrabeen gully alluvium, fern-shrub swamp | *leptospermum gahnia gleichenia blechnum* | 650-650 | alluvium | swamp shrubs and sedges | semi-sheltered | Blue Mountains Coral Fern Shrub Swamp | S_FrW14 | 4 | 0.00 | 2 | 0.51 |
| **SANDSTONE RIDGE SHELT higher rainfall** | | | | | | | | | | | | |
| 3200 | narrabeen hillslope, dry-intermediate forest | *eucapiper eucacypel stringybark eucapunct angocosta +/- eucaconsi ironbark* | 600-700 | low rock | dry to intermediate shrubs and grasses | sheltered | Hunter Range Stringybark-Apple-Peppermint Forest | S_DSF33 | 2470 | 1.07 | 3 | 0.76 |
| 3205 | narrabeen hillslope / gully, moist forest | *eucacypel +/- eucapiper stringybark eucaradia eucablaxl eucavimin* | 700-800 | moderate rock | dry to intermediate shrubs | semi-sheltered | Wollemi Monkey Gum-Peppermint | S_WSF22 | 4992 | 2.16 | 5 | 1.26 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *eucaagglo* | | | | | Gully Forest | | | | | |
| 3210 | narrabeen hillslope, montane moist forest | *eucaoread +/- eucablaxl eucacypel eucaradia eucapiper* | 850-900 | moderate-high rock | dry to intermediate shrubs | sheltered | Blue Mountains Ash Moist Forest | S_WSF20 | 662 | 0.29 | 5 | 1.26 |
| 3220 | hawkesbury? hillslope, dry-intermediate forest | *angocosta eucapiper eucapunct stringybark eucagummi eucaagglo* | 550-950 | moderate rock | dry to intermediate shrubs | sheltered | Sydney Hinterland Peppermint-Apple Forest | S_DSF22 | 47 | 0.02 | 0 | 0.00 |
| 3230 | narrabeen hillslope / gully, moist forest | *stringybark eucapunct angocosta +/- ironbark eucapiper (oc syncglomu)* | 500-600 | moderate rock | dry to intermediate shrubs and grasses | sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 5619 | 2.43 | 1 | 0.25 |
| 3235 | narrabeen hillslope / gully, moist forest | *syncglomu eucapiper stringybark eucapunct +/- eucadeane eucaagglo angocosta angoflori* | 500-600 | moderate rock | intermediate to mesic trees and shrubs | sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 986 | 0.43 | 1 | 0.25 |
| 3240 | narrabeen hillslope / gully, moist forest | *eucapiper +/- eucacypel eucavimin stringybark eucapunct eucaagglo* | 650-650 | moderate rock | dry to intermediate trees and shrubs | semi-sheltered | Upper Blue Mountains Peppermint Sheltered Forest | S_DSF55 | 8968 | 3.88 | 6 | 1.52 |
| 3241 | narrabeen hillslope / gully, moist forest | *eucapiper +/- eucacypel eucavimin stringybark eucapunct eucaagglo* | 700-850 | moderate-high rock | dry to intermediate shrubs | semi-sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 9003 | 3.89 | 11 | 2.78 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3245 | narrabeen ridgetop, dry-intermediate forest | *stringybark eucapunct +/- eucacypel eucapiper eucaconsi ironbark angocosta* | 550-650 | moderate rock | dry to intermediate shrubs and grasses | semi-sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 804 | 0.35 | 0 | 0.00 |
| 3246 | narrabeen ridgetop, dry-intermediate forest | *stringybark eucapunct +/- eucacypel eucapiper eucaconsi ironbark angocosta* | 700-800 | moderate rock | dry to intermediate shrubs and grasses | semi-sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 351 | 0.15 | 0 | 0.00 |
| 3250 | narrabeen hillslope, dry forest / woodland | *eucapiper eucapunct stringybark* | 500-650 | very high rock | dry shrubs | sheltered | Hunter Range Peppermint Sheltered Forest | S_DSF52 | 1074 | 0.46 | 1 | 0.00 |
| **PAGODAS** | | | | | | | | | | | | |
| 3260 | narrabeen sandy colluvium, dry-intermediate forest | *eucapiper +/- angoflori eucavimin etc* | 700-750 | low rock | dry shrubs and ferns (bracken) | semi-sheltered | Upper Blue Mountains Peppermint Sheltered Forest | S_DSF55 | 587 | 0.25 | 2 | 0.51 |
| 3265 | narrabeen pagoda, dry scrub / woodland | *stringybark eucapiper eucarossi callendli* | 700-800 | high-very high rock | very dry scrub and shrub/heath | various | Western Blue Mountains Pagoda Shrubland | S_HL13 | 6139 | 2.65 | 10 | 2.53 |
| **SANDSTONE RIDGE SHELT lower rainfall** | | | | | | | | | | | | |
| 3275 | narrabeen hillslope / gully, dry-intermediate forest | *eucapunct stringybark +/- angoflori eucapiper eucaagglo callendli eucacypel* | 650-800 | high rock | dry to intermediate shrubs | semi-sheltered | Growee Ranges Grey Gum Sheltered Forest | S_DSF50 | 1061 | 0.46 | 2 | We |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3276 | narrabeen hillslope / gully, dry-intermediate forest | *eucapunct stringybark +/- angoflori eucapiper eucaagglo callendli eucacypel* | 700-800 | moderate-high rock | dry to intermediate shrubs | semi-sheltered | Western Blue Mountains Peppermint Forest | S_DSF56 | 2158 | 0.93 | 1 | 0.25 |
| 3277 | narrabeen hillslope / gully, dry-intermediate forest | *eucapunct stringybark +/- angoflori eucapiper eucaagglo callendli eucacypel* | 550-700 | high-very high rock | dry to intermediate shrubs | semi-sheltered | Western Hunter Stringybark-Ironbark Sheltered Forest | S_DSF63 | 1590 | 0.69 | 1 | 0.25 |
| **SANDSTONE RIDGE EXPOS higher rainfall – low rock** | | | | | | | | | | | | |
| 3285 | hawkesbury? ridgetop, dry forest | *stringybark eucapunct +/- eucapiper eucagummi eucaconsi bankserra* | 600-800 | low-moderate rock | dry shrubs | exposed | Hunter Range Stringybark-Apple-Peppermint Forest | S_DSF33 | 4955 | 2.14 | 2 | 0.51 |
| 3290 | hawkesbury? ridgetop, dry forest | *eucagummistringybark eucapiper eucapunct +/- eucaconsi eucablaxl angoflori* | 800-950 | low rock | dry shrubs and grasses | exposed | Upper Blue Mountains Peppermint Sheltered Forest | S_DSF55 | 57 | 0.02 | 3 | 0.76 |
| 3300 | narrabeen terrace, dry forest | *eucacrebr eucafibro eucapunct stringybark* | 600-700 | low rock | dry shrubs and grasses | exposed | Hunter Range Stringybark-Apple-Peppermint Forest | S_DSF33 | 4391 | 1.90 | 3 | 0.76 |
| 3305 | narrabeen hillslope, dry forest | *stringybark eucapunct +/- ironbark angocosta* | 450-600 | moderate rock | dry shrubs | exposed | Hunter Range Ironbark Forest | S_DSF28 | 1345 | 0.58 | 0 | 0.00 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3310 | narrabeen footslope, dry forest | *eucapiper stringybark eucapunct eucarossi angoflori +/- eucacypel eucavimin oc callendli* | 700-800 | low-moderate rock | dry shrubs and grasses | exposed | Cudgegong Footslopes Forest | S_DSF47 | 2950 | 1.28 | 5 | 1.26 |
| **SANDSTONE RIDGE EXPOS higher rainfall – rocky** | | | | | | | | | | | | |
| 3325 | hawkesbury? ridgetop, dry forest / woodland | *eucagummi stringybark eucapunct eucapiper eucaconsi* | 700-800 | moderate rock | dry shrubs | exposed | Wollemi Yertchuk-Stringybark Exposed Woodland | S_DSF65 | 1870 | 0.81 | 6 | 1.52 |
| 3330 | narrabeen ridgetop, dry forest / woodland | *eucaconsi stringybark eucapunct eucapiper +/- angocosta gospers plateau* | 750-850 | moderate-high rock | dry shrubs | exposed | Wollemi Yertchuk-Stringybark Exposed Woodland | S_DSF65 | 10889 | 4.71 | 9 | 2.27 |
| 3335 | narrabeen hillslope, dry forest / woodland | *litto eucarossi stringybark eucaconsi +/- bankerici eucapunct eucapiper ironbark angoflori callendli (sth)* | 600-700 | moderate-high rock | dry shrubs/scrub/heath | exposed | Wolgan Plateau Grey Gum-Stringybark Woodland | S_DSF64 | 2542 | 1.10 | 9 | 2.27 |
| 3340 | narrabeen terrace, dry forest / woodland | *stringybark eucapunct eucaconsi +/- ironbark angocosta eucabenso eucapiper mallee* | 600-750 | high rock | dry shrubs/scrub/heath | exposed | Wollemi Yertchuk-Stringybark Exposed Woodland | S_DSF65 | 16807 | 7.27 | 17 | 4.29 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3345 | narrabeen ridgetop / hillslope, dry forest / woodland | *eucapiper eucapunct stringybark +/- eucacypel eucarossi eucaagglo few or no eucaconsi* | 700-800 | moderate-high rock | dry shrubs | exposed | Western Blue Mountains Peppermint Forest | S_DSF56 | 9435 | 4.08 | 6 | 1.52 |
| 3350 | narrabeen ridgetop, dry forest / woodland | *eucapunct stringybark +/- eucapiper callendli* | 700-850 | moderate rock | dry shrubs and grasses | semi-sheltered | Growee Ranges Grey Gum-Scribbly Gum Forest | S_DSF49 | 907 | 0.39 | 3 | 0.76 |
| **SANDSTONE RIDGE EXPOS lower rainfall** | | | | | | | | | | | | |
| 3360 | narrabeen plateau / terrace, dry forest / woodland | *eucapunct stringybark +/- eucacrebr eucarossi eucapiper callendli (eucapiper oc in shelt or colluvial locn)* | 700-800 | low rock | dry shrubs and grasses | semi-sheltered | Wolgan Plateau Grey Gum-Stringybark Woodland | S_DSF64 | 6442 | 2.79 | 15 | 3.79 |
| 3361 | narrabeen plateau / terrace, dry forest / woodland | *eucapunct stringybark +/- eucacrebr eucarossi eucapiper callendli (eucapiper oc in shelt or colluvial locn)* | 750-850 | moderate rock | dry shrubs and grasses | semi-sheltered | Growee Ranges Grey Gum-Scribbly Gum Forest | S_DSF49 | 1867 | 0.81 | 4 | 1.01 |
| 3362 | narrabeen plateau / terrace, dry forest / woodland | *eucapunct stringybark +/- eucacrebr eucarossi eucapiper callendli (eucapiper oc in shelt or colluvial locn) very dry <650mm and <600m asl* | 350-450 | low-moderate rock | dry shrubs and grasses | exposed | Western Hunter Grey Gum-Stringybark Forest | S_DSF60 | 135 | 0 | 0 | 0 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3365 | narrabeen ridgetop / hillslope, dry forest / woodland | *eucapunct stringybark eucarossi callendli +/- eucapiper eucaconsi* | 700-800 | moderate-high rock | dry shrubs | exposed | Growee Ranges Grey Gum-Scribbly Gum Forest | S_DSF49 | 12378 | 5 | 16 | 4 |
| 3366 | narrabeen ridgetop / hillslope, | *eucapunct stringybark eucarossi callendli +/- eucapiper eucaconsi* | 550-650 | moderate-high rock | dry shrubs | exposed | | | 1942 | 1 | 2 | 1 |
| **SANDSLOPE RISES** | | | | | | | | | | | | |
| 3375 | narrabeen sandslope rise, dry forest / woodland | *eucarossi eucamanni +/- eucacorti eucapraec? eucadives eucamacro / eucacanon* | 700-750 | low-moderate rock | dry shrubs and grasses | exposed | Central Tablelands Sand-slope Scribbly Gum Woodland | S_DSF46 | 3457 | 1.49 | 13 | 3.28 |
| 3380 | narrabeen sandslope rise, dry forest / woodland | *eucarossi bankserra +/- angoflori* | 700-800 | low rock | dry shrubs and grasses | semi-sheltered | Central Tablelands Sand-slope Scribbly Gum Woodland | S_DSF46 | 115 | 0.05 | 0 | 0.00 |
| 3385 | sandslope rise, dry forest / woodland | *eucarossi eucapiper bankserra +/- angoflori stringybark eucavimin oc eucadives* | 750-850 | sandy | dry shrubs and ferns (bracken) | exposed | Central Tablelands Sand-slope Scribbly Gum Woodland | S_DSF46 | 150 | 0.06 | 3 | 0.76 |
| 3390 | narrabeen sandslope rise, dry forest / | *eucapiper banksia +/- eucarossi angoflori* | 750-850 | sandy | dry shrubs and ferns (bracken) | semi-sheltered | Cudgegong Footslopes Forest | S_DSF47 | 35 | 0.02 | 1 | 0.25 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | woodland | | | | | | | | | | | |
| **SANDSLOPE GULLIES** | | | | | | | | | | | | |
| 3400 | narrabeen sandslope gully, dry-intermediate forest / woodland | *eucaracem eucaparra* | 650-750 | alluvium | dry to moist grasses/herbs/sedges | various | Blue Mountains Sands Scribbly Gum Woodland | S_DSF45 | 25 | 0.01 | 1 | 0.00 |
| 3405 | narrabeen sandslope gully, dry woodland | *eucaracem +/- eucaparra a more open woodland to heath/shrub structure* | 650-750 | alluvium | dry shrubs and grasses | various | Blue Mountains Sands Scribbly Gum Woodland | S_DSF45 | 26 | 0.01 | 1 | 0.25 |
| 3410 | narrabeen sandslope stream, dry-intermediate forest | *eucarubid eucavimin eucacorti eucanobil eucapauci (localised eucastellu)* | 650-750 | low rock | dry shrubs and grasses | various | Central Tableland Flats Snow Gum-Ribbon Gum Forest | S_WSF24 | 336 | 0.15 | 2 | 0.51 |
| 3415 | narrabeen sandslope gully, dry-intermediate forest | *eucavimin +/- angoflori eucapiper* | 700-750 | low rock | dry to moist grasses/herbs/sedges | various | Central Tableland Ribbon Gum-Apple Gully Forest | S_WSF25 | 437 | 0.19 | 2 | 0.51 |
| 3425 | narrabeen sandslope gully, wet sedge-heath | | 650-750 | alluvium | swamp shrubs/sedges | semi-sheltered | Central Tableland Sedge Swamp | S_FrW17 | 73 | 0.03 | 1 | 0.25 |
| 3426 | freshwater reedland derived from reservoir | | 600-700 | alluvium | swamp shrubs/sedges | exposed | Derived Freshwater Wetland | S_DFW | 10 | 0.00 | 0 | 0.00 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3430 | narrabeen sandslope gully, intermediate-wet sev disturbed gullies | | 700-750 | alluvium | swamp shrubs/sedges | exposed | Mixed Derived Native and Agricultural Grasslands | S_MGL | 140 | 0.06 | 0 | 0.00 |
| 3435 | narrabeen sandslope gully, intermediate swamp forest / woodland / scrub | *eucacamph +/- eucapauci* | 650-750 | alluvium | swamp shrubs/sedges | semi-sheltered | Central Tableland Flats Swamp Gum Low Forest | S_FrW16 | 61 | 0.03 | 4 | 1.01 |
| 3440 | narrabeen hillslope, intermediate-wet perched seepage area | *gleichenia etc* | 850-950 | low-moderate rock | swamp shrubs/sedges | semi-sheltered | Blue Mountains Sedge Swamp | S_FrW15 | 14 | 0.01 | 3 | 0.76 |
| 3441 | narrabeen sandslope gully, wet sedge-swamp | | 700-800 | alluvium | swamp shrubs/sedges | semi-sheltered | Blue Mountains Sedge Swamp | S_FrW15 | 6 | 0.00 | 1 | 0.25 |
| 3445 | narrabeen sandslope gully, intermediate-wet swamp forest / scrub | *melalinar* | 650-750 | alluvium | swamp shrubs/sedges | semi-sheltered | Sydney Hinterland Riverflat Paperbark Swamp Forest | S_FoW05 | 34 | 0.01 | 2 | 0.51 |
| **MALLEE/HEATH etc.** | | | | | | | | | | | | |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3455 | narrabeen plateau / ridgetop, dry woodland / mallee / scrub | *eucamulti (eucaconsi eucapiper)* | 650-750 | moderate-high rock | mallee +/- dry scrub/shrubs/heath | exposed | Wollemi Yertchuk-Stringybark Exposed Woodland | S_DSF65 | 170 | 0.07 | 1 | 0.25 |
| 3460 | narrabeen ridgetop / hillslope, dry woodland / mallee / scrub | *acacia gymnanthera etc* | 650-800 | high-very high rock | dry scrub/shrubs/heath | exposed | Western Blue Mountains Pagoda Shrubland | S_HL13 | 234 | 0.10 | 1 | 0.00 |
| 3465 | narrabeen ridgetop / hillslope, dry mallee / heath | *calytrix etc* | 400-500 | high-very high rock | very dry scrub/shrubs/heath | exposed | Western Blue Mountains Pagoda Shrubland | S_HL13 | 8 | 0.00 | 0 | 0.00 |
| 3470 | narrabeen ridgetop / hillslope, dry mallee / heath | *allonana* | 900-1000 | very high rock | very dry scrub/shrubs/heath | exposed | Blue Mountains Heath-Mallee | S_HL12 | 5 | 0.00 | 1 | 0.25 |
| **ARID IRONBARK CURRAWANG – EXPOSED** | | | | | | | | | | | | |
| 3480 | narrabeen ridgetop / hillslope, dry woodland / scrub | *acacdoryt callendli +/- eucacaley eucatracy eucaspar eucadwyer* | 500-600 | very high rock | very dry (arid) shrubs/scrub/heath | exposed | Western Hunter Dwyer's Red Gum-Cypress Woodland | S_DSF61 | 7782 | 3.36 | 12 | 3.03 |
| 3481 | narrabeen ridgetop rocky dry woodland | *eucaspars eucapunct* | 650-750 | high-very high rock | very dry (arid) shrubs/scrub/heath | exposed | Growee Ranges Rocky Stringybark | S_DSF51 | 2694 | 1.16 | 1 | 0.25 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Woodland | | | | | |
| 3485 | narrabeen ridgetop / hillslope, dry forest / woodland | *eucacaley eucatracy acacdoryt callendli (eucadwyer?) +/- eucapunct eucafibro* | 350-450 | high-very high rock | very dry (arid) shrubs/scrub/heath | exposed | Western Hunter Caley's Ironbark Low Woodland | S_DSF57 | 2313 | 1.00 | 9 | 2.27 |
| 3490 | narrabeen hillslope, dry forest / woodland | *eucapunct eucafibro eucacrebr stringybark callendli +/- eucacaley eucatracy acacdoryt* | 350-450 | high-very high rock | very dry (arid) shrubs/scrub/heath | exposed | Western Hunter Escarpment Ironbark Woodland | S_DSF59 | 6585 | 2.85 | 15 | 3.79 |
| 3495 | narrabeen terrace, dry forest / woodland | *eucacaley etc* | 350-450 | moderate rock | dry shrubs | exposed | Western Hunter Caley's Ironbark Low Woodland | S_DSF57 | 257 | 0.11 | 2 | 0.51 |
| 3500 | narrabeen sandy depression, dry forest / woodland | *eucapunct eucarossi callendli eucacaley eucatracy acacdoryt, various combinations* | 350-450 | moderate-sandy | dry shrubs | exposed | Goulburn River Ranges Cypress-Ironbark Forest | S_DSF48 | 345 | 0.15 | 2 | 0.51 |
| **IRONBARK CURRAWANG – SEMI SHELTERED** | | | | | | | | | | | | |
| 3510 | narrabeen hillslope, dry forest / woodland | *acacdoryt callendli +/ - eucacaley eucatracy stringybark* | 400-500 | high-very high rock | dry shrubs/scrub/heath | semi-sheltered | Western Hunter Caley's Ironbark Low Forest | S_DSF57 | 247 | 0.11 | 0 | 0.00 |
| 3515 | narrabeen hillslope, dry forest / woodland | *eucapunct eucafibro callendli* | 350-450 | high-very high rock | dry to intermediate shrubs | semi-sheltered | Western Hunter Escarpment Ironbark Forest | S_DSF59 | 1732 | 0.75 | 3 | 0.76 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IRONBARK – SHELTERED** | | | | | | | | | | | | |
| 3525 | narrabeen hillslope, dry-intermediate forest | *eucapunct eucafibro callendli angoflori* | 400-500 | moderate-high rock | dry to intermediate shrubs | semi-sheltered | Western Hunter Stringybark-Ironbark Sheltered Forest | S_DSF63 | 722 | 0.31 | 1 | 0.25 |
| 3526 | narrabeen hillslope, dry-intermediate forest | *eucapunct eucafibro callendli angoflori* | 550-650 | moderate-high rock | dry to intermediate shrubs | semi-sheltered | Capertee Escarpment Ironbark Forest | S_DSF67 | 171 | 0.07 | 0 | 0.00 |
| 3530 | narrabeen hillslope, dry-intermediate forest | *eucapunct eucafibro callendli bmyrt* | 350-500 | high rock | grey myrtle (abundant or dominant in understorey) | sheltered | Hunter Range Grey Myrtle Layered Forest | S_RF13 | 1054 | 0.46 | 1 | 0.25 |
| 3535 | alluvium gully / flat, dry-intermediate forest | *eucapunct eucafibro eucacrebr angoflori +/- eucaconic eucacrebrc* | 150-250 | alluvium | dry shrubs and ferns (bracken) | semi-sheltered | Western Hunter Flats Ironbark Forest | S_DSF39 | 247 | 0.11 | 3 | 0.76 |
| **BOX COLLUVIAL ESCARPMENT** | | | | | | | | | | | | |
| 3545 | permian-narrabeen colluvial gully, moist forest | *angoflori eucavimin +/- backmyrti* | 350-450 | low-moderate rock | dry to moist grasses/herbs/sedges | semi-sheltered | Blue Mountains Gorges Grey Gum Sheltered Forest | S_DSF40 | 584 | 0.25 | 1 | 0.25 |
| 3546 | permian-narrabeen colluvial gully, moist riparian | | 350-450 | low-moderate rock | dry to moist grasses/herbs/sedges | semi-sheltered | River Oak Forest | S_FoW13 | | | | |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | forest | | | | | | | | | | | |
| 3550 | permian-narrabeen colluvial gully, intermediate-moist forest / dry rainforest | *eucapunct stringybark backmyrti* | 400-550 | low-moderate rock | grey myrtle (abundant or dominant in understorey) | semi-sheltered | Hunter Range Grey Myrtle Layered Forest | S_RF13 | 567 | 0.25 | 1 | 0.25 |
| 3555 | permian-narrabeen colluvial escarpment, dry-intermediate forest / woodland | *eucapunct angoflori stringybark eucacypel +/- eucadawso eucamollu eucarossi eucafibro eucacrebr* | 400-500 | low-moderate rock | dry shrubs and grasses | semi-sheltered | Hunter Escarpment Slaty Gum-Box Forest/Capertee Escarpment Slaty Gum Forest | S_DSF41/S_DSF68 | 1125 | 0.49 | 2 | 0.51 |
| 3556 | permian-narrabeen colluvial escarpment, intermediate-moist forest | *eucapunct angoflori stringybark eucacypel +/- eucadawso eucamollu eucarossi eucafibro eucacrebr* | 500-600 | low-moderate rock | dry to intermediate shrubs and grasses | semi-sheltered | Blue Mountains Gorge Grey Gum Sheltered Forest | S_DSF40 | 634 | 0.27 | 2 | 0.51 |
| 3557 | permian-narrabeen colluvial escarpment, dry-intermediate forest | *eucapunct angoflori stringybark eucacypel +/- eucadawso eucamollu eucarossi eucafibro eucacrebr* | 350-450 | moderate rock | dry shrubs and grasses | semi-sheltered | Hunter Escarpment Slaty Gum-Box Forest | S_DSF41 | 1613 | 0.70 | 2 | 0.51 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3560 | permian-narrabeen colluvial escarpment, intermediate-mesic forest | | 400-550 | high rock | intermediate to mesic trees and shrubs | sheltered | Blue Mountains Gorge Grey Gum Sheltered Forest | S_DSF40 | 204 | 0.09 | 1 | 0.25 |
| 3561 | permian-narrabeen colluvial escarpment, intermediate-mesic forest | | 450-700 | moderate rock | intermediate to mesic trees and shrubs | sheltered | Blue Mountains Gorge Grey Gum Sheltered Forest | S_DSF40 | 375 | 0.16 | 3 | 0.76 |
| 3565 | permian-narrabeen colluvial escarpment, dry forest | | 350-450 | moderate-high rock | dry shrubs | semi-sheltered | Hunter Escarpment Slaty Gum-Box Forest | S_DSF41 | 5449 | 2.36 | 7 | 1.77 |
| 3566 | permian-narrabeen colluvial escarpment, dry forest / woodland | *eucadawsonii, eucapunctata, eucamolbens, ironbarks, callitris parent is 3570* | 250-350 | moderate rock | dry shrubs and grasses | exposed | Hunter Escarpment Slaty Gum-Box Forest | S_DSF41 | 3102 | 1.34 | 1 | 0.25 |
| 3567 | permian-narrabeen colluvial escarpment, dry forest / woodland | *eucadawsonii eucafibrosa.eucapunctata* | 550-650 | moderate-high rock | dry shrubs | exposed | Capertee Escarpment Slaty Gum Forest | S_DSF68 | 985 | 0.43 | 2 | 0.51 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3570 | permian-narrabeen colluvial escarpment, dry forest / woodland | *eucamollu/eucaalben eucadawso eucafibro eucacrebr oc stringybark eucacaley eucatracy eucapunct angoflori eucablake* | 300-400 | low-moderate rock | dry shrubs and grasses | exposed | Hunter Escarpment Slaty Gum-Box Forest | S_DSF41 | 9742 | 4.21 | 11 | 2.78 |
| 3571 | permian-narrabeen colluvial escarpment, dry forest / woodland | | 500-600 | low rock | dry shrubs and grasses | exposed | Capertee Escarpment Slaty Gum Forest | S_DSF68 | | | | |
| 3575 | permian-narrabeen colluvial escarpment, dry forest / woodland | *eucamelli +/- eucablake eucacanno* | 650-750 | low rock | dry shrubs and grasses | exposed | Cudgegong Footslopes Yellow Box Forest | S_GW09 | 202 | 0.09 | 2 | 0.51 |
| **BOX FOOTSLOPES/FLATS/EXITING GULLIES** | | | | | | | | | | | | |
| 3590 | permian footslope / flat, dry forest / woodland | *eucamollu/eucaalben eucadawso +/- eucamelli eucafibro eucacrebr eucablake angoflori* | 250-300 | low rock | dry shrubs and grasses | semi-sheltered | Western Hunter Footslopes Box Woodland | S_GW05 | 1535 | 0.66 | 2 | 0.51 |
| 3591 | permian footslope / flat, dry forest / woodland | *eucamollu/eucaalben eucadawso +/- eucamelli eucafibro eucacrebr eucablake angoflori* | 450-500 | low rock | dry shrubs and grasses | semi-sheltered | Capertee Footslopes Box-Stringybark Forest | S_DSF66 | 48 | 0.02 | 0 | 0.00 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3595 | permian gully / flat, dry forest / woodland | *eucablake angoflori +/- eucamelli eucamollu eucadawso (cudgegong eucavimin)* | 250-300 | alluvium | dry to moist grasses/herbs/sedges | various | Western Hunter Flats Rough-barked Apple Forest | S_FoW19 | 1047 | 0.45 | 3 | 0.76 |
| 3596 | permian footslope / gully, dry forest / woodland | *eucavimin eucablake eucamelli* | 500-600 | low rock | dry to moist grasses/herbs/sedges | exposed | Central Tableland Ribbon Gum-Apple Gully Forest | S_WSF25 | 0 | 0.06 | 0 | 0.00 |
| 3600 | permian gully / flat, dry forest / woodland | *eucaconic* | 200-250 | low rock | dry to moist grasses/herbs/sedges | semi-sheltered | Western Hunter Flats Fuzzy Box Woodland | S_GW06 | 27 | 0.01 | 2 | 0.51 |
| **RIPARIAN** | | | | | | | | | | | | |
| 3580 | upper perm / lower narrabeen? stream, dry-intermediate riparian forest | *eucabridg eucavimin +/- camphora eucacamph* | 600-700 | alluvium | dry to moist grasses/herbs/sedges | semi-sheltered | Central Tableland Ribbon Gum-Apple Gully Forest | S_WSF25 | 58 | 0.03 | 2 | 0.51 |
| 3620 | permian stream, intermediate riparian forest | *casucunni angoflori eucablake oc eucamelli* | 200-250 | alluvium | dry to moist grasses/herbs/sedges | semi-sheltered | River Oak Forest | S_FoW13 | 1122 | 0.49 | 2 | 0.51 |
| **OTHER** | | | | | | | | | | | | |
| 3630 | other - rock >550m | | | rock | very dry shrubs/scrub/heath | | Exposed Rock | S_ROCK | 4025 | 1.74 | 9 | 2.27 |

| API Feature Code | Broad Habitat and Vegetation Descriptor | Common Species | Typical Elevation | Typical Rock Cover | Typical Understorey | Typical Exposure | Corresponding Map Unit Name | Corresponding Map Unit Code | Mapped Area (Hectares) | Proportion of Total Study Area (%) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3635 | other - cleared | | | | | | Mixed Derived Native and Agricultural Grasslands | S_MGL | 15779 | 6.82 | 4 | 1.01 |
| 3640 | other - infrastructures | | | | | | Cleared: Infrastructure | S_CL | 30 | 0.01 | 0 | 0.00 |
| 3645 | other - regen - unidentified | | | | | | Regenerating Vegetation | S_RGS | 154 | 0.07 | 1 | 0.25 |
| 3650 | other - bursaria | | | | | | Regenerating Vegetation | S_RGS | 179 | 0.08 | 0 | 0.00 |
| 3655 | other - exotic | | | | | | Non Native Vegetation | S_NNV | 17 | 0.01 | 0 | 0.00 |
| 3660 | other - water | | | | | | Water | S_WA | 35 | 0.02 | 0 | 0.00 |
| 3426 | Other - water | freshwater reedland derived from reservoir | | | | | Derived Freshwater Wetland | S_DFW | | | | |

## Appendix B: Distribution of systematic floristic sample sites by broad stratification classes

| Broad Geology Class | Altitude Class (metres above sea level) | Aspect Class | Area of Strata (hectares) | Proportion of Stratification Layer (per cent) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|
| Alluvium | Below 550 m | exposed | 914.12 | 0.40 | 3 | 0.78 |
| | | intermediate | 1624.63 | 0.70 | 2 | 0.52 |
| | | sheltered | 519.31 | 0.23 | 0 | 0.00 |
| Basalt | Below 550 m | exposed | 480.80 | 0.21 | 0 | 0.00 |
| | | intermediate | 903.74 | 0.39 | 1 | 0.26 |
| | | sheltered | 487.66 | 0.21 | 0 | 0.00 |
| | 550 m to 850 m | exposed | 769.56 | 0.33 | 2 | 0.52 |
| | | intermediate | 1447.56 | 0.63 | 5 | 1.30 |
| | | sheltered | 573.09 | 0.25 | 1 | 0.26 |
| | 850 m and above | exposed | 1867.51 | 0.81 | 10 | 2.60 |
| | | intermediate | 3261.06 | 1.41 | 17 | 4.43 |
| | | sheltered | 1174.68 | 0.51 | 4 | 1.04 |
| Hawkesbury Group | Below 550 m | exposed | 151.76 | 0.07 | 0 | 0.00 |
| | | intermediate | 408.69 | 0.18 | 1 | 0.26 |
| | | sheltered | 223.87 | 0.10 | 0 | 0.00 |
| | 550 m to 850 m | exposed | 1707.97 | 0.74 | 2 | 0.52 |
| | | intermediate | 3735.48 | 1.62 | 4 | 1.04 |
| | | sheltered | 1859.07 | 0.81 | 0 | 0.00 |
| Narrabeen Group | Below 550 m | exposed | 8026.44 | 3.48 | 12 | 3.13 |
| | | intermediate | 16,157.17 | 7.01 | 20 | 5.21 |
| | | sheltered | 7989.47 | 3.47 | 12 | 3.13 |
| | 550 m to 850 m | exposed | 29,339.91 | 12.72 | 52 | 13.54 |
| | | intermediate | 59,459.03 | 25.79 | 89 | 23.18 |
| | | sheltered | 28,404.24 | 12.32 | 43 | 11.20 |
| | 850 m and above | exposed | 5073.51 | 2.20 | 10 | 2.60 |
| | | intermediate | 10,029.68 | 4.35 | 38 | 9.90 |
| | | sheltered | 4621.97 | 2.00 | 15 | 3.91 |

| Broad Geology Class | Altitude Class (metres above sea level) | Aspect Class | Area of Strata (hectares) | Proportion of Stratification Layer (per cent) | Number of Sites | Proportion of Sites (per cent) |
|---|---|---|---|---|---|---|
| Permian | Below 550 m | exposed | 9494.39 | 4.12 | 6 | 1.56 |
| | | intermediate | 15,221.39 | 6.60 | 18 | 4.69 |
| | | sheltered | 7799.05 | 3.38 | 8 | 2.08 |
| | 550 m to 850 m | exposed | 1555.75 | 0.67 | 0 | 0.00 |
| | | intermediate | 3874.79 | 1.68 | 4 | 1.04 |
| | | sheltered | 1372.55 | 0.60 | 4 | 1.04 |
| | 850 m and above | exposed | 7.34 | 0.00 | 0 | 0.00 |
| | | intermediate | 23.89 | 0.01 | 1 | 0.26 |
| | | sheltered | 9.36 | 0.00 | 0 | 0.00 |

## Appendix C: Native flora species recorded at systematic floristic sample sites

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Acanthaceae | *Brunoniella australis* | Blue trumpet | 15 |
| Acanthaceae | *Pseuderanthemum variabile* | Pastel flower | 1 |
| Adiantaceae | *Adiantum aethiopicum* | Common maidenhair | 30 |
| Adiantaceae | *Adiantum formosum* | Giant maidenhair | 10 |
| Adiantaceae | *Adiantum hispidulum* | Rough maidenhair | 4 |
| Adiantaceae | *Cheilanthes austrotenuifolia* | Rock fern | 23 |
| Adiantaceae | *Cheilanthes distans* | Bristly cloak fern | 27 |
| Adiantaceae | *Cheilanthes sieberi* | Rock fern | 12 |
| Adiantaceae | *Cheilanthes sieberi* subsp. *sieberi* | Rock fern | 89 |
| Adiantaceae | *Pellaea falcata* | Sickle fern | 33 |
| Adiantaceae | *Pellaea nana* | Dwarf sickle fern | 6 |
| Adoxaceae | *Sambucus australasica* | Native elderberry | 4 |
| Adoxaceae | *Sambucus gaudichaudiana* | White elderberry | 2 |
| Anthericaceae | *Arthropodium milleflorum* | Pale vanilla-lily | 21 |
| Anthericaceae | *Arthropodium minus* | Small vanilla Lily | 8 |
| Anthericaceae | *Arthropodium* sp. *B* | | 1 |
| Anthericaceae | *Caesia parviflora* var. *parviflora* | | 1 |
| Anthericaceae | *Laxmannia gracilis* | Slender wire lily | 15 |
| Anthericaceae | *Laxmannia* spp. | | 2 |
| Anthericaceae | *Thysanotus tuberosus* subsp. *tuberosus* | | 1 |
| Anthericaceae | *Tricoryne elatior* | Yellow autumn-lily | 1 |
| Apiaceae | *Actinotus gibbonsii* | | 2 |
| Apiaceae | *Actinotus helianthi* | Flannel flower | 19 |
| Apiaceae | *Actinotus minor* | Lesser flannel flower | 4 |
| Apiaceae | *Centella asiatica* | Indian pennywort | 3 |
| Apiaceae | *Centella cordifolia* | | 1 |
| Apiaceae | *Chaerophyllum eriopodum* | | 6 |
| Apiaceae | *Daucus glochidiatus* | Native carrot | 27 |
| Apiaceae | *Daucus glochidiatus* f. *F* | Native carrot | 5 |
| Apiaceae | *Hydrocotyle acutiloba* | | 1 |
| Apiaceae | *Hydrocotyle hirta* | Hairy pennywort | 1 |
| Apiaceae | *Hydrocotyle laxiflora* | Stinking pennywort | 101 |
| Apiaceae | *Hydrocotyle pedicellosa* | | 1 |
| Apiaceae | *Hydrocotyle sibthorpioides* | | 9 |
| Apiaceae | *Hydrocotyle tripartita* | Pennywort | 6 |
| Apiaceae | *Platysace clelandii* | | 2 |
| Apiaceae | *Platysace ericoides* | | 106 |
| Apiaceae | *Platysace lanceolata* | Shrubby platysace | 77 |
| Apiaceae | *Platysace linearifolia* | | 6 |
| Apiaceae | *Trachymene composita* | | 7 |
| Apiaceae | *Trachymene incisa* | Trachymene | 2 |
| Apiaceae | *Trachymene incisa* subsp. *incisa* | | 8 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Apiaceae | *Xanthosia atkinsoniana* | | 53 |
| Apiaceae | *Xanthosia dissecta* | Cut-leaved xanthosia | 1 |
| Apiaceae | *Xanthosia pilosa* | Woolly xanthosia | 38 |
| Apiaceae | *Xanthosia tridentata* | Rock xanthosia | 4 |
| Apocynaceae | *Marsdenia flavescens* | Hairy milk vine | 1 |
| Apocynaceae | *Marsdenia rostrata* | Milk vine | 10 |
| Apocynaceae | *Marsdenia suaveolens* | Scented marsdenia | 1 |
| Apocynaceae | *Marsdenia viridiflora* subsp. *viridiflora* | Native pear | 2 |
| Apocynaceae | *Parsonsia eucalyptophylla* | Gargaloo | 1 |
| Apocynaceae | *Parsonsia lanceolata* | Rough silkpod | 4 |
| Apocynaceae | *Parsonsia purpurascens* | Black silkpod | 1 |
| Apocynaceae | *Parsonsia* spp. | | 1 |
| Apocynaceae | *Parsonsia straminea* | Common silkpod | 4 |
| Apocynaceae | *Tylophora barbata* | Bearded tylophora | 21 |
| Apocynaceae | *Tylophora paniculata* | Thin-leaved tylophora | 1 |
| Araliaceae | *Astrotricha latifolia* | | 4 |
| Araliaceae | *Astrotricha longifolia* | | 13 |
| Araliaceae | *Astrotricha longifolia* f. *'Inland'* | | 3 |
| Araliaceae | *Astrotricha obovata* | | 1 |
| Araliaceae | *Cephalaralia cephalobotrys* | Climbing panax | 2 |
| Araliaceae | *Polyscias sambucifolia* | Elderberry panax | 29 |
| Araliaceae | *Polyscias sambucifolia* subsp. *decomposita* | Ferny panax | 4 |
| Araliaceae | *Polyscias sambucifolia* subsp. *leptophylla* | | 1 |
| Araliaceae | *Polyscias sambucifolia* subsp. *sambucifolia* | | 28 |
| Asphodelaceae | *Bulbine bulbosa* | Bulbine lily | 5 |
| Aspleniaceae | *Asplenium flabellifolium* | Necklace fern | 51 |
| Aspleniaceae | *Asplenium polyodon* | Sickle spleenwort | 1 |
| Asteraceae | *Arrhenechthites mixta* | Purple fireweed | 18 |
| Asteraceae | *Brachyscome aculeata* | Hill daisy | 1 |
| Asteraceae | *Brachyscome angustifolia* | | 1 |
| Asteraceae | *Brachyscome angustifolia* var. *heterophylla* | | 3 |
| Asteraceae | *Brachyscome dentata* | | 1 |
| Asteraceae | *Brachyscome dissectifolia* | | 1 |
| Asteraceae | *Brachyscome diversifolia* var. *diversifolia* | | 2 |
| Asteraceae | *Brachyscome gracilis* | Dookie daisy | 1 |
| Asteraceae | *Brachyscome linearifolia* | | 3 |
| Asteraceae | *Brachyscome multifida* | Cut-leaved daisy | 1 |
| Asteraceae | *Brachyscome multifida* var. *dilatata* | | 1 |
| Asteraceae | *Brachyscome multifida* var. *multifida* | | 8 |
| Asteraceae | *Brachyscome spathulata* | | 2 |
| Asteraceae | *Calomeria amaranthoides* | Incense plant | 3 |
| Asteraceae | *Calotis hispidula* | Bogan flea | 1 |
| Asteraceae | *Calotis lappulacea* | Yellow burr-daisy | 13 |
| Asteraceae | *Cassinia aculeata* | Dolly bush | 14 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Asteraceae | *Cassinia arcuata* | Sifton bush | 6 |
| Asteraceae | *Cassinia aureonitens* | | 8 |
| Asteraceae | *Cassinia compacta* | | 6 |
| Asteraceae | *Cassinia cunninghamii* | | 39 |
| Asteraceae | *Cassinia decipiens* | | 8 |
| Asteraceae | *Cassinia laevis* | Cough bush | 3 |
| Asteraceae | *Cassinia leptocephala* | | 2 |
| Asteraceae | *Cassinia longifolia* | | 4 |
| Asteraceae | *Cassinia quinquefaria* | | 63 |
| Asteraceae | *Cassinia* sp. *D* | | 18 |
| Asteraceae | *Cassinia* spp. | | 10 |
| Asteraceae | *Cassinia trinerva* | | 5 |
| Asteraceae | *Cassinia uncata* | Sticky cassinia | 23 |
| Asteraceae | *Chrysocephalum apiculatum* | Common everlasting | 5 |
| Asteraceae | *Chrysocephalum semipapposum* | Clustered everlasting | 2 |
| Asteraceae | *Coronidium elatum* | | 10 |
| Asteraceae | *Coronidium oxylepis* | | 5 |
| Asteraceae | *Coronidium scorpioides* | Button everlasting | 7 |
| Asteraceae | *Coronidium waddelliae* | | 1 |
| Asteraceae | *Cotula australis* | Common cotula | 1 |
| Asteraceae | *Craspedia variabilis* | Common billy-buttons | 2 |
| Asteraceae | *Cymbonotus lawsonianus* | Bear's ear | 16 |
| Asteraceae | *Cymbonotus preissianus* | Austral bear's ear | 3 |
| Asteraceae | *Cymbonotus* spp. | | 1 |
| Asteraceae | *Epaltes australis* | Spreading nut-heads | 1 |
| Asteraceae | *Euchiton gymnocephalus* | Creeping cudweed | 8 |
| Asteraceae | *Euchiton involucratus* | Star cudweed | 14 |
| Asteraceae | *Euchiton sphaericus* | Star cudweed | 12 |
| Asteraceae | *Euchiton* spp. | A cudweed | 1 |
| Asteraceae | *Glossocardia bidens* | Cobbler's tack | 3 |
| Asteraceae | *Gnaphalium indutum* | Tiny cudweed | 1 |
| Asteraceae | *Gnaphalium* spp. | Cudweed | 6 |
| Asteraceae | *Helichrysum* spp. | | 2 |
| Asteraceae | *Lagenophora gracilis* | Slender lagenophora | 11 |
| Asteraceae | *Lagenophora stipitata* | Common lagenophora | 42 |
| Asteraceae | *Leiocarpa semicalva* subsp. *semicalva* | | 1 |
| Asteraceae | *Leptorhynchos squamatus* | Scaly buttons | 1 |
| Asteraceae | *Leucochrysum albicans* subsp. *albicans* var. *tricolor* | Hoary sunray | 1 |
| Asteraceae | *Olearia elliptica* | Sticky daisy-bush | 16 |
| Asteraceae | *Olearia elliptica* subsp. *elliptica* | | 5 |
| Asteraceae | *Olearia erubescens* | Pink-tip daisy-bush | 1 |
| Asteraceae | *Olearia microphylla* | | 2 |
| Asteraceae | *Olearia ramulosa* | Twiggy daisy-bush | 13 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Asteraceae | *Olearia tomentosa* | Toothed daisy-bush | 3 |
| Asteraceae | *Ozothamnus diosmifolius* | White dogwood | 12 |
| Asteraceae | *Ozothamnus rufescens* | | 2 |
| Asteraceae | *Picris angustifolia* | | 1 |
| Asteraceae | *Rhodanthe anthemoides* | | 2 |
| Asteraceae | *Senecio bathurstianus* | | 3 |
| Asteraceae | *Senecio bipinnatisectus* | | 2 |
| Asteraceae | *Senecio hispidulus* | Hill fireweed | 17 |
| Asteraceae | *Senecio linearifolius* | Fireweed groundsel | 16 |
| Asteraceae | *Senecio microbasis* | | 1 |
| Asteraceae | *Senecio minimus* | | 11 |
| Asteraceae | *Senecio pinnatifolius* | | 1 |
| Asteraceae | *Senecio pinnatifolius* var. *lanceolatus* | | 1 |
| Asteraceae | *Senecio pinnatifolius* var. *pinnatifolius* | | 12 |
| Asteraceae | *Senecio prenanthoides* | | 19 |
| Asteraceae | *Senecio quadridentatus* | Cotton fireweed | 16 |
| Asteraceae | *Senecio squarrosus* | Swamp groundsel | 1 |
| Asteraceae | *Senecio tenuiflorus* | A fireweed | 1 |
| Asteraceae | *Senecio vagus* subsp. *eglandulosus* | | 5 |
| Asteraceae | *Senecio vagus* subsp. *vagus* | | 2 |
| Asteraceae | *Senecio velleioides* | | 3 |
| Asteraceae | *Sigesbeckia australiensis* | | 15 |
| Asteraceae | *Sigesbeckia orientalis* subsp. *orientalis* | Indian weed | 24 |
| Asteraceae | *Sigesbeckia* spp. | | 3 |
| Asteraceae | *Solenogyne dominii* | | 1 |
| Asteraceae | *Vernonia cinerea* | | 1 |
| Asteraceae | *Vernonia cinerea* var. *cinerea* | | 7 |
| Asteraceae | *Vittadinia cervicularis* var. *subcervicularis* | | 3 |
| Asteraceae | *Vittadinia cuneata* | A fuzzweed | 3 |
| Asteraceae | *Vittadinia cuneata* var. *cuneata* | A fuzzweed | 5 |
| Asteraceae | *Vittadinia cuneata* var. *cuneata* f. *cuneata* | | 3 |
| Asteraceae | *Vittadinia cuneata* var. *cuneata* f. *minor* | | 5 |
| Asteraceae | *Vittadinia dissecta* var. *hirta* | | 3 |
| Asteraceae | *Vittadinia muelleri* | A fuzzweed | 5 |
| Asteraceae | *Vittadinia pustulata* | Fuzzweed | 1 |
| Asteraceae | *Vittadinia* spp. | Fuzzweed | 3 |
| Asteraceae | *Vittadinia sulcata* | | 12 |
| Asteraceae | *Xerochrysum bracteatum* | Golden everlasting | 7 |
| Bignoniaceae | *Pandorea pandorana* | Wonga wonga vine | 33 |
| Bignoniaceae | *Pandorea pandorana* subsp. *pandorana* | Wonga wonga vine | 4 |
| Blechnaceae | *Blechnum cartilagineum* | Gristle fern | 69 |
| Blechnaceae | *Blechnum indicum* | Swamp water fern | 4 |
| Blechnaceae | *Blechnum minus* | Soft Water fern | 2 |
| Blechnaceae | *Blechnum nudum* | Fishbone water fern | 16 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Blechnaceae | *Blechnum patersonii* | Strap water fern | 2 |
| Blechnaceae | *Blechnum* spp. | | 1 |
| Blechnaceae | *Blechnum wattsii* | Hard water fern | 1 |
| Blechnaceae | *Doodia aspera* | Prickly rasp fern | 31 |
| Boraginaceae | *Austrocynoglossum latifolium* | | 3 |
| Boraginaceae | *Cynoglossum australe* | | 16 |
| Boraginaceae | *Cynoglossum suaveolens* | Sweet hound's-tongue | 5 |
| Boraginaceae | *Ehretia acuminata* var. *acuminata* | Koda | 1 |
| Brassicaceae | *Cardamine paucijuga* | | 2 |
| Campanulaceae | *Wahlenbergia communis* | Tufted bluebell | 32 |
| Campanulaceae | *Wahlenbergia gracilis* | Sprawling bluebell | 24 |
| Campanulaceae | *Wahlenbergia luteola* | Bluebell | 5 |
| Campanulaceae | *Wahlenbergia multicaulis* | Tadgell's bluebell | 1 |
| Campanulaceae | *Wahlenbergia planiflora* | Bluebell | 1 |
| Campanulaceae | *Wahlenbergia planiflora* subsp. *planiflora* | Flat bluebell | 2 |
| Campanulaceae | *Wahlenbergia* spp. | Bluebell | 7 |
| Campanulaceae | *Wahlenbergia stricta* | Tall bluebell | 3 |
| Campanulaceae | *Wahlenbergia stricta* subsp. *stricta* | Tall bluebell | 13 |
| Caryophyllaceae | *Stellaria angustifolia* | Swamp starwort | 2 |
| Caryophyllaceae | *Stellaria flaccida* | | 42 |
| Caryophyllaceae | *Stellaria pungens* | Prickly starwort | 86 |
| Casuarinaceae | *Allocasuarina distyla* | | 9 |
| Casuarinaceae | *Allocasuarina gymnanthera* | | 20 |
| Casuarinaceae | *Allocasuarina littoralis* | Black she-oak | 70 |
| Casuarinaceae | *Allocasuarina luehmannii* | Bulloak | 2 |
| Casuarinaceae | *Allocasuarina nana* | Dwarf she-oak | 10 |
| Casuarinaceae | *Allocasuarina torulosa* | Forest oak | 11 |
| Casuarinaceae | *Allocasuarina verticillata* | Drooping she-oak | 6 |
| Casuarinaceae | *Casuarina cunninghamiana* subsp. *cunninghamiana* | River oak | 13 |
| Celastraceae | *Apatophyllum constablei* | | 5 |
| Celastraceae | *Celastrus australis* | Staff climber | 1 |
| Celastraceae | *Maytenus silvestris* | Narrow-leaved orangebark | 25 |
| Chenopodiaceae | *Einadia hastata* | Berry saltbush | 15 |
| Chenopodiaceae | *Einadia nutans* | Climbing saltbush | 2 |
| Chenopodiaceae | *Einadia nutans* subsp. *linifolia* | Climbing saltbush | 1 |
| Chenopodiaceae | *Einadia nutans* subsp. *nutans* | Climbing saltbush | 1 |
| Chenopodiaceae | *Einadia trigonos* | Fishweed | 1 |
| Chenopodiaceae | *Einadia trigonos* subsp. *leiocarpa* | | 1 |
| Chenopodiaceae | *Einadia trigonos* subsp. *stellulata* | | 2 |
| Chenopodiaceae | *Einadia trigonos* subsp. *trigonos* | | 6 |
| Chenopodiaceae | *Enchylaena tomentosa* | Ruby saltbush | 1 |
| Chenopodiaceae | *Maireana enchylaenoides* | Wingless fissure-weed | 1 |
| Clusiaceae | *Hypericum gramineum* | Small St John's wort | 27 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Clusiaceae | *Hypericum japonicum* | | 2 |
| Colchicaceae | *Burchardia umbellata* | Milkmaids | 4 |
| Commelinaceae | *Commelina cyanea* | Native wandering Jew | 3 |
| Convolvulaceae | *Calystegia marginata* | | 2 |
| Convolvulaceae | *Convolvulus erubescens* | Pink bindweed | 2 |
| Convolvulaceae | *Dichondra repens* | Kidney weed | 152 |
| Convolvulaceae | *Dichondra* sp. *A* | Kidney weed | 10 |
| Crassulaceae | *Crassula helmsii* | Swamp stonecrop | 1 |
| Crassulaceae | *Crassula sieberiana* | Australian stonecrop | 32 |
| Cucurbitaceae | *Sicyos australis* | | 1 |
| Cunoniaceae | *Bauera rubioides* | River rose | 1 |
| Cunoniaceae | *Callicoma serratifolia* | Black wattle | 25 |
| Cunoniaceae | *Ceratopetalum apetalum* | Coachwood | 30 |
| Cunoniaceae | *Ceratopetalum gummiferum* | Christmas bush | 3 |
| Cunoniaceae | *Schizomeria ovata* | Crabapple | 2 |
| Cupressaceae | *Callitris endlicheri* | Black cypress pine | 89 |
| Cupressaceae | *Callitris glaucophylla* | White cypress pine | 3 |
| Cupressaceae | *Callitris gracilis* subsp. *gracilis* | | 11 |
| Cupressaceae | *Callitris muelleri* | | 1 |
| Cupressaceae | *Callitris rhomboidea* | Port Jackson pine | 15 |
| Cyatheaceae | *Cyathea australis* | Rough treefern | 18 |
| Cyatheaceae | *Cyathea cooperi* | Straw treefern | 1 |
| Cyatheaceae | *Cyathea* spp. | | 4 |
| Cyperaceae | *Baumea arthrophylla* | | 3 |
| Cyperaceae | *Baumea planifolia* | | 2 |
| Cyperaceae | *Baumea rubiginosa* | | 2 |
| Cyperaceae | *Baumea teretifolia* | | 2 |
| Cyperaceae | *Baumea tetragona* | | 2 |
| Cyperaceae | *Carex appressa* | Tall sedge | 7 |
| Cyperaceae | *Carex bichenoviana* | | 2 |
| Cyperaceae | *Carex breviculmis* | | 2 |
| Cyperaceae | *Carex incomitata* | | 4 |
| Cyperaceae | *Carex inversa* | Knob sedge | 16 |
| Cyperaceae | *Carex* spp. | | 4 |
| Cyperaceae | *Caustis flexuosa* | Curly wig | 59 |
| Cyperaceae | *Caustis pentandra* | Thick twist rush | 17 |
| Cyperaceae | *Caustis recurvata* var. *recurvata* | | 1 |
| Cyperaceae | *Cyperus fulvus* | Sticky sedge | 2 |
| Cyperaceae | *Cyperus gracilis* | Slender flat-sedge | 7 |
| Cyperaceae | *Cyperus laevis* | | 1 |
| Cyperaceae | *Cyperus lucidus* | Leafy flat sedge | 2 |
| Cyperaceae | *Cyperus sphaeroideus* | | 1 |
| Cyperaceae | *Cyperus* spp. | | 6 |
| Cyperaceae | *Eleocharis sphacelata* | Tall spike rush | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Cyperaceae | *Ficinia nodosa* | Knobby club-rush | 1 |
| Cyperaceae | *Fimbristylis dichotoma* | Common fringe-sedge | 4 |
| Cyperaceae | *Gahnia aspera* | Rough saw-sedge | 49 |
| Cyperaceae | *Gahnia clarkei* | Tall saw-sedge | 2 |
| Cyperaceae | *Gahnia erythrocarpa* | | 1 |
| Cyperaceae | *Gahnia filifolia* | | 1 |
| Cyperaceae | *Gahnia microstachya* | | 11 |
| Cyperaceae | *Gahnia radula* | | 1 |
| Cyperaceae | *Gahnia sieberiana* | Red-fruit saw-sedge | 16 |
| Cyperaceae | *Gahnia* spp. | | 3 |
| Cyperaceae | *Gahnia subaequiglumis* | Bog saw-sedge | 1 |
| Cyperaceae | *Gymnoschoenus sphaerocephalus* | Button grass | 9 |
| Cyperaceae | *Isolepis hookeriana* | | 1 |
| Cyperaceae | *Isolepis inundata* | Club-rush | 1 |
| Cyperaceae | *Isolepis* spp. | Club-rush | 1 |
| Cyperaceae | *Lepidosperma concavum* | | 10 |
| Cyperaceae | *Lepidosperma elatius* | | 6 |
| Cyperaceae | *Lepidosperma filiforme* | | 7 |
| Cyperaceae | *Lepidosperma gunnii* | | 75 |
| Cyperaceae | *Lepidosperma laterale* | Variable sword-sedge | 132 |
| Cyperaceae | *Lepidosperma limicola* | | 8 |
| Cyperaceae | *Lepidosperma neesii* | | 1 |
| Cyperaceae | *Lepidosperma* spp. | | 4 |
| Cyperaceae | *Lepidosperma urophorum* | | 21 |
| Cyperaceae | *Lepidosperma viscidum* | | 12 |
| Cyperaceae | *Ptilothrix deusta* | | 8 |
| Cyperaceae | *Schoenus apogon* | Fluke bogrush | 4 |
| Cyperaceae | *Schoenus brevifolius* | | 5 |
| Cyperaceae | *Schoenus ericetorum* | | 16 |
| Cyperaceae | *Schoenus imberbis* | | 21 |
| Cyperaceae | *Schoenus melanostachys* | | 3 |
| Cyperaceae | *Scleria mackaviensis* | | 1 |
| Cyperaceae | *Tetraria capillaris* | | 2 |
| Dawsoniaceae | *Dawsonia* spp. | | 1 |
| Dennstaedtiaceae | *Dennstaedtia davallioides* | Lacy ground fern | 2 |
| Dennstaedtiaceae | *Histiopteris incisa* | Bat's wing fern | 2 |
| Dennstaedtiaceae | *Hypolepis glandulifera* | Downy ground fern | 1 |
| Dennstaedtiaceae | *Hypolepis muelleri* | Harsh ground fern | 3 |
| Dennstaedtiaceae | *Hypolepis rugosula* | Ruddy ground fern | 1 |
| Dennstaedtiaceae | *Pteridium esculentum* | Bracken | 203 |
| Dicksoniaceae | *Calochlaena dubia* | Rainbow fern | 55 |
| Dicksoniaceae | *Dicksonia antarctica* | Soft treefern | 11 |
| Dilleniaceae | *Hibbertia acicularis* | | 32 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Dilleniaceae | *Hibbertia aspera* | Rough Guinea flower | 7 |
| Dilleniaceae | *Hibbertia circumdans* | | 62 |
| Dilleniaceae | *Hibbertia cistoidea* | | 2 |
| Dilleniaceae | *Hibbertia diffusa* | Wedge Guinea flower | 2 |
| Dilleniaceae | *Hibbertia empetrifolia* subsp. *empetrifolia* | | 13 |
| Dilleniaceae | *Hibbertia monogyna* | | 15 |
| Dilleniaceae | *Hibbertia obtusifolia* | Hoary Guinea flower | 30 |
| Dilleniaceae | *Hibbertia pedunculata* | | 2 |
| Dilleniaceae | *Hibbertia riparia* | | 21 |
| Dilleniaceae | *Hibbertia saligna* | | 4 |
| Dilleniaceae | *Hibbertia serpyllifolia* | Hairy Guinea flower | 4 |
| Dilleniaceae | *Hibbertia* spp. | | 3 |
| Dilleniaceae | *Hibbertia vestita* | | 1 |
| Droseraceae | *Drosera auriculata* | | 4 |
| Droseraceae | *Drosera binata* | Forked sundew | 2 |
| Droseraceae | *Drosera burmanni* | | 3 |
| Droseraceae | *Drosera peltata* | A sundew | 2 |
| Dryopteridaceae | *Lastreopsis acuminata* | Shiny shield fern | 1 |
| Dryopteridaceae | *Lastreopsis decomposita* | Trim shield fern | 2 |
| Dryopteridaceae | *Lastreopsis microsora* subsp. *microsora* | Creeping shield fern | 4 |
| Dryopteridaceae | *Polystichum australiense* | Harsh shield fern | 13 |
| Dryopteridaceae | *Polystichum fallax* | | 10 |
| Dryopteridaceae | *Polystichum formosum* | Broad shield fern | 1 |
| Dryopteridaceae | *Polystichum proliferum* | Mother shield fern | 4 |
| Ebenaceae | *Diospyros australis* | Black plum | 1 |
| Elaeocarpaceae | *Elaeocarpus reticulatus* | Blueberry ash | 38 |
| Elaeocarpaceae | *Tetratheca decora* | | 2 |
| Elaeocarpaceae | *Tetratheca ericifolia* | | 1 |
| Elaeocarpaceae | *Tetratheca juncea* | Black-eyed susan | 1 |
| Elaeocarpaceae | *Tetratheca neglecta* | | 1 |
| Elaeocarpaceae | *Tetratheca rubioides* | | 1 |
| Ericaceae | *Acrotriche aggregata* | Red Cluster heath | 5 |
| Ericaceae | *Acrotriche divaricata* | | 3 |
| Ericaceae | *Acrotriche rigida* | | 47 |
| Ericaceae | *Acrotriche serrulata* | Honeypots | 3 |
| Ericaceae | *Astroloma humifusum* | Native cranberry | 45 |
| Ericaceae | *Brachyloma daphnoides* | Daphne heath | 34 |
| Ericaceae | *Brachyloma daphnoides* subsp. *daphnoides* | | 33 |
| Ericaceae | *Dracophyllum secundum* | | 2 |
| Ericaceae | *Epacris coriacea* | | 3 |
| Ericaceae | *Epacris longiflora* | Fuchsia heath | 2 |
| Ericaceae | *Epacris microphylla* | Coral heath | 9 |
| Ericaceae | *Epacris muelleri* | | 1 |
| Ericaceae | *Epacris obtusifolia* | Blunt-leaf heath | 3 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Ericaceae | *Epacris paludosa* | Swamp heath | 1 |
| Ericaceae | *Epacris pulchella* | Wallum heath | 22 |
| Ericaceae | *Epacris reclinata* | Fuchsia heath | 5 |
| Ericaceae | *Epacris* spp. | | 2 |
| Ericaceae | *Leucopogon appressus* | | 7 |
| Ericaceae | *Leucopogon attenuatus* | A beard-heath | 1 |
| Ericaceae | *Leucopogon ericoides* | Pink beard-heath | 3 |
| Ericaceae | *Leucopogon esquamatus* | | 1 |
| Ericaceae | *Leucopogon fraseri* | | 5 |
| Ericaceae | *Leucopogon lanceolatus* | | 17 |
| Ericaceae | *Leucopogon lanceolatus* var. *lanceolatus* | | 40 |
| Ericaceae | *Leucopogon microphyllus* | | 8 |
| Ericaceae | *Leucopogon microphyllus* var. *microphyllus* | | 7 |
| Ericaceae | *Leucopogon microphyllus* var. *pilibundus* | | 6 |
| Ericaceae | *Leucopogon muticus* | Blunt beard-heath | 150 |
| Ericaceae | *Leucopogon neoanglicus* | | 1 |
| Ericaceae | *Leucopogon setiger* | | 21 |
| Ericaceae | *Leucopogon* spp. | A beard-heath | 2 |
| Ericaceae | *Leucopogon virgatus* | | 4 |
| Ericaceae | *Lissanthe sapida* | Native cranberry | 1 |
| Ericaceae | *Lissanthe strigosa* | Peach heath | 14 |
| Ericaceae | *Lissanthe strigosa* subsp. *subulata* | Peach heath | 1 |
| Ericaceae | *Melichrus erubescens* | Ruby urn heath | 16 |
| Ericaceae | *Melichrus procumbens* | Jam tarts | 2 |
| Ericaceae | *Melichrus urceolatus* | Urn heath | 61 |
| Ericaceae | *Monotoca elliptica* | Tree broom-heath | 5 |
| Ericaceae | *Monotoca scoparia* | | 118 |
| Ericaceae | *Sprengelia incarnata* | Pink swamp Heath | 1 |
| Ericaceae | *Styphelia* spp. | | 2 |
| Ericaceae | *Styphelia triflora* | Pink five-corners | 63 |
| Ericaceae | *Styphelia tubiflora* | Red five-corner | 3 |
| Ericaceae | *Styphelia viridis* subsp. *viridis* | | 1 |
| Ericaceae | *Trochocarpa laurina* | Tree heath | 1 |
| Eriocaulaceae | *Eriocaulon scariosum* | | 2 |
| Escalloniaceae | *Polyosma cunninghamii* | Featherwood | 1 |
| Escalloniaceae | *Quintinia sieberi* | Possumwood | 5 |
| Euphorbiaceae | *Amperea xiphoclada* | | 26 |
| Euphorbiaceae | *Amperea xiphoclada* var. *xiphoclada* | | 30 |
| Euphorbiaceae | *Bertya linearifolia* | | 1 |
| Euphorbiaceae | *Bertya oblonga* | | 1 |
| Euphorbiaceae | *Bertya oleifolia* | | 1 |
| Euphorbiaceae | *Bertya pomaderroides* | | 1 |
| Euphorbiaceae | *Beyeria viscosa* | Sticky wallaby bush | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Euphorbiaceae | *Claoxylon australe* | Brittlewood | 2 |
| Euphorbiaceae | *Micrantheum* spp. | | 2 |
| Euphorbiaceae | *Omalanthus nutans* | | 2 |
| Euphorbiaceae | *Pseudanthus pimeleoides* | | 6 |
| Eupomatiaceae | *Eupomatia laurina* | Bolwarra | 6 |
| Fabaceae (Caesalpinioideae) | *Cassia* spp. | | 1 |
| Fabaceae (Faboideae) | *Aotus subglauca* var. *filiformis* | | 1 |
| Fabaceae (Faboideae) | *Bossiaea buxifolia* | | 4 |
| Fabaceae (Faboideae) | *Bossiaea ensata* | Sword bossiaea | 2 |
| Fabaceae (Faboideae) | *Bossiaea heterophylla* | Variable bossiaea | 33 |
| Fabaceae (Faboideae) | *Bossiaea lenticularis* | | 2 |
| Fabaceae (Faboideae) | *Bossiaea obcordata* | Spiny bossiaea | 17 |
| Fabaceae (Faboideae) | *Bossiaea prostrata* | | 3 |
| Fabaceae (Faboideae) | *Bossiaea rhombifolia* | | 6 |
| Fabaceae (Faboideae) | *Bossiaea rhombifolia* subsp. *rhombifolia* | | 13 |
| Fabaceae (Faboideae) | *Daviesia acicularis* | | 5 |
| Fabaceae (Faboideae) | *Daviesia corymbosa* | | 3 |
| Fabaceae (Faboideae) | *Daviesia genistifolia* | Broom bitter pea | 22 |
| Fabaceae (Faboideae) | *Daviesia latifolia* | Bitter-pea | 1 |
| Fabaceae (Faboideae) | *Daviesia pubigera* | | 1 |
| Fabaceae (Faboideae) | *Daviesia ulicifolia* | Gorse bitter pea | 13 |
| Fabaceae (Faboideae) | *Daviesia ulicifolia* subsp. *ulicifolia* | | 7 |
| Fabaceae (Faboideae) | *Desmodium brachypodum* | Large tick-trefoil | 6 |
| Fabaceae (Faboideae) | *Desmodium gunnii* | Slender tick-trefoil | 42 |
| Fabaceae (Faboideae) | *Desmodium heterocarpon* var. *heterocarpon* | | 2 |
| Fabaceae (Faboideae) | *Desmodium rhytidophyllum* | | 3 |
| Fabaceae (Faboideae) | *Desmodium spp.* | Tick-trefoil | 7 |
| Fabaceae (Faboideae) | *Desmodium varians* | Slender tick-trefoil | 49 |
| Fabaceae (Faboideae) | *Dillwynia acicularis* | | 5 |
| Fabaceae (Faboideae) | *Dillwynia elegans* | | 9 |
| Fabaceae (Faboideae) | *Dillwynia floribunda* | | 3 |
| Fabaceae (Faboideae) | *Dillwynia phylicoides* | Parrot-pea | 20 |
| Fabaceae (Faboideae) | *Dillwynia retorta* | | 27 |
| Fabaceae (Faboideae) | *Dillwynia rudis* | | 16 |
| Fabaceae (Faboideae) | *Dillwynia sericea* | Egg and bacon peas, parrot peas | 16 |
| Fabaceae (Faboideae) | *Glycine clandestina* | Twining glycine | 82 |
| Fabaceae (Faboideae) | *Glycine microphylla* | Small-leaf glycine | 15 |
| Fabaceae (Faboideae) | *Glycine* spp. | | 1 |
| Fabaceae (Faboideae) | *Glycine tabacina* | Variable glycine | 44 |
| Fabaceae (Faboideae) | *Glycine tomentella* | Woolly glycine | 1 |
| Fabaceae (Faboideae) | *Gompholobium aspalathoides* | | 22 |
| Fabaceae (Faboideae) | *Gompholobium glabratum* | Dainty wedge pea | 1 |
| Fabaceae (Faboideae) | *Gompholobium grandiflorum* | Large wedge pea | 1 |
| Fabaceae (Faboideae) | *Gompholobium huegelii* | Pale wedge pea | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Fabaceae (Faboideae) | *Gompholobium inconspicuum* | | 1 |
| Fabaceae (Faboideae) | *Gompholobium latifolium* | Golden glory pea | 17 |
| Fabaceae (Faboideae) | *Gompholobium minus* | Dwarf wedge pea | 1 |
| Fabaceae (Faboideae) | *Gompholobium uncinatum* | Red wedge pea | 7 |
| Fabaceae (Faboideae) | *Gompholobium virgatum* | Leafy wedge pea | 2 |
| Fabaceae (Faboideae) | *Hardenbergia violacea* | False sarsaparilla | 115 |
| Fabaceae (Faboideae) | *Hovea heterophylla* | | 1 |
| Fabaceae (Faboideae) | *Hovea lanceolata* | | 38 |
| Fabaceae (Faboideae) | *Hovea linearis* | | 32 |
| Fabaceae (Faboideae) | *Hovea longifolia* | Rusty pods | 1 |
| Fabaceae (Faboideae) | *Hovea pannosa* | | 1 |
| Fabaceae (Faboideae) | *Hovea purpurea* | | 4 |
| Fabaceae (Faboideae) | *Hovea speciosa* | | 2 |
| Fabaceae (Faboideae) | *Hovea* spp. | | 5 |
| Fabaceae (Faboideae) | *Indigofera adesmiifolia* | Tick indigo | 8 |
| Fabaceae (Faboideae) | *Indigofera australis* | Australian indigo | 92 |
| Fabaceae (Faboideae) | *Indigofera coronillifolia* | | 9 |
| Fabaceae (Faboideae) | *Jacksonia scoparia* | Dogwood | 1 |
| Fabaceae (Faboideae) | *Kennedia rubicunda* | Dusky coral pea | 8 |
| Fabaceae (Faboideae) | *Lespedeza juncea* subsp. *sericea* | | 1 |
| Fabaceae (Faboideae) | *Lotus australis* | Australian trefoil | 1 |
| Fabaceae (Faboideae) | *Mirbelia platylobioides* | | 10 |
| Fabaceae (Faboideae) | *Mirbelia pungens* | Prickly mirbelia | 2 |
| Fabaceae (Faboideae) | *Mirbelia rubiifolia* | Heathy mirbelia | 9 |
| Fabaceae (Faboideae) | *Oxylobium arborescens* | Tall shaggy pea | 3 |
| Fabaceae (Faboideae) | *Oxylobium pulteneae* | Wiry shaggy pea | 9 |
| Fabaceae (Faboideae) | *Phyllota phylicoides* | Heath phyllota | 22 |
| Fabaceae (Faboideae) | *Phyllota squarrosa* | Dense phyllota | 11 |
| Fabaceae (Faboideae) | *Platylobium formosum* subsp*. formosum* | | 1 |
| Fabaceae (Faboideae) | *Podolobium ilicifolium* | Prickly shaggy pea | 171 |
| Fabaceae (Faboideae) | *Pultenaea cinerascens* | | 1 |
| Fabaceae (Faboideae) | *Pultenaea daphnoides* | Large-leaf bush-pea | 5 |
| Fabaceae (Faboideae) | *Pultenaea echinula* | | 2 |
| Fabaceae (Faboideae) | *Pultenaea flexilis* | | 25 |
| Fabaceae (Faboideae) | *Pultenaea glabra* | Smooth bush-pea | 2 |
| Fabaceae (Faboideae) | *Pultenaea microphylla* | A bush pea | 9 |
| Fabaceae (Faboideae) | *Pultenaea procumbens* | | 2 |
| Fabaceae (Faboideae) | *Pultenaea scabra* | | 44 |
| Fabaceae (Faboideae) | *Pultenaea setulosa* | A bush pea | 2 |
| Fabaceae (Faboideae) | *Pultenaea spinosa* | A bush pea | 6 |
| Fabaceae (Faboideae) | *Pultenaea* spp. | | 6 |
| Fabaceae (Faboideae) | *Sphaerolobium minus* | | 1 |
| Fabaceae (Faboideae) | *Swainsona galegifolia* | Smooth darling pea | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Fabaceae (Faboideae) | *Swainsona* spp. | | 1 |
| Fabaceae (Faboideae) | *Templetonia stenophylla* | Leafy templetonia | 4 |
| Fabaceae (Mimosoideae) | *Acacia amblygona* | Fan wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia brownii* | Heath wattle | 9 |
| Fabaceae (Mimosoideae) | *Acacia buxifolia* | Box-leaved wattle | 14 |
| Fabaceae (Mimosoideae) | *Acacia buxifolia* subsp. *buxifolia* | Box-leaved wattle | 56 |
| Fabaceae (Mimosoideae) | *Acacia caesiella* | Tablelands wattle | 10 |
| Fabaceae (Mimosoideae) | *Acacia clandullensis* | | 3 |
| Fabaceae (Mimosoideae) | *Acacia costiniana* | | 1 |
| Fabaceae (Mimosoideae) | *Acacia crassa* subsp. *crassa* | | 15 |
| Fabaceae (Mimosoideae) | *Acacia cultriformis* | Knife-leaved wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia dawsonii* | Poverty wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia dealbata* subsp. *dealbata* | Silver wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia deanei* subsp. *deanei* | Deane's wattle | 3 |
| Fabaceae (Mimosoideae) | *Acacia deanei* subsp. *paucijuga* | Green wattle | 10 |
| Fabaceae (Mimosoideae) | *Acacia decora* | Western silver wattle | 26 |
| Fabaceae (Mimosoideae) | *Acacia decurrens* | Black wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia doratoxylon* | Currawang | 45 |
| Fabaceae (Mimosoideae) | *Acacia echinula* | Hedgehog wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia elata* | Mountain cedar wattle | 26 |
| Fabaceae (Mimosoideae) | *Acacia elongata* | Swamp wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia falcata* | | 1 |
| Fabaceae (Mimosoideae) | *Acacia falciformis* | Broad-leaved hickory | 38 |
| Fabaceae (Mimosoideae) | *Acacia filicifolia* | Fern-leaved wattle | 47 |
| Fabaceae (Mimosoideae) | *Acacia floribunda* | White sally | 6 |
| Fabaceae (Mimosoideae) | *Acacia genistifolia* | Early wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia gunnii* | Ploughshare wattle | 4 |
| Fabaceae (Mimosoideae) | *Acacia hamiltoniana* | Hamilton's wattle | 9 |
| Fabaceae (Mimosoideae) | *Acacia implexa* | Hickory wattle | 27 |
| Fabaceae (Mimosoideae) | *Acacia ixiophylla* | | 9 |
| Fabaceae (Mimosoideae) | *Acacia ixodes* | Motherumbung | 1 |
| Fabaceae (Mimosoideae) | *Acacia leiocalyx* subsp. *leiocalyx* | Curracabah | 6 |
| Fabaceae (Mimosoideae) | *Acacia leprosa* | Cinnamon wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia leucolobia* | | 1 |
| Fabaceae (Mimosoideae) | *Acacia linearifolia* | Narrow-leaved wattle | 47 |
| Fabaceae (Mimosoideae) | *Acacia linifolia* | White wattle | 29 |
| Fabaceae (Mimosoideae) | *Acacia longifolia* | | 32 |
| Fabaceae (Mimosoideae) | *Acacia longifolia* subsp. *longifolia* | Sydney golden wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia lunata* | Lunate-leaved acacia | 1 |
| Fabaceae (Mimosoideae) | *Acacia melanoxylon* | Blackwood | 60 |
| Fabaceae (Mimosoideae) | *Acacia montana* | Mallee wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia muelleriana* | | 3 |
| Fabaceae (Mimosoideae) | *Acacia myrtifolia* | Red-stemmed wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia neriifolia* | Silver wattle | 2 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Fabaceae (Mimosoideae) | *Acacia obliquinervia* | Mountain hickory | 30 |
| Fabaceae (Mimosoideae) | *Acacia obtusata* | Blunt-leaf wattle | 5 |
| Fabaceae (Mimosoideae) | *Acacia obtusifolia* | | 84 |
| Fabaceae (Mimosoideae) | *Acacia paradoxa* | Kangaroo thorn | 22 |
| Fabaceae (Mimosoideae) | *Acacia parramattensis* | Parramatta wattle | 26 |
| Fabaceae (Mimosoideae) | *Acacia parvipinnula* | Silver-stemmed wattle | 11 |
| Fabaceae (Mimosoideae) | *Acacia penninervis* | Mountain hickory | 20 |
| Fabaceae (Mimosoideae) | *Acacia penninervis* var. *penninervis* | Mountain hickory | 14 |
| Fabaceae (Mimosoideae) | *Acacia piligera* | | 8 |
| Fabaceae (Mimosoideae) | *Acacia pilligaensis* | Pilliga wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia prominens* | Gosford wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia ptychoclada* | | 2 |
| Fabaceae (Mimosoideae) | *Acacia rubida* | Red-stemmed wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia saliciformis* | | 37 |
| Fabaceae (Mimosoideae) | *Acacia salicina* | Cooba | 1 |
| Fabaceae (Mimosoideae) | *Acacia schinoides* | Green cedar wattle | 3 |
| Fabaceae (Mimosoideae) | *Acacia* spp. | Wattle | 15 |
| Fabaceae (Mimosoideae) | *Acacia suaveolens* | Sweet wattle | 11 |
| Fabaceae (Mimosoideae) | *Acacia terminalis* | Sunshine wattle | 33 |
| Fabaceae (Mimosoideae) | *Acacia terminalis* subsp. *angustifolia* | | 18 |
| Fabaceae (Mimosoideae) | *Acacia terminalis* subsp. *aurea* | | 14 |
| Fabaceae (Mimosoideae) | *Acacia trinervata* | Three-veined wattle | 1 |
| Fabaceae (Mimosoideae) | *Acacia ulicifolia* | Prickly moses | 49 |
| Fabaceae (Mimosoideae) | *Acacia uncinata* | Gold-dust wattle | 44 |
| Fabaceae (Mimosoideae) | *Acacia venulosa* | | 3 |
| Fabaceae (Mimosoideae) | *Acacia verniciflua* | Varnish wattle | 2 |
| Fabaceae (Mimosoideae) | *Acacia viscidula* | Sticky wattle | 1 |
| Fabaceae (Mimosoideae) | *Vachellia farnesiana* | Mimosa bush | 1 |
| Geraniaceae | *Geranium homeanum* | | 29 |
| Geraniaceae | *Geranium potentilloides* | | 5 |
| Geraniaceae | *Geranium potentilloides* var. *potentilloides* | | 14 |
| Geraniaceae | *Geranium retrorsum* | Cranesbill geranium | 1 |
| Geraniaceae | *Geranium solanderi* | Native geranium | 12 |
| Geraniaceae | *Geranium solanderi* var. *solanderi* | | 39 |
| Geraniaceae | *Pelargonium inodorum* | | 1 |
| Gleicheniaceae | *Dicranopteris linearis* var. *linearis* | | 2 |
| Gleicheniaceae | *Gleichenia dicarpa* | Pouched coral fern | 13 |
| Gleicheniaceae | *Gleichenia rupestris* | | 1 |
| Gleicheniaceae | *Sticherus flabellatus* var. *flabellatus* | Umbrella fern | 8 |
| Gleicheniaceae | *Sticherus lobatus* | Spreading shield fern | 1 |
| Goodeniaceae | *Brunonia australis* | Blue pincushion | 1 |
| Goodeniaceae | *Coopernookia barbata* | Purple goodenia | 17 |
| Goodeniaceae | *Dampiera adpressa* | Purple beauty bush | 6 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Goodeniaceae | *Dampiera lanceolata* var. *lanceolata* | | 16 |
| Goodeniaceae | *Dampiera purpurea* | | 4 |
| Goodeniaceae | *Dampiera* spp. | | 1 |
| Goodeniaceae | *Dampiera stricta* | | 49 |
| Goodeniaceae | *Goodenia bellidifolia* | | 2 |
| Goodeniaceae | *Goodenia bellidifolia* subsp. *bellidifolia* | | 21 |
| Goodeniaceae | *Goodenia decurrens* | | 20 |
| Goodeniaceae | *Goodenia hederacea* | Ivy goodenia | 5 |
| Goodeniaceae | *Goodenia hederacea* subsp. *hederacea* | | 41 |
| Goodeniaceae | *Goodenia heteromera* | | 2 |
| Goodeniaceae | *Goodenia heterophylla* | | 19 |
| Goodeniaceae | *Goodenia heterophylla* subsp. *eglandulosa* | | 16 |
| Goodeniaceae | *Goodenia heterophylla* subsp. *heterophylla* | | 15 |
| Goodeniaceae | *Goodenia heterophylla* subsp. *montana* | | 1 |
| Goodeniaceae | *Goodenia ovata* | Hop goodenia | 44 |
| Goodeniaceae | *Goodenia paniculata* | | 5 |
| Goodeniaceae | *Goodenia rotundifolia* | | 20 |
| Goodeniaceae | *Goodenia* spp. | | 4 |
| Goodeniaceae | *Goodenia stephensonii* | | 13 |
| Goodeniaceae | *Scaevola aemula* | Fairy fan-flower | 1 |
| Goodeniaceae | *Scaevola albida* var. *albida* | | 4 |
| Goodeniaceae | *Scaevola humilis* | | 1 |
| Goodeniaceae | *Scaevola ramosissima* | Purple fan-flower | 8 |
| Grammitidaceae | *Grammitis billardierei* | Finger fern | 2 |
| Haemodoraceae | *Haemodorum corymbosum* | | 3 |
| Haemodoraceae | *Haemodorum planifolium* | | 2 |
| Haloragaceae | *Gonocarpus elatus* | A raspwort | 10 |
| Haloragaceae | *Gonocarpus humilis* | | 5 |
| Haloragaceae | *Gonocarpus longifolius* | | 8 |
| Haloragaceae | *Gonocarpus micranthus* subsp. *ramosissimus* | | 6 |
| Haloragaceae | *Gonocarpus oreophilus* | | 2 |
| Haloragaceae | *Gonocarpus* spp. | Raspwort | 3 |
| Haloragaceae | *Gonocarpus tetragynus* | Poverty raspwort | 59 |
| Haloragaceae | *Gonocarpus teucrioides* | Germander raspwort | 64 |
| Haloragaceae | *Haloragis aspera* | Rough raspwort | 1 |
| Haloragaceae | *Haloragis serra* | | 14 |
| Haloragaceae | *Haloragis* spp. | A raspwort | 1 |
| Hymenophyllaceae | *Hymenophyllum australe* | | 1 |
| Hymenophyllaceae | *Hymenophyllum cupressiforme* | Common filmy fern | 7 |
| Iridaceae | *Libertia paniculata* | Branching grass-flag | 12 |
| Iridaceae | *Patersonia fragilis* | Swamp iris | 1 |
| Iridaceae | *Patersonia glabrata* | Leafy purple-flag | 57 |
| Iridaceae | *Patersonia sericea* | Silky purple-flag | 100 |
| Juncaceae | *Juncus australis* | Rush | 3 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Juncaceae | *Juncus continuus* | | 5 |
| Juncaceae | *Juncus fockei* | | 1 |
| Juncaceae | *Juncus pauciflorus* | | 1 |
| Juncaceae | *Juncus planifolius* | | 3 |
| Juncaceae | *Juncus procerus* | | 1 |
| Juncaceae | *Juncus* spp. | A rush | 1 |
| Juncaceae | *Luzula flaccida* | Woodrush | 8 |
| Juncaceae | *Luzula meridionalis* | | 3 |
| Juncaceae | *Luzula ovata* | | 1 |
| Juncaceae | *Luzula* spp. | | 4 |
| Lamiaceae | *Ajuga australis* | Austral bugle | 34 |
| Lamiaceae | *Chloanthes stoechadis* | | 12 |
| Lamiaceae | *Clerodendrum tomentosum* | Hairy clerodendrum | 3 |
| Lamiaceae | *Hemigenia cuneifolia* | | 1 |
| Lamiaceae | *Hemigenia purpurea* | | 4 |
| Lamiaceae | *Mentha diemenica* | Slender mint | 2 |
| Lamiaceae | *Mentha satureioides* | Native pennyroyal | 3 |
| Lamiaceae | *Plectranthus graveolens* | | 1 |
| Lamiaceae | *Plectranthus parviflorus* | | 22 |
| Lamiaceae | *Plectranthus* spp. | | 1 |
| Lamiaceae | *Prostanthera discolor* | | 4 |
| Lamiaceae | *Prostanthera hindii* | | 3 |
| Lamiaceae | *Prostanthera howelliae* | Prostanthera | 1 |
| Lamiaceae | *Prostanthera incana* | Velvet mint-bush | 1 |
| Lamiaceae | *Prostanthera incisa* | Cut-leaved mint-bush | 1 |
| Lamiaceae | *Prostanthera linearis* | Narrow-leaved mint-bush | 1 |
| Lamiaceae | *Prostanthera nivea* | Snowy mint-bush | 1 |
| Lamiaceae | *Prostanthera nivea* var. *nivea* | | 2 |
| Lamiaceae | *Prostanthera ovalifolia* | | 1 |
| Lamiaceae | *Prostanthera prunelloides* | | 11 |
| Lamiaceae | *Prostanthera rotundifolia* | Round-leaved mint-bush | 3 |
| Lamiaceae | *Prostanthera saxicola* var. *saxicola* | | 1 |
| Lamiaceae | *Prostanthera* spp. | | 3 |
| Lamiaceae | *Scutellaria humilis* | Dwarf skullcap | 9 |
| Lamiaceae | *Scutellaria mollis* | Soft skullcap | 1 |
| Lamiaceae | *Spartothamnella juncea* | Bead bush | 1 |
| Lamiaceae | *Teucrium corymbosum* | Forest germander | 2 |
| Lauraceae | *Cassytha glabella* f. *glabella* | | 36 |
| Lauraceae | *Cassytha melantha* | | 2 |
| Lauraceae | *Cassytha pubescens* | Downy dodder-laurel | 26 |
| Lauraceae | *Cassytha racemosa* f. *muelleri* | | 2 |
| Lentibulariaceae | *Utricularia dichotoma* | Fairy aprons | 2 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Linaceae | *Linum marginale* | Native flax | 2 |
| Lindsaeaceae | *Lindsaea linearis* | Screw fern | 5 |
| Lindsaeaceae | *Lindsaea microphylla* | Lacy wedge fern | 8 |
| Lobeliaceae | *Isotoma axillaris* | Showy isotome | 5 |
| Lobeliaceae | *Isotoma petraea* | Rock isotome | 1 |
| Lobeliaceae | *Lobelia gibbosa* | Tall lobelia | 2 |
| Lobeliaceae | *Pratia purpurascens* | Whiteroot | 10 |
| Loganiaceae | *Logania albiflora* | | 15 |
| Loganiaceae | *Logania pusilla* | | 3 |
| Loganiaceae | *Mitrasacme polymorpha* | | 3 |
| Loganiaceae | *Phyllangium sulcatum* | Rock mitrewort | 1 |
| Lomandraceae | *Lomandra brevis* | | 2 |
| Lomandraceae | *Lomandra confertifolia* | Matrush | 21 |
| Lomandraceae | *Lomandra confertifolia* subsp. *pallida* | Matrush | 52 |
| Lomandraceae | *Lomandra confertifolia* subsp. *rubiginosa* | | 143 |
| Lomandraceae | *Lomandra cylindrica* | | 6 |
| Lomandraceae | *Lomandra filiformis* | Wattle matt-rush | 5 |
| Lomandraceae | *Lomandra filiformis* subsp. *coriacea* | Wattle matt-rush | 51 |
| Lomandraceae | *Lomandra filiformis* subsp. *filiformis* | | 44 |
| Lomandraceae | *Lomandra filiformis* subsp. *flavior* | Wattle matt-rush | 1 |
| Lomandraceae | *Lomandra fluviatilis* | | 1 |
| Lomandraceae | *Lomandra glauca* | Pale mat-rush | 170 |
| Lomandraceae | *Lomandra gracilis* | | 9 |
| Lomandraceae | *Lomandra hystrix* | | 2 |
| Lomandraceae | *Lomandra leucocephala* subsp. *leucocephala* | Woolly mat-rush | 1 |
| Lomandraceae | *Lomandra longifolia* | Spiny-headed mat-rush | 160 |
| Lomandraceae | *Lomandra montana* | | 1 |
| Lomandraceae | *Lomandra multiflora* subsp. *multiflora* | Many-flowered mat-rush | 115 |
| Lomandraceae | *Lomandra obliqua* | | 78 |
| Lomandraceae | *Lomandra* spp. | Mat-rush | 14 |
| Loranthaceae | *Amyema miquelii* | Box mistletoe | 4 |
| Loranthaceae | *Amyema pendulum* subsp. *pendulum* | | 7 |
| Loranthaceae | *Amyema* spp. | Mistletoe | 5 |
| Loranthaceae | *Dendrophthoe glabrescens* | | 3 |
| Loranthaceae | *Dendrophthoe vitellina* | | 2 |
| Loranthaceae | *Muellerina bidwillii* | | 3 |
| Loranthaceae | *Muellerina eucalyptoides* | | 2 |
| Luzuriagaceae | *Eustrephus latifolius* | Wombat berry | 38 |
| Luzuriagaceae | *Geitonoplesium cymosum* | Scrambling lily | 34 |
| Lycopodiaceae | *Lycopodiella lateralis* | Slender clubmoss | 2 |
| Malvaceae | *Hibiscus sturtii* var. *sturtii* | Hill hibiscus | 8 |
| Malvaceae | *Sida corrugata* | Corrugated sida | 10 |
| Malvaceae | *Sida filiformis* | | 5 |
| Malvaceae | *Sida trichopoda* | High sida | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Meliaceae | *Melia azedarach* | White cedar | 1 |
| Meliaceae | *Toona ciliata* | Red cedar | 4 |
| Menispermaceae | *Sarcopetalum harveyanum* | Pearl vine | 5 |
| Menispermaceae | *Stephania japonica* | Snake vine | 1 |
| Menispermaceae | *Stephania japonica* var. *discolor* | Snake vine | 10 |
| Monimiaceae | *Doryphora sassafras* | Sassafras | 38 |
| Monimiaceae | *Hedycarya angustifolia* | Native mulberry | 5 |
| Moraceae | *Ficus coronata* | Creek sandpaper fig | 10 |
| Moraceae | *Ficus rubiginosa* | Port Jackson fig | 7 |
| Moraceae | *Trophis scandens* subsp. *scandens* | Burny vine | 1 |
| Myoporaceae | *Eremophila debilis* | Amulla | 3 |
| Myoporaceae | *Myoporum montanum* | Western boobialla | 18 |
| Myrsinaceae | *Myrsine howittiana* | Brush muttonwood | 10 |
| Myrsinaceae | *Myrsine variabilis* | | 6 |
| Myrtaceae | *Acmena smithii* | Lilly pilly | 17 |
| Myrtaceae | *Angophora bakeri* | Narrow-leaved apple | 6 |
| Myrtaceae | *Angophora costata* | Sydney red gum | 33 |
| Myrtaceae | *Angophora euryphylla* | | 4 |
| Myrtaceae | *Angophora floribunda* | Rough-barked apple | 125 |
| Myrtaceae | *Backhousia myrtifolia* | Grey myrtle | 38 |
| Myrtaceae | *Baeckea brevifolia* | | 3 |
| Myrtaceae | *Baeckea latifolia* | | 1 |
| Myrtaceae | *Baeckea linifolia* | Weeping baeckea | 4 |
| Myrtaceae | *Baeckea utilis* | Mountain baeckea | 9 |
| Myrtaceae | *Callistemon citrinus* | Crimson bottlebrush | 19 |
| Myrtaceae | *Callistemon linearis* | Narrow-leaved bottlebrush | 4 |
| Myrtaceae | *Callistemon salignus* | Willow bottlebrush | 7 |
| Myrtaceae | *Calytrix tetragona* | Common fringe-myrtle | 58 |
| Myrtaceae | *Corymbia gummifera* | Red bloodwood | 27 |
| Myrtaceae | *Corymbia trachyphloia* | White bloodwood | 4 |
| Myrtaceae | *Corymbia trachyphloia* subsp. *amphistomatica* | | 19 |
| Myrtaceae | *Darwinia peduncularis* | | 4 |
| Myrtaceae | *Darwinia taxifolia* subsp. *taxifolia* | | 3 |
| Myrtaceae | *Eucalyptus agglomerata* | Blue-leaved stringybark | 39 |
| Myrtaceae | *Eucalyptus albens* | White box | 36 |
| Myrtaceae | *Eucalyptus albens <--> moluccana* | | 2 |
| Myrtaceae | *Eucalyptus apiculata* | | 1 |
| Myrtaceae | *Eucalyptus bensonii* | | 8 |
| Myrtaceae | *Eucalyptus beyeriana* | | 20 |
| Myrtaceae | *Eucalyptus bicostata* | Eurabbie | 13 |
| Myrtaceae | *Eucalyptus blakelyi* | Blakely's red gum | 24 |
| Myrtaceae | *Eucalyptus blaxlandii* | Blaxland's stringybark | 43 |
| Myrtaceae | *Eucalyptus bosistoana* | Coast grey box | 2 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Myrtaceae | *Eucalyptus bridgesiana* | Apple box | 8 |
| Myrtaceae | *Eucalyptus burgessiana* | Faulconbridge mallee ash | 1 |
| Myrtaceae | *Eucalyptus caleyi* | | 5 |
| Myrtaceae | *Eucalyptus caleyi* subsp. *caleyi* | | 18 |
| Myrtaceae | *Eucalyptus camphora* | Broad-leaved sally | 10 |
| Myrtaceae | *Eucalyptus cannonii* | Capertee stringybark | 15 |
| Myrtaceae | *Eucalyptus conica* | Fuzzy box | 4 |
| Myrtaceae | *Eucalyptus consideniana* | Yertchuk | 62 |
| Myrtaceae | *Eucalyptus corticosa* | Creswick apple box | 6 |
| Myrtaceae | *Eucalyptus crebra* | Narrow-leaved ironbark | 28 |
| Myrtaceae | *Eucalyptus cypellocarpa* | Monkey gum | 78 |
| Myrtaceae | *Eucalyptus dalrympleana* subsp. *dalrympleana* | | 2 |
| Myrtaceae | *Eucalyptus dalrympleana* subsp. *heptantha* | | 5 |
| Myrtaceae | *Eucalyptus dawsonii* | Slaty gum | 31 |
| Myrtaceae | *Eucalyptus deanei* | Mountain blue gum | 16 |
| Myrtaceae | *Eucalyptus dives* | Broad-leaved peppermint | 7 |
| Myrtaceae | *Eucalyptus dwyeri* | Dwyer's red gum | 19 |
| Myrtaceae | *Eucalyptus elata* | River peppermint | 3 |
| Myrtaceae | *Eucalyptus eugenioides* | Thin-leaved stringybark | 1 |
| Myrtaceae | *Eucalyptus fastigata* | Brown barrel | 2 |
| Myrtaceae | *Eucalyptus fergusonii* subsp. *dorsiventralis* | | 6 |
| Myrtaceae | *Eucalyptus fibrosa* | Red ironbark | 70 |
| Myrtaceae | *Eucalyptus fibrosa* subsp. *nubilis* | Dusky-leaved ironbark | 3 |
| Myrtaceae | *Eucalyptus goniocalyx* | Bundy | 1 |
| Myrtaceae | *Eucalyptus hypostomatica* | | 2 |
| Myrtaceae | *Eucalyptus laevopinea* | Silver-top stringybark | 43 |
| Myrtaceae | *Eucalyptus laophila* | | 4 |
| Myrtaceae | *Eucalyptus macrorhyncha* | Red stringybark | 13 |
| Myrtaceae | *Eucalyptus mannifera* | Brittle gum | 13 |
| Myrtaceae | *Eucalyptus mannifera* subsp. *mannifera* | Brittle gum | 1 |
| Myrtaceae | *Eucalyptus melanophloia* | Silver-leaved ironbark | 1 |
| Myrtaceae | *Eucalyptus melliodora* | Yellow box | 36 |
| Myrtaceae | *Eucalyptus microcarpa* | Western grey box | 2 |
| Myrtaceae | *Eucalyptus moluccana* | Grey box | 32 |
| Myrtaceae | *Eucalyptus multicaulis* | Whipstick ash | 22 |
| Myrtaceae | *Eucalyptus nobilis* | Forest ribbon gum | 8 |
| Myrtaceae | *Eucalyptus oblonga* | Stringybark | 2 |
| Myrtaceae | *Eucalyptus oreades* | Blue Mountains ash | 15 |
| Myrtaceae | *Eucalyptus paniculata* | Grey ironbark | 1 |
| Myrtaceae | *Eucalyptus parramattensis* | Parramatta red gum | 1 |
| Myrtaceae | *Eucalyptus parramattensis* subsp. *parramattensis* | | 3 |
| Myrtaceae | *Eucalyptus pauciflora* | White sally | 11 |
| Myrtaceae | *Eucalyptus piperita* | Sydney peppermint | 132 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Myrtaceae | *Eucalyptus polyanthemos* | Red box | 7 |
| Myrtaceae | *Eucalyptus praecox* | Brittle gum | 8 |
| Myrtaceae | *Eucalyptus prominula* | Stringybark | 1 |
| Myrtaceae | *Eucalyptus punctata* | Grey gum | 272 |
| Myrtaceae | *Eucalyptus racemosa* | Narrow-leaved scribbly gum | 3 |
| Myrtaceae | *Eucalyptus radiata* | Narrow-leaved peppermint | 6 |
| Myrtaceae | *Eucalyptus radiata* subsp. *radiata* | | 4 |
| Myrtaceae | *Eucalyptus rossii* | Inland scribbly gum | 104 |
| Myrtaceae | *Eucalyptus rubida* | Candlebark | 10 |
| Myrtaceae | *Eucalyptus sideroxylon* | Mugga ironbark | 25 |
| Myrtaceae | *Eucalyptus sieberi* | Silvertop ash | 3 |
| Myrtaceae | *Eucalyptus* sp. aff. *fibrosa (Yarrawa)* | | 1 |
| Myrtaceae | *Eucalyptus sparsifolia* | Narrow-leaved stringybark | 209 |
| Myrtaceae | *Eucalyptus* spp. | | 12 |
| Myrtaceae | *Eucalyptus stellulata* | Black sally | 2 |
| Myrtaceae | *Eucalyptus stricta* | Blue Mountains mallee ash | 3 |
| Myrtaceae | *Eucalyptus tereticornis* | Forest red gum | 13 |
| Myrtaceae | *Eucalyptus viminalis* | Ribbon gum | 65 |
| Myrtaceae | *Harmogia densifolia* | | 21 |
| Myrtaceae | *Homoranthus cernuus* | | 10 |
| Myrtaceae | *Homoranthus darwinioides* | | 1 |
| Myrtaceae | *Kunzea ambigua* | Tick bush | 15 |
| Myrtaceae | *Kunzea* sp. *'Mt Kaputar'* | | 3 |
| Myrtaceae | *Leptospermum arachnoides* | | 40 |
| Myrtaceae | *Leptospermum brevipes* | Slender tea-tree | 1 |
| Myrtaceae | *Leptospermum continentale* | Prickly teatree | 14 |
| Myrtaceae | *Leptospermum grandifolium* | Woolly teatree | 5 |
| Myrtaceae | *Leptospermum juniperinum* | Prickly tea-tree | 3 |
| Myrtaceae | *Leptospermum microcarpum* | | 1 |
| Myrtaceae | *Leptospermum morrisonii* | | 2 |
| Myrtaceae | *Leptospermum obovatum* | | 5 |
| Myrtaceae | *Leptospermum parvifolium* | | 73 |
| Myrtaceae | *Leptospermum polyanthum* | | 13 |
| Myrtaceae | *Leptospermum polygalifolium* | Tantoon | 13 |
| Myrtaceae | *Leptospermum polygalifolium* subsp. *cismontanum* | | 2 |
| Myrtaceae | *Leptospermum polygalifolium* subsp. *polygalifolium* | | 20 |
| Myrtaceae | *Leptospermum polygalifolium* subsp. *transmontanum* | | 10 |
| Myrtaceae | *Leptospermum sphaerocarpum* | | 71 |
| Myrtaceae | *Leptospermum* spp. | Tea-tree | 3 |
| Myrtaceae | *Leptospermum squarrosum* | | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Myrtaceae | *Leptospermum trinervium* | Slender tea-tree | 93 |
| Myrtaceae | *Melaleuca erubescens* | Pink honeymyrtle | 1 |
| Myrtaceae | *Melaleuca linariifolia* | Flax-leaved paperbark | 6 |
| Myrtaceae | *Melaleuca styphelioides* | Prickly-leaved tea tree | 12 |
| Myrtaceae | *Melaleuca thymifolia* | Thyme honey-myrtle | 5 |
| Myrtaceae | *Ochrosperma oligomerum* | | 6 |
| Myrtaceae | *Sannantha cunninghamii* | | 3 |
| Myrtaceae | *Syncarpia glomulifera* | Turpentine | 5 |
| Myrtaceae | *Syncarpia glomulifera* subsp. *glomulifera* | | 7 |
| Myrtaceae | *Tristania neriifolia* | Water gum | 1 |
| Myrtaceae | *Tristaniopsis collina* | Mountain water gum | 6 |
| Myrtaceae | *Tristaniopsis laurina* | Kanooka | 4 |
| Olacaceae | *Olax stricta* | | 12 |
| Oleaceae | *Notelaea longifolia* | Large mock-olive | 11 |
| Oleaceae | *Notelaea longifolia* f. *intermedia* | | 2 |
| Oleaceae | *Notelaea longifolia* f. *longifolia* | | 29 |
| Oleaceae | *Notelaea microcarpa* var. *microcarpa* | | 7 |
| Oleaceae | *Notelaea venosa* | Veined mock-olive | 7 |
| Onagraceae | *Epilobium billardierianum* | | 1 |
| Onagraceae | *Epilobium billardierianum* subsp. *cinereum* | | 1 |
| Onagraceae | *Epilobium gunnianum* | Gunn's willow-herb | 1 |
| Orchidaceae | *Acianthus collinus* | Hooded mosquito-orchid | 1 |
| Orchidaceae | *Acianthus exsertus* | Mosquito orchid | 2 |
| Orchidaceae | *Acianthus fornicatus* | Pixie caps | 2 |
| Orchidaceae | *Acianthus* spp. | Mosquito orchid | 13 |
| Orchidaceae | *Caladenia carnea* | Pink fingers | 5 |
| Orchidaceae | *Caladenia* spp. | | 1 |
| Orchidaceae | *Caladenia tentaculata* | Fringed spider orchid | 1 |
| Orchidaceae | *Caleana major* | Large duck orchid | 1 |
| Orchidaceae | *Calochilus paludosus* | Red beard orchid | 1 |
| Orchidaceae | *Calochilus robertsonii* | Purplish beard orchid | 3 |
| Orchidaceae | *Calochilus* spp. | | 6 |
| Orchidaceae | *Chiloglottis diphylla* | | 1 |
| Orchidaceae | *Chiloglottis reflexa* | | 1 |
| Orchidaceae | *Chiloglottis seminuda* | | 1 |
| Orchidaceae | *Chiloglottis* spp. | | 19 |
| Orchidaceae | *Corybas aconitiflorus* | Spurred helmet orchid | 1 |
| Orchidaceae | *Corybas* spp. | | 3 |
| Orchidaceae | *Cryptostylis erecta* | Tartan tongue orchid | 1 |
| Orchidaceae | *Cryptostylis* spp. | | 1 |
| Orchidaceae | *Cymbidium suave* | Snake orchid | 1 |
| Orchidaceae | *Dendrobium linguiforme* | Tongue orchid | 2 |
| Orchidaceae | *Dendrobium speciosum* | Rock lily | 2 |
| Orchidaceae | *Dendrobium striolatum* | Streaked rock orchid | 5 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Orchidaceae | *Dipodium roseum* | | 5 |
| Orchidaceae | *Diuris* spp. | | 1 |
| Orchidaceae | *Glossodia major* | Waxlip orchid | 1 |
| Orchidaceae | *Microtis* spp. | | 1 |
| Orchidaceae | *Paracaleana minor* | Small duck orchid | 1 |
| Orchidaceae | *Pterostylis concinna* | Trim greenhood | 7 |
| Orchidaceae | *Pterostylis curta* | Blunt greenhood | 2 |
| Orchidaceae | *Pterostylis decurva* | Summer grasshood | 2 |
| Orchidaceae | *Pterostylis laxa* | Antelope greenhood | 1 |
| Orchidaceae | *Pterostylis longifolia* | Tall greenhood | 3 |
| Orchidaceae | *Pterostylis nutans* | Nodding greenhood | 4 |
| Orchidaceae | *Pterostylis parviflora* | Tiny greenhood | 1 |
| Orchidaceae | *Pterostylis reflexa* | Small autumn greenhood | 1 |
| Orchidaceae | *Pterostylis* sp. aff. *parviflora (sstn hth)* | | 1 |
| Orchidaceae | *Pterostylis* spp. | Greenhood | 34 |
| Orchidaceae | *Spiranthes australis* | Ladies' tresses | 1 |
| Orchidaceae | *Thelymitra ixioides* var. *ixioides* | Dotted sun orchid | 1 |
| Orchidaceae | *Thelymitra* spp. | | 2 |
| Osmundaceae | *Todea barbara* | King fern | 5 |
| Oxalidaceae | *Oxalis chnoodes* | | 15 |
| Oxalidaceae | *Oxalis exilis* | | 1 |
| Oxalidaceae | *Oxalis perennans* | | 48 |
| Oxalidaceae | *Oxalis radicosa* | | 2 |
| Oxalidaceae | *Oxalis* spp. | | 1 |
| Passifloraceae | *Passiflora cinnabarina* | Red passionfruit | 6 |
| Phormiaceae | *Dianella brevipedunculata* | | 1 |
| Phormiaceae | *Dianella caerulea* | Blue flax-lily | 32 |
| Phormiaceae | *Dianella caerulea* var. *assera* | | 47 |
| Phormiaceae | *Dianella caerulea* var. *caerulea* | | 32 |
| Phormiaceae | *Dianella caerulea* var. *cinerascens* | | 25 |
| Phormiaceae | *Dianella caerulea* var. *producta* | | 23 |
| Phormiaceae | *Dianella longifolia* | Blueberry lily | 3 |
| Phormiaceae | *Dianella longifolia* var. *longifolia* | A blue flax lily | 11 |
| Phormiaceae | *Dianella prunina* | | 11 |
| Phormiaceae | *Dianella revoluta* | Blueberry lily | 11 |
| Phormiaceae | *Dianella revoluta* var. *revoluta* | A blue flax lily | 132 |
| Phormiaceae | *Dianella* spp. | | 7 |
| Phormiaceae | *Dianella tasmanica* | | 13 |
| Phormiaceae | *Stypandra glauca* | Nodding blue lily | 35 |
| Phormiaceae | *Thelionema caespitosum* | Tufted blue-lily | 1 |
| Phyllanthaceae | *Breynia oblongifolia* | Coffee bush | 19 |
| Phyllanthaceae | *Phyllanthus gunnii* | | 2 |
| Phyllanthaceae | *Phyllanthus hirtellus* | Thyme spurge | 99 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Phyllanthaceae | *Phyllanthus occidentalis* | | 8 |
| Phyllanthaceae | *Poranthera corymbosa* | | 26 |
| Phyllanthaceae | *Poranthera ericifolia* | | 12 |
| Phyllanthaceae | *Poranthera microphylla* | Small poranthera | 58 |
| Pittosporaceae | *Billardiera scandens* | Hairy apple berry | 102 |
| Pittosporaceae | *Bursaria longisepala* | | 8 |
| Pittosporaceae | *Bursaria spinosa* | Native blackthorn | 124 |
| Pittosporaceae | *Bursaria spinosa* subsp. *lasiophylla* | Native blackthorn | 4 |
| Pittosporaceae | *Bursaria spinosa* subsp. *spinosa* | Native blackthorn | 55 |
| Pittosporaceae | *Hymenosporum flavum* | Native frangipani | 1 |
| Pittosporaceae | *Pittosporum multiflorum* | Orange thorn | 7 |
| Pittosporaceae | *Pittosporum revolutum* | Rough fruit pittosporum | 10 |
| Pittosporaceae | *Pittosporum undulatum* | Sweet pittosporum | 26 |
| Pittosporaceae | *Rhytidosporum procumbens* | | 9 |
| Pittosporaceae | *Rhytidosporum prostratum* | | 1 |
| Plantaginaceae | *Plantago debilis* | Shade plantain | 60 |
| Plantaginaceae | *Plantago gaudichaudii* | Narrow plantain | 16 |
| Plantaginaceae | *Plantago hispida* | | 7 |
| Plantaginaceae | *Plantago* spp. | Plantain | 4 |
| Plantaginaceae | *Plantago varia* | | 4 |
| Plantaginaceae | *Veronica brownii* | | 1 |
| Plantaginaceae | *Veronica calycina* | Hairy speedwell | 17 |
| Plantaginaceae | *Veronica notabilis* | Forest speedwell | 1 |
| Plantaginaceae | *Veronica plebeia* | Trailing speedwell | 70 |
| Poaceae | *Anisopogon avenaceus* | Oat speargrass | 36 |
| Poaceae | *Aristida echinata* | | 2 |
| Poaceae | *Aristida jerichoensis* var. *jerichoensis* | Jericho wiregrass | 4 |
| Poaceae | *Aristida personata* | | 16 |
| Poaceae | *Aristida ramosa* | Purple wiregrass | 43 |
| Poaceae | *Aristida* spp. | A wiregrass | 1 |
| Poaceae | *Aristida vagans* | Threeawn speargrass | 44 |
| Poaceae | *Aristida warburgii* | | 1 |
| Poaceae | *Austrodanthonia bipartita* | Wallaby grass | 2 |
| Poaceae | *Austrodanthonia fulva* | Wallaby grass | 16 |
| Poaceae | *Austrodanthonia laevis* | Wallaby grass | 1 |
| Poaceae | *Austrodanthonia monticola* | A wallaby grass | 2 |
| Poaceae | *Austrodanthonia penicillata* | Slender wallaby grass | 3 |
| Poaceae | *Austrodanthonia racemosa* | Wallaby grass | 2 |
| Poaceae | *Austrodanthonia racemosa* var. *obtusata* | A Wallaby grass | 4 |
| Poaceae | *Austrodanthonia racemosa* var. *racemosa* | A Wallaby grass | 26 |
| Poaceae | *Austrodanthonia richardsonii* | Straw wallaby-grass | 3 |
| Poaceae | *Austrodanthonia setacea* | Smallflower wallaby grass | 5 |
| Poaceae | *Austrodanthonia* spp. | A wallaby grass | 21 |
| Poaceae | *Austrodanthonia tenuior* | A wallaby grass | 5 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Poaceae | *Austrostipa bigeniculata* | Yanganbil | 1 |
| Poaceae | *Austrostipa densiflora* | Foxtail speargrass | 2 |
| Poaceae | *Austrostipa mollis* | Soft speargrass | 1 |
| Poaceae | *Austrostipa pubescens* | | 27 |
| Poaceae | *Austrostipa ramosissima* | Stout bamboo grass | 8 |
| Poaceae | *Austrostipa rudis* | | 2 |
| Poaceae | *Austrostipa rudis* subsp. *nervosa* | A speargrass | 3 |
| Poaceae | *Austrostipa rudis* subsp. *rudis* | | 3 |
| Poaceae | *Austrostipa scabra* | Speargrass | 4 |
| Poaceae | *Austrostipa scabra* subsp. *falcata* | Rough speargrass | 6 |
| Poaceae | *Austrostipa scabra* subsp. *scabra* | Rough speargrass | 16 |
| Poaceae | *Austrostipa setacea* | Corkscrew grass | 1 |
| Poaceae | *Austrostipa* spp. | A speargrass | 1 |
| Poaceae | *Austrostipa verticillata* | Slender bamboo grass | 18 |
| Poaceae | *Bothriochloa decipiens* var. *decipiens* | Pitted bluegrass | 5 |
| Poaceae | *Bothriochloa macra* | Red grass | 1 |
| Poaceae | *Chloris truncata* | Windmill grass | 5 |
| Poaceae | *Chloris ventricosa* | Tall chloris | 1 |
| Poaceae | *Cleistochloa rigida* | | 73 |
| Poaceae | *Cymbopogon refractus* | Barbed wire grass | 28 |
| Poaceae | *Cynodon dactylon* | Common couch | 1 |
| Poaceae | *Deyeuxia quadriseta* | | 3 |
| Poaceae | *Deyeuxia* spp. | A bent grass | 1 |
| Poaceae | *Dichelachne crinita* | Longhair plumegrass | 1 |
| Poaceae | *Dichelachne hirtella* | Plumegrass | 2 |
| Poaceae | *Dichelachne inaequiglumis* | | 2 |
| Poaceae | *Dichelachne micrantha* | Shorthair plumegrass | 36 |
| Poaceae | *Dichelachne rara* | | 1 |
| Poaceae | *Dichelachne sieberiana* | | 1 |
| Poaceae | *Dichelachne* spp. | A plumegrass | 2 |
| Poaceae | *Digitaria brownii* | Cotton panic grass | 1 |
| Poaceae | *Digitaria diffusa* | Open summer-grass | 9 |
| Poaceae | *Digitaria parviflora* | Small-flowered finger grass | 1 |
| Poaceae | *Digitaria ramularis* | Finger panic grass | 26 |
| Poaceae | *Echinopogon caespitosus* | Bushy hedgehog-grass | 5 |
| Poaceae | *Echinopogon caespitosus* var. *caespitosus* | Tufted hedgehog grass | 10 |
| Poaceae | *Echinopogon cheelii* | Long-flowered hedgehog grass | 4 |
| Poaceae | *Echinopogon intermedius* | Erect hedgehog grass | 8 |
| Poaceae | *Echinopogon ovatus* | Forest hedgehog grass | 71 |
| Poaceae | *Echinopogon* spp. | A hedgehog grass | 4 |
| Poaceae | *Elymus scaber* | Common wheatgrass | 5 |
| Poaceae | *Elymus scaber* var. *scaber* | Common wheatgrass | 3 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Poaceae | *Enneapogon gracilis* | Slender nineawn | 3 |
| Poaceae | *Entolasia marginata* | Bordered panic | 12 |
| Poaceae | *Entolasia stricta* | Wiry panic | 163 |
| Poaceae | *Eragrostis benthamii* | | 3 |
| Poaceae | *Eragrostis brownii* | Brown's lovegrass | 3 |
| Poaceae | *Eragrostis lacunaria* | Purple lovegrass | 2 |
| Poaceae | *Eragrostis leptostachya* | Paddock lovegrass | 6 |
| Poaceae | *Hemarthria uncinata* var. *uncinata* | | 3 |
| Poaceae | *Imperata cylindrica* | Blady grass | 13 |
| Poaceae | *Isachne globosa* | Swamp millet | 6 |
| Poaceae | *Joycea pallida* | Silvertop wallaby grass | 106 |
| Poaceae | *Lachnagrostis aemula* | Blowngrass | 2 |
| Poaceae | *Lachnagrostis filiformis* | | 7 |
| Poaceae | *Microlaena stipoides* | Weeping grass | 21 |
| Poaceae | *Microlaena stipoides* var. *stipoides* | Weeping grass | 145 |
| Poaceae | *Notodanthonia longifolia* | Long-leaved wallaby grass | 42 |
| Poaceae | *Notodanthonia semiannularis* | Tasmanian wallaby grass | 1 |
| Poaceae | *Oplismenus aemulus* | | 11 |
| Poaceae | *Oplismenus imbecillis* | | 22 |
| Poaceae | *Oplismenus* spp. | | 1 |
| Poaceae | *Panicum decompositum* var. *tenuius* | | 2 |
| Poaceae | *Panicum effusum* | Hairy panic | 9 |
| Poaceae | *Panicum simile* | Two-colour panic | 10 |
| Poaceae | *Panicum* spp. | Panicum | 2 |
| Poaceae | *Paspalidium criniforme* | | 4 |
| Poaceae | *Paspalidium distans* | | 2 |
| Poaceae | *Paspalidium gracile* | Slender panic | 9 |
| Poaceae | *Paspalidium* spp. | | 2 |
| Poaceae | *Phragmites australis* | Common reed | 1 |
| Poaceae | *Poa affinis* | | 82 |
| Poaceae | *Poa labillardierei* var. *labillardierei* | Tussock | 36 |
| Poaceae | *Poa meionectes* | | 1 |
| Poaceae | *Poa sieberiana* | Snowgrass | 11 |
| Poaceae | *Poa sieberiana* var. *sieberiana* | Snowgrass | 7 |
| Poaceae | *Poa tenera* | Slender tussock-grass | 2 |
| Poaceae | *Sorghum leiocladum* | Wild sorghum | 2 |
| Poaceae | *Sporobolus creber* | Slender rat's tail grass | 4 |
| Poaceae | *Tetrarrhena juncea* | Wiry ricegrass | 2 |
| Poaceae | *Themeda australis* | Kangaroo grass | 31 |
| Poaceae | *Thyridolepis mitchelliana* | Mulga mitchell grass | 1 |
| Poaceae | *Triodia scariosa* subsp. *scariosa* | | 1 |
| Poaceae | *Tripogon loliiformis* | Fiveminute grass | 4 |
| Poaceae | *Walwhalleya subxerophila* | Gilgai grass | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Podocarpaceae | *Podocarpus spinulosus* | Spiny-leaf podocarp | 1 |
| Polygalaceae | *Comesperma defoliatum* | | 2 |
| Polygalaceae | *Comesperma ericinum* | Pyramid flower | 15 |
| Polygalaceae | *Comesperma volubile* | | 1 |
| Polygonaceae | *Muehlenbeckia adpressa* | Climbing lignum | 3 |
| Polygonaceae | *Persicaria hydropiper* | Water pepper | 1 |
| Polygonaceae | *Persicaria praetermissa* | | 1 |
| Polygonaceae | *Rumex brownii* | Swamp dock | 13 |
| Polypodiaceae | *Dictymia brownii* | Strap fern | 1 |
| Polypodiaceae | *Microsorum pustulatum* | Kangaroo fern | 5 |
| Polypodiaceae | *Microsorum scandens* | Fragrant fern | 6 |
| Polypodiaceae | *Pyrrosia rupestris* | Rock Felt fern | 21 |
| Portulacaceae | *Calandrinia calyptrata* | | 2 |
| Portulacaceae | *Calandrinia eremaea* | Small purslane | 1 |
| Proteaceae | *Banksia cunninghamii* | | 4 |
| Proteaceae | *Banksia cunninghamii* subsp. *cunninghamii* | | 4 |
| Proteaceae | *Banksia ericifolia* | Heath-leaved banksia | 2 |
| Proteaceae | *Banksia ericifolia* subsp. *ericifolia* | | 12 |
| Proteaceae | *Banksia marginata* | Silver banksia | 12 |
| Proteaceae | *Banksia penicillata* | | 14 |
| Proteaceae | *Banksia serrata* | Old-man banksia | 17 |
| Proteaceae | *Banksia spinulosa* | Hairpin banksia | 1 |
| Proteaceae | *Banksia spinulosa* var. *collina* | | 3 |
| Proteaceae | *Banksia spinulosa* var. *spinulosa* | | 25 |
| Proteaceae | *Conospermum ellipticum* | | 1 |
| Proteaceae | *Conospermum longifolium* subsp. *mediale* | | 2 |
| Proteaceae | *Conospermum taxifolium* | Variable smoke-bush | 2 |
| Proteaceae | *Conospermum tenuifolium* | Sprawling smoke-bush | 2 |
| Proteaceae | *Grevillea arenaria* | | 1 |
| Proteaceae | *Grevillea buxifolia* | Grey Spider flower | 10 |
| Proteaceae | *Grevillea buxifolia* subsp. *buxifolia* | | 4 |
| Proteaceae | *Grevillea buxifolia* subsp. *ecorniculata* | | 5 |
| Proteaceae | *Grevillea evansiana* | Evans grevillea | 8 |
| Proteaceae | *Grevillea johnsonii* | Johnson's grevillea | 4 |
| Proteaceae | *Grevillea laurifolia* | Laurel-leaf grevillea | 1 |
| Proteaceae | *Grevillea montana* | | 2 |
| Proteaceae | *Grevillea mucronulata* | | 36 |
| Proteaceae | *Grevillea phylicoides* | Grey spider flower | 1 |
| Proteaceae | *Grevillea sericea* | Pink spider flower | 10 |
| Proteaceae | *Grevillea sericea* subsp. *sericea* | | 7 |
| Proteaceae | *Grevillea* spp. | | 2 |
| Proteaceae | *Grevillea triternata* | | 4 |
| Proteaceae | *Hakea dactyloides* | Finger hakea | 84 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Proteaceae | *Hakea laevipes* subsp. *laevipes* | | 22 |
| Proteaceae | *Hakea microcarpa* | Small-fruited hakea | 3 |
| Proteaceae | *Hakea propinqua* | | 5 |
| Proteaceae | *Hakea salicifolia* | Willow-leaved hakea | 11 |
| Proteaceae | *Hakea salicifolia* subsp. *salicifolia* | | 1 |
| Proteaceae | *Hakea sericea* | Needlebush | 16 |
| Proteaceae | *Isopogon anemonifolius* | Broad-leaf drumsticks | 41 |
| Proteaceae | *Isopogon anethifolius* | Narrow-leaf drumsticks | 3 |
| Proteaceae | *Isopogon dawsonii* | Nepean conebush | 42 |
| Proteaceae | *Lomatia arborescens* | Tree lomatia | 2 |
| Proteaceae | *Lomatia myricoides* | River lomatia | 3 |
| Proteaceae | *Lomatia silaifolia* | Crinkle bush | 104 |
| Proteaceae | *Lomatia* spp. | | 1 |
| Proteaceae | *Persoonia levis* | Broad-leaved geebung | 48 |
| Proteaceae | *Persoonia linearis* | Narrow-leaved geebung | 319 |
| Proteaceae | *Persoonia myrtilloides* | | 6 |
| Proteaceae | *Persoonia myrtilloides* subsp. *cunninghamii* | | 8 |
| Proteaceae | *Persoonia myrtilloides* subsp. *myrtilloides* | Myrtle geebung | 19 |
| Proteaceae | *Persoonia oblongata* | | 11 |
| Proteaceae | *Persoonia rigida* | | 1 |
| Proteaceae | *Petrophile canescens* | Conesticks | 13 |
| Proteaceae | *Petrophile pulchella* | Conesticks | 24 |
| Proteaceae | *Stenocarpus salignus* | Scrub beefwood | 9 |
| Proteaceae | *Telopea speciosissima* | Waratah | 6 |
| Proteaceae | *Xylomelum pyriforme* | Woody pear | 25 |
| Psilotaceae | *Tmesipteris parva* | | 1 |
| Pteridaceae | *Pteris tremula* | Tender brake | 3 |
| Ranunculaceae | *Clematis aristata* | Old man's beard | 46 |
| Ranunculaceae | *Clematis glycinoides* | Headache vine | 12 |
| Ranunculaceae | *Clematis glycinoides* var. *glycinoides* | | 67 |
| Ranunculaceae | *Clematis* spp. | | 2 |
| Ranunculaceae | *Ranunculus inundatus* | River buttercup | 1 |
| Ranunculaceae | *Ranunculus lappaceus* | Common buttercup | 31 |
| Ranunculaceae | *Ranunculus* spp. | | 5 |
| Restionaceae | *Baloskion australe* | | 6 |
| Restionaceae | *Empodisma minus* | | 10 |
| Restionaceae | *Lepyrodia leptocaulis* | | 1 |
| Restionaceae | *Lepyrodia muelleri* | | 2 |
| Restionaceae | *Lepyrodia scariosa* | | 12 |
| Restionaceae | *Sporadanthus gracilis* | | 1 |
| Rhamnaceae | *Alphitonia excelsa* | Red Ash | 1 |
| Rhamnaceae | *Cryptandra amara* | Bitter cryptandra | 2 |
| Rhamnaceae | *Cryptandra amara* var. *longiflora* | | 1 |
| Rhamnaceae | *Cryptandra spinescens* | | 12 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Rhamnaceae | *Pomaderris andromedifolia* subsp. *andromedifolia* | | 4 |
| Rhamnaceae | *Pomaderris angustifolia* | | 1 |
| Rhamnaceae | *Pomaderris aspera* | Hazel pomaderris | 1 |
| Rhamnaceae | *Pomaderris betulina* subsp. *betulina* | | 1 |
| Rhamnaceae | *Pomaderris brunnea* | Brown pomaderris | 2 |
| Rhamnaceae | *Pomaderris elliptica* subsp. *elliptica* | | 1 |
| Rhamnaceae | *Pomaderris eriocephala* | | 1 |
| Rhamnaceae | *Pomaderris ferruginea* | | 6 |
| Rhamnaceae | *Pomaderris intermedia* | | 2 |
| Rhamnaceae | *Pomaderris lanigera* | Woolly pomaderris | 3 |
| Rhamnaceae | *Pomaderris ledifolia* | Sydney pomaderris | 2 |
| Rhamnaceae | *Pomaderris ligustrina* subsp. *ligustrina* | | 2 |
| Rhamnaceae | *Pomaderris prunifolia* | Plum-leaf pomaderris | 2 |
| Rhamnaceae | *Pomaderris queenslandica* | Scant pomaderris | 1 |
| Rhamnaceae | *Pomaderris sericea* | Silky pomaderris | 1 |
| Rhamnaceae | *Pomaderris* spp. | | 5 |
| Rosaceae | *Acaena agnipila* | Hairy sheep's burr | 6 |
| Rosaceae | *Acaena novae-zelandiae* | Bidgee-widgee | 28 |
| Rosaceae | *Acaena ovina* | Acaena | 4 |
| Rosaceae | *Acaena* spp. | Sheep's burr | 7 |
| Rosaceae | *Rubus moluccanus* var. *trilobus* | Molucca bramble | 5 |
| Rosaceae | *Rubus nebulosus* | Green-leaved bramble | 1 |
| Rosaceae | *Rubus parvifolius* | Native raspberry | 25 |
| Rosaceae | *Rubus rosifolius* | Rose-leaf bramble | 4 |
| Rubiaceae | *Asperula conferta* | Common woodruff | 39 |
| Rubiaceae | *Asperula scoparia* | Prickly woodruff | 5 |
| Rubiaceae | *Coprosma quadrifida* | Prickly currant bush | 23 |
| Rubiaceae | *Cyclophyllum longipetalum* | Coast canthium | 1 |
| Rubiaceae | *Galium binifolium* | | 25 |
| Rubiaceae | *Galium ciliare* | | 1 |
| Rubiaceae | *Galium gaudichaudii* | Rough bedstraw | 21 |
| Rubiaceae | *Galium liratum* | | 5 |
| Rubiaceae | *Galium migrans* | | 5 |
| Rubiaceae | *Galium propinquum* | Maori bedstraw | 73 |
| Rubiaceae | *Morinda jasminoides* | Sweet morinda | 12 |
| Rubiaceae | *Opercularia aspera* | Coarse stinkweed | 22 |
| Rubiaceae | *Opercularia diphylla* | Stinkweed | 14 |
| Rubiaceae | *Opercularia hispida* | Hairy stinkweed | 9 |
| Rubiaceae | *Pomax umbellata* | Pomax | 171 |
| Rubiaceae | *Psydrax odorata* subsp. *buxifolia* | | 2 |
| Rutaceae | *Boronia anemonifolia* subsp. *anemonifolia* | | 8 |
| Rutaceae | *Boronia anemonifolia* subsp. *variabilis* | Coast boronia | 1 |
| Rutaceae | *Boronia anethifolia* | | 19 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Rutaceae | *Boronia angustisepala* | | 1 |
| Rutaceae | *Boronia barkeriana* subsp. *barkeriana* | | 2 |
| Rutaceae | *Boronia floribunda* | Pale-pink boronia | 7 |
| Rutaceae | *Boronia ledifolia* | Sydney boronia | 6 |
| Rutaceae | *Boronia microphylla* | Small-leaved boronia | 11 |
| Rutaceae | *Boronia pinnata* | | 2 |
| Rutaceae | *Boronia rigens* | Stiff boronia | 7 |
| Rutaceae | *Boronia rubiginosa* | | 6 |
| Rutaceae | *Correa reflexa* | Native fuschia | 1 |
| Rutaceae | *Correa reflexa* var. *reflexa* | Native fuschia | 36 |
| Rutaceae | *Eriostemon australasius* | | 1 |
| Rutaceae | *Nematolepis squamea* subsp. *squamea* | Satinwood | 6 |
| Rutaceae | *Phebalium glandulosum* subsp. *angustifolium* | | 5 |
| Rutaceae | *Phebalium squamulosum* | Scaly phebalium | 3 |
| Rutaceae | *Phebalium squamulosum* subsp. *argenteum* | | 2 |
| Rutaceae | *Phebalium squamulosum* subsp. *gracile* | | 63 |
| Rutaceae | *Philotheca ericifolia* | | 1 |
| Rutaceae | *Philotheca hispidula* | | 13 |
| Rutaceae | *Philotheca myoporoides* | Long-leaf wax flower | 4 |
| Rutaceae | *Philotheca myoporoides* subsp. *myoporoides* | | 3 |
| Rutaceae | *Philotheca obovalis* | | 4 |
| Rutaceae | *Philotheca salsolifolia* | | 24 |
| Rutaceae | *Philotheca salsolifolia* subsp. *salsolifolia* | | 3 |
| Rutaceae | *Philotheca trachyphylla* | Rock waxflower | 2 |
| Rutaceae | *Zieria aspalathoides* subsp. *aspalathoides* | Whorled zieria | 5 |
| Rutaceae | *Zieria compacta* | | 1 |
| Rutaceae | *Zieria cytisoides* | Downy zieria | 5 |
| Rutaceae | *Zieria laevigata* | Smooth zieria | 5 |
| Rutaceae | *Zieria pilosa* | Pilose-leafed zieria | 2 |
| Rutaceae | *Zieria smithii* | Sandfly zieria | 3 |
| Rutaceae | *Zieria* spp. | | 1 |
| Santalaceae | *Choretrum candollei* | White sour bush | 8 |
| Santalaceae | *Choretrum* sp. *A* | | 38 |
| Santalaceae | *Choretrum* spp. | | 1 |
| Santalaceae | *Exocarpos cupressiformis* | Cherry ballart | 28 |
| Santalaceae | *Exocarpos strictus* | Dwarf cherry | 89 |
| Santalaceae | *Leptomeria acida* | Sour currant bush | 44 |
| Santalaceae | *Omphacomeria acerba* | | 11 |
| Santalaceae | *Santalum lanceolatum* | Northern sandalwood | 2 |
| Sapindaceae | *Alectryon subcinereus* | Wild quince | 1 |
| Sapindaceae | *Dodonaea boroniifolia* | Fern-leaf hop-bush | 9 |
| Sapindaceae | *Dodonaea lanceolata* var. *subsessilifolia* | | 1 |
| Sapindaceae | *Dodonaea multijuga* | | 4 |
| Sapindaceae | *Dodonaea triangularis* | Hopbush | 14 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Sapindaceae | *Dodonaea triquetra* | Large-leaf hop-bush | 19 |
| Sapindaceae | *Dodonaea truncatiales* | Angular hop-bush | 6 |
| Sapindaceae | *Dodonaea viscosa* | Sticky hop-bush | 8 |
| Sapindaceae | *Dodonaea viscosa* subsp. *angustifolia* | | 5 |
| Sapindaceae | *Dodonaea viscosa* subsp. *angustissima* | Narrow-leaf hop-bush | 3 |
| Sapindaceae | *Dodonaea viscosa* subsp. *cuneata* | Wedge-leaf hop-bush | 63 |
| Sapindaceae | *Dodonaea viscosa* subsp. *spatulata* | Broad-leaf hopbush | 3 |
| Sapindaceae | *Dodonaea viscosa* subsp. *viscosa* | | 1 |
| Schizaeaceae | *Schizaea bifida* | Forked comb fern | 3 |
| Schizaeaceae | *Schizaea dichotoma* | Branched comb fern | 1 |
| Scrophulariaceae | *Derwentia blakelyi* | | 2 |
| Scrophulariaceae | *Derwentia perfoliata* | Digger's speedwell | 1 |
| Scrophulariaceae | *Gratiola pedunculata* | | 1 |
| Scrophulariaceae | *Gratiola pumilo* | | 1 |
| Scrophulariaceae | *Mimulus prostratus* | Small monkey-flower | 1 |
| Smilacaceae | *Smilax australis* | Lawyer vine | 25 |
| Smilacaceae | *Smilax glyciphylla* | Sweet sarsparilla | 35 |
| Solanaceae | *Solanum amblymerum* | | 9 |
| Solanaceae | *Solanum americanum* | Glossy nightshade | 3 |
| Solanaceae | *Solanum aviculare* | Kangaroo apple | 2 |
| Solanaceae | *Solanum brownii* | Violet nightshade | 32 |
| Solanaceae | *Solanum campanulatum* | | 21 |
| Solanaceae | *Solanum opacum* | Green-berry nightshade | 2 |
| Solanaceae | *Solanum parvifolium* subsp. *parvifolium* | Nightshade | 5 |
| Solanaceae | *Solanum prinophyllum* | Forest nightshade | 53 |
| Solanaceae | *Solanum pungetium* | Eastern nightshade | 2 |
| Solanaceae | *Solanum stelligerum* | Devil's needles | 2 |
| Solanaceae | *Solanum vescum* | | 1 |
| Sphagnaceae | *Sphagnum* spp. | | 5 |
| Stackhousiaceae | *Stackhousia monogyna* | Creamy candles | 8 |
| Stackhousiaceae | *Stackhousia muricata* | Stackhousia | 1 |
| Stackhousiaceae | *Stackhousia* spp. | | 1 |
| Stackhousiaceae | *Stackhousia viminea* | Slender stackhousia | 11 |
| Sterculiaceae | *Brachychiton populneus* | Kurrajong | 5 |
| Sterculiaceae | *Brachychiton populneus* subsp. *populneus* | | 34 |
| Sterculiaceae | *Commersonia fraseri* | Brush kurrajong | 1 |
| Sterculiaceae | *Lasiopetalum ferrugineum* var. *cordatum* | | 4 |
| Sterculiaceae | *Lasiopetalum parviflorum* | | 2 |
| Stylidiaceae | *Stylidium graminifolium* | Grass triggerplant | 17 |
| Stylidiaceae | *Stylidium laricifolium* | Tree triggerplant | 2 |
| Stylidiaceae | *Stylidium lineare* | Narrow-leaved triggerplant | 4 |
| Stylidiaceae | *Stylidium productum* | | 41 |
| Thymelaeaceae | *Pimelea curviflora* | Rice flower | 3 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Thymelaeaceae | *Pimelea curviflora* var. *divergens* | | 3 |
| Thymelaeaceae | *Pimelea curviflora* var. *sericea* | | 3 |
| Thymelaeaceae | *Pimelea latifolia* subsp. *elliptifolia* | | 25 |
| Thymelaeaceae | *Pimelea latifolia* subsp. *hirsuta* | | 1 |
| Thymelaeaceae | *Pimelea ligustrina* | | 1 |
| Thymelaeaceae | *Pimelea ligustrina* subsp. *ligustrina* | | 4 |
| Thymelaeaceae | *Pimelea linifolia* | Slender rice flower | 13 |
| Thymelaeaceae | *Pimelea linifolia* subsp. *caesia* | | 2 |
| Thymelaeaceae | *Pimelea linifolia* subsp. *collina* | | 1 |
| Thymelaeaceae | *Pimelea linifolia* subsp. *linifolia* | | 45 |
| Ulmaceae | *Trema tomentosa* var. *aspera* | Native peach | 9 |
| Unidentified | *Unidentified* | | 1 |
| Urticaceae | *Australina pusilla* | | 1 |
| Urticaceae | *Dendrocnide excelsa* | Giant stinging tree | 2 |
| Urticaceae | *Urtica incisa* | Stinging nettle | 37 |
| Violaceae | *Hybanthus monopetalus* | Slender violet-bush | 14 |
| Violaceae | *Hybanthus vernonii* subsp. *scaber* | | 1 |
| Violaceae | *Hybanthus vernonii* subsp. *vernonii* | | 4 |
| Violaceae | *Melicytus dentatus* | Tree violet | 36 |
| Violaceae | *Viola banksii* | | 3 |
| Violaceae | *Viola betonicifolia* subsp. *betonicifolia* | | 33 |
| Violaceae | *Viola eminens* | | 1 |
| Violaceae | *Viola hederacea* | Ivy-leaved violet | 49 |
| Violaceae | *Viola sieberiana* | | 1 |
| Violaceae | *Viola silicestris* | | 7 |
| Viscaceae | *Notothixos cornifolius* | Kurrajong mistletoe | 1 |
| Vitaceae | *Cayratia clematidea* | Native grape | 2 |
| Vitaceae | *Cissus hypoglauca* | Giant water vine | 20 |
| Vitaceae | *Clematicissus opaca* | Pepper vine | 1 |
| Winteraceae | *Tasmannia insipida* | Brush pepperbush | 6 |
| Xanthorrhoeaceae | *Xanthorrhoea acaulis* | | 1 |
| Xanthorrhoeaceae | *Xanthorrhoea arborea* | | 4 |
| Xanthorrhoeaceae | *Xanthorrhoea glauca* subsp. *angustifolia* | | 1 |
| Xanthorrhoeaceae | *Xanthorrhoea johnsonii* | Johnson's grass tree | 12 |
| Xanthorrhoeaceae | *Xanthorrhoea media* | | 9 |
| Xanthorrhoeaceae | *Xanthorrhoea resinosa* | | 1 |
| Xanthorrhoeaceae | *Xanthorrhoea* spp. | | 2 |
| Xyridaceae | *Xyris gracilis* | | 6 |
| Xyridaceae | *Xyris operculata* | | 2 |
| Zamiaceae | *Macrozamia communis* | Burrawang | 30 |
| Zamiaceae | *Macrozamia reducta* | | 25 |
| Zamiaceae | *Macrozamia secunda* | | 1 |
| Zamiaceae | *Macrozamia spiralis* | | 3 |
| Zamiaceae | *Macrozamia* spp. | | 2 |

## Appendix D: Exotic flora species recorded at systematic floristic sample sites

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Amaranthaceae | *Gomphrena celosioides* | Gomphrena Weed | 1 |
| Apocynaceae | *Gomphocarpus fruticosus* | Narrow-leaved cotton bush | 3 |
| Asteraceae | *Bidens pilosa* | Cobbler's pegs | 3 |
| Asteraceae | *Bidens subalternans* | Greater beggar's ticks | 4 |
| Asteraceae | *Chondrilla juncea* | Skeleton weed | 1 |
| Asteraceae | *Cineraria lyratiformis* | African marigold | 19 |
| Asteraceae | *Cirsium* spp. | | 1 |
| Asteraceae | *Cirsium vulgare* | Spear thistle | 26 |
| Asteraceae | *Conyza bonariensis* | Flaxleaf fleabane | 6 |
| Asteraceae | *Conyza canadensis* var. *canadensis* | Canadian fleabane | 3 |
| Asteraceae | *Conyza parva* | Fleabane | 3 |
| Asteraceae | *Conyza sumatrensis* | Tall fleabane | 4 |
| Asteraceae | *Hypochaeris glabra* | Smooth catsear | 3 |
| Asteraceae | *Hypochaeris radicata* | Catsear | 36 |
| Asteraceae | *Leontodon taraxacoides* subsp. *taraxacoides* | Lesser hawkbit | 1 |
| Asteraceae | *Onopordum acanthium* subsp. *acanthium* | Scotch thistle | 2 |
| Asteraceae | *Senecio jacobaea* | Ragwort | 2 |
| Asteraceae | *Senecio madagascariensis* | Fireweed | 8 |
| Asteraceae | *Silybum marianum* | Variegated thistle | 3 |
| Asteraceae | *Sonchus oleraceus* | Common sowthistle | 14 |
| Asteraceae | *Taraxacum officinale* | Dandelion | 25 |
| Asteraceae | *Xanthium* spp. | | 1 |
| Boraginaceae | *Cynoglossum* spp. | | 1 |
| Boraginaceae | *Echium plantagineum* | Patterson's curse | 1 |
| Boraginaceae | *Echium vulgare* | Viper's bugloss | 2 |
| Boraginaceae | *Heliotropium europaeum* | Potato weed | 2 |
| Brassicaceae | *Arabidopsis thaliana* | Thale cress | 1 |
| Brassicaceae | *Cardamine* spp. | | 1 |
| Brassicaceae | *Lepidium africanum* | Common peppercress | 3 |
| Brassicaceae | *Rapistrum rugosum* | Turnip weed | 4 |
| Brassicaceae | *Rorippa* spp. | | 1 |
| Cactaceae | *Opuntia aurantiaca* | Tiger pear | 4 |
| Cactaceae | *Opuntia stricta* var. *stricta* | Common prickly pear | 18 |
| Callitrichaceae | *Callitriche stagnalis* | Common starwort | 1 |
| Caprifoliaceae | *Lonicera japonica* | Japanese honeysuckle | 1 |
| Caryophyllaceae | *Arenaria leptoclados* | Lesser thyme-leaVED sandwort | 4 |
| Caryophyllaceae | *Cerastium* spp. | | 1 |
| Caryophyllaceae | *Paronychia brasiliana* | Chilean whitlow wort, Brazilian whitlow | 3 |
| Caryophyllaceae | *Petrorhagia dubia* | | 4 |
| Caryophyllaceae | *Petrorhagia nanteuilii* | Proliferous pink | 11 |
| Caryophyllaceae | *Polycarpon tetraphyllum* | Four-leaved allseed | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Caryophyllaceae | *Stellaria media* | Common chickweed | 8 |
| Clusiaceae | *Hypericum perforatum* | St. Johns wort | 24 |
| Fabaceae (Faboideae) | *Medicago minima* | Woolly burr medic | 1 |
| Fabaceae (Faboideae) | *Medicago sativa* | Lucerne | 2 |
| Fabaceae (Faboideae) | *Medicago* spp. | A medic | 1 |
| Fabaceae (Faboideae) | *Robinia pseudoacacia* | Black locust | 2 |
| Fabaceae (Faboideae) | *Trifolium angustifolium* | Narrow-leaved clover | 2 |
| Fabaceae (Faboideae) | *Trifolium arvense* | Haresfoot clover | 18 |
| Fabaceae (Faboideae) | *Trifolium campestre* | Hop clover | 2 |
| Fabaceae (Faboideae) | *Trifolium dubium* | Yellow suckling clover | 3 |
| Fabaceae (Faboideae) | *Trifolium fragiferum* | Strawberry clover | 1 |
| Fabaceae (Faboideae) | *Trifolium repens* | White clover | 20 |
| Fabaceae (Faboideae) | *Vicia sativa* subsp. *nigra* | Narrow-leaved vetch | 1 |
| Gentianaceae | *Centaurium erythraea* | Common centaury | 6 |
| Gentianaceae | *Centaurium tenuiflorum* | Branched centaury, slender centaury | 1 |
| Geraniaceae | *Erodium moschatum* | Musky crowfoot | 1 |
| Geraniaceae | *Geranium molle* subsp. *molle* | Cranesbill geranium | 2 |
| Lamiaceae | *Prunella vulgaris* | Self-heal | 1 |
| Malvaceae | *Modiola caroliniana* | Red-flowered mallow | 2 |
| Malvaceae | *Sida rhombifolia* | Paddy's lucerne | 7 |
| Myrsinaceae | *Anagallis arvensis* | Scarlet pimpernel | 9 |
| Oxalidaceae | *Oxalis corniculata* | Creeping oxalis | 2 |
| Oxalidaceae | *Oxalis pes-caprae* | Soursob | 1 |
| Plantaginaceae | *Plantago lanceolata* | Lamb's tongues | 3 |
| Plantaginaceae | *Veronica arvensis* | Wall speedwell | 1 |
| Poaceae | *Agrostis* spp. | Bent grass | 3 |
| Poaceae | *Aira caryophyllea* | Silvery hairgrass | 1 |
| Poaceae | *Briza minor* | Shivery grass | 1 |
| Poaceae | *Bromus brevis* | | 1 |
| Poaceae | *Bromus diandrus* | Great brome | 2 |
| Poaceae | *Bromus molliformis* | Soft brome | 1 |
| Poaceae | *Bromus* spp. | A brome | 1 |
| Poaceae | *Cynosurus echinatus* | Rough dog's tail | 1 |
| Poaceae | *Digitaria* spp. | A finger grass | 3 |
| Poaceae | *Ehrharta erecta* | Panic veldtgrass | 3 |
| Poaceae | *Eragrostis* spp. | A lovegrass | 1 |
| Poaceae | *Festuca pratensis* | Meadow fescue | 1 |
| Poaceae | *Holcus lanatus* | Yorkshire fog | 2 |
| Poaceae | *Hordeum* spp. | A barley grass | 1 |
| Poaceae | *Paspalum dilatatum* | Paspalum | 1 |
| Poaceae | *Pennisetum clandestinum* | Kikuyu grass | 1 |
| Poaceae | *Poa annua* | Winter grass | 2 |
| Poaceae | *Setaria parviflora* | | 1 |
| Poaceae | *Vulpia bromoides* | Squirrel tail fesque | 3 |
| Poaceae | *Vulpia muralis* | Wall fescue | 1 |

| Family | Scientific Name | Common Name | Number of Records |
|---|---|---|---|
| Polygonaceae | *Acetosella vulgaris* | Sheep sorrel | 3 |
| Polygonaceae | *Persicaria* spp. | Knotweed | 1 |
| Polygonaceae | *Rumex crispus* | Curled dock | 2 |
| Ranunculaceae | *Ranunculus repens* | Creeping buttercup | 1 |
| Rosaceae | *Rosa rubiginosa* | Sweet briar | 5 |
| Rosaceae | *Rubus fruticosus* sp. *agg.* | Blackberry complex | 6 |
| Rosaceae | *Rubus ulmifolius* | Blackberry | 11 |
| Rubiaceae | *Galium aparine* | Goosegrass | 1 |
| Rubiaceae | *Richardia humistrata* | | 1 |
| Scrophulariaceae | *Verbascum virgatum* | Twiggy mullein | 2 |
| Solanaceae | *Nicotiana* spp. | | 2 |
| Solanaceae | *Solanum nigrum* | Black-berry nightshade | 6 |
| Solanaceae | *Solanum pseudocapsicum* | Madeira winter cherry | 1 |
| Urticaceae | *Urtica urens* | Small nettle | 1 |
| Verbenaceae | *Verbena bonariensis* | Purpletop | 1 |
| Verbenaceae | *Verbena rigida* var. *rigida* | Veined verbena | 1 |

## Appendix E: Comparison between map units of this study and those of Bell (1998)

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Bell Code | Bell Name |
|---|---|---|---|---|
| Rainforests | S_RF09 | Blue Mountains Gorge Subtropical-Dry Rainforest | RF3 | Sandstone Gorge Subtropical Rainforest |
| Rainforests | S_RF13 | Hunter Range Grey Myrtle Layered Forest | RF1 | Sandstone Gorge Dry Rainforest (b) |
| Rainforests | S_RF14 | Montane Basalt Warm Temperate Rainforest | RF4 | Montane Basalt Cap Rainforest |
| Rainforests | S_RF11 | Sydney Hinterland Grey Myrtle Dry Rainforest | RF1 | Sandstone Gorge Dry Rainforest (a) |
| Rainforests | S_RF12 | Sydney Hinterland Warm Temperate Rainforest | RF2 | Sandstone Gorge Warm Temperate Rainforest |
| Rainforests | S_RF15 | Dry Ranges Rocky Fig Rainforest Scrub | not described | not described |
| Wet Sclerophyll Forests | S_WSF20 | Blue Mountains Ash Moist Forest | not described | not described |
| Wet Sclerophyll Forests | S_WSF10 | Sydney Hinterland Blue Gum–Turpentine Gully Forest | F11 | Narrabeen Sheltered Blue Gum Forest |
| Wet Sclerophyll Forests | S_WSF21 | Sydney Montane Basalt Monkey Gum Forest | F15 | Montane Basalt Cap Forest |
| Wet Sclerophyll Forests | S_WSF22 | Wollemi Monkey Gum-Peppermint Gully Forest | F8 | Narrabeen East Wollemi Sheltered Dry Forest (part) |
| Wet Sclerophyll Forests | S_WSF23 | Blue Mountains Diatreme Forest | F17 | Moist Basalt Diatreme Forest |
| Wet Sclerophyll Forests | S_WSF24 | Central Tableland Flats Snow Gum-Ribbon Gum Forest | not described | not described |
| Wet Sclerophyll Forests | S_WSF25 | Central Tableland Ribbon Gum-Apple Gully Forest | W16/W17 | Western Wollemi Alluvial Woodland Complex (b)/Cudgegong River Alluvial Woodland |
| Wet Sclerophyll Forests | S_WSF30 | Hunter Range Basalt Paperbark Thicket | not described | not described |
| Wet Sclerophyll Forests | S_WSF28 | Montane Basalt Ribbon Gum Moist Forest | not described | not described |
| Wet Sclerophyll Forests | S_WSF29 | Montane Basalt Ribbon Gum-Snow Gum Forest | not described | not described |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | F15 | Montane Basalt Cap Forest |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | F16 | Montane Basalt Diatreme Forest |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | SH2 | Towinhingy Dry Basalt Shrubland |
| Grassy Woodlands | S_GW09 | Cudgegong Footslopes Yellow | | not described |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Bell Code | Bell Name |
|---|---|---|---|---|
| | | Box Forest | | |
| Grassy Woodlands | S_GW11 | Central Tableland Clay White Box Woodland | F18 | Dry Basalt Diatreme Forest (part) |
| Grassy Woodlands | S_GW10 | Hunter Range Basalt Grey Box Woodland | F18 | Dry Basalt Diatreme Forest |
| Grassy Woodlands | S_GW07 | Montane Basalt Stringybark-Brittle Gum Forest | W22 | Nullo Mountain Basalt Woodland |
| Grassy Woodlands | S_GW06 | Western Hunter Flats Fuzzy Box Woodland | not described | not described |
| Grassy Woodlands | S_GW05 | Western Hunter Footslopes Box Woodland | W24 | Permian Growee Talus Woodland/Permian Yellow Box Woodland |
| Dry Sclerophyll Forests | S_DSF40 | Blue Mountains Gorge Grey Gum Sheltered Forest | W16 | Western Wollemi Alluvial Woodland Complex (part) |
| Dry Sclerophyll Forests | S_DSF66 | Capertee Footslopes Box-Stringybark Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF68 | Capertee Escarpment Slaty Gum Forest | | Permian Capertee Talus Woodland (part) |
| Dry Sclerophyll Forests | S_DSF39 | Western Hunter Flats Ironbark Forest | W14 | Goulburn Valley Alluvial Ironbark Woodland |
| Dry Sclerophyll Forests | S_DSF44 | Western Hunter Residual Basalt Low Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF55 | Blue Mountains Sands Scribbly Gum Woodland | not described | not described |
| Dry Sclerophyll Forests | S_DSF67 | Capertee Escarpment Ironbark Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF46 | Central Tableland Sand-Slope Scribbly Gum Woodland | W8/W9 | Narrabeen Upper Cudgegong Sandslope Woodland (b) /Narrabeen Heffrons Gap Woodland |
| Dry Sclerophyll Forests | S_DSF48 | Goulburn River Ranges Cypress-Ironbark Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF47 | Cudgegong Footslopes Forest | W8 | Narrabeen Upper Cudgegong Sandslope Woodland (a) |
| Dry Sclerophyll Forests | S_DSF49 | Growee Range Grey Gum-Scribbly Gum Forest | W4 | Narrabeen Bogee Stringybark Woodland |
| Dry Sclerophyll Forests | S_DSF50 | Growee Range Grey Gum Sheltered Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF51 | Growee Range Rocky Stringybark Woodland | H10 | Narrabeen Pagoda Rocky Heath Scrub |
| Dry Sclerophyll Forests | S_DSF41 | Hunter Escarpment Slaty Gum- | W23 | Permian Widden talus |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Bell Code | Bell Name |
|---|---|---|---|---|
| | | Box Forest | | Woodland |
| Dry Sclerophyll Forests | S_DSF28 | Hunter Range Ironbark Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF52 | Hunter Range Peppermint Sheltered Forest | F8 | Narrabeen East Wollemi Sheltered Dry Forest |
| Dry Sclerophyll Forests | S_DSF33 | Hunter Range Stringybark-Apple-Peppermint Forest | W6 | Narrabeen Wollemi Woodland Complex |
| Dry Sclerophyll Forests | S_DSF22 | Sydney Hinterland Peppermint-Apple Forest | F12/W13 | Hawkesbury Sheltered Dry Forest/Hawkesbury Mountain Lagoon Exposed Forest |
| Dry Sclerophyll Forests | S_DSF54 | Western Blue Mountains Pagoda Woodland | not described | not described |
| Dry Sclerophyll Forests | S_DSF55 | Upper Blue Mountains Sheltered Peppermint Forest | F9/F10 | Narrabeen West Wollemi Sheltered Dry Forest/Narrabeen Pagoda Sheltered Forest (a) |
| Dry Sclerophyll Forests | S_DSF56 | Western Blue Mountains Peppermint Forest | not described | not described |
| Dry Sclerophyll Forests | S_DSF57 | Western Hunter Caley's Ironbark Low Forest | W1 | Narrabeen Goulburn Valley Ironbark Woodland |
| Dry Sclerophyll Forests | S_DSF58 | Western Hunter Currawang Low Forest | W5 | Narrabeen Arid Acacia Woodland |
| Dry Sclerophyll Forests | S_DSF59 | Western Hunter Escarpment Ironbark Forest | W1 | Narrabeen Goulburn Valley Ironbark Woodland |
| Dry Sclerophyll Forests | S_DSF60 | Western Hunter Grey Gum-Stringybark Forest | W3 | Narrabeen Bylong Arid Woodland |
| Dry Sclerophyll Forests | S_DSF61 | Western Hunter Rocky Dwyer's Red Gum-Cypress Woodland | W2 | Narrabeen Goulburn Valley Exposed Woodland |
| Dry Sclerophyll Forests | S_DSF63 | Western Hunter Stringybark-Ironbark Sheltered Forest | W1 | Narrabeen Goulburn Valley Ironbark Woodland |
| Dry Sclerophyll Forests | S_DSF62 | Western Hunter Rocky Heath-Mallee | H1/H9 | Narrabeen Arid Rocky Heath/Narrabeen Kerrabee Arid Rocky Heath |
| Dry Sclerophyll Forests | S_DSF64 | Wolgan Plateau Grey Gum-Stringybark Woodland | W6 | Narrabeen Wollemi Woodland Complex |
| Dry Sclerophyll Forests | S_DSF65 | Wollemi Yertchuk-Stringybark Exposed Woodland | W6 | Narrabeen Wollemi Woodland Complex |
| Heathlands | S_HL12 | Blue Mountains Heath-Mallee | H6/H5/H4 | Narrabeen Wollangambe Rocky Heath/Narrabeen Montane Mallee Heath/Narrabeen Montane Rocky Heath |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Bell Code | Bell Name |
|---|---|---|---|---|
| Heathlands | S_HL13 | Western Blue Mountains Pagoda Shrubland | H2/H3 | Narrabeen Pagoda Rocky Heath-Scrub/Narrabeen Newnes Plateau Callitris Heath |
| Freshwater Wetlands | S_FrW14 | Blue Mountains Coral Fern Shrub Swamp | not described | not described |
| Freshwater Wetlands | S_FrW15 | Blue Mountains Sedge Swamp | SE1 | Narrabeen Blue Mountains Sedgeland |
| Freshwater Wetlands | S_FrW16 | Central Tableland Flats Swamp Gum Low Forest | SS2/SG1 | Upper Cudgegong Alluvial Shrub-swamp/Cudgegong River Swamp Grassland |
| Freshwater Wetlands | S_FrW17 | Central Tableland Sedge Swamp | SE3/B1 | Upper Cudgegong Alluvial Sedgeland/Sphagnum Bog |
| Forested Wetlands | S_FoW13 | River Oak Forest | F20 | Alluvial River Oak |
| Forested Wetlands | S_FoW05 | Sydney Hinterland Riverflat Paperbark Swamp Forest | not described | not described |
| Forested Wetlands | S_FoW19 | Western Hunter Alluvial Rough-barked Apple Forest | w15 | Northern Wollemi Alluvial Apple Woodland |
| Other Vegetation | S_MGL | Mixed Derived Native and Agricultural Grasslands | SS2 | Kerrabee Dry Basalt Herbfield |

## Appendix F: Comparison between map units of this study and those of Sommerville (2009), Tozer et al. (2010) and DEC (2006).

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Rainforests | S_RF09 | Blue Mountains Gorges Subtropical-Dry Rainforest | | not described | RF40 | Temperate Dry Rainforest | | |
| Rainforests | S_RF13 | Hunter Range Grey Myrtle Layered Forest | MU16/MU17 | Grey Myrtle/ Large-fruited Grey gum gully rainforest of northern Wollemi NP and upper Hunter Valley (MU17); Grey Myrtle dry rainforest of sheltered sandstone gullies in northern Wollemi NP (MU16) | | | | |
| Rainforests | S_RF14 | Montane Basalt Warm Temperate Rainforest | MU12 | Sassafras warm temperate rainforest (MU12); | RF316 | Yarrawarra Temperate Rainforest (RFp516) | | |
| Rainforests | S_RF11 | Sydney Hinterland Grey Myrtle Dry Rainforest | | | RF38 | Grey Myrtle Dry Rainforest | MU2 | Mountain Gully Grey Myrtle Rainforest |
| Rainforests | S_RF12 | Sydney Hinterland Warm Temperate Rainforest | MU10 | Lilly Pilly/Coachwood sandstone gully warm temperate rainforest on sandstone ranges of the Sydney Basin (MU10 | RF114 | Sandstone Scarp Warm Temperate Rainforest | MU1 | Sandstone Warm Temperate Rainforest |
| Rainforests | S_RF15 | Dry Ranges Rocky Fig Rainforest Scrub | MU20 | Rusty Fig/ Alectryon subcinereus/ Native Olive/ dry rainforest of the Central Hunter Valley | not described | | | |
| Wet Sclerophyll Forests | S_WSF20 | Blue Mountains Ash Moist Forest | | not described | | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Wet Sclerophyll Forests | S_WSF10 | Sydney Hinterland Blue Gum–Turpentine Gully Forest | MU56 | Large fruited Grey Gum/Mountain Blue Gum/Forest Oak shrubby open forest on ranges of the Sydney Basin | not described | | | |
| Wet Sclerophyll Forests | S_WSF21 | Sydney Montane Basalt Monkey Gum Forest | MU85 | Monkey Gum/ Eucalyptus blaxlandii shrubby open forest on basalt of western Blue Mountains (MU85) | WSF168 | Shale-Basalt Sheltered Forest (WSFp168); | | |
| Wet Sclerophyll Forests | S_WSF22 | Wollemi Monkey Gum-Peppermint Gully Forest | MU100 | a component of Sydney Peppermint semi-mesic open forest of northern Wollemi | not described | | MU4 | Sheltered Gully Brown Barrel Ferny Forest |
| Wet Sclerophyll Forests | S_WSF23 | Blue Mountains Diatreme Forest | | not described | not described | | | |
| Wet Sclerophyll Forests | S_WSF24 | Central Tableland Flats Snow Gum-Ribbon Gum Forest | | not described | GW520 | Tableland Swamp Flats Forest | MU11 | Tableland Gully Snow Gum-Ribbon Gum Grassy Forest |
| Wet Sclerophyll Forests | S_WSF25 | Central Tableland Ribbon Gum-Apple Gully Forest | | not described | not described | | MU13/MU55/MU56 | Tableland Gully Ribbon Gum-Blackwood-Apple Box Forest/Tableland Riparian Scrub Complex/Wolgan Riparian Scrub Complex |
| Wet Sclerophyll Forests | S_WSF30 | Hunter Range Basalt Paperbark Thicket | | not described | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Wet Sclerophyll Forests | S_WSF28 | Montane Basalt Ribbon Gum Moist Forest | | not described | not described | | | |
| Wet Sclerophyll Forests | S_WSF29 | Montane Basalt Ribbon Gum-Snow Gum Forest | MU27 | Forest Ribbon Gum/Silvertop Stringybark/Snow Gum/Snow Grass open forest/MU28 and MU150 | not described | | | |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | MU86 | Ribbon Gum/Parramatta Wattle shrubby open forest of western Blue Mountains | not described | | MU9 | Mount Vincent Basalt Ribbon Gum Grassy Forest |
| Grassy Woodlands | S_GW09 | Cudgegong Footslopes Yellow Box Forest | | not described | not described | | | |
| Grassy Woodlands | S_GW11 | Central Tableland Clay White Box Woodland | MU62 | White Box/ Blackthorn shrubby woodland of western Blue Mountains (MU62); | not described | | | |
| Grassy Woodlands | S_GW10 | Hunter Range Basalt Grey Box Woodland | MU121 | Grey Box/ Slaty Box shrub/ grass woodland | not described | | | |
| Grassy Woodlands | S_GW07 | Montane Basalt Stringybark-Brittle Gum Forest | MU151 | Silvertop Stringybark/ Boxthorn Woodland on basalt | not described | | | |
| Grassy Woodlands | S_GW06 | Western Hunter Flats Fuzzy Box Woodland | | not described | not described | | | |
| Grassy Woodlands | S_GW05 | Western Hunter Footslopes Box Woodland | MU62 | White Box/ Blackthorn shrubby woodland of western Blue Mountains (MU62); | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF40 | Blue Mountains Gorge Grey Gum Sheltered Forest | | not described | DSF37 | Kowmung-Wollondilly Grassy Gorge Forest | MU3/MU22 | Hillslope Talus Mountain Grey Gum-Brown Stringybark-Grey Gum-Broad-leaved Hickory Moist Forest/Kanangra Gorge Sheltered Grey Gum Forest |
| Dry Sclerophyll Forests | S_DSF66 | Capertee Footslopes Box-Stringybark Forest | | not described | not described | | MU21 | Capertee-Wolgan Slopes Red Box-Grey Gum-Stringybark Grassy Woodland |
| Dry Sclerophyll Forests | S_DSF68 | Capertee Escarpment Slaty Gum Forest | | not described | not described | | MU41 | Capertee Slopes Slaty Gum-Grey Gum-Mugga-Callitris Open Forest |
| Dry Sclerophyll Forests | S_DSF39 | Western Hunter Flats Ironbark Forest | MU78 | Blakely's Red Gum/ Narrow-leaved Ironbark shrubby woodland | not described | | | |
| Dry Sclerophyll Forests | S_DSF44 | Western Hunter Residual Basalt Low Forest | | not described | not described | | | |
| Dry Sclerophyll Forests | S_DSF55 | Blue Mountains Sands Scribbly Gum Woodland | | not described | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF67 | Capertee Escarpment Ironbark Forest | | not described | not described | | MU40 | Capertee Slopes Red Ironbark-Red Stringybark-Narrow-leaved Stringybark Shrubby Woodland |
| Dry Sclerophyll Forests | S_DSF46 | Central Tableland Sand-Slope Scribbly Gum Woodland | | not described | not described | | | |
| Dry Sclerophyll Forests | S_DSF48 | Goulburn River Ranges Cypress-Ironbark Forest | MU139 | Black Pine/ Red Ironbark/ Brown Bloodwood shrubby woodland | not described | | | |
| Dry Sclerophyll Forests | S_DSF47 | Cudgegong Footslopes Forest | | not described | not described | | | |
| Dry Sclerophyll Forests | S_DSF49 | Growee Range Grey Gum-Scribbly Gum Forest | MU142 | Large-fruited Grey Gum/ Scribbly Gum/ Black Pine heathy open forest of western Blue Mountains | not described | | | |
| Dry Sclerophyll Forests | S_DSF50 | Growee Range Grey Gum Sheltered Forest | MU135 | Red Ironbark/ Large fruited grey gum/ Narrow-leaved Stringybark/ Brown Bloodwood shrubby open forest in north west Wollemi and eastern Goulburn River NP | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF51 | Growee Range Rocky Stringybark Woodland | MU132 | Narrow-leaved Stringybark/ Fringe Myrtle/ Phebalium squamulosum heathy woodland of the western Blue Mountains (MU132) | not described | | | |
| Dry Sclerophyll Forests | S_DSF41 | Hunter Escarpment Slaty Gum-Box Forest | MU121 | Grey Box/ Slaty Box shrub/ grass woodland | not described | | | |
| Dry Sclerophyll Forests | S_DSF28 | Hunter Range Ironbark Forest | MU92 | Narrow-leaved Ironbark/ Rough-barked Apple shrubby open forest | not described | | | |
| Dry Sclerophyll Forests | S_DSF52 | Hunter Range Peppermint Sheltered Forest | MU100 | Sydney Peppermint semi-mesic open forest of northern Wollemi | not described | | | |
| Dry Sclerophyll Forests | S_DSF33 | Hunter Range Stringybark-Apple-Peppermint Forest | MU98 | Narrow-leaved Stringybark/Large-fruited Grey Gum shrubby open forest of northern Wollemi | not described | | | |
| Dry Sclerophyll Forests | S_DSF22 | Sydney Hinterland Peppermint-Apple Forest | 96 | Smooth-barked Apple/ Turpentine heathy woodland on sandstones of the northern Sydney Basin | DSF142 | Hinterland Sandstone Gully Forest | | |
| Dry Sclerophyll Forests | S_DSF54 | Western Blue Mountains Pagoda Woodland | MU132 | Narrow-leaved Stringybark/ Fringe Myrtle/ Phebalium squamulosum heathy woodland of the western Blue Mountains (MU132) | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF55 | Upper Blue Mountains Sheltered Peppermint Forest | MU100 | Sydney Peppermint semi-mesic open forest of northern Wollemi | DSF76 | Moist Montane Sandstone Forest (DSFp76) | MU29 | Sandstone Slopes Sydney Peppermint Shrubby Forest |
| Dry Sclerophyll Forests | S_DSF56 | Western Blue Mountains Peppermint Forest | MU99 | Sydney Peppermint/Large-fruited Grey Gum heathy open forest of north-west Wollemi (MU99) | not described | | MU27 | Mount Airly Sydney Peppermint-Narrow-leaved Stringybark-Grey Gum Shrubby Open Forest |
| Dry Sclerophyll Forests | S_DSF57 | Western Hunter Caley's Ironbark Low Forest | MU143 | Caley's Ironbark/Currawang shrubby woodland of northern Wollemi | not described | | | |
| Dry Sclerophyll Forests | S_DSF58 | Western Hunter Currawang Low Forest | MU144 | Brown Bloodwood/ Currawang/ Caley's Ironbark shrubby woodland of eastern Goulburn River area (MU144); | not described | | | |
| Dry Sclerophyll Forests | S_DSF59 | Western Hunter Escarpment Ironbark Forest | MU135 | a component of Red Ironbark/ Large fruited grey gum/ Narrow-leaved Stringybark/ Brown Bloodwood shrubby open forest in north-west Wollemi and eastern Goulburn River NP (MU135) | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF60 | Western Hunter Grey Gum-Stringybark Forest | MU136 | Narrow-leaved Stringybark/Large Fruited Grey Gum heathy open forest in northern Wollemi (MU136) | not described | | | |
| Dry Sclerophyll Forests | S_DSF61 | Western Hunter Rocky Dwyer's Red Gum-Cypress Woodland | MU137 | Brown Bloodwood/ Dwyer's Red Gum heathy woodland of northern Wollemi and Goulburn River NP (MU137) | not described | | | |
| Dry Sclerophyll Forests | S_DSF63 | Western Hunter Stringybark-Ironbark Sheltered Forest | MU135 | Red Ironbark/ Large fruited grey gum/ Narrow-leaved Stringybark/ Brown Bloodwood shrubby open forest in north west Wollemi and eastern Goulburn River NP | not described | | | |
| Dry Sclerophyll Forests | S_DSF62 | Western Hunter Rocky Heath-Mallee | MU145/ MU146 | Dwyer’s Red Gum/ Fringe Myrtle sandstone plateau heathy open woodland of the upper Hunter Valley (MU145); Dwyer’s Red Gum/ Micromyrtus sessilis sandstone plateau heathy open woodland of the upper Hunter Valley(146) | not described | | | |
| Dry Sclerophyll Forests | S_DSF64 | Wolgan Plateau Grey Gum-Stringybark Woodland | | not described | not described | | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF65 | Wollemi Yertchuk-Stringybark Exposed Woodland | MU130 | Whipstick Mallee Ash/ Yertchuk heathy mallee woodland of central Wollemi | not described | | | |
| Heathlands | S_HL12 | Blue Mountains Heath-Mallee | 131 | Whipstick Mallee Ash/ Casuarina/ Baeckea brevifolia mallee woodland of central Wollemi & Southern CC | HL124 | Blue Mountains Heath | MU44/MU45/ MU46 | Sandstone Plateaux Tea Tree-Dwarf She Oak-Banksia Rocky Heath/Newnes Plateau Tea Tree-Banksia-Mallee Heath/Newnes Plateau Dwarf Sheoak-Banksia Heath |
| Heathlands | S_HL13 | Western Blue Mountains Pagoda Shrubland | 145 | Dwyer's Red Gum/ Fringe Myrtle sandstone plateau heathy open woodland of the upper Hunter Valley | not described | | MU43 | Pagoda Rock Sparse Shrubland |
| Freshwater Wetlands | S_FrW14 | Blue Mountains Coral Fern Shrub Swamp | | not described | not described | | | |
| Freshwater Wetlands | S_FrW15 | Blue Mountains Sedge Swamp | | not described | FrW130 | Blue Mountains-Shoalhaven Hanging Swamps (FrW p130) | MU51 | Newnes Plateau Hanging Swamp |
| Freshwater Wetlands | S_FrW16 | Central Tableland Flats Swamp Gum Low Forest | | not described | FrW53 | Tableland Bog | | |

| Statewide Formation | Map Unit Code in This Study | Map Unit Name in This Study | Hunter Code | Hunter Type | SCIVI Code | SCIVI | WBM Code | WBM Label |
|---|---|---|---|---|---|---|---|---|
| Freshwater Wetlands | S_FrW17 | Central Tableland Sedge Swamp | | not described | FrW57 | Tablelands Swamp Meadow (FrW p57) | | |
| Forested Wetlands | S_FoW13 | River Oak Forest | MU195/ MU196 | ?River Oak Riparian Forest of the Western Hunter (MU195) and within River Red Gum /River Oak Riparian Woodland of the Hunter Valley (MU196) | | | MU54 | Capertee-Wolgan Riparian Rough-barked Apple-River Oak Forest |
| Forested Wetlands | S_FoW05 | Sydney Hinterland Riverflat Paperbark Swamp Forest | MU189 | Melaleuca linariifolia/ Carex appressa shrubland of the Hunter Valley (MU189) | FoW44 | Sydney Swamp Forest | MU57 | Capertee Riparian Melaleuca Thicket |
| Forested Wetlands | S_FoW19 | Western Hunter Alluvial Rough-barked Apple Forest | MU125 | a component of Rough-barked Apple grass/forb riparian open forest (MU125) | not described | | | |

## Appendix G: Reservation status of map units in the Sydney Basin Bioregion

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Rainforests | S_RF09 | Blue Mountains Gorge Subtropical-Dry Rainforest | 52 | 52 | 752 | 10% | 25% | 652 | 87% |
| Rainforests | S_RF11 | Sydney Hinterland Grey Myrtle Dry Rainforest | 183 | 179 | 6883 | 10% | 25% | 5779 | 84% |
| Rainforests | S_RF12 | Sydney Hinterland Warm Temperate Rainforest | 2239 | 2159 | 9439 | 5% | 10% | 8059 | 85% |
| Rainforests | S_RF13 | Hunter Range Grey Myrtle Layered Forest | 1865 | 1839 | 6365 | 5% | 10% | 5839 | 92% |
| Rainforests | S_RF14 | Montane Basalt Warm Temperate Rainforest | 198 | 84 | 1698 | 1% | 25% | 384 | 23% |
| Rainforests | S_RF15 | Dry Ranges Rocky Fig Rainforest Scrub | 7 | 7 | 207 | 5% | 10% | 207 | 100% |
| Wet Sclerophyll Forests | S_WSF10 | Sydney Hinterland Blue Gum-Turpentine Gully Forest | 3080 | 3080 | 14480 | 10% | 10% | 13080 | 90% |
| Wet Sclerophyll Forests | S_WSF20 | Blue Mountains Ash Moist Forest | 662 | 554 | 4662 | 5% | 30% | 1554 | 33% |
| Wet Sclerophyll Forests | S_WSF21 | Sydney Montane Basalt Monkey Gum Forest | 3290 | 1423 | 5290 | 65% | 80% | 2113 | 40% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Wet Sclerophyll Forests | S_WSF22 | Wollemi Monkey Gum-Peppermint Gully Forest | 5881 | 5808 | 10881 | 5% | 10% | 10308 | 95% |
| Wet Sclerophyll Forests | S_WSF23 | Blue Mountains Diatreme Moist Forest | 320 | 320 | 346 | n/a | n/a | n/a | n/a |
| Wet Sclerophyll Forests | S_WSF24 | Central Tableland Flats Snow Gum-Ribbon Gum Forest | 336 | 165 | 1922 | 65% | 80% | 323 | 17% |
| Wet Sclerophyll Forests | S_WSF25 | Central Tableland Ribbon Gum-Apple Gully Forest | 4546 | 2953 | 5688 | 30% | 70% | 3103 | 55% |
| Wet Sclerophyll Forests | S_WSF28 | Montane Basalt Ribbon Gum Moist Forest | 2194 | 1133 | 2194 | 5% | 10% | 1135 | 52% |
| Wet Sclerophyll Forests | S_WSF29 | Montane Basalt Ribbon Gum-Snow Gum Forest | 1190 | 224 | 1190 | 20% | 40% | 225 | 19% |
| Wet Sclerophyll Forests | S_WSF30 | Hunter Range Basalt Paperbark Thicket | 30 | 30 | 31 | n/a | n/a | 31 | 100% |
| Wet Sclerophyll Forests | S_WSF31 | Montane Basalt Ribbon Gum-Box Forest | 1703 | 1458 | 2033 | 10% | 20% | 1459 | 72% |
| Grassy Woodlands | S_GW05 | Western Hunter Footslopes Box Woodland | 1886 | 691 | 12885 | 40% | 60% | 941 | 7% |
| Grassy Woodlands | S_GW06 | Western Hunter Flats Fuzzy Box Woodland | 220 | 16 | 1220 | 80% | 90% | 36 | 3% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Grassy Woodlands | S_GW07 | Montane Basalt Stringybark-Brittle Gum Forest | 1760 | 857 | 1760 | 40% | 60% | 858 | 49% |
| Grassy Woodlands | S_GW09 | Cudgegong Footslopes Yellow Box Forest | 202 | 128 | 1502 | 30% | 60% | 129 | 9% |
| Grassy Woodlands | S_GW10 | Hunter Range Basalt Grey Box Woodland | 186 | 25 | 536 | 40% | 70% | 275 | 51% |
| Grassy Woodlands | S_GW11 | Central Tableland Clay White Box Woodland | 3910 | 3194 | 6210 | 40% | 70% | 3394 | 55% |
| Dry Sclerophyll Forests | S_DSF22 | Sydney Hinterland Peppermint-Apple Forest | 47 | 47 | 60047 | 5% | 20% | 50047 | 83% |
| Dry Sclerophyll Forests | S_DSF28 | Hunter Range Ironbark Forest | 13457 | 13457 | 48345 | 5% | 10% | 44345 | 92% |
| Dry Sclerophyll Forests | S_DSF33 | Hunter Range Stringybark-Apple-Peppermint Forest | 11732 | 11714 | 21732 | 5% | 10% | 20714 | 95% |
| Dry Sclerophyll Forests | S_DSF39 | Western Hunter Flats Ironbark Forest | 247 | 195 | 2247 | 40% | 60% | 985 | 44% |
| Dry Sclerophyll Forests | S_DSF40 | Blue Mountains Gorges Grey Gum Sheltered Forest | 1485 | 1418 | 38585 | 5% | 10% | 33118 | 86% |
| Dry Sclerophyll Forests | S_DSF41 | Hunter Escarpment Slaty Gum-Box Forest | 11857 | 7642 | 21857 | 5% | 10% | 8642 | 40% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF44 | Western Hunter Residual Basalt Low Forest | 766 | 590 | 1266 | 1% | 5% | 680 | 54% |
| Dry Sclerophyll Forests | S_DSF45 | Blue Mountains Sands Scribbly Gum Woodland | 51 | 51 | 3703 | 5% | 10% | 451 | 25% |
| Dry Sclerophyll Forests | S_DSF46 | Central Tableland Sand-Slope Scribbly Gum Woodland | 3703 | 1361 | 3703 | 55% | 70% | 1362 | 37% |
| Dry Sclerophyll Forests | S_DSF47 | Cudgegong Footslopes Forest | 2950 | 376 | 2950 | 5% | 20% | 377 | 13% |
| Dry Sclerophyll Forests | S_DSF48 | Goulburn River Ranges Cypress-Ironbark Forest | 360 | 175 | 5360 | 5% | 20% | 2175 | 41% |
| Dry Sclerophyll Forests | S_DSF49 | Growee Ranges Grey Gum-Scribbly Gum Forest | 15474 | 14305 | 23474 | 5% | 10% | 17304 | 74% |
| Dry Sclerophyll Forests | S_DSF50 | Growee Ranges Grey Gum Sheltered Forest | 1036 | 1030 | 3535 | 5% | 10% | 2030 | 57% |
| Dry Sclerophyll Forests | S_DSF51 | Growee Ranges Rocky Stringybark Woodland | 5883 | 5590 | 10883 | 1% | 5% | 5590 | 51% |
| Dry Sclerophyll Forests | S_DSF52 | Hunter Range Peppermint Sheltered Forest | 17181 | 17164 | 29980 | 5% | 10% | 28164 | 94% |
| Dry Sclerophyll Forests | S_DSF54 | Western Blue Mountains Pagoda Woodland | 2073 | 1066 | 3073 | 1% | 5% | 1566 | 51% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF55 | Upper Blue Mountains Peppermint Sheltered Forest | 11083 | 8745 | 15883 | 1% | 5% | 12945 | 82% |
| Dry Sclerophyll Forests | S_DSF56 | Western Blue Mountains Peppermint Forest | 9719 | 8528 | 10759 | 1% | 5% | 9028 | 84% |
| Dry Sclerophyll Forests | S_DSF57 | Western Hunter Caley's Ironbark Low Forest | 2762 | 2160 | 6762 | 5% | 10% | 3160 | 47% |
| Dry Sclerophyll Forests | S_DSF58 | Western Hunter Currawang Low Forest | 48 | 37 | 1048 | 5% | 10% | 537 | 51% |
| Dry Sclerophyll Forests | S_DSF59 | Western Hunter Escarpment Ironbark Forest | 13709 | 12127 | 23709 | 5% | 10% | 17127 | 72% |
| Dry Sclerophyll Forests | S_DSF60 | Western Hunter Grey Gum-Stringybark Forest | 1877 | 1744 | 11877 | 10% | 20% | 6744 | 57% |
| Dry Sclerophyll Forests | S_DSF61 | Western Hunter Rocky Dwyer's Red Gum-Cypress Woodland | 4385 | 4299 | 14385 | 1% | 5% | 12299 | 85% |
| Dry Sclerophyll Forests | S_DSF62 | Western Hunter Rockplate Heath-Mallee | 513 | 508 | 1063 | 1% | 5% | 1008 | 95% |
| Dry Sclerophyll Forests | S_DSF63 | Western Hunter Stringybark-Ironbark Sheltered Forest | 2336 | 2250 | 5836 | 5% | 10% | 4750 | 81% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Dry Sclerophyll Forests | S_DSF64 | Wolgan Plateau Grey Gum-Stringybark Woodland | 9034 | 8949 | 12034 | 1% | 5% | 11949 | 99% |
| Dry Sclerophyll Forests | S_DSF65 | Wollemi Yertchuk-Stringybark Exposed Woodland | 29547 | 28847 | 39547 | 1% | 5% | 37847 | 96% |
| Dry Sclerophyll Forests | S_DSF66 | Capertee Footslopes Box-Stringybark Forest | 48 | 38 | 9417 | 10% | 35% | 1538 | 16% |
| Dry Sclerophyll Forests | S_DSF67 | Capertee Escarpment Ironbark Forest | 1199 | 925 | 2054 | 5% | 10% | 1225 | 60% |
| Dry Sclerophyll Forests | S_DSF68 | Capertee Escarpment Slaty Gum Forest | 987 | 418 | 2991 | 15% | 30% | 619 | 21% |
| Heathlands | S_HL12 | Blue Mountains Heath-Mallee | 242 | 240 | 8142 | 1% | 5% | 6440 | 79% |
| Heathlands | S_HL13 | Western Blue Mountains Pagoda Shrubland | 9853 | 9331 | 11751 | 1% | 5% | 9631 | 82% |
| Freshwater Wetlands | S_FrW14 | Blue Mountains Coral Fern Shrub Swamp | 4 | 4 | 204 | 5% | 10% | 1004 | 20% |
| Freshwater Wetlands | S_FrW15 | Blue Mountains Sedge Swamp | 20 | 14 | 3514 | 1% | 5% | 5020 | 70% |
| Freshwater Wetlands | S_FrW16 | Central Tableland Flats Swamp Gum Low Forest | 61 | 23 | 193 | 15% | 25% | 791 | 24% |
| Freshwater Wetlands | S_FrW17 | Central Tableland Sedge Swamp | 73 | 30 | 35 | 75% | 85% | 3873 | 1% |

| Statewide Formation | Map Unit Code | Map Unit Name | Total Area Within the Study Area (hectares) | Total Area in OEH Estate in the Mudgee Area (hectares) | Estimated Total Extant Area in Sydney Basin Region (hectares) | Estimate of Per Cent Cleared (Minimum) | Estimate of Per Cent Cleared (Maximum) | Estimated Extant Area in Reserves of the Sydney Basin (ha) | Percent of Total Extant Area in Reserves of the Sydney Basin Region Min |
|---|---|---|---|---|---|---|---|---|---|
| Forested Wetlands | S_FoW05 | Sydney Hinterland Riverflat Paperbark Swamp Forest | 34 | 15 | 194 | 15% | 30% | 35 | 18% |
| Forested Wetlands | S_FoW13 | River Oak Forest | 1332 | 602 | 10732 | 15% | 40% | 4501 | 42% |
| Forested Wetlands | S_FoW19 | Western Hunter Alluvial Rough-barked Apple Forest | 1124 | 516 | 6124 | 30% | 50% | 1716 | 28% |

## Appendix H: Summary of the distribution of eucalypt species in the study area

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Angophora costata* | Smooth-barked apple | Widespread on Narrabeen Sandstone on exposed and sheltered communities of southern and central Wollemi plateaux. Extends north toward Widden valley. Prominent below 700 metres above sea level. | | Yes | Yes |
| *Angophora bakeri* | Narrow-leaved apple | Restricted to rocky Narrabeen sandstone outcrops near the Glen Alice Trail. | | Yes | Yes |
| *Angophora floribunda* | Rough-barked apple | Widespread on sandy alluvial and colluvial landscapes and Narrabeen and Permian shales and sandstone. Also residual basalt. | | Yes | Yes |
| *Corymbia trachyphloia* subsp. *amphistomatica* | White (brown) bloodwood | Restricted to northern perimeter of the study area on rocky and/or exposed Narrabeen sandstone and sandy colluvium. Generally below 450 metres above sea level. | | Yes | Yes |
| *Corymbia gummifera* | Red bloodwood | Common on the eastern boundary of the study area, sparsely distributed on exposed and sheltered Narrabeen sandstones up to 850 metres above sea level | | Yes | Yes |
| *Eucalyptus agglomerata* | Blue-leaved stringybark | Locally common. Found on sheltered gorge slopes on Narrabeen sediments in the central and eastern dissected plateaux between Gospers Mountain and Three Ways. Also found on rocky sheltered Narrabeen slopes north of Nullo Mountain. | | Yes | Yes |
| *Eucalyptus albens* | White box | Found on basalt caps and flows between 350 and 700 metres above sea level and on shale soils along the Permian escarpment and footslopes less than 450 metres above sea level. Often can be a hybrid with *E. moluccana* and difficult to identify pure specimens. | | Yes | Yes |
| *Eucalyptus albens* x *moluccana* | White-grey box intergrade | As above. | | Yes | Yes |
| *Eucalyptus bridgesiana* | Apple box | Restricted to sandy alluviums of the Cudgegong River and also on basalt diatreme at Box Hole. Above 550 metres above sea | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| | | level | | | |
| *Eucalyptus bensonii* | Benson's stringybark | Widespread, though patchy found on exposed Narrabeen sandstone outcrops amongst heath and open ridgetop woodland 550-1000 metres above sea level. | | Yes | Yes |
| *Eucalyptus beyeriana* | Beyer's ironbark | Likely to be under-recorded owing to difficulties of identification without examination of flowering material. Occurs on exposed Narrabeen sandstone up to 700 metres above sea level. Commonly identified as *E. crebra.* | | Yes | Yes |
| *Eucalyptus bicostata* | Southern blue gum | Rare. Restricted to basalt enriched soils on the margins of volcanic flows and alluvium downstream of basalt outcrops. Above 700 metres above sea level | | Yes | Yes |
| *Eucalyptus blakelyi* | Blakeley's red gum | Rare. Found along alluvial soils of the western perimeter of study area. Typically Permian aged sediments and alluviums 300-650 metres above sea level | | Yes | Yes |
| *Eucalyptus blaxlandii* | Blaxland's stringybark | Restricted to high elevations generally above 850 metres above sea level. Abundant on thinner basalt soils or margins of basalt caps. Also occurs on exposed and sheltered Narrabeens sandstone. | | Yes | Yes |
| *Eucalyptus caleyi* subsp. *caleyi* | Caley's ironbark | Locally common. Restricted to dry rocky Narrabeen sandstone and low rock Permian benches on the northern boundary of Wollemi NP. Common less than 350 metres above sea level but may reach 600 metres above sea level. Small areas occur on rocky basalt scree at Murrumbo Gap. | | Yes | Yes |
| *Eucalyptus camphora* | Swamp gum | Rare and localised. Restricted to poorly drained sandy alluvium in the Cudgegong Valley between 700 and 800 metres above sea level. | | Yes | Yes |
| *Eucalyptus cannonii* | Capertee stringybark | Uncommon near the Great Dividing Range between Glen Alice and Nullo Mountain between 650 and 850 metres above sea level. Restricted to sandy loams on exposed sandstone ridges and slopes. Also found on Permian escarpment talus slopes. | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Eucalyptus conica* | Fuzzy box | Locally common. Restricted to clay rich soils associated in wide alluvial flats and terraces within the northern valleys of the Upper Bylong, Goulburn River and Widden. Less than 350 metres above sea level. | | Yes | Yes |
| *Eucalyptus consideniana* | Yertchuk | Widespread and common. Often dominant tree species of forests and woodlands of exposed Narrabeen sandstone forests and woodlands. Common between 650 and 950 metres above sea level. | | Yes | Yes |
| *Eucalyptus corticosa* | Creswick apple box | Rare. Restricted to indurated sands on gentle lower slopes of the Cudgegong Valley between 700 and 800 metres above sea level. | | Yes | No |
| *Eucalyptus crebra* | Narrow-leaved ironbark | Widespread though scattered below 700 metres above sea level on shale enriched sheltered slopes and ridges in Narrabeen series sediments. | | Yes | Yes |
| *Eucalyptus cypellocarpa* | Monkey gum | Common on sheltered Narrabeen sandstone slopes and gullies between 550 and 800 metres above sea level. Occasional on sheltered Permian escarpment slopes above 550 metres above sea level. Also on margins of basalt caps or thin basalt soils associated with diatremes between 700 and 1100 metres above sea level. | | Yes | Yes |
| *Eucalyptus dalrympleana* subsp. *dalrympleana* | Mountain gum | Cudgegong Valley | Bell (1998) | No | No |
| *Eucalyptus dalrympleana* subsp. *heptantha* | Mountain gum | Rare. Restricted to basalt on Nullo Mountain. | Sommerville (2009) | No | No |
| *Eucalyptus dawsonii* | Slaty gum/Dawson's box | Common. Associated with Permian sediments along the escarpments of the western Blue Mountains and Hunter valley between Capertee and Widden valley. Between 200 and 550 metres above sea level. | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Eucalyptus deanei* | Deane's blue gum | Common. Widespread on Narrabeen sheltered slopes and gullies of central, southern and eastern plateaux. Also prevalent on basalt soils associated with diatremes in gully heads. Below 550 metres above sea level though may rise to 650 metres in select locations. | | Yes | Yes |
| *Eucalyptus dives* | Broad-leaved peppermint | Rare. Restricted to local patches on sandy lower slopes and alluviums of the Cudgegong valley. Between 700 and 800 metres above sea level. | | Yes | Yes |
| *Eucalyptus dwyeri* | Dwyer's red gum | Common. Widespread on rocky Narrabeen sandstones in the dry exposed areas of northern Wollemi NP below 500 metres above sea level. | | Yes | Yes |
| *Eucalyptus eugenioides* | Thin-leaved stringybark | | Bell (1998) | No | Unknown |
| *Eucalyptus fastigata* | Brown barrel | Rare. Restricted to basalt cap at Mount Monundilla at 1100 metres above sea level. | Bell (1998) | No | Yes |
| *Eucalyptus fibrosa* | Broad-leaved ironbark | Common. Widespread on Narrabeen shales and Permian sediments between 200 and 700 metres above sea level | | Yes | Yes |
| *Eucalyptus fibrosa* sp. aff. *Yarrawa* | Broad-leaved ironbark | Rare. Restricted to northern escarpment talus slopes. Less than 550 metres above sea level. Currently overlooked and commonly identified as *E. fibrosa* | | Yes | Yes |
| *Eucalyptus laophila* | | Rare. Restricted to Narrabeen sandstone rock plates above 700 metres above sea level | | Yes | Yes |
| *Eucalyptus laevopinea* | Silvertop stringybark | Locally common. Restricted to high elevation deep basalt soils associated with major plateaux and peaks above 950 metres above sea level. | | Yes | Yes |
| *Eucalyptus macrorhyncha* | Red stringybark | Uncommon near the Great Dividing Range between Glen Alice and Nullo Mountain between 650 and 850 metres above sea level. Restricted to sandy loams on exposed sandstone ridges and slopes. Also found on Permian escarpment talus slopes. | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Eucalyptus mannifera* | Brittle gum | Uncommon. Restricted to higher elevations on Narrabeen sediments in gentle depressions (>700 metres above sea level). Also found on transitional basalt and sandstone soils in the Nullo Mountain area (>800 metres above sea level). | | Yes | Yes |
| *Eucalyptus melliodora* | Yellow box | Uncommon. Restricted to Permian escarpment footslopes and flats slopes <450 metres above sea level between Capertee and Widden valley. Associated with basalt caps and flows between 700 and 1000 metres above sea level. Alluvial flats <500 metres above sea level. | | Yes | Yes |
| *Eucalyptus moluccana* | Grey box | Common. Widespread on Permian escarpment slopes between Capertee and Widden valleys below 550 metres above sea level. Also basalt caps and flows <350 metres above sea level. | | Yes | Yes |
| *Eucalyptus multicaulis* | Whipstick mallee-ash | Uncommon. Restricted to rocky Narrabeen sandstone outcrops. Occasionally dominates shallow soils on Narrabeen sandstone ridgetops. Below 900 metres above sea level. | | Yes | Yes |
| *Eucalyptus nobilis* | Ribbon gum | Locally uncommon. Restricted to high elevation deep basalt soils associated with major plateaux and peaks above 950 metres above sea level. | | Yes | Yes |
| *Eucalyptus nubila* | Blue-leaved ironbark | Rare. Restricted to rocky Narrabeen slopes on the northern boundary of Wollemi NP near Coxs Gap. Between 300 and 400 metres above sea level. | Bell (1998) | No | Yes |
| *Eucalyptus oreades* | Blue Mountains ash | Locally common on protected Narrabeen slopes above 850 metres above sea level. May be recorded as low as 700 metres in some deep gullies. Located in proximity to main Basalt peaks of the study area. | | Yes | Yes |
| *Eucalyptus parramattensis* subsp. *parramattensis* | Drooping red gum | Rare. Restricted to sandy depressions on Narrabeen sediments. Found at near Gospers Mountain airstrip and Bylong between 350 and 750 metres above sea level. | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Eucalyptus pauciflora* | Snow gum | Uncommon. Restricted to alluvial soils along the Cudgegong valley fringing sedgelands and bogs between 700 and 800 metres above sea level. Taller stands are found on high elevation basalt on Nullo Mountain >1000 metres above sea level. | | Yes | Yes |
| *Eucalyptus piperita* | Sydney peppermint | Very common and widespread. Narrabeen sandstone ridges and sheltered slopes, sandy alluviums and transitional basalt sandstone soils between 350 and 1000 metres above sea level. | | Yes | Yes |
| *Eucalyptus polyanthemos* | Red box | Rare. Restricted to Permian sediments on lower slopes of the Capertee escarpment. | DEC (2006) | No | Yes |
| *Eucalyptus praecox* | Brittle gum | Rare. Restricted to shallow basalt soils on Nullo Mountain. Above 750 metres above sea level. | | Yes | Yes |
| *Eucalyptus punctata* | Grey gum | Very common and widespread. Narrabeen sandstone ridges and sheltered slopes, Permian escarpment slopes between 350 and 800 metres above sea level. | | Yes | Yes |
| *Eucalyptus racemosa* | Narrow-leaved scribbly gum | Rare. Restricted to isolated sand deposit near Gospers Mountain airstrip. Around 750 metres above sea level. | | Yes | Yes |
| *Eucalyptus radiata* | Narrow-leaved peppermint | Uncommon. Restricted to sheltered Narrabeen sediments and shale enriched ridgetops between 750 and 1100 metres above sea level. Also on transitional basalt soils. | | Yes | Yes |
| *Eucalyptus rossii* | Inland scribbly gum | Common. Restricted to Narrabeen sandstone ridges, exposed slopes and occasionally sandstone talus on Permian sediments. Above 650 metres above sea level. | | Yes | Yes |
| *Eucalyptus rubida* | Candlebark | Rare. Restricted to alluvial flats along the Cudgegong River. Between 700 and 800 metres above sea level. | | Yes | Yes |
| *Eucalyptus saligna* | Sydney blue gum | Locally common. Sheltered Narrabeen shales and alluvium of central and south-east gorges. Below 600 metres above sea level. | | Yes | Yes |

| Scientific Name | Common Name | Distribution in Study Area | Source | Recorded During This Study? | Recorded Within North-west Wollemi NP? |
|---|---|---|---|---|---|
| *Eucalyptus sideroxylon* | Mugga ironbark | Rare. Locally restricted to dry Narrabeen and Permian sediments along the western and northern escarpments between the Capertee and Widden valleys. Below 450 metres above sea level. | Bell (1998) | No | Yes |
| *Eucalyptus sieberi* | Silvertop ash | Rare. Single record. Northern limit on rocky Narrabeen sandstone outcropping near Talooby. 610 metres above sea level | Bell (1998) | No | Yes |
| *Eucalyptus sparsifolia* | Narrow-leaved stringybark | Very common and widespread across Narrabeen sandstone slopes and ridges. Between 350 and 1000 metres above sea level | | Yes | Yes |
| *Eucalyptus stellulata* | Black sally | Rare. Locally restricted to alluvial depressions along the Cudgegong valley. Between 700 and 800 metres above sea level. | | Yes | Yes |
| *Eucalyptus stricta* | Blue Mountains mallee-ash | Uncommon. Restricted to rocky Narrabeen sandstone outcropping 600-1000 metres above sea level. | | Yes | Yes |
| *Eucalyptus tenella* | | Rare. Restricted to Narrabeen sandstone ridgelines in the Glen Alice area. Between 500 and 750 metres above sea level. | | No | Yes |
| *Eucalyptus tereticornis* | Forest red gum | Uncommon. Associated with clay rich alluviums, and Permian shales on escarpment footslopes below 500 metres above sea level. Also associated with exposed slopes of basalt peaks between 600 and 900 metres above sea level. | | Yes | Yes |
| *Eucalyptus viminalis* | Ribbon gum | Locally common. Associated with high basalt peaks 600-1200 metres above sea level. May be found in diatremes to about 500 metres above sea level. Prominent on alluvial soils above 500 metres above sea level in the western gullies below Nullo Mountain and in the Cudgegong valley. | | Yes | Yes |
| *Syncarpia glomulifera* | Turpentine | Locally common. Restricted to the eastern slopes and gullies on Narrabeen sandstones and shales. Below 600 metres above sea level. | | Yes | Yes |




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