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Vegetation assessment:

396 Lane Cove Road/36-42 Waterloo Road, & Coolinga Street, Macquarie Park

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Contents

1.0	Introduction
2.0 2.1 2.2 2.2.1 2.2.2 2.3	Environmental Setting Climate Geology and Soil Landscapes Geology Soil Landscapes Land use
3.0 3.1 3.2 3.2.1 3.2.2	Flora Previous studies Current survey Methods Observations
4.0 4.1 4.2 4.3 4.3.1 4.3.2 4.3.3	Conservation significance Trees Communities Species National State Regional
5.0	Noxious Weeds
6.0	Conclusions
7.0	Recommendations

References

Figures

- 1. Location of the Site
- 2. Aerial photograph of the Site
- 3. Geology of the Site (Herbert 1983)
- 4. Soil landscape of the Site (Chapman et al. 1989)
- 5. Vegetation mapping of the Site (Benson and Howell 1994)6. NPWS (2002) vegetation mapping of the Site
- 7. Locations of trees recorded on the Site

Table

1. Trees recorded on the Site

Appendices

- 1. Significant Tree Register
- 2. Tree Preservation Order and Tree Management Policy, City of Ryde
- 3. Photographic record of trees on the Site
- 4. Noxious weed declarations for Ryde City Council

1.0 Introduction

The vegetation on the approximately 1.6 ha of 396 Lane Cove Road/36-42 Waterloo Road and 2 Coolinga Street, Macquarie Park (Figure 1, the Site) consisted mainly of a perimeter of planted trees with a ground layer of mown grass and/or woodchips.

The Site is located in the Ryde Local Government Area (LGA).

2.0 Environmental Setting

The Site is relatively flat, with an elevation of approximately 50 m ADH. It is located in an existing industrial area with the adjacent sites occupied by large industrial and commercial buildings, associated car parks and perimeter landscaping.

The Site is bounded (Figures 1 and 2):

- to the north-east by Waterloo Road;
- to the north-west by Coolinga Street;
- to the south-west by Giffnock Avenue and vacant industrial land; and
- to the south-east by Lane Cove Road although currently an area fenced off as a construction Site for the Chatswood-Epping rail tunnel project separates the rest of the Site from the Lane Cove Road frontage, except for a short section at the south-west end.

Lane Cove Road is a major arterial road carrying very heavy volumes of traffic, with consequent high concentrations of vehicle fumes.

2.1 Climate

The nearest meteorological station to the Site is at Marsfield (Willandra Village) (Station No. 066156) at similar elevation (65 m AHD) and approximately 3 km to the west.

At Marsfield, the mean annual daily maximum temperature is 22.6°C, and the mean annual daily minimum temperature is 11.1°C. The highest mean monthly temperature occurs in January (27.4°C) and the lowest mean monthly temperature in July (5.0°C) (Bureau of Meteorology website www.bom.gov.au/climate accessed 31 May 2006).

The mean annual rainfall recorded is 1135 mm, with the highest mean monthly rainfall of 144.7 mm in March and the lowest mean monthly rainfall of 52.8 mm in July. The mean number of rain days per annum is 127.5 days (Bureau of Meteorology website www.bom.gov.au/climate accessed 31 May 2006).

2.2 Geology and Soil landscape

2.2.1 Geology

The geology (Figure 3) is mapped at a scale of 1:100 000 by Herbert (1983) as Ashfield Shale (map unit Rwa). Ashfield Shale belongs to the Wianamatta Group and is described as:

Black to dark-grey shale and laminite.

2.2.2 Soil landscape

The soil landscape of the Site (Figure 4) has been mapped at a scale of 1:100 000 by Chapman *et al.* (1989) as Glenorie (map unit gn). Glenorie soil landscape is described as:

Soil landscape	Landscape	Soils	Limitations
Glenorie	Undulating to rolling	Shallow to moderately	High soil erosion
(map unit gn)	low hills on	deep (<100 cm) Red	hazard localised
	Wianamatta Group	Podzolic Soils on crests;	impermeable
	shales. Local relief	moderately deep Red and	highly plastic
	50-80 m slopes 5-	Brown Podzolic Soils on	subsoil,
	20%. Narrow	upper slopes, deep	moderately
	ridges, hillcrests	(>200) Yellow Podzolic	reactive.
	and valleys.	Soils on lower slopes and	
	-	Humic Gleys, Yellow	
		Podzolic Soils and	
		Gleyed Podzolic Soils	
		along drainage lines.	

2.3 Land use

The Site is currently used for industrial purposes and is occupied by office and warehouse buildings, car parks, paved areas, mown lawns and planted trees adjoining the perimeter.

A part of the Site at the corner of Lane Cove and Waterloo Roads was temporarily enclosed as a construction site for the Chatswood-Epping rail tunnel project at time of survey in May 2006.

3.0 Flora

3.1 Previous studies

Benson and Howell (1990) describe the vegetation of the shale-derived soils in Ryde LGA as (page 124):

mainly Turpentine-Ironbark Forest. In Ryde much of this forest was cleared for timber, and to provide land for farming, early during European settlement. Very little remains. ...

At Macquarie Hospital, which is about 2 km SSW of the Site and on similar topography and soils, Benson and Howell (1990) describe the remnant forest as:

Turpentine Syncarpia glomulifera, Grey Ironbark Eucalyptus paniculata, White Stringybark, Eucalyptus globoidea and Red Mahogany, Eucalyptus resinifera. The understorey is mainly shrubby, with patches of Pittosporum undulatum, Polyscias sambucifolia, Dodonaea triquetra, Acacia falcata and Acacia linifolia, but there are also grassy open areas ...

Benson (1994) mapped the existing vegetation of the Sydney region (1:100 000 map sheet). The Site was mapped as 'Cleared' (Figure 5). In the map unit "cleared", small remnants of vegetation too small to map at a 1:100 000 scale may occur.

NPWS (2002) mapped the native vegetation of the Cumberland Plain using 1:16 000 scale stereo aerial photographs taken in November 1997 to March 1998. NPWS 2002 mapped approximately 0.1 ha of map unit 43 Turpentine-Ironbark Margin Forest with <10 percent canopy cover on the north-western boundary of the Site. The mapped remnant extends north across Waterloo Road to the M2 Motorway (Figure 6).

3.2 Current survey

The vegetation on the Site was assessed in terms of:

- The Council's Significant Tree Register (Appendix 1);
- Ryde City Council's Tree Preservation Order which applies to trees over 5 m in height but exempting certain tree species (Appendix 2);
- Species and Endangered Ecological Communities listed in the schedules of the Commonwealth EPBC Act and the NSW TSC Act.

The vegetation was surveyed by Tony Rodd and Emma Laxton on 31 May 2006. A total of 93 trees of 11 different species (9 native and 2 exotic) were recorded (Figure 7, Table 1).

3.2.1 Methods

Trees of height greater than 5 m were assessed (Table 1, Figure 7). For each tree the following were recorded:

- species identification;
- · estimated height;
- estimated diameter at breast height;
- a visual assessment of health/shape on a scale of 0 (dead) to 5 (very good);
- any comments relating to health or shape.

The trees were photographed individually or in groups at the time of survey (Appendix 3).

Nomenclature is consistent with Harden (1990-1993, 2002), Harden and Murray (2000) and subsequent taxonomic changes as published in *Telopea*, the Sydney Royal Botanic Gardens' journal of systematic botany, and in other Australian taxonomic literature.

3.2.2 Observations

The perimeter trees fronting Lane Cove Road and the adjoining corner of Waterloo Road have been cleared for construction associated with the Chatswood-Epping rail tunnel project.

All of the 93 trees were recorded on the perimeter of the Site (Figure 7). Of the eleven species (9 native and 2 exotic) recorded, only four species naturally occur on shale-derived soil on the hilltops in the Ryde LGA. These four possible local native species are *Acacia floribunda* (White Sally), *Acacia parramattensis* (Parramatta Wattle), *Melaleuca styphelioides* (Prickly-leaved Tea Tree) and *Eucalyptus saligna* (Sydney Blue Gum). Of these, the *E. saligna* and the *M. styphelioides* were evidently part of the perimeter planting. The two *Acacia* species may also have been planted or could possibly have originated as stray seedlings.

No remnant native vegetation was observed on Site. The tree species recorded were:

Botanical name	Common name	Tree numbers
Native		
Acacia floribunda	White Sally	3
Acacia parramattensis	Parramatta Wattle	2, 14
Casuarina cunninghamiana	River Oak	5, 6, 8-10, 12, 13, 18-21, 28-32, 35, 37, 49-51, 53-55, 57, 58, 60, 66, 68, 69, 76, 79,
Corymbia maculata	Spotted Gum	70, 71, 77, 78, 80-88
Eucalyptus grandis	Flooded Gum	7, 11, 22-27, 33, 34, 36, 38, 39, 44, 46-48,
Eucalyptus microcorys	Tallowwood	15-17, 41-43, 45,
Eucalyptus nicholii	Narrow-leaved Black Peppermint	52, 56, 59, 62, 64, 65, 73
Eucalyptus saligna	Sydney Blue Gum	4
Melaleuca styphelioides	Prickly-leaved Tea Tree	61, 63, 67, 72, 74, 75, 89-93
Exotic		
Ligustrum sinense	Small-leafed Privet	1
Syagrus romanzoffiana	Queen Palm	40

Of the 93 trees assessed:

- three of the seven Eucalyptus nicholii (trees 64, 65, 73) were dead and a
 fourth (tree 59) almost dead. This formerly popular species, originating from a
 cool Northern Tablelands district, has proved vigorous but often short-lived in
 warmer coastal regions of NSW.
- Of the 30 recorded Casuarina cunninghamiana, two (trees 18, 19) were almost dead; at least three others (trees 8, 9, 10) were strongly suppressed by adjacent trees and so had made little growth and appeared very stressed. Of the remaining 25, most were in fair to good condition but many had suffered some degree of suppression through competition with neighbouring trees. Casuarina cunninghamiana naturally occurs along permanent freshwater streams (Harden 1990). This species, though quite adaptable in cultivation, has a high soil moisture requirement and may decline in drought periods without irrigation.
- The two *Acacia parramattensis* (trees 2, 14) and one *A. floribunda* (tree 3) were senescent or approaching senescence. These are short-lived species with a useful life expectancy of between 10 and 20 years.
- Of the 17 Eucalyptus grandis recorded, 11 were in good to fair health, while six (trees 22, 24, 25, 39, 44, 47) were in poor condition with sparse foliage canopy, damage to bark or evidence of bad lopping. Eucalyptus grandis naturally occurs in tall wet forest or rainforest margins on fertile alluvial soils along valley floors, north of Newcastle (Harden 2002). This species is unlikely to survive through long droughts in Ryde.
- The seven trees of Eucalyptus microcorys were all in perfect health and of good shape. This species, though not native to the Sydney region, is among the most disease and pest-resistant of all the eucalypts as well as being fast growing and long-lived.
- The 13 trees of Corymbia maculata were also in perfect health except for one (tree 88), which appeared somewhat suppressed by the much larger tree 87 of the same species. It is possible that tree 88 originated as a self-sown

- seedling rather than a deliberately planted tree. The species is more drought-tolerant than most other trees planted on this Site.
- The 11 trees of Melaleuca stypheliodes were all in good health, though all
 were smaller and lower-branched than trees of this species found growing in
 more optimal conditions. The species adapts well to cultivation and is longlived, but prefers environments with high soil moisture.

4.0 Conservation significance

4.1 Trees

There are no trees listed in the City of Ryde Significant Tree Register on the Site (Appendix 1).

The Tree Preservation Order covers all of the trees with the following exceptions:

- dead and dying trees;
- the listed noxious weed Ligustrum sinense (Small-leafed Privet) tree 1;
- two trees of Acacia parramattensis (Parramatta Wattle, trees 2 and 14) and one tree of Acacia floribunda (White Sally, tree 3), as they are close to the end of their useful lives;
- the palm Syagrus romanzoffiana (tree 40).

4.2 Communities

The vegetation on Site has been cleared and planted on the perimeter of the industrial land. No remnant native vegetation was recorded.

NPWS (2002) mapped approximately 0.1 ha of map unit 43 Turpentine-Ironbark Margin Forest with <10 percent canopy cover on the north-western boundary of the Site. The endangered ecological community Turpentine-Ironbark Forest may have once occurred on Site. There is no evidence of the community Turpentine-Ironbark Margin Forest being currently present on the Site.

4.3 Species

4.3.1 National

A search of the Environment Australia website (www.deh.gov.au, accessed 2 June 2006) revealed that the following species listed in the EP&BC Act have been recorded within 10 km of the Site:

Species	Status	Habitat (Harden 1990-1993, 2002)
Acacia pubescens	V	Usually grows in dry sclerophyll forest and
-		woodland on clay soils.
Caladenia tesselata	V	Grows on clay loam or sandy soils, south from
		Swansea.
Cryptostylis hunteriana	V	Saprophytic terrestrial herb. Grows in swamp-
		heath on sandy soils, chiefly in coastal districts,
		south from the Gibraltar Ranges.
Darwinia biflora	V	Erect or spreading shrub. Grows in heath on
		shallow soils; confined to the Gosford district,
		rare.
Deveuxia appressa	V	Grows on wet ground, in the Hornsby area. CC.
Pimelea curviflora var.	V	Coastal area of northern Sydney to Maroota in

Species	Status	Habitat (Harden 1990-1993, 2002)
curviflora		the northwest. It is found between South
		Maroota, Cowan, Narrabeen, Allambie Heights,
		Northmead and Kellyville (Final Determination 31
		July 1998).
Prostanthera marifolia	Ex	Grows in sclerophyll forest and woodland, usually near the coast, in sandy loamy soils, on sandstone, in Mangrove Mtn and Sydney districts.
Tetratheca glandulosa	V	Grows in sandy or rocky heath or scrub from
		Mangrove Mtn to the Blue Mtns and Sydney.

Note: V: Vulnerable, Ex = Extinct.

None of the listed species were recorded on the Site, nor are they likely to occur.

4.3.2 State

The following species listed in the TSC Act have been recorded in the Ryde LGA (NPWS Atlas of Wildlife, website www.wildlifeatlas.nationalparks.nsw.gov.au searched 2 June 2006):

Species	Status	Habitat (Harden (1990-1993, 2002)
Epacris purpurascens	V	Gross in sclerophyll forest, scrubs an swamps,
var. purpurascens		from Gosford and Sydney districts. CC.
Callistemon linearifolius	V	Gross in damp places, widespread on the coast and nearby ranges, chiefly in the Sydney district. NC CC SC NT NWS.
Darwinia biflora	V	Erect or spreading shrub. Grows in heath on shallow soils; confined to the Gosford district, rare.
Leptospermum deanei	V	Rare, only on forested slopes near watershed of Lane Cove River.
Melaleuca deanei	V	Gross in wet heath on sandstone, uncommon, in coastal districts from Berowra to Nowra. CC SC.
Tetratheca glandulosa	V	Grows in sandy or rocky heath or scrub from Mangrove Mtn to the Blue Mtns and Sydney.

Note: V: Vulnerable

None of the listed species were recorded on the Site, nor are they likely to occur.

4.3.3 Regional

None of the 50 species of particular conservation significance (Benson 1986) were recorded on the Site, nor are they likely to occur.

5.0 Noxious weeds

The NSW Agriculture *Noxious Weeds List* (www.agric.nsw.gov.au/noxweed accessed 2 June 2006) identifies 106 noxious weeds for the Ryde Local Government Area (Appendix 4).

One of the two exotic tree species recorded on the Site, *Ligustrum sinense* (Small-leafed Privet), is listed as a Noxious Weed in the Ryde LGA (Appendix 3).

6.0 Conclusions

From the vegetation assessment of the Site, it was found that:

- The perimeter trees fronting Lane Cove Road and the adjoining corner of Waterloo Road have been cleared for construction associated with the Chatswood-Epping rail tunnel project.
- Vegetation was restricted to perimeter planted trees with an ground layer of mown lawn and/or woodchips;
- 93 individual trees recorded and assessed on the Site;
- 11 tree species (9 native, 2 exotic) were recorded on Site (Table 1);
- No Nationally listed species nor endangered ecological communities of conservation significance (EP&BC Act) were recorded;
- No State listed species nor endangered ecological communities of conservation significance (TSC Act) were recorded;
- No regionally significant species (listed by Benson 1986) were recorded; and
- Ligustrum sinense (Small-leafed Privet) is listed as a Noxious Weed in the Ryde LGA.

7.0 Recommendations

It is recommended that the planted trees on the perimeter be retained, where practicable, with the exception of:

- Dead and dying trees Eucalyptus nicholii (Narrow-leaved Black Peppermint) trees 64, 65, 73, 59 and Casuarina cunninghamiana (River Oak) – trees 18, 19:
- The listed noxious weed Ligustrum sinense (Small-leafed Privet) tree 1;
- The two trees of *Acacia parramattensis* (Parramatta Wattle) trees 2 and 14 and one tree of *Acacia floribunda* (White Sally) tree 3, as they are close to the ends of their useful lives:
- The single tree of the palm Syagrus romanzoffiana (tree 40), a species exempted from the Council's Tree Preservation Order and which has proved somewhat invasive in some regions of NSW; also its profuse fallen fruits can be unpleasant-smelling and a danger on footpaths:

For future landscaping, it is recommended that a dense perimeter planting be maintained, with replacement planting of local native tree, shrub and understorey species. Local native species are likely to be better adapted to the climate and soil conditions of the Site.

If possible perimeter tree planting needs to be reinstated fronting Lane Cove Road and the adjoining corner of Waterloo Road, post the completion of the rail link construction works.

References

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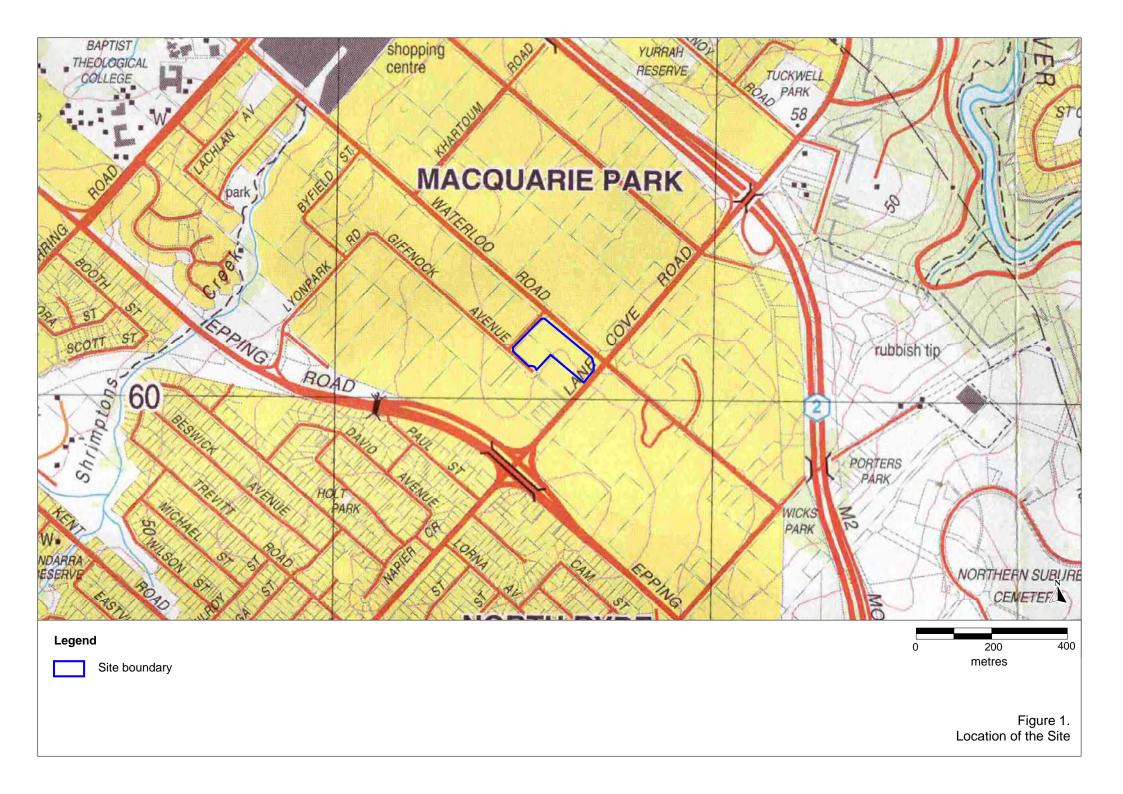
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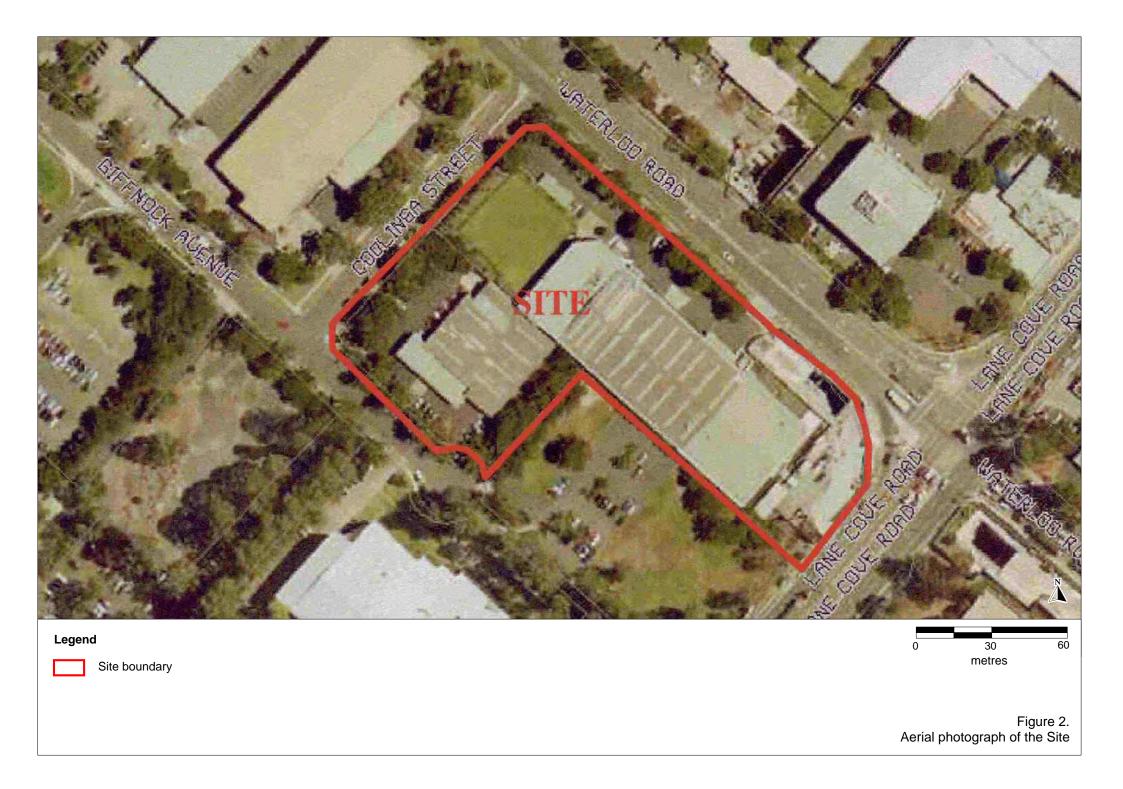
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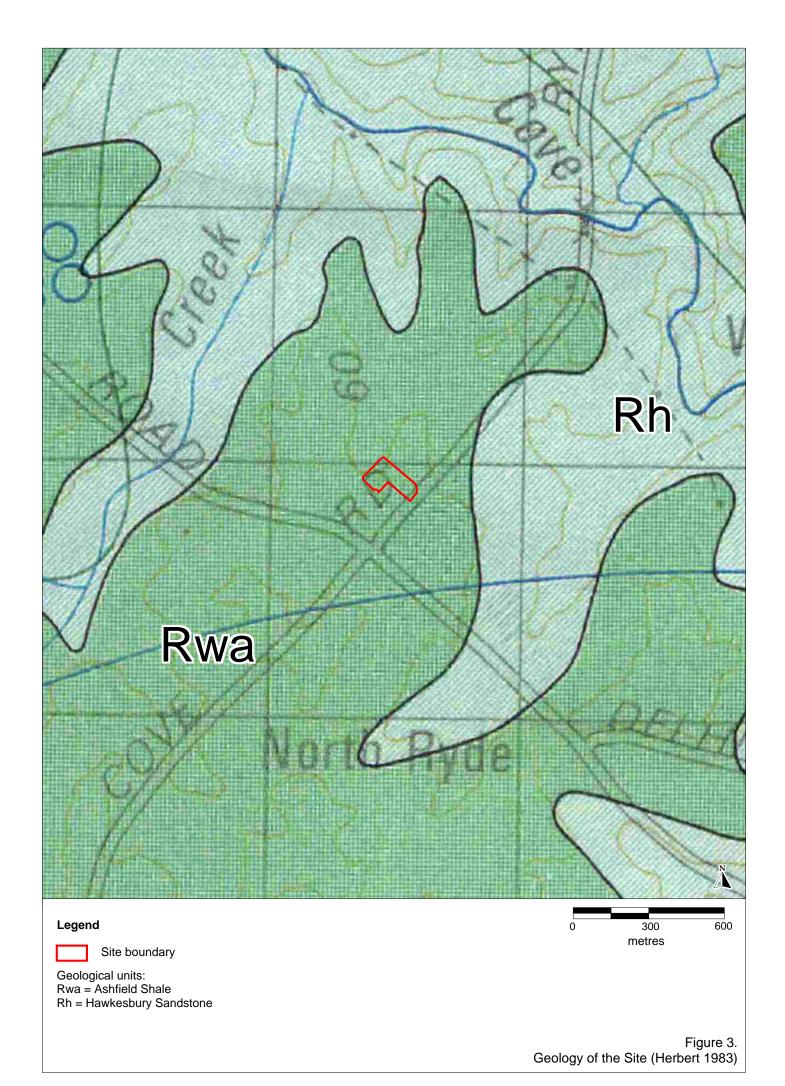
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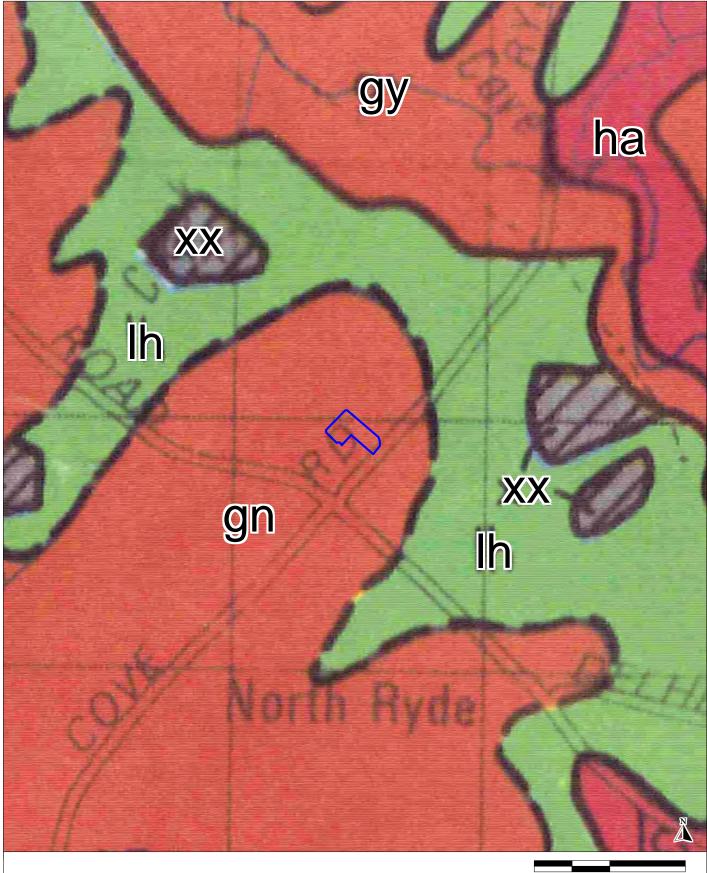
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Figures











Site boundary

Soil landscape units: gn = Glenorie

gy = Gymea Ih = Lucas Heights ha = Hawkesbury

xx = Disturbed

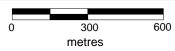
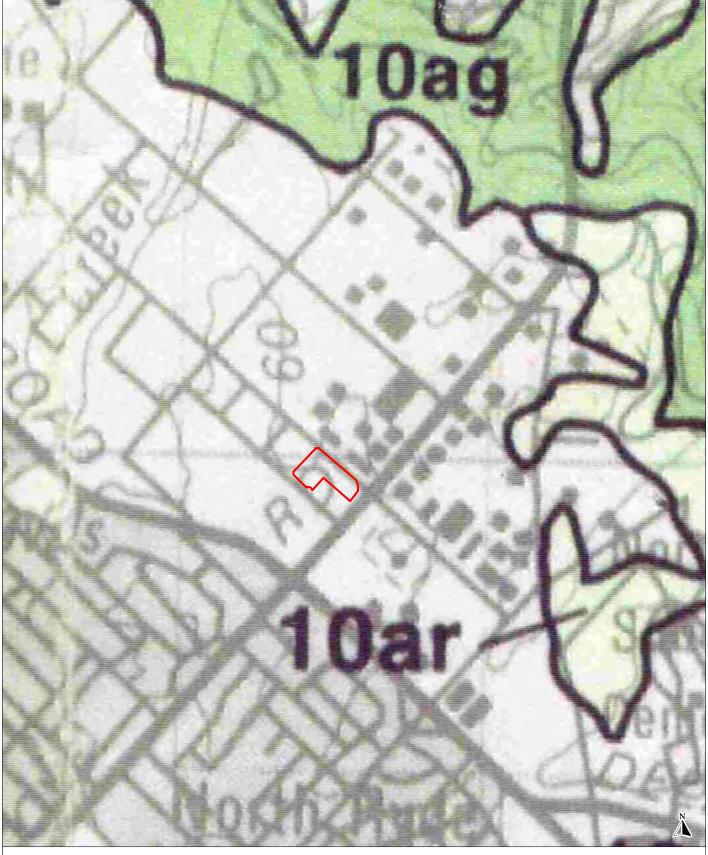


Figure 4. Soil landscape of the Site (Chapman et al. 1989)

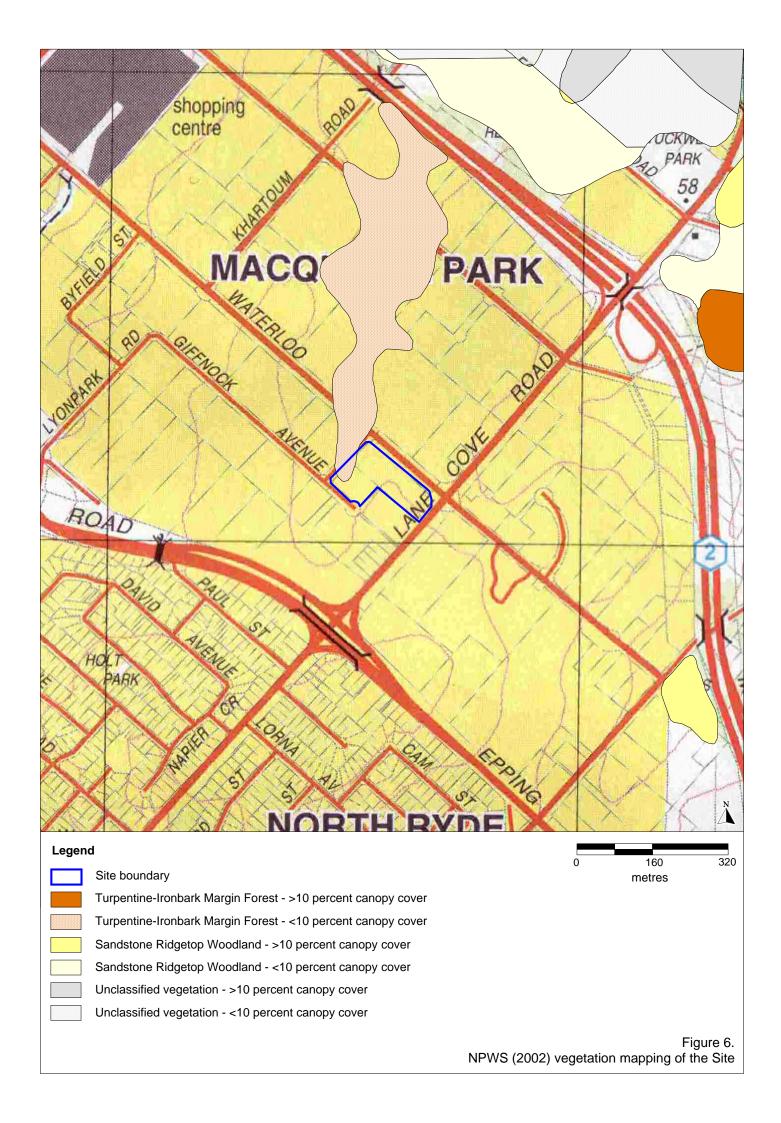


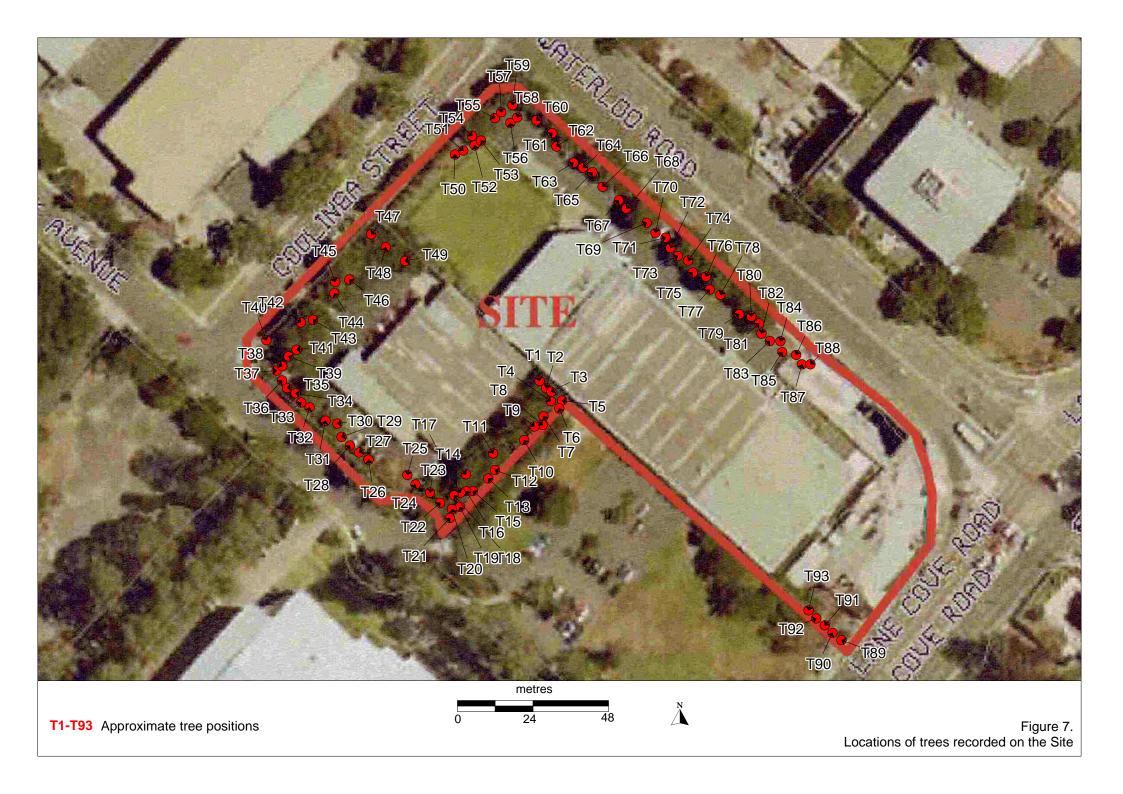
Legend 0 250 500 metres

Site boundary

Vegetation map units: 10ag = Sydney Sandstone Gully Forest 10ar = Sydney Sandstone Ridgetop Woodland

Figure 5. Vegetation mapping of teh Site (Benson and Howell 1994)





Tables

Table 1. Trees over 5 m height on Site, with species identifications, estimated dimensions, and assessments of health/shape

Tree no.	Photo no.	Botanical name	Common name	Height (m)	Diam (cm)	Health on scale 0 (dead) to 5 (v. good)	Comment
64	7503	Eucalyptus nicholii	Narrow-leaved Black Peppermint	15	30	0	DEAD - dead foliage persisting
65	7503	Eucalyptus nicholii	Narrow-leaved Black Peppermint	16	45	0	DEAD - dead foliage persisting
73	7510	Eucalyptus nicholii	Narrow-leaved Black Peppermint	14	25	0	DEAD
18	0099	Casuarina cunninghamiana	River Oak, River She-oak	6	10	1	Almost dead
19	0100	Casuarina cunninghamiana	River Oak, River She-oak	6	10	1	Almost dead
59	7496	Eucalyptus nicholii	Narrow-leaved Black Peppermint	15	35	1	Canopy mostly dead
02	0083	Acacia parramattensis	Parramatta Wattle	10	25	2	Near-senescent
03	0083	Acacia floribunda	White Sally	7	10	2	Near-senescent
08	8800	Casuarina cunninghamiana	River Oak, River She-oak	6	10	2	Suppressed; poorly lopped; dead branches
09	0090	Casuarina cunninghamiana	River Oak, River She-oak	7	15	2	Suppressed; dead branches
10	0091	Casuarina cunninghamiana	River Oak, River She-oak	7	16	2	Suppressed
24	0109	Eucalyptus grandis	Flooded Gum	10	15	2	Poorly lopped, many dead branches
04	0084	Eucalyptus saligna	Sydney Blue Gum	10	20	3	Bark diseased at base; badly lopped
06	0086	Casuarina cunninghamiana	River Oak, River She-oak	9	15	3	Some dead branches
12	0093	Casuarina cunninghamiana	River Oak, River She-oak	13	15	3	Some dead branches
13	0094	Casuarina cunninghamiana	River Oak, River She-oak	11	15	3	Some dead branches
20	0101	Casuarina cunninghamiana	River Oak, River She-oak	12	15	3	
22	0106	Eucalyptus grandis	Flooded Gum	13	10	3	Poor shape, sparse canopy

25	0110	Eucalyptus grandis Flo	ooded Gum	10	10	3	Sparse canopy, some dead branches
35	0118	Casuarina cunninghamiana Riv	ver Oak, River She-oak	10	15	3	
39	0124	Eucalyptus grandis Flo	ooded Gum	12	30	3	Trunk with wounds and bracket fungi
44	0129	Eucalyptus grandis Flo	ooded Gum	17	45	3	Sparse canopy
47	0133	Eucalyptus grandis Flo	ooded Gum	13	30	3	Insect damage to bark at base
50	0139	Casuarina cunninghamiana Riv	ver Oak, River She-oak	8	20	3	Suppressed
56	0142	Eucalyptus nicholii Na	arrow-leaved Black Peppermint	17	30	3	Sparse canopy, poor shape
72	7509	Melaleuca styphelioides Pri	ickly Paperbark	9	45	3	Shaded; trunk forked into 6 at base
05	0085	Casuarina cunninghamiana Riv	ver Oak, River She-oak	16	35	4	Massive growth of ivy on trunk
14	0095	Acacia parramattensis Pa	arramatta Wattle	11	15	4	Near end of useful life
21	0102	Casuarina glauca Sw	vamp Oak, Swamp She-oak	10	15	4	Plus thicket of suckers; parent tree apparently in neighbouring property
28	0114	Casuarina cunninghamiana Riv	ver Oak, River She-oak	13	25	4	
29	0114	Casuarina cunninghamiana Riv	ver Oak, River She-oak	11	25	4	
30	0114	Casuarina cunninghamiana Riv	ver Oak, River She-oak	10	20	4	
31	0114	Casuarina cunninghamiana Riv	ver Oak, River She-oak	10	15	4	
36	0119	Eucalyptus grandis Flo	ooded Gum	17	30	4	
38	0121, 0122	Eucalyptus grandis Flo	ooded Gum	18	45	4	Bark damage at base
52	0140	Eucalyptus nicholii Na	arrow-leaved Black Peppermint	15	35	4	Shaded by neighbouring trees
57	7494	Casuarina cunninghamiana Riv	ver Oak, River She-oak	11	20	4	Slightly suppressed
62	7500	Eucalyptus nicholii Na	arrow-leaved Black Peppermint	14	35	4	Sparse canopy
88	7522	Corymbia maculata Sp	ootted Gum	6	8	4	Suppressed by tree 87
01	0083	Ligustrum sinense Sm	mall-Leaved Privet	6	8	5	Shaded
07	0087	Eucalyptus grandis Flo	ooded Gum	17	40	5	
11	0092	Eucalyptus grandis Flo	ooded Gum	17	30	5	

15	0096	Eucalyptus microcorys	Tallowwood	17	45	5	
16	0097	Eucalyptus microcorys	Tallowwood	17	45	5	
17	0098	Eucalyptus microcorys	Tallowwood	17	45,25	5	2 trunks from ground-level
23	0107	Eucalyptus grandis	Flooded Gum	17	45	5	
26	0111	Eucalyptus grandis	Flooded Gum	17	40	5	Poorly lopped
27	0112	Eucalyptus grandis	Flooded Gum	18	40	5	
32	0115	Casuarina cunninghamiana	River Oak, River She-oak	13	25	5	
33	0116	Eucalyptus grandis	Flooded Gum	17	30,35,25	5	Forked into 3 at base
34	0117	Eucalyptus grandis	Flooded Gum	11	10	5	
37	0120	Casuarina cunninghamiana	River Oak, River She-oak	16	25	5	
40	0125	Syagrus romanzoffiana	Cocos Palm, Queen Palm	9	20	5	
41	0126	Eucalyptus microcorys	Tallowwood	19	45	5	
42	0127	Eucalyptus microcorys	Tallowwood	19	50	5	
43	0128	Eucalyptus microcorys	Tallowwood	19	60	5	Trunk forked c. 1.5 m above ground
45	0130	Eucalyptus microcorys	Tallowwood	19	45	5	
46	0131	Eucalyptus grandis	Flooded Gum	18	40	5	
48	0134	Eucalyptus grandis	Flooded Gum	15	60	5	Trunk forked into 3 at 2 m; shape somewhat poor
49	0135	Casuarina cunninghamiana	River Oak, River She-oak	15	35	5	
51	0139	Casuarina cunninghamiana	River Oak, River She-oak	15	30	5	
53	0140	Casuarina cunninghamiana	River Oak, River She-oak	17	40	5	
54	0140	Casuarina cunninghamiana	River Oak, River She-oak	16	30	5	
55	0141	Casuarina cunninghamiana	River Oak, River She-oak	13	30	5	
58	7495	Casuarina cunninghamiana	River Oak, River She-oak	12	25	5	
60	7498	Casuarina cunninghamiana	River Oak, River She-oak	11	25	5	
61	7499	Melaleuca styphelioides	Prickly Paperbark	12	45	5	Shape somewhat poor

63	7501	Melaleuca styphelioides	Prickly Paperbark	8	15 x 5	5	Trunk forked into 5 from base
66	7504	Casuarina glauca	Swamp Oak, Swamp She-oak	15	20	5	
67	7504	Melaleuca styphelioides	Prickly Paperbark	10	35	5	Trunk forked low into 3
68	7505	Casuarina cunninghamiana	River Oak, River She-oak	11	20	5	
69	7506	Casuarina cunninghamiana	River Oak, River She-oak	10	20	5	
70	7507	Corymbia maculata	Spotted Gum	12	30	5	
71	7508	Corymbia maculata	Spotted Gum	15	45	5	
74	7511	Melaleuca styphelioides	Prickly Paperbark	10	35	5	
75	7511	Melaleuca styphelioides	Prickly Paperbark	9	30	5	
76	7514	Casuarina cunninghamiana	River Oak, River She-oak	10	10	5	
77	7512	Corymbia maculata	Spotted Gum	16	60	5	Trunk forked into 2 at 2 m
78	7513	Corymbia maculata	Spotted Gum	6	8	5	
79	7515	Casuarina cunninghamiana	River Oak, River She-oak	10	25	5	
80	7516	Corymbia maculata	Spotted Gum	17	40	5	
81	7517	Corymbia maculata	Spotted Gum	17	35	5	
82	7517	Corymbia maculata	Spotted Gum	19	45	5	
83	7518	Corymbia maculata	Spotted Gum	13	25	5	
84	7519	Corymbia maculata	Spotted Gum	8	15	5	
85	7520	Corymbia maculata	Spotted Gum	15	35	5	
86	7521	Corymbia maculata	Spotted Gum	11	15	5	
87	7522	Corymbia maculata	Spotted Gum	17	50	5	
89	7525-6	Melaleuca styphelioides	Prickly Paperbark	8-10	~25	5	Row of 5 trees, all branched close to ground

Appendices

Appendix 1 Significant Tree Register

Appendix 2

Tree Preservation Order and Tree Management Policy, City of Ryde

Appendix 3

Photographic record of trees on the Site



Row A – see Figure 1 for location.



Eucalyptus saligna (T4)



Casuarina cunninghamiana (T5)



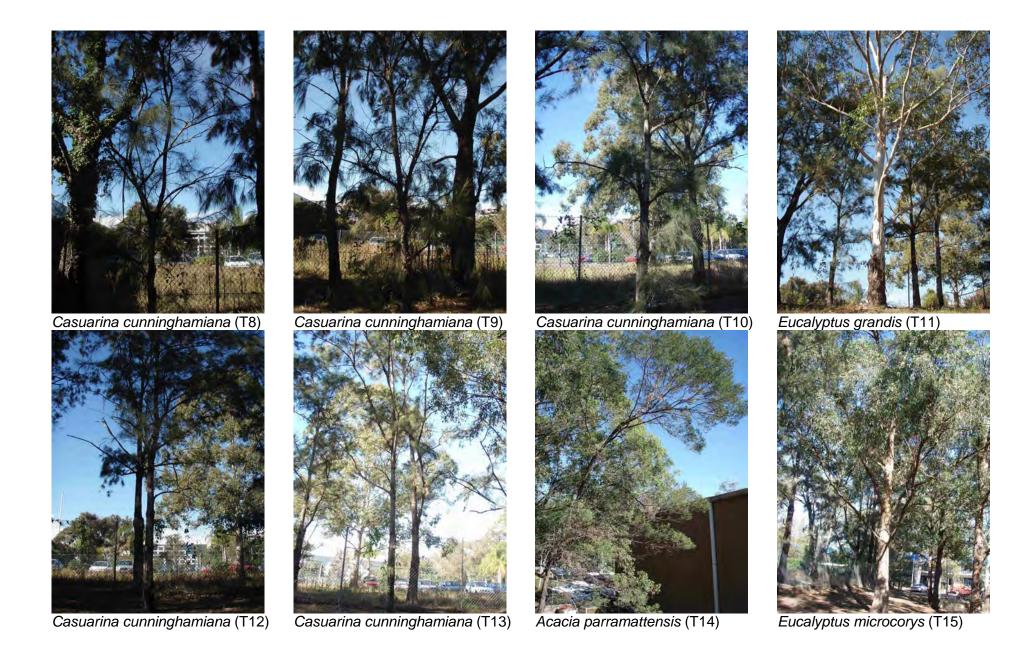
Ligustrum sinense (T1), Acacia parramettensis (T2) and Acacia floribunda (T3) (left to right)

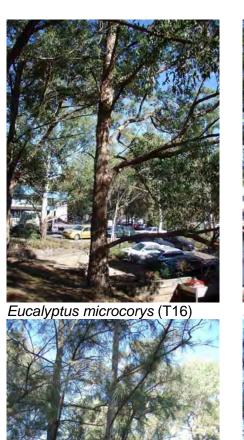


Casuarina cunninghamiana (T6)

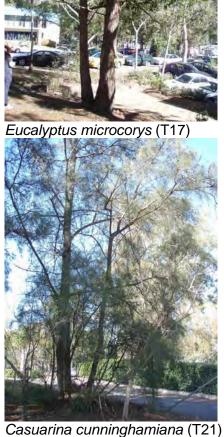


Eucalyptus grandis (T7)





Casuarina cunninghamiana (T20)











Row A - trees to the left of fence; Trees within the security area to the right of the fence.



Row B – located along Giffnock Avenue.



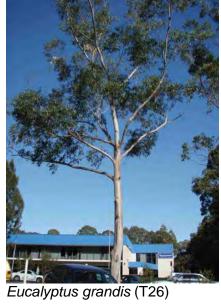
Eucalyptus grandis (T24)



Eucalyptus grandis (T25)



Eucalyptus grandis (T22)





Eucalyptus grandis (T23)



Eucalyptus grandis (T27)



Casuarina cunninghamiana (T28, 29, 30, 31)



Casuarina cunninghamiana (T32)



Eucalyptus grandis (T33)



Eucalyptus grandis (T34)



Casuarina cunninghamiana (T35)



Eucalyptus grandis (T36)



Casuarina cunninghamiana (T37)



Eucalyptus grandis (T38)



Eucalyptus grandis (T38) – damage on trunk



Syagrus romanzoffiana (T40)



Row C – located along Coolinga Street



Eucalyptus microcorys (T41)



Eucalyptus microcorys (T42)



Eucalyptus grandis (T39)



Eucalyptus microcorys (T43)



Eucalyptus grandis (T44)



Eucalyptus microcorys (T45)



Eucalyptus grandis (T48)



Eucalyptus grandis (T46)



Casuarina cunninghamiana (T49)



Row D – adjacent to Coolinga Street



2 x Casuarina cunninghamiana (T50, 51)



Eucalyptus grandis (T47)



Row E – located along Coolinga Street.



Casuarina cunninghamiana (T55)





Last 1/3 of Row E - corner of Coolinga St and Waterloo Rd.



Casuarina cunninghamiana (T57)

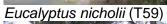


Eucalyptus nicholii and 2 x Casuarina cunninghamiana (T52, 53, 54)



Casuarina cunninghamiana (T58)







Melaleuca styphelioides (T61)



Row F – along Waterloo Road



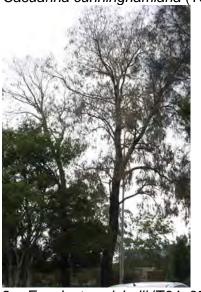
Eucalyptus nicholii (T62)



Melaleuca styphelioides (T63)



Casuarina cunninghamiana (T60)



2 x Eucalyptus nicholii (T64, 65)



Melaleuca styphelioides and Casuarina cunninghamiana (T66, 67)



Casuarina cunninghamiana (T68)



Casuarina cunninghamiana (T69)



Corymbia maculata (T70)



Corymbia maculata (T71)



Melaleuca styphelioides (T72)



Eucalyptus nicholii (T73)



Melaleuca styphelioides (T74, 75)





Corymbia maculata (T80)



Corymbia maculata (T77)



Corymbia maculata (T81, 82)



Corymbia maculata (T78)



Corymbia maculata (T83)

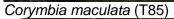


Casuarina cunninghamiana (T79)



Corymbia maculata (T84)







Corymbia maculata (T86)



Row F - Looking back over works; Waterloo Road to the right



Corymbia maculata (T87, 88)



Corner of Waterloo Road and Lane Cove Road. Row G (in the background)



Row G - 5 x Melaleuca styphelioides (to the right).



Row G - 5 x Melaleuca styphelioides.

Appendix 4

Noxious weed declarations for Ryde City Council

Noxious weed declarations

Noxious weed declarations for Ryde City Council

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The following weeds are declared noxious in the control area of Ryde City Council:

Weed	Class	Legal requirements
African feathergrass [Pennisetum macrourum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
African olive [Olea europaea subspecies cuspidata]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
African turnipweed [Sisymbrium runcinatum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
African turnipweed [Sisymbrium thellungii]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Alligator weed [Alternanthera philoxeroides]	3	The plant must be fully and continuously suppressed and destroyed
Anchored water hyacinth [Eichhornia azurea]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Annual ragweed [Ambrosia artemisiifolia]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Arrowhead [Sagittaria montevidensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Artichoke thistle [Cynara cardunculus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Asparagus fern [Asparagus aethiopicus]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Athel tree [Tamarix aphylla]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration

Balloon vine [Cardiospermum grandiflorum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Bitou bush [Chrysanthemoides monilifera subspecies rotunda]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Black knapweed [Centaurea nigra]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Blackberry [Rubus fruticosus aggregate species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed This is an All of NSW declaration
Boneseed [Chrysanthemoides monilifera subspecies monilifera]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Bridal creeper [Asparagus asparagoides]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Bridal creeper [Asparagus asparagoides]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Broomrapes [Orobanche species] Includes all Orobanche species except the native O. cernua variety australiana and O. minor	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Burr ragweed [Ambrosia confertiflora]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Cabomba [Cabomba caroliniana]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Camphor laurel [Cinnamomum camphora]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Cape broom [Genista monspessulana]	3	The plant must be fully and continuously suppressed and destroyed
Cape ivy [Delairea odorata]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed

Castor oil plant [Ricinus communis]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Cat's claw creeper [Macfadyena unguis-cati]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Cayenne snakeweed [Stachytarpheta cayennensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Chilean needle grass [Nassella neesiana]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Chinese violet [Asystasia gangetica subspecies micrantha]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Climbing asparagus fern [Asparagus plumosus]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Clockweed [Gaura lindheimeri]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Clockweed [Gaura parviflora]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Corn sowthistle [Sonchus arvensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Dodder [Cuscuta species] Includes All Cuscuta species except the native species C. australis, C. tasmanica and C. victoriana	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
East Indian hygrophila [Hygrophila polysperma]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Elephant grass [Arundo donax]		See Giant reed
English broom [Cytisus scoparius]		See Scotch broom
Espartillo [Achnatherum brachychaetum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration

Eurasian water milfoil [Myriophyllum spicatum]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Fine-bristled burr grass [Cenchrus brownii]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Fountain grass [Pennisetum setaceum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Gallon's curse [Cenchrus biflorus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Giant reed [Arundo donax]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Glaucous starthistle [Carthamus glaucus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Golden thistle [Scolymus hispanicus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Green cestrum [Cestrum parqui]	3	The plant must be fully and continuously suppressed and destroyed
Harrisia cactus [Harrisia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed This is an All of NSW declaration
Hawkweed [Hieracium species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Horsetail [Equisetum species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Hygrophila [Hygrophila costata]	2	The plant must be eradicated from the land and the land must be kept free of the plant
Hymenachne [Hymenachne amplexicaulis]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Karoo thorn [Acacia karroo]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration

Kochia [Bassia scoparia]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Lagarosiphon major]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Lantana [Lantana species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Lantana [Lantana species]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Long-leaf willow primrose [Ludwigia longifolia]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Long-leaf willow primrose [Ludwigia longifolia]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Ludwigia [Ludwigia peruviana]	3	The plant must be fully and continuously suppressed and destroyed
Madeira vine [Anredera cordifolia]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Mexican feather grass [Nassella tenuissima]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Mexican poppy [Argemone mexicana]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Miconia [Miconia species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Mimosa [Mimosa pigra]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Morning glory (coastal) [Ipomoea cairica]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Morning glory (purple) [Ipomoea indica]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed

Mossman River grass [Cenchrus echinatus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Ochna [Ochna serrulata]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Onion grass [Romulea species] Includes all Romulea species and varieties except R. rosea var. australis	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Oxalis [Oxalis species and varieties] Includes all Oxalis species and varieties except the native species O. chnoodes, O. exilis, O. perennans, O. radicosa, O. rubens, and O. thompsoniae	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Pampas grass [Cortaderia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Parthenium weed [Parthenium hysterophorus]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Pellitory [Parietaria judaica]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Pond apple [Annona glabra]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Prickly acacia [Acacia nilotica]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Prickly pear [Cylindropuntia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed This is an All of NSW declaration
Prickly pear [Opuntia species except O. ficus-indica]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed This is an All of NSW declaration
Privet (Broad leaf) [Ligustrum lucidum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed

Privet (Narrow-leaf/Chinese) [Ligustrum sinense]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Red rice [Oryza rufipogon]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Rhizomatous bamboo [Phyllostachys spp.]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Rhus tree [Toxicodendron succedanea]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority This is an All of NSW declaration
Rubbervine [Cryptostegia grandiflora]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Sagittaria [Sagittaria platyphylla]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Salvinia [Salvinia molesta]	2	The plant must be eradicated from the land and the land must be kept free of the plant
Sand oat [Avena strigosa]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Scotch broom [Cytisus scoparius]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Senegal tea plant [Gymnocoronis spilanthoides]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Senna [Senna pendula]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Serrated tussock [Nassella trichotoma]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Siam weed [Chromolaena odorata]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration

Smooth-stemmed turnip [Brassica barrelieri subspecies oxyrrhina]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Soldier thistle [Picnomon acarna]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Spotted knapweed [Centaurea maculosa]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
St. John's wort [Hypericum perforatum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Texas blueweed [Helianthus ciliaris]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Trad [Tradescantia fluminensis]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Wandering Jew [Tradescantia fluminensis]		See Trad
Water caltrop [Trapa species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Water hyacinth [Eichhornia crassipes]	2	The plant must be eradicated from the land and the land must be kept free of the plant
Water lettuce [Pistia stratiotes]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Water soldier [Stratiotes aloides]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Willows [Salix species] Includes all Salix species except S. babylonica, S. x reichardtii, S. x calodendron	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Witchweed [Striga species] Includes all Striga species except native species and Striga parviflora	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Yellow burrhead [Limnocharis flava]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Yellow nutgrass [Cyperus esculentus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration

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