



NSW NATIONAL PARKS & WILDLIFE SERVICE

Yathong Nature Reserve Vegetation Survey

September 2014 and September 2015



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Contents

List of photos	iv
List of maps	iv
Acknowledgements	iv
Executive summary	v
Background	1
Introduction	3
Results	6
Vegetation classification	6
Plant community types	7
Reserve species list	14
Discussion	17
Vegetation	17
Full floristic plots	18
Plant species list	19
Threatened species	19
Goat grazing and browsing	20
Recommendations	24
References	25
Appendix A: Plant species of significance and taxonomic interest	27
Appendix B: Full floristic plots (NPWS)	29
Appendix C: Yathong Nature Reserve plant list	116

List of tables

Table 1	Vegetation classes, full floristic plots	6
Table 2	Plant community types	12
Table 3	Yathong Nature Reserve native species by growth form	15
Table 4	Yathong Nature Reserve exotic species by growth form	15
Table 5	Yathong Nature Reserve plant list	116

List of figures

Figure 1	NSW vegetation classification hierarchy	3
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List of photos

Photo 1	Brigalow (<i>Acacia harpophylla</i>), Merrimurriwa Range, Yathong Nature Reserve	1
Photo 2	Ground-heads (<i>Chthonocephalus pseudevax</i>), Yathong Nature Reserve	6
Photo 3	PCT 184 Dwyer's Red Gum – White Cypress Pine – Currawang low – shrub-grass woodland of the Cobar Penneplain Bioregion	7
Photo 4	PCT104 – Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion	9
Photo 5	PCT171 – Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	11
Photo 6	Riley's spider orchid (<i>Caladenia rileyi</i>) new reserve species record	13
Photo 7	Rustyhoo (<i>Pterostylis cobarensis</i>) new reserve threatened species record	14
Photo 8	Merrimurriwa Range	17
Photos 9 and 10	Feral goat impacts on curly-bark wattle (<i>Acacia curranii</i>)	20
Photo 11	Browsing line from feral goats in sandplain mallee	21
Photo 12	Feral goat browsing on eucalypt mallee bark	22

List of maps

Map 1	Locations of Yathong, Round Hill and Nombinnie nature reserves and Nombinnie State Conservation Area (G Wright/DPIE)	2
Map 2	NPWS and SVTM full floristic plot locations (G Wright/DPIE)	5
Map 3	Location of ridges and ranges in Yathong Nature Reserve, with plots marked	29
Map 4	Location of open plains in Yathong Nature Reserve, with plots marked	52
Map 5	Location of mallee vegetation in Yathong Nature Reserve, with plots marked	88

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Executive summary

A vegetation survey of Yathong Nature Reserve, in central-western New South Wales (NSW), was conducted over two seasons, during September 2014 and September 2015. This was completed as part of a broader program by the NSW National Parks and Wildlife Service (NPWS) to improve knowledge of species biodiversity in targeted western NSW reserves. The information collected from this program aims to: (i) provide NPWS operational staff with current information for developing or updating reserve plans of management, (ii) document the condition of vegetation communities and their constituent species on the reserve at a given time, (iii) identify species, habitats and vegetation types requiring future monitoring if current threats are identified, and (iv) collect data that can be used to either review or update the reserve vegetation maps.

In 2012 no permanent plots were located in Yathong Nature Reserve. In June 2013, 36 unmarked plots were surveyed as part of the NSW State Vegetation Type Map Program (SVTM, Science Division) and during this survey 84 permanently marked NPWS plots were established (Park Programs, NPWS) (Appendix B). For a reserve of this size at least 110 plots is regarded as 'adequate' to cover the contained floristic diversity. The establishment of these permanently marked NPWS plots allows for repeat visits at known locations. This can then provide valuable information on the persistence of biodiversity values and the effectiveness of management strategies.

An updated species list for Yathong Nature Reserve was also completed as part of this flora survey (Appendix C). The basis for the list was survey records (plot data and incidental observations) from the 2014 and 2015 surveys, and data extracted from the Australian Virtual Herbarium (AVH). This list increased the number of plants known to occur on the reserve by 174 species (from 416 to 590). In addition to compilation of the list, over 100 plant specimens were collected and lodged with the National Herbarium of NSW and all plot data have been included in the Department of Planning, Industry and Environment (DPIE) database the BioNet Atlas.

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Background

Yathong Nature Reserve is situated in the central-western region of New South Wales. It is on the boundary between two major biophysical (IBRA) regions: the Murray Darling Depression and the Cobar Peneplain (Interim Biogeographic Regionalisation for Australia, IBRA, Version 7). Its significance in diversity of both flora and fauna led to its listing as a UNESCO Biosphere Reserve in 1977. It protects a range of mallee communities with approximately half its area covered by a complex of mallee vegetation. The other half of the reserve protects a diversity of semi-arid woodlands. Yathong shares part of its eastern border with Nombinnie Nature Reserve. Yathong, Round Hill and Nombinnie nature reserves and Nombinnie State Conservation Area together comprise a large area (approx. 245,000 ha) (Map 1) containing a range of land systems and plant communities. These reserves together protect a diverse range of mallee and woodland habitats and their constituent fauna species (NPWS 1996) and contains the largest continuous area of mallee managed by NPWS in New South Wales (Cohn 1995). This flora survey did not include Nombinnie Nature Reserve or State Conservation Area, but focused solely on Yathong Nature Reserve.



Photo 1 **Brigalow (*Acacia harpophylla*), Merrimerrriwa Range, Yathong Nature Reserve**
(Photo G Wright/ DPIE)



Map 1 Locations of Yathong, Round Hill and Nombinnie nature reserves and Nombinnie State Conservation Area (G Wright/DPIE)

Introduction

NPWS Western Branch conducted a vegetation information audit of their reserves in 2010–11 (Vegetation Information Audit, NPWS Western Branch, July 2012). Nombinnie and Round Hill nature reserves were assessed to have an adequate number of full floristic plots, while the audit revealed there were no plots in Yathong Nature Reserve. A reserve the size of Yathong requires at least 110 full floristic plots to adequately capture the floristic diversity (M Kerr DPIE, pers. comm., 2014). The current survey was designed to establish a series of permanent vegetation plots to assist in documenting the reserve’s flora and provide baseline information for future monitoring.

Prior to commencement of the survey a vegetation data audit was completed using the [BioNet Atlas](#) in July 2014. This found that 36 full floristic plots and 165 ‘rapid’ plots had been surveyed in Yathong (June 2013) since completion of the NPWS 2012 report. These data had been collected as part of the NSW State Vegetation Type Map Program (SVTM) run by Science Division to map the native vegetation across New South Wales (these plots were not permanently marked). In the current survey only the full floristic plots were mapped and considered during the plot selection process.

The plot locations were selected (stratified) based on the current vegetation map for the reserve (Holmes 1991) and visual assessment of vegetation patterns from the latest aerial imagery from NSW Land and Property Information (NSW LPI). Of the recommended 110 plots for the reserve, a total of 84 full floristic permanent plots were established (45 in September 2014 and 39 in September 2015) (Map 2) (Appendix B).

Currently NSW vegetation is classified using a hierarchical system that is maintained in the [BioNet Vegetation Classification database](#) (Figure 1). For the purposes of this report an attempt has been made to allocate the full floristic plots established in Yathong to this classification system, with each plot assigned to the defined NSW vegetation formation, NSW vegetation class and NSW plant community type (PCT).

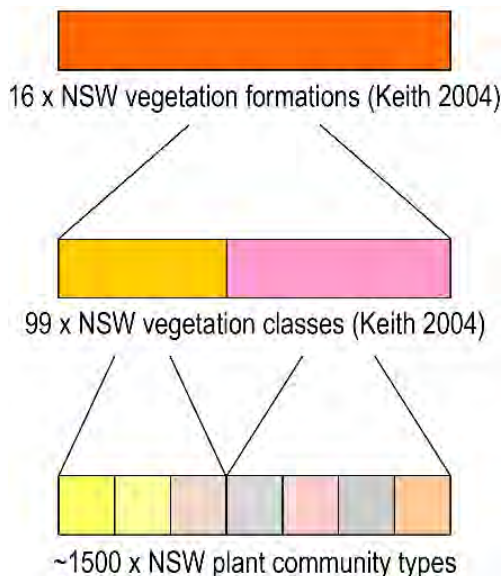


Figure 1 NSW vegetation classification hierarchy

A full plant species list was generated for Yathong Nature Reserve prior to commencement of surveys in 2014. Data for this list were sourced from an existing NPWS species list and augmented with data from the BioNet Atlas, extracted to the park boundary. The list contained 416 plant species (not including subspecies) and provided a valuable source of information during the 2014 and 2015 surveys.

This project did not attempt to produce a vegetation map for the reserve, but did analyse all floristic data collected so that plot data could be allocated to a PCT and the PCTs that occur on the reserve could be identified.

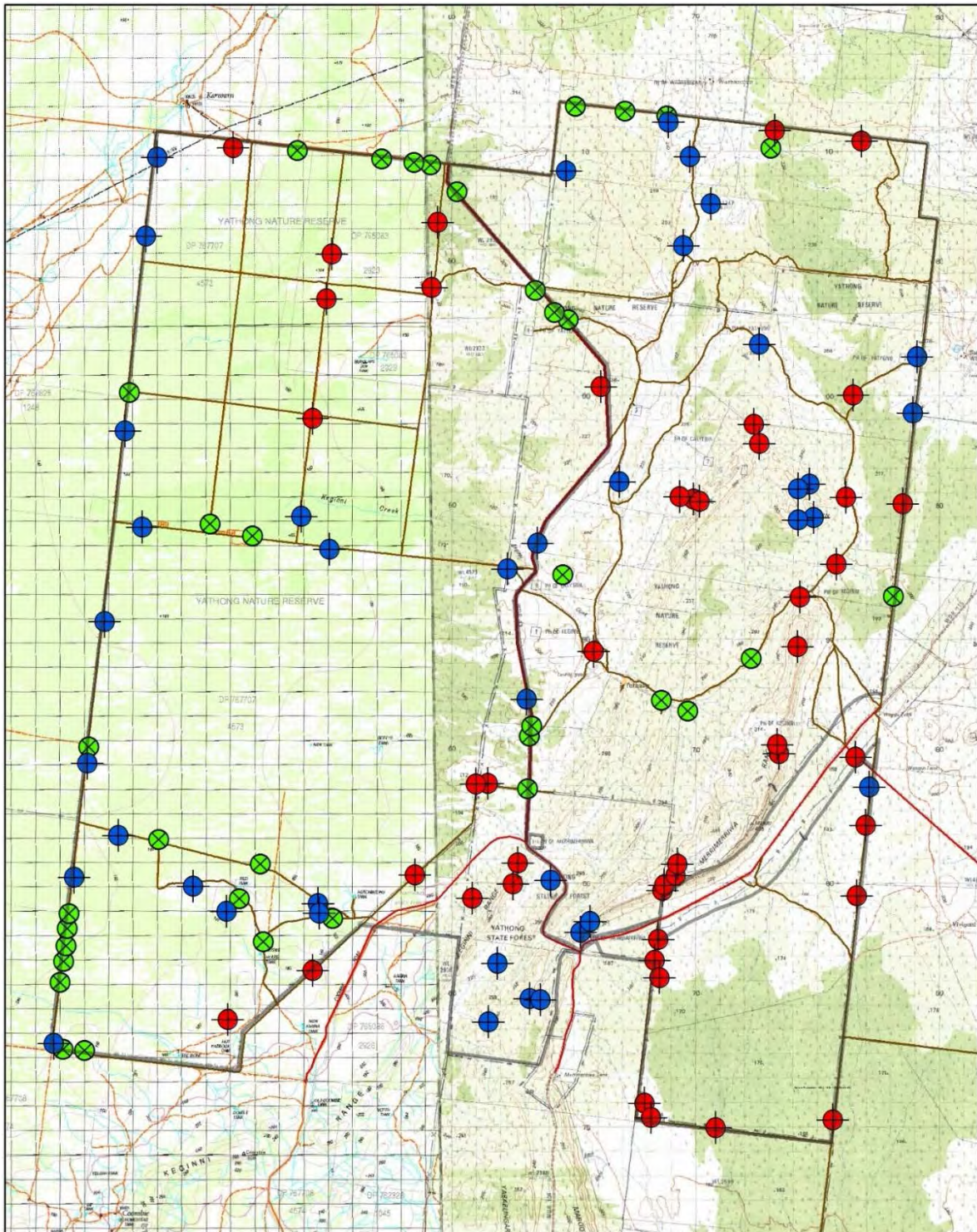
Prior to analysis (NPWS & SVTM) each plot was allocated to a PCT. This was done based on the full floristics data and reflected expert opinion on what was considered to be the best fit to a specified PCT. The data were then cleaned to exclude annuals, exotic species and incompletely named species; subspecies were merged in some cases. Analysis of these data, using Primer v6 (Clarke & Gorley 2006), was then completed to assess the relationships between all plots and to assess if any groups of plots were strongly related based on floristics.

Early analysis of the data investigated any potential differences between the two NPWS surveys (2014 and 2015) and the SVTM surveys. This was done to identify whether these data could be analysed as a single data set. The two NPWS datasets appeared similar, but the SVTM dataset stood out as being separate in the analysis. This difference seems to be driven by the average (mean) number of species found per plot. The number of species found per plot for the two NPWS surveys was similar (NPWS 2014 data 34.9 ± 1.7 (mean, ± 1 SE); NPWS 2015 data (31.5 ± 1.5); whereas the SVTM 2013 data were much lower in species number (15.2 ± 0.8). The two NPWS surveys and the SVTM survey were conducted at different times of the year, which may account for the difference in species diversity. SVTM plots were completed in June 2013, while NPWS surveys were completed in September 2014 and September 2015. September is considered optimal for conducting surveys to maximise detection of plant species diversity. On the basis of this difference the two data sets were analysed separately; the results presented in this report are only for the combined NPWS plot data, although the PCTs that SVTM plots were assigned to are briefly discussed.




Only 80 of the 84 NPWS plots were included in the final analysis. Four plots were excluded as early analysis showed these were floristically very different to the rest of the plot data; two were on highly disturbed, cleared land; the other two could not be assigned a PCT. For the purposes of analysis Dwyer's red gum (*Eucalyptus dwyeri*) and Manara Hills red gum (*Eucalyptus vicina*) were considered a single entity. These species are both recorded within the reserve, but material collected in Yathong has been identified as an intergrade between the two species.

A plant species list for Yathong Nature Reserve was updated with floristic data collected from the NPWS permanent plots and incidental survey, with data extracted from the AVH (August 2016) and other sources. Each species on the list is identified as native or exotic, allocated to life form (fern, vine, forb, subshrub, shrub, small tree, mallee or tree) and to lifecycle type (annual, biennial or perennial). Some species fall within two categories, for example shrub/small tree, but for the purposes of summarising these data they were allocated to one category or another. Analysis of the plant list was only completed on species, and excluded subspecies/varieties. For example, a plant species with several subspecies or varieties occurring in the reserve (e.g. climbing saltbush, *Einadia nutans* with three subspecies) was counted as one entity in the analysis.

The list also annotates: (1) species for which there are herbarium specimens held in Australian Herbaria (AVH, August 2016), (2) species for which herbarium collections were made in the NPWS surveys, (3) additional species records from other sources (D Eldridge, pers. comm., 2016), (4) new species records for the reserve recorded during the NPWS surveys, (5) Atlas BioNet records, and (†) threatened species (Appendix C).



**Yathong Nature Reserve
Full-floristic Plots**

-  NPWS plots 2014
-  NPWS plots 2015
-  Science Division plots 2013

Map 2 NPWS and SVTM full floristic plot locations (G Wright/DPIE)

Results

Vegetation classification

Analysis of the NPWS data indicated that the NPWS plots occur within two broad vegetation formations: (i) Semi-arid Woodlands (Shrubby sub-formation) and (ii) Arid Shrublands (Acacia sub-formation) (Keith 2004). Within these vegetation formations the plots are found in six vegetation classes and 12 plant community types (PCTs) (Tables 1 & 2). Images and descriptions of all PCTs are available in the BioNet Vegetation Classification database (www.environment.nsw.gov.au/NSWVCA20PRapp).

Of the 36 SVTM plots, 25 were in Mallee (PCT173), 10 in Gum Coolibah woodland (PCT104) and one in Belah/Black Oak (PCT57).

Table 1 Vegetation classes, full floristic plots

Vegetation class (Keith 2004)	SVTM	NPWS
Dune Mallee Woodlands	–	10
Inland Rocky Hill Woodlands	10	33
North-west Plain Shrublands	–	5
Sand Plain Mallee Woodlands	25	20
Semi-arid Sand Plain Woodlands	1	7
Western Peneplain Woodlands	–	7
Unallocated	–	4
	36	84

Note: With additional plot data, more definition between the plant community types may be possible; the current analysis provides a best-fit based on the current available data. In the full floristic plots document, each plot has other possible PCT allocations listed if identified.



Photo 2 Ground-heads (*Chthonocephalus pseudevax*), Yathong Nature Reserve
(A Orme/DPIE)

Plant community types

Ridges and ranges



Photo 3 PCT 184 Dwyer's Red Gum – White Cypress Pine – Currawang low –shrub-grass woodland of the Cobar Peneplain Bioregion
(G Wright/DPIE)

PCT184

Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Peneplain Bioregion (PCT184) was a well-defined group. This community occurs on the Merrimerrriwa and Keginni ranges and on Blue Mountain in Yathong Nature Reserve.

Diagnostic species for this community were *Eucalyptus dwyeri/vicina*, *Cheilanthes austrotenuifolia*, *Thyridolepis mitchelliana*, *Callitris glaucophylla* and *Oxalis perennans*.

PCT176

Green Mallee – White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Peneplain Bioregion was a well-defined group. This community was recorded on the Keginni Range and on Blue Mountain in Yathong Nature Reserve, although it could also occur on the Merrimerrriwa Range in the reserve.

Diagnostic species for this community were *Eucalyptus viridis*, *Dodonaea viscosa* subsp. *cuneata*, *Aristida jerichoensis* var. *subspinulifera* and *Austrostipa scabra* subsp. *scabra*.

PCT142

Broombush shrubland in the mallee landscapes of the temperate and semi-arid (warm) climate zones. This PCT includes two sites dominated by broombush (*Melaleuca uncinata*) and one dominated by curly-bark wattle (*Acacia curranii*). This community has strong affinities with PCT176 as it has green mallee as an emergent within its structure, but the understorey is so dense that it dominates the vegetation community. This community occurs on the lower ridges between the Merrimerrriwa and Keginni ranges and appears to extend for some 14 kilometres in the southern part of the reserve.

Diagnostic species for this community from the three plots surveyed were *Melaleuca uncinata*, *Eucalyptus viridis*, *Cheilanthes sieberi* subsp. *sieberi*, *Solanum ferocissimum* and *Thyridolepis mitchelliana*.

PCT180

Grey Mallee – White Cypress Pine woodland on rocky hills of the eastern Cobar Penneplain Bioregion (PCT180) was a well-defined group. During this survey it was recorded on the northern end of the Merrimerrriwa Range and extensively on Blue Mountain. This community is confined to the ridges and ranges within the reserve.

Diagnostic species for this community from the five plots surveyed were *Eucalyptus morrisii*, *Aristida jerichoensis* var. *subspinulifera*, *Calotis cuneifolia* and *Caladenia fuscata*.

PCT125

Mulga – Ironwood shrubland on loams and clays mainly of the Cobar Penneplain Bioregion was a very well-defined group. In Yathong Nature Reserve this community tends to be even-aged and is dominated by mulga, with very few other associated larger species. Very little recruitment was observed in this community and those recruits that were observed had been browsed. During this survey it was mainly recorded on the northern end of the Merrimerrriwa Range and extensively on Blue Mountain. There was one site where the species was recorded as a structural dominant in a gum coolibah open woodland on the eastern side of the reserve in open flat country, indicating that the species is not exclusively confined to the ranges in the reserve.

Diagnostic species for this community from the three plots surveyed were *Acacia aneura*, *Calotis cuneifolia* and *Philothea linearis*.

Open plains



Photo 4 PCT104 – Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion
(G Wright/DPIE)

PCT57

Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Penneplain Bioregion (PCT57) was a very well-defined group. This community occurs across the open plains and is still determined to be the community in the absence of belah/black oak. It can also occur in discrete patches in mallee on the north-western part of the reserve.

Diagnostic species for this community are *Geijera parviflora*, *Casuarina cristata* and *Sclerolaena diacantha*.

PCT104

Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion was not a particularly well-defined group and contains a number of plots that more closely resemble other PCTs. Nine of the plots in this group closely resemble PCT104, this community is widespread in the reserve and commonly associated with white cypress pine. Two plots in the group are dominated by hop-bush species with emergent gum coolibah; these could be allocated to PCT229 Derived mixed shrubland on loamy-clay soils in the Cobar Penneplain Bioregion. Three plots dominated by western rosewood could be allocated to PCT58, Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion. This rosewood community occurs as discrete

patches within the Gum Coolibah woodland. Two other plots in this group are gum coolibah/red mallee, one plot was on the western slope of the Merrimerrriwa Range and the other on an ecotone between PCT173 and PCT104.

Diagnostic species for this community are *Eucalyptus intertexta*, *Callitris glaucophylla*, *Aristida jerichoensis* var. *subspinulifera*, *Oxalis perennans*, *Sclerolaena diacantha*, *Calotis cuneifolia*, *Einadia nutans* subsp. *nutans*, *Convolvulus* spp., *Chenopodium desertorum* subsp. *desertorum*, *Austrostipa scabra* subsp. *scabra*.

PCT229

Derived mixed shrubland on loamy-clay soils in the Cobar Penepplain Bioregion represents a widespread community across the open plains of the reserve. This community is dominated by *Eremophila* shrub species. It is found throughout the reserve in the open plains. It may be a derived community that has dominated sections of the park after previous clearing.

Diagnostic species for this community are *Eremophila longifolia*, *Eremophila glabra*, *Aristida jerichoensis* var. *subspinulifera* and *Austrostipa scabra* subsp. *scabra*.

PCT134

Ironwood woodland of the semi-arid plains was a well-defined group. It occurs in the open plains of the reserve in the northern-western part of the reserve. The individuals within these communities are obviously very old and are showing signs of senescence. No recruitment of the dominant species *Acacia excelsa* subsp. *angusta* was evident in this community.

Diagnostic species for this community are *Acacia excelsa* subsp. *angusta*, *Dodonaea viscosa* subsp. *angustissima*, *Aristida jerichoensis* var. *subspinulifera*, *Eremophila longifolia* and *Calotis cuneifolia*.

PCT105

Poplar Box grassy woodland on flats mainly in the Cobar Penepplain and Murray Darling Depression Bioregions was not a particularly well-defined group. This community is highly variable across the reserve, but was cohesive through the dominance of poplar box in the overstorey. One of the plots did not have this diagnostic species within the plot, but was within an area where poplar box occurred. It occurs throughout the open plains of the reserve but pure stands tend to be concentrated around drainage lines.

Diagnostic species for this community are *Eucalyptus populnea* subsp. *bimbil*, *Dodonaea viscosa* subsp. *mucronata*, *Eremophila mitchellii*, *Sida cunninghamii*, *Eremophila longifolia*, *Aristida jerichoensis* var. *subspinulifera* and *Oxalis perennans*.

Mallee



Photo 5 PCT171 – Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
(G Wright/DPIE)

PCT171

Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion was a well-defined group. This mallee type was mainly confined to the western side of the reserve where dune swale topography is evident from aerial images. It also occurs in the patch of mallee on the south-eastern corner of the reserve and is strongly correlated with the Murray Darling Depression Bioregion boundary. It diagnostically has a high cover of *Triodia scariosa*.

Diagnostic species for this community are *Triodia scariosa*, *Eucalyptus socialis*, *Eremophila glabra*.

PCT173

Sandplain mallee of central NSW was a reasonably well-defined group. This community occurs widely in the reserve, within the swales on the western side of the reserve and is the common mallee type on the eastern side of the reserve. More plot data within this community may separate it into two PCTs 173 and 174.

Diagnostic species for this community are *Eucalyptus socialis*, *Eucalyptus dumosa*, *Olearia pimeleoides*, *Eucalyptus gracilis*, *Lomandra effusa*, *Eremophila glabra* and *Halgania cyanea*.

Table 2 Plant community types

PCT	Plant community type	Plot name	No. plots
184	Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Penneplain Bioregion	YNR004, YNR024, YNR041, YNR042, YNR043, YNR071, YNR082, YNR083	8
176	Green Mallee – White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Penneplain Bioregion	YNR022, YNR023, YNR069	3
142	Broombush shrubland in the mallee landscapes of the temperate and semi-arid (warm) climate zones	YNR058, YNR059, YNR060	3
180	Grey Mallee – White Cypress Pine woodland on rocky hills of the eastern Cobar Penneplain Bioregion	YNR003, YNR019, YNR021, YNR070	4
125	Mulga – Ironwood shrubland on loams and clays mainly of the Cobar Penneplain Bioregion	YNR006, YNR018, YNR068	3
57	Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Penneplain Bioregion	YNR013, YNR017, YNR037, YNR053, YNR063, YNR065, YNR072.	7
104	Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion	YNR002, YNR005, YNR008, YNR020, YNR025, YNR028, YNR030, YNR033, YNR034, YNR036, YNR040, YNR050, YNR052, YNR056, YNR064, YNR085.	16
229	Derived mixed shrubland on loamy-clay soils in the Cobar Penneplain Bioregion	YNR016, YNR077	2
134	Ironwood woodland of the semi-arid plains	YNR046, YNR076	2
105	Poplar Box grassy woodland on flats mainly in the Cobar Penneplain and Murray Darling Depression Bioregion	YNR026, YNR035, YNR049, YNR078, YNR084	5
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	YNR014, YNR031, YNR032, YNR038, YNR051, YNR055, YNR057, YNR073, YNR079, YNR080	10
173	Sandplain mallee of central NSW	YNR001, YNR007, YNR009, YNR010, YNR011, YNR012, YNR015, YNR027, YNR048, YNR054, YNR061, YNR062, YNR066, YNR067, YNR074, YNR075, YNR081	17
	Unallocated/not included in analysis: derived native/exotic herbfield	YNR029, YNR039, YNR044, YNR045	4
			84

YNR029 & YNR045

These two plots were not included in the analysis as they are located in highly disturbed parts of the reserve having been extensively cleared and/or cropped. They are described as derived native/exotic herbfield.

YNR039 & YNR044

YNR039 was not included in the analysis as it was a rare small rock outcrop surrounded by mallee vegetation and could not be classified. YNR044 was not included in the analysis as it was not replicated in any other vegetation type and could not be assigned a PCT. This vegetation assemblage may occur more broadly within the reserve on similar rocky outcrops but would need more survey to be able to be identified as a discrete unit.



Photo 6 Riley's spider orchid (*Caladenia rileyi*) new reserve species record
(G Wright/DPIE)

Reserve species list

The plant species list for Yathong Nature Reserve, prior to the current survey, contained 416 species (extracted from BioNET to the reserve boundary, August 2014), excluding subspecies. After the current survey there were 590 plant species listed for the reserve (excluding subspecies), an increase of 30% from prior to these surveys being conducted. Of the 590 species, 83% are native and 17% exotic. The most common growth form is forbs making up 51% of the flora, followed by shrubs (14%), grasses (13%), subshrubs (5%), shrub/small tree (5%) and trees (4%). The most commonly represented plant family is Asteraceae (16%) followed by Poaceae (13%), Fabaceae (8%), Chenopodiaceae (5%) and Myrtaceae (3%). In total, species from 84 families are represented in the flora of Yathong Nature Reserve.



Photo 7 Rustyhood (*Pterostylis cobarensis*) new reserve threatened species record
(A. Orme/DPIE)

Natives

Summary data of the 489 native species listed for Yathong Nature Reserve show that 46% are forbs, 16% shrubs, 11% grasses (Table 3). In addition, the flora found at Yathong is 73% perennial, 21% annual and 6% a combination of annual/ biennial/ perennial. The most commonly represented families were Asteraceae (17%), followed by Poaceae (11%), Fabaceae (8%), Chenopodiaceae (5%) and Myrtaceae (4%). In total, species from 79 families are represented in the native flora of Yathong Nature Reserve.

Table 3 Yathong Nature Reserve native species by growth form

Growth form	No. species	Percentage of natives
Fern	8	2
Orchid	14	3
Forb	226	46
Rush/Sedge	14	3
Grass	53	10
Subshrub	34	7
Shrub	79	16
Shrub/Small tree	25	5
Mallee	7	2
Tree	14	3
Vine	10	2
Mistletoe	5	1
Total	489	

Weeds

Seventeen percent of the plant species recorded for Yathong Nature Reserve are exotic, with 69% forbs, 23% grasses, 4% shrubs and 2% small trees (Table 4). Of these 63% are annual, 24% perennial and 13% a combination of annual/ biennial/ perennial. In total species from 26 families are represented in the exotic flora of Yathong Nature Reserve. The most commonly represented families were Poaceae (25%), Asteraceae (16%), followed by Brassicaceae and Caryophyllaceae (9%).

Table 4 Yathong Nature Reserve exotic species by growth form

Growth form	No. species	Percentage of exotics
Forb	70	69
Grass	23	23
Prostrate vine	1	1
Subshrub	1	1
Shrub	4	4
Small tree	2	2
Total	101	

Plant names

Except for a few taxa, plant names in this report follow the online Flora of New South Wales ([PlantNet](#)). Every effort has been made to achieve the maximum taxonomic resolution, in plant identifications and in rank, with infraspecific taxa recognised where possible.

Common names follow Cunningham et al. (1981), PlantNet, or where not given in these sources, common names are those used in Victoria (DSE 2004). A common name is not available for some species. An asterisk (*) denotes exotic species.

See Appendix A for plant species of significance on the reserve and those with some taxonomic uncertainty.

Discussion

Vegetation

Yathong Nature Reserve (covering 116, 984 hectares) has a diverse range of vegetation types and contains at least 490 native flora species and 12 identified plant community types. The landscape consists of undulating plains, ridges and ranges. The Merrimerrriwa Range is a dominant feature in the landscape that runs in a SW–NE direction on the south-eastern part of the reserve (UNESCO 2015). The Keginni Range is less prominent and found in the central southern area of the reserve.

The vegetation survey conducted in September 2014 and September 2015: (i) established a series of permanent full floristic plots within the reserve, stratified by vegetation type (84 plots); (ii) recorded the types of vegetation present and their general location on the reserve; (iii) collected 200 plant specimens for the NSW Herbarium; (iv) established a full floristic plot in the threatened population of the curly-bark wattle (*Acacia curranii*) and conducted a survey to estimate the population size (Wright & Clark 2015); (v) made general observations about the current vegetation ecology and condition throughout the reserve.



Photo 8 Merrimerrriwa Range
(G Wright/DPIE)

The vegetation on the plains in Yathong Nature Reserve comprises a complex of mallee communities, bumblebox woodlands, pine woodlands, gum coolibah and pine woodlands, belah and wilga woodland, rosewood and open grasslands (derived from previous clearing/disturbance). There are also shrub communities that are dominated variously by *Eremophila* and *Dodonaea* species. This community may be an artefact of previous

disturbance. Increases in these 'woody weeds' have been related to overgrazing, changed fire regimes and recruitment during periods of high rainfall (Westbrooke 1998). The flat plains in the north-western corner of the reserve protect a small population of ironwood (*Acacia excelsa* subsp. *angusta*). This population is significant as it is within the southern distributional limit for this species (see Australian Virtual Herbarium data).

The ridges and ranges of the reserve are covered with a complex of green mallee, grey mallee, Dwyer's red gum, mulga and pine woodlands (Photo 8). A patch of brigalow (*Acacia harpophylla*) occurs on the Merrimerriwa Range (Photo 1), which is at the southern end of the range for this species (see Australian Virtual Herbarium data).

The current vegetation map for Yathong Nature Reserve (Holmes 1991) does not adequately map the reserve vegetation. The vegetation categories are very broad and a revision of this map to adequately consider PCTs would significantly improve park management capabilities.

The past land-use history of Yathong Nature Reserve does not appear well documented and further investigation would provide useful information for the management of the reserve. Observations during the 2014/2015 surveys indicate extensive clearing of white cypress pine (*Callitris glaucophylla*) in the northern section of the reserve, which clearly correlates with old portion boundaries. In the south-eastern corner of the reserve an old fenceline dissects a patch of mallee vegetation following an old portion boundary. The clearing for this fence is visible in the 2014 aerial images (Mount Allen ADS80) and the last owner of the reserve prior to gazettal (Ted Fryer) reported that this area of mallee was fenced off and had never been grazed (J Brickhill, pers. comm., 26 September 2017). There is no waterpoint south of this fenceline in the reserve, suggesting that historic grazing would have been low. Other historic land use on the reserve included unsuccessful cropping. This was attempted by landholders in the areas surrounding the old Yathong homestead and shearing quarters; these areas are now dominated by exotic perennials and native annuals. There may be a correlation between the shrub dominated communities present on the reserve and previous grazing stock intensity.

Full floristic plots

The NPWS surveys established 84 permanent plots in 12 plant community types (PCTs) ranging from mallee complex and woodlands on the flat to undulating plains, to the diverse vegetation occurring on the ridges and ranges of the reserve. Based on the analysis of the floristic data collected, these 12 PCTs were the 'best fit' floristically for the 84 established plots; however, with additional plot data from within the reserve and surrounding areas more definition within the PCTs identified in Yathong vegetation may be possible.

The semi-arid climate of the region, as well as the timing and amount of rainfall at Yathong Nature Reserve, has a very strong influence on the species composition and diversity in any one season (Cunningham et al. 1981). Both surveys were conducted in spring, which is considered the optimal time for detecting species diversity at any given site, but plant diversity is dependent on rainfall in the preceding months. Subsequent surveys of the same plots in future could record additional plant species. There also may be a change in dominance, particularly of the ground layer. This layer is often comprised predominantly of annual species and climatic conditions can lead to a temporary change in dominance if particular species' germination and establishment requirements are met by the climatic conditions at the time (Cunningham et al. 1981). However, in the long term the establishment of these plots allows for repeated visits to be carried out at documented sites. Repeated visits allow investigation into both the persistence of biodiversity values on the reserve and the effectiveness of management strategies, such as feral goat control (OEH 2010).

The 36 SVTM program plots were not permanently marked and therefore cannot be used for ongoing monitoring on the reserve. The data can however be utilised in the production of an updated vegetation map. The plots occurred within three PCTs (25 in PCT173, 10 in PCT104 and one in PCT57). The NPWS surveys established permanent full floristic plots within each of these three PCTs.

Plant species list

The plant species list compiled from the current NPWS plot data, BioNET Atlas (August 2016) and AVH records (August 2015), records 590 plant species for the reserve (excluding subspecies) with 83% being native and 17% exotic. The current survey and database searches found 174 new records of species within the reserve, which increased the number of species known to occur by 30%.

Analysis of this list showed that the dominant growth form (or life form) of the native flora of Yathong is forbs (46%), followed by shrubs (16%), then grasses (10%); trees contribute 3% of the growth forms present but dominate the vegetation and landscapes of the reserve. The predominant life strategies, or life cycles in the native flora are perennial (73%) and then annual (21%). A smaller number of plants are biennial, biennial/annual and annual/perennial (6%). Seventeen percent of Yathong's flora is exotic, of which 76% are forbs, 23% grasses and 1% shrubs. For the exotic flora the annual species (72%) are far greater in number than the perennials (26%), which is the opposite of the native species. Only one shrub, African boxthorn (*Lycium ferocissimum*) is on the list of Weeds of National Significance (WoNS) (this list contains weedy plant species that are controlled and or managed under state or territory legislation). However, although not listed, other weed species represent significant cover in some areas of the reserve and warrant a control program, such as fierce thornapple *Datura ferox*, variegated thistle (*Silybum marianum*) and white horehound (*Marrubium vulgare*).

Threatened species

The reserve protects the largest known population of the threatened species curly-bark wattle (*Acacia curranii*), which is listed as vulnerable on Schedule 1 of the NSW Biodiversity Conservation Act 2016. It also protects populations of the orchid *Pterostylis petrosa*, a NSW endemic known from four collections (AVH data).

The curly-bark wattle (*Acacia curranii*) population was visited in September 2014 and September 2015. Damage from goat browsing was observed and documented, with individual shrubs having bark stripped from the main stems (Photo 9). Crown dieback was also observed on those affected individuals (Photo 10) and no seedlings or regeneration of the population was observed. A full floristic permanent plot has been established in one patch of the species, the population extent has been mapped and a population estimate completed. The number of individuals estimated to occur is in excess of 150,000 plants (Wright & Clark 2015).



Photos 9 and 10 Feral goat impacts on curly-bark wattle (*Acacia curranii*)
(G Wright/DPIE)

Goat grazing and browsing

Goat grazing and browsing of vegetation at Yathong Nature Reserve and throughout western New South Wales is having catastrophic impacts at the individual plant species level, at the vegetation community level and on faunal habitats. Goats are known to have a severe impact on perennial plant species, they can survive on a predominantly woody diet and browse up to two metres high on palatable vegetation (Westbrooke 1998). The longer-term prognosis for the flora, and its dependent fauna, is extinction of numerous species, alteration of ecosystem function, exacerbated soil erosion and other problems such as trampling and blanketing effects of faecal pellets.

Few indigenous plant species in the landscape appear immune to goat grazing/browsing, only those which are toxic (Everist 1981) appear to escape, notably *Nicotiana* and *Bulbine*. Goat browsing is selective and there are also likely to be seasonal responses. In some species, for example *Dianella admixta*, the foliage may remain relatively unscathed but the inflorescences are heavily browsed and rarely able to produce flowers or fruits. While such species may persist in the landscape for a long time, little if any recruitment is occurring and there is likely to be a trajectory of decline. Another issue is the combined effects of grazing/browsing and fire. Mass mortality was observed in recently-burnt broombush (*Melaleuca uncinata*). The species recovers post-fire by the re-sprouting lignotubers; standing stems die during the fire. Goats intensively browse the young shoots from the lignotubers, killing the plants.

Mechanical defences of plants (thorns, spines, prickles) do not seem to deter browsing. The most ferociously spiny plant at Yathong, with needle-like spines, *Solanum ferocissimum*, is frequently severely browsed.

Many plant species in the landscape are represented by very small populations and could therefore be considered critically endangered locally or regionally; for example, only one plant from each of the following species was observed (over about 20 person days of field work) in the 2014 survey: desert lime (*Citrus glauca*), small-leaved mint-bush (*Prostanthera serpyllifolia* subsp. *microphylla*), clubmoss daisy bush (*Olearia lepidophylla*), rock sida (*Sida petrophila*) and austral bugle (*Adjuga australis*).

Other plant species may have a major presence as a structural dominant or co-dominant but recruitment is not occurring. In mulga communities only four seedlings of mulga (*Acacia aneura*) were observed – either very recent germinants less than a year old, or very severely browsed plants obviously years old and only a few centimetres high, but able to survive in rock fissures. No kurrajong (*Brachychiton populneus* subsp. *trilobus*) plants in the landscape are younger than about 25 years except for four seedlings observed where protected by spinifex (*Triodia*) or other vegetation. These plants will soon succumb to browsing once they 'put their heads up'. The brigalow stand on the Merrimerrriwa Range and the ironwood in the north-western corner of the reserve had no observable recruitment and are old, even-aged communities. White cypress pine recruitment was also being severely browsed, impacting on the recovery of these communities on the reserve. Auld and Denham (2001) provide evidence of the negative impact of browsing on the ability of vegetation communities to regenerate, particularly in long-lived herbaceous perennials and shrubs. Further, other studies (Chesterfield & Parsons 1985, Lunt et al. 2007) have implicated grazing by mammals in the lack of regeneration of belah and rosewood communities in the semi-arid zones. Cohn (1995) noted the impact of goat grazing on the vegetation of Nombinnie Nature Reserve, observing higher levels of grazing in the non-mallee than mallee vegetation types.



Photo 11 Browsing line from feral goats in sandplain mallee
(M Irwin/DPIE)

In Yathong Nature Reserve, browsing pressure from goats was not restricted to non-mallee habitats. Observations in the mallee communities in the north-western portion of the reserve (within threatened mallee fowl habitat) indicated severe browsing pressure from goats with browse lines in these communities clearly evident (Photo 11) (M Irving, pers. comm., September 2014). This is the site where the death of re-sprouting post-fire broombush was observed and mortality of mallee pine (*Callitris verrucosa*) from goat damage and browsing pressure. In 2014, grazing pressure appeared to be most severe on the ridges and ranges of the reserve. Here goats are stripping the bark from the mallee eucalypts for food, presumably during times of low herb/shrub fodder availability (Photo 12). The levels of browsing by goats observed in September 2014 on the reserve make it difficult to assess the impact of other grazers or browsers such as rabbits. The possibility of impacts from other species, that is, the total grazing pressure, should not be ignored, but cannot be assessed at

present. Six species of macropods occur in the reserve (western grey kangaroos, eastern grey kangaroos, red-necked wallabies, swamp wallabies, wallaroos and red kangaroos).

There are a number of exclosures established on the Yathong Nature Reserve that could be used to assess the impact of grazing and browsing. Some data are currently being collected by researchers and these should provide valuable insights into the impact of grazing on the vegetation of the reserve (D Eldridge, pers. comm., 2016).

Competition and habitat degradation by feral goats has been listed under NSW legislation as a key threatening process since November 2004. In response to this, NPWS has formulated management strategies to control feral goats on reserves, which are outlined in the Regional Pest Management Strategy 2012–17: Western Rivers Region (OEH 2012), the NPWS Goat Control Plan for Yathong, Nombinnie NR and SCA and Round Hill NR 2013–2018 (OEH 2013) and the 2014/15 Operations Plan Western Rivers Region (OEH 2014). In Yathong Nature Reserve, for the financial years 2014–15 and 2015–16, NPWS programs have removed some 18,370 goats. These have been removed through a combination of competitive rotational mustering, trapping at defined waterpoints and strategic ground shooting operations (supplementary Pest Control Program) (D Egan & J Neville NPWS, pers. comm., 2016).



Photo 12 Feral goat browsing on eucalypt mallee bark
(G Wright/DPIE)

NPWS has implemented other on-ground works to reduce the goat populations on reserves. Recent works have included modification of inflow drains into 30 ground tanks; implemented to reduce water availability (funded through the *Saving our Species* (SOS) threatened species program) and fencing of existing tanks to enable the exclusion of goats from these water sources. In 2014 the Soil Conservation Service carried out earthworks on eight ground

tanks in Yathong Nature Reserve and 15 in the adjoining Nombinnie Nature Reserve, aiming to reduce the duration of water availability in those tanks (D Egan NPWS, pers. comm., 2016).

There was a visible difference between the numbers of goats observed between the two seasons of this vegetation survey. In September 2014 the goat density in the reserve was incredibly high. In September 2015 goat sightings were a much rarer event in comparison. The current NPWS program seems to have been very effective at reducing goat numbers in the reserve. A monitoring program has been established on the reserve to better track the NPWS control program (A McSorley, pers. comm., 2016). The effective removal of goats and the associated reduction in browsing pressure is critical for the recovery and long-term protection of the vegetation and fauna habitats of Yathong Nature Reserve. This single action is currently, and will remain, the most important management action recommended to protect the biodiversity of the reserve and its reliant fauna.

Recommendations

The following recommendations are made as a result of the vegetation surveys:

- Undertake additional targeted plot work to capture the floristic diversity in Yathong Nature Reserve.
- The current vegetation map for Yathong Nature Reserve is both inaccurate and inadequate for park management. A revised vegetation map and report should be completed. Data from vegetation plots and surveys should be retained and utilised in later review or update of the current vegetation map for Yathong Nature Reserve.
- Establish protective measures, accurate population counts and monitoring for curly-bark wattle (*Acacia curranii*) on the reserve.
- Utilise current NPWS full floristic plots in any post-fire monitoring program, either through collection of full floristics data, or as a minimum, use them as photo monitoring plots to record vegetation recovery after fire.
- Maintain the effective control program currently being implemented for feral goats in the reserve. This should be given the highest priority to avoid further, irreparable damage to natural vegetation.
- Collect baseline density levels of feral goats in different landscape/vegetation types within Yathong Nature Reserve. This would assist in managing the observable damage and/or record recovery within the affected vegetation of the reserve.
- Map the location of all monitoring enclosure plots, record them in BioNET, and investigate their use to document current grazing pressure from goats and other herbivores on vegetation. David Eldridge should be contacted regarding the current program collecting data in a number of these enclosures, to determine usability for management purposes.
- Evaluate the impacts of goat browsing/grazing for the particularly vulnerable (to extinction) species in Yathong Nature Reserve, to determine what further measures may be implemented to ensure the long-term security of these species in the landscape.

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Appendix A: Plant species of significance and taxonomic interest

The following are: (i) significant species, (ii) species whose names do not appear in the current Flora of New South Wales, as more than one taxon is present, and (iii) species to which a name(s) cannot be assigned with confidence:

Acacia curranii – this *Acacia* species is listed as vulnerable under the NSW Biodiversity Conservation Act 2016. The southern end of the population was visited in September 2014. Location: Approx. 3.3 km west of the road that runs past the Merrimerrriwa tank (Grid reference Easting: 361572, Northing: 6374383 – GDA 94).

Acacia harpophylla – two small stands of this species occur on the Merrimerrriwa Range; this population is towards the southern end of the range for this species. Location: Approx. 2 km from Roto Road on the Merrimerrriwa Range (Grid reference Easting: 370939, Northing: 6381934 – GDA 94).

Ajuga australis – this is a polymorphic complex in Australia currently under revision. The Yathong form is the large, very showy entity portrayed by Cochrane et al. (1968, p. 59) of sub-arid north-west Victoria, inland New South Wales and South Australia. It occurs at Yathong Nature Reserve in mallee communities on sand, but is evidently now very rare; only one plant was seen.

***Bulbine* sp. aff. *semibarbata* (Yathong)** – the widespread and abundant annual bulbine at Yathong has previously been referred to as *Bulbine semibarbata*; however, it differs from *Bulbine semibarbata* (R.Br) Haw. in a suite of vegetative, floral and fruiting character states (Carr unpubl. data). It is not conspecific with *Bulbine semibarbata* or the entity which occurs further south in the NSW Riverina; it is presumed to be an undescribed species (Carr unpubl. data).

Brunonia australis – the literature usually indicates that this species is a perennial; however, the plant at Yathong Nature Reserve (small widely-scattered populations) is a slender annual with small inflorescences, and appears to be the annual form reported for Central Australia by Carolin (1981). It may represent an undescribed or unrecognised taxon.

Caladenia rileyi – the spider orchid found in flower (Photo 6) was identified as *C. rileyi* (see Jones (1997) and Backhouse (2011)). This species is endemic to New South Wales and has a very localised distribution. There are two sites recorded south of the town of Narrandera (in state forest) and one location south of Weethalle (unreserved) (see PlantNet). This new record in Yathong is c. 260 km north-north-west of the Narrandera population. It is a significant range extension for the species, and the only site reserved on park. Only two plants were found but material was not collected. It would be desirable to obtain more material for comparison. Location: Approx. 700 m east of the Wagga Tank management trail at the base of ridge. This ridge is the northern end of the Merrimerrriwa Range (Grid reference Easting: 373664, Northing: 6390187 – GDA 94).

***Cassytha* sp.** – *Cassytha pubescens* has been recorded and collected from Yathong Nature Reserve by several researchers. The single plant recorded by us was parasitising *Eucalyptus vicina* and it does not key to *C. pubescens* in the literature. Further investigation is warranted.

***Chrysocephalum apiculatum* s.l.** – the Australian botanical community has long been aware that a revision of this complex will show that it comprises a number of species/subspecies. Three very different entities occur at Yathong Nature Reserve: one a small fluffy grey annual; one a suckering green-leaved perennial with sticky leaves; and one a suckering, grey-woolly perennial. The name *C. apiculatum* s.l. is used in this report.

Clematis microphylla* / *C. decipiens – records of *C. microphylla* from Yathong Nature Reserve may be referable to the recently described *C. decipiens* (see Eichler & Jeanes 2011).

Enchylaena tomentosa – there are two entities in this species, one a prostrate, lax, densely mat-forming plant to c. 15–20 cm high with larger grey-green succulent leaves, and the other a rigid shrub to c. 80 cm or more high with silvery tomentose leaves. They can occur together and the latter form is evidently more drought tolerant. Two (cryptic) species are likely to be revealed with appropriate research.

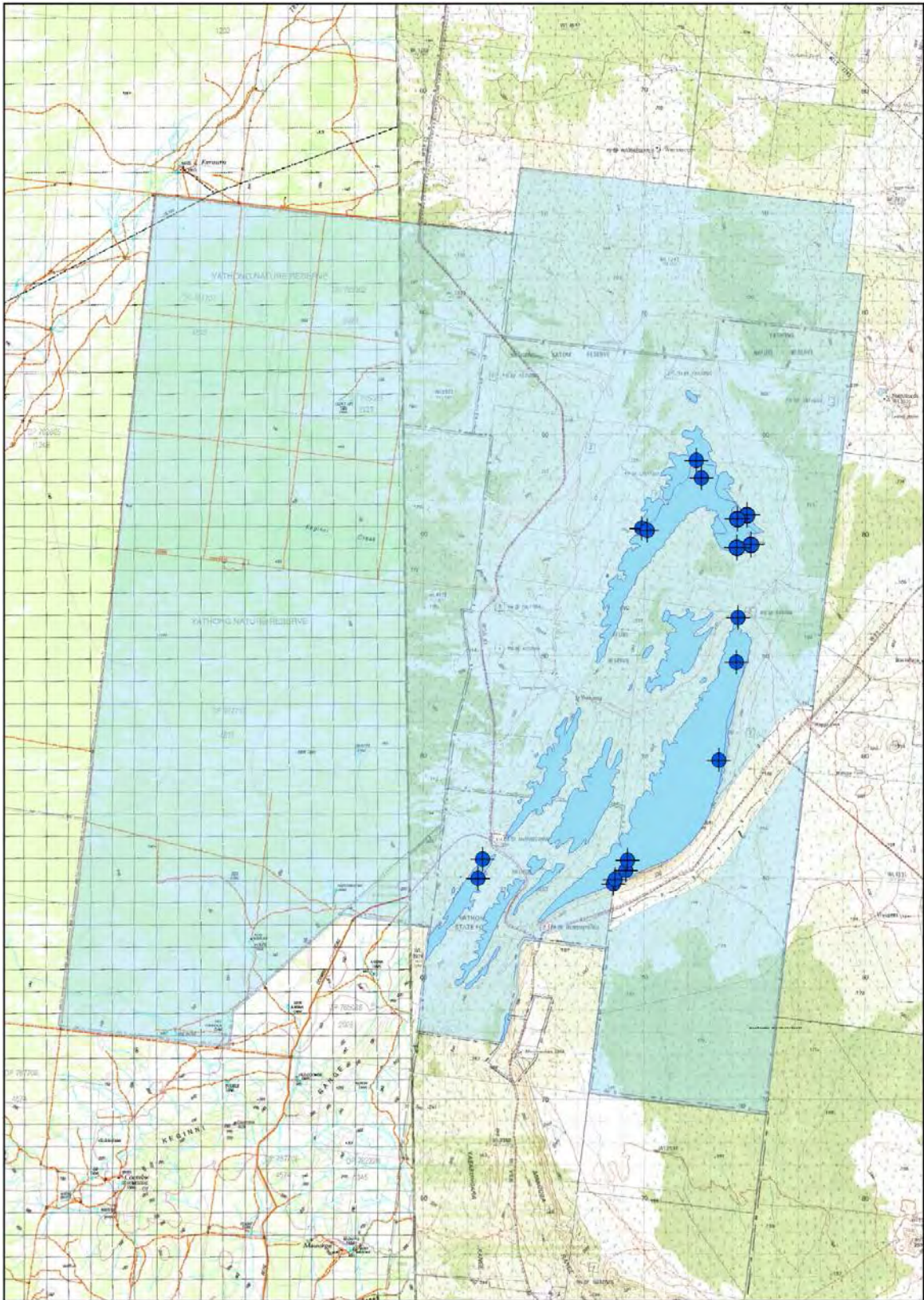
***Eucalyptus* sp. cf. *intertexta* (mallee)** – this tall mallee tree was recorded in one location and it may represent a mallee form of *E. intertexta* as noted by Boland et al. (1984) or perhaps a hybrid with *E. socialis*. Further material is required to clarify the situation. Location: Eastern Boundary trail, approx. 1 km north of its junction with the south-east boundary trail, Yathong Nature Reserve plot no. 032 (Grid reference Easting: 375733, Northing: 6370423 – GDA 94).

***Eucalyptus* sp.** – one small stand of a mallee eucalypt probably related to *E. gracilis* could not be keyed in the taxonomic literature. It has markedly clavate flower buds and may represent a new taxon; further research is required. Location: Approx. 1.7 km north-west of Roto Road on the Merrimerrriwa Range, Yathong Nature Reserve plot no. 044 (Grid reference Easting: 369367, Northing: 6380924 – GDA 94).

***Hypericum* sp. (annual)** – this is most likely an undescribed species and revisionary research is underway in Australia (John Hosking, Tamworth, pers. comm.) where there are more taxa than available names. An annual *Hypericum* has probably not been reported previously in the Australian literature. The plant was found in one small location occupying shallow, seasonally-wet soil over sandstone. It is evidently very rare at Yathong Nature Reserve. Location: Approx. 1.3 km north-west of Roto Road on the Merrimerrriwa Range, Yathong Nature Reserve plot no. 043 (Grid reference Easting: 369288, Northing: 6380458 – GDA 94).

Pterostylis petrosa – this *Pterostylis* (Jones & Clements 1993) species is known from only four records on the AVH database. It is clearly highly endangered. At the locations where it was seen (only three plants) weed invasion was very high, with almost 100% cover of annual catsear (**Hypochaeris glabra*). Goat grazing is also a severe threat.

Appendix B: Full floristic plots (NPWS)



Map 3 Location of ridges and ranges in Yathong Nature Reserve, with plots marked (G Wright/DPIE)

Ridges and ranges

Plot YNR004



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Penepplain Bioregion (PCT 184).

Overstorey: Manara Hills red gum (*Eucalyptus vicina*), kurrajong (*Brachychiton populneus* subsp. *trilobus*).

Mid storey: Annual rice-flower (*Pimelea trichostachya*), leionema (*Leionema* sp.), narrow-leaf waxflower (*Philotheca linearis*).

Ground layer: Hill goodenia (*Goodenia havilandii*), smooth catsear (*Hypochaeris glabra*), rock fern (*Cheilanthes austrotenuifolia*), small purslane (*Calandrinia eremaea*).

Location/Date: Ridge crest on Merrimerriwa Range, approx. 2 km north-west of Roto Road, GDA94 (Easting: 373521, Northing: 6385461) – 09/09/2014.

Plot YNR024



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Penneplain Bioregion (PCT 184).

Overstorey: Manara Hills red gum (*Eucalyptus vicina*).

Mid storey: Kunzea (*Kunzea* sp. 'Mt Kaputar').

Ground layer: Mulga Mitchell grass (*Thyridolepis mitchelliana*), smooth catsear (**Hypochaeris glabra*).

Location/Date: Approx. 1 km south of the Coombie Road on the Keginni Range, GDA94 (Easting: 362804, Northing: 6380986) – 13/09/2014.

Plot YNR041



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Peneplain Bioregion (PCT 184).

Overstorey: White cypress pine (*Callitris glaucophylla*), Manara Hills red gum (*Eucalyptus vicina*).

Mid storey: Thin-leaf daisy bush (*Olearia tenuifolia*).

Ground layer: Smooth catsear (*Hypochaeris glabra*), broad-leaved millotia (*Millotia myosotidifolia*), speargrass (*Austrostipa* sp.), hill raspwort (*Gonocarpus elatus*).

Location/Date: North of Roto Road, Merrimerrriwa escarpment, GDA94 (Easting: 368747, Northing: 6379859) – 18/09/2014.

Note: The vegetation on this plot also has affinities with White Cypress Pine – Mulga low woodland on siliceous rocky ranges mainly of the Cobar Peneplain Bioregion (PCT 106).

Plot YNR042



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Peneplain Bioregion (PCT 184).

Overstorey: Manara Hills red gum (*Eucalyptus vicina*).

Mid storey: None present.

Ground layer: Smooth catsear (*Hypochaeris glabra*), rock fern (*Cheilanthes austrotenuifolia*), hill goodenia (*Goodenia havilandii*).

Location/Date: North of Roto Road, Merrimerriwa escarpment, GDA94 (Easting: 368815, Northing: 6380060) – 18/09/2014.

Plot YNR043



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Peneplain Bioregion (PCT 184).

Overstorey: Manara Hills red gum (*Eucalyptus vicina*), kunzea (*Kunzea* sp. 'Mt Kaputar').

Mid storey: Micromyrtus (*Micromyrtus striata*).

Ground layer: Smooth catsear (*Hypochaeris glabra*), hill goodenia (*Goodenia havilandii*), rock fern (*Cheilanthes austrotenuifolia*).

Location/Date: North of Roto Road, Merrimerriwa escarpment, GDA94 (Easting: 369288, Northing: 6380458) – 18/09/2014.

Plot YNR071



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Penepplain Bioregion (PCT 184).

Overstorey: Dwyer's red gum (*Eucalyptus dwyeri*), white cypress pine (*Callitris glaucophylla*).

Mid storey: White cypress pine (*Callitris glaucophylla*), micromyrtus (*Micromyrtus sessilis*).

Ground layer: Rough raspwort (*Haloragis aspera*), poison rock fern (*Cheilanthes sieberi* subsp. *seiberi*), cough bush (*Cassinia laevis*).

Location/Date: Southern end of Blue Mountain, west of Red Tank management trail, GDA94 (Easting: 374317, Northing: 6395042) – 08/09/2015.

Plot YNR082



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Penepplain Bioregion (PCT 184).

Overstorey: Dwyer's red gum (*Eucalyptus dwyeri*), white cypress pine (*Callitris glaucophylla*).

Mid storey: White cypress pine (*Callitris glaucophylla*).

Ground layer: Chilean whitlow wort (*Paronychia brasiliiana*), common chickweed (*Stellaria media*), broad-leaved millotia (*Millotia myosotidifolia*).

Location/Date: Approx. 500 m north-west of Roto Road, on the Merrimerrriwa Range, GDA94 (Easting: 365380, Northing: 6378139) – 10/09/2015.

Plot YNR083



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Dwyer's Red Gum – White Cypress Pine – Currawang low shrub-grass woodland of the Cobar Peneplain Bioregion (PCT 184).

Overstorey: Manara Hills red gum (*Eucalyptus vicina*), Dwyer's red gum (*Eucalyptus dwyeri*). Identification of the eucalypts at this site needs to be confirmed; they are possibly only *Eucalyptus vicina*.

Mid storey: None present.

Ground layer: Capeweed (**Arctotheca calendula*), smooth catsear (**Hypochoeris glabra*), broad-leaved millotia (*Millotia myosotidifolia*).

Location/Date: Approx. 750 m north-west of Roto Road, on the Merrimmerriwa Range, GDA94 (Easting: 365771, Northing: 6378578) – 10/09/2015.

Plot YNR022



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Green Mallee – White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Peneplain Bioregion (PCT 176).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *cuneata*), daisy bush (*Olearia* sp.).

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), broad-leaved millotia (*Millotia myosotidifolia*), hill goodenia (*Goodenia havilandii*).

Location/Date: West of Red Tank management trail, northern end of Blue Mountain range, GDA94 (Easting: 372725, Northing: 6398203) – 12/09/2014.

Plot YNR023



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Green Mallee – White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Peneplain Bioregion (PCT 176).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Budda (*Eremophila mitchellii*).

Ground layer: Rough speargrass (*Austrostipa scabra* subsp. *scabra*), wallaby grass (*Rytidosperma erianthum*), goodenia (*Goodenia havilandii*).

Location/Date: Approx. 2 km south-east of Coombie Road, on the Keginni Range, GDA94 (Easting: 362618, Northing: 6380120) – 13/09/2014.

Plot YNR069



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Green Mallee – White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Penepplain Bioregion (PCT 176).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *cuneata*), spiked daisy bush (*Olearia subspicata*), clustered everlasting (*Chrysocephalum semipapposum* s.l.).

Ground layer: Poison rock fern (*Cheilanthes sieberi* subsp. *sieberi*), spoon cudweed (*Stuartina muelleri*), small purslane (*Calandrinia eremaea*).

Location/Date: Northern end of Blue Mountain, west of Red Tank management trail, GDA94 (Easting: 374320, Northing: 6396340) – 08/09/2015.

Plot YNR058



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Untyped [this community occurs as discrete patches surrounded by Broombush shrubland in the mallee landscapes of the temperate and semi-arid (warm) climate zones (PCT 142)].

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Curly-bark wattle (*Acacia curranii*), broombush (*Melaleuca uncinata*).

Ground layer: Sponge-fruit (*Trachymene ornata*), sand spurge (*Phyllanthus fuernrohrii*), sunray (*Hyalosperma semisterile*).

Location/Date: In old state forest section of reserve, in curly-bark wattle stand, GDA94 (Easting: 361609, Northing: 6374458) – 06/09/2015.

Plot YNR059



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Broombush shrubland in the mallee landscapes of the temperate and semi-arid (warm) climate zones (PCT 142).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*).

Ground layer: Sticky hop-bush (*Dodonaea viscosa* s.l.), spiny potato bush (*Solanum ferocissimum*), bogon flea (*Calotis hispidula*).

Location/Date: In old state forest section of reserve, in broombush stand, GDA94 (Easting: 631980, Northing: 6376846) – 06/09/2015.

Plot YNR060



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Broombush shrubland in the mallee landscapes of the temperate and semi-arid (warm) climate zones (PCT 142).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*), white cypress pine (*Callitris glaucophylla*).

Mid storey: Broombush (*Melaleuca uncinata*), needle wattle (*Acacia rigens*).

Ground layer: Sponge-fruit (*Trachymene ornata*), bogan flea (*Calotis hispidula*), poison rock fern (*Cheilanthes sieberi* subsp. *seiberi*).

Location/Date: In old state forest section of reserve, in broombush stand, GDA94 (Easting: 364156, Northing: 6380262) – 06/09/2015.

Plot YNR003



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Grey Mallee – White Cypress Pine Woodland on rocky hills of the eastern Cobar Peneplain Bioregion (PCT 180).

Overstorey: Grey mallee (*Eucalyptus morrisii*), Manara Hills red gum (*Eucalyptus vicina*).

Mid storey: Thin-leaf daisy bush (*Olearia tenuifolia*).

Ground layer: Hill goodenia (*Goodenia havilandii*), smooth catsear (*Hypochaeris glabra*), sand spurge (*Phyllanthus fuernrohrii*), common sunray (*Triptilodiscus pygmaeus*).

Location/Date: Ridge crest on Merrimerrriwa Range, 2 km south of Wagga Tank management trail, GDA94 (Easting: 374295, Northing: 6389866) – 09/09/2014.

Plot YNR019



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Grey Mallee – White Cypress Pine Woodland on rocky hills of the eastern Cobar Peneplain Bioregion (PCT 180).

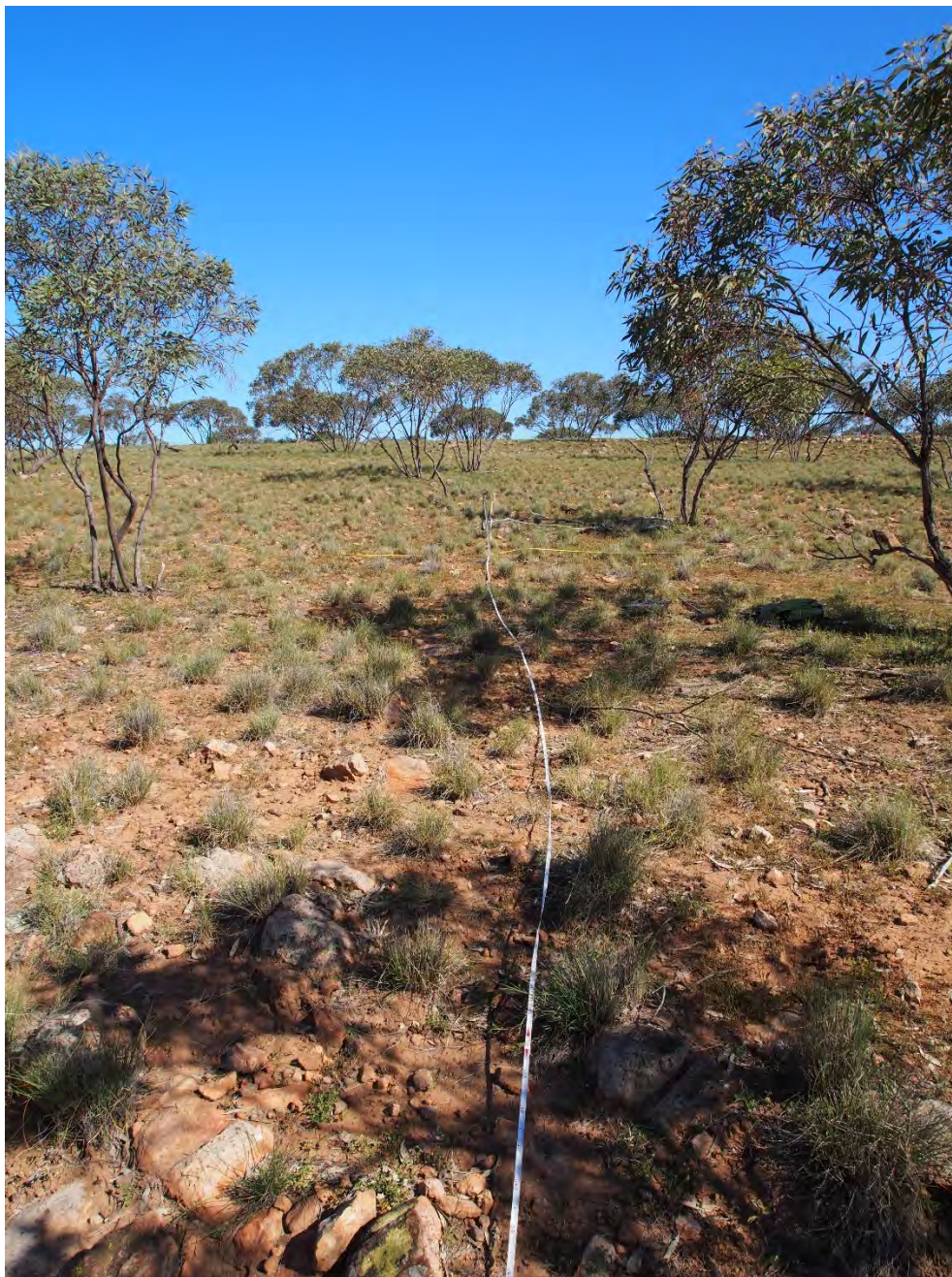
Overstorey: Grey mallee (*Eucalyptus morrisii*), Manara Hills red gum (*Eucalyptus vicina*).

Mid storey: Narrow-leaf waxflower (*Philothea linearis*), green fuchsia bush (*Eremophila serrulata*).

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), hill goodenia (*Goodenia havilandii*), broad-leaved millotia (*Millotia myosotidifolia*), bogan flea (*Calotis hispidula*).

Location/Date: Eastern side of Ring-road management trail, approx. 4 km west of Blue Mountain, GDA94 (Easting: 370271, Northing: 6395821) – 12/09/2014.

Plot YNR021



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Grey Mallee – White Cypress Pine Woodland on rocky hills of the eastern Cobar Peneplain Bioregion (PCT 180).

Overstorey: Grey mallee (*Eucalyptus morrisii*).

Mid storey: None present.

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), hill goodenia (*Goodenia havilandii*).

Location/Date: West of Red Tank management trail, northern end of Blue Mountain range, GDA94 (Easting: 372505, Northing: 6398985) – 12/09/2014.

Plot YNR070



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Grey Mallee – White Cypress Pine woodland on rocky hills of the eastern Cobar Peneplain Bioregion (PCT 180).

Overstorey: Grey mallee (*Eucalyptus morrisii*).

Mid storey: None present.

Ground layer: Mulga Mitchell grass (*Thyridolepis mitchelliana*), spoon cudweed (*Stuartina muelleri*), wild onion (*Bulbine semibarbata*).

Location/Date: Southern end of Blue Mountain, west of Red Tank management trail, GDA94 (Easting: 374943, Northing: 6395153) – 08/09/2015.

Plot YNR006



Vegetation classification: North-west Plain Shrublands (Keith 2004).

Plant community type: Mulga – Ironwood shrubland on loams and clays mainly of the Cobar Peneplain Bioregion (PCT 125).

Overstorey: Mulga (*Acacia aneura* s.l.).

Mid storey: None present.

Ground layer: Broad-leaved millotia (*Millotia myosotidifolia*), smooth velleia (*Velleia glabrata*), hill goodenia (*Goodenia havilandii*), slender violet-bush (*Hybanthus monopetalus*), smooth catsear (*Hypochaeris glabra*).

Location/Date: Northern edge of Merrimerrriwa Range, Wagga Tank management trail, GDA94 (Easting: 374385, Northing: 6391881) – 10/09/2014.

Plot YNR018



Vegetation classification: North-west Plain Shrublands (Keith 2004).

Plant community type: Mulga – Ironwood shrubland on loams and clays mainly of the Cobar Penplain Bioregion (PCT 125).

Overstorey: Mulga (*Acacia aneura* s.l.).

Mid storey: Narrow-leaf waxflower (*Philothea linearis*).

Ground layer: Broad-leaved millotia (*Millotia myosotidifolia*), purple burr-daisy (*Calotis cuneifolia*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), rock fern (*Cheilanthes austrotenuifolia*), hill goodenia (*Goodenia havilandii*).

Location/Date: Eastern side of Ring-road management trail, approx. 4.3 km west of Blue Mountain, GDA94 (Easting: 370013, Northing: 6395913) – 12/09/2014.

Plot YNR068



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: White Cypress Pine – Mulga low woodland on siliceous rocky ranges mainly of the Cobar Peneplain Bioregion (PCT 106).

Overstorey: Mulga (*Acacia aneura* s.l.).

Mid storey: None present.

Ground layer: Poison rock fern (*Cheilanthes sieberi* subsp. *sieberi*), broad-leaved millotia (*Millotia myosotidifolia*), sponge-fruit (*Trachymene ornata*).

Location/Date: West of Red Tank management trail, approx. 2.8 km south of its intersection with Yarran Tank management trail, eastern slope of Blue Mountain, GDA94 (Easting: 374773, Northing: 6396524) – 08/09/2015.

Plot YNR044



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Unallocated.

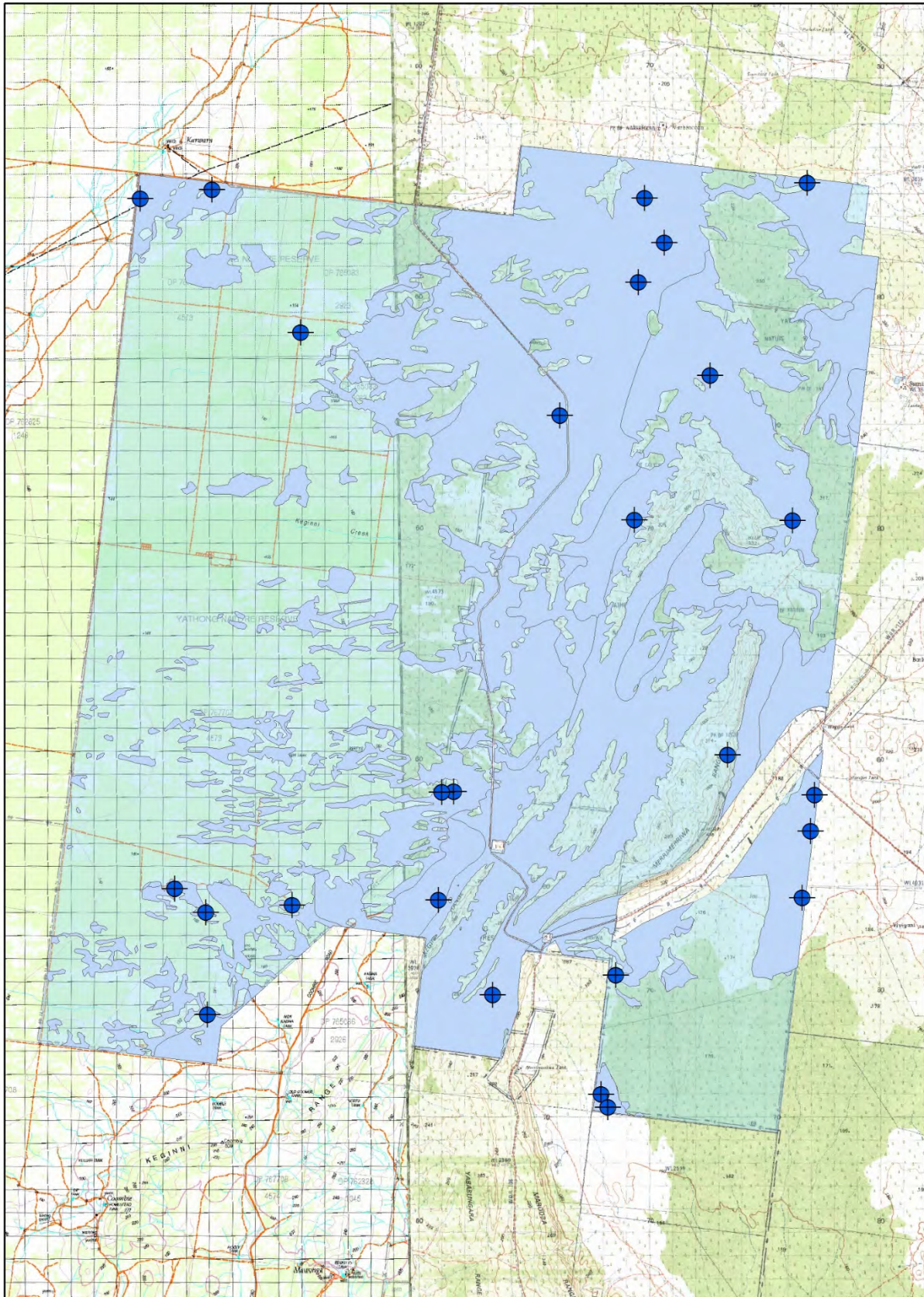
Overstorey: White cypress pine (*Callitris glaucophylla*), kurrajong (*Brachychiton populneus* subsp. *trilobus*), white mallee (*Eucalyptus dumosa*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Not present.

Ground layer: Small sago-weed (*Plantago turrifera*), rough speargrass (*Austrostipa scabra* subsp. *scabra*).

Location/Date: North of Roto Road, Merrimerriwa escarpment, GDA94 (Easting: 369367, Northing: 6380924) – 18/09/2014.

Note: This plot was not included in the analysis. It is located on the Merrimerriwa escarpment but the associated dominant eucalypts, with the exception of this plot, have only been recorded in mallee vegetation at lower elevation in the reserve. This vegetation association can be seen from the aerial images as a discrete line of vegetation that follows a drainage line.



Map 4 Location of open plains in Yathong Nature Reserve, with plots marked (G Wright/DPIE)

Open plains

Plot YNR013



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

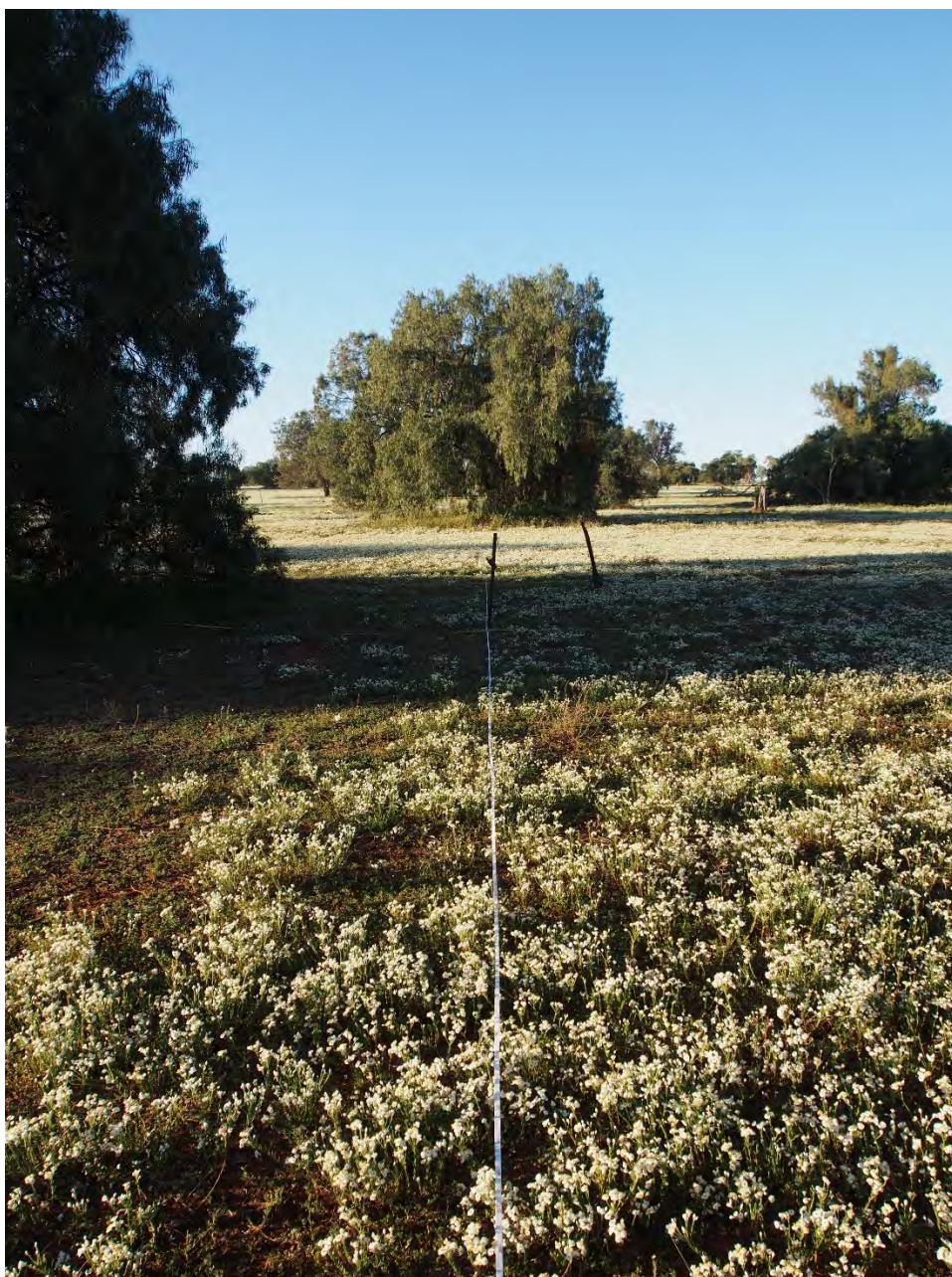
Overstorey: Belah (*Casuarina cristata*), wilga (*Geijera parviflora*), red mallee (*Eucalyptus socialis*).

Mid storey: Budda (*Eremophila mitchellii*), silver cassia (*Senna artemisioides* subsp. *zygophylla*).

Ground layer: Burrabunga (*Olearia pimeleoides*), tar bush (*Eremophila glabra* subsp. *glabra*), mallee saltbush (*Atriplex stipitata*), small purslane (*Calandrinia eremaea*), grey copperburr (*Sclerolaena diacantha*).

Location/Date: Yellow management trail, GDA94 (Easting: 354963, Northing: 6404124) – 11/09/2014.

Plot YNR017



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

Overstorey: Belah (*Casuarina cristata*).

Mid storey: Wilga (*Geijera parviflora*).

Ground layer: Common white sunray (*Rhodanthe floribunda*), cut-leaved medic (**Medicago laciniata*), smooth mustard (**Sisymbrium erysimoides*), small-flower tobacco (*Nicotiana goodspeedii*), woolly burr medic (**Medicago minima*), grey copperburr (*Sclerolaena diacantha*).

Location/Date: Western side of Cobar Road, GDA94 (Easting: 366216, Northing: 6400529) – 11/09/2014.

Plot YNR037



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

Overstorey: Belah (*Casuarina cristata*).

Mid storey: Wilga (*Geijera parviflora*), western rosewood (*Alectryon oleifolius* subsp. *canescens*), budda (*Eremophila mitchellii*), silver cassia (*Senna artemisioides* subsp. *zygophylla*).

Ground layer: Desert goosefoot (*Chenopodium desertorum* subsp. *desertorum*), grey copperburr (*Sclerolaena diacantha*).

Location/Date: West of South-west Boundary fire trail, GDA94 (Easting: 361088, Northing: 6384208) – 16/09/2014.

Plot YNR053



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

Overstorey: Belah (*Casuarina cristata*), wilga (*Geijera parviflora*).

Mid storey: Warrior bush (*Apophyllum anomalum*), western rosewood (*Alectryon oleifolius* subsp. *canescens*).

Ground layer: Grey copperburr (*Sclerolaena diacantha*), desert goosefoot (*Chenopodium desertorum* subsp. *desertorum*), gall weed (*Zygophyllum apiculatum*).

Location/Date: South of Red Tank West fire trail, GDA94 (Easting: 349507, Northing: 6380022) – 05/09/2015.

Plot YNR063



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

Overstorey: Wilga (*Geijera parviflora*), western rosewood (*Alectryon oleifolius* subsp. *canescens*), warrior bush (*Apophyllum anomalum*), budda (*Eremophila mitchellii*).

Mid storey: None present.

Ground layer: Smooth mustard (**Sisymbrium erysimoides*), common chickweed (**Stellaria media*), galvanized burr (*Sclerolaena birchii*).

Location/Date: West side of Pink Tank management trail approx. 250 m north of its intersection with Link 2 management trail, GDA94 (Easting: 369614, Northing: 6406311) – 07/09/2015.

Plot YNR065



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Peneplain Bioregion (PCT 57).

Overstorey: Wilga (*Geijera parviflora*), belah (*Casuarina cristata*), warrior bush (*Apophyllum anomalum*).

Mid storey: None present.

Ground layer: Smooth mustard (*Sisymbrium erysimoides*), four-leaved allseed (*Polycarpon tetraphyllum*), earth cress (*Geococcus pusillus*).

Location/Date: West side of Pink Tank management trail approx. 1.7 km south of its intersection with Northern Boundary fire trail, GDA94 (Easting: 369883, Northing: 6409962) – 07/09/2015.

Plot YNR072



Vegetation classification: Semi-arid Sand Plain Woodlands (Keith 2004).

Plant community type: Belah/Black Oak – Western Rosewood – Wilga woodland of central NSW including the Cobar Penepain Bioregion (PCT 57).

Overstorey: Black oak (*Casuarina pauper*), wilga (*Geijera parviflora*), warrior bush (*Apophyllum anomalum*).

Mid storey: Budda (*Eremophila mitchellii*).

Ground layer: Grey copperburr (*Sclerolaena diacantha*), warty peppercress (*Lepidium papillosum*), small purslane (*Calandrinia eremaea*).

Location/Date: South-west of Red Tank management trail, approx. 1.7 km east from its intersection with Ernie's management trail, GDA94 (Easting: 372717, Northing: 6402266) – 08/09/2015.

Note: This is the only plot on the reserve that is dominated with *Casuarina pauper* rather than *Casuarina cristata*.

Plot YNR002



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: White cypress pine (*Callitris glaucophylla*), Baradine gum (*Eucalyptus chloroclada*).

Mid storey: Gargaloo (*Parsonsia eucalyptophylla*).

Ground layer: Rough speargrass (*Austrostipa scabra* subsp. *scabra*), common white sunray (*Rhodanthe floribunda*), blue crowfoot (*Erodium crinitum*).

Location/Date: Northern Boundary fire trail, GDA94 (Easting: 376919, Northing: 6410614) – 08/09/2014.

Note: Also fits description of White Cypress Pine – Poplar Box woodland on footslopes and penneplains mainly in the Cobar Penneplain Bioregion (PCT 72).

Plot YNR005



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*), red mallee (*Eucalyptus socialis*).

Mid storey: Narrow-leaf waxflower (*Philothea linearis*), annual rice-flower (*Pimelea trichostachya*).

Ground layer: Smooth catsear (*Hypochaeris glabra*), small sago-weed (*Plantago turrifera*), dark sago-weed (*Plantago drummondii*), hill goodenia (*Goodenia havilandii*).

Location/Date: Ridge crest on Merrimerrriwa Range, approx. 2 km north-west of Roto Road, GDA94 (Easting: 373467, Northing: 6385831) – 09/09/2014.

Note: Seemingly intermediate in floristics between White Cypress Pine – Mulga low woodland on siliceous rocky ranges mainly of the Cobar Peneplain Bioregion (PCT 106) and Sandplain mallee of central NSW (PCT 173). This plot was located on the Merrimerrriwa Range but analysis shows its closest affinities were to PCT104. PCT104 is commonly a community of the open plains, not the ranges on Yathong Nature Reserve.

Plot YNR008



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*).

Mid storey: White cypress pine (*Callitris glaucophylla*), sticky hop-bush (*Dodonaea viscosa* s.l.).

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), common white sunray (*Rhodanthe floribunda*), sunray (*Hyalosperma semisterile*), mulga Mitchell grass (*Thyridolepis mitchelliana*), cut-leaved medic (**Medicago laciniata*), smooth catsear (**Hypochaeris glabra*), smooth velleia (*Velleia glabrata*).

Location/Date: Western side of Red Tank management trail, near Blue Mountain GDA94 (Easting: 376283, Northing: 6395989) – 10/09/2014.

Plot YNR025



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: White cypress pine (*Callitris glaucophylla*), gum coolibah (*Eucalyptus intertexta*).

Mid storey: Bead hop-bush (*Dodonaea lobulata*).

Ground layer: Broad-leaved millotia (*Millotia myosotidifolia*), hill goodenia (*Goodenia havilandii*), rock fern (*Cheilanthes austrotenuifolia*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), smooth catsear (*Hypochaeris glabra*), mulga Mitchell grass (*Thyridolepis mitchelliana*).

Location/Date: Approx. 1 km south-east of Coombie Road, west side of the Keginni Range, GDA94 (Easting: 360940, Northing: 6379529) – 13/09/2014.

Plot YNR028



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion/Sandplain mallee of central NSW (PCT 104/173) intergrade.

Overstorey: Gum coolibah (*Eucalyptus intertexta*), red mallee (*Eucalyptus socialis*).

Mid storey: Budda (*Eremophila mitchellii*).

Ground layer: Mallee saltbush (*Atriplex stipitata*), grey copperburr (*Sclerolaena diacantha*), ruby saltbush (*Enchylaena tomentosa*).

Location/Date: Approx. 400 m east of South-east Boundary fire trail, GDA94 (Easting: 368631, Northing: 6376269) – 15/09/2014.

Note: Seemingly intermediate in floristics between Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).and Sandplain mallee of central NSW (PCT 173). This plot is located in the open plains where occasional patches of red mallee (*Eucalyptus socialis*) are present.

Plot YNR030



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: White cypress pine (*Callitris glaucophylla*).

Mid storey: None present.

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), common white sunray (*Rhodanthe floribunda*), ruby saltbush (*Enchylaena tomentosa*), long tails (*Ptilotus polystachyus* var. *polystachyus*).

Location/Date: North of South-east Boundary fire trail, GDA94 (Easting: 368294, Northing: 6370541) – 15/09/2014.

Note: Also fits description of White Cypress Pine – Poplar Box woodland on footslopes and penneplains mainly in the Cobar Penneplain Bioregion (PCT 72).

Plot YNR033



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*), mulga (*Acacia aneura* s.l.).

Mid storey: Wait-a-while (*Acacia colletioides*), silver cassia (*Senna artemisioides* subsp. *zygophylla*).

Ground layer: Climbing saltbush (*Einadia nutans* subsp. *nutans*), rough speargrass (*Austrostipa scabra* subsp. *scabra*), small purslane (*Calandrinia eremaea*).

Location/Date: West of Eastern Boundary fire trail, GDA94 (Easting: 376713, Northing: 6379620) – 16/09/2014.

Plot YNR052



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*), white cypress pine (*Callitris glaucophylla*).

Mid storey: Wilga (*Geijera parviflora*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Wild sage (**Salvia verbenaca*), flax-leaf alyssum (**Alyssum linifolium*), hairy-pod cress (*Harmsiodoxa blennodioides*).

Location/Date: Open plain, south of Red Tank West fire trail, GDA94 (Easting: 350872, Northing: 6378982) – 05/09/2015.

Plot YNR056



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

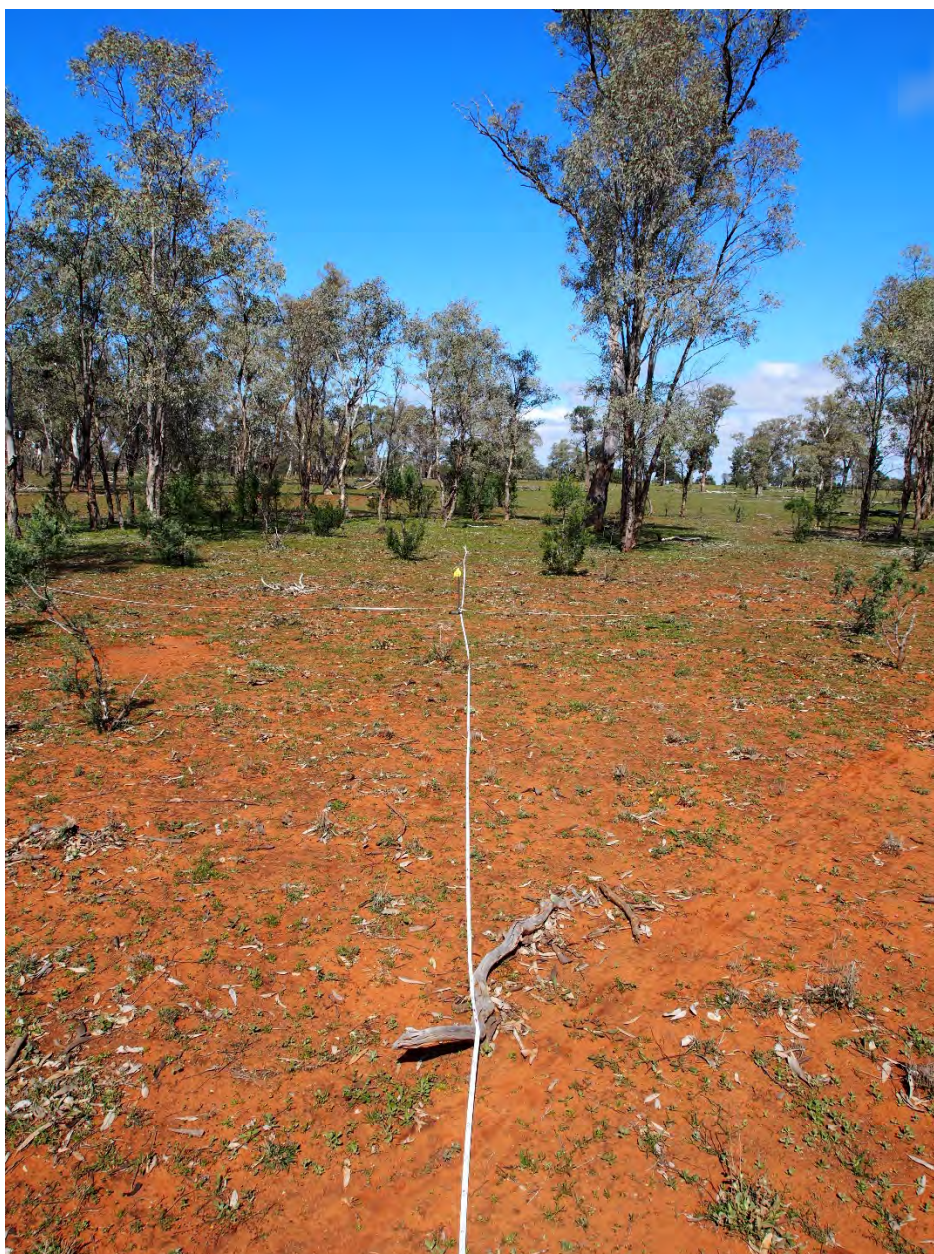
Overstorey: Gum coolibah (*Eucalyptus intertexta*).

Mid storey: None present.

Ground layer: Wild sage (*Salvia verbenaca*), smooth catsear (*Hypochaeris glabra*), burr medic (*Medicago polymorpha*), earth cress (*Geococcus pusillus*), hairy-pod cress (*Harmsiodoxa blennodioides*).

Location/Date: In old state forest section of reserve, in open plain, GDA94 (Easting: 363294, Northing: 6375413) – 06/09/2015.

Plot YNR064



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*).

Mid storey: White cypress pine (*Callitris glaucophylla*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Sunray (*Hyalosperma semisterile*), hairy-pod cress (*Harmsiodoxa blennodioides*), cut-leaf goodenia (*Goodenia cycloptera*), scented mat-rush (*Lomandra effusa*).

Location/Date: East side of Pink Tank management trail approx. 3.5 km south of its intersection with Northern Boundary fire trail, GDA94 (Easting: 370742, Northing: 6408016) – 07/09/2015.

Plot YNR034



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: Gum coolibah (*Eucalyptus intertexta*).

Mid storey: Emubush (*Eremophila longifolia*), narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*).

Ground layer: Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), smooth mustard (**Sisymbrium erysimoides*), Paterson's curse (**Echium plantagineum*), rough speargrass (*Austrostipa scabra* subsp. *scabra*), blue crowfoot (*Erodium crinitum*).

Location/Date: West of Eastern Boundary fire trail, GDA94 (Easting: 377083, Northing: 6382512) – 16/09/2014.

Plot YNR050



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: Sticky hop-bush (*Dodonaea viscosa* s.l.).

Mid storey: White cypress pine (*Callitris glaucophylla*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Smooth catsear (*Hypochaeris glabra*), mother-of-misery (*Cuphonotus humistratus*), cotton bush (*Ptilotus obovatus* var. *obovatus*).

Location/Date: Glenlea fire trail, approx. 3 km west of South-west Boundary trail, GDA94 (Easting: 354618, Northing: 6379303) – 05/09/2015.

Note: Also fits description of Derived mixed shrubland on loamy-clay soils in the Cobar Penneplain Bioregion (PCT 229). This vegetation unit is distinguishable in the field but was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR085



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion (PCT 104).

Overstorey: White cypress pine (*Callitris glaucophylla*).

Mid storey: Narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*), emubush (*Eremophila longifolia*).

Ground layer: Sunray (*Hyalosperma semisterile*), smooth catsear (*Hypochaeris glabra*), mother-of-misery (*Cuphonotus humistratus*).

Location/Date: Eastern Boundary fire trail, approx. 3.3 km south of its intersection with Roto Road, GDA94 (Easting: 377247, Northing: 6384084).

Note: Also fits description of Derived mixed shrubland on loamy-clay soils in the Cobar Peneplain Bioregion (PCT 229). This vegetation unit is distinguishable in the field but was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR020



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: White cypress pine (*Callitris glaucophylla*), western rosewood (*Alectryon oleifolius* subsp. *canescens*).

Mid storey: None present.

Ground layer: Annual rice-flower (*Pimelea trichostachya*), slender daisy (*Brachyscome exilis*), smooth catsear (*Hypochaeris glabra*), common everlasting (*Chrysocephalum apiculatum* s.l.), hill goodenia (*Goodenia havilandii*), cut-leaved medic (*Medicago laciniata*).

Location/Date: Eastern side of Ring-road management trail, approx. 4.8 km west of Blue Mountain, GDA94 (Easting: 369450, Northing: 6396000) – 12/09/2014.

Note: Also fits description of Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion (PCT 58). This vegetation unit is distinguishable in the field and occurs as discrete stands dominated by western rosewood. It occurs within PCT104 but was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR036



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: Western rosewood (*Alectryon oleifolius* subsp. *canescens*), wilga (*Geijera parviflora*).

Mid storey: None present.

Ground layer: Small-flower tobacco (*Nicotiana goodspeedii*), smooth mustard (**Sisymbrium erysimoides*), grey copperburr (*Sclerolaena diacantha*), cut-leaved medic (**Medicago laciniata*).

Location/Date: North of South-west Boundary fire trail, GDA94 (Easting: 361596, Northing: 6384227) – 16/09/2014.

Note: Also fits description of Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion (PCT 58). This vegetation unit is distinguishable in the field and occurs as discrete stands dominated by western rosewood. It occurs within PCT104 but was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR040



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: Kurrajong (*Brachychiton populneus* subsp. *trilobus*), western rosewood (*Alectryon oleifolius* subsp. *canescens*).

Mid storey: Tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: False hairgrass (*Pentameris airoides*), smooth catsear (*Hypochaeris glabra*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), rough speargrass (*Austrostipa scabra* subsp. *scabra*), hill goodenia (*Goodenia havilandii*).

Location/Date: West of South-west Boundary fire trail, GDA94 (Easting: 350931, Northing: 6374553) – 16/09/2014.

Note: Also fits description of Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion (PCT 58). This vegetation unit is distinguishable in the field and occurs as discrete stands dominated by western rosewood. It occurs within PCT104 but was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR029



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey/Mid storey: Not present.

Ground layer: Common white sunray (*Rhodanthe floribunda*), wild sage (**Salvia verbenaca*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), bunch wiregrass (*Aristida behriana*), wiregrass (*Aristida* sp.), speargrass (*Austrostipa* sp.), woolly burr medic (**Medicago minima*), smooth velleia (*Velleia glabrata*).

Location/Date: Approx. 400 m east of South-east Boundary fire trail, GDA94 (Easting: 368004, Northing: 6371121) – 15/09/2014.

Note: This plot was not included in the analysis as it is a highly disturbed site described as derived native/exotic herbfield (previously cleared and cropped). Also fits description of White Cypress Pine – Poplar Box woodland on footslopes and penneplains mainly in the Cobar Penneplain Bioregion (PCT 72).

Plot YNR045



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

Overstorey: Not present.

Mid storey: Not present.

Ground layer: Common white sunray (*Rhodanthe floribunda*), blue crowfoot (*Erodium crinitum*), wild sage (**Salvia verbenaca*), pigmy sunray (*Rhodanthe pygmaea*).

Location/Date: East of Central-valley management trail, GDA94 (Easting: 365936, Northing: 6389669) – 21/09/2014.

Note: This plot was not included in the analysis as it is a highly disturbed site described as derived native/exotic herbfield (previously cleared and cropped). Also fits description of White Cypress Pine – Poplar Box woodland on footslopes and penneplains mainly in the Cobar Penneplain Bioregion (PCT 72).

Plot YNR016



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Gum Coolibah woodland on sedimentary substrates mainly in the Cobar Penneplain Bioregion (PCT 104).

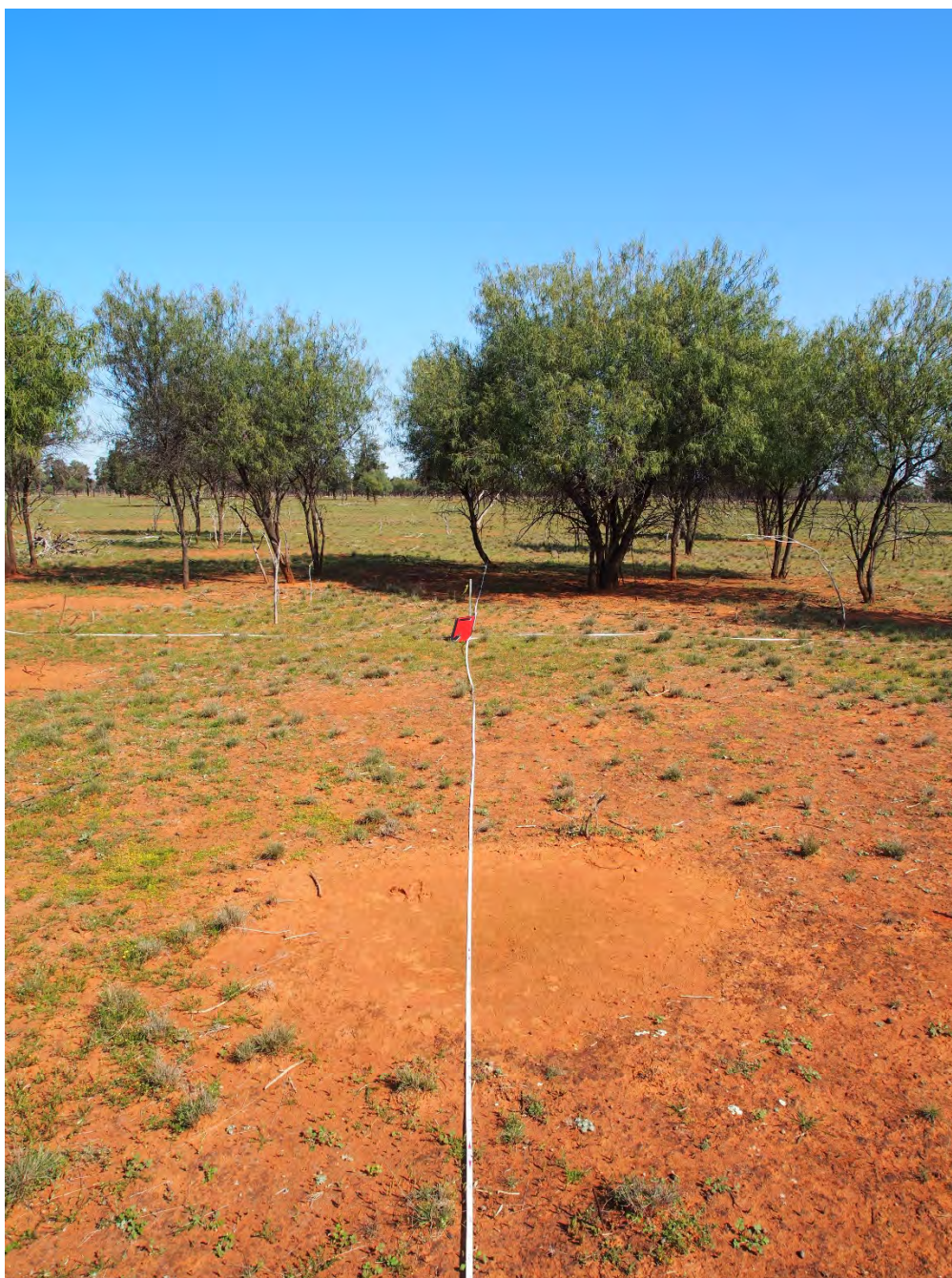
Overstorey: Gum coolibah (*Eucalyptus intertexta*), kurrajong (*Brachychiton populneus* subsp. *trilobus*).

Mid storey: Emubush (*Eremophila longifolia*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Broad-leaved millotia (*Millotia myosotidifolia*), purple burr-daisy (*Calotis cuneifolia*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), rough speargrass (*Austrostipa scabra* subsp. *scabra*), slender daisy (*Brachyscome exilis*), hill goodenia (*Goodenia havilandii*), sand spurge (*Phyllanthus fuernrohrii*), mulga Mitchell grass (*Thyridolepis mitchelliana*).

Location/Date: Green management trail, GDA94 (Easting: 359274, Northing: 6404590) – 11/09/2014.

Plot YNR077



Vegetation classification: North-west Plain Shrublands (Keith 2004).

Plant community type: Derived mixed shrubland on loamy-clay soils in the Cobar Penepain Bioregion (PCT 229).

Overstorey: Emubush (*Eremophila longifolia*).

Mid storey: None present.

Ground layer: Jericho wiregrass (*Aristida jerichoensis*), sunray (*Hyalosperma semisterile*), flannel cudweed (*Actinobole uliginosum*).

Location/Date: Western Boundary fire trail; approx. 1.0 km south of its intersection with Northern Boundary fire trail, GDA94 (Easting: 348022, Northing: 6409939) – 09/09/2015.

Plot YNR046



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Ironwood woodland of the semi-arid plains (PCT 134).

Overstorey: Ironwood (*Acacia excelsa* subsp. *angusta*), western rosewood (*Alectryon oleifolius* subsp. *canescens*).

Mid storey: Emubush (*Eremophila longifolia*), western rosewood (*Alectryon oleifolius* subsp. *canescens*), narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*).

Ground layer: Common everlasting (*Chrysocephalum apiculatum* s.l.), common white sunray (*Rhodanthe floribunda*), bogan flea (*Calotis hispidula*), annual rice-flower (*Pimelea trichostachya*).

Location/Date: North-west corner of reserve, south of Northern Boundary fire trail, GDA94 (Easting: 351138, Northing: 6410323) – 20/06/2014.

Plot YNR076



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Ironwood woodland of the semi-arid plains (PCT 134).

Overstorey: Ironwood (*Acacia excelsa* subsp. *angusta*).

Mid storey: Narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Mother-of-misery (*Cuphonotus humistratus*), burr stickweed (*Omphalolappula concava*), mallee catchfly (**Silene apetala*)

Location/Date: Western Boundary fire trail; approx. 4.3 km south of its intersection with Northern Boundary fire trail, GDA94 (Easting: 347552, Northing: 6406698) – 09/09/2015.

Plot YNR026



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Poplar Box grassy woodland on flats mainly in the Cobar Peneplain and Murry Darling Depression Bioregions (PCT 105).

Overstorey: Bimblebox (*Eucalyptus populnea* subsp. *bimbil*).

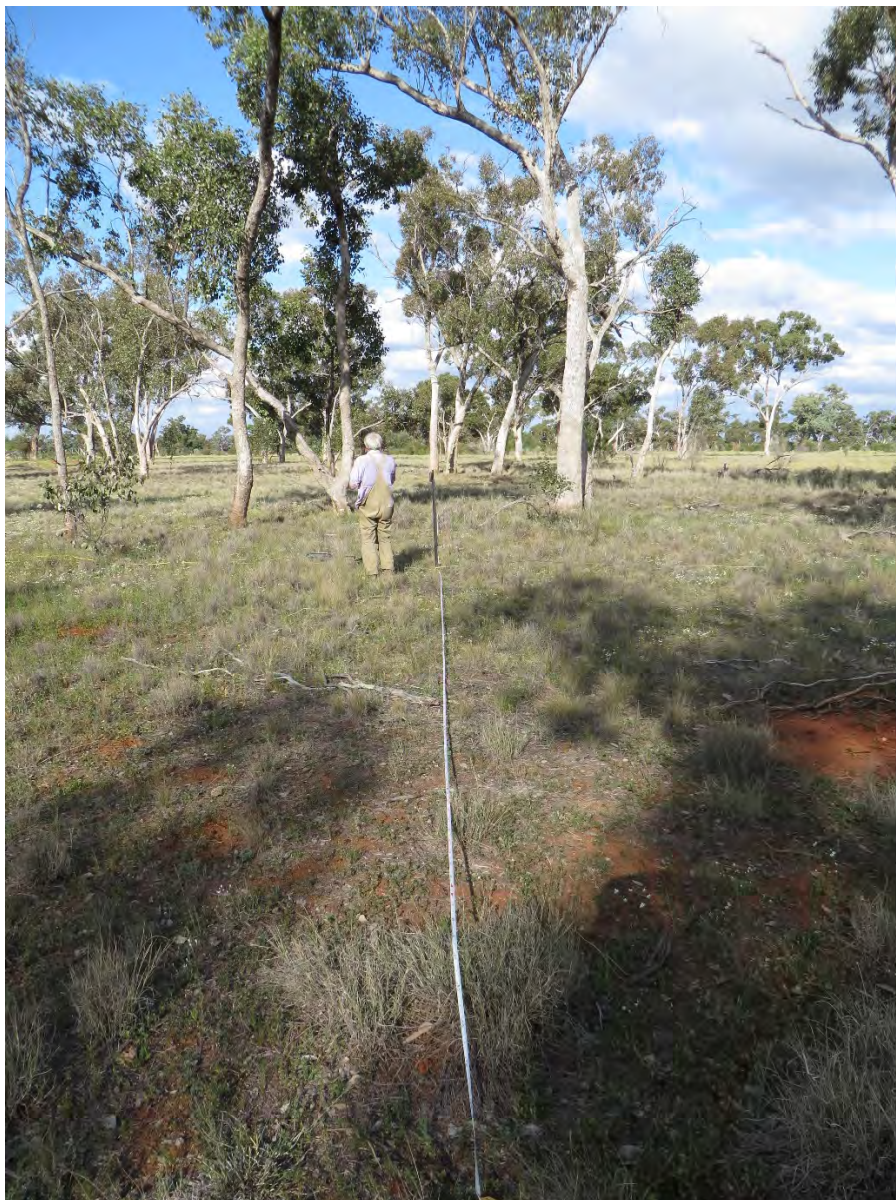
Mid storey: Budda (*Eremophila mitchellii*), wilga (*Geijera parviflora*), emubush (*Eremophila longifolia*).

Ground layer: Common white sunray (*Rhodanthe floribunda*), common wheatgrass (*Elymus scaber*), grey copperburr (*Sclerolaena diacantha*).

Location/Date: East of South-east Boundary fire trail, GDA94 (Easting: 368568, Northing: 6377831) – 15/09/2014.

Note: Also fits description of Poplar Box – Gum Coolibah – White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion (PCT 103).

Plot YNR035



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Poplar Box grassy woodland on flats mainly in the Cobar Peneplain and Murry Darling Depression Bioregions (PCT 105).

Overstorey: Bimblebox (*Eucalyptus populnea* subsp. *bimbil*).

Mid storey: None present.

Ground layer: Blue crowfoot (*Erodium crinitum*), knottybutt grass (*Paspalidium constrictum*), cut-leaved medic (**Medicago laciniata*), speargrass (*Austrostipa* sp.), woolly burr medic (**Medicago minima*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*), common white sunray (*Rhodanthe floribunda*).

Location/Date: North Wangin management trail, GDA94 (Easting: 376664, Northing: 6385316) – 16/09/2014.

Note: Also fits description of Poplar Box – Gum Coolibah – White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion (PCT 103).

Plot YNR049



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Poplar Box grassy woodland on flats mainly in the Cobar Peneplain and Murry Darling Depression Bioregions (PCT 105).

Overstorey: Bimblebox (*Eucalyptus populnea* subsp. *bimbil*), kurrajong (*Brachychiton populneus* subsp. *trilobus*).

Mid storey: Wilga (*Geijera parviflora*), budda (*Eremophila mitchellii*).

Ground layer: Mother-of-misery (*Cuphonotus humistratus*), smooth mustard (**Sisymbrium erysimoides*), stinging nettle (*Urtica incisa*).

Location/Date: East side of Yathong road, approx. 1 km north of intersection with Western fire trail, GDA94 (Easting: 363623, Northing: 6394107) – 04/09/2015.

Note: Also fits description of Poplar Box – Gum Coolibah – White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion (PCT 103).

Plot YNR078



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Poplar Box grassy woodland on flats mainly in the Cobar Peneplain and Murry Darling Depression Bioregions (PCT 105).

Overstorey: Bimblebox (*Eucalyptus populnea* subsp. *bimbil*).

Mid storey: Wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *mucronata*).

Ground layer: Cut-leaved medic (**Medicago laciniata*), dense stonecrop (*Crassula colorata* var. *acuminata*), blue crowfoot (*Erodium crinitum*).

Location/Date: Eastern Boundary fire trail; approx. 300 m north of its intersection with Yarran Tank management trail, GDA94 (Easting: 379203, Northing: 6401748) – 09/09/2015.

Note: Also fits description of White Cypress Pine – Poplar Box woodland on footslopes and peneplains mainly in the Cobar Peneplain Bioregion (PCT72).

Plot YNR084



Vegetation classification: Western Peneplain Woodlands (Keith 2004).

Plant community type: Poplar Box grassy woodland on flats mainly in the Cobar Peneplain and Murry Darling Depression Bioregions (PCT 105).

Overstorey: Gum coolibah (*Eucalyptus intertexta*) – emergent.

Mid storey: Wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *mucronata*), grey mulga (*Acacia brachybotrya*), emubush (*Eremophila longifolia*).

Ground layer: Sunray (*Hyalosperma semisterile*), smooth catsear (*Hypochaeris glabra*), clustered everlasting (*Chrysocephalum semipapposum* s.l.).

Location/Date: Eastern Boundary fire trail, approx. 2 km south of its intersection with Yarran Tank management trail, GDA94 (Easting: 379026, Northing: 6399442) – 11/09/2015.

Note: Also fits description of Derived mixed shrubland on loamy-clay soils in the Cobar Peneplain Bioregion (PCT 229). This plot has been placed in PCT105 as it was floristically most similar to Plot YNR078 and was not floristically different enough for the analysis to show it as a separate vegetation type.

Plot YNR039



Vegetation classification: Inland Rocky Hill Woodlands (Keith 2004).

Plant community type: Grey Mallee – White Cypress Pine Woodland on rocky hills of the eastern Cobar Peneplain Bioregion (PCT 180) – closest match (see sheet)

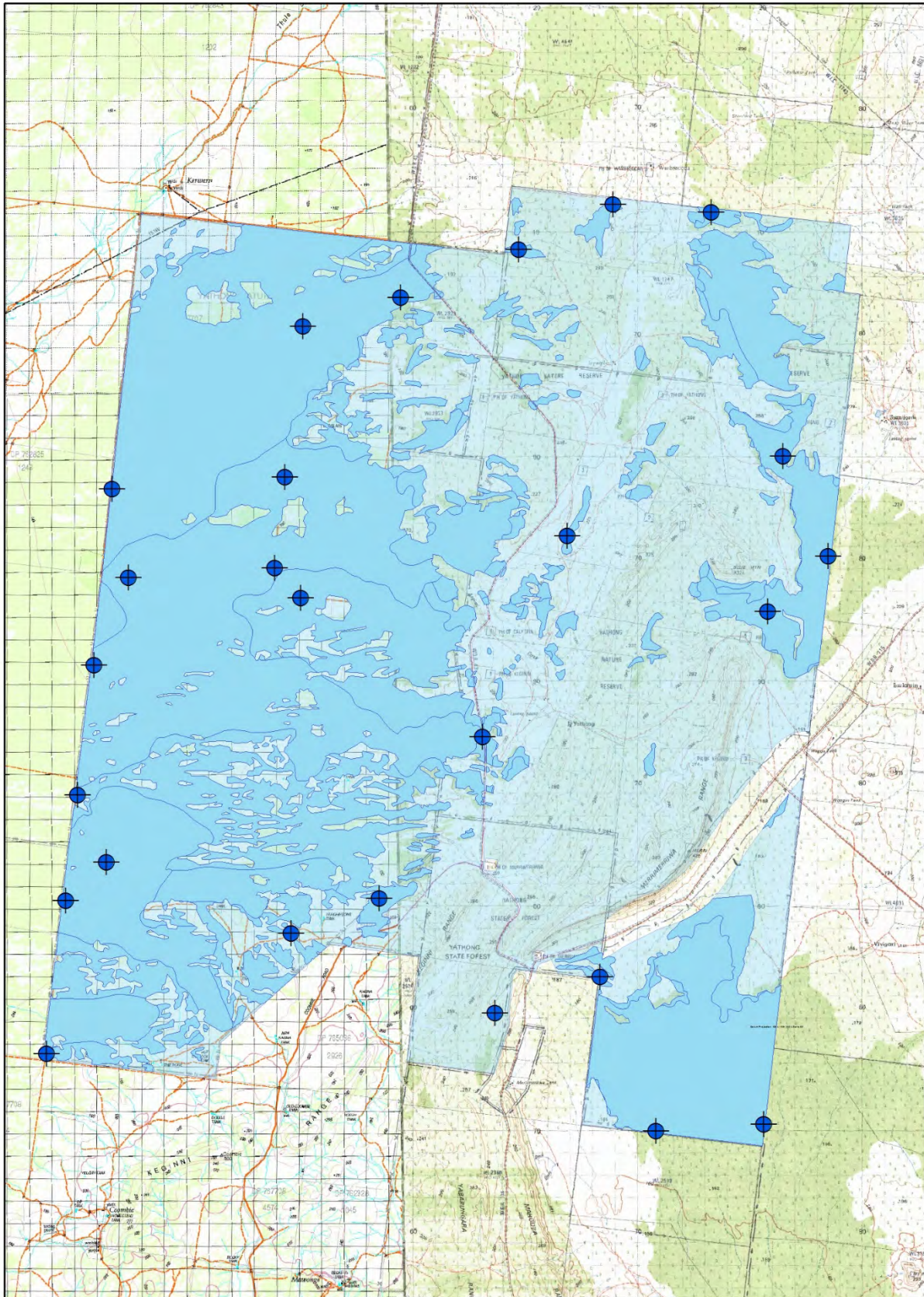
Large Shrub Layer: Cough bush (*Cassinia laevis*).

Mid storey: Fern-leaf hop-bush (*Dodonaea boroniifolia*), micromyrtus (*Micromyrtus striata*).

Ground layer: Mulga cabbage (*Haloragis odontocarpa*), purple burr-daisy (*Calotis cuneifolia*), mulga Mitchell grass (*Thyridolepis mitchelliana*).

Location/Date: West of South-west Boundary fire trail, GDA94 (Easting: 354406, Northing: 6376570) – 16/09/2014.

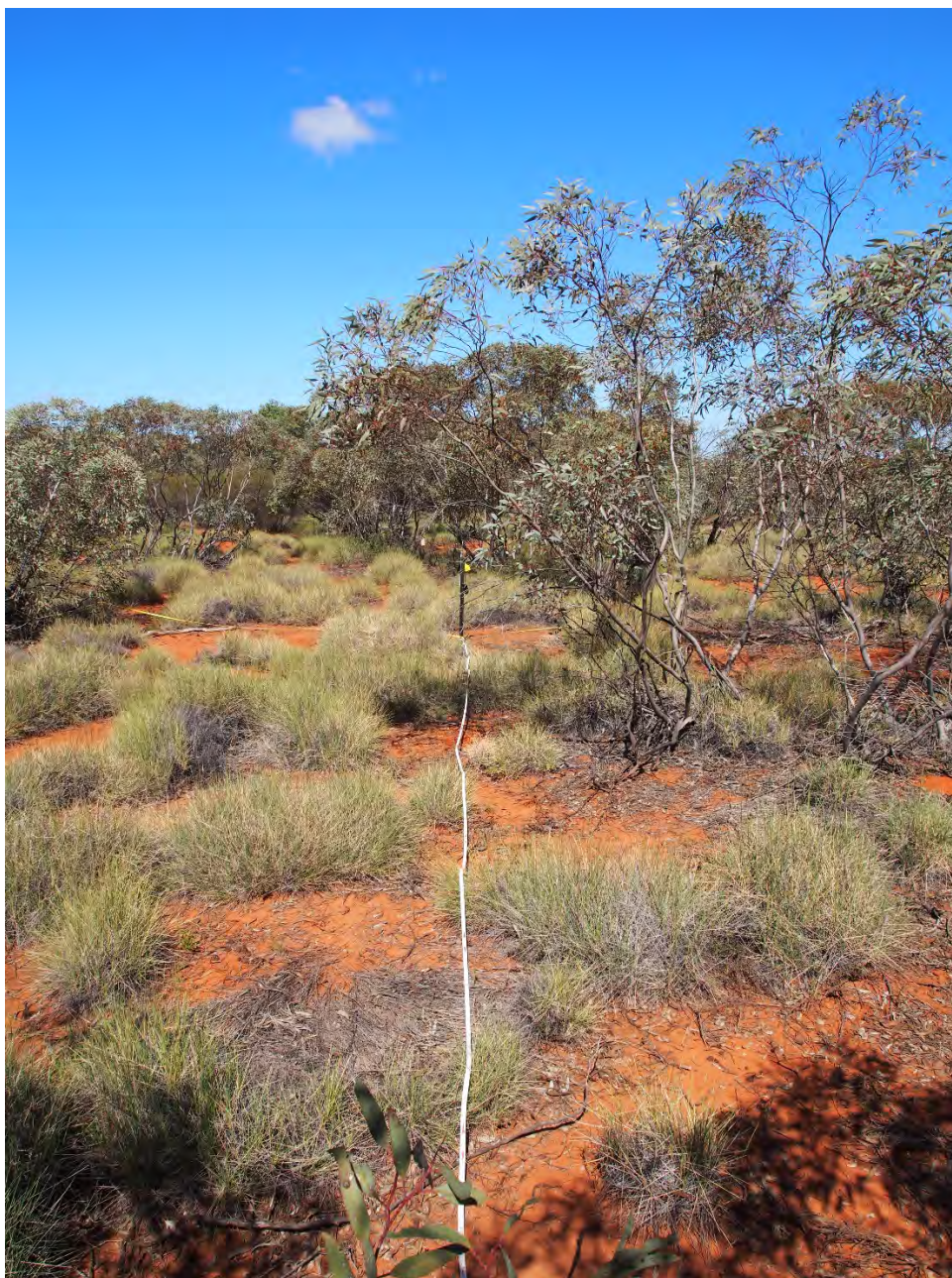
Note: This plot was not included in the analysis. It is a rare small rock outcrop surrounded by mallee vegetation. The vegetation on the knoll has floristic affinities to PCT 180, but the vegetation is not classified. The dominant shrub *Cassinia laevis* was only found in one other plot (YNR071) which is on the rocky upper slopes of the southern end of Blue Mountain.



Map 5 Location of mallee vegetation in Yathong Nature Reserve, with plots marked (G Wright/DPIE)

Mallee

Plot YNR014



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*).

Mid storey: Tar bush (*Eremophila glabra* subsp. *glabra*), wait-a-while (*Acacia colletioides*).

Ground layer: Porcupine grass (*Triodia scariosa*), rough halganina (*Halgania cyanea*).

Location/Date: Yellow management trail, GDA94 (Easting: 355193, Northing: 6405971) – 11/09/2014.

Plot YNR031



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), green mallee (*Eucalyptus viridis* ssp. *viridis*), narrow-leaved red mallee (*Eucalyptus leptophylla*).

Mid storey: Cactus pea (*Bossiaea walkeri*), broombush (*Melaleuca uncinata*), stiff westringia (*Westringia rigida*).

Ground layer: Porcupine grass (*Triodia scariosa*), scented mat-rush (*Lomandra effusa*), grey copperburr (*Sclerolaena diacantha*), rough speargrass (*Austrostipa scabra* subsp. *scabra*).

Location/Date: North of South-east Boundary fire trail, GDA94 (Easting: 370928, Northing: 6370116) – 16/09/2014.

Plot YNR032



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), gum coolibah (*Eucalyptus intertexta* – mallee form).

Mid storey: Broombush (*Melaleuca uncinata*), micromyrtus (*Micromyrtus striata*), cactus pea (*Bossiaea walkerii*), stiff westringia (*Westringia rigida*).

Ground layer: Porcupine grass (*Triodia scariosa*), scented mat-rush (*Lomandra effusa*).

Location/Date: West of Eastern Boundary fire trail, GDA94 (Easting: 375733, Northing: 6370423) – 16/09/2014.

Plot YNR038



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: White cypress pine (*Callitris glaucophylla*), gereera wattle (*Acacia johnsonii*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Porcupine grass (*Triodia scariosa*), scented mat-rush (*Lomandra effusa*), spiked daisy bush (*Olearia subspicata*).

Location/Date: West of South-west Boundary fire trail, GDA94 (Easting: 358589, Northing: 6380486) – 16/09/2014.

Plot YNR051



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Green mallee (*Eucalyptus viridis* ssp. *viridis*), red mallee (*Eucalyptus socialis*).

Mid storey: Narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*), turkeybush (*Eremophila deserti*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Porcupine grass (*Triodia scariosa*), scented mat-rush (*Lomandra effusa*).

Location/Date: Glenlea Homestead fire trail, approx. 2.2 km west of its intersection with the South-west Boundary trail, GDA94 (Easting: 354661, Northing: 6378915) – 05/09/2015.

Plot YNR055



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*), green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Cactus pea (*Bossiaea walkeri*), comb grevillea (*Grevillea huegelii*).

Ground layer: Porcupine grass (*Triodia scariosa*), rough halganina (*Halgania cyanea*), scented mat-rush (*Lomandra effusa*).

Location/Date: Western Boundary fire trail, approx. 2.3 km south of its intersection with Glenlea fire trail, GDA94 (Easting: 344624, Northing: 6380391) – 05/09/2015.

Plot YNR057



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), kurrajong (*Brachychiton populneus* subsp. *trilobus*).

Mid storey: Curly-bark wattle (*Acacia curranii*), wait-a-while (*Acacia colletioides*).

Ground layer: Porcupine grass (*Triodia scariosa*), creamy candles (*Stackhousia monogyna*), scented austral bugle (*Ajuga australis* s.l.).

Location/Date: In old state forest section of reserve, in mallee, GDA94 (Easting: 363739, Northing: 6375371) – 06/09/2015.

Plot YNR073



Vegetation classification: Dune Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*), white mallee (*Eucalyptus dumosa*), mallee pine (*Callitris verrucosa*).

Mid storey: Comb grevillea (*Grevillea huegeli*), cactus pea (*Bossiaea walkeri*), wait-a-while (*Acacia colletioides*).

Ground layer: Porcupine grass (*Triodia scariosa*), flax lily (*Dianella revoluta* var. *revoluta*), small-leaved mint-bush (*Prostanthera serpyllifolia* subsp. *microphylla*).

Location/Date: Yellow management trail approx. 1 km north of its intersection with Western fire trail, GDA94 (Easting: 353941, Northing: 6395193) – 09/09/2015.

Plot YNR079



Vegetation classification: Dune Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Red mallee (*Eucalyptus socialis*), white mallee (*Eucalyptus dumosa*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Stiff westringia (*Westringia rigida*), tar bush (*Eremophila glabra* subsp. *glabra*), wait-a-while (*Acacia colletioides*).

Ground layer: Porcupine grass (*Triodia scariosa*), flax lily (*Dianella revoluta* var. *revoluta*), pale mat-rush (*Lomandra collina*).

Location/Date: Western Boundary fire trail; approx. 4.1 km south of its intersection with Western fire trail, GDA94 (Easting: 345879, Northing: 6390874) – 10/09/2015.

Plot YNR080



Vegetation classification: Dune Mallee Woodlands (Keith 2004).

Plant community type: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion (PCT 171).

Overstorey: Snap and rattle (*Eucalyptus gracilis*), white mallee (*Eucalyptus dumosa*), red mallee (*Eucalyptus socialis*).

Mid storey: Wait-a-while (*Acacia colletioides*), tar bush (*Eremophila glabra* subsp. *glabra*), turpentine bush (*Eremophila sturtii*).

Ground layer: Porcupine grass (*Triodia scariosa*), rough halganian (*Halgania cyanea*), burrabunga (*Olearia pimeleoides*).

Location/Date: Western Boundary fire trail; approx. 2.4 km south of its intersection with Glenlea fire trail, GDA94 (Easting: 345168, Northing: 6385074) – 10/09/2015.

Plot YNR001



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*).

Mid storey: Cactus pea (*Bossiaea walkeri*), burrabunga (*Olearia pimeleoides*), wait-a-while (*Acacia colletioides*).

Ground layer: Austral bugle (*Ajuga australis* s.l.), mulga cabbage (*Haloragis odontocarpa*), scented mat-rush (*Lomandra effusa*), pale summer-grass (*Paspalidium albavillosum*), common white sunray (*Rhodanthe floribunda*).

Location: Northern Boundary fire trail, GDA94 (Easting: 373370, Northing: 6411040) – 08/09/2014.

Note: Also fits description of Mallee – Gum Coolibah woodland on red earth flats of the eastern Cobar Peneplain Bioregion (PCT 174).

Plot YNR007



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white cypress pine (*Callitris glaucophylla*), glossy-leaved red mallee (*Eucalyptus oleosa*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Micromyrtus (*Micromyrtus striata*), green wattle (*Acacia deanei* subsp. *paucijuga*), silver cassia (*Senna artemisioides* subsp. *zygophylla*), tar bush (*Eremophila glabra* subsp. *glabra*), burrabunga (*Olearia pimeleoides*).

Ground layer: Scented mat-rush (*Lomandra effusa*), minnie daisy (*Minuria leptophylla*), rough speargrass (*Austrostipa scabra* subsp. *scabra*), purple burr-daisy (*Calotis cuneifolia*), common everlasting (*Chrysocephalum apiculatum* s.l.).

Location/Date: Eastern side of Red Tank management trail, GDA94 (Easting: 375890, Northing: 6393249) – 10/09/2014.

Note: Also fits description of Mallee – Gum Coolibah woodland on red earth flats of the eastern Cobar Peneplain Bioregion (PCT 174).

Plot YNR009



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white cypress pine (*Callitris glaucophylla*).

Mid storey: Burrabunga (*Olearia pimeleoides*), rough halganian (*Halgania cyanea*).

Ground layer: Common everlasting (*Chrysocephalum apiculatum* s.l.), creamy candles (*Stackhousia monogyna*), scented mat-rush (*Lomandra effusa*).

Location/Date: Western side of Yarran Tank management trail, GDA94 (Easting: 376580, Northing: 6400173) – 10/09/2014.

Note: Also fits description of Mallee – Gum Coolibah woodland on red earth flats of the eastern Cobar Peneplain Bioregion (PCT 174).

Plot YNR010



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Mallee (*Eucalyptus socialis*), white cypress pine (*Callitris glaucophylla*).

Mid storey: Burrabunga (*Olearia pimeleoides*), silver cassia (*Senna artemisioides* subsp. *zygophylla*).

Ground layer: Common everlasting (*Chrysocephalum apiculatum* s.l.), scented mat-rush (*Lomandra effusa*), porcupine grass (*Triodia scariosa*), scaevola (*Scaevola parvibarbata*).

Location/Date: Eastern side of Eastern Boundary fire trail, GDA94 (Easting: 378599, Northing: 6395726) – 10/09/2014.

Note: Also fits description of Mallee – Gum Coolibah woodland on red earth flats of the eastern Cobar Peneplain Bioregion (PCT 174).

Plot YNR011



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: White mallee (*Eucalyptus dumosa*), red mallee (*Eucalyptus socialis*).

Mid storey: Burrabunga (*Olearia pimeleoides*), weeooka (*Eremophila oppositifolia* subsp. *rubra*).

Ground layer: Porcupine grass (*Triodia scariosa*), oxalis (*Oxalis perennans*).

Location/Date: Western fire trail, approx. 1.2 km from intersection with Yathong road.
GDA94 (Easting: 362392, Northing: 6393050) – 04/09/2015.

Plot YNR012



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*), white cypress pine (*Callitris glaucophylla*), glossy-leaved red mallee (*Eucalyptus oleosa*).

Mid storey: Cactus pea (*Bossiaea walkeri*), tar bush (*Eremophila glabra* subsp. *glabra*), broombush (*Melaleuca uncinata*), burrabunga (*Olearia pimeleoides*).

Ground layer: Rough halgania (*Halgania cyanea*), scented mat-rush (*Lomandra effusa*), rough speargrass (*Austrostipa scabra* subsp. *scabra*).

Location/Date: Yellow management trail, GDA94 (Easting: 354391, Northing: 6399234) – 11/09/2014.

Plot YNR015



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Stiff westringia (*Westringia rigida*), cactus pea (*Bossiaea walkeri*), wait-a-while (*Acacia colletioides*).

Ground layer: Porcupine grass (*Triodia scariosa*), Jericho wiregrass (*Aristida jerichoensis* var. *subspinulifera*).

Location/Date: Green management trail, GDA94 (Easting: 359539, Northing: 6407255) – 11/09/2014.

Plot YNR027



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*).

Mid storey: Tar bush (*Eremophila glabra* subsp. *glabra*), wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *cuneata*), ruby saltbush (*Enchylaena tomentosa*).

Ground layer: Grey copperburr (*Sclerolaena diacantha*), rough speargrass (*Austrostipa scabra* subsp. *scabra*).

Location/Date: East of South-east Boundary fire trail, GDA94 (Easting: 368433, Northing: 6376977) – 15/09/2014.

Plot YNR048



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: White mallee (*Eucalyptus dumosa*), red mallee (*Eucalyptus socialis*), green mallee (*Eucalyptus viridis* ssp. *viridis*).

Mid storey: Emubush (*Eremophila longifolia*), turkeybush (*Eremophila deserti*), burrabunga (*Olearia pimeleoides*).

Ground layer: Common everlasting (*Chrysocephalum apiculatum* s.l.), common white sunray (*Rhodanthe floribunda*), bogan flea (*Calotis hispidula*), annual rice-flower (*Pimelea trichostachya*).

Location/Date: Western fire trail, approx. 8.4 km from intersection with Yathong road. GDA94 (Easting: 355085, Northing: 6393861) – 04/09/2015.

Plot YNR054



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Wait-a-while (*Acacia colletioides*), silver cassia (*Senna artemisioides* subsp. *zygophylla*), burrabunga (*Olearia pimeleoides*).

Ground layer: Scented mat-rush (*Lomandra effusa*), rough halganina (*Halgania cyanea*), grey copperburr (*Sclerolaena diacantha*).

Location/Date: Glenlea fire trail approx. 1.5 km west of its intersection with the Western Boundary fire trail, GDA94 (Easting: 346439, Northing: 6382099) – 05/09/2015.

Plot YNR061



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), snap and rattle (*Eucalyptus gracilis*), white mallee (*Eucalyptus dumosa*).

Mid storey: Shrubby rice-flower (*Pimelea microcephala* subsp. *microcephala*), wilga (*Geijera parviflora*), narrow-leaved hop-bush (*Dodonaea viscosa* subsp. *angustissima*).

Ground layer: Threadgrass (*Stenopetalum lineare*), bogan flea (*Calotis hispidula*), tall copperburr (*Sclerolaena convexula*).

Location/Date: Yathong road, approx. 1.5 km north of its intersection with Mailbox management trail, GDA94 (Easting: 363192, Northing: 6387685) – 06/09/2015.

Plot YNR062



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white mallee (*Eucalyptus dumosa*).

Mid storey: Emubush (*Eremophila longifolia*).

Ground layer: Tall copperburr (*Sclerolaena convexula*), threadcress (*Stenopetalum lineare*), native carrot (*Daucus glochidiatus*).

Location/Date: East side of Central Valley management trail, approx. 1 km north of its intersection with Ring-road management trail, GDA94 (Easting: 366973, Northing: 6396626) – 07/09/2015.

Plot YNR066



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white mallee (*Eucalyptus dumosa*).

Mid storey: Turpentine bush (*Eremophila sturtii*), bead hop-bush (*Dodonaea lobulata*), green fuchsia bush (*Eremophila serrulata*).

Ground layer: Cotton bush (*Ptilotus obovatus* var. *obovatus*), desert goosefoot (*Chenopodium desertorum* subsp. *desertorum*), mallee saltbush (*Atriplex stipitata*).

Location/Date: South of Northern Boundary fire trail, approx. 1.2 km west from its intersection with Pink Tank management trail, GDA94 (Easting: 369000, Northing: 6411398) – 07/09/2015.

Plot YNR067



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: White mallee (*Eucalyptus dumosa*), red mallee (*Eucalyptus socialis*).

Mid storey: Turpentine Bush (*Eremophila sturtii*), budda (*Eremophila mitchellii*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Rough halgania (*Halgania cyanea*), hairy-pod cress (*Harmsiodoxa blennodioides*), desert goosefoot (*Chenopodium desertorum* subsp. *desertorum*).

Location/Date: East of the Northern Boundary fire trail, GDA94 (Easting: 364800, Northing: 6409380) – 07/09/2015.

Plot YNR074



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

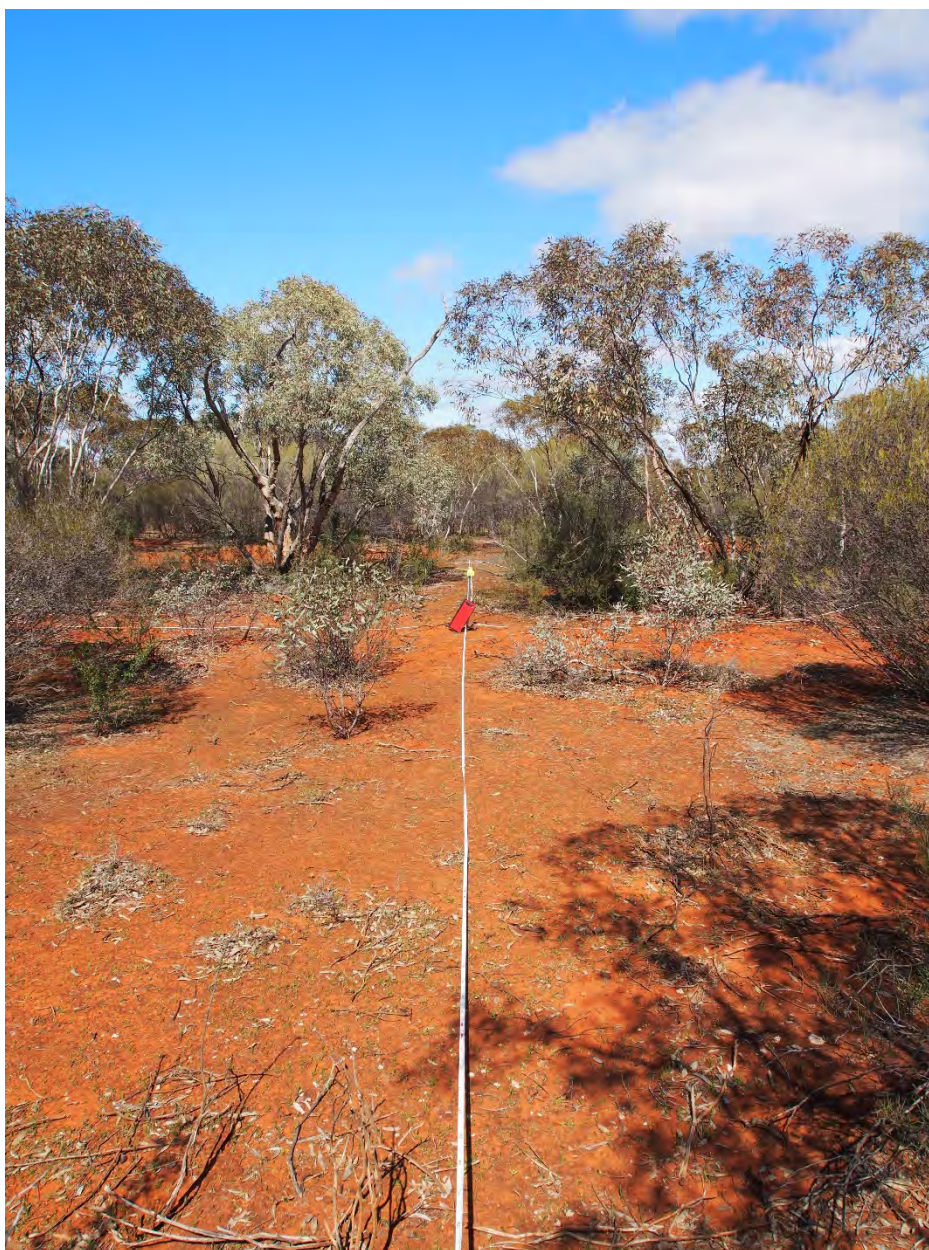
Overstorey: White mallee (*Eucalyptus dumosa*), snap and rattle (*Eucalyptus gracilis*), red mallee (*Eucalyptus socialis*).

Mid storey: Broombush (*Melaleuca uncinata*), wait-a-while (*Acacia colletioides*), tar bush (*Eremophila glabra* subsp. *glabra*).

Ground layer: Burrabunga (*Olearia pimeleoides*), porcupine grass (*Triodia scariosa*), scented mat-rush (*Lomandra effusa*).

Location/Date: Western fire trail approx. 1.2 km east from its intersection with Western Boundary fire trail, GDA94 (Easting: 347425, Northing: 6394772) – 09/09/2015.

Plot YNR075



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white mallee (*Eucalyptus dumosa*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Broombush (*Melaleuca uncinata*), wait-a-while (*Acacia colletioides*), tar bush (*Eremophila glabra* subsp. *glabra*), wedge-leaf hop-bush (*Dodonaea viscosa* subsp. *cuneata*).

Ground layer: Rough halgania (*Halgania cyanea*), scented mat-rush (*Lomandra effusa*), Wilhelm's wattle (*Acacia wilhelmiana*).

Location/Date: Western Boundary fire trail; approx. 3.8 km north of its intersection with Western fire trail, GDA94 (Easting: 346700, Northing: 6398720) – 09/09/2015.

Plot YNR081



Vegetation classification: Sand Plain Mallee Woodlands (Keith 2004).

Plant community type: Sandplain mallee of central NSW (PCT 173).

Overstorey: Red mallee (*Eucalyptus socialis*), white mallee (*Eucalyptus dumosa*), snap and rattle (*Eucalyptus gracilis*).

Mid storey: Broombush (*Melaleuca uncinata*), wilga (*Geijera parviflora*).

Ground layer: Burrabunga (*Olearia pimeleoides*), scented mat-rush (*Lomandra effusa*).

Location/Date: Western Boundary fire trail; approx. 300 m north of its intersection with South-west Boundary management trail, GDA94 (Easting: 343788, Northing: 6373567) – 10/09/2015.

Appendix C: Yathong Nature Reserve plant list

Table 5 Yathong Nature Reserve plant list

Sources	
Herbarium specimen (AVH, Aug. 2016)	1
NPWS specimen	2
New species record (D Eldridge 2016)	3
NPWS new species record	4
BioNet record	5
Threatened species	†

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Subshrub	Dwarf lantern-flower		<i>Abutilon fraseri</i>	Malvaceae	1
p	Subshrub	Desert lantern		<i>Abutilon otocarpum</i>	Malvaceae	1
p	Tall shrub/small tree	Mulga		<i>Acacia aneura</i> s.l.	Fabaceae (Mimosoideae)	1
p	Shrub	Grey mulga		<i>Acacia brachybotrya</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	Sandhill wattle		<i>Acacia burkittii</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	Wait-a-while		<i>Acacia colletioides</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	Thorn wattle		<i>Acacia continua</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Curly-bark wattle		† <i>Acacia curranii</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	Green wattle		<i>Acacia deanei</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Green wattle		<i>Acacia deanei</i> subsp. <i>deanei</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Green wattle		<i>Acacia deanei</i> subsp. <i>paucijuga</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Western silver wattle		<i>Acacia decora</i>	Fabaceae (Mimosoideae)	1, 2
p	Tall shrub/small	Currawang		<i>Acacia doratoxylon</i>	Fabaceae (Mimosoideae)	1, 2

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
	tree					
p	Tree	Ironwood		<i>Acacia excelsa</i>	Fabaceae (Mimosoideae)	1
p	Tree	Ironwood		<i>Acacia excelsa</i> subsp. <i>angusta</i>	Fabaceae (Mimosoideae)	1
p	Tree	Ironwood		<i>Acacia excelsa</i> subsp. <i>excelsa</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Hakea wattle		<i>Acacia hakeoides</i>	Fabaceae (Mimosoideae)	1
p	Tree	Brigalow		<i>Acacia harpophylla</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub/small tree	Haviland's wattle		<i>Acacia havilandiorum</i>	Fabaceae (Mimosoideae)	1, 2
p	Small tree	Yarran		<i>Acacia homalophylla</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Streaked wattle		<i>Acacia lineata</i>	Fabaceae (Mimosoideae)	5
p	Shrub	Golden-top wattle		<i>Acacia mariae</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	Mallee wattle		<i>Acacia montana</i>	Fabaceae (Mimosoideae)	1
p	Shrub/small tree	Sandplain wattle		<i>Acacia murrayana</i>	Fabaceae (Mimosoideae)	1
p	Shrub/tree	Miljee		<i>Acacia oswaldii</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Needle wattle		<i>Acacia rigens</i>	Fabaceae (Mimosoideae)	1, 2
p	Shrub	A wattle		<i>Acacia</i> sp. (<i>Acacia</i> cf. <i>johnsonii</i>)	Fabaceae (Mimosoideae)	2, 4
p	Shrub	A wattle		<i>Acacia</i> spp.	Fabaceae (Mimosoideae)	2
p	Shrub	Spurwing wattle		<i>Acacia triptera</i>	Fabaceae (Mimosoideae)	1
p	Shrub	Wilhelm's wattle		<i>Acacia wilhelmiana</i>	Fabaceae (Mimosoideae)	1, 2
a	Forb	Flannel cudweed		<i>Actinobole uliginosum</i>	Asteraceae	1, 2
p	Forb	Clustered flannel flower		<i>Actinotus paddisonii</i>	Apiaceae	1
p	Fern	Common maidenhair		<i>Adiantum aethiopicum</i>	Pteridaceae	5
a	Grass	Silvery hairgrass	*	<i>Aira caryophyllea</i>	Poaceae	3
a	Grass	Silvery hairgrass	*	<i>Aira cupaniana</i>	Poaceae	3

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Forb	Austral bugle		<i>Ajuga australis</i> s.l.	Lamiaceae	1
p	Small/medium tree	Western rosewood		<i>Alectryon oleifolius</i>	Sapindaceae	5
p	Small/medium tree	Western rosewood		<i>Alectryon oleifolius</i> subsp. <i>canescens</i>	Sapindaceae	1
p	Small/medium tree	Western rosewood		<i>Alectryon oleifolius</i> subsp. <i>elongatus</i>	Sapindaceae	1
p	Tall shrub/small tree	Drooping sheoak		<i>Allocasuarina verticillata</i>	Casuarinaceae	1
p	Forb	Lesser joyweed		<i>Alternanthera denticulata</i>	Amaranthaceae	1
p	Forb	Plains joyweed		<i>Alternanthera</i> sp. A	Amaranthaceae	4
a	Forb	Flax-leaf alyssum	*	<i>Alyssum linifolium</i>	Brassicaceae	1, 2
p	Grass	Southern swamp wallaby-grass		<i>Amphibromus neesii</i>	Poaceae	1
p	Grass	Common swamp wallaby-grass		<i>Amphibromus nervosus</i>	Poaceae	1
p	Grass	Long grey-beard grass		<i>Amphipogon caricinus</i>	Poaceae	1
p	Grass	Long grey-beard grass		<i>Amphipogon caricinus</i> var. <i>caricinus</i>	Poaceae	1
p	Mistletoe	Buloke mistletoe		<i>Amyema linophylla</i> subsp. <i>orientalis</i>	Loranthaceae	1
p	Mistletoe	Maidens mistletoe		<i>Amyema maidenii</i>	Loranthaceae	1
p	Mistletoe	Maidens mistletoe		<i>Amyema maidenii</i> subsp. <i>maidenii</i>	Loranthaceae	1, 2
p	Mistletoe	Box mistletoe		<i>Amyema miquelii</i>	Loranthaceae	1, 2
p	Mistletoe	Fleshy mistletoe		<i>Amyema miraculosa</i> subsp. <i>boormanii</i>	Loranthaceae	1
p	Mistletoe	Long-leaf mistletoe		<i>Amyema preissii</i>	Loranthaceae	1
p	Mistletoe	Grey mistletoe		<i>Amyema quandang</i>	Loranthaceae	1, 2
p	Mistletoe	Grey mistletoe		<i>Amyema quandang</i> var. <i>quandang</i>	Loranthaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Scarlet pimpernel	*	<i>Anagallis arvensis</i>	Myrsinaceae	1
p	Small tree	Warrior bush		<i>Apophyllum anomalum</i>	Capparaceae	1, 2
a	Forb	Capeweed	*	<i>Arctotheca calendula</i>	Asteraceae	1
a	Forb	Mexican poppy	*	<i>Argemone ochroleuca</i>	Papaveraceae	2,4
p	Grass	Bunch wiregrass		<i>Aristida behriana</i>	Poaceae	1
a/p	Grass	Bunched kerosene grass		<i>Aristida contorta</i>	Poaceae	1
p	Grass	Erect kerosene grass		<i>Aristida holathera</i> var. <i>holathera</i>	Poaceae	5
p	Grass	Jericho wiregrass		<i>Aristida jerichoensis</i>	Poaceae	5
p	Grass	Jericho wiregrass		<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	Poaceae	1
p	Forb	Small vanilla lily		<i>Arthropodium minus</i>	Anthericaceae	1
p	Small tree	Whitewood		<i>Atalaya hemiglauca</i>	Sapindaceae	1
p	Subshrub	Slender-fruit saltbush		<i>Atriplex leptocarpa</i>	Chenopodiaceae	5
p	Subshrub	Creeping saltbush		<i>Atriplex semibaccata</i>	Chenopodiaceae	5
p	Subshrub	Spiny-fruit saltbush		<i>Atriplex spinibractea</i>	Chenopodiaceae	1
p	Shrub	Mallee saltbush		<i>Atriplex stipitata</i>	Chenopodiaceae	1
p	Grass	Foxtail speargrass		<i>Austrostipa densiflora</i>	Poaceae	1
p	Grass	Cotton speargrass		<i>Austrostipa drummondii</i>	Poaceae	1
p	Grass	Feather speargrass		<i>Austrostipa elegantissima</i>	Poaceae	5
p	Grass	Balcarra grass		<i>Austrostipa nitida</i>	Poaceae	1
p	Grass	Knotted speargrass		<i>Austrostipa nodosa</i>	Poaceae	1
p	Grass	Flat-awn speargrass		<i>Austrostipa platychaeta</i>	Poaceae	5
p	Grass	Rough speargrass		<i>Austrostipa scabra</i>	Poaceae	5
p	Grass	Rough speargrass		<i>Austrostipa scabra</i> subsp. <i>falcata</i>	Poaceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Grass	Rough speargrass		<i>Austrostipa scabra</i> subsp. <i>scabra</i>	Poaceae	1
p	Grass	Corkscrew grass		<i>Austrostipa setacea</i>	Poaceae	1
p	Grass	Speargrass		<i>Austrostipa trichophylla</i>	Poaceae	4
p	Grass	Tucker's speargrass		<i>Austrostipa tuckeri</i>	Poaceae	1
a	Grass	Wild oats	*	<i>Avena fatua</i>	Poaceae	5
a	Grass	Sterile oats	*	<i>Avena sterilis</i>	Poaceae	1
p	Shrub	Gooma bush, wallaby bush		<i>Bertya cunninghamii</i>	Euphorbiaceae	1
p	Shrub	Gooma bush, wallaby bush		<i>Bertya cunninghamii</i> subsp. <i>cunninghamii</i>	Euphorbiaceae	2
p	Shrub	Dark turpentine bush		<i>Beyeria opaca</i>	Euphorbiaceae	1
p	Shrub	Sticky wallaby bush		<i>Beyeria viscosa</i>	Euphorbiaceae	1
p	Twiner	Pale appleberry		<i>Billardiera versicolor</i>	Pittosporaceae	1
p	Forb	Tarvine		<i>Boerhavia dominii</i>	Nyctaginaceae	1
p	Shrub	Cactus pea		<i>Bossiaea walkeri</i>	Fabaceae (Faboideae)	1, 2
p	Tree	Kurrajong		<i>Brachychiton populneus</i>	Sterculiaceae	1
p	Tree	Currajong		<i>Brachychiton populneus</i> subsp. <i>trilobus</i>	Sterculiaceae	1
p	Forb	Variable daisy		<i>Brachyscome ciliaris</i>	Asteraceae	5
p	Forb	Variable daisy		<i>Brachyscome ciliaris</i> var. <i>ciliaris</i>	Asteraceae	1
a	Forb	Weak daisy		<i>Brachyscome debilis</i>	Asteraceae	4
a	Forb	Slender daisy		<i>Brachyscome exilis</i>	Asteraceae	1, 2
a	Forb	Hard-headed daisy		<i>Brachyscome lineariloba</i>	Asteraceae	1, 2
p	Forb	Cut-leaved daisy		<i>Brachyscome multifida</i>	Asteraceae	5
p	Forb	Cut-leaved daisy		<i>Brachyscome multifida</i> var. <i>multifida</i>	Asteraceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Tiny daisy		<i>Brachyscome perpusilla</i> var. <i>tenella</i>	Asteraceae	1
a	Forb	Mediterranean turnip	*	<i>Brassica tournefortii</i>	Brassicaceae	1
a	Grass	Sand brome		<i>Bromus arenarius</i>	Poaceae	5
a	Grass	Prairie grass	*	<i>Bromus catharticus</i>	Poaceae	1
a	Grass	Madrid brome	*	<i>Bromus madritensis</i>	Poaceae	1
a	Grass	Soft brome	*	<i>Bromus molliformis</i>	Poaceae	3
a	Grass	Red brome	*	<i>Bromus rubens</i>	Poaceae	1
a	Forb	Blue pincushion		<i>Brunonia australis</i>	Goodeniaceae	1, 2
p	Forb	Golden lily		<i>Bulbine bulbosa</i>	Asphodelaceae	4
a/p	Forb	Wild onion		<i>Bulbine semibarbata</i>	Asphodelaceae	1
p	Shrub	Bird-of-paradise shrub	*	<i>Caesalpinia gilliesii</i>	Fabaceae (Caesalpinioideae)	1
p	Orchid	Pink fingers		<i>Caladenia carnea</i>	Orchidaceae	4
p	Orchid	Spider orchid		<i>Caladenia</i> cf. <i>rileyi</i>	Orchidaceae	2, 4
p	Orchid	Green spider orchid		<i>Caladenia concinna</i>	Orchidaceae	1
p	Orchid	Dusky fingers		<i>Caladenia fuscata</i>	Orchidaceae	1
p	Orchid	Brown-clubbed spider orchid		<i>Caladenia phaeoclavia</i>	Orchidaceae	1
p	Orchid	Spider orchid		<i>Caladenia</i> sp. 'Inland NSW'	Orchidaceae	2
a	Forb	Pink purslane		<i>Calandrinia calyptrata</i>	Portulacaceae	4
a	Forb	Small purslane		<i>Calandrinia eremaea</i>	Portulacaceae	1, 2
a	Forb	Matted water-starwort		<i>Callitriche sonderi</i>	Callitrichaceae	4
p	Tree	White cypress pine		<i>Callitris glaucophylla</i>	Cupressaceae	1
p	Tree	Murray pine		<i>Callitris gracilis</i> subsp. <i>murrayensis</i>	Cupressaceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Tree	Mallee pine		<i>Callitris verrucosa</i>	Cupressaceae	1, 2
p	Forb	Mountain burr-daisy		<i>Calotis cuneata</i>	Asteraceae	2
p	Forb	Purple burr-daisy		<i>Calotis cuneifolia</i>	Asteraceae	1
a	Forb	Bogan flea		<i>Calotis hispidula</i>	Asteraceae	1
p	Forb	Yellow burr-daisy		<i>Calotis lappulacea</i>	Asteraceae	1
a	Forb	Shepherd's purse	*	<i>Capsella bursa-pastoris</i>	Brassicaceae	1,2
a	Forb	Ward's weed	*	<i>Carrichtera annua</i>	Brassicaceae	4
a	Forb	Saffron thistle	*	<i>Carthamus lanatus</i>	Asteraceae	1
p	Shrub	Cough bush		<i>Cassinia laevis</i>	Asteraceae	1
p	Twining parasite	Coarse dodder-laurel		<i>Cassytha melantha</i>	Lauraceae	5
p	Twining parasite	Downy dodder-laurel		<i>Cassytha pubescens</i>	Lauraceae	1, 2
p	Twining parasite	<i>Cassytha</i> sp. (Yathong)		<i>Cassytha</i> sp.	Lauraceae	2, 4
p	Tree	Belah		<i>Casuarina cristata</i>	Casuarinaceae	1
p	Tree	Black oak		<i>Casuarina pauper</i>	Casuarinaceae	1
p	Grass	Buffel grass	*	<i>Cenchrus ciliaris</i>	Poaceae	5
a	Forb	Maltese cockspur	*	<i>Centaurea melitensis</i>	Asteraceae	1
a	Forb	Centipeda		<i>Centipeda crateriformis</i> subsp. <i>compacta</i>	Asteraceae	1
p	Forb	Common sneezeweed		<i>Centipeda cunninghamii</i>	Asteraceae	2
a	Forb	Spreading sneezeweed		<i>Centipeda minima</i> subsp. <i>minima</i>	Asteraceae	5
a	Forb	Hairy centrolepis		<i>Centrolepis strigosa</i> subsp. <i>strigosa</i>	Centrolepidaceae	2, 4
a	Forb	Mouse-ear chickweed	*	<i>Cerastium glomeratum</i>	Caryophyllaceae	4
a	Forb	Wingwort		<i>Ceratogyne obionoides</i>	Asteraceae	2, 4
a	Forb	Caustic weed		<i>Chamaesyce drummondii</i>	Euphorbiaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Fern	Rock fern		<i>Cheilanthes austrotenuifolia</i>	Pteridaceae	4
p	Fern	Bristly cloak fern		<i>Cheilanthes distans</i>	Pteridaceae	4
p	Fern	Woolly cloak fern		<i>Cheilanthes lasiophylla</i>	Pteridaceae	1
p	Fern	Poison rock fern		<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	Pteridaceae	1
a	Forb	Fat hen	*	<i>Chenopodium album</i>	Chenopodiaceae	1
a	Forb	Crested goosefoot		<i>Chenopodium cristatum</i>	Chenopodiaceae	1, 2
p	Subshrub	Cottony saltbush		<i>Chenopodium curvispicatum</i>	Chenopodiaceae	2, 4
p	Subshrub	Desert goosefoot		<i>Chenopodium desertorum</i>	Chenopodiaceae	5
p	Subshrub	Desert goosefoot		<i>Chenopodium desertorum</i> subsp. <i>anidiophyllum</i>	Chenopodiaceae	1
p	Subshrub	Desert goosefoot		<i>Chenopodium desertorum</i> subsp. <i>desertorum</i>	Chenopodiaceae	5
p	Subshrub	Desert goosefoot		<i>Chenopodium desertorum</i> subsp. <i>microphyllum</i>	Chenopodiaceae	1
a	Forb	Black crumbweed		<i>Chenopodium melanocarpum</i>	Chenopodiaceae	1
a	Forb	Nettle-leaf goosefoot	*	<i>Chenopodium murale</i>	Chenopodiaceae	1
a	Forb	Small crumbweed		<i>Chenopodium pumilio</i>	Chenopodiaceae	1
a/p	Grass	Windmill grass		<i>Chloris truncata</i>	Poaceae	1
p	Forb	Skeleton weed	*	<i>Chondrilla juncea</i>	Asteraceae	4
p	Forb	<i>Chrysocephalum apiculatum</i> s.l. (suckering)		<i>Chrysocephalum apiculatum</i> s.l.	Asteraceae	1
a	Forb	<i>Chrysocephalum apiculatum</i> s.l. (annual)		<i>Chrysocephalum apiculatum</i> s.l.	Asteraceae	2
p	Forb	Common everlasting		<i>Chrysocephalum apiculatum</i> s.l.	Asteraceae	2
p	Forb	<i>Chrysocephalum apiculatum</i>		<i>Chrysocephalum apiculatum</i> s.l.	Asteraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
		s.l. (tufted silver)				
p	Forb	Clustered everlasting		<i>Chrysocephalum semipapposum</i> s.l.	Asteraceae	1, 2
a	Forb	Ground-heads		<i>Chthonocephalus pseudevax</i>	Asteraceae	1, 2
p	Forb	Spear thistle	*	<i>Cirsium vulgare</i>	Asteraceae	1
a	Forb	Camel melon	*	<i>Citrullus lanatus</i>	Cucurbitaceae	1
a	Forb	Camel melon	*	<i>Citrullus lanatus</i> var. <i>lanatus</i>	Cucurbitaceae	5
p	Shrub/small tree	Desert lime		<i>Citrus glauca</i>	Rutaceae	1, 2
p	Woody climber	Small-leaved clematis		<i>Clematis microphylla</i>	Ranunculaceae	5
p	Woody climber	Match sticks		<i>Comesperma integerrimum</i>	Polygalaceae	1, 2
p	Forb	Desert bindweed		<i>Convolvulus clementii</i>	Convolvulaceae	1
p	Forb	Pink bindweed		<i>Convolvulus erubescens</i>	Convolvulaceae	5
p	Forb	Grassy bindweed		<i>Convolvulus remotus</i>	Convolvulaceae	1
p	Shrub	Rock correa		<i>Correa glabra</i> var. <i>leucoclada</i>	Rutaceae	1
a/p	Forb	Common cotula		<i>Cotula australis</i>	Asteraceae	4
a	Forb	Dense stonecrop		<i>Crassula colorata</i>	Crassulaceae	5
a	Forb	Dense stonecrop		<i>Crassula colorata</i> var. <i>acuminata</i>	Crassulaceae	5
a/p	Forb	Australian stonecrop		<i>Crassula sieberiana</i>	Crassulaceae	1
a/p	Forb	A crassula		<i>Crassula tetramera</i>	Crassulaceae	4
p	Shrub	Bitter cryptandra		<i>Cryptandra amara</i>	Rhamnaceae	2, 4
a	Prostrate vine	Paddy melon	*	<i>Cucumis myriocarpus</i>	Cucurbitaceae	5
a	Prostrate vine	Paddy melon	*	<i>Cucumis myriocarpus</i> subsp. <i>leptodermis</i>	Cucurbitaceae	1
p	Forb	Grey scurf-pea		<i>Cullen discolor</i>	Fabaceae (Faboideae)	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Downy mother-of-misery		<i>Cuphonotus andraeanus</i>	Brassicaceae	1
a	Forb	Mother-of-misery		<i>Cuphonotus humistratus</i>	Brassicaceae	1, 2
p	Grass	Common couch		<i>Cynodon dactylon</i>	Poaceae	1
p	Forb	Australian hound's-tongue		<i>Cynoglossum australe</i>	Boraginaceae	1
p	Sedge	Sedge		<i>Cyperus alterniflorus</i>	Cyperaceae	1
p	Sedge	Sticky sedge		<i>Cyperus fulvus</i>	Cyperaceae	1
a	Sedge	Bearded flat-sedge		<i>Cyperus squarrosus</i>	Cyperaceae	1
p	Shrub	Grey ray flower		<i>Cyphanthera albicans</i>	Solanaceae	5
p	Shrub	Grey ray flower		<i>Cyphanthera albicans</i> subsp. <i>tomentosa</i>	Solanaceae	1
p	Subshrub	Grooved dampiera		<i>Dampiera lanceolata</i> var. <i>lanceolata</i>	Goodeniaceae	1
a	Prostrate vine	Paddy melon	*	<i>Cucumis myriocarpus</i> subsp. <i>leptodermis</i>	Cucurbitaceae	1
p	Forb	Grey scurf-pea		<i>Cullen discolor</i>	Fabaceae (Faboideae)	1
a	Forb	Fierce thornapple	*	<i>Datura ferox</i>	Solanaceae	4
a	Forb	Native carrot		<i>Daucus glochidiatus</i>	Apiaceae	1, 2
p	Shrub	Sandhill bitter pea		<i>Daviesia arenaria</i>	Fabaceae (Faboideae)	5
p	Shrub	Broom bitter pea		<i>Daviesia genistifolia</i>	Fabaceae (Faboideae)	5
p	Shrub	Gorse bitter pea		<i>Daviesia ulicifolia</i>	Fabaceae (Faboideae)	5
p	Shrub/small tree	Yellow-berry bush		<i>Denhamia cunninghamii</i>	Celastraceae	1
p	Forb	Riverine flax lily		<i>Dianella porracea</i>	Phormiaceae	4
p	Forb	A blue flax lily		<i>Dianella revoluta</i> var. <i>revoluta</i>	Phormiaceae	1
p	Forb	Undescribed species identified as <i>Dianella</i> spp. Aff. <i>Admixta</i> (Yathong). No specimen		<i>Dianella</i> sp.	Phormiaceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
		collected (plant was caged).				
p	Grass	Queensland bluegrass		<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>	Poaceae	1
p	Forb	Kidney weed		<i>Dichondra repens</i>	Convolvulaceae	4
p	Grass	Cotton panic grass		<i>Dichopogon strictus</i>	Anthericaceae	3
p	Grass	Cotton panic grass		<i>Digitaria brownii</i>	Poaceae	1
p	Grass	Finger panic grass		<i>Digitaria coenicola</i>	Poaceae	1
p	Mistletoe	Coolibah mistletoe		<i>Diplatia grandibractea</i>	Loranthaceae	4
a/p	Forb	Cannonball burr		<i>Dissocarpus paradoxus</i>	Chenopodiaceae	4
p	Orchid	Western donkey orchid		<i>Diuris goonooensis</i>	Orchidaceae	1
p	Orchid	Leopard orchid		<i>Diuris pardina</i>	Orchidaceae	1
p	Shrub	Fern-leaf hop-bush		<i>Dodonaea boroniifolia</i>	Sapindaceae	1, 2
p	Shrub	Bead hop-bush		<i>Dodonaea lobulata</i>	Sapindaceae	1, 2
p	Shrub	Small-leaf hop-bush		<i>Dodonaea peduncularis</i>	Sapindaceae	1, 2
p	Shrub	Sticky hop-bush		<i>Dodonaea viscosa</i>	Sapindaceae	5
p	Shrub	Hop-bush		<i>Dodonaea viscosa</i> subsp. <i>angustifolia</i>	Sapindaceae	4
p	Shrub	Narrow-leaf hop-bush		<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	Sapindaceae	1
p	Shrub	Wedge-leaf hop-bush		<i>Dodonaea viscosa</i> subsp. <i>cuneata</i>	Sapindaceae	1, 2
p	Shrub	Wedge-leaf hop-bush		<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	Sapindaceae	1
p	Shrub	Broad-leaf hop-bush		<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>	Sapindaceae	5
p	Forb	Sundew		<i>Drosera auriculata</i>	Droseraceae	2
a	Forb	Tropical sundew		<i>Drosera burmanni</i>	Droseraceae	2, 4
p	Forb	Pale sundew		<i>Drosera peltata</i>	Droseraceae	1
p	Forb	Pale sundew		<i>Drosera peltata</i> subsp. <i>peltata</i>	Droseraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Small crumbweed		<i>Dysphania pumilio</i>	Chenopodiaceae	5
a	Grass	Awnless barnyard grass		<i>Echinochloa colona</i>	Poaceae	1
a/b	Forb	Patterson's curse	*	<i>Echium plantagineum</i>	Boraginaceae	1
a/b	Forb	Yellow twin-heads		<i>Eclipta platyglossa</i>	Asteraceae	1
p	Subshrub	Climbing saltbush		<i>Einadia nutans</i>	Chenopodiaceae	1
p	Forb	Climbing saltbush		<i>Einadia nutans</i> subsp. <i>eremaea</i>	Chenopodiaceae	1
p	Forb	Climbing saltbush		<i>Einadia nutans</i> subsp. <i>linifolia</i>	Chenopodiaceae	5
p	Subshrub	Climbing saltbush		<i>Einadia nutans</i> subsp. <i>nutans</i>	Chenopodiaceae	1
a	Forb	Waterwort		<i>Elatine gratioloides</i>	Elatinaceae	1
p	Sedge	Common spike-sedge		<i>Eleocharis acuta</i>	Cyperaceae	1
p	Sedge	Pale spike-sedge		<i>Eleocharis pallens</i>	Cyperaceae	5
p	Grass	Common wheatgrass		<i>Elymus scaber</i>	Poaceae	5
p	Grass	Common wheatgrass		<i>Elymus scaber</i> var. <i>scaber</i>	Poaceae	1
a	Forb	Spiny emex	*	<i>Emex australis</i>	Polygonaceae	1
p	Shrub	Ruby saltbush		<i>Enchylaena tomentosa</i>	Chenopodiaceae	1
a/p	Grass	Bottle washers		<i>Enneapogon avenaceus</i>	Poaceae	1
p	Grass	Slender nineawn		<i>Enneapogon gracilis</i>	Poaceae	5
p	Grass	Curly windmill grass		<i>Enteropogon acicularis</i>	Poaceae	1
p	Forb	Hairy willow herb		<i>Epilobium hirtigerum</i>	Onagraceae	4
a	Grass	Stinkgrass	*	<i>Eragrostis cilianensis</i>	Poaceae	1
p	Grass	Woollybutt		<i>Eragrostis eriopoda</i>	Poaceae	4
p	Grass	Purple lovegrass		<i>Eragrostis lacunaria</i>	Poaceae	1
a	Grass	Weeping lovegrass		<i>Eragrostis parviflora</i>	Poaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Grass	Neverfail		<i>Eragrostis setifolia</i>	Poaceae	4
p	Shrub	Turkeybush		<i>Eremophila deserti</i>	Myoporaceae	1
p	Shrub	Tar bush		<i>Eremophila glabra</i> subsp. <i>glabra</i>	Myoporaceae	1, 2
p	Shrub/small tree	Emubush		<i>Eremophila longifolia</i>	Myoporaceae	1, 2
p	Shrub/small tree	Budda		<i>Eremophila mitchellii</i>	Myoporaceae	1, 2
p	Shrub/small tree	Weeooka		<i>Eremophila oppositifolia</i> subsp. <i>rubra</i>	Myoporaceae	1
p	Shrub	Green fuchsia bush		<i>Eremophila serrulata</i>	Myoporaceae	1, 2
p	Shrub	Turpentine bush		<i>Eremophila sturtii</i>	Myoporaceae	1
p	Grass	Mountain wanderrie grass		<i>Eriachne mucronata</i>	Poaceae	4
a	Forb	Carolin's crowfoot		<i>Erodium carolinianum</i>	Geraniaceae	1
a/b	Forb	Common crowfoot	*	<i>Erodium cicutarium</i>	Geraniaceae	1
a	Forb	Blue crowfoot		<i>Erodium crinitum</i>	Geraniaceae	1, 2
a/b	Forb	Oval crowfoot	*	<i>Erodium malacoides</i>	Geraniaceae	5
p	Tree	Baradine gum		<i>Eucalyptus chloroclada</i>	Myrtaceae	2, 4
p	Mallee/small– medium tree	White mallee		<i>Eucalyptus dumosa</i>	Myrtaceae	1, 2
p	Mallee/tree	Dwyer's red gum		<i>Eucalyptus dwyeri</i>	Myrtaceae	1
p	Mallee/small tree	Snap and rattle		<i>Eucalyptus gracilis</i>	Myrtaceae	1, 2
p	Mallee/small tree	Snap and rattle		<i>Eucalyptus gracilis</i> subsp. <i>gracilis</i>	Myrtaceae	1
p	Tree	Gum coolibah		<i>Eucalyptus intertexta</i>	Myrtaceae	1, 2
p	Medium tree	Black box		<i>Eucalyptus largiflorens</i>	Myrtaceae	5
p	Mallee/small tree	Narrow-leaved red mallee		<i>Eucalyptus leptophylla</i>	Myrtaceae	1, 2
p	Mallee/small tree	Grey mallee		<i>Eucalyptus morrisii</i>	Myrtaceae	1, 2

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Mallee/small tree	Glossy-leaved red mallee		<i>Eucalyptus oleosa</i> subsp. <i>oleosa</i>	Myrtaceae	2
p	Tree	Bimblebox		<i>Eucalyptus populnea</i>	Myrtaceae	1
p	Tree	Bimblebox		<i>Eucalyptus populnea</i> subsp. <i>bimbil</i>	Myrtaceae	1
p	Mallee/tree	Red mallee		<i>Eucalyptus socialis</i>	Myrtaceae	1, 2
p	Tree	Mallee		<i>Eucalyptus</i> sp. (<i>Eucalyptus</i> cf. <i>intertexta</i> [mallee])	Myrtaceae	2
p	Mallee	Mallee		<i>Eucalyptus</i> sp. A (mallee)	Myrtaceae	2
p	Mallee/tree	Manara Hills red gum		<i>Eucalyptus vicina</i>	Myrtaceae	1, 2
p	Mallee	Green mallee		<i>Eucalyptus viridis</i>	Myrtaceae	1, 2
a	Forb	Star cudweed		<i>Euchiton sphaericus</i>	Asteraceae	1, 2
a/p	Forb	Desert spurge		<i>Euphorbia tannensis</i> var. <i>eremophila</i>	Euphorbiaceae	1
p	Shrub	Common eutaxia		<i>Eutaxia microphylla</i>	Fabaceae (Faboideae)	1
p	Forb	Tropical speedwell		<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	Convolvulaceae	1
p	Shrub/small tree	Leafless ballart		<i>Exocarpos aphyllus</i>	Santalaceae	1
p	Sedge	Common fringe-sedge		<i>Fimbristylis dichotoma</i>	Cyperaceae	1
a	Forb	Cleavers	*	<i>Galium aparine</i>	Rubiaceae	1
p	Forb	Slender bedstraw	*	<i>Galium divaricatum</i>	Rubiaceae	3
p	Forb	Rough bedstraw		<i>Galium gaudichaudii</i>	Rubiaceae	1
a	Forb	Bedstraw		<i>Galium microlobum</i>	Rubiaceae	1
a	Forb	Small bedstraw	*	<i>Galium murale</i>	Rubiaceae	4
a	Forb	Bedstraw	*	<i>Galium spurium</i>	Rubiaceae	2, 4
p	Shrub/small– medium tree	Wilga		<i>Geijera parviflora</i>	Rutaceae	1
a	Forb	Earth cress		<i>Geococcus pusillus</i>	Brassicaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Forb	Native geranium		<i>Geranium solanderi</i>	Geraniaceae	5
p	Forb	Austral cranesbill		<i>Geranium solanderi</i> var. <i>solanderi</i>	Geraniaceae	1
p	Forb	Silky glycine		<i>Glycine canescens</i>	Fabaceae (Faboideae)	1
p	Forb	Glycine		<i>Glycine clandestina</i>	Fabaceae (Faboideae)	3
p	Forb	Glycine		<i>Glycine</i> spp. (cf. <i>canescens</i>)	Fabaceae (Faboideae)	4
a	Forb	Dwarf cup-flower		<i>Gnephosis tenuissima</i>	Asteraceae	2, 4
p	Forb/subshrub	Tall raspwort		<i>Gonocarpus elatus</i>	Haloragaceae	1
p	Forb	Cut-leaf goodenia		<i>Goodenia cycloptera</i>	Goodeniaceae	1, 2
p	Forb	Mallee goodenia		<i>Goodenia fascicularis</i>	Goodeniaceae	4
p	Forb	Smooth goodenia		<i>Goodenia glabra</i>	Goodeniaceae	1
a	Forb	Goodenia		<i>Goodenia glauca</i>	Goodeniaceae	3
a	Forb	Hill goodenia		<i>Goodenia havilandii</i>	Goodeniaceae	1
p	Forb	Spreading goodenia		<i>Goodenia heteromera</i>	Goodeniaceae	1
a	Forb	Small-flower goodenia		<i>Goodenia pusilliflora</i>	Goodeniaceae	1, 2
p	Subshrub	Sticky goodenia		<i>Goodenia varia</i>	Goodeniaceae	4
p	Forb	Sandhill goodenia		<i>Goodenia willisiana</i>	Goodeniaceae	1
p	Forb	Dwarf brooklime		<i>Gratiola pumilo</i>	Scrophulariaceae	4
p	Shrub	Comb grevillea		<i>Grevillea huegelii</i>	Proteaceae	1, 2
p	Shrub	Honeysuckle grevillea		<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>	Proteaceae	1
a	Forb	Annual chalkwort		<i>Gypsophila tubulosa</i>	Caryophyllaceae	1, 2
p	Small tree	Hooked needlewood		<i>Hakea tephrosperma</i>	Proteaceae	1, 2
p	Subshrub	Rough halgania		<i>Halgania cyanea</i>	Boraginaceae	1
p	Forb	Rough raspwort		<i>Haloragis aspera</i>	Haloragaceae	4

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Forb	Variable raspwort		<i>Haloragis heterophylla</i>	Haloragaceae	4
a	Forb	Mulga cabbage		<i>Haloragis odontocarpa</i> s.l.	Haloragaceae	1
a	Forb	Hairy-pod cress		<i>Harmsiodoxa blennodioides</i>	Brassicaceae	1, 2
a	Forb	Short cress		<i>Harmsiodoxa brevipes</i>	Brassicaceae	1
a	Forb	Cretan weed	*	<i>Hedypnois rhagadioloides</i>	Asteraceae	5
a	Forb	Cretan weed	*	<i>Hedypnois rhagadioloides</i> subsp. <i>cretica</i>	Asteraceae	1
p	Forb	Rough heliotrope		<i>Heliotropium asperrimum</i>	Boraginaceae	1
p	Forb	Common heliotrope	*	<i>Heliotropium europaeum</i>	Boraginaceae	1
p	Shrub	Hoary guinea-flower		<i>Hibbertia obtusifolia</i>	Dilleniaceae	4
p	Subshrub	Hill hibiscus		<i>Hibiscus sturtii</i>	Malvaceae	5
p	Subshrub	Hill hibiscus		<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	Malvaceae	1
p	Subshrub	Hill hibiscus		<i>Hibiscus sturtii</i> var. <i>sturtii</i>	Malvaceae	5
a	Grass	Northern barley grass	*	<i>Hordeum glaucum</i>	Poaceae	4
a	Grass	Barley grass	*	<i>Hordeum leporinum</i>	Poaceae	5
a	Grass	Barley grass	*	<i>Hordeum</i> spp.	Poaceae	5
a	Forb	Moss sunray		<i>Hyalosperma demissum</i>	Asteraceae	4
a	Forb	Moss sunray		<i>Hyalosperma glutinosum</i> subsp. <i>glutinosum</i>	Asteraceae	1
a	Forb	Orange sunray		<i>Hyalosperma semisterile</i>	Asteraceae	1, 2
p	Forb	Slender violet-bush		<i>Hybanthus monopetalus</i>	Violaceae	1, 2
a	Forb	Annual St John's wort		<i>Hypericum</i> spp.	Clusiaceae	2
a	Forb	Smooth catsear	*	<i>Hypochaeris glabra</i>	Asteraceae	1
p	Forb	Catsear	*	<i>Hypochaeris radicata</i>	Asteraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Forb	Tiny star		<i>Hypoxis glabella</i> var. <i>glabella</i>	Hypoxidaceae	4
p	Shrub	Austral indigo		<i>Indigofera australis</i>	Fabaceae (Faboideae)	1
a	Forb	Grass cushion		<i>Isoetopsis graminifolia</i>	Asteraceae	1, 2
a	Sedge	Slender club-sedge		<i>Isolepis congrua</i>	Cyperaceae	1
a	Sedge	Grassy club-sedge		<i>Isolepis hookeriana</i>	Cyperaceae	2, 4
a	Sedge	Victorian club-sedge		<i>Isolepis victoriensis</i>	Cyperaceae	5
p	Forb	Showy isotome		<i>Isotoma axillaris</i>	Lobeliaceae	1
p	Vine	Desert jasmine		<i>Jasminum lineare</i>	Oleaceae	1
p	Rush	Tussock rush		<i>Juncus aridicola</i>	Juncaceae	1
a	Rush	Toad rush		<i>Juncus bufonius</i>	Juncaceae	4
p	Rush	Rush		<i>Juncus ochrocoleus</i>	Juncaceae	4
p	Rush	Finger rush		<i>Juncus subsecundus</i>	Juncaceae	1
p	Shrub	Tick bush		<i>Kunzea</i> sp. 'Mt Kaputar'	Myrtaceae	1, 2
p	Grass	Blown grass		<i>Lachnagrostis filiformis</i>	Poaceae	1
b	Forb	Prickly lettuce	*	<i>Lactuca serriola</i>	Asteraceae	5
a	Grass	Goldentop	*	<i>Lamarckia aurea</i>	Poaceae	1
a/p	Forb	Flat billy-buttons		<i>Leiocarpa brevicompta</i>	Asteraceae	5
p	Forb	Stalked plover-daisy		<i>Leiocarpa leptolepis</i>	Asteraceae	5
p	Forb	Hill everlasting		<i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>	Asteraceae	1
p	Forb	Woolly plover-daisy		<i>Leiocarpa websteri</i>	Asteraceae	1
p	Forb	Lesser hawkbit	*	<i>Leontodon taraxacoides</i> subsp. <i>taraxacoides</i>	Asteraceae	5
a/p	Forb	Common peppergrass	*	<i>Lepidium africanum</i>	Brassicaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Warty peppergrass		<i>Lepidium papillosum</i>	Brassicaceae	1
p	Shrub	Green tea-tree		<i>Leptospermum coriaceum</i>	Myrtaceae	1, 2
a	Forb	Hoary sunray		<i>Leucochrysum molle</i>	Asteraceae	1
a	Forb	Hairy stylewort		<i>Levenhookia dubia</i>	Stylidiaceae	1
p	Forb	Large mudwort		<i>Limosella curdieana</i>	Scrophulariaceae	1, 2
p	Forb	Native flax		<i>Linum marginale</i>	Linaceae	1
p	Subshrub	Bare logania		<i>Logania nuda</i>	Loganiaceae	1
p	Grass	Perennial ryegrass	*	<i>Lolium perenne</i>	Poaceae	5
p	Forb	Pale mat-rush		<i>Lomandra collina</i>	Lomandraceae	1
p	Forb	Scented mat-rush		<i>Lomandra effusa</i>	Lomandraceae	1, 2
p	Forb	Pale mat-rush		<i>Lomandra glauca</i>	Lomandraceae	5
p	Forb	Woolly mat-rush		<i>Lomandra leucocephala</i>	Lomandraceae	1
p	Forb	Woolly mat-rush		<i>Lomandra leucocephala</i> subsp. <i>leucocephala</i>	Lomandraceae	1
p	Forb	Blue mountains mat-rush		<i>Lomandra montana</i>	Lomandraceae	4
p	Forb	Many-flowered mat-rush		<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	Lomandraceae	4
p	Forb	Irongrass		<i>Lomandra patens</i>	Lomandraceae	1
p	Forb	Red-flowered lotus		<i>Lotus cruentus</i>	Fabaceae (Faboideae)	1, 2
p	Shrub	African boxthorn	*	<i>Lycium ferocissimum</i>	Solanaceae	1
p	Shrub	African boxthorn	*	<i>Lysiana exocarpi</i>	Loranthaceae	1
p	Mistletoe	Harlequin mistletoe		<i>Lysiana exocarpi</i> subsp. <i>exocarpi</i>	Loranthaceae	1
a	Forb	Hyssop loosestrife		<i>Lythrum hyssopifolia</i>	Lythraceae	4
p	Forb	Wingless bluebush		<i>Maireana enchylaenoides</i>	Chenopodiaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Forb	A bluebush		<i>Maireana humillima</i>	Chenopodiaceae	1
a/b	Forb	Small-flowered mallow	*	<i>Malva parviflora</i>	Malvaceae	1
p	Subshrub	Native hollyhock		<i>Malva preissiana</i>	Malvaceae	1, 2
p	Forb	White horehound	*	<i>Marrubium vulgare</i>	Lamiaceae	1
p	Woody twiner	Doubah		<i>Marsdenia australis</i>	Apocynaceae	1
a	Forb	Cut-leaved medic	*	<i>Medicago laciniata</i>	Fabaceae (Faboideae)	1
a	Forb	Woolly burr medic	*	<i>Medicago minima</i>	Fabaceae (Faboideae)	1, 2
a	Forb	Burr medic	*	<i>Medicago polymorpha</i>	Fabaceae (Faboideae)	1
a	Forb	Barrel medic	*	<i>Medicago truncatula</i>	Fabaceae (Faboideae)	4
p	Shrub	Broombush		<i>Melaleuca uncinata</i>	Myrtaceae	1, 2
a	Forb	Hexham scent	*	<i>Melilotus indicus</i>	Fabaceae (Faboideae)	5
a	Forb	Menkea		<i>Menkea australis</i>	Brassicaceae	4
p	Grass	Weeping grass		<i>Microlaena stipoides</i> var. <i>stipoides</i>	Poaceae	4
p	Shrub	Fringed heath-myrtle		<i>Micromyrtus ciliata</i>	Myrtaceae	1
p	Shrub	Micromyrtus		<i>Micromyrtus sessilis</i>	Myrtaceae	5
p	Shrub	Micromyrtus		<i>Micromyrtus striata</i>	Myrtaceae	1, 2
p	Forb	Yam daisy		<i>Microseris lanceolata</i> s.l.	Asteraceae	1
p	Orchid	Onion orchid		<i>Microtis</i> spp.	Orchidaceae	4
a	Forb	Broad-leaved millotia		<i>Millotia myosotidifolia</i>	Asteraceae	1, 2
p	Forb	Minnie daisy		<i>Minuria leptophylla</i>	Asteraceae	1, 2
p	Shrub	Prickly mirbelia		<i>Mirbelia pungens</i>	Fabaceae (Faboideae)	1
p	Grass	Bandicoot grass		<i>Monachather paradoxus</i>	Poaceae	1
p	Shrub/small tree	Western boobialla		<i>Myoporum montanum</i>	Myoporaceae	4

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Shrub/small tree	Sugarwood		<i>Myoporum platycarpum</i> s.l.	Myoporaceae	1
p	Forb	Red water-milfoil		<i>Myriophyllum verrucosum</i>	Haloragaceae	1
p	Shrub	Tree tobacco	*	<i>Nicotiana glauca</i>	Solanaceae	1
a	Forb	Small-flower tobacco		<i>Nicotiana goodspeedii</i>	Solanaceae	1, 2
a/p	Forb	Native tobacco		<i>Nicotiana simulans</i>	Solanaceae	3
a/p	Forb	Native tobacco		<i>Nicotiana suaveolens</i>	Solanaceae	1, 2
a/p	Forb	Native tobacco		<i>Nicotiana velutina</i>	Solanaceae	5
p	Shrub	Limestone daisy bush		<i>Olearia calcarea</i>	Asteraceae	5
p	Shrub	Clubmoss daisy bush		<i>Olearia lepidophylla</i>	Asteraceae	4
p	Shrub	Burrabunga		<i>Olearia pimeleoides</i>	Asteraceae	1, 2
p	Shrub	Twiggy daisy bush		<i>Olearia ramulosa</i>	Asteraceae	1
p	Shrub	Twiggy daisy bush		<i>Olearia ramulosa</i> var. <i>ramulosa</i>	Asteraceae	5
p	Shrub	Daisy bush		<i>Olearia rudis</i>	Asteraceae	1
p	Shrub	Spiked daisy bush		<i>Olearia subspicata</i>	Asteraceae	1, 2
p	Shrub	Thin-leaf daisy bush		<i>Olearia tenuifolia</i>	Asteraceae	2, 4
a	Forb	Burr stickseed		<i>Omphalolappula concava</i>	Boraginaceae	1, 2
p	Fern	Adder's tongue		<i>Ophioglossum lusitanicum</i>	Ophioglossaceae	1
p	Forb	Five-wing bonefruit		<i>Osteocarpum pentapterum</i>	Chenopodiaceae	5
p	Forb	Grassland wood-sorrel		<i>Oxalis perennans</i>	Oxalidaceae	1
p	Forb	Soursob	*	<i>Oxalis pes-caprae</i>	Oxalidaceae	1, 2
p	Forb	Stout-rooted wood-sorrel		<i>Oxalis radicata</i>	Oxalidaceae	1
p	Shrub	Heath everlasting		<i>Ozothamnus diotophyllus</i>	Asteraceae	1
p	Shrub	Tucker's everlasting		<i>Ozothamnus tuckeri</i>	Asteraceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Climber	Wonga wonga vine		<i>Pandorea pandorana</i>	Bignoniaceae	1, 2
p	Climber	Wonga wonga vine		<i>Pandorea pandorana</i> subsp. <i>pandorana</i> 'inland form'	Bignoniaceae	1
p	Grass	Native millet		<i>Panicum decompositum</i>	Poaceae	4
p	Grass	Hairy panic		<i>Panicum effusum</i>	Poaceae	1
p	Grass	Yadbila grass		<i>Panicum queenslandicum</i>	Poaceae	1
a	Forb	Rough poppy	*	<i>Papaver hybridum</i>	Papaveraceae	1, 2
a	Forb	Native pellitory		<i>Parietaria debilis</i>	Urticaceae	1
p	Forb	Chilean whitlow wort	*	<i>Paronychia brasiliiana</i>	Caryophyllaceae	4
p	Woody vine	Gargaloo		<i>Parsonsia eucalyptophylla</i>	Apocynaceae	5
p	Grass	Pale summer-grass		<i>Paspalidium albobillosum</i>	Poaceae	4
p	Grass	Knottybutt grass		<i>Paspalidium constrictum</i>	Poaceae	1
a	Grass	False hairgrass	*	<i>Pentaschistis airoides</i>	Poaceae	2, 4
p	Forb	Creeping knotweed		<i>Persicaria prostrata</i>	Polygonaceae	1
p	Shrub	Butterfly bush		<i>Petalostylis labicheoides</i>	Fabaceae (Caesalpinioideae)	1
a	Grass	Paradoxa grass	*	<i>Phalaris paradoxa</i>	Poaceae	5
p	Shrub	Club-leaved phebalium		<i>Phebalium obcordatum</i>	Rutaceae	1, 2
p	Shrub	Small-leaf waxflower		<i>Philothea difformis</i>	Rutaceae	1, 2
p	Shrub	Small-leaf waxflower		<i>Philothea difformis</i> subsp. <i>difformis</i>	Rutaceae	1, 2
p	Shrub	Rock wallaby shrub		<i>Philothea linearis</i>	Rutaceae	1, 2
a	Forb	Rock mitrewort		<i>Phyllangium sulcatum</i>	Loganiaceae	1, 2
a/p	Subshrub	Sand spurge		<i>Phyllanthus fuernrohrii</i>	Phyllanthaceae	1
a	Forb	Lagoon spurge		<i>Phyllanthus lacunarius</i>	Phyllanthaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Phyllanthus		<i>Phyllanthus oblanceolatus</i>	Phyllanthaceae	1
p	Shrub	Silky rice-flower		<i>Pimelea micrantha</i>	Thymelaeaceae	4
p	Shrub	Mallee rice-flower		<i>Pimelea microcephala</i>	Thymelaeaceae	5
p	Shrub	Shrubby rice-flower		<i>Pimelea microcephala</i> subsp. <i>microcephala</i>	Thymelaeaceae	1
a	Forb	Annual rice-flower		<i>Pimelea trichostachya</i>	Thymelaeaceae	1, 2
p	Shrub/small tree	Butterbush		<i>Pittosporum angustifolium</i>	Pittosporaceae	1
a	Forb	Valley popcorn flower	*	<i>Plagiobothrys canescens</i>	Boraginaceae	2
a	Forb	White forget-me-not		<i>Plagiobothrys plurisepaleus</i>	Boraginaceae	1
a	Forb	Sago-weed		<i>Plantago cunninghamii</i>	Plantaginaceae	1
a	Forb	Dark sago-weed		<i>Plantago drummondii</i>	Plantaginaceae	1, 2
a	Forb	Small sago-weed		<i>Plantago turrifera</i>	Plantaginaceae	1
p	Fern	Bristly cloak fern		<i>Pleurosorus rutifolius</i>	Aspleniaceae	2
p	Fern	Blanket fern		<i>Pleurosorus subglandulosus</i>	Aspleniaceae	1
a	Forb	Clustered copper-wire daisy		<i>Podolepis arachnoidea</i>	Asteraceae	1
a	Forb	Large copper-wire daisy		<i>Podolepis canescens</i>	Asteraceae	1, 2
a/p	Forb	Showy copper-wire daisy		<i>Podolepis jaceoides</i>	Asteraceae	3
a/p	Forb	Tall copper-wire daisy		<i>Podolepis longipedata</i>	Asteraceae	1
a	Forb	Four-leaved allseed	*	<i>Polycarpon tetraphyllum</i>	Caryophyllaceae	1
a	Forb	Small knotweed		<i>Polygonum plebeium</i>	Polygonaceae	1
a	Grass	Annual beardgrass	*	<i>Polypogon monspeliensis</i>	Poaceae	1
p	Forb	Pomax		<i>Pomax umbellata</i>	Rubiaceae	1
a	Forb	Small poranthera		<i>Poranthera microphylla</i>	Phyllanthaceae	2, 4

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
a	Forb	Pigweed		<i>Portulaca oleracea</i>	Portulacaceae	1
a	Forb	Purple-flowered devil's claw	*	<i>Proboscidea louisiana</i>	Martyniaceae	1
p	Shrub	Snowy mint-bush		<i>Prostanthera nivea</i>	Lamiaceae	1
p	Shrub	Snowy mint-bush		<i>Prostanthera nivea</i> var. <i>nivea</i>	Lamiaceae	1
p	Shrub	Small-leaved mint-bush		<i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i>	Lamiaceae	1, 2
p	Shrub	Jockey's cap		<i>Prostanthera striatiflora</i>	Lamiaceae	1
a	Forb	Jersey cudweed		<i>Pseudognaphalium luteoalbum</i>	Asteraceae	1
p	Shrub/small tree	lamboto		<i>Psyrdrax odorata</i> f. <i>subnitida</i>	Rubiaceae	1
p	Orchid	Black-tip greenhood		<i>Pterostylis bicolor</i>	Orchidaceae	4
p	Orchid	Rustyhood		<i>Pterostylis bisecta</i> group	Orchidaceae	2, 4
p	Orchid	Orchid		<i>Pterostylis boormanii</i>	Orchidaceae	2, 4
p	Orchid	Cobar rustyhood		† <i>Pterostylis cobarensis</i>	Orchidaceae	2, 4
p	Orchid	Orchid		<i>Pterostylis excelsa</i> group	Orchidaceae	2, 4
p	Orchid	Midget greenhood		<i>Pterostylis mutica</i>	Orchidaceae	1, 2
p	Orchid	Dwarf greenhood		<i>Pterostylis nana</i>	Orchidaceae	1, 2
p	Forb	Orchid		<i>Pterostylis petrosa</i>	Orchidaceae	4
p	Forb	Hairy heads		<i>Ptilotus erubescens</i>	Amaranthaceae	4
p	Forb	Tall mulla mulla		<i>Ptilotus exaltatus</i> var. <i>exaltatus</i>	Amaranthaceae	5
a	Forb	Paper foxtail		<i>Ptilotus gaudichaudii</i>	Amaranthaceae	5
a	Forb	Paper foxtail		<i>Ptilotus gaudichaudii</i> var. <i>parviflorus</i>	Amaranthaceae	1, 2
p	Forb	Regal foxtail		<i>Ptilotus nobilis</i> subsp. <i>nobilis</i>	Amaranthaceae	1
p	Subshrub	Smoke bush		<i>Ptilotus obovatus</i>	Amaranthaceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Subshrub	Cotton bush		<i>Ptilotus obovatus</i> var. <i>obovatus</i>	Amaranthaceae	5
p	Forb	Long tails		<i>Ptilotus polystachyus</i> var. <i>polystachyus</i>	Amaranthaceae	1, 2
p	Forb	Rabbit-tails		<i>Ptilotus seminudus</i>	Amaranthaceae	1
p	Subshrub	Silver-tails		<i>Ptilotus sessilifolius</i> var. <i>sessilifolius</i>	Amaranthaceae	1
p	Forb	Pussy-tails		<i>Ptilotus spathulatus</i> f. <i>spathulatus</i>	Amaranthaceae	1
a	Forb	Soft billy button		<i>Pycnosorus pleiocephalus</i>	Asteraceae	1
p	Shrub	Bush hibiscus		<i>Radyera farragei</i>	Malvaceae	5
p	Forb	Common buttercup		<i>Ranunculus lappaceus</i>	Ranunculaceae	2, 4
a	Forb	Buttercup		<i>Ranunculus pentandrus</i> var. <i>platycarpus</i>	Ranunculaceae	4
a	Forb	Ferny buttercup		<i>Ranunculus pumilio</i>	Ranunculaceae	5
a	Forb	Buttercup		<i>Ranunculus sessiliflorus</i> var. <i>pilulifer</i>	Ranunculaceae	1
a	Forb	Small-flowered Australian buttercup		<i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>	Ranunculaceae	1, 2
a/b	Forb	Wild radish	*	<i>Raphanus raphanistrum</i>	Brassicaceae	5
p	Forb	Weld	*	<i>Reseda luteola</i>	Resedaceae	1
a	Forb	Common white sunray		<i>Rhodanthe corymbiflora</i>	Asteraceae	3
a	Forb	Common white sunray		<i>Rhodanthe floribunda</i>	Asteraceae	1, 2
a	Forb	Smooth sunray		<i>Rhodanthe laevis</i>	Asteraceae	1, 2
a	Forb	Musk sunray		<i>Rhodanthe moschata</i>	Asteraceae	1, 2
a	Forb	Pygmy sunray		<i>Rhodanthe pygmaea</i>	Asteraceae	1, 2
a	Forb	Sand sunray		<i>Rhodanthe tietkensis</i>	Asteraceae	4
a	Forb	Woolly sunray		<i>Rhodanthe uniflora</i>	Asteraceae	4
p	Slender twiner	Purple pentatope		<i>Rhyncharrhena linearis</i>	Apocynaceae	1

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Shrub	Western wedding bush		<i>Ricinocarpos bowmanii</i>	Euphorbiaceae	2
p	Shrub	Western wedding bush		<i>Ricinocarpos trachyphyllus</i>	Euphorbiaceae	2
p	Forb	Onion grass	*	<i>Romulea rosea</i> var. <i>australis</i>	Iridaceae	3
p	Forb	Rostellularia		<i>Rostellularia adscendens</i> var. <i>adscendens</i>	Acanthaceae	5
p	Forb	Pink tongues		<i>Rostellularia adscendens</i> var. <i>pogonantha</i>	Acanthaceae	1
a	Grass	Annual cat's tail	*	<i>Rostraria cristata</i>	Poaceae	1
a	Grass	Rough tail	*	<i>Rostraria pumila</i>	Poaceae	1, 2
p	Forb	Swamp dock		<i>Rumex brownii</i>	Polygonaceae	1
p	Forb	Curled dock	*	<i>Rumex crispus</i>	Polygonaceae	1
a	Forb	Shiny dock		<i>Rumex crystallinus</i>	Polygonaceae	5
a/p	Forb	Dock	*	<i>Rumex</i> spp.	Polygonaceae	5
p	Forb	Shiny dock		<i>Rumex tenax</i>	Polygonaceae	1
p	Forb	Grey wrinklewort		<i>Rutidosia helichrysoides</i>	Asteraceae	1
p	Grass	Wallaby grass		<i>Rytidosperma bipartitum</i>	Poaceae	1
p	Grass	Ringed wallaby grass		<i>Rytidosperma caespitosum</i>	Poaceae	1
p	Grass	Wallaby grass		<i>Rytidosperma erianthum</i>	Poaceae	1
p	Grass	Mountain wallaby grass		<i>Rytidosperma monticola</i>	Poaceae	1
p	Grass	Small-flowered wallaby-grass		<i>Rytidosperma setaceum</i>	Poaceae	4
a/b	Forb	Roly poly		<i>Salsola australis</i>	Chenopodiaceae	1
a	Subshrub	Mintweed	*	<i>Salvia reflexa</i>	Lamiaceae	1
p	Forb	Wild sage	*	<i>Salvia verbenaca</i>	Lamiaceae	1
p	Shrub/small tree	Sweet quandong		<i>Santalum acuminatum</i>	Santalaceae	1, 2

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

Annual/ Perennial	Form	Common name	Exotic	Scientific name	Family	Source
p	Shrub/small tree	Northern sandalwood		<i>Santalum lanceolatum</i>	Santalaceae	4
p	Shrub/small tree	Bitter quandong		<i>Santalum murrayanum</i>	Santalaceae	2, 4
p	Forb	Sandplain fan-flower		<i>Scaevola humilis</i>	Goodeniaceae	1
p	Forb	Scaevola		<i>Scaevola parvibarbata</i>	Goodeniaceae	4
p	Shrub	Maroon bush		<i>Scaevola spinescens</i>	Goodeniaceae	1
a/b	Forb	Spike centaury		<i>Schenkia australis</i>	Gentianaceae	1
p	Small/medium tree	Pepper tree	*	<i>Schinus areira</i>	Anacardiaceae	1
a	Grass	Arabian grass	*	<i>Schismus barbatus</i>	Poaceae	1, 2
p	Sedge	Desert bog-sedge		<i>Schoenus subaphyllus</i>	Cyperaceae	5
a	Forb	Cushion knawel		<i>Scleranthus minusculus</i>	Caryophyllaceae	1
a	Forb	Purple goosefoot		<i>Scleroblitum atriplicinum</i>	Chenopodiaceae	1
p	Shrub	Goathead burr		<i>Sclerolaena bicornis</i>	Chenopodiaceae	5
p	Shrub	Galvanized burr		<i>Sclerolaena birchii</i>	Chenopodiaceae	1, 2
p	Subshrub	Tall copperburr		<i>Sclerolaena convexula</i>	Chenopodiaceae	1
p	Subshrub	Grey copperburr		<i>Sclerolaena diacantha</i>	Chenopodiaceae	1
p	Subshrub	Tangled copperburr		<i>Sclerolaena divaricata</i>	Chenopodiaceae	5
p	Subshrub	Limestone copperburr		<i>Sclerolaena obliquicuspis</i>	Chenopodiaceae	3
p	Subshrub	Mallee copperburr		<i>Sclerolaena parviflora</i>	Chenopodiaceae	1
p	Subshrub	Two-spined saltbush		<i>Sclerolaena uniflora</i>	Chenopodiaceae	1
p	Shrub	Feathery groundsel		<i>Senecio anethifolius</i> subsp. <i>anethifolius</i>	Asteraceae	1
p	Subshrub	Bushy groundsel		<i>Senecio cunninghamii</i>	Asteraceae	1
a	Forb	Slender groundsel		<i>Senecio glossanthus</i>	Asteraceae	1, 2

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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a/p	Forb	Variable groundsel		<i>Senecio pinnatifolius</i> var. <i>pinnatifolius</i>	Asteraceae	1
a	Forb	Toothed groundsel		<i>Senecio platylepis</i>	Asteraceae	1
p	Forb	Cotton fireweed		<i>Senecio quadridentatus</i>	Asteraceae	1, 2
p	Forb	Tall groundsel		<i>Senecio runcinifolius</i>	Asteraceae	2, 4
p	Shrub	Cassia		<i>Senna artemisioides</i>	Asteraceae	1
p	Shrub	Woody cassia		<i>Senna artemisioides</i> cf. ssp. <i>petiolaris</i>	Fabaceae (Caesalpinioideae)	5
p	Shrub	Fine-leaf desert cassia		<i>Senna artemisioides</i> subsp. <i>filifolia</i>	Fabaceae (Caesalpinioideae)	1
p	Shrub	Silver cassia		<i>Senna artemisioides</i> subsp. X <i>artemisioides</i>	Fabaceae (Caesalpinioideae)	1, 2
p	Shrub	Broad-leaf desert cassia		<i>Senna artemisioides</i> subsp. X <i>coriacea</i>	Fabaceae (Caesalpinioideae)	5
p	Subshrub	Narrow-leaf desert cassia		<i>Senna artemisioides</i> subsp. <i>zygophylla</i>	Fabaceae (Caesalpinioideae)	2
p	Shrub	Cassia		<i>Senna</i> form taxon 'zygophylla'	Fabaceae (Caesalpinioideae)	4
p	Subshrub	Corrugated sida		<i>Sida corrugata</i>	Malvaceae	5
p	Subshrub	Ridge sida		<i>Sida cunninghamii</i>	Malvaceae	1
p	Subshrub	Pin sida		<i>Sida fibulifera</i>	Malvaceae	4
p	Subshrub	Fine sida		<i>Sida filiformis</i>	Malvaceae	1
p	Shrub	Rock sida		<i>Sida petrophila</i>	Malvaceae	1, 2
a	Forb	Copper weed		<i>Sigesbeckia australiensis</i>	Asteraceae	1
a	Forb	Indian weed		<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Asteraceae	5
a	Forb	Mallee catchfly	*	<i>Silene apetala</i>	Caryophyllaceae	4

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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a	Forb	Mediterranean catchfly	*	<i>Silene nocturna</i>	Caryophyllaceae	1, 2
b	Forb	Variegated thistle	*	<i>Silybum marianum</i>	Asteraceae	5
a/b	Forb	Smooth mustard	*	<i>Sisymbrium erysimoides</i>	Brassicaceae	1
a	Forb	London rocket	*	<i>Sisymbrium irio</i>	Brassicaceae	3
p	Forb	Indian hedge mustard	*	<i>Sisymbrium orientale</i>	Brassicaceae	1
p	Subshrub	Western nightshade		<i>Solanum coactiliferum</i>	Solanaceae	1
p	Forb/subshrub	Velvet potato bush		<i>Solanum ellipticum</i>	Solanaceae	5
p	Forb/subshrub	Quena		<i>Solanum esuriale</i>	Solanaceae	5
p	Shrub	Spiny potato bush		<i>Solanum ferocissimum</i>	Solanaceae	1
a	Forb	Black-berry nightshade	*	<i>Solanum nigrum</i>	Solanaceae	5
p	Forb	Solengyne		<i>Solenogyne bellioides</i>	Asteraceae	4
a	Forb	Prickly sowthistle	*	<i>Sonchus asper</i> subsp. <i>asper</i>	Asteraceae	1
a	Forb	Common sowthistle	*	<i>Sonchus oleraceus</i>	Asteraceae	1
a/b	Forb	Red sandspurry	*	<i>Spergularia rubra</i>	Caryophyllaceae	5
a/p	Forb	Sandspurry		<i>Spergularia</i> spp.	Caryophyllaceae	2
p	Forb	Creamy candles		<i>Stackhousia monogyna</i>	Stackhousiaceae	1, 2
a/p	Forb	Stackhousia		<i>Stackhousia muricata</i>	Stackhousiaceae	1
a	Forb	Many flowered starwort		<i>Stellaria angustifolia</i>	Caryophyllaceae	3
a/b	Forb	Chickweed	*	<i>Stellaria media</i>	Caryophyllaceae	4
a	Forb	Many flowered starwort		<i>Stellaria multiflora</i>	Caryophyllaceae	4
a	Forb	Lesser chickweed	*	<i>Stellaria pallida</i>	Caryophyllaceae	4
a/b	Forb	Common chickweed	*	<i>Stellaria papillata</i>	Caryophyllaceae	3
a	Forb	Stellaria		<i>Stellaria</i> sp. D	Caryophyllaceae	4

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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p	Shrub	Stenanthemum		<i>Stenanthemum leucophractum</i>	Rhamnaceae	5
a	Forb	Threadcross		<i>Stenopetalum lineare</i>	Brassicaceae	1, 2
a	Forb	Pea thread-petal		<i>Stenopetalum sphaerocarpum</i>	Brassicaceae	1, 2
a	Forb	Hooked cudweed		<i>Stuartina hamata</i>	Asteraceae	1
a	Forb	Spoon cudweed		<i>Stuartina muelleri</i>	Asteraceae	4
p	Forb	Common poison pea		<i>Swainsona affinis</i>	Fabaceae (Faboideae)	1
a/p	Forb	Woolly darling pea		<i>Swainsona burkittii</i>	Fabaceae (Faboideae)	1
p	Forb	Poison swainson-pea		<i>Swainsona microphylla</i>	Fabaceae (Faboideae)	2
p	Forb	Dwarf swainson-pea		<i>Swainsona phacoides</i>	Fabaceae (Faboideae)	1
p	Small tree	Athel tree	*	<i>Tamarix aphylla</i>	Tamaricaceae	1
p	Shrub	Spiny mallee pea		<i>Templetonia aculeata</i>	Fabaceae (Faboideae)	1, 2
p	Shrub	Desert broombush		<i>Templetonia egena</i>	Fabaceae (Faboideae)	2, 4
a	Forb	Tetragonia		<i>Tetragonia moorei</i>	Aizoaceae	1
a	Forb	New Zealand spinach		<i>Tetragonia tetragonioides</i>	Aizoaceae	5
p	Forb	Grey germander		<i>Teucrium racemosum</i>	Lamiaceae	1
p	Orchid	Scented sun orchid		<i>Thelymitra megalyptra</i>	Orchidaceae	1
p	Orchid	Sun orchid		<i>Thelymitra pauciflora</i> s.l.	Orchidaceae	5
p	Grass	Kangaroo grass		<i>Themeda australis</i>	Poaceae	1
p	Grass	Mulga Mitchell grass		<i>Thyridolepis mitchelliana</i>	Poaceae	1
p	Forb	Fringe-lily		<i>Thysanotus baueri</i>	Anthericaceae	5
p	Forb	Twining fringe-lily		<i>Thysanotus patersonii</i>	Anthericaceae	1, 2
p	Forb	Common fringe-lily		<i>Thysanotus tuberosus</i>	Anthericaceae	5
a	Forb	Yellow hawkweed	*	<i>Tolpis barbata</i>	Asteraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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a	Forb	Purple parsnip		<i>Trachymene cyanopetala</i>	Apiaceae	1
a	Forb	Sponge-fruit		<i>Trachymene ornata</i>	Apiaceae	1, 2
a	Grass	Small burrgrass		<i>Tragus australianus</i>	Poaceae	1
a/p	Forb	Cat-head	*	<i>Tribulus terrestris</i>	Zygophyllaceae	1
p	Forb	Yellow autumn-lily		<i>Tricoryne elatior</i>	Anthericaceae	5
a	Forb	Clustered clover	*	<i>Trifolium glomeratum</i>	Fabaceae (Faboideae)	3
p	Forb	Woolly clover	*	<i>Trifolium tomentosum</i>	Fabaceae (Faboideae)	1
a	Forb	Spurred arrowgrass		<i>Triglochin calcitrapa</i>	Juncaginaceae	1
p	Grass	Porcupine grass		<i>Triodia scariosa</i>	Poaceae	1
p	Grass	Porcupine grass		<i>Triodia scariosa</i> subsp. <i>scariosa</i>	Poaceae	1
p	Grass	Fiveminute grass		<i>Tripogon loliiformis</i>	Poaceae	1
a	Forb	Common sunray		<i>Triptilodiscus pygmaeus</i>	Asteraceae	1
a/p	Grass	Purple needlegrass		<i>Triraphis mollis</i>	Poaceae	1
p	Forb	Stinging nettle		<i>Urtica incisa</i>	Urticaceae	5
a	Forb	Small nettle	*	<i>Urtica urens</i>	Urticaceae	1, 2
a	Forb	Cup velleia		<i>Velleia connata</i>	Goodeniaceae	1
a	Forb	Smooth velleia		<i>Velleia glabrata</i>	Goodeniaceae	4
p	Forb	Spur velleia		<i>Velleia paradoxa</i>	Goodeniaceae	1
p	Forb	Trailing verbena	*	<i>Verbena supina</i>	Verbenaceae	1
a	Forb	Annual New Holland daisy		<i>Vittadinia cervicalis</i>	Asteraceae	5
a	Forb	Fuzzweed		<i>Vittadinia cervicalis</i> var. <i>cervicalis</i>	Asteraceae	1
p	Forb	Club-hair New Holland daisy		<i>Vittadinia condyloides</i>	Asteraceae	1
a/p	Forb	Fuzzweed		<i>Vittadinia cuneata</i>	Asteraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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a/p	Forb	Fuzzweed		<i>Vittadinia cuneata</i> var. <i>cuneata</i> f. <i>cuneata</i>	Asteraceae	5
a/p	Forb	Fuzzweed		<i>Vittadinia cuneata</i> var. <i>morrisii</i>	Asteraceae	3
a/p	Forb	Dissected New Holland daisy		<i>Vittadinia dissecta</i>	Asteraceae	5
a/p	Forb	Dissected New Holland daisy		<i>Vittadinia dissecta</i> var. <i>hirta</i>	Asteraceae	1
a/p	Forb/subshrub	Fuzzweed		<i>Vittadinia pustulata</i>	Asteraceae	5
a/p	Forb	Fuzzweed		<i>Vittadinia</i> spp.	Asteraceae	5
a/p	Forb	Furrowed New Holland daisy		<i>Vittadinia sulcata</i>	Asteraceae	5
a	Grass	Squirrel tail fescue	*	<i>Vulpia bromoides</i>	Poaceae	4
a	Grass	Wall fescue	*	<i>Vulpia muralis</i>	Poaceae	4
a	Grass	Rat's tail fescue	*	<i>Vulpia myuros</i>	Poaceae	1
a	Grass	Rat's tail fescue	*	<i>Vulpia myuros</i> f. <i>myuros</i>	Poaceae	1
p	Forb	Tufted bluebell		<i>Wahlenbergia communis</i>	Campanulaceae	1
p	Forb	Annual bluebell		<i>Wahlenbergia gracilentia</i>	Campanulaceae	1
p	Forb	Bluebell		<i>Wahlenbergia luteola</i>	Campanulaceae	1
p	Forb	Tall bluebell		<i>Wahlenbergia stricta</i>	Campanulaceae	1
p	Forb	Bronze tall bluebell		<i>Wahlenbergia stricta</i> subsp. <i>alterna</i>	Campanulaceae	1
a/p	Forb	Mallee annual bluebell		<i>Wahlenbergia tumidifructa</i>	Campanulaceae	4
a	Forb	Orange immortelle		<i>Waitzia acuminata</i>	Asteraceae	1
p	Shrub	Stiff westringia		<i>Westringia rigida</i>	Lamiaceae	1, 2
p	Forb	Early nancy		<i>Wurmbea dioica</i> subsp. <i>dioica</i>	Colchicaceae	1
a	Forb	Bathurst burr	*	<i>Xanthium spinosum</i>	Asteraceae	1
a	Forb	Noogoora burr	*	<i>Xanthium strumarium</i>	Asteraceae	5

Yathong Nature Reserve Vegetation Survey: September 2014 and September 2015 (NPWS)

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a	Forb	Golden everlasting		<i>Xerochrysum bracteatum</i>	Asteraceae	1, 2
p	Forb	Sticky everlasting		<i>Xerochrysum viscosum</i>	Asteraceae	1
a	Subshrub	Gall weed		<i>Zygophyllum apiculatum</i>	Zygophyllaceae	1, 2
a	Subshrub	Pale twinleaf		<i>Zygophyllum glaucum</i>	Zygophyllaceae	1