

Floristics and distribution of Wattle Dry Sclerophyll Forests and Scrubs in north-eastern New South Wales

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Abstract: *Acacia blakei* forests and scrubs of north-eastern NSW are described and compared to similar vegetation found in the south-east of the state, primarily dominated by *Acacia silvestris*. Like those in the south, Northern Wattle Dry Sclerophyll Forests form often discrete stands with abrupt margins on steep slopes in rugged terrain on shallow often rocky soils. The structure is usually of a cohort with stems of an even height and size up to 20 m tall, and a sparse understorey with few grasses, herbs or shrubs. These systems are potentially maintained by infrequent extreme fire events. Notes are made on their management and conservation.

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Introduction

Clayton-Greene & Wimbush (1988) were the first to fully describe an unusual vegetation association of dense *Acacia*-dominated scrubs and forests on the eastern fall of the Great Dividing Range in southern NSW. This class of vegetation, primarily dominated by *Acacia silvestris* (Bodalla Silver Wattle), occurred between the Byadbo region of the Snowy Mountains to south of Deddick in Victoria. The assemblage was characterised by being composed of dense stands of *Acacia* often of a uniform height, with very little understorey (sparse in grasses with only scattered smaller shrubs), and occurring on steep north and west-facing slopes, on metasediments or coarse grained granite. The edges of these *Acacia* scrubs were sharp and clearly-defined.

Similar vegetation, called ‘Black Jungle’ or ‘Black Scrub’, was classified under Forest Type 214 (Anon 1989), and as *Acacia* Scrub (Map Unit 4) by Keith & Bedward (1999) in their mapping of south-eastern NSW forests. Though *Acacia silvestris* was the most common dominant, other wattles such as *Acacia binervia*, *Acacia doratoxylon*, *Acacia falciformis* and *Acacia kettlewelliae* sometimes formed similarly structured assemblages (Clayton-Greene & Wimbush 1988; Keith & Bedward 1999). Keith (2004) considered that these assemblages showed little close affinity with other vegetation classes but did share taxa with rock outcrop communities.

Keith (2004) considered these *Acacia*-dominated systems, which he termed Southern Wattle Dry Sclerophyll Forests, as a curious anomaly, as the only (non-regrowth) class of vegetation in eastern flowing catchments of the Great Dividing Range to be dominated by *Acacia* rather than *Eucalyptus*. Similar vegetation however has been reported elsewhere in eastern NSW for over a decade. Stands dominated by *Acacia bulgaensis* occur in the Wollemi, Yengo, Parr and Pokolbin areas west of Newcastle (Bell et al. 1993; Binns 1996). Vegetation dominated by *Acacia blakei* subsp. *diphylla*

occurs in areas north from Gloucester (Binns 1994; Binns 1995; Anon 1995; Hunter 1998; Hunter et al. 1998; Benwell 2000; Hunter 2004). Extensive field investigations have highlighted that the latter northern vegetation, in particular, mirrors the physical and structural characteristics of the southern scrubs and forests. Here I describe, compare and contrast these Northern Wattle Dry Sclerophyll Forests and Scrubs with those from southern NSW.

Occurrences in Northern New South Wales

Many assemblages similar to the ‘Black Scrubs’ of south-eastern NSW have been reported. Binns (1994) described an *Acacia blakei* subsp. *diphylla*–*Plectranthus graveolens* low forest or woodland from the Chaelundi area north of Dorrigo. An *Acacia blakei* subsp. *diphylla* forest association was noted near the Henry River Falls on metasediments in Guy Fawkes River National Park (Anon 1995). Benwell (2000) described an *Acacia blakei* subsp. *diphylla* scrub associated with low quartz sedimentary rock types and acid volcanics in Nymboida National Park. Benwell (2000) also discusses finding similar stands within Guy Fawkes River National Park. Extensive stands of *Acacia blakei* scrub also occur within Oxley Wild Rivers National Park (*pers. obs.*) where they are quite extensive compared to other northern occurrences. These stands are often associated with dry rainforest, and due to their similar colour on aerial photographs may be included in dry rainforest mapping units (CRA 1999). Table 1 compares features shown by the southern and northern stands.

The Demon Fault, the western boundary of Demon Nature Reserve, runs along the western base of the Malara Plateau east of Tenterfield. Along this geological feature is a distinct linear patch of vegetation dominated by *Acacia blakei* subsp. *diphylla* which forms a dense cohort of scrub on the steep western facing slopes (Hunter et al. 1998). The *Acacia* scrub



Fig. 1. *Acacia blakei* scrubs on the Demon Fault within the Demon Nature Reserve.

forms a distinct linear patch whose boundary is clear and sharp within a larger *Eucalyptus* forest. The understorey was sparse with scattered grasses and a few shrubs (Fig. 1). The height of most of the stand was only 4 to 8 m but some sections consisted of much older cohorts.

Stands of *Acacia blakei* forests and scrubs were found on steep north and western facing slopes in dissected metasediment gorge country within the Washpool National Park western additions (Hunter 1998). These stands occurred on shallow soils but had sharp and distinct boundaries with the surrounded *Eucalyptus*-dominated forests. The understorey was very sparse, with only a few grasses and some scattered smaller shrubs. The dominant *Acacia blakei*, up to a height of 20 m, formed a cohort of similar-aged individuals with little recruitment evident (Fig. 2). In floristic analyses this community was closely allied to rock outcrop assemblages which they sometimes occur around (Hunter 1998).



Fig. 2. Stand of *Acacia blakei* forest within Washpool National Park.

Hunter (2004) described stands of *Acacia blakei* subsp. *diphylla* forests and scrubs within Mann River Nature Reserve. The stands were often associated with shallow soils on northerly facing slopes of course grained granite. These stands often also occurred around rock outcrops and were floristically associated with outcrops in floristic analyses

Table 1. Comparison of Southern Wattle Dry Sclerophyll Forest (sensu Keith 2004) and Northern Wattle Dry Sclerophyll Forests. Information for southern localities derived from Clayton-Greene & Wimbush (1988), Keith & Bedward (1999) and Keith (2004).

Characteristic	Southern Wattle DSF	Northern Wattle DSF
Dominant taxon	<i>Acacia silvestris</i> sometimes <i>A. kettlewelliae</i> , rarely <i>A. doratoxylon</i> or <i>A. falciformis</i>	<i>Acacia blakei</i> subsp. <i>diphylla</i> sometimes <i>A. blakei</i> subsp. <i>blakei</i>
Boundaries	Discrete & very abrupt within a sea of Eucalypt forest	Discrete & very abrupt within a sea of Eucalypt forest
Slopes	Steep north & west facing	Steep to gentle primarily north & west facing, sometimes east facing.
Landscape	Usually in remote, dissected terrain	Remote dissected terrain
Soil	Shallow & rocky	Shallow & rocky
Rock type	Metasediments and course grained granite	Metasediments and course grained granite, rarely acid volcanics
Canopy	Generally uniform, closed canopies, stems of similar height & size away from ecotone	Generally uniform, closed canopies, stems of similar height & size away from ecotone
Diameter at breast height	0.8–20 cm. Average 4.4 cm ± 3.3 cm.	16.1–37.5 cm. Average 22 cm ± 6 cm. (Mann River)
Height	5 to 20 m tall	5 to 20 m tall
Understorey	Sparse, little ground cover, few grasses, some scattered shrubs	Sparse, little ground cover, few grasses, some scattered shrubs
Floristic relationships	With rock outcrop floras	With rock outcrop floras
Occurrence	3585 ha (south eastern NSW Keith & Bedward 1999)	Possibly 700 ha



Fig. 3. *Acacia blakei* forests within the Mann River Nature Reserve.

(Hunter 2004). As with the previously described stands the understorey was sparse and open and the boundaries of the patches were clear and distinct within a general *Eucalyptus* forest and woodland matrix, although scattered *Acacia* individuals were commonly found in other forests and woodlands. The *Acacia* stands were mainly of even size within each patch though different patches were often different heights. In most patches the stems were 10–18 m tall, with stem diameters (dbh) averaging 22 cm (Fig. 3).

Based on full floristic field survey sites *Acacia blakei* communities typically contain the shrub *Ficus rubiginosa*; the forbs *Cheilanthes sieberi* subsp. *sieberi*, *Commelina cyanea*, *Desmodium varians*, *Dianella caerulea*, *Gahnia aspera*, *Lomandra longifolia*, *Lomandra multiflora*, *Opercularia hispida*, *Pomax umbellata*, *Pratia purpurascens*, *Scleria mackaviensis*, *Sigesbeckia australiensis* and *Hybanthus stellarioides*; the grasses *Cymbopogon refractus*, *Entolasia stricta*, *Oplismenus aemulus* and *Themeda australis*.

Acacia blakei appears to be the only species that forms these clear and distinct assemblages with these ecological characteristics in the eastern flowing catchments of northern NSW. The abrupt and clear boundaries of these systems are distinctive in many situations, but in some situations the boundaries (as with many vegetation communities) can be extended and somewhat blurred (as is the situation in the southern occurrences as well - Clayton-Greene & Wimbush 1988). Other wattle taxa, such as *Acacia falciformis*, *Acacia dealbata*, *Acacia elata*, *Acacia irrorata*, often form dense stands but only as an understorey component of *Eucalyptus* forests or as short-term (i.e. > 20 yrs) regrowth following disturbance in sites that will eventually support eucalypt forests.

Similar vegetation on western flowing catchments of the north-east

On the western flowing catchments on the Northern Tablelands and North Western Slopes structurally similar wattle forests and scrubs also occur, and are dominated by

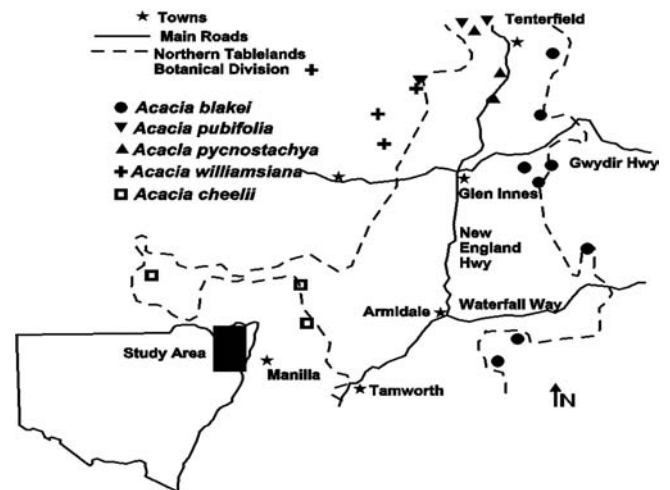


Fig. 4. Known locations of Wattle Dry Sclerophyll Forests and Scrubs of north-eastern New South Wales. *Acacia blakei* is the only taxon dominating these communities in eastern flowing catchments.

taxa with broad affinities to *Acacia blakei* (Juliflorae) and which share the same site characteristics (Fig. 4). Between Deepwater and Tenterfield *Acacia pycnostachya* forms scrubs and forests in Bolivia Hill and Bluff River Nature Reserves (Hunter & Clarke 1998; Hunter 2002). In the northern parts of the Northern Tablelands *Acacia pubifolia* forms similar stands at Torrington, and in Queensland within Girraween and Sundown National Parks (Hunter & Clarke 1998). *Acacia cheelii* forms dense cohort stands in the south-west of the Northern Tablelands at Mt Kaputar and Warrabah National Parks and at Ironbark and Melville Range Nature Reserves (Hunter & Clarke 1998; Hunter & Alexander 2000; Hunter & Hunter 2003). In north-west New England, *Acacia williamsiana* forms structurally similar stands in similar situations at Torrington State Recreation Area, Kwiambal and Kings Plains National Parks and Severn River Nature Reserve (Hunter 1997; Hunter & Clarke 1998; Hunter et al 1999; Hunter 2000ab).

Management and conservation

Clayton-Greene & Wimbush (1988) showed that the 'Black Scrubs' of south-eastern NSW were long-lived with some trees of *Acacia silvestris* and *Eriostemon trachyphyllus* having ring-counts indicating ages of up to 100 years or more, though most appeared to be between 25 and 35 years old. These scrubs did not appear to carry low intensity fires probably due to the sparse understorey and the comparative lack of flammability of *Acacia* leaves (Clayton-Green & Wimbush 1988). However due to lack of resprouting ability the dominant wattles were likely to be killed by fire (Keith 2004). Such evidence, along with investigations of previous fire patterns, lead Clayton-Green & Wimbush (1988) to surmise that these scrubs were maintained by infrequent intense fire events, and that they may not persist in the absence of such events. Each cohort is likely to be related to

a specific intense wildfire event (Keith 2004). A very similar dynamic was proposed for rock outcrop floras of northern NSW with which these scrubs and forests are closely allied (Hunter et al. 1998; Hunter 2003).

Within eastern NSW potentially less than 5 000 ha of this vegetation may exist north of the Hunter region. Around 700 ha have been mapped in northern NSW though it is likely that not all stands have been recorded. In the south-east where more extensive investigations have occurred, 3585 ha are known. These distinctive communities are probably part of a long-term dynamic reliant on unique site characteristics and extreme fire events. In 1988 Clayton-Greene and Wimbush suggested that the only conceivable threat to the continued existence of the southern scrubs would be attempts to exclude intense fire by too-frequent low-intensity burns in the surrounding woodland. Under such regimes the likelihood of these wattle scrubs and forests persisting in landscapes where extreme fire events are actively discouraged by management activities may be reduced. Although most occurrences in northern NSW are within reserves managed by the National Parks and Wildlife Service; most are small and isolated stands and they may be under threat while we do not understand the mechanisms enabling persistence. These communities should be perceived as both a significant and unusual vegetation association of limited extent.

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Appendix 1. List of vascular plant species associated with *Acacia blakei* Dry Sclerophyll Forests and Scrubs of eastern flowing catchments of north-eastern NSW. Taxa were recorded from field plots. Nomenclature follows that of Harden (1992-2002) Flora of New South Wales, except where recent changes have been made.

DM = Demon Nature Reserve (5 x 0.1 ha sites).

MR = Mann River Nature Reserve (4 x 0.1 ha sites).

NY = Nymboida National Park (Benwell 2000).

WWP = Washpool National Park Western Additions (3 sites).

PTERIDOPHYTES

Adiantaceae

<i>Adiantum hispidulum</i>	NY, WWP
<i>Cheilanthes distans</i>	DM, MR
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	DM, MR, NY, WWP
<i>Pellaea falcata</i>	WWP
<i>Pellaea nana</i>	DM

Aspleniaceae

<i>Asplenium flabellifolium</i>	WWP
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Polypodiaceae

<i>Pyrrosia rupestris</i>	NY
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MONOCOTYLEDONS

Anthericaceae

<i>Arthropodium milleflorum</i>	DM
<i>Tricoryne anceps</i> var. <i>pterocaulon</i>	DM, WWP

Commelinaceae

<i>Commelina cyanea</i>	DM, MR, WWP
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Cyperaceae

<i>Cyperus imbecillis</i>	DM
<i>Cyperus fulvus</i>	MR
<i>Cyperus gracilis</i>	MR, NY
<i>Cyperus thotskyanus</i>	DM
<i>Fimbristylis dichotoma</i>	DM, MR
<i>Gahnia aspera</i>	DM, MR, NY, WWP
<i>Lepidosperma laterale</i>	DM, WWP
<i>Schoenus melanostachys</i>	DM, MR
<i>Scleria mackaviensis</i>	DM, MR, WWP

Haemodoraceae

<i>Haemodorum planifolium</i>	DM
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Iridaceae

<i>Patersonia glabrata</i>	WWP
<i>Patersonia sericea</i>	DM

Lomandraceae

<i>Lomandra confertiflora</i>	DM
<i>Lomandra filiformis</i>	DM
<i>Lomandra longifolia</i>	DM, MR, WWP
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	DM, MR, WWP
<i>Eustrephus latifolius</i>	DM, WWP
<i>Geitonoplesium cymosum</i>	NY

Orchidaceae

<i>Acianthus apprimus</i>	DM
<i>Bulbophyllum minutissimum</i>	MR
<i>Dendrobium kingianum</i>	MR

Phormiaceae

<i>Dianella caerulea</i> var. <i>caerulea</i>	DM, MR, NY, WWP
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Poaceae

<i>Aristida acuta</i>	MR
<i>Aristida calycina</i> var. <i>calycina</i>	MR
<i>Aristida jerichoensis</i> subsp. <i>subspinulifera</i>	DM
<i>Aristida ramosa</i> var. <i>ramosa</i>	MR
<i>Austrodanthonia racemosa</i> var. <i>racemosa</i>	MR
<i>Austrostipa rudis</i> subsp. <i>nervosa</i>	WWP
<i>Austrostipa scabra</i> subsp. <i>scabra</i>	MR
<i>Cenchrus caliculatus</i>	MR, WWP
<i>Cymbopogon refractus</i>	DM, MR, NY, WWP
<i>Deyeuxia mckiei</i>	DM
<i>Dichelachne micrantha</i>	MR, WWP
<i>Dichelachne rara</i>	DM
<i>Digitaria breviglumis</i>	DM, MR
<i>Digitaria diffusa</i>	MR
<i>Digitaria ramularis</i>	MR, WWP
<i>Echinopogon caespitosus</i> var. <i>caespitosus</i>	MR
<i>Echinopogon ovatus</i>	DM
<i>Entolasia marginata</i>	MR, WWP
<i>Entolasia stricta</i>	DM, MR, NY, WWP
<i>Eragrostis elongata</i>	DM, MR
<i>Eragrostis leptostachya</i>	MR
<i>Eragrostis molybdea</i>	MR
<i>Joycea pallida</i>	MR
<i>Microlaena stipoides</i>	DM
<i>Notodanthonia longifolia</i>	DM, WWP
<i>Oplismenus aemulus</i>	DM, MR, WWP
<i>Oplismenus imbecillis</i>	NY
<i>Oplismenus undulatifolius</i> var. <i>mollis</i>	DM, MR
<i>Panicum effusum</i>	MR
<i>Panicum simile</i>	DM
<i>Paspalidium constrictum</i>	DM
<i>Poa labillardieri</i>	DM, WWP
<i>Poa sieberiana</i> var. <i>sieberiana</i>	MR
<i>Sorghum leiocladum</i>	WWP
<i>Themeda australis</i>	DM, MR, WWP
<i>Tripogon loliiformis</i>	DM, MR
Restionaceae	
<i>Baloskion stenocoleum</i>	DM
Smilacaceae	
<i>Smilax australis</i>	NY
DICOTYLEDONS	
Acanthaceae	
<i>Brunoniella australis</i>	WWP

Apiaceae		<i>Polymeria calycina</i>	DM
<i>Trachymene incisa</i> subsp. <i>incisa</i>	DM, MR	Crassulaceae	
Apocynaceae		<i>Crassula sieberiana</i>	DM, MR
<i>Alyxia ruscifolia</i>	NY, MR	Dilleniaceae	
<i>Parsonsia straminea</i>	DM	<i>Hibbertia obtusifolia</i>	DM, MR
Araliaceae		Epacridaceae	
<i>Astrotricha longifolia</i>	WWP	<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	WWP
Asclepiadaceae		<i>Melichrus urceolatus</i>	DM
<i>Hoya australis</i> subsp. <i>australis</i>	MR	Escalloniaceae	
<i>Sarcostemma brunonianum</i>	MR	<i>Rapanea variabilis</i>	NY
Asteraceae		Euphorbiaceae	
* <i>Bidens pilosa</i>	DM, MR, WWP	<i>Acalypha nemorum</i>	DM, NY
<i>Brachyscome microcarpa</i>	DM	<i>Beyeria viscosa</i>	WWP
<i>Calotis dentex</i>	MR, WWP	<i>Breynia cernua</i>	DM, NY
<i>Cassinia uncata</i>	WWP	<i>Phyllanthus gunnii</i>	DM, NY, WWP
<i>Chrysocephalum apiculatum</i>	DM	<i>Poranthera microphylla</i>	DM
* <i>Cirsium vulgare</i>	WWP	<i>Ricinocarpos speciosus</i>	MR
* <i>Conyza albida</i>	DM	Fabaceae	
<i>Euchiton sphaericus</i>	MR, WWP	<i>Acacia blakei</i> subsp. <i>diphylla</i>	DM, MR, NY, WWP
<i>Glossogyne tannensis</i>	DM	<i>Bossiaea scortechinii</i>	DM
* <i>Gnaphalium americanum</i>	DM	<i>Desmodium brachypodum</i>	DM, MR
* <i>Hypochaeris radicata</i>	DM, MR, WWP	<i>Desmodium rhytidophyllum</i>	DM
<i>Lagenifera gracilis</i>	DM	<i>Desmodium varians</i>	DM, MR, WWP
<i>Senecio diaschides</i>	MR, WWP	<i>Glycine clandestina</i>	DM
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	MR	<i>Glycine microphylla</i>	DM
<i>Senecio lautus</i> subsp. <i>dissectifolius</i>	MR	<i>Jacksonia scoparia</i>	DM, MR
<i>Senecio lautus</i> subsp. <i>lanceolatus</i>	WWP	<i>Mirbelia pungens</i>	DM
<i>Senecio vagus</i> subsp. <i>eglandulosus</i>	WWP	<i>Podolobium ilicifolium</i>	DM
<i>Sigesbeckia australiensis</i>	DM, MR, WWP	Goodeniaceae	
<i>Veronica cinerea</i> var. <i>cinerea</i>	DM, WWP	<i>Dampiera stricta</i>	MR
<i>Vittadinia cervicalis</i> subsp. <i>subcircularis</i>	DM, MR	<i>Goodenia hederacea</i>	DM
* <i>Zinnia peruviana</i>	MR	<i>Goodenia rotundifolia</i>	DM
Bignoniaceae		Haloragaceae	
<i>Pandorea pandorana</i>	DM, MR	<i>Haloragis heterophylla</i>	DM
Campanulaceae		<i>Gonocarpus oreophilus</i>	NY
<i>Wahlenbergia communis</i>	DM, WWP	<i>Gonocarpus teucroides</i>	WWP
<i>Wahlenbergia luteola</i>	DM	Lamiaceae	
Casuarinaceae		<i>Ajuga australis</i>	DM
<i>Allocasuarina littoralis</i>	MR, WWP	<i>Mentha diemenica</i>	DM
<i>Allocasuarina torulosa</i>	DM	<i>Plectranthus graveolens</i>	DM, MR
Celastraceae		<i>Plectranthus parviflorus</i>	DM, MR, WWP
<i>Maytenus silvestris</i>	DM, WWP	<i>Plectranthus suaveolens</i>	MR
Chenopodiaceae		<i>Prostanthera nivea</i>	DM
<i>Chenopodium carinatum</i>	MR	Lobeliaceae	
<i>Einadia trigonos</i> subsp. <i>leiocarpa</i>	WWP	<i>Pratia purpurascens</i>	DM, MR, WWP
Clusiaceae		Loranthaceae	
<i>Hypericum gramineum</i>	DM	<i>Muellerina celastroides</i>	MR
Convolvulaceae		<i>Muellerina eucalyptoides</i>	MR
<i>Dichondra repens</i>	DM, WWP	Malvaceae	
<i>Dichondra</i> sp. A	MR	<i>Hibiscus trionum</i>	MR
* <i>Ipomoea cairica</i>	MR		

Moraceae		Proteaceae	
<i>Ficus rubiginosa</i> forma <i>glabrescens</i>	DM, MR, NY	<i>Hakea sericea</i>	DM
Myrtaceae		<i>Lomatia silaifolia</i>	WWP
<i>Babingtonia collina</i>	MR	Plantaginaceae	
<i>Corymbia gummifera</i>	DM	<i>Plantago varia</i>	WWP
<i>Corymbia variegata</i>	NY	Rhamnaceae	
<i>Eucalyptus biturbinata</i>	MR	<i>Alphitonia excelsa</i>	MR, NY
<i>Eucalyptus campanulata</i>	WWP	<i>Persoonia sericea</i>	
<i>Eucalyptus crebra</i>	MR	<i>Pomaderris elliptica</i>	DM
<i>Eucalyptus dorrigoensis</i>	WWP	Rubiaceae	
<i>Eucalyptus fibrosa</i>	DM	<i>Opercularia aspera</i>	MR, WWP
<i>Eucalyptus prava</i>	MR	<i>Opercularia diphylla</i>	MR
<i>Eucalyptus propinqua</i>	DM	<i>Opercularia hispida</i>	DM, MR, WWP
<i>Eucalyptus radiata</i> subsp. <i>sejuncta</i>	WWP	<i>Pomax umbellata</i>	DM, MR, WWP
<i>Eucalyptus tereticornis</i>	MR	Rutaceae	
<i>Leptospermum arachnoides</i>	MR	<i>Asterolasia correifolia</i>	MR
<i>Leptospermum petersonii</i> subsp. <i>petersonii</i>	MR	<i>Correa reflexa</i> var. <i>reflexa</i>	DM, WWP
<i>Leptospermum polygalifolium</i> subsp. <i>transmontanum</i>	DM, WWP	<i>Zieria smithii</i> subsp. <i>smithii</i>	WWP
<i>Lophostemon confertus</i>	DM, MR	Solanaceae	
Nyctaginaceae		<i>Solanum campanulatum</i>	DM, MR, WWP
<i>Boerhavia dominii</i>	DM	Santalaceae	
Oleaceae		<i>Exocarpus cupressiformis</i>	WWP
<i>Jasminum volubile</i>	MR	Scrophulariaceae	
<i>Notelaea longifolia</i>	DM, NY	<i>Veronica calycina</i>	WWP
Oxalidaceae		<i>Veronica plebeia</i>	WWP
<i>Oxalis chnoodes</i>	WWP	Sterculiaceae	
<i>Oxalis perennans</i>	DM	<i>Brachychiton populneus</i> subsp. <i>populneus</i>	DM, MR
Passifloraceae		<i>Lasiopetalum ferrugineum</i> var. <i>cordatum</i>	MR
<i>Passiflora aurantia</i>	WWP	Ulmaceae	
Pittosporaceae		<i>Trema tomentosa</i>	DM, NY
<i>Billardiera scandens</i> var. <i>scandens</i>	DM	Verbenaceae	
<i>Bursaria spinosa</i>	WWP	<i>Clerodendrum tomentosum</i>	NY
Polygalaceae		Violaceae	
<i>Rumex brownii</i>	WWP	<i>Hybanthus monopetalus</i>	DM
Portulacaceae		<i>Hybanthus stellaroides</i>	DM, NY, WWP
<i>Calandrinia pickeringii</i>	DM	<i>Viola betonicifolia</i>	DM
Primulaceae		<i>Viola hederacea</i>	DM
* <i>Anagallis arvensis</i>	MR	Viscaceae	
		<i>Notothixos subaureus</i>	MR