NATIVE PLANTS OF THE RYDE DISTRICT

The Conservation Significance of Ryde's Bushland Plants

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A REPORT PREPARED FOR

City of Ryde

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(Note : The draft version of this report was completed in May, 2005. The draft was circulated by Ryde Council to interested parties for comment. A few comments were received and these have been taken into account in this, the finalized version of the document).

TABLE OF CONTENTS

SUMMARY

The Ryde district is situated approximately 10-15 kilometres north-west of Sydney. Ryde was one of the first areas to be settled in Australia. A large percentage of Ryde's natural vegetation has been cleared. Even so, significant bushland areas have survived in the Ryde district. Ryde's largest surviving areas of native vegetation can be found in sandstone localities along the Lane Cove River. Much of this bushland has been reserved in Lane Cove National Park, but significant areas are also managed by the City of Ryde. Ryde has small, but significant areas of three threatened vegetation types, namely Blue Gum High Forest, Turpentine-Ironbark Forest and Saltmarsh. The rainforest at Brush Farm Park is unique in the northern suburbs of Sydney. Ryde's natural vegetation has a high diversity of native plant species and supports a rich variety of animal life. The close proximity of Ryde's bushland to people's homes provides many opportunities for local residents to relax in beautiful natural surroundings.

At least 570 species of native plants have been recorded in Ryde's bushland, in recent years. This tally includes the Ryde section of Lane Cove National Park and Wallumatta Nature Reserve, as well as the bushland reserves managed by the City of Ryde. There are 9 plant species that have been recorded in the Ryde district, which are currently listed under the NSW Threatened Species Conservation Act 1995. Two of these have been listed as endangered and the remaining seven have been listed as vulnerable. At least 25 of Ryde's native plant species can be considered to be significant within the Sydney region. A further 48 of Ryde's bushland plant species can be regarded as significant in the context of northern Sydney's native vegetation. An additional 85 of the area's native plant species can be categorized as locally significant within the Ryde district. There are at least 19 local native plant species which have been recorded in the past from Ryde's bushland, but may now be locally extinct. It also seems likely that some native plant species may have disappeared from Ryde's bushland before they could be recorded.

Ryde's bushland is currently threatened by invading weeds, rubbish dumping and disturbance by activities such as illegal track construction. Also, some of the local native vegetation continues to be cleared for infrastructure development, such as road widening. Concerned local residents have continued to contribute to the conservation of Ryde's bushland by participating in activities such as bush regeneration, co-ordinated by the City of Ryde.

INTRODUCTION

The Ryde local government area is situated approximately 10-15 kilometres north-west of the city of Sydney in the state of New South Wales, Australia. For the purposes of this report, the boundaries of the "Ryde district" are taken to be the same as the boundaries of the Ryde local government area, as at the year 2005. It could be noted that the boundaries of the Ryde local government area have changed in the past and could possibly change again in the future

The Ryde district covers an area of approximately 4000 hectares and currently it is estimated that approximately 100,000 people live in the area (Ryde City Council 1994-95; City of Ryde 2004).

Ryde is at the southern edge of the Hornsby Plateau. The rocks underlying the Ryde district are quite ancient, dating back several hundred million years. A layer of Ashfield Shale overlies a layer of Hawkesbury Sandstone. This is a quartz sandstone with minor shale lenses, which dominates the Sydney district (Herbert 1983). However, much of the Ryde district is situated on soils derived from the overlying shale (Chapman and Murphy 1989), forming a moderately undulating landscape, stretching between the Parramatta River and the Lane Cove River. Along Ryde's eastern and northern flanks, the Lane Cove River and its tributaries have cut quite deeply into the overlying shale, creating an often craggy sandstone landscape. The soils derived from this sandstone are less fertile than those derived from the shale on the adjoining ridges. A similar pattern has occurred on Ryde's southern boundary, along the Parramatta River, but here the slopes adjoining the river tend to be more gentle. Along the rivers and creeks some alluvial deposits have accumulated, with soils somewhat enriched by downwash from the shale ridges.

It seems likely that aborigines lived in the Ryde district over a period of many thousands of years, before the arrival of Europeans to the area. Attenbrow (2002) found evidence that people were apparently gathering shells at Sugarloaf, North Ryde some 3-4,000 years ago. The community of aborigines living in the Ryde district, at the time of first contact with Europeans, was probably called the "Wallumedegal" (Attenbrow 2002). The local aborigines probably had a highly detailed knowledge of the plants of the area. They would have gathered Ryde's native plants for food, medicine and to fashion tools, implements and toys. They probably had names for hundreds of local species of plants, but very few of these were recorded for the Sydney region. It seems likely that some of the local plant species may have had particular spiritual significances for the aborigines living in the Ryde district.

European settlers arrived in Sydney in 1788 and first began settling in Ryde in 1792, making this district one of the earliest to be settled by non-aboriginal people in Australia. The forests in the Ryde district were extensively cleared over the subsequent several hundred years, first for timber and agriculture and then for suburban development. The local shale forests and river-flat forests suffered the greatest clearing because their soils were more fertile and their landscape was flatter and more suitable for cultivation. A lot of Ryde's native vegetation on sandstone has also been cleared, particularly in more recent years for housing, roads and other infrastructure. During the twentieth century many of Ryde's saltmarshes along the Lane Cove River were destroyed by

"reclamation" with landfill. Attitudes have changed in more recent years and many local residents are now committed to conserving what remains of Ryde's natural vegetation, through efforts such as participation in local bush regeneration and conservation groups.

Most of Ryde's surviving native vegetation occurs in sandstone areas along the Lane Cove River. Some tiny remnants of shale forest still exist, but they are threatened by weed infestation and also sometimes by a lack of appreciation of how significant they are to the story of Ryde. The natural vegetation surviving on sandstone is also seriously threatened by invading weeds, as well as ongoing clearing for the construction of infrastructure, such as roads. In addition, some people still view the local bushland as a place to dump their rubbish or to clear more tracks.

The bushland of the Ryde district has value on many different levels. It provides places where people can relax and enjoy the beauty of nature. Ryde's bushland is a living landscape, where it is still possible to experience what the district was like hundreds and possibly even thousands of years ago. The bushland of Ryde supports a myriad of animal and plant life. Even tiny bushland remnants can help to support interesting bird and insect populations, as well as provide sanctuaries for plants that would otherwise become extinct within the district. The bizarre forms of fungi can be seen in many of Ryde's bushland reserves, particularly after autumn rains. Ryde's bushland has great historical value. A visit to Brush Farm Park, Darvall Park, Field of Mars Reserve or Terrys Creek reveals glimpses of the landscapes that first confronted the early European settlers some two hundred years ago. A walk along the Parramatta River or Lane Cove River shows the homelands where aborigines lived for centuries before the arrival of Europeans.

The aim of this report is to explore the conservation significance of Ryde's bushland plant species, particularly in the context of northern Sydney and the wider Sydney region. The focus of this report is on the rarer native plant species found in the Ryde district. However, it is worth noting that the "common" plant species are ecologically very important. They support the fauna of the bushland and provide the matrix in which the rarer plant species are found. If the "common" local bushland plants are not protected, then Ryde's "common" native animals and plants are likely to become uncommon and the rarer ones are likely to become extinct.

NATURAL VEGETATION OF THE RYDE DISTRICT

Some Early Botanical Collectors in the Ryde District

A number of botanists visited the Ryde district and collected herbarium specimens of local bushland plants in the first 150 years of European settlement. Fairley (2004) provides biographical notes for some of these botanists.

Robert Brown (1773-1858) may have been the earliest known botanist to make collections of plants in the Ryde district. In early October of 1803, Brown visited North Brush Farm, some 14 kilometres north-west of Sydney, where he apparently collected some plants (Vallance et al. 2001). This locality appears to have been in the Eastwood area and may have included the bushland that is known today as Brush Farm Park. In November of 1803, Brown apparently visited the lower Lane Cove River and may have reached as far as Buffalo Creek. In September of 1804, Brown may possibly have visited an area near the farm of Michael Connor, in the Eastern Farms district (Ryde). Here, he collected a *Dendrobium ?aemulum* orchid from the fallen trunk of an ironbark tree (Vallance et al. 2001).

Henry Deane (1847-1924) made some important collections of orchids in the Gladesville area in the late nineteenth century. Most notably,he collected *Diuris bracteata* (before 1889) ,*Genoplesium baueri* (1884,1885,1887), *Caleana minor* (1884) and *Pterostylis reflexa* (1885) (Rupp 1969; Kubiak 1996c; L.McDougall & D.Benson pers. comm.).

Joseph J. Fletcher (1850-1926) collected *Boronia polygalifolia* from Field of Mars in 1887 (L.McDougall & D.Benson pers. comm.). He also collected *Diuris punctata* at Ryde in September of 1886 and *Caladenia tentaculata* at Gladesville in September, 1885 (Rupp 1969; Kubiak 1996c).

More recently, Flockton found *Spiranthes sinensis* at Gladesville in April of 1905 (Rupp 1969) and F.R.Smith collected *Melaleuca deanei* at Ryde in 1914 (L.McDougall and D.Benson pers. comm.). The rare plant *Persoonia hirsuta* was found by M.B.Welch at North Ryde in 1923 (L.McDougall & D.Benson pers. comm.). Gwenda Rodway made collections of plants at Ryde in 1933 (Fairley 2004). Also, Evans collected *Darwinia biflora* at Marsfield in 1938 (Briggs 1962).

Vegetation Studies and Plant Species Lists for Ryde's Bushland

Hamilton (1919) conducted a study of saltmarshes in the Sydney area. His paper contains observations and photographs of saltmarsh at Buffalo Creek on the Lane Cove River, as well as brief comments about saltmarsh at Meadowbank on the Parramatta River.

Shearer and Jenkins (1979) outlined the vegetation found in a number of bushland areas in the Ryde district and also provided a list of native plant species for the area.

The National Trust of Australia (N.S.W.)(1982) undertook a survey of Ryde's bushland and this report included a plant species list.

Clarke and Benson (1987) conducted a detailed survey of Lane Cove National Park (then known as Lane Cove River State Recreation Area). They mapped the natural vegetation of the Park at a scale of 1:4,000 and described 15 vegetation types, grouped under four main landscape units, occurring within Lane Cove National Park. They also provided a detailed plant species list for the Park.

McLoughlin (1985,1987,1993,2000) published a number of works relevant to the native vegetation and environmental history of the Ryde district. Her observations regarding the decline of local saltmarshes and increasing prevalence of mangroves along the local rivers are of particular interest.

Fox and Rawling (1990) outlined the vegetation in the main bushland reserves of the Ryde district and discussed management strategies for these areas. Their work also included a detailed plant species list for Ryde Council bushland reserves.

Benson & Howell (1990) discussed the vegetation of the Ryde district within the broader context of Sydney's bushland and also provided detailed descriptions of Ryde's remaining vegetation types (see pp.124-129). Benson & Howell (1994) mapped and described the natural vegetation of the Sydney area (at a scale of 1:100,000) and this included the surviving bushland of the Ryde district (their mapping was based on aerial photographs taken in 1982).

Ryde Council has produced plans of management for a number of bushland areas within the district and these also contain information on Ryde's vegetation and plant species (Ryde City Council 1995,1996a, 1996b, 1996c,1998). The *State of the Environment Reports* produced by Ryde council also contain information about Ryde's natural vegetation (e.g. see Ryde City Council 1994-95,1995-96;The City of Ryde 2003,2004). A draft plan of management for the Buffalo Creek catchment was prepared by Clouston Landscape Architects (1996) and this contains a vegetation map and plant species list for the area. Thomas & Assoc. (1996) conducted a study of the bushland reserves of the Denistone catchment and this work included a description of the vegetation and a list of plant species of significant conservation value found within the area. Oculus Environmental Planning (1999; 2001) did some mapping (at a scale of 1:35,000) and a generalized description of vegetation in the Ryde district and also attempted to estimate the local extent of various vegetation types.

Environmental impact studies have also been completed for a number of local development projects in the Ryde district. These reports often contain information, such as plant species lists and vegetation descriptions, for specific affected areas (e.g. Fanning et al. 1995; Clements et al. 2004).

Quite a large number of unpublished plant species lists for Ryde's bushland reserves have been compiled by various people over the last several decades. Unpublished plant species lists for bushland in the Ryde district have been cited in the *References* section of this report. There may well be other unpublished lists that have been omitted because they were not known to the author of this report. A number of plant species lists for Ryde were collated by Clements & Assoc.(1998).

Information relevant to Ryde's native vegetation can also be obtained from documents prepared for neighbouring areas. These documents include work done by McLoughlin (1992) ,Smith & Smith (1993), Martyn (1994), Hornsby Shire Council (2004) and many others (see the *References* section of this report).

Ryde's Vegetation Types

The vegetation in the Ryde district prior to European settlement probably consisted of a complex mosaic of vegetation types ranging from a small area of rainforest, large tracts of tall open forest and open forest, through to woodland, heathlands, swamps, mangroves and saltmarshes. The native vegetation that has survived is fragmented and the smaller of these fragments are sometimes highly disturbed.

Prior to European settlement, one of the most common of Ryde's vegetation types was probably the Turpentine-Ironbark Forest, growing on the locally extensive shallower, drier shale-based soils (see Benson & Howell 1990; Benson & Howell 1994; Fox & Rawling 1990; Ryde City Council 1994-95; Oculus 1999,2001). Very little of this forest type survives in the Ryde district today. Valuable remnants can still be seen at Wallumatta Nature Reserve (Benson & Howell 1990), Stewart Park (Robinson 1998) and a few other localities (Ryde City Council 1994-95; Oculus 1999). Most of the surviving remnants in Ryde tend to occur near the edge of the shale. Benson & Howell (1990;1994) estimated that more than 99.5% of Sydney's Turpentine-Ironbark Forest had been destroyed by the 1980's. There were probably hundreds of hectares of this forest type in Ryde before European settlement, but now there are only a few hectares left.

Valuable remnants of Blue Gum High Forest survive at Darvall Park, Denistone and Brush Farm Park, Eastwood on deeper, moister soils derived from shale (Benson & Howell 1990; Benson & Howell 1994; Ryde City Council 1994-95; Thomas & Assoc. 1996; Oculus 1999). This forest type may have been quite locally common in the Eastwood to Denistone area prior to the arrival of Europeans. Some of the trees of these forests may have been very old and large. Levy (1947) recorded the reminiscences of William Small, who recalled, in 1888, the existence of a "giant tree" near Ryde. According to Small, this tree was large enough to house the bed and kitchen furniture of a local sawyer, in the base of the tree's hollowed trunk. Benson & Howell (1994)(p.135) published a photograph of a very large remnant Blue Gum (*Eucalyptus saligna*) that was still growing at Chatswood in 1885 (only a few kilometres away from Ryde). It seems likely that trees of similar sizes also grew in the Ryde district prior to European settlement. Benson & Howell (1990) estimated that more than 99% of Sydney's Blue Gum High Forest had been cleared by the 1980's.

The rainforest understorey at Brush Farm Park is unique in northern Sydney and also would probably have been considered most unusual at the time of first European settlement (Broadbent & Buchanan 1984; Benson 1986; Benson & Howell 1990; Benson & Howell 1994). The native vegetation of Brush Farm Park supports a number of plant species seldom encountered elsewhere in northern Sydney's bushland. The unusual deep, sheltered gullies and rich soils at Brush Farm Park support a unique assemblage of plant species not found elsewhere in the suburbs of northern Sydney or on the Cumberland Plain (Broadbent & Buchanan 1984; Benson 1986; Benson & Howell 1990(p.125); Benson & Howell 1994: pp.690-691).

Most of Ryde's surviving natural vegetation occurs on sandstone along the Lane Cove River. Much of this bushland is now reserved within Lane Cove National Park. There are also other valuable remnants of sandstone vegetation, the largest of which can be found at Pembroke Park/Lucknow Park (along Terrys Creek), Pages Creek, Magdala Park (near Kittys Creek) and Field of Mars Reserve (along Buffalo Creek). Clarke & Benson (1987) described 7 vegetation types occurring on Hawkesbury Sandstone in Lane Cove National Park (then known as Lane Cove River SRA.). These included forest, open forest, woodland, shrubland and riparian shrubland. Similar vegetation types to those described by Clarke & Benson (1987) can be seen across many of the bushland reserves managed by Ryde council. The most common trees in Ryde's sandstone vegetation are Sydney Red Gum (*Angophora costata*), Red Bloodwood (*Corymbia gummifera*), Sydney Peppermint (*Eucalyptus piperita*), Black Sheoak (*Allocasuarina littoralis*) and Narrow-leaved Scribbly Gum (*Eucalyptus racemosa*). Saw Banksia (*Banksia serrata*), Heath Banksia (*Banksia ericifolia*) and Narrow-leaved Apple (*Angophora bakeri*) also occur fairly frequently, as smaller trees. (*Banksia ericifolia* only attains its full size in areas not burnt for several decades). Red Mahogany (*Eucalyptus resinifera*) can occasionally be found in sandstone areas, possibly sometimes growing on shale lenses. Heath Banksia (*Banksia ericifolia*), Narrow-leaved Apple (*Angophora bakeri*) and Broad-leaved Scribbly Gum (*Eucalyptus haemastoma*) are more common in the Ryde section of Lane Cove National Park than they are in reserves managed by Ryde council. Ryde's sandstone vegetation supports a high diversity of native plant species, with hundreds of species having been recorded in areas such as Field of Mars Reserve and Pages Creek bushland. The sandstone bushland managed by the City of Ryde is mostly open (dry sclerophyll) forest, with smaller amounts of woodland and very little heathland or riparian shrubland. The riparian shrubland consists of species such as Water Gum (*Tristaniopsis laurina*), River Lomatia (*Lomatia myricoides*) and Narrow-leaf Myrtle (*Austromytrus tenuifolia*) and is threatened by invading weeds. Ryde's heathland and woodland are probably the main sandstone vegetation types that have suffered the greatest declines since first European settlement of the district (see Ryde City Council 1995-96). Disturbance, dumping, runoff from adjoining developed areas and associated weed invasion threaten the vegetation types growing on sandstone in the Ryde area. Benson & Howell (1990: pp.23-25; 1994: pp.701-710) gave detailed descriptions of Sydney's sandstone vegetation and much of this information is directly applicable to an understanding of Ryde's bushland. Keith (2004) (pp.146-147) provides a general description of the Sydney Coastal Dry Sclerophyll Forests, which are such a prominent component of Ryde's remaining bushland.

In the Ryde district, there are some small surviving remnants of natural vegetation growing on soils transitional between sandstone and shale. Wallumatta Nature Reserve spans an area between shale and sandstone, providing a valuable opportunity to study vegetation growing along this environmental gradient in the Ryde district (Shearer and Jenkins 1979). Benson (1989) noted a similar transition between Turpentine-Ironbark Forest and open-forest, growing on sandstone, at Macquarie University, North Ryde. Oculus (1999) gave a generalized description of Shale/Sandstone Transition Forest and indicated that small stands of this type of forest may occur in the northern part of the Ryde area.

The estuaries of Ryde (along the Lane Cove River and Parramatta River) support mangroves and saltmarsh, backed by Swamp Oak (*Casuarina glauca*) (Clarke & Benson 1987; Ryde City Council 1994-95; Ryde City Council 1996c; Oculus 1999). The most common local mangrove is the Grey Mangrove (*Avicennia marina*). The other local species is River Mangrove (*Aegiceras corniculatum*), which is much less abundant than *A.marina.* The saltmarshes of Ryde are comprised principally of the salt-tolerant herbs Creeping Brookweed (*Samolus repens*)*,* Samphire (*Sarcocornia quinqueflora*) and New Zealand Spinach (*Tetragonia tetragonioides*) ,along with a few other species of herbs, rushes and grasses. Several Common Reed (*Phragmites australis*) rushland areas occur along the Lane Cove River, most notably at Pages Creek (Clarke & Benson 1987). The estuarine vegetation of Ryde is fairly typical of this vegetation type as generally described by Benson & Howell (1990:p.27; 1994: pp.689-690) in the Sydney area. McLoughlin (1985; 1987; 2000) concluded that mangroves have become more common along the Lane Cove River and Parramatta River since the time of first European settlement and that the local saltmarshes have declined. The loss of local saltmarshes can be attributed to destruction by landfilling (e.g. at Buffalo Creek) and may also partly be a result of invasion by mangroves (e.g. possibly at Kittys Creek). McLoughlin (1985) documented the destruction of swamps along the Lane Cove River by landfilling, e.g. at Magdala Park in the 1960's. Hamilton (1919) published five very interesting photographs of saltmarsh at Buffalo Creek, most of which has since been destroyed by landfilling. Keith (2004,p.239) noted that there appears to have recently been a fairly widespread invasion of saltmarshes by mangroves in south-eastern Australia and that the causes of this are not well understood.

Currently, there are 3 of Ryde's native vegetation types that are listed as endangered under the *NSW Threatened Species Conservation Act 1995:-*

Blue Gum High Forest
Sydney Turpentine-Ironbark Forest
Coastal Saltmarsh

In addition, there are a number of key threatening processes listed under the *NSW Threatened Species Conservation Act 1995*, that are likely to be relevant to Ryde's natural vegetation:-

- Bushrock Removal
- High Frequency Fire
- Clearing of Native Vegetation
- Infection of Native Plants by Phytophthora cinnamomi

THE CONSERVATION SIGNIFICANCE OF RYDE'S BUSHLAND PLANTS

In recent years,at least 570 species of native plant species have been recorded from the bushland of the Ryde district (see Appendix 1). This tally includes plant species recorded from the Ryde section of Lane Cove National Park and from Wallumatta Nature Reserve, as well as bushland reserves managed by the City of Ryde. This figure represents a quite high floristic diversity and largely reflects the diversity of plant species typically found in the coastal sandstone vegetation of the Sydney region (e.g. see Keith 2004, p.146). It is also indicative of the variety of natural vegetation types that can still be found in the Ryde district. When local extinctions are taken into account, together with additional plant species recorded by other workers (e.g. Coveny 1978; 1978-79), it seems likely that the number of plant species occurring in the Ryde district prior to European settlement probably exceeded 600 species.

In this report, the conservation significance of Ryde's native plant species has been studied at four different levels:-

1. Ryde plants currently listed under the *NSW Threatened Species Conservation Act 1995.*
2. Ryde plant species considered significant within the Sydney region.
3. Ryde plant species regarded as significant in the context of northern Sydney's bushland.
4. Locally significant plant species occurring in Ryde's bushland.

There are 9 plant species that have been recorded from the Ryde district, which are currently listed under the *NSW Threatened Species Conservation Act 1995* (see Table 1 and the section following Table 1). *Diuris bracteata* and *Persoonia hirsuta* have been listed as endangered and the remaining 7 species have been listed as vulnerable. A recovery plan has been prepared for the vulnerable species *Darwinia biflora* (DEC 2004). In addition to *Diuris bracteata,* the vulnerable species *Genoplesium baueri* and the endangered species *Persoonia hirsuta* may now also be locally extinct in the Ryde district. Fairley (2004) provides an outline of the *NSW Threatened Species Conservation Act 1995,* the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the "Rare or Threatened Australian Plant" (ROTAP) coding system (see Briggs and Leigh 1996). Lists of threatened plant species in the Ryde district have previously been included in Ryde council documents (e.g. see Ryde City Council 1995-96, p.48; 1996a, p.12; City of Ryde 2003, p.99). The threatened species *Acacia pubescens* was recorded from Putney Park (Fox & Rawling 1990, pp.18,92), but

it appears that this species may have been planted there (City of Ryde 2004). Therefore, *A.pubescens* was not included in *Table 1* of this report. There are apparently no records at the Herbarium of NSW for *Acacia pubescens* in the Ryde district (L.McDougall & D.Benson pers. comm.).

At least 25 of Ryde's native plant species can be considered to be significant within the Sydney region (see Table 2 and the notes following that table). The works of authors such as Benson & McDougall (1993-2002), Robinson (1991), James et al. (1999) and Fairley (2004) were consulted when trying to determine which of Ryde's plant species could be regarded as regionally significant. There is an element of subjectivity in the preparation of such a list (as noted by Fairley 2004, p.11). However, the work of many botanists and ecologists over the past several hundred years has given a good general idea of the distribution and relative abundance of Sydney's native plant species, particularly in the more frequently studied suburban areas.

A further 48 of Ryde's native plant species can be regarded as significant within the context of northern Sydney's bushland (see Table 3 and the notes following that table). This list was drafted by drawing on the author's experience of northern Sydney bushland and referring to the works of authors such as Benson & Howell (1994, Table 4), McLoughlin (1992), Martyn (1994) and others (see *References*).

At least 85 of Ryde's native plant species can be categorized as locally significant within the Ryde district (see Table 4). This list is comprised of native plant species that are locally rare in Ryde's bushland, but may be common elsewhere. Adam (2002, p.658) discussed the preparation of lists of locally rare plant species for local government areas. He suggested that such lists might help local communities to conserve their remaining bushland.

At least 19 of Ryde's native plant species may now be locally extinct within the Ryde district (see Appendix 2). These include some species such as *Genoplesium baueri*, which may still possibly be present in the area, but could go undetected due to their cryptic nature. It also seems likely that some native plant species may have disappeared from Ryde's bushland before they could be recorded. For example, *Dendrobium speciosum* (Rock Lily) probably would have occurred in the Ryde district prior to European settlement, but does not appear to have been recorded for any localities in Ryde. In addition, a number of Ryde's plant species have apparently declined so dramatically that they are now on the brink of local extinction. This includes species such as *Pultenaea scabra* var. *biloba* and *Lissanthe strigosa* subsp. *strigosa*.

Over the past 100-200 years habitat destruction has probably been the most powerful force leading to local extinctions and declines of bushland plants in the Ryde district. Bushland growing on shale and areas transitional between sandstone and shale has

suffered great losses through land clearing. Ryde's bushland has continued to dwindle over the last few decades, but the rate of direct habitat destruction has diminished. Ideally, all remaining bushland in the Ryde district should be conserved. Currently, weed invasion of bushland areas is probably the single greatest threat to the survival of Ryde's native plants. Other threats include illegal rubbish dumping and illegal track construction. In addition, some local bushland continues to be cleared for construction of infrastructure such as roads.

Whilst it is very important to conserve rare and threatened plant species, this should not be done at the cost of neglecting the more common species. Just because a plant species is "common", this does not mean that it is expendable. The common species are likely to have the greatest ecological significance. The common plants and fungi are the most important species in keeping the local ecosystems functioning. The common species of plants provide the habitat for most of the bushland's mammals, birds, reptiles, frogs and insects. Therefore, the conservation of Ryde's "common" bushland plants should be given a high priority.

TABLE 1:

Plant Species Recorded in Ryde's Bushland and Currently Listed under the N.S.W. Threatened Species Conservation Act 1995.

Species and Family	TSC Status	Current Local Status(Ryde)	Ryde Localities
Darwinia biflora (Myrtaceae)	Vulnerable	Uncommon	North Ryde, Marsfield (mostly Lane Cove National Park)
Diuris bracteata (Orchidaceae)	Endangered	Probably Extinct	Gladesville (before 1889)
Epacris purpurascens var. purpurascens (Epacridaceae)	Vulnerable	Uncommon	Ryde; North Ryde; Macquarie Park, Marsfield.
Genoplesium baueri (Orchidaceae)	Vulnerable	Probably Extinct?	Gladesville (1880's).
Melaleuca deanei (Myrtaceae)	Vulnerable	Rare	Marsfield; North Ryde.
Persoonia hirsuta (Proteaceae)	Endangered	Probably Extinct?	North Ryde (1923).
Pimelea curviflora var. curviflora (Thymelaeaceae)	Vulnerable	Uncommon	Gladesville; Ryde; North Ryde.
Tetratheca glandulosa (Tremandraceae)	Vulnerable	Rare	Marsfield; North Ryde.
Wilsonia backhousei (Convolvulaceae)	Vulnerable	Rare	Melrose Park, Parramatta River.

Darwinia biflora

Family: Mytaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: VULNERABLE.
NSW Threatened Species Conservation Act 1995: VULNERABLE.
Rare or Threatened Australian Plant (Briggs & Leigh,1996) (ROTAP): 2VCa.

Local Abundance and Distribution in the Ryde District:
Darwinia biflora is an uncommon plant in Ryde's remnant bushland. Most of the surviving local populations occur in Lane Cove National Park. Six sites within the Ryde district were listed in the *Recovery Plan* for this species (NSW Department of Environment and Conservation, 2004). Some of the sites listed in that *Plan* were regarded as sub-populations (plants occurring within 500 metres of each other were considered to be part of the same population). By this measure, the *Recovery Plan* recorded four populations of *D.biflora* in Ryde's bushland. These populations are quite small. In addition, Briggs (1962, p.144) recorded that *D.biflora* was collected by Evans at Marsfield in August, 1938.

Threats:
The *Recovery Plan* (DEC 2004) noted three key threatening processes, listed under the TSC Act, as being of relevance to the conservation of *D.biflora*: HIGH FREQUENCY FIRE, BUSHROCK REMOVAL and CLEARING OF NATIVE VEGETATION.

It could also be noted that INFECTION OF NATIVE PLANTS BY *PHYTOPHTHORA CINNAMOMI* is another listed key threatening process that may adversely affect *D.biflora*.

Habitat loss and degradation of habitat are the major threats to *D.biflora* highlighted in the *Recovery Plan.* It seems likely that some populations of *D.biflora* in the Ryde district have become locally extinct, though no such local extinctions have apparently been formally recorded. For example, there may have been suitable habitat for *D.biflora* in the vicinity of North Ryde Park and the North Ryde RSL Club, as well as a number of other sites in the Ryde district where the native vegetation has been destroyed.

Blaxell & Pickard (1969) recorded *D.biflora* as growing in four acres (approx. 1.5 hectares) of unspoilt, high quality bushland at the Commonwealth Experimental Building Station, North Ryde. This site apparently tallies with the current location of Riverside Corporate Park on Delhi Road. As such, the surviving plants at Riverside Corporate Park, closer to the river, would appear to be the remnants of a larger population. The prime habitat for *D.biflora*, near the ridge, at Riverside Corporate Park has been destroyed by development. However, the small number of surviving plants are still significant, as this may well be the southern-most surviving population of *D.biflora.* Also, some of these plants inhabit a somewhat unusual boulder-top habitat. This is probably the most endangered population of *D.biflora* in the Ryde district.

The *Recovery Plan* listed inappropriate fire regimes, weed infestation, impacts from nearby suburban development, illegal track construction and clearing for the maintenance of easements as the main threats posed to the surviving populations of *D.biflora.* A number of these processes are also acting on Ryde's remaining *D.biflora* populations. For example:-

1. The surviving plants of *D.biflora* at Riverside Corporate Park occur in an area that has not been burnt for a long time. A careful application of fire by skilled professionals may well be required at this site to maintain the health and vigour of this tiny surviving population of plants.
2. One site in Lane Cove National Park, where *D.biflora* occurred (at North Ryde), was infested by the weed *Paspalum quadrifarium.*
3. One of the populations of *D.biflora* in Lane Cove National Park, at North Ryde, is affected by a powerline easement, with some associated clearing of native vegetation and weed invasion.
4. Most of Ryde's surviving populations of *D.biflora* are not directly affected by residential development. However, the plants at Riverside Corporate Park have been potentially threatened by ongoing commercial development of the site. The goodwill of the people neighbouring this valuable bushland remnant will be crucial to its ongoing survival.

The Local Conservation Significance of Darwinia biflora in the Ryde District:
It appears that North Ryde may now be at the southern limit of the range of *D.biflora.* This species was recorded at Hunters Hill in 1892 and Waterfall in 1933. However, there appear to be no recent collections from these localities (Benson & McDougall 1998; DEC 2004). This has led to the conclusion that *D.biflora* is now probably extinct at Waterfall and Hunters Hill (DEC, 2004). According to Fairley (2004), *D.biflora* was also collected at Lane Cove (by J.J.Fletcher) in 1913. *D.biflora* is probably now locally extinct at Lane Cove.

Some Key Ecological Attributes of D.biflora:
Response to Fire: D.biflora is killed by fire and re-establishes from seed stored in the soil (Benson & McDougall 1998; DEC 2004).

The *Recovery Plan* suggested the following recommendations for fire management of this species:-

1. An interval between fires of more than 5 years and preferably longer than 10 years.
2. Try to avoid repeated frequent fires, i.e. avoid sequences of fires at intervals of less than five years. (The plants require an adequate amount of time to flower and set seed. They need a number of years after the fire to reach maturity and some years after that to build up the soil seed bank).
3. Burns for this species are preferably moderate to high intensity. (Low intensity fires may not be sufficient to stimulate the germination of seed stored in the soil).

The above recommendations can be considered as useful guidelines, based on current available knowledge. Ideally, such recommendations would be supplemented by the adequate local knowledge and ecological/operational skills of the people seeking to follow them.

Pollination:
D.biflora is probably mainly self-pollinated (Benson & McDougall 1998, DEC 2004: from the work of Briggs, 1962).

Habitat:
D.biflora occurs mostly on the edges of weathered shale-capped ridges (DEC 2004).

Associated Vegetation:
Eucalypt woodland, scrub or heath (Benson & McDougall 1998; DEC 2004).

Some Key References:
Benson, D. & McDougall,L.(1998). "Ecology of Sydney plant species,Part 6: Dicotyledon family Myrtaceae." Cunninghamia,5(4):p.852.
Briggs, B.G.(1962). "The New South Wales species of Darwinia." Contributions from the N.S.W. National Herbarium,3(3):p.144.
Fairley, A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney. (p.56).
NSW Department of Environment and Conservation.(2004). "Darwinia biflora Recovery Plan." NSW DEC, Hurstville.
Ryde City Council. (1998). "State of the Environment Report." (p.44).

Diuris bracteata

Family: Orchidaceae
Common Name: No accepted common name.
Conservation Status:
NSW Threatened Species Conservation Act 1995: ENDANGERED.

This orchid was first collected by H.Deane near Gladesville, on the Parramatta River, before 1889 and until recently was only known from this collection (Fitzgerald 1889; Rupp 1969; Chapman 1991; Harden 1993; Ryde City Council 1995-96; L.McDougall & D.Benson pers. comm.; DEC 2005). However, since 1998, more specimens of this orchid have been collected from the Sydney region (DEC 2005). This species is now known from a few sites in dry sclerophyll woodland. The total number of plants is thought to be about 50 individuals (DEC 2005). Some of the plants occur in remnant roadside vegetation and none of the known surviving populations occur in conservation reserves. Accordingly, *D.bracteata* has been listed as an endangered species under the NSW TSC Act (DEC 2005).

The Gladesville *D.bracteata* had about three yellow flowers and flowered in September (Fitzgerald 1889; Chapman 1991; Harden 1993). Robert D.Fitzgerald painted a fine illustration of this orchid, dated June 1889, which was published in his work entitled *"Australian Orchids."* Unfortunately, *D.bracteata* may now be locally extinct in the Ryde district.

This orchid is emblematic of the drastic biodiversity losses caused by the wholesale destruction of native vegetation along the Parramatta River in the Ryde district.

Some Key References:

Bishop, A.(1996). "Field Guide to the Orchids of New South Wales and Victoria." University of NSW Press, Kensington.(p.4).
Chapman, A.D.(1991). "Australian Plant Names Index,D-J." Australian Flora & Fauna Series, No. 13." ABRS, Canberra.(p.1032).
Fitzgerald, R.D. (1889). "Australian Orchids."Volume 2,Part 4(Second Plate). Acting Government Printer, Sydney. (Facsimile Edition: Landsdowne Editions, East Melbourne,1979).
Harden, G.J.(ed.)(1993). "Flora of New South Wales." Volume 4(pp.143-144). University of NSW Press, Kensington.
NSW Department of Environment and Conservation.(2005). Final Determination to list Diuris bracteata as an endangered species on Part 1 of Schedule 1 of the Threatened Species Conservation Act 1995. NSW Scientific Committee, TSC Act 1995. (Gazetted 21.10.05).
Rupp, H.M.R.(1969). "The Orchids of New South Wales." Facsimile edition, Government Printer of N.S.W. (Originally issued: 1943).(p.16).

Epacris purpurascens var. purpurascens

Family: Epacridaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: Not currently listed.
NSW Threatened Species Conservation Act 1995: VULNERABLE.
Rare or Threatened Australian Plant(Briggs & Leigh,1996)(ROTAP): 2KC- .

Local Abundance and Distribution in the Ryde District:

Epacris purpurascens var. purpurascens is locally uncommon in the remnant bushland of the Ryde district. This species occurs in small scattered populations in the Ryde, North Ryde, Macquarie Park and Marsfield areas. The two largest surviving populations probably occur in Field of Mars Reserve and Wallumatta Nature Reserve. Most of the other local populations occur in a few small fragmented bushland remnants, e.g. Blenheim Road, North Ryde and at Macquarie University, Macquarie Park and at Epping Road, Marsfield. There is also a small population in Lane Cove National Park at North Ryde. It seems likely that this species was once more common in the Ryde district and that clearing of much of its preferred habitat may have taken a great toll. Fairley (2004) notes that this species was recorded at Hunters Hill, in 1905.

Threats:
Probably the single greatest local threat to *E.purpurascens var. purpurascens* is habitat destruction. For example, the construction of the M2 Motorway destroyed plants of this species at several locations in the Ryde district. In the future, the populations at Blenheim Rd., N.Ryde and Epping Rd., Marsfield could potentially be threatened by road widening. Weed infestation also threatens both of these populations. Another potential threat is an inappropriate fire regime. Too frequent fire would be likely to pose a significant threat to this species.

Key threatening processes listed under the TSC Act for this species include CLEARING OF NATIVE VEGETATION and INFECTION BY *PHYTOPHORA CINNAMOMI.*

Some Key Ecological Attributes of E.purpurascens var. purpurascens:
Response to Fire: This species is killed by fire and relies on seed stored in the soil for post-fire regeneration (Benson & McDougall 1995; NPWS 2002). It should be noted that populations in areas long unburnt may not be evident, as the adult plants may have died off, but there may still be viable seed stored in the soil. Locally, this process may have recently occurred at Blenheim Rd., North Ryde.
Habitat: Locally, this species probably prefers areas transitional between shale and sandstone (as gauged from surviving populations),but also occurs on sandstone. The surviving populations of *E.purpurascens var. purpurascens* in the Ryde district tend to occur in open forest.

Some Key References:
Benson,D. & McDougall,L.(1995). "Ecology of Sydney Plant Species,Part 3: Dicotyledon Families Cambombaceae to Eupomatiaceae." Cunninghamia,4(2):p.364.
Fairley,A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney.(pp.73-74).
NSW National Parks and Wildlife Service.(1999). "Final Determination to list the shrub Epacris purpurascens var. purpurascens R.Br. as a VULNERABLE SPECIES on Schedule 2 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.
NSW National Parks and Wildlife Service.(2002). "Threatened Species Information: Epacris purpurascens var. purpurascens R.Br.." NSW NPWS, Hurstville.

Genoplesium baueri

Family: Orchidaceae
Common Name: "Brittle Midge Orchid"
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: Not currently listed.
NSW Threatened Species Conservation Act 1995: VULNERABLE.
Rare or Threatened Australian Plant(Briggs & Leigh,1996)(ROTAP): 3RC- .

This orchid was collected by H.Deane at Gladesville in 1884, 1885 and 1887 (Rupp 1969; Ryde City Council 1995-96; DEC 2004; L.McDougall & D.Benson pers. comm.).No collections have been made from Gladesville in recent years (DEC 2004).

It seems likely that this species in now locally extinct in the Ryde district. It is almost certainly now extinct in the Gladesville area, probably as a result of habitat destruction. There is an outside possibility that this orchid may still survive elsewhere in Ryde's remnant bushland.

There are some old records for this orchid in suburbs such as Longueville (Rupp 1969), Wahroonga (DEC 2004) and Pennant Hills (Fairley 2004).

Genoplesium baueri is cryptic (DEC 2004) and tends to flower mainly after fires, when it is easiest to find (Bishop 1996;Fairley 2004). This species has proven quite elusive in recent years, with several vegetation surveys and targeted searches failing to find any individuals growing south of Sydney (DEC 2004;Fairley 2004). *G.baueri* tends to grow in sparse sclerophyll vegetation or moss gardens on sandstone and flowers between December and March (or Feb.-May) (Harden 1993; Bishop 1996).

G.baueri has probably declined because of habitat destruction and may also be threatened by inappropriate fire regimes (DEC 2004).

Some Key References:

Bishop, A.(1996). "Field Guide to the Orchids of New South Wales and Victoria." University of NSW Press.(p.50).
Harden, G.J.(ed.).(1993). "Flora of New South Wales, Vol.4." NSW University Press, Kensington. (pp. 164-165).
Fairley, A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney. (pp.89-90).
NSW Department of Environment and Conservation.(2004). "Final Determination to list the orchid Genoplesium baueri R.Br. as a VULNERABLE SPECIES in Schedule 2 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.
Rupp, H.M.R.(1969). "The Orchids of New South Wales." Facsimile edition, Government Printer of NSW. (Originally issued: 1943).(pp.30-31).

Melaleuca deanei

Family: Myrtaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: VULNERABLE.
NSW Threatened Species Conservation Act 1995: VULNERABLE.
Rare or Threatened Australian Plant(Briggs & Leigh,1996)(ROTAP): 3RC- .

Local Abundance and Distribution in the Ryde District:
This species is locally rare in Ryde's remaining bushland. There are two very small known populations. There are a few plants at Lucknow Park, Terrys Creek, Marsfield. The other tiny population occurs in Lane Cove National Park at North Ryde. It seems likely that *M.deanei* may have been rare in Ryde's bushland prior to European settlement of the area. Even so, some of the local populations of this species may have become extinct due to habitat destruction over the last couple of centuries. It is interesting to note that *M.deanei* was collected by F.R.Smith at Ryde in 1914 (L.McDougall & D.Benson pers.comm.). A collection was also made at Lane Cove by H.Deane in 1886 (Fairley 2004).

Threats:
Locally, this species could be threatened, in the future, by weed infestations and also possibly by inappropriate fire regimes. The habitat at Terrys Creek requires ongoing protection.

CLEARING OF NATIVE VEGETATION, HIGH FREQUENCY FIRE and BUSHROCK REMOVAL are key threatening process listed under the NSW TSC Act as being likely to affect *M.deanei.*

Many populations occur on the edge of fire trails, making this species vulnerable to the adverse impacts of trail maintenance and widening (NPWS 1999). Such threats are magnified by the typically small population sizes of *M.deanei.*

Some Key Ecological Attributes of M.deanei:
Response to Fire: This species resprouts after fire and may require burning for flowering to be stimulated (Benson & McDougall 1998).
Reproductive Capacity: Rates of seed production appear to be low for *M.deanei* (Benson & McDougall 1998). Some populations appear to survive as clones, having originated from lignotubers whose centres have either been burnt away or rotted (Myerscough 1998). It could be noted that some of the plants of *M.deanei* at Lucknow Park, Marsfield have quite thick stems, suggesting that they are probably fairly old.
Habitat: M.deanei occurs in woodland or heath on sandstone (Benson & McDougall 1998; NPWS 1999).

Some Key References:
Benson, D. & McDougall,L.(1998). "Ecology of Sydney Plant Species, Part 6: Dicotyledon family Myrtaceae." Cunninghamia, 5(4):p.964.
Fairley, A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney. (pp.131-132).
Myerscough, P.J.(1998). "Ecology of Myrtaceae with special reference to the Sydney region." Cunninghamia, 5(4): p.797.
NSW National Parks and Wildlife Service.(1999). "Final Determination to list the shrub Melaleuca deanei F.Muell. as a VULNERABLE SPECIES on Schedule 2 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.

Persoonia hirsuta

Family: Proteaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: ENDANGERED.
NSW Threatened Species Conservation Act 1995: ENDANGERED.
Rare or Threatened Australian Plant (Briggs & Leigh,1996)(ROTAP): 3KCi.

Local Abundance and Distribution in the Ryde District:
P.hirsuta was collected by M.B.Welch at North Ryde in 1923 (L.McDougall & D.Benson, pers.comm.).This species may now be locally extinct in the Ryde district. There is a slight chance that this shrub may still be present in some of Ryde's remnant bushland. However, there do not appear to be any recent local records for *P.hirsuta.* It seems likely that this species was quite rare in the Ryde district prior to European settlement. Generally, however, *P.hirsuta* subsp. *hirsuta* seems to have been more common before 1920 than it is at present (Benson & McDougall 2000). It is interesting to note that *P.hirsuta* was apparently recorded in Pennant Hills Park bushland, in 1994 (Douglas 1997, p.6).

Threats:
Key threatening processes listed under the NSW Threatened Species Conservation Act 1995 as being likely to adversely affect *P.hirsuta* include:- BUSHROCK REMOVAL, CLEARING OF NATIVE VEGETATION, INFECTION BY *PHYTOPHORA CINNAMOMI.*

Populations of *P.hirsuta* are usually very small and this species is threatened by high frequency fire, in addition to the above-mentioned threatening processes (NPWS 1998).

Some Key Ecological Attributes of Persoonia hirsuta:
Fire Response: Probably killed by fire (Benson & McDougall 2000).
Habitat: Woodland, scrub, heath or open forest on sandstone, on the sides of ridges (Benson & McDougall 2000; Fairley 2004).

Some Key References:
Benson,D. & McDougall,L.(2000). "Ecology of Sydney Plant Species,Part 7b:Dicotyledon families Proteaceae to Rubiaceae." Cunninghamia,6(4):p.1101.
Fairley,A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney.(pp.148-149).
NSW National Parks and Wildlife Service.(1998). "Final Determination to list Persoonia hirsuta Pers., a spreading to decumbent shrub in the Proteaceae, as an ENDANGERED SPECIES on Part 1 of Schedule 1 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.

Pimelea curviflora var. curviflora

Family: Thymelaeaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: VULNERABLE.
NSW Threatened Species Conservation Act 1995: VULNERABLE.

Local Abundance and Distribution in the Ryde District:
This plant is quite uncommon in the Ryde district. There are two fairly small populations in Lane Cove National Park, North Ryde. Also, a few plants were recorded in the Pages Creek area ,in 1999. The largest local occurrence is probably in Field of Mars Reserve, Ryde, where the population was estimated to be greater than 300 plants following the wildfire of 2002. This species was also recorded, in 1988, from Sugarloaf (Lane Cove National Park, North Ryde). Benson & McDougall (2001) noted that *P.curviflora var. curviflora* was collected at Gladesville in 1884. This species may have been diminished in the Ryde district due to destruction of its habitat, e.g. at Gladesville.

Threats:
CLEARING OF NATIVE VEGETATION and BUSHROCK REMOVAL are key threatening processes listed under the TSC Act as likely to be detrimental to *P.curviflora var. curviflora.* Weed invasion, inappropriate fire regimes and track construction/maintenance may also pose threats to this species (NPWS 1998).

In the Ryde district, the greatest current threats to this species probably arise from weed infestation and disturbance resulting from track maintenance and construction. Illegal dumping and illegal track construction are also threatening some of the plants at Field of Mars Reserve.

Some Key Ecological Attributes of Pimelea curviflora var. curviflora:
Response to Fire: Tends to be more evident following fire (Klaphake 1995; James et al. 1997; Benson & McDougall 2001; pers.obs.).
Habitat: Woodland and open-forest, mostly on ridgetops and upper slopes, tending to occur in areas transitional between sandstone and shale (but also on sandstone) (James et al. 1999; Benson & McDougall 2001; pers.obs.).

Some Key References:
Benson, D, & McDougall,L.(2001). "Ecology of Sydney Plant Species,Part 8: Dicotyledon families Rutaceae to Zygophyllaceae." Cunninghamia,7(2):pp.402-403.
James, T. et al.(1997). "Urban Bushland Biodiversity Survey, Stage 1: Western Sydney. (Native Flora in Western Sydney)."NSW National Parks and Wildlife Service. (p.157).
James, T., McDougall,L. & Benson,D.(1999). "Rare Bushland Plants of Western Sydney." Royal Botanic Gardens, Sydney.(p.47).
Klaphake, V.(1995). "Case Study: Warraroon Reserve in the Lane Cove River Valley,"in: "Bushfire! Looking to the Future." Ed. by C.Brown & L.Tohver, Envirobook Publishing, Sydney. (pp.40-43).

NSW National Parks and Wildlife Service.(1998). "Final Determination to List Pimelea curviflora var. curviflora (a small shrub) *as a VULNERABLE SPECIES on Schedule 2 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.*

Tetratheca glandulosa

Family: Tremandraceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: VULNERABLE.
NSW Threatened Species Conservation Act 1995: VULNERABLE.
Rare or Threatened Australian Plant(Briggs & Leigh 1996)(ROTAP): 2VC- .

Local Abundance and Distribution in the Ryde District:
This species is rare in Ryde's remnant bushland. A few plants occur along Terrys Creek, Marsfield, eg. at Lucknow Park. *T.glandulosa* was also recorded from Field of Mars Reserve in the late 1980's, but the exact location was not noted. In 1979, a few plants were seen in the tiny remnants of woodland on the edge of the dirt carpark at the North Ryde RSL Club, but this area was subsequently asphalted over and the species would appear to be lost from that location. Other populations in the Ryde district may have been destroyed by land clearing before they could be recorded. The population lost at the North Ryde RSL Club would appear to have been close to the southern limit of this species. The populations recorded at Mosman, Willoughby and Manly are now also probably extinct (NPWS 2000). This species was also collected in the past from Balmain and Auburn (Benson & McDougall 2001). *Tetratheca glandulosa* is somewhat more abundant in the upper Lane Cove River catchment than it is in the Ryde district.
Threats:

INFECTION BY *PHYTOPHORA CINNAMOMI* and BUSHROCK REMOVAL are listed under the NSW TSC Act as key threatening processes that may adversely affect *T.glandulosa.* It is conceivable that weed infestation and track widening could threaten the Terrys Creek population of this species, in the future. Many populations of *T.glandulosa* are located along fire trails, transmission line easements and at the edges of suburban development (NPWS 2000). Significant threats may be posed to this species by the construction/maintenance of fire trails, mechanical fuel reduction and high frequency fire (NPWS 2000).

Some Key Ecological Attributes of Tetratheca glandulosa:
Fire Response: Resprouts after fire(NPWS 2000;Benson & McDougall 2001).
Habitat: Heath or woodland, on shale-sandstone transition or sandstone; on edges of plateaux or upper slopes and less commonly on mid-slope sandstone benches; on shallow soils(NPWS 2000;Benson & McDougall 2001).

Some Key References:
Benson, D. & McDougall,L.(2001). "Ecology of Sydney Plant Species, Part 8: Dicotyledon families Rutaceae to Zygophyllaceae." Cunninghamia,7(2):p.414.
Fairley, A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland, Sydney.(p.181).
NSW National Parks & Wildlife Service.(2000). "Threatened Species Information: Tetratheca glandulosa Smith." NSW NPWS, Hurstville.

Wilsonia backhousei

Family: Convolvulaceae
Common Name: No accepted common name.
Conservation Status:
Environment Protection and Biodiversity Conservation Act 1999: Not currently listed.
NSW Threatened Species Conservation Act 1995: VULNERABLE.

Local Abundance and Distribution in the Ryde District:
Wilsonia backhousei is extremely rare in the Ryde district. A small patch of this species grows in saltmarsh at Melrose Park (near Lancaster Avenue) on the Parramatta River. *W.backhousei* may have been slightly less rare in the Ryde district before the arrival of Europeans. Some suitable habitat in the Meadowbank area may have been destroyed by landfilling. This species has also been recorded at Ermington, Homebush Bay and Concord on the Parramatta River (Robinson 1991; Benson & McDougall 1995; Fairley 2004). *W.backhousei* is rare in the Sydney region (Robinson 1991; Benson & McDougall 1995), where this species has declined over the last century, mostly due to loss of habitat (NPWS 2000).

Threats:
Locally, *W.backhousei* may be threatened by illegal dumping. Also, its saltmarsh habitat could potentially be threatened with encroachment by mangroves in the future. Mats of *W.backhousei* can be damaged by pedestrian trampling and vehicles (NPWS 2000). Changes in drainage and invasion by weeds, such as *Juncus acutus*, could also potentially threaten this species (NPWS 2000). Coastal saltmarsh in the Sydney basin has been listed as an endangered ecological community under the NSW Threatened Species Conservation Act 1995. The final determination for that listing highlights threats to coastal saltmarshes in New South Wales.

Some Key Ecological Attributes of Wilsonia backhousei:
This species mostly occurs in coastal saltmarsh,but has also been recorded from seaside cliff tops (at Clovelly) (Benson & McDougall 1995). *W.backhousei* appears to generally favour tidal river flats composed of silt and clay, where its elongating stems can form prostrate mats up to 2 metres in diameter (Benson & McDougall 1995).

Some Key References:

Benson,D. & McDougall,L.(1995). "Ecology of Sydney Plant Species,Part 3:Dicotyledon families Cabombaceae to Eupomatiaceae." Cunninghamia, 4(2): pp.312-313.

Fairley,A.(2004). "Seldom Seen: Rare Plants of Greater Sydney." Reed New Holland ,Sydney.(pp.186-187).

Department of Environment & Conservation(NSW).(2004). "Final Determination to list Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions as an endangered ecological community." NSW Scientific Committee, TSC Act 1995.

NSW National Parks and Wildlife Service.(2000). "Final Determination to list Wilsonia backhousei (a perennial matforming subshrub) as a vulnerable species on Schedule 2 of the Threatened Species Conservation Act 1995." NSW Scientific Committee, TSC Act 1995.

TABLE 2:

Some Regionally Significant Plant Species Recorded in Ryde's Bushland.

Species and Family	Current Local Status(Ryde)	Ryde Localities	Status in Sydney Region
Acacia schinoides (Fabaceae)	Uncommon	North Ryde; Marsfield	Ryde is at the sthn. limit of this species.
Acacia stricta (Fabaceae)	Uncommon	North Ryde; Marsfield	Uncommon.
Boronia polygalifolia (Rutaceae)	Very rare	Ryde; North Ryde	Rare.
Boronia serrulata (Rutaceae)	?Extinct	?Tennyson (1800's)	Rare.
Caladenia tentaculata (Orchidaceae)	?Extinct	Gladesville (1885)	Extinct?
Caleana minor (Orchidaceae)	?Extinct	Gladesville (1884)	Probably uncommon
Calystegia sepium (Convolvulaceae)	?Rare	Ryde	?Rare.
Diuris punctata (Orchidaceae)	?Extinct	Ryde (1886)	Probably rare.
Eucalyptus acmenoides (Myrtaceae)	Rare	West Ryde; Eastwood	Rare.
Glossogyne tannensis (Asteraceae)	?Extinct	Ryde (1884)	Probably rare?
Gompholobium pinnatum (Fabaceae)	Rare	Ryde	Probably rare.

Species and Family	Current Local Status(Ryde)	Ryde Localities	Status in Sydney Region
Gompholobium uncinatum (Fabaceae)	?Very rare	Ryde (1989)	Mainly upper Blue Mountains.
Grevillea sphacelata (Proteaceae)	?Extinct	Gladesville (1914)	Occurs mostly sth. of Port Jackson.
Lythrum hyssopifolia (Lythraceae)	Very rare	Denistone	Becoming rare.
Petrophile sessilis (Proteaceae)	?Extinct	Gladesville (1914)	Occurs mostly sth. Of Sydney
Prostanthera howelliae (Lamiaceae)	Very rare	North Ryde	Rare.
Pterostylis reflexa (Orchidaceae)	?Extinct	Gladesville (1885)	?Rare on coast?
Pultenaea mollis (Fabaceae)	Rare	Ryde; North Ryde	Probably uncommon.
Pultenaea paleacea (Fabaceae)	Very rare	Ryde	Rare in Sydney district.
Pultenaea scabra *var.* ***biloba*** (Fabaceae)	Very rare	Nth Ryde; Marsfield	Probably rare.
Scleranthus biflorus (Caryophyllaceae)	?Extinct	Gladesville (1904)	Rare.
Senecio quadridentatus (Asteraceae)	?Very rare	Denistone (1978)	?Rare near coast.
Styphelia longifolia (Epacridaceae)	Uncommon to Rare.	Ryde; Nth Ryde	Rare.
Viola betonicifolia (Violaceae)	Uncommon to Rare.	Ryde (1889)	Rare.
Zornia dyctiocarpa (Fabaceae)	?Very rare	Denistone	Probably uncommon to rare.

Notes on Some of Ryde's Regionally Significant Bushland Plant Species.

Acacia schinoides *(Fabaceae)* (Green Cedar Wattle)
This species reaches its southern limit in the Ryde district, locally occurring mostly in Lane Cove National Park. Benson & McDougall (1996) stated that *A.schinoides* is probably adequately conserved in the northern part of its range, but may be less secure at its southern geographical limit (i.e. the Lane Cove River area). They surmised that weed infestation may pose a threat to this species. This is the case because its habitat consists of creeklines and gullies, which are very prone to weed invasion in established suburban areas.

Acacia stricta *(Fabaceae)* (Straight Wattle)
This species is considered to be uncommon in the Sydney region (Keith 1994; Benson & McDougall 1996). In the Ryde district, *A.stricta* occurs in a few scattered localities, e.g. Marsfield Park and Wallumatta Nature Reserve. Benson & McDougall (1996) noted that this wattle occurs mostly on clay soil, often near the boundary between shale and sandstone and occasionally on sandstone. They considered that this shrub is unlikely to be adequately conserved in the Sydney region because its habitat is not well represented in conservation reserves. James et al. (1999) categorized this species as vulnerable in western Sydney. *A.stricta* was probably much more common in the Ryde district prior to European settlement than it is today. Its preferred habitat of forests growing on soils derived from shale has been all but wiped out in the Ryde district, even though these were once probably the most abundant local vegetation types. *A.stricta* can be regarded as threatened in the Ryde district. Some local populations have recently been brought back from the brink of extinction by the cessation of mowing in parks, most notably at Stewart Park, Marsfield and Bundara Reserve, North Ryde.

Boronia polygalifolia *(Rutaceae)*
This species is regarded as rare in the Sydney region (Benson & McDougall 2001) and vulnerable in western Sydney (James et al. 1999). In the Ryde district, this species is locally extremely rare. In the last few decades, a few plants have been observed growing at one location in Lane Cove National Park, North Ryde (Clarke & Benson 1987; pers. obs.). A couple of plants were also seen at one spot in Field of Mars Reserve, Ryde in 1993. *B.polygalifolia* may once have been more common in the Ryde district. This species was collected by J.J.Fletcher at Field of Mars in 1887 and also collected at Ryde in 1903 (L.McDougall & D.Benson, pers. comm.).

B.polygalifolia may have declined in the Sydney region as a result of habitat destruction. Clarke & Benson (1987) suggested that this species was probably once widespread in wet shale forests in the Sydney region, but the number of localities has likely been reduced following European settlement. Duretto (2003) noted that this species appears to be fairly secure (outside of the Sydney region). In the Ryde district, *B.polygalifolia* can be regarded as locally extremely threatened, owing to the tiny sizes of the two known surviving populations.

Boronia serrulata *(Rutaceae)* (Native Rose or Rose Boronia)
There is apparently no record at the National Herbarium of NSW of this species having been collected from the Ryde district (L.McDougall & D.Benson, pers. comm.). However, it seems highly likely that *B.serrulata* once occurred in Ryde's bushland. A description of bushland at Tennyson on the Parramatta River, by a real estate company (dating from the 1880's), includes the "native rose" as one of the species of boronia present at that locality (Anon. 1887?; Ryde City Council 1996c). *B.serrulata* once grew in the Lane Cove River area (Plummer 1895; McLoughlin 1985; Clarke & Benson 1987). According to Benson & McDougall (2001), this species was originally quite common on the north shore of Sydney, but urban development of the area has led to a decline in this local endemic shrub. Auld (2001) discussed current threats to this species, particularly high frequency fire. Duretto (2003) suggested that a conservation coding of 2VC- is more appropriate for *B.serrulata* than the current coding of 2RC- , as applied by Briggs & Leigh (1996). This species is probably now locally extinct in the Ryde district, assuming that it did once occur in Ryde's bushland.

Caladenia tentaculata *(Orchidaceae)* (Arachnorchis tentaculata) (Greencomb Spider Orchid)
This orchid was collected at Gladesville by Fletcher in Sept.1885 (Rupp 1969,p.60; Ryde City Council 1995-96) and there is also another old record for the same locality (L.McDougall & D.Benson pers. comm.). *C.tentaculata* is now probably locally extinct, yet another likely casualty of the broad scale destruction of Ryde's Parramatta River bushland. Another local pressure on this species would probably have been its attractiveness to orchid collectors (Kubiak 1996c). *C.tentaculata* was probably a rare species in the Ryde district and in the Sydney region prior to European settlement. This species is probably now extinct in the Sydney area (Bishop 1996).

Caleana minor *(Orchidaceae)* (Small Duck Orchid)
This species was collected by Deane at Gladesville in Nov., 1884 (Rupp 1969; Ryde City Council 1995-96). This orchid is uncommon in the Sydney district (Robinson 1991) and also uncommon elsewhere in New South Wales and Victoria (Bishop 1996). *Caleana minor* is probably now locally extinct in the Ryde district. This species was probably not locally common prior to European settlement. Habitat destruction probably accounted for its apparent disappearance from the Gladesville area. There is a slight possibility that *C.minor* might still be found in some of Ryde's remnant bushland, as this appears to be a somewhat cryptic species.

Calystegia sepium *(Convolvulaceae)*
This plant has been recorded from Buffalo Creek at Field of Mars Reserve, Ryde. Benson & McDougall (1995) noted that this species appears to be rare and inadequately reserved in the Sydney area. *C.sepium* is considered to be vulnerable and a species of particular conservation significance in western Sydney (James et al. 1999).

Diuris punctata *(Orchidaceae)* (Purple Donkey Orchid)
D.punctata was collected by Fletcher at Ryde in Sept., 1886 (Rupp 1969; Ryde City Council 1995-96). This species is uncommon to rare in the Sydney district (Robinson 1991) and is considered to be vulnerable in western Sydney (James et al. 1999). This is a showy orchid and probably would have been attractive to collectors, making it vulnerable to depletion through over-collection. This stress would have been added to the pressure of habitat destruction. *D.punctata* is probably now locally extinct in the Ryde district.

Eucalyptus acmenoides *(Myrtaceae)* (White Mahogany)
This tree species has been recorded locally from Brush Farm Park,Eastwood (Fox & Rawling 1990; Benson & McDougall 1998); Darvall Park,Denistone (Coveny 1978-79; Benson & Howell 1990; Fox & Rawling 1990) and at Maze Park, West Ryde (Benson & Howell 1994, p.699). *E.acmenoides* is now rare in the Sydney region, due to the clearing of shale forests (Benson & McDougall 1998). This species is rare in the Ryde district, but may once have been more locally common, prior to the widespread destruction of most of Ryde's native vegetation occurring on shale-based soils. *E.acmenoides* can be considered to be threatened in the Ryde district.

Glossogyne tannensis *(Asteraceae)* (Cobbler's Tack)
This daisy was collected in Ryde in 1884 (L.McDougall & D.Benson pers. comm.). This species is considered to be vulnerable and of particular conservation significance in western Sydney (James et al. 1999), but may be more common elsewhere in N.S.W. (Harden 1992). In the Sydney region, *G.tannensis* seems to be confined largely to western Sydney, the Capertee and Shoalhaven areas (Benson & McDougall 1994). This species is probably now locally extinct in the Ryde district, probably as a result of the destruction of the local forests growing on shale.

Gompholobium pinnatum *(Fabaceae)* (Pinnate Wedge Pea)
This species is locally quite rare in the Ryde district, occurring in Field of Mars Reserve. In the Sydney region, *G.pinnatum* is apparently rare (Benson & McDougall 1996), whilst this species is considered to be vulnerable in western Sydney (James et al. 1999). This pea species was recorded in Lane Cove National Park by Clarke & Benson (1987), but it is likely to be rare there. Pinnate Wedge Pea is also a rare plant in the remnant bushland of northern Sydney. This species can be regarded as vulnerable in the Ryde district. The local conservation of *G.pinnatum* will largely depend upon keeping its habitat in Field of Mars Reserve free of weeds and disturbance.

Gompholobium uncinatum *(Fabaceae)* (Red Wedge Pea)
This species was recorded in Field of Mars Reserve by C.Gibson in 1989 (L.McDougall & D.Benson pers. comm.). This is a very unusual species for the bushland of northern Sydney. *G.uncinatum* typically occurs in the upper Blue Mountains in the Sydney region, but it has also been recorded from St Marys and Ryde (Benson & McDougall 1996).

Grevillea sphacelata *(Proteaceae)*
This species was collected from Gladesville in 1914 (L.McDougall & D.Benson pers. comm.). The occurrence of this shrub at Gladesville is noteworthy because this species is known mainly from the Woronora Plateau, in the Sydney region (Benson & McDougall 2000). *G.sphacelata* may now be locally extinct in the Ryde district.

Lythrum hyssopifolia *(Lythraceae)* (Hyssop Loosestrife)
This herb has been recorded for Darvall Park, Denistone (Coveny 1978-79) and at Glades Bay Park (Fox & Rawling 1990). Thomas & Assoc. (1996) recognized this as a significant plant species for the Denistone catchment. This species is regarded as vulnerable in western Sydney (James et al. 1999). According to Benson & McDougall (1997), *L.hyssopifolia* is becoming rare in the Sydney district due to habitat destruction.

Petrophile sessilis *(Proteaceae)*
This species was collected from Gladesville in 1914, where it was said to occur in "dry stony places" (L.McDougall & D.Benson pers. comm.). *P.sessilis* tends to occur in the southern parts of the Sydney region (Benson & McDougall 2000) and is considered to be vulnerable in western Sydney (James et al. 1999). This species is probably now extinct in the Ryde district. *P.sessilis* may well have been rare in the Ryde district prior to European settlement and the cause of its likely local extinction would probably have been the destruction of its habitat. Clarke & Benson (1987) reported *P.sessilis* from Lane Cove National Park, but if this species does still survive there it is likely to be extremely rare.

Prostanthera howelliae *(Lamiaceae)*
This species is extremely rare in the Ryde district and in the northern suburbs of Sydney. In 1979, *P.howelliae* was found in bushland north of Kittys Creek, but this tiny population has not been seen since. There are also a few plants in remnant bushland in Lane Cove National Park, but this population has been threatened by park development in the past and plants in the adjoining cemetery have had their habitat all but destroyed in recent years. *P.howelliae* can be considered to be an endangered plant in the Ryde district and in the northern suburbs of Sydney. This species was recorded from Hunters Hill in 1898 and Lane Cove in 1927 (Benson & McDougall 1997), but these populations are probably now gone. According to Robinson (1991) *,P.howelliae* has also been recorded from the Lane Cove River area near Gordon. This species may now be locally extinct there. *P.howelliae* may have been fairly rare in the Ryde district prior to European settlement, but its current extreme local rarity is probably attributable to the destruction of local bushland, particularly on soils transitional between shale and sandstone. Benson & McDougall (1997) state that *Prostanthera howelliae* is rare in the Sydney region and is probably not adequately conserved in this region. *P.howelliae* is listed under the NSW TSC Act as an example of a species which may become threatened by the continuation of bushrock removal (as a key threatening process).

Pterostylis reflexa *(Orchidaceae)* (Dainty Greenhood)
This orchid was collected by Deane in Gladesville in May, 1885 (Rupp 1969; Ryde City Council 1995-96). *P.reflexa* is probably now extinct in the Ryde district. Its likely disappearance from Gladesville is probably a consequence of the clearing of most of that suburb's bushland. According to Robinson (1991), this species usually does not occur near the coast in the Sydney district. *P.reflexa* is considered to be vulnerable and of particular conservation significance in western Sydney (James et al. 1999). This species is unusual for the northern suburbs of Sydney and may have been uncommon to rare in the Ryde district prior to European settlement.

Pultenaea mollis *(Fabaceae)* (formerly *P.viscosa*)
P.mollis is quite rare in the Ryde district. This species occurs in Field of Mars Reserve and Lane Cove National Park, North Ryde. The Lane Cove N.P. population is apparently larger than the one in Field of Mars Reserve, but both of these populations appear to be quite small and localized. This pea has also been collected from Marsfield (Benson & McDougall 1996).This species may have been fairly uncommon in the Ryde district before European settlement. *P.*mollis is considered to be vulnerable and of particular local significance in western Sydney (James et al. 1999). Apparently, this species is uncommon in the Sydney district (Fairley & Moore 1989; Robinson 1991). This shrub appears to be localized, but not common in the Sydney region (Benson & McDougall 1996). Weed invasion and track widening or construction may pose potential threats to this species in the Ryde district, in the future. *P.mollis* is probably relatively short-lived and so may appear to be absent in areas long unburnt, even though there may be seed stored in the soil (see observations by Klaphake, noted in Benson & McDougall 1996).

Pultenaea paleacea *(Fabaceae)*
This pea species is very rare in Ryde's remnant bushland. A small population survives in Field of Mars Reserve, Ryde. Populations of *P.paleacea* in suburban Sydney are considered to be vulnerable and inadequately conserved (Benson & McDougall 1996). According to Robinson (1991), this species was once scattered in Sydney's inner suburbs, but is now verging on local extinction in the immediate vicinity of Sydney. *P.paleacea* was recorded by C.Gibson at Field of Mars in 1989 (L.McDougall & D.Benson pers. comm.) and this appears to be the same record for Ryde noted in Benson & McDougall (1996). *P.paleacea* may have been less rare in the Ryde district prior to European settlement and any local decline of this species is likely to have resulted from the destruction of much of Ryde's bushland over the last several hundred years. The surviving population in Field of Mars Reserve may be threatened in the future by illegal track construction, illegal dumping, weed invasion and inappropriate fire regimes. *P.paleacea* may appear to be absent from its habitat if the area has not been burnt for a long time, even though the plant has survived as seed stored in the soil. Too frequent fire would be likely to threaten the survival of *P.paleacea* in Field of Mars Reserve.

Pultenaea scabra *var.* ***biloba*** *(Fabaceae)*
This shrub is very rare in the Ryde district. A few scattered plants survive in the Marsfield area and a tiny population was recorded on the edge of Lane Cove National Park at North Ryde. In NSW, this variety is largely restricted to western Sydney, where it is regarded as vulnerable and regionally significant and where many of the original populations have probably now been destroyed by development (James 1997; James et al. 1999). *P.scabra* var. *biloba* may have been fairly common in the Marsfield area before European settlement. Any local decline of this variety is likely to have been caused by clearing of much of the native vegetation on soils transitional between sandstone and shale. The surviving plants in Marsfield may be threatened by weed invasion and clearing of roadside remnant vegetation. The site at North Ryde may be threatened by further park development and weed infestation.

Scleranthus biflorus *(Caryophyllaceae)*
This herb was collected from Gladesville in 1904 (L.McDougall & D.Benson pers. comm.). This species is rare in the Sydney region (Benson & McDougall 1995). *S.biflorus* may now be locally extinct in the Ryde district.

Senecio quadridentatus *(Asteraceae)* ("Cotton Fire Daisy")
This daisy was collected from Denistone in 1978,where it was said to be scattered on shale (L.McDougall & D.Benson pers. comm.). R.Coveny (1978-79) recorded this species in his plant checklist for Darvall Park, Denistone. *S.quadridentatus* is considered to be vulnerable in western Sydney (James et al. 1999). Most of the recordings for this species in the Sydney region appear to be from western Sydney and the Blue Mountains to Bathurst areas (Benson & McDougall 1994).

Styphelia longifolia *(Epacridaceae)*
This shrub is uncommon to rare in the Ryde district. Locally, *S.longifolia* is widely scattered throughout the remnant sandstone bushland areas. It typically occurs in very small numbers, often as a single plant or a few plants growing together at an isolated site. The total number of plants occurring in Ryde's bushland at any one time would probably only amount to a few dozen. This species is considered to be rare in the Sydney region (Benson & McDougall 1995). Fairley (2004) considered *S.longifolia* to be rare and endangered over its rather limited range. This species is killed by high-intensity fire, probably making it vulnerable to local extinction if bushland is burnt too frequently (Benson & McDougall 1995; Fairley 2004). Locally, invasion of bushland by weeds is likely to pose an additional ongoing threat to this species. *S.longifolia* was probably quite rare in Ryde's bushland prior to European settlement. Even so, the clearing of large areas of Ryde's bushland has probably increased the local rarity of this species. *S.longifolia* was collected from Field of Mars, Ryde by J.J.Fletcher in 1887 (Fairley 2004).

Viola betonicifolia *(Violaceae)*
This herb was collected at Ryde in 1889 (L.McDougall & D.Benson pers. comm.). *V.betonicifolia* was previously more common in the Sydney area, but is now rare (Benson & McDougall 2001). This species is considered to be vulnerable in western Sydney (James et al. 1999). This herb has been recorded from Observatory Park, Pennant Hills (Lewis 2001) and Dalrymple Hay Nature Reserve (Rodgie & Hartnell 1985). *V.betonicifolia* is probably now locally extinct in the Ryde district. Its likely local demise presumably resulted from the widespread destruction of Ryde's forests growing on shale.

Zornia dyctiocarpa *(Fabaceae)* (Zornia)
This species was recorded by R.Coveny (1978-79) at Darvall Park, Denistone. Apparently, this herb was once common in western Sydney, but is becoming rarer as a result of habitat destruction (Benson & McDougall,1996). *Z.dyctiocarpa* is considered to be vulnerable in western Sydney (James et al. 1999). This species was flagged as a significant plant record in northern Pennant Hills Park,where it was noted in 1976 (Smith & Smith 1993). If this herb still survives in Ryde's bushland, it is probably extremely rare. Denistone may be the most easterly reliable recorded occurrence for *Z.dyctiocarpa* in the Sydney region.

Note*:* The *ROTAP* plant species *Lomandra brevis* was recorded by Clements et al.(2004) near Waterloo Road, Marsfield. This species was regarded as having particular conservation significance within the Sydney 1:100,000 map sheet area (Benson & Howell 1994, p.777; Clements et al. 2004, p.13).

TABLE 3:

Some Plants of Significance in the Context of Northern Sydney Bushland and Recorded in the Ryde District.

Species and Family	Current Local Status (Ryde)	Ryde Localities	Status in Nthn Sydney
Acacia longissima (Fabaceae)	Rare	Nth Ryde; Marsfield	Somewhat uncommon
Aphanopetalum resinosum (Cunoniaceae)	Very rare	Eastwood	Very rare
Astroloma humifusum (Epacridaceae)	Very rare	North Ryde	Rare
Astroloma pinifolium. (Epacridaceae)	Very rare	North Ryde	Very rare
Blechnum indicum (Blechnaceae)	Very rare	North Ryde	Rare
Boronia rigens (Rutaceae)	Possibly extinct	Marsfield	Rare
Brunoniella australis (Acanthaceae)	Very rare	Denistone	Rare
Caladenia caerulea (Orchidaceae)	Very rare	Ryde; Nth Ryde	Rare
Caladenia testacea (Orchidaceae)	Very rare	Ryde; Nth Ryde	Rare
Callistemon pinifolius (Myrtaceae)	Very rare	Ryde	Probably rare
Cassine australis (Celastraceae)	Very rare	Denistone	Very rare
Celastrus subspicata (Celastraceae)	Very rare	Eastwood	Very rare
Citriobatus pauciflorus (Pittosporaceae)	Very rare	Eastwood; Denistone	Very rare
Convolvulus erubescens (Convolvulaceae)	Very rare	Denistone; Ryde	Very rare
Corybas pruinosus (Orchidaceae)	Very rare	North Ryde	?Quite rare
Cryptocarya glaucescens (Lauraceae)	Very rare	Eastwood	Rare
Cyperus tetraphyllus (Cyperaceae)	Very rare	Eastwood; Denistone	Very rare
Diuris maculata (Orchidaceae)	Rare	Ryde; Nth Ryde	Probably rare

Species and Family	Current Local Status (Ryde)	Ryde Localities	Status in Nthn Sydney
Epaltes australis (Asteraceae)	Very rare	Ryde	Very rare
Guioa semiglauca (Sapindaceae)	Very rare	Eastwood	Rare
Gymnostachys anceps (Araceae)	Very rare	Denistone	Rare
Hibbertia diffusa (Dilleniaceae)	Very rare	North Ryde	Rare
Indigofera australis (Fabaceae)	Very rare	Denistone	Rare
Isolepis hookeriana (Cyperaceae)	Possibly extinct	Gladesville (1904)	?Very rare
Lasiopetalum parviflorum (Sterculiaceae)	Rare	Nth Ryde; Marsfield	Rare
Linum marginale (Linaceae)	Possibly extinct	Marsfield	Very rare
Lissanthe strigosa *subsp.* ***strigosa*** (Epacridaceae)	Very rare	Marsfield/Macquarie Park	Very rare
Melaleuca decora (Myrtaceae)	Rare	Ryde; Nth Ryde	Rare
Melicope micrococca (Rutaceae)	Very rare	Eastwood	Very rare
Muehlenbeckia gracillima (Polygonaceae)	Very rare	Eastwood; Denistone	Very rare
Olearia viscidula (Asteraceae)	Very rare	Ryde; Nth Ryde	Very rare
Plantago debilis (Plantaginaceae)	Very rare	Denistone	Rare
Prasophyllum brevilabre (Orchidaceae)	Rare	Ryde	Rare
Pterostylis daintreana (Orchidaceae)	Very rare	North Ryde	Very rare
Pterostylis parviflora (Orchidaceae)	?Extinct	Ryde (1941)	Rare
Pultenaea villosa (Fabaceae)	Uncommon	Ryde; Marsfield	Rare
Ranunculus plebeius (Ranunculaceae)	Very rare	Ryde	Very rare
Rhodamnia rubescens (Myrtaceae)	Very rare	Eastwood; Denistone	Rare

Species and Family	Current Local Status (Ryde)	Ryde Localities	Status in Nthn Sydney
Ripogonum album (Smilacaceae)	Very rare	Eastwood	Very rare
Rubus parvifolius (Rosaceae)	Very rare	Eastwood; Denistone	Rare
Rubus rosifolius (Rosaceae)	Very rare	Eastwood	Rare
Rulingia dasyphylla (Sterculiaceae)	Rare	Nth Ryde; Marsfield	Rare
Schoenus villosus (Cyperaceae)	Very rare	Nth Ryde	Rare
Spiranthes sinensis (Orchidaceae)	?Extinct	Gladesville (1905)	Rare
Thelionema caespitosum (Liliaceae *s.lat.*)	Rare	Nth Ryde	Very rare
Trachymene incisa (Apiaceae)	Quite rare	Ryde; Nth Ryde	Uncommon to rare
Triglochin procerum (Juncaginaceae)	?Extinct	Gladesville (1888)	Uncommon to rare
Wahlenbergia stricta (Campanulaceae)	Very rare	Ryde; Denistone	Rare

Notes on Some of Ryde's Bushland Plants Significant in the Context of Northern Sydney (i.e. plant species significant at a sub-regional level).

CODINGS: (VRD) = Vulnerable in the Ryde District.
(ERD) = Endangered in the Ryde District.
(?XRD) = Possibly extinct in the Ryde District.

Acacia longissima *(Fabaceae)* (Narrow-leaved Wattle) *(VRD)*

This wattle is rare in the Ryde district and somewhat uncommon in the northern suburbs of Sydney. Benson & McDougall (1996) noted that this species has been recorded in the past from localities in the Sydney region which are now suburban. Robinson (1991) stated that *A.longissima* is uncommon in the Sydney district, where it occurs mostly north of the harbour. This species is considered to be vulnerable in western Sydney (James et al. 1999). *A.longissima* has been recorded from Gladesville (Benson & McDougall 1996), but it may now be extinct there,as a result of habitat destruction. This wattle lives in gullies (Harden 1991) and this may make *A.longissima* vulnerable to displacement by the numerous weeds, which all too readily infest such habitats in suburban areas. This wattle may have been uncommon in the Ryde district prior to European settlement, but it has probably become locally rarer since. This species could be regarded as highly vulnerable in the Ryde district.

Aphanopetalum resinosum *(Cunoniaceae)* (Gum Vine) *(ERD)*

This climber is extremely rare in the Ryde district, occurring in remnant rainforest at Brush Farm Park, Eastwood. This species is also extremely rare in northern Sydney (e.g. see Broadbent & Buchanan 1984; plant species list in Benson & Howell 1994). *A.resinosum* is considered to be vulnerable in western Sydney (James et al. 1999). This vine is probably fairly common in the rainforests of the Royal National Park and the Illawarra (Fairley & Moore 1989; Robinson 1991). Locally, *A.resinosum* can be regarded as endangered in the Ryde district. Weed infestation is likely to pose the greatest immediate threat to this species at Brush Farm Park.

Astroloma humifusum *(Epacridaceae)* (Native Cranberry) *(ERD)*

This species is rare in the Ryde district and uncommon to rare in the northern suburbs of Sydney. Locally, *A.humifusum* has been recorded from remnant roadside bushland on Epping Road, near Herring Road, North Ryde(National Trust of Australia[NSW] 1993). One plant was also seen in Lane Cove National Park, North Ryde in 1988. *A.humifusum* is a rare plant in the catchment of the Lane Cove River. Martyn (1994) considered this species to be uncommon in the bushland of the upper Lane Cove valley. McLoughlin (1992) recorded that this species is rare in Lane Cove's remnant bushland. Benson & McDougall (1995) noted that this shrub often occurs on medium nutrient clay soils. It seems likely that this species may have been more common in the Ryde district before European settlement and that *A.humifusum* would have probably declined with the destruction of most of the local shale-based vegetation. This species is considered to be adequately conserved in western Sydney (James et al. 1999). *A.humifusum* can be regarded as endangered in the Ryde district.

Astroloma pinifolium *(Epacridaceae)* (Pine Heath) *(ERD)*

This species is extremely rare in the Ryde district and in the Lane Cove River area, where it occurs as a few scattered plants in the lower parts of the catchment. McLoughlin (1991) noted that this species is rare in the municipality of Lane Cove. This shrub is also rare in the northern suburbs of Sydney. *A.pinifolium* is considered to be uncommon in the Sydney district (Robinson 1991) and vulnerable in western Sydney (James et al. 1999). In Ryde's bushland, one plant was seen at Sugarloaf and several plants were observed near Kitty's Creek, North Ryde. Both of these sites are currently part of Lane Cove National Park. *Astroloma sp.* was also recorded from Field of Mars Reserve (McLoughlin 1993). This may have been *A.pinifolium*? It seems likely that *A.pinifolium* was quite rare in the Ryde district prior to European settlement. Even so, its potential local sandstone habitat has diminished over the past two centuries as a result of land clearing and ongoing weed invasion. *A.pinifolium* can be regarded as endangered in the Ryde district.

Blechnum indicum *(Blechnaceae)* (Swamp Water Fern) *(ERD)*

A small patch of this fern was observed at Fairyland, North Ryde (Lane Cove National Park) in 1994. This fern is generally rare in northern Sydney, though it is fairly abundant in a few swamps near Narrabeen Lagoon (e.g. this species has been recorded at Deep Creek: Benson & McDougall 1993). According to Robinson (1991),this species is now uncommon around Botany Bay, where it was formerly plentiful. *B.indicum* is considered to be vulnerable and of particular local conservation significance in western Sydney (James et al. 1999). It seems possible that this species may have occurred uncommonly at a limited number of sites along the lower Lane Cove River prior to European settlement,but that much of its potential local habitat may have been destroyed by landfilling. *B.indicum* can be regarded as endangered in the Ryde district.

Boronia rigens *(Rutaceae) (?XRD)*

Although this plant is not considered to be generally rare or threatened (Neish & Duretto 2000), *B.rigens* was very rare in Ryde's remnant bushland and is uncommon to rare in the bushland of northern Sydney. There was a tiny population of this shrub in bushland at Terry's Creek, Marsfield, but this site was destroyed for construction of the M2 Motorway (see Ryde City Council 1995-96, p.46). There are several tiny populations of *B.rigens* in the upper Lane Cove River area (e.g. Pennant Hills Park: see Hornsby Shire Council 2004). A very small population was recorded at Lindfield (Parker & Assoc. 1994). There are also a few tiny populations of this species near Belrose (see Benson & McDougall 2001). *B.rigens* has also been reported from Dural and Berrilee (Hornsby Shire Council 2004). This is regarded as a locally significant plant species in Ku-ring-gai Chase National Park (Thomas & Benson 1985). This species is considered to be vulnerable and of particular conservation significance in western Sydney (James et al. 1999) and is also regarded as significant in Hornsby's bushland (Hornsby Shire Council 2004). *B.rigens* may now be locally extinct in the Ryde district.

Brunoniella australis *(Acanthaceae)* (Blue Trumpet) *(ERD)*

This is a very rare plant in Ryde's bushland and is also rare in the northern suburbs of Sydney. Locally, this herb has been recorded from Darvall Park, Denistone(e.g. Coveny 1978-79) and Memorial Park, Meadowbank(Fox & Rawling 1990). This species is considered to be of significant conservation value in the Denistone catchment (Thomas & Assoc. 1996). It seems possible that this species may have been more common in the Ryde district prior to the destruction of most of the local shale forests. *B.australis* has also been recorded at the Edna May Hunt Reserve, Epping (Benson 1979) and at Observatory Park, Pennant Hills (Lewis 2001).

Caladenia caerulea *(Orchidaceae)* (Blue Caladenia) *(ERD)*

This orchid is locally very rare in the Ryde district and also rare in the bushland of northern Sydney. One plant was seen flowering in Field of Mars Reserve in the late 1980's and another one was observed in a bushland fragment in Lane Cove National Park, North Ryde in 1998. *C.caerulea* is considered to be vulnerable in western Sydney (James et al. 1999) and uncommon in the Sydney district (Robinson 1991). This species may have been more common in the Ryde district before European settlement, but much of its local potential habitat has been destroyed. *Caladenia caerulea* was collected by Rupp at Lane Cove in 1917 (Rupp 1969).

Caladenia testacea *(Orchidaceae)* (Honey Caladenia) *(ERD)*

This species is rare in the bushland of northern Sydney and very rare in the Ryde district. A tiny population of this orchid were observed in Field of Mars Reserve in 1993 and another in Lane Cove National Park, North Ryde in 1995. It seems quite likely that *C.testacea* was once more common in the bushland of Ryde, but may have declined locally due to habitat destruction. This orchid was collected from Gladesville in September,1885 by Fletcher (Rupp 1969),where it is now probably locally extinct. *C.testacea* is considered to be vulnerable and of particular conservation significance in western Sydney (James et al. 1999) and uncommon north of the harbour, in the Sydney district (Robinson 1991). *C.testacea* was also recorded in bushland at Lindfield (Parker & Assoc. 1994).

Callistemon pinifolius *(Myrtaceae)* (Pine-leaved Bottlebrush) *(VRD)*

This plant is rare in the northern suburbs of Sydney and in the bushland of the Ryde district. A small population survives in Field of Mars Reserve (see McLoughlin 1993). This species may also have occurred in Wicks Park, North Ryde, prior to the construction of the M2 Motorway. Locally, *C.pinifolius* mainly occurs in western Sydney, but there are some older records for Randwick, Long Bay and South Turramurra (Benson & McDougall 1998). Robinson (1991) considered this shrub to be uncommon in the Sydney district. It seems likely that this species was probably fairly rare in the Ryde district prior to European settlement. Even so, some local populations may have been destroyed without having been recorded.

Cassine australis *(Celastraceae)* (Red Olive Plum) *(VRD)*

This species is very rare in both the Ryde district and in the northern suburbs of Sydney. Locally, *C.australis* has been recorded from Brush Farm Park, Eastwood and Darvall Park, Denistone (e.g. see Coveny 1978-79; Thomas 1986). This plant is considered to be vulnerable in western Sydney (James et al. 1999). This species was recognized as a plant of significant conservation value in the Denistone catchment area by Thomas & Assoc. (1996). *C.australis* was probably quite rare in the Ryde district before European settlement, as suitable rainforest habitat would have been locally very limited in extent. The main threat to this species in the Ryde district is probably invasion of its habitat by weeds at Darvall Park and Brush Farm Park.

Celastrus subspicata *(Celastraceae) (ERD)*

This climber is extremely rare in the Ryde district and in northern Sydney's bushland. This species has been recorded at Brush Farm Park, Eastwood (e.g. see Broadbent & Buchanan 1984; Benson 1986). This plant was considered to be significant in the Denistone catchment, by Thomas & Assoc. (1996). *C.subspicata* was probably locally rare in the Ryde district prior to European settlement of the area. Weed infestation at Brush Farm Park is likely to pose the greatest local threat to this species.

Citriobatus pauciflorus *(Pittosporaceae)* (Orange Thorn) *(VRD)*

This species is quite rare in the northern suburbs of Sydney (e.g. see the plant species list in Benson & Howell 1994) and is regarded as vulnerable in western Sydney (James et al. 1999). Thomas and Assoc. (1996) considered this plant to be of particular conservation significance in the Denistone catchment area.This shrub is rare in the Ryde district, occurring at Brush Farm Park,Eastwood and Darvall Park, Denistone (e.g. Coveny 1978; Thomas 1986). Local conservation of this species will depend upon minimizing disturbance and ensuring effective weed control at these two localities. *C.pauciflorus* may have been somewhat more abundant in the Denistone and Eastwood areas prior to European settlement, than it is today.

Convolvulus erubescens *(Convolvulaceae) (VRD)*

This plant is rare in the northern suburbs of Sydney and in the Ryde district. Locally, this creeper has been recorded from Darvall Park, Denistone(e.g. see Coveny 1978-79), Burrows Park, Ryde and beside the Lane Cove River at Marsfield. *C.erubescens* is thought to be vulnerable in western Sydney (James et al. 1999). This species is considered to be uncommon in the Sydney district (Fairley & Moore 1989; Robinson 1991). This plant may have been uncommon, but more widely distributed on soils derived from shale in the Ryde district, before the clearing of most of these forests that accompanied the settlement of the area by Europeans.

Corybas pruinosus *(Orchidaceae)* (Toothed Helmet Orchid) *(VRD)*

This orchid is apparently quite rare in the northern suburbs of Sydney and is very rare in the Ryde district. A patch of *C.pruinosus* was found growing at Sugarloaf, in 1995. Robinson (1991) considered this species to be "moderately common north of the harbour". However, this orchid appears to be much less common in the immediate northern suburbs of Sydney than its relative, *Corybas aconitiflorus.* Rupp (1969) noted the following local collections of *Corybas pruinosus*:-

Ryde: June 1884 (collected by Deane)
Ryde: May 1887 (collected by Fletcher)
Lane Cove : May 1918 (collected by Rupp).

It seems quite likely that *Corybas pruinosus* may now be more rare in the Ryde district and in the Lane Cove River area, than it was in the past. Much of the potential local habitat for this orchid may have been cleared or invaded by weeds. This orchid was not found in a survey of Lane Cove's bushland (McLoughlin 1992) and has only been rarely recorded in the upper Lane Cove River area, at Pennant Hills Park (see Martyn 1994). The population at Sugarloaf occurred in an area affected by weeds (1995). This bushland is now part of Lane Cove National Park.

Cryptocarya glaucescens *(Lauraceae)*(Jackwood)*(ERD)*

This tree is very rare in the Ryde district and is also rare in the northern suburbs of Sydney (see Broadbent & Buchanan 1984; Benson 1986). This species is considered to be locally significant in Ku-ring-gai Chase National Park (Thomas & Benson 1985) and is regarded as vulnerable in the bushland of western Sydney (James et al. 1999). Weeds are likely to pose a threat to the local population at Brush Farm Park, Eastwood.

Cyperus tetraphyllus *(Cyperaceae) (VRD)*

This sedge is very rare in the Ryde district and in the northern suburbs of Sydney (e.g. see Brroadbent & Buchanan 1984). Locally, *C.tetraphyllus* has been recorded from Brush Farm Park,Eastwood (e.g. Coveny 1978) and Darvall Park, Denistone. This species is considered to be vulnerable and of particular conservation significance in western Sydney's bushland (James et al. 1999). This plant was also considered to have significant conservation value within the Denistone catchment (Thomas & Assoc. 1996). This sedge may have been quite rare in the Ryde district before European settlement, as it tends to be confined to rainforest (see Benson & McDougall 2002). Locally, this species is likely to be threatened by weeds invading its habitat.

Diuris maculata *(Orchidaceae)* (Spotted Doubletail,Leopard Orchid) *(VRD)*

This orchid is quite rare in the bushland of the Ryde district and the northern suburbs of Sydney. *D.maculata* is regarded as vulnerable in western Sydney (James et al. 1999). Locally, there are only a few small scattered populations surviving in the bushland of Ryde, e.g. at Field of Mars Reserve and Lane Cove National Park, North Ryde. This species was probably considerably more common in the Ryde area prior to European settlement. Much of the preferred habitat of this orchid has been cleared in the Ryde district.

Epaltes australis *(Asteraceae)* (Spreading Nut-heads) *(ERD)*

This inconspicuous herb appears to be very rare in the northern suburbs of Sydney and the bushland of the Ryde district. Locally, a few plants have been observed in one location at Field of Mars Reserve, Ryde. This population could be threatened by track widening in the future. This species is considered to be locally significant in Hornsby's bushland (Hornsby Shire Council 2004).

Guioa semiglauca *(Sapindaceae) (VRD)*

This species very is rare in the Ryde district and has been recorded locally in rainforest at Brush Farm Park, Eastwood (e.g. see Coveny 1978). This plant is also quite rare in the northern suburbs of Sydney (e.g. see Broadbent & Buchanan 1984; plant species list in Benson & Howell 1994). This is considered to be a locally significant plant species in Ku-ring-gai Chase National Park (Thomas and Benson 1985). *G.semiglauca* is regarded as vulnerable and of particular conservation significance in western Sydney (James et al. 1999).

Gymnostachys anceps *(Araceae)* (Settler's Flax) *(ERD)*

This plant is extremely rare in the Ryde district and quite rare in the bushland of northern Sydney. This species has been recorded from Darvall Park, Denistone (e.g. Coveny 1978-79). Thomas & Assoc. (1996) regarded this as a plant species having particular conservation significance within the Denistone catchment. Locally, *G.anceps* may be threatened by invading weeds and possibly also by streamside erosion. This species is thought to be vulnerable in western Sydney bushland (James et al. 1999).

Hibbertia diffusa *(Dilleniaceae) (ERD)*

This low-growing shrub is very rare in the Ryde district and is also rare in the northern suburbs of Sydney. Locally, *H.diffusa* has been seen in very small numbers at one location in Lane Cove National Park, North Ryde. This species was also recorded from Pennant Hills Park (Martyn 1994). It seems likely that *H.diffusa* may have declined in the Ryde district, due to the wholesale destruction of the local shale forests.

Indigofera australis *(Fabaceae) (ERD)*

This shrub is very rare in the Ryde district and also quite rare in the northern suburbs of Sydney. Locally, this species has been recorded from Darvall Park, Denistone (e.g. Coveny 1978-79). A few plants also occurred along Pittwater Road, North Ryde, prior to the construction of the M2 Motorway. It seems likely that *I.australis* was more common in the Ryde district before European settlement and that the reason for its probable local decline was the destruction of most of Ryde's shale forests. This species has also been recorded from Lane Cove (Benson & McDougall 1996), but was not noted there in a recent survey (McLoughlin 1992). This shrub also occurs at South Turramurra (see Martyn 1994),but it is a rare plant in the Lane Cove River area. This species is likely to be threatened by weeds invading its habitat at Darvall Park.

Isolepis hookeriana *(Cyperaceae) (?XRD)*

This sedge was collected at Gladesville in 1904 (L.McDougall & D.Benson pers. comm.). This plant may now be extinct in the Ryde district. There do not appear to be many records for this species in northern Sydney (e.g. see the plant species list in Benson & Howell 1994). *I.hookeriana* is regarded as vulnerable and of particular conservation significance in the bushland of western Sydney (James et al. 1999).

Lasiopetalum parviflorum *(Sterculiaceae) (VRD)*

This shrub is quite rare in the Ryde district and in the northern suburbs of Sydney. Locally, this species occurs in Wallumatta Nature Reserve, Lane Cove National Park at North Ryde and along Terrys Creek (e.g. at Lucknow Park and Pembroke Park). The local populations are not very large. It seems likely that *L.parviflorum* may have been more common in the Ryde district prior to the clearing of most of the area's shale forests. This species is categorized as vulnerable in the bushland of western Sydney (James et al. 1999).

Linum marginale *(Linaceae) (?XRD)*

This herb was seen in 1995 near Pioneer Park at Marsfield. This regenerating vegetation has since been cleared. *L.marginale* is considered to be vulnerable in western Sydney (James et al. 1999) and is a very rare plant in northern Sydney. This species is regarded as significant in the Hornsby district (Hornsby Shire Council 2004). Urban development has destroyed much of the habitat of this species in the Sydney region (Benson & McDougall 1997).

Lissanthe strigosa *subsp.* ***strigosa*** *(Epacridaceae)* (Peach Heath) *(ERD)*

This shrub is extremely rare in the Ryde district and in the northern suburbs of Sydney. A few plants have been recorded in the Marsfield area, in several tiny bushland remnants. This species has also been found in remnant bushland at Macquarie University (Benson 1989), where it is also very rare. This plant was probably once locally common in the Marsfield area, prior to European settlement. Its local decline was probably caused by the destruction of most of the shale-based vegetation and bushland growing on soils transitional between shale and sandstone ,in the Marsfield area. This species may once have been more widely distributed in the Ryde district. *L.strigosa* has been recorded at Wallumatta Nature Reserve (Benson & Keith 1984) and Pidding Park, Ryde (Fox & Rawling 1990). The surviving local tiny populations at Marsfield are threatened by weed infestation and rubbish dumping. Road widening could also pose a potential threat in the future.

Melaleuca decora *(Myrtaceae) (ERD)*

This species is very rare in the Ryde district, surviving as a few scattered plants, principally at Wallumatta Nature Reserve (e.g. see Benson & Keith 1984) and Field of Mars Reserve. One plant was seen at Delhi Park, Pittwater Road, North Ryde prior to the construction of the M2 Motorway. *M.decora* also appears to be rare in the northern suburbs of Sydney (e.g. see Benson & Howell 1994). This is probably yet another species that has declined locally, as a result of the widespread clearing of shale-based vegetation in the Ryde district. *M.decora* has also been recorded from Lane Cove (Benson & McDougall 1998), but was not noted there in a recent survey (McLoughlin 1992). The tiny surviving local populations can probably best be conserved by protecting their habitat from disturbance and weed invasion.

Melicope micrococca *(Rutaceae)* (Hairy-leaved Doughwood) *(VRD)*

This plant is very rare in the Ryde district, occurring at Brush Farm Park, Eastwood (e.g. see Coveny 1978; Benson & Howell 1990). This species is also very rare in the bushland of Sydney's northern suburbs (e.g. see Broadbent & Buchanan 1984; Benson 1986). This plant is regarded as vulnerable in western Sydney (James et al. 1999). *M.micrococca* was probably quite rare in the Ryde district prior to European settlement, due to the local rarity of rainforest. The greatest immediate threat to this species at Brush Farm Park is likely to be invasion of its habitat by weeds.

Muehlenbeckia gracillima *(Polygonaceae) (VRD)*

This climber is very rare in the Ryde district and in the northern suburbs of Sydney. Locally, this species has been recorded from Darvall Park, Denistone and Brush Farm Park,Eastwood. *M.gracillima* is considered to be uncommon in the Sydney district (Fairley & Moore 1989; Robinson 1991).

Olearia viscidula *(Asteraceae)* (Wallaby Daisy) *(VRD)*

This shrub is very rare in both the northern suburbs of Sydney and in the bushland of the Ryde district. Locally, this plant occurs as a few scattered individuals, e.g. at Sugarloaf, Field of Mars Reserve and near Fairyland. Thomas and Assoc. (1996) highlighted this as a plant species of significant conservation value in the Denistone catchment. This species is regarded as vulnerable in western Sydney bushland (James et al. 1999). This shrub is thought to be uncommon in the bushland of Lane Cove municipality (McLoughlin 1992). *O.viscidula* is regarded as having conservation significance in Hornsby's bushland (Hornsby Shire Council 2004).

Plantago debilis *(Plantaginaceae)(ERD)*

This herb is very rare in Ryde's bushland and also rare in the northern suburbs of Sydney. This species has been recorded from Darvall Park,Denistone (e.g. Coveny 1978-79; Thomas 1986). Thomas and Assoc. (1996) recognized this as a plant species of significant conservation value in the Denistone catchment. This herb is considered to be vulnerable in western Sydney (James et al. 1999). *P.debilis* is regarded as a significant plant species in Hornsby's bushland (Hornsby Shire Council 2004). Robinson (1991) considered this species to be "moderately common on the north shore" of Sydney, but this may be a questionable assessment. *P.debilis* may once have been more common in the Ryde district, but may have declined locally due to the clearing of most of the area's shale-based forests. This species is likely to be threatened by invasive weeds at Darvall Park.

Prasophyllum brevilabre *(Orchidaceae)* (Short-lipped Leek Orchid) *(VRD)*

This orchid is rare in the Ryde district and in the northern suburbs of Sydney. Fletcher collected this species at Ryde in August, 1885 (Rupp 1969). A fairly small and quite localized population still survives in Field of Mars Reserve, Ryde, where it is most evident after the area has been burnt. This population could potentially be threatened by weed invasion and disturbance (e.g. illegal clearing of tracks and dumping of rubbish). Robinson (1991) suggested that this species occurs mainly south of the harbour, in the Sydney district. *P.brevilabre* is considered to be significant in Hornsby's bushland, where it has been recorded at North Epping, flowering after fire (Hornsby Shire Council 2004).

Pterostylis daintreana *(Orchidaceae)(ERD)*

This orchid is very rare in Ryde's bushland and in the northern suburbs of Sydney. One plant was seen in Lane Cove National Park, North Ryde in 1988. James, McDougall & Benson (1999) considered this species to be vulnerable and of particular conservation significance in western Sydney bushland. *P.daintreana* has been recorded recently in the Deep Creek catchment section of Garigal National Park (Sheringham & Sanders 1993) and also at Lindfield (Parker & Assoc. 1994). This orchid is regarded as significant in Hornsby's bushland (Hornsby Shire Council 2004). This species may have been quite rare in the Ryde district prior to European settlement. Even so, its potential local habitat has been diminished by land clearing and weed invasion.

Pterostylis parviflora *(Orchidaceae) (?XRD)*

This orchid was collected by Messmer and Rupp in April, 1941 at Ryde (Rupp 1969). This species is rare in the northern suburbs of Sydney. *P.parviflora* is considered to be vulnerable and of particular conservation significance in western Sydney (James et al. 1999). This plant may now possibly be extinct in the Ryde district. However, this orchid is somewhat cryptic and difficult to detect (see Fairley & Moore 1989). Robinson (1991) considered this species to be uncommon in the Sydney district.

Pultenaea villosa *(Fabaceae)(VRD)*

This shrub is quite uncommon in the Ryde district and fairly rare in the bushland of northern Sydney. Locally, this species occurs at Field of Mars Reserve and in a few small bushland remnants at Marsfield. *P.villosa* is considered to be conserved in western Sydney (James et al. 1999),but may not be adequately conserved elsewhere in the Sydney region (Benson & McDougall 1996). It seems likely that this plant was more common in the Ryde district prior to European settlement and has probably declined due to the destruction of most of the district's shale forests. The Marsfield populations of *P.villosa* are likely to be threatened by weed invasion. A concerted program of weed removal has improved the prospects for conservation of the populations at Field of Mars Reserve and Stewart Park.

Ranunculus plebeius *(Ranunculaceae) (ERD)*

This herb is very rare in the bushland of the Ryde district and in the northern suburbs of Sydney. Locally, a few plants have been seen at Buffalo Creek in Field of Mars Reserve. A few individuals have also been observed in the upper Lane Cove River area (e.g. see Martyn 1994). This species is regarded as vulnerable in western Sydney (James et al. 1999). *R.plebeius* may have been quite rare in the Ryde district prior to European settlement. Even so, much of the potential local habitat for this species has been invaded by weeds, e.g. along Buffalo Creek. The maintenance of the tiny population at Field of Mars Reserve will involve continuing to keep the place where this species grows free of weeds.

Rhodamnia rubescens *(Myrtaceae)* (Scrub Turpentine) *(ERD)*

Locally, this species has been recorded at Brush Farm Park, Eastwood and Darvall Park, Denistone (e.g. see Coveny 1978; Coveny 1978-79). This plant is very rare in the Ryde district and also rare in the northern suburbs of Sydney. *R.rubescens* is considered to be vulnerable in western Sydney (James et al. 1999). This was recognized as a plant species of significant conservation value in the Denistone catchment (Thomas & Assoc. 1996). Weed infestation probably poses the single greatest immediate threat to this species at Darvall Park and Brush Farm Park.

Ripogonum album *(Smilacaceae)* (White Supplejack) *(ERD)*

This climber is extremely rare in the Ryde district and in the northern suburbs of Sydney. Locally, this plant has been recorded from Brush Farm Park at Eastwood, where it is rare and likely to be threatened by invading weeds. *R.album* is regarded as vulnerable and of particular significance in western Sydney (James et al. 1999).

Rubus parvifolius *(Rosaceae)* (Native Raspberry) *(ERD)*

This plant is very rare in the bushland of the Ryde district and quite rare in the northern suburbs of Sydney. A tiny population was seen at Pittwater Road, North Ryde prior to the construction of the M2 Motorway. This species has been observed at Darvall Park, Denistone and Brush Farm Park, Eastwood (e.g. Coveny 1978-79). Local conservation of *R.parvifolius* will largely depend upon ongoing bush regeneration efforts to control the weeds at Darvall Park and Brush Farm Park. *R.parvifolius* may once have been more common in Ryde's bushland, before the arrival of Europeans.

Rubus rosifolius *(Rosaceae)* (Rose-leaf Bramble) *(ERD)*

This shrub has been recorded from Brush Farm Park at Eastwood (e.g. Coveny 1978). This plant is rare in both the Ryde district and the northern suburbs of Sydney. *R.rosifolius* may have been rare in the Ryde district prior to European settlement. Even so, destruction of surrounding forests and weed invasion of Brush Farm Park has reduced, isolated and threatened the potential local habitat of this species. *R.rosifolius* was highlighted as a significant species in the Denistone catchment by Thomas & Assoc. (1996).

Rulingia dasyphylla *(Sterculiaceae)* (Kerrawang) *(VRD)*

This shrub is quite rare in the Ryde district and in the northern suburbs of Sydney. Locally, this species has been observed at two locations in Lane Cove National Park at North Ryde. One of these is by the riverside and has been affected by weeds. A few plants were also seen at lower Terrys Creek, Marsfield. Weed infestation is likely to pose the greatest immediate local threat to this species. Robinson (1991) considered *R.dasyphylla* to be uncommon in the Sydney district. This species is regarded as vulnerable in western Sydney (James et al. 1999).

Schoenus villosus *(Cyperaceae) (ERD)*

This sedge is apparently very rare in the Ryde district and also rare in the northern suburbs of Sydney. A few plants were seen at Fairyland, North Ryde in 1995. This species was recorded as being rare in the bushland of Lane Cove Municipality (McLoughlin 1992). *S.villosus* may have been rare in the Ryde district prior to European settlement.

Spiranthes sinensis *(Orchidaceae)* (Ladies' Tresses) *(?XRD)*

This orchid was collected by Flockton at Gladesville in April,1905 (Rupp 1969). This species is rare in the bushland of northern Sydney. *S.sinensis* may now be extinct in the Ryde district. The likely local demise of this orchid was probably due to the destruction of its habitat.

Thelionema caespitosum *(Liliaceae s.lat.) (VRD)*

This species is rare in the bushland of Lane Cove National Park at North Ryde and is also rare in northern Sydney's bushland. According to Robinson (1991), *T.caespitosum* is now rare in the Sydney district because most of its local range has been cleared for suburban development. This species is considered to be vulnerable in the bushland of western Sydney (James et al. 1999).

Trachymene incisa *subsp.* ***incisa*** *(Apiaceae) (VRD)*

This species is quite rare in the Ryde district and also in the bushland of northern Sydney. Robinson (1991) stated that *T.incisa* subsp. *incisa* is uncommon in the Sydney district. Locally, this plant occurs in small numbers at Field of Mars Reserve, Pidding Park and Wallumatta Nature Reserve. The population at Field of Mars Reserve has recently been damaged by illegal track widening.

Triglochin procerum *(Juncaginaceae)* (Water Ribbons) *(?XRD)*

This species was recorded from Gladesville in 1888 (L.McDougall & D.Benson pers. comm.). *T.procerum* may now be extinct in the Ryde district and this may be due to the destruction of wetlands along the Parramatta River. This species is quite uncommon in northern Sydney, where it may have declined due to wetland destruction.

Wahlenbergia stricta *(Campanulaceae)* (Tall Bluebell) *(ERD)*

This herb has been recorded locally in small numbers from Darvall Park, Denistone (e.g. see Coveny 1978-79) and at Field of Mars Reserve. This species is also rare in the northern suburbs of Sydney. This plant was recognized as a species of significant conservation value in the Denistone catchment (Thomas & Assoc. 1996). This species is considered to be vulnerable in western Sydney (James et al. 1999). Weed invasion may pose a threat to *W.stricta* in the Ryde district.

TABLE 4:

Some Locally Significant Plant Species Recorded in the Bushland of the Ryde District.

Species Family	Family	Ryde Localities	Current Local Status (Ryde)
Acrotriche divaricata	Epacridaceae	Marsfield	Rare
Angophora floribunda*	Myrtaceae	e.g. M/bank; Gladesville; Ryde	Not common
Arthropodium*	Liliaceae	Nth Ryde; Marsfield; Denistone	Uncommon
Austrodanthonia pilosa	Poaceae	Denistone (RC-DP)	?Rare
Austromyrtus tenuifolia	Myrtaceae	Ryde; Nth Ryde; Marsfield	Uncommon
Babingtonia densifolia*	Myrtaceae	North Ryde	Rare
Babingtonia pluriflora*	Myrtaceae	North Ryde (1979)	Very rare
Baeckea imbricata	Myrtaceae	North Ryde	Very rare
Bothriochloa macra*	Poaceae	Denistone (RC-DP)	? Rare
Brachycome angustifolia*	Asteraceae	North Ryde	Rare
Calochilus gracillimus*	Orchidaceae	Ryde; North Ryde	Uncommon-rare
Calystegia marginata*	Convolvulaceae	Denistone; N.Ryde; M/field	Rare
Cassinia denticulata	Asteraceae	North Ryde	Rare
Cassinia longifolia*	Asteraceae	North Ryde	Rare
Chorizandra cymbaria	Cyperaceae	North Ryde	Rare
Comesperma sphaerocarpum	Polygalaceae	Ryde; Nth Ryde; Marsfield	Uncommon
Comesperma volubile	Polygalaceae	Ryde; Nth Ryde	Rare
Conospermum ericifolium	Proteaceae	North Ryde	Rare
Cryptandra amara	Rhamnaceae	North Ryde	Rare
Cryptandra ericoides	Rhamnaceae	North Ryde	Rare
Cymbidium suave*	Orchidaceae	North Ryde	Very rare
Cyperus sanguinolentus*	Cyperaceae	Denistone (RC-DP)	?Rare
Desmodium rhytidophyllum*	Fabaceae	North Ryde; Marsfield	Uncommon
Dillwynia rudis	Fabaceae	North Ryde; Marsfield	Uncommon

Species Family	Family	Ryde Localities	Current Local Status (Ryde)
Diplazium australe*	Athyriaceae	North Ryde (1987) Denistone (RC-DP)	Very rare
Dipodium roseum	Orchidaceae	East Ryde; North Ryde	Uncommon
Diuris aurea	Orchidaceae	Ryde; North Ryde	Very rare
Epacris longiflora	Epacridaceae	North Ryde	Very rare
Eriochilus autumnalis	Orchidaceae	North Ryde	Rare
Eriochloa pseudoacrotricha*	Poaceae	Eastwood (RC-BFP)	?Rare
Eucalyptus paniculata	Myrtaceae	Denistone; N.Ryde; M/field	Not common
Eucalyptus punctata	Myrtaceae	Denistone; Ryde; Marsfield	Uncommon
Eucalyptus tereticornis*	Myrtaceae	Meadowbank	Rare
Eupomatia laurina*	Eupomatiaceae	Eastwood	Rare
Euryomyrtus ramosissima	Myrtaceae	North Ryde	Rare
Fimbristylis dichotoma	Cyperaceae	Ryde; North Ryde Denistone (RC-DP)	Rare
Galium binifolium*	Rubiaceae	North Ryde	Rare
Glossodia major	Orchidaceae	Ryde; North Ryde	Rare
Gompholobium grandiflorum	Fabaceae	Marsfield	Rare
Grevillea speciosa	Proteaceae	Marsfield	Rare
Hakea propinqua	Proteaceae	North Ryde	Rare
Helichrysum elatum	Asteraceae	North Ryde	Rare
Helichrysum scorpioides	Asteraceae	Ryde; Nth Ryde; Marsfield	Uncommon-rare
Hovea longifolia	Fabaceae	North Ryde	Rare
Hybanthus monopetalus	Violaceae	North Ryde	Rare
Hymenophyllum cupressiforme	Hymenophyllaceae	Ryde; North Ryde	Rare
Hypoxis hygrometrica*	Hypoxidaceae	Ryde; North Ryde	Very rare
Juncus remotiflorus	Juncaceae	North Ryde (B&M 2002)	Unknown
Leucopogon amplexicaulis	Epacridaceae	North Ryde	Very rare
Leucopogon appressus	Epacridaceae	North Ryde; Marsfield	Rare

Species Family	Family	Ryde Localities	Current Local Status (Ryde)
Leucopogon esquamatus	Epacridaceae	North Ryde; Marsfield	Rare
Leucopogon setiger	Epacridaceae	North Ryde	Rare
Lyperanthus suaveolens	Orchidaceae	North Ryde	Very rare
Melaleuca ericifolia*	Myrtaceae	Ryde; North Ryde	Rare
Melaleuca styphelioides	Myrtaceae	E/wood; Denistone; N.Ryde	Uncommon
Melaleuca thymifolia	Myrtaceae	Ryde; North Ryde	Quite rare
Melichrus procumbens	Epacridaceae	Ryde; North Ryde	Uncommon
Micromyrtus ciliata	Myrtaceae	North Ryde	Rare
Mirbelia speciosa*	Fabaceae	North Ryde	Very rare
Notodanthonia longifolia*	Poaceae	Denistone (RC-DP)	?Rare
Orthoceras strictum	Orchidaceae	North Ryde	Very rare
Passiflora herbertiana*	Passifloraceae	North Ryde; Denistone	Rare
Pelargonium inodorum*	Geraniaceae	Ryde; North Ryde	Uncommon
Platyscace ericoides	Apiaceae	North Ryde (1987)	Very rare
Polygonum plebeium*	Polygonaceae	Denistone (RC-DP)	?Rare
Poranthera corymbosa	Euphorbiaceae	North Ryde	Very rare
Prasophyllum elatum	Orchidaceae	North Ryde; Marsfield	Rare
Psychotria loniceroides*	Rubiaceae	Eastwood	Very rare
Pterostylis curta*	Orchidaceae	North Ryde	Very rare
Pterostylis erecta*	Orchidaceae	North Ryde	Very rare
Pterostylis grandiflora	Orchidaceae	North Ryde	Rare
Rhytidosporum procumbens	Pittosporaceae	North Ryde	Rare
Schelhammera undulata	Liliaceae(s.lat.)	North Ryde	Rare
Schizaea asperula*	Schizaeaceae	Ryde	Rare
Schizomeria ovata	Cunoniaceae	Eastwood; N.Ryde; Marsfield	Rare
Schoenus turbinatus*	Cyperaceae	North Ryde	Very rare
Stenocarpus salignus	Proteaceae	North Ryde	Rare
Styphelia triflora	Epacridaceae	Ryde; N.Ryde; Marsfield	Uncommon

Species Family	Family	Ryde Localities	Current Local Status (Ryde)
Styphelia tubiflora	Epacridaceae	Ryde; N.Ryde; Marsfield	Uncommon
Telopea speciosissima	Proteaceae	Ryde; North Ryde	Rare
Tricoryne elatior*	Liliaceae(s.lat.)	Meadowbank,Putney	Rare
Trochocarpa laurina	Epacridaceae	Eastwood; Denistone	Rare
Velleia lyrata*	Goodeniaceae	North Ryde; Marsfield	Uncommon
Vernonia cinerea*	Asteraceae	North Ryde	Very rare
Zieria laevigata	Rutaceae	North Ryde	Very rare

Notes

(RC-DP) = Plant species recorded by R.Coveny at Darvall Park, Denistone (1978-1979).

(RC-BFP) = Plant species recorded by R.Coveny at Brush Farm Park, Eastwood (1978).

(B&M 2002) = D.Benson & L.McDougall.(2002). "Ecology of Sydney plant species,Part 9:Monocotyledon Families Agavaceae to Juncaginaceae." *Cunninghamia,*7(4): p.911.

An asterisk(*) after the name of a plant species denotes that this species could also *possibly* be considered as significant in the northern suburbs of Sydney. This could require further research to resolve the local status of some of these species.

Some of the above listed species may have declined in the Ryde district since European settlement. For example, the tree species *Angophora floribunda, Eucalyptus paniculata* and *Eucalyptus punctata* have probably all experienced marked declines in the Ryde district, due to habitat destruction. The orchids *Diuris aurea* and *Pterostylis grandiflora* are probably also less common in the Ryde district than they were prior to European settlement.

Some of the plant species that are locally rare in the Ryde district are quite common in some other parts of northern Sydney's bushland, e.g. *Zieria laevigata.*

There appears to be no collection date for the species *Juncus remotiflorus* (L.McDougall & D.Benson pers.comm.).

APPENDIX 1:

Native Plants of the Ryde District – Species List.

Observations by P.J.Kubiak.

Pteridiophytes

Adiantaceae

Adiantum aethiopicum	C	
Adiantum hispidulum	S	(e.g. FL BFPE DP)

Aspleniaceae

Asplenium australasicum	(U)	FMR PC(g.e.?) FL FDS DBS TC(Luck.Pk.)
Asplenium flabellifolium	S	(e.g. FMR SL PC FDS BFPE Put.Pk.)

Athyriaceae

Diplazium australe	(R)	FDS (LCNP) (1987)

Blechnaceae

Blechnum ambiguum	S	(e.g. FMR PC FL FDS)
Blechnum cartilagineum	C	
Blechnum indicum	(R)	FL (LCNP) (1994)
Blechnum nudum	(R)	FDS (LCNP)
Doodia aspera	S	(e.g. WNR FDS BFPE Den.Pk. GB)
Doodia australis	(R)	FMR
Doodia caudata	S	(e.g. FMR PC KC FL FDS TC[e.g. Luck.Pk.] BFPE)

Cyatheaceae

Cyathea australis	C
Cyathea cooperi	(g.e.?) FMR FL FDS

Davalliaceae

Davallia solida var. pyxidata	(R)	FL FDS

Dennstaedtiaceae

Histiopteris incisa	S
Hypolepis muelleri	S
Pteridium esculentum	C

Dicksoniaceae

Calochlaena dubia	C

Gleicheniaceae

Gleichenia dicarpa	C	
Gleichenia microphylla	S	(upper KC FMR PC FL)
Gleichenia rupestris	S	(SL PC FL DBS)
Sticherus flabellatus	S	(e.g. FMR PC KC FDS FL)

Hymenophyllaceae

Hymenophyllum cupressiforme	(R)	FMR PC FDS

Lindsaeaceae

Lindsaea linearis	C	
Lindsaea microphylla	C	

Lycopodiaceae

Lycopodiella lateralis	(R)	FL (LCNP)

Osmundaceae

Todea barbara	S	

Polypodiaceae

Platycerium bifurcatum	S	(SL FMR Bur.Pk. KC PC FL FDS DBS TC[Luck.Pk.] BFPE)
Pyrrosia rupestris	(U)	FMR KC(Portius Pk.) PC BFPE

Psilotaceae

Psilotum nudum	(R)	FMR PC FL

Pteridiaceae

Pteris tremula	(U)	FMR Pid.Pk. DP BFPE

Schizaeaceae

Schizaea asperula	(R)	FMR
Schizaea bifida *(s.str.)*	S	
Schizaea rupestris	(R)	DBS (LCNP)

Sinopteridaceae

Cheilanthes distans	(R)	SL FMR FDS
Cheilanthes sieberi	C	
Pellaea falcata	S	(FMR PC KC WNR FDS TC[Luck.Pk.,Pemb.Pk.] DBS BFPE)

Thelypteridaceae

Christella dentata	S	

Gymnosperms

Podocarpaceae

Podocarpus spinulosus	S	(FMR PC FDS FL)

Zamiaceae

Macrozamia communis	(R)	FL (LCNP) (Possibly planted.)

Angiosperms – Dicotyledons

Acanthaceae

Brunoniella australis	(R)	DP
Brunoniella pumilio	S	(SL FMR KC PC WNR FDS Tas.Pl. TC DBS)
Pseuderanthemum variabile	C	

Aizoaceae

Tetragonia tetragonioides	S	(e.g. SL FMR KC PC FL Mem.Pk. Benn.Pk. GB)

Amaranthaceae

Alternanthera denticulata	FMR FL FDS DP	

Apiaceae

Actinotus helianthi	C	
Actinotus minor	C	
Apium prostratum	(U)	SL KC PC FL
Centella asiatica	S	
Hydrocotyle peduncularis	C	
Hydrocotyle tripartita	(R)	FDS (LCNP) (1994)
Platysace ericoides	(R)	WNR (1987)
Platysace lanceolata	C	
Platysace linearifolia	C	
Trachymene incisa subsp. incisa	(R)	FMR Pid.Pk. WNR
Xanthosia pilosa	C	
Xanthosia tridentata	C	

Apocynaceae

Parsonsia straminea	(U)	FMR KC FDS

Araliaceae

Astrotricha latifolia	(R)	FDS DBS (LCNP)
Astrotricha longifolia	S	
Polyscias sambucifolia	C	

Asclepiadaceae

Marsdenia suaveolens	S	
Tylophora barbata	S	(FMR Bur.Pk. FDS DP BFPE SP)

Asteraceae

Brachycome angustifolia var. angustifolia	(R)	WNR Bund.Res. FDS
Cassinia aculeata	(U)	SL FMR Pid.Pk. WNR FDS
Cassinia denticulata	(R)	KC DBS
Cassinia longifolia	(R)	KC PC FL ?FDS
Cotula australis	(R)	FDS (LCNP)
Epaltes australis	(R)	FMR (1993 & 2004)
Euchiton gymnocephalus	(R)	FMR FL
Helichrysum elatum	(R)	FDS DBS (LCNP)
Helichrysum rutidolepis	(R)	DBS (LCNP) (1994)
Helichrysum scorpioides	(U-R)	FMR WNR FDS Mar.Pk.
Lagenifera gracilis		FMR? WNR? KC? FDS DBS
Lagenifera ?stipitata		
Olearia microphylla		S
Olearia viscidula	(R)	SL FMR FL
Ozothamnus adnatus		(R)FMR (1994) (one plant, 40cm tall, not flowering)
Ozothamnus diosmifolius		C
Pseudognaphalium luteoalbum	(U)	FL FDS (LCNP)
Senecio hispidulus var. hispidulus		FMR WNR FL FDS DP
Senecio minimus	(R)	FDS (LCNP)
Sigesbeckia orientalis		S
Vernonia cinerea	(R)	WNR

Baueraceae

Bauera rubioides		S

Bignoniaceae

Pandorea pandorana		C

Campanulaceae

Wahlenbergia communis *(s.lat.)*		FMR FDS
Wahlenbergia gracilis		C
Wahlenbergia stricta	(R)	DP FMR

Casuarinaceae

Allocasuarina distyla	(R)	FDS (LCNP)
Allocasuarina littoralis		C
Allocasuarina torulosa		S (e.g. FMR WNR PC FDS Tas.Pl. Mar.Pk. SP)
Casuarina glauca		C

Celastraceae

Cassine australis	(R)	BFPE DP
Celastrus subspicata	(R)	BFPE
Maytenus silvestris	(U)	Delhi Rd.,Nth Ryde; BFPE DP Den.Pk.; lower TC

Chenopodiaceae

Einadia hastata	S	(FMR WNR Bur.Pk. DP SP)
Sarcocornia quinqueflora	S	(SL FMR KC PC FL Melrose Park GB) (apparently declining)
Suaeda australis	(U)	SL KC FL Melrose Park Mem.Pk. Benn.Pk. GB

Clusiaceae

Hypericum gramineum	S	

Convolvulaceae

Calystegia marginata	(R)	DP FDS DBS TC(Luck.Pk.)
Calystegia sepium	(R?)	FMR
Convolvulus erubescens	(R)	Bur.Pk. DP DBS ; Mem.Pk.(?planted?)
Dichondra repens *(s.lat.)*	S	
Polymeria calycina		FMR WNR KC FL Bund.Res. FDS MU
Wilsonia backhousei	(R)	near Lancaster Ave.,Melrose Park.

Crassulaceae

Crassula sieberiana	(R)	FL FDS (LCNP)

Cunoniaceae

Aphanopetalum resinosum	(R)	BFPE
Callicoma serratifolia	C	
Ceratopetalum apetalum	S	
Ceratopetalum gummiferum	C	
Schizomeria ovata	(R)	FDS TC(Luck.Pk.) BFPE

Dilleniaceae

Hibbertia aspera	C	
Hibbertia bracteata		FDS DBS (LCNP) TC(Luck.Pk.)
Hibbertia dentata	S	
Hibbertia diffusa	(R)	FDS (LCNP)
Hibbertia fasciculata	S	
Hibbertia linearis	C	
Hibbertia riparia *(s.lat.)*	(U)	FMR WNR FDS WP Tas.Pl.
Hibbertia scandens	(R)	SL BFPE Den.Pk.

Droseraceae

Drosera auriculata	C	
Drosera peltata	C	
Drosera spatulata	S	(WNR KC PC FL FDS)

Elaeocarpaceae

Elaeocarpus reticulatus	C	(white flowered)

Epacridaceae

Acrotriche divaricata	(R) TC(Pemb.Pk.)
Astroloma humifusum	(R) FDS (LCNP) (1988)
Astroloma pinifolium	(R) SL KC FDS (LCNP)
Brachyloma daphnoides	S
Dracophyllum secundum	(U) FMR FL FDS
Epacris longiflora	(R) FL (LCNP)
Epacris microphylla	S
Epacris pulchella	C
Epacris purpurascens var. purpurascens	S (WNR FMR PC(1979) Myall Res. FDS; Tas.Pl.-Cleared-M2; MU EBHS)
Leucopogon amplexicaulis	(R) DBS (LCNP)
Leucopogon appressus	(R) FDS(LCNP) TC(cleared- M2)
Leucopogon ericoides	S
Leucopogon esquamatus	(R) FDS(LCNP) TC(cleared- M2)
Leucopogon juniperinus	S
Leucopogon lanceolatus	S
Leucopogon microphyllus	C
Leucopogon setiger	(R) FDS DBS (LCNP)
Lissanthe strigosa subsp. strigosa	(R) MU EBHS Mar.Pk.(Vimiera Rd.) ; Nile Cl.(1994)
Melichrus procumbens	(U) FMR PC KC FDS DBS
Monotoca elliptica	S
Monotoca scoparia	C
Styphelia longifolia	(U-R) SL FMR KC PC FL FDS
Styphelia triflora	(U) SL FMR KC PC FDS DBS TC(Luck.Pk.)
Styphelia tubiflora	(U) FMR KC FDS DBS TC(Luck.Pk.)
Trochocarpa laurina	(R) BFPE DP
Woollsia pungens	C

Euphorbiaceae

Amperea xiphoclada	C
Breynia oblongifolia	C
Glochidion ferdinandi	C
Micrantheum ericoides	C
Omalanthus populifolius	S
Phyllanthus hirtellus	C
Poranthera corymbosa	(R) FL (LCNP) (1995)
Poranthera ericifolia	(U) SL FMR FL FDS DBS TC(e.g. Som.Pk.)
Poranthera microphylla	S
Ricinocarpos pinifolius	S

Eupomatiaceae

Eupomatia laurina	(R) BFPE

Fabaceae

Acacia binervata	(R) FDS (LCNP) (1988)
Acacia binervia	(R) Bur.Pk. DBS TC(Pemb.Pk.)
Acacia brownii	(U) FMR WNR FDS EBHS
Acacia decurrens	FDS
Acacia echinula	(R) FDS (LCNP)
Acacia elata	SL (planted) BFPE(?planted)
Acacia falcata	S (e.g. FMR WNR KC PC Tas.Pl. MU SP TC)
Acacia floribunda	SL FL FDS DBS
Acacia hispidula	(R) FDS (LCNP) (1988 & 1995)
Acacia implexa	(R) WNR ; Delhi Rd.,N.Ryde.
Acacia linifolia	C
Acacia longifolia subsp. longifolia	C
Acacia longissima	(R) PC FDS ; lower TC
Acacia myrtifolia	C
Acacia parramattensis	C
Acacia parvipinnula	FDS (LCNP) (1996)
Acacia schinoides	FL FDS DBS (mostly LCNP); Kittys Ck (Portius Pk.)(?planted?)
Acacia stricta	(U) WNR Bund.Res. FDS MU Mar.Pk. SP DP BFPE
Acacia suaveolens	C
Acacia terminalis	C
Acacia ulicifolia	C
Bossiaea heterophylla	C
Bossiaea obcordata	C
Bossiaea scolopendria	S
Daviesia ulicifolia	S (FMR WNR PC KC FDS Tas.Pl. MU SP EBHS Mar.Pk.)
Desmodium ?gunnii	S (WNR Bund.Res. FDS Mar.Pk. SP DP BFPE)
Desmodium rhytidophyllum	(U) WNR Myall Res. SP EBHS
Dillwynia retorta	C
Dillwynia rudis	(U) FDS DBS (LCNP) TC(Luck.Pk.)
Glycine clandestina	C
Glycine tabacina	S (e.g. FMR WNR FDS FL DBS BFPE)
Gompholobium glabratum	S
Gompholobium grandiflorum	(R) DBS (LCNP) (near Brown's Waterhole) ; TC(LCNP)
Gompholobium latifolium	S
Gompholobium pinnatum	(R) FMR
Hardenbergia violacea	C
Hovea linearis *(s.str.)*	S (?SL FMR ?WNR ?KC PC FDS ?DBS)
Hovea longifolia	(R) PC FL(LCNP)
Indigofera australis	(R) DP ; Pittwater Rd.,Nth Ryde(cleared - M2)
Kennedia rubicunda	C
Mirbelia rubiifolia	S (e.g. FMR WNR KC FL FDS)
Mirbelia speciosa subsp. speciosa	(R) FDS (LCNP) (1997)

Phyllota phylicoides	C
Platylobium formosum	C
Pultenaea daphnoides	C
Pultenaea flexilis	C
Pultenaea linophylla	FDS Tas.Pl. EBHS
Pultenaea mollis	(R) FMR(1993 & 2004) FDS
Pultenaea paleacea	(R) FMR
Pultenaea retusa	FMR WNR FDS Bund.Res. ?SP DBS
Pultenaea scabra var. biloba	(R) EBHS ; SP ; Mar.Pk. ; Plassey Rd.,N.Ryde(1993)
Pultenaea stipularis	C
Pultenaea tuberculata	C
Pultenaea villosa	(U) FMR MU DBS EBHS SP Mar.Pk.
Viminaria juncea	S

Geraniaceae

Geranium homeanum	S
Pelargonium inodorum	(U) FMR PC FL FDS

Goodeniaceae

Dampiera purpurea	(U) FDS DBS (LCNP)
Dampiera stricta	C
Goodenia bellidifolia	S
Goodenia hederacea	C
Goodenia heterophylla	S
Goodenia ovata	(U) FMR PC FL DP
Scaevola ramosissima	S
Velleia lyrata	(U) FL FDS TC(Luck.Pk.)

Haloragaceae

Gonocarpus micranthus subsp. micranthus	WNR FMR PC FL FDS
Gonocarpus tetragynus	?FMR WNR Bund.Res. FDS DP Mar.Pk.
Gonocarpus teucrioides	C

Lamiaceae

Hemigenia purpurea	(U?) KC FDS(LCNP)
Plectranthus parviflorus	(U) FMR FL FDS BFPE DP GB
Prostanthera howelliae	(R) KC(1979) ; FDS(remnant vegetation) (LCNP); Mac.Cem.
Prostanthera linearis	(R) DBS(Terrys Ck.)

Lauraceae

Cassytha glabella	S
Cassytha pubescens	C
Cryptocarya glaucescens	(R) BFPE

Linaceae

Linum marginale	(R) Near Pioneer Pk.,Balaclava Rd.,Marsfield.

Lobeliaceae

Lobelia alata	S	
Lobelia dentata	C	(flowers after fire)
Lobelia gracilis	C	
Pratia purpurascens	C	

Loganiaceae

Logania albiflora	S	
Mitrasacme polymorpha	C	

Loranthaceae

Amyema congener subsp. congener	FMR KC ?PC FDS	
Dendrophthoe vitellina	FMR SL KC	
Muellerina eucalyptoides	PC Delhi Rd. FDS Mar.Pk.	

Meliaceae

Melia azedarach	DP (g.e.?)	
Synoum glandulosum	(R)	BFPE

Menispermaceae

Sarcopetalum harveyanum	(U)	BFPE DP
Stephania japonica var. discolor	S	(FDS DBS BFPE DP Den.Pk. Put.Pk.)

Monimiaceae

Doryphora sassafras	?planted	BFPE
Hedycarya angustifolia	?planted	BFPE

Moraceae

Ficus coronata	(R)	BFPE
Ficus rubiginosa	S	(e.g. FMR KC PC FL FDS Put.Pk.)

Myrsinaceae

Aegiceras corniculatum	SL FMR KC FL FDS	
Rapanea variabilis (syn. Myrsine variabilis)	S	

Myrtaceae

Acmena smithii	(U)	Bur.Pk. BFPE DP
Angophora bakeri	S	
Angophora costata	C	
Angophora floribunda	S	(e.g. Mem.Pk. GB LGB Mac.Hosp. FDS)(not common)
Angophora hispida	FL FDS TC(e.g. Luck.Pk.) (rare in Ryde Council bushland).	
Austromyrtus tenuifolia	(U)	FMR FDS DBS TC
Babingtonia densifolia	(R)	SL FDS (LCNP)

Babingtonia pluriflora	(R)	FDS(1979) (LCNP)
Backhousia myrtifolia	S	(FDS BFPE DP Deni.Pk.)
Baeckea diosmifolia	S	(e.g. ?FMR ?KC FL FDS MU)
Baeckea imbricata	(R)	PC(1979) DBS
Baeckea linifolia	S	(FMR FL FDS) (not common)
Callistemon citrinus	(U)	FL FDS
Callistemon linearis	S	
Callistemon pinifolius	(R)	FMR ?WP
Callistemon salignus	(U)	DP BFPE Den.Pk. ; FMR(g.e.?)
Calytrix tetragona	S	(FMR KC FL FDS DBS)
Corymbia gummifera	C	
Darwinia biflora	(U)	FL FDS (mostly LCNP)
Darwinia fascicularis subsp. fascicularis	S	(FL FDS DBS) (LCNP)
Eucalyptus acmenoides	(R)	BFPE
Eucalyptus globoidea	S	(WNR KC ?Bund.Res. FDS ?MU)
Eucalyptus haemastoma	S	
Eucalyptus oblonga	FMR	
Eucalyptus paniculata	S	(e.g. WNR FL Bund.Res. FDS SP Mar.Pk. DP Den.Pk. Mem.Pk.)
Eucalyptus pilularis	S	
Eucalyptus piperita	C	
Eucalyptus punctata	(U)	FMR WNR Mac.Hosp. SP Den.Pk.
Eucalyptus racemosa	S	
Eucalyptus resinifera	S	
Eucalyptus saligna	S	
Eucalyptus tereticornis	(R)	Mem.Pk. Mead.Pk.
Euryomyrtus ramosissima	(R)	KC(1979)-cleared ; FDS (LCNP)
Kunzea ambigua	C	
Kunzea capitata	KC(1979)	FDS DBS
Leptospermum arachnoides	S	
Leptospermum parvifolium	(U)	FDS DBS (LCNP)
Leptospermum polygalifolium	C	
Leptospermum squarrosum	S	
Leptospermum trinervium	C	
Melaleuca deanei	(R)	FDS TC(Luck.Pk.)
Melaleuca decora	(R)	FMR WNR KC ; Delhi Pk.(cleared- M2)
Melaleuca ericifolia	(R)	FMR & just sth of Kittys Ck.
Melaleuca hypericifolia	(R)	FDS (LCNP) ; ?Brereton Pk.(g.e.?)
Melaleuca linariifolia	S	
Melaleuca nodosa	SL KC FMR FDS (not common)	
Melaleuca stypheliodes	(U)	WNR BFPE DP Den.Pk.
Melaleuca thymifolia	(U-R)	FMR WNR WP FDS MU
Micromyrtus ciliata	(R)	FDS (LCNP) (near Kobada Pk.)
Rhodamnia rubescens	(R)	BFPE DP
Syncarpia glomulifera	S	

Tristania neriifolia	(R)	DBS(1979) (LCNP)
Tristaniopsis collina	(U)	FMR PC KC(Portius Pk.) FDS TC ; DP(?planted)
Tristaniopsis laurina	C	

Olacaceae

Olax stricta	(U-R)	SL KC FL FDS DBS (LCNP)

Oleaceae

Notelaea longifolia	C	

Passifloraceae

Passiflora herbertiana	(R)	FDS DP Den.Pk.

Pittosporaceae

Billardiera scandens	C	
Bursaria spinosa	C	
Citriobatus pauciflorus	(R)	BFPE DP
Pittosporum revolutum	S	(FMR FL DBS TC[Luck.Pk.,Pemb.Pk.] BFPE DP Den.Pk.)
Pittosporum undulatum	C	
Rhytidosporum procumbens	(R)	FDS DBS (LCNP)

Plantaginaceae

Plantago debilis	(R)	DP

Polygalaceae

Comesperma ericinum	(U)	KC FDS TC(e.g.Luck.Pk.)
Comesperma sphaerocarpum	(U-R)	FMR WNR FDS TC(Luck.Pk.)
Comesperma volubile	(R)	FMR FDS

Polygonaceae

Muehlenbeckia gracillima	(R)	BFPE DP
Persicaria decipiens	FMR?PC FL FDS DP	
Persicaria subsessilis	FMR FL	
Rumex brownii	S	(e.g. FMR FL DP BFPE)

Primulaceae

Samolus repens	C	

Proteaceae

Banksia ericifolia	C	(common in LCNP, but less common in Ryde Council reserves)
Banksia integrifolia	(U)	(Bur.Pk. KC PC Put.Pk. GB)
Banksia marginata	FL FDS DBS (LCNP) (not common)	
Banksia oblongifolia	C	
Banksia serrata	C	
Banksia spinulosa	C	
Conospermum ericifolium	(R)	FDS (LCNP)

Conospermum longifolium subsp. longifolium	(U)	FDS(LCNP)
Grevillea buxifolia	C	
Grevillea linearifolia *(s.str.)*	C	
Grevillea sericea	C	
Grevillea speciosa	(R)	TC (Som.Pk.,Luck.Pk.); DBS(LCNP) (near Brown's Waterhole)
Hakea dactyloides *(s.str.)*	S	
Hakea gibbosa	(U)	FL FDS (LCNP)
Hakea laevipes	S	(e.g. FMR KC PC FL WP FDS MU TC[e.g. Luck.Pk.])
Hakea propinqua	(R)	FDS (LCNP)
Hakea salicifolia	S	
Hakea sericea	C	
Hakea teretifolia	S	(but uncommon in Ryde Council bushland)
Isopogon anemonifolius	S	
Isopogon anethifolius	(U)	SL KC FDS TC (mostly LCNP)
Lambertia formosa	C	
Lomatia myricoides	FDS	(LCNP)
Lomatia silaifolia	C	
Persoonia lanceolata	C	
Persoonia laurina	S	(e.g. WNR FMR KC FDS Tas.Pl. MU DBS)
Persoonia levis	C	
Persoonia linearis	C	
Persoonia pinifolia	S	(e.g. SL KC FDS MU DBS TC[Luck.Pk.,Pemb.Pk.] SP)
Petrophile pulchella	S	
Stenocarpus salignus	(R)	FDS DBS (LCNP)
Telopea speciosissima	(R)	FMR FDS (only a few plants)
Xylomelum pyriforme	S	(e.g. FMR KC PC FL FDS)

Ranunculaceae

Clematis aristata	C	
Clematis glycinoides	C	
Ranunculus plebeius	(R)	FMR(Buffalo Ck.)

Rhamnaceae

Cryptandra amara	(R)	SL FDS (LCNP)
Cryptandra ericoides	(R)	FL FDS (LCNP)
Pomaderris discolor	FMR FL FDS DBS	
Pomaderris ?elliptica	FMR FDS	
Pomaderris ferruginea	(?U) KC FDS DBS	
Pomaderris intermedia	SL FL FDS	
Pomaderris lanigera	(U)	FMR Pidding Pk. KC WNR

Rosaceae

Rubus parvifolius	(R)	BFPE DP ; Pittwater Rd.,N.Ryde(cleared-M2)
Rubus rosifolius	(R)	BFPE

Rubiaceae

Galium binifoium	(R)	SL WNR
Morinda jasminoides	S	
Opercularia aspera	C	
Opercularia varia	S	
Pomax umbellata	C	
Psychotria loniceroides	(R)	BFPE

Rutaceae

Boronia ledifolia	S	(e.g. SL FMR KC PC FL FDS)
Boronia pinnata	PC WP FDS TC(e.g. Luck.Pk.) (quite rare in Ryde Council bushland)	
Boronia polygalifolia	(R)	FMR(1993) FDS
Boronia rigens	(R)	Terrys Ck. (cleared – M2)
Correa reflexa var. reflexa	S	(e.g. SL FMR KC PC FL FDS DBS) (pale yellow flowered)
Leionema dentatum	S	(FMR FL FDS DBS) (rare in Ryde Council bushland)
Melicope micrococca	(R)	BFPE
Philotheca salsolifolia *(s.str.)*	(U)	FDS DBS
Zieria laevigata	(R)	FDS (LCNP) (1995)
Zieria pilosa	C	
Zieria smithii	C	

Santalaceae

Exocarpos cupressiformis	S	(e.g. SL FMR WNR KC FL FDS Tas.Pl. SP)
Leptomeria acida	S	(e.g. SL FMR KC PC FL FDS TC[Luck.Pk.])
Omphacomeria acerba	(R)	DBS (late 1980's)

Sapindaceae

Alectryon subcinereus	(R)	BFPE
Dodonaea triquetra	C	
Guioa semiglauca	(R)	BFPE

Scrophulariaceae

Veronica plebeia	C	

Solanaceae

Solanum aviculare	S	(FMR FL PC FDS BFPE DP) (some possibly planted- ?BFPE)
Solanum ?prinophyllum	(R)	DP

Stackhousiaceae

Stackhousia viminea	S	(e.g. PC FL FDS) (rare in Ryde Council reserves)

Sterculiaceae

Lasiopetalum ferrugineum var. ferrugineum	C	
Lasiopetalum parviflorum	(R)	WNR FDS TC(incl. Luck.Pk.& Pemb.Pk.)
Rulingia dasyphylla	(R)	FDS (LCNP); lower TC/DBS

Stylidiaceae

Stylidium graminifolium	S	(e.g. SL FMR KC WNR FDS Mar.Pk. MU TC[Luck.Pk.])
Stylidium lineare	(U)	PC FL FDS (LCNP)
Stylidium productum	S	(e.g. SL FMR FL FDS)

Thymelaeaceae

Pimelea curviflora var. curviflora	SL(1988) FMR PC(1999) FDS(1988,1995)
Pimelea linifolia	C

Tremandraceae

Tetratheca glandulosa	(R)	KC(cleared); FMR(late 1980's) ; TC(Luck.Pk. & LCNP)

Ulmaceae

Trema tomentosa var. viridis	BFPE DP Den.Pk. Ryde Hospital

Urticaceae

Urtica incisa	(R)	FDS (LCNP)

Verbenaceae

Avicennia marina var. australasica	C	
Clerodendrum tomentosum	(U)	KC BFPE DP TC

Violaceae

Hybanthus monopetalus	(R)	WNR FDS(LCNP)
Viola hederacea	C	

Vitaceae

Cayratia clematidea	Pidding Pk. BFPE DP Den.Pk. DBS Mem.Pk. Put.Pk.
Cissus antarctica	BFPE DP Ryde Hospital
Cissus hypoglauca	PC DP BFPE TC(e.g. Luck.Pk.)

Monocotyledons

Araceae

Gymnostachys anceps	(R)	DP

Arecaceae

Livistona australis	(R) BFPE (?planted) (may once have occurred naturally at BFPE)

Centrolepidaceae

Centrolepis strigosa	FMR KC PC FL TC(Luck.Pk.)

Commelinaceae

Commelina cyanea	S

Cyperaceae

Baumea juncea	S (e.g. SL FMR KC PC FL GB)
Carex inversa	S
Caustis flexuosa	C
Chorizandra cymbaria	(R) WP FDS
Cyathochaeta diandra	C
Cyperus polystachyos	just sth of Kittys Ck.
Cyperus tetraphyllus	(R) BFPE DP
Eleocharis gracilis	(R) FL (1994) (near Quebec Rd.)
Fimbristylis dichotoma	(R) FMR FDS
Gahnia clarkei	S (e.g. SL FMR WNR PC FL WP FDS)
Gahnia erythrocarpa	C
Gahnia melanocarpa	(U) SL FL KC DBS
Gahnia radula	(R) TC
Isolepis cernua	(R) ?SL ?FMR FL
Isolepis inundata	(R?) FL Bur.Pk.
Isolepis nodosa	(U) SL KC PC DBS Ki.Pt.Pk.
Lepidosperma filiforme	FMR FDS FL
Lepidosperma gunnii	S
Lepidosperma laterale	C
Lepidosperma neesii	S (e.g. FMR WNR PC FL FDS)
Lepidosperma urophorum	(U) SL FMR FDS
Ptilothrix deusta	C
?Schoenoplectus validus	(R) SL?
Schoenus apogon	S (e.g. SL FMR WNR PC FL FDS)
Schoenus brevifolius	(U) PC ?WNR DBS
Schoenus ericetorum	S
Schoenus imberbis	S?
Schoenus melanostachys	C
Schoenus moorei	FL FDS TC (LCNP)
Schoenus turbinatus	(R) FDS (1996) (LCNP)
Schoenus villosus	(R) FL (1995) (LCNP)
Tetraria capillaris	S (SL FMR WNR KC PC FL WP FDS)
Tricostularia pauciflora	(R) FDS (1996) (LCNP)

Haemodoraceae

Haemodorum corymbosum	(U) FMR ?KC FL FDS
Haemodorum planifolium	C

Hypoxidaceae

Hypoxis hygrometrica *(s.lat.)*	(R)	FMR(late 1980's) WNR KC(1979) FDS

Iridaceae

Patersonia glabrata	C	
Patersonia sericea	C	

Juncaceae

Juncus continuus	FDS	
Juncus kraussii	S	(saltmarsh)
Juncus planifolius	FMR?WNR FDS	

Juncaginaceae

Triglochin striata	(U)	SL FMR KC FL

Liliaceae *(s.lat.)*

Arthropodium milleflorum *(s.lat.)*	(U-R)	WNR ; Delhi Pk.(cleared-M2) ; SP Mar.Pk. DP
Blandfordia nobilis	S	(e.g. SL FMR KC PC FL FDS TC) (most evident after fire)
Burchardia umbellata	C	
Caesia parviflora	S	(e.g. FMR WNR PC FL FDS TC[Luck.Pk.])
Dianella caerulea	C	
Dianella prunina	SL FL FDS DBS (LCNP) TC(Luck.Pk.)	
Dianella revoluta	S	
Laxmannia gracilis *(s.str.)*	C	
Schelhammera undulata	(R)	FDS (LCNP)
Thelionema caespitosum	(R)	FDS (LCNP)
Thysanotus juncifolius	(U?)	PC WP ?FDS
Thysanotus tuberosus	C	
Tricoryne elatior	(R)	Mem.Pk. Ki.Pt.Pk.
Tricoryne simplex	C	

Lomandraceae

Lomandra cylindrica	S	
Lomandra filiformis subsp. filiformis	S	
Lomandra fluviatilis	(R)	DBS (LCNP)
Lomandra glauca	S	
Lomandra gracilis	S	
Lomandra longifolia	C	
Lomandra micrantha	S	(FMR WNR KC PC WP FDS Nile Cl.)
Lomandra multiflora	C	
Lomandra obliqua	C	

Luzuriagaceae

Eustrephus latifolius	C	

Orchidaceae

Acianthus caudatus var. caudatus	(U) FMR FL FDS
Acianthus fornicatus	C
Acianthus pusillus	FMR SL PC FL FDS
Caladenia caerulea	(R) FMR(late 1980's) FDS
Caladenia carnea	(U) SL FMR FL FDS
Caladenia catenata	C
Caladenia testacea	(R) FMR(1993) FDS(1995)
Caleana major	S (SL FMR KC PC FL FDS) (small populations)
Calochilus campestris	(U) FMR WNR FL FDS
Calochilus gracillimus	(U-R) FMR WNR FDS MU
Calochilus paludosus	S (SL FMR WNR KC PC FL FDS)
Calochilus robertsonii	C
Corybas aconitiflorus	(U) FMR PC WP FDS
Corybas pruinosus	(R) SL(1995) (LCNP)
Cryptostylis erecta	C
Cryptostylis subulata	S (SL FMR KC PC FL MU)
Cymbidium suave	(R) PC(1999) FDS
Dendrobium linguiforme	(U) SL FMR FL FDS DBS
Dipodium roseum	(U) SL KC FDS (LCNP)
Dipodium variegatum	C
Diuris aurea	(R) FMR(1985 & 2003) FDS(1995)
Diuris maculata	(R) FMR FDS
Eriochilus autumnalis	(R) FDS (LCNP)
Genoplesium fimbriatum	(U-R) SL FMR ?FL FDS
Genoplesium rufum	(U-R) SL FMR FDS
Genoplesium woollsii	(R) FDS (LCNP)
Glossodia major	(R) FMR FDS
Glossodia minor	FMR FL FDS DBS (a few populations)
Liparis reflexa	(R) FL(1996) (LCNP)
Lyperanthus suaveolens	(R) FDS(1994) (LCNP)
Microtis unifolia *(s.lat.)*	FMR KC PC FL FDS
Orthoceras strictum	(R) FDS(1996) (LCNP)
Prasophyllum brevilabre	(R) FMR ?FDS(1994)
Prasopyllum elatum	(R) FDS(1994) TC(cleared-M2)
Pterostylis acuminata	S (e.g. SL FMR PC FL WP FDS DBS)
Pterostylis concinna	S (SL FMR KC PC FL FDS)
Pterostylis curta	(R) SL(1995) (LCNP)
Pterostylis daintreana	(R) FDS(1988) (LCNP)
Pterostylis erecta	(R) SL(1995) (LCNP)
Pterostylis grandiflora	(R) PC(2 sites- 1979 & 1995)
Pterostylis longifolia	(U) FMR KC PC FL FDS (small populations)
Pterostylis nutans	C
Thelymitra ixioides var. ixioides	S (e.g. FMR KC PC FL FDS TC[Luck.Pk.])
Thelymitra pauciflora	(U-R) FMR(1993) FL(1994) FDS(1994)

Phylidraceae

Phylidrum lanuginosum	(R) FDS(1996) (LCNP)

Poaceae

Anisopogon avenaceus	C
Aristida ?calycina	?FMR ?BFPE
Aristida ramosa	?FMR KC FL FDS TC
Aristida vagans	C
Aristida warburgii	SL FMR KC PC FDS
Austrodanthonia fulva	FMR PC FL
Austrodanthonia ?pilosa	Bund.Res. Delhi Pk.
Austrodanthonia ?racemosa	FMR BFPE
Austrodanthonia tenuior	FL FDS TC
Austrostipa pubescens	C
Austrostipa ramosissima	?FDS(1994) DBS(1994) (LCNP) & ?Den.Pk.?
Austrostipa rudis subsp. nervosa	S
Austrostipa rudis subsp. rudis	Mar.Pk.
Cymbopogon refractus	S (e.g. FMR WNR Bund.Res. FDS Mar.Pk. DP)
Deyeuxia quadriseta	S
Dichelachne crinita	(U) FMR KC FL FDS
Dichelachne micrantha	FMR ?PC WNR FDS
Dichelachne parva	PC KC FL FDS
Dichelachne ?rara	FMR WNR Bund.Res.
Echinopogon caespitosus	C
Entolasia marginata	S
Entolasia stricta	C
Eragrostis brownii	?SL WNR BFPE
Hemarthria uncinata	(U) PC FDS DBS
Imperata cylindrica var. major	C
Lachnagrostis filiformis	S
Microlaena stipoides var. stipoides	C
Oplismenus aemulus	S
Oplismenus imbecilis	S
Panicum simile	S
Phragmites australis	FMR PC KC FL (large reedfield at Pages Ck.)
Poa affinis	PC Mar.Pk.
Sporobolus virginicus	S
Tetrarrhena juncea	SL FMR PC
Themeda australis	C

Restionaceae

Lepyrodia scariosa	C

Smilacaceae

Ripogonum album	(R) BFPE
Smilax australis	Bur.Pk. FL FDS BFPE DP Den.Pk.
Smilax glyciphylla	C

Typhaceae

Typha orientalis	?FMR KC PC ?FL

Xanthorrhoeaceae

Xanthorrhoea arborea	C
Xanthorrhoea media	C
Xanthorrhoea ?minor	FMR FDS
Xanthorrhoea resinifera	(U-R) FMR FDS ; Tas.Pl.(M2 corridor)

Xyridaceae

Xyris complanata	(R) FDS(1987) (LCNP)
Xyris gracilis subsp. gracilis	(R) FMR FL

NOTES

The above observations were recorded between the years 1979 and 2005.

SYMBOLS USED IN THE PLANT LIST.

C	Common in bushland of the Ryde district.
S	Scattered in Ryde's bushland
(U)	Apparently uncommon in bushland of the Ryde district
(R)	Apparently rare in Ryde's bushland
(U-R)	Apparently uncommon to rare in Ryde's bushland

(Note: The estimated abundance of each plant species was subjectively assessed, based on the author's field experience of Ryde's bushland.)

(g.e.)	garden escape.
?	Uncertain status, e.g. of uncertain identification or location
(s.str.)	sensu stricto (i.e. in a strict or narrow sense)
(s.lat.)	sensu lato (i.e. in a wide sense)

LOCATION SYMBOLS

LCNP	The **Ryde section** of **Lane Cove National Park**	
SL	**Sugarloaf**, Nth Ryde	(bounded by Pittwater Rd., Buffalo Ck. & Lane Cove River)
FMR	**Field of Mars Reserve**, Ryde	
Pid.Pk	**Pidding Park**, Ryde	(east of Pidding Road).
Bur.Pk	**Burrows Park**, Ryde	(Princes St./Clayton St.)
WNR	**Wallumatta Nature Reserve**, North Ryde	(Cressy Rd./ Twin Rd.)
Mac.Hosp.	**Macquarie Hospital Grounds**, North Ryde	
KC	**Kittys Creek area**	(bounded by Magdala Rd., Pittwater Rd.,Kittys Ck & L. Cove R.)
PC	**Pages Creek area**	(bounded by Epping Rd.,Pittwater Rd.,Magdala Rd & L. Cove R.)
FL	**Fairyland area**	(bounded by Epping Rd.,Delhi Rd.,Magdala Rd. & Lane Cove River)
Bund.Res.	**Bundara Reserve**, North Ryde	(Delhi Rd./ Epping Rd.)

WP	**Wicks Park**, North Ryde	(Wicks Rd./ M2 Motorway)
Mac.Cem.	**Macquarie Park Cemetery Grounds**	(Delhi Rd./ Plassey Rd., North Ryde)
FDS	**Fuller's Bridge to DeBurgh's Bridge**, along the southern (and western) bank of the Lane Cove River (includes Kobada Park area)	
Tas.Pl.	**Tasman Place**, Nth Ryde	
MU	**Macquarie University Grounds**, Nth Ryde	
DBS	**DeBurgh's Bridge to Brown's Waterhole**, along the southern bank of the Lane Cove River.	
TC	**Terrys Creek** (Ryde bushland along Terrys Creek).	
Pemb.Pk.	**Pembroke Park**, Marsfield	(Terrys Ck.).
Luck.Pk	**Lucknow Park**, Marsfield	(Terrys Ck.)
Som.Pk	**Somerset Park**, Marsfield	(Terrys Ck.)
Mar.Pk.	**Marsfield Park**, Marsfield	(Vimiera Rd./ Culloden Rd.)
SP	**Stewart Park**, Marsfield	(Epping Rd./ Vimiera Rd.).
EBHS	**Outside Epping Boy's High School**, Epping Rd., Marsfield	
Nile Cl.	**Nile Close**, Marsfield	
DP	**Darvall Park**, Denistone	(Chatham Road)
Den.Pk.	**Denistone Park**, Denistone	(Terry Rd./ Elston Ave.).
BFPE	**Brush Farm Park**, Eastwood	(Brush Rd./ Marsden Rd.)
Mead.Pk	**Meadowbank Park**, west of tennis courts and east of Adelaide Street.	
Mem.Pk.	**Memorial Park**, Meadowbank	
Benn.Pk.	**Bennelong Park**, Putney.	
Ki.Pt.Pk.	**Kissing Point Park**, Putney.	
Put.Pk.	**Putney Park**, Putney	(Pellisier Road)
GB	**Glades Bay Park**, Gladesville	
LGB	**Looking Glass Bay**, Gladesville	

APPENDIX 2:

Some Native Plant Species that may now be Locally Extinct in the Ryde District.

Species and Family	Collector	Ryde Locality	Date Collected
Boronia rigens (Rutaceae)	(pers.obs.)	Marsfield	(obs.) 1993
Boronia serrulata (Rutaceae)	Anon. note	?Tennyson	?1887 (noted)
Caladenia tentaculata. (Orchidaceae)	Fletcher	Gladesville	Sept 1885
Caleana minor (Orchidaceae)	Deane	Gladesville	Nov 1884
Diuris bracteata (Orchidaceae)	Deane	Gladesville	Before 1889
Diuris punctata (Orchidaceae)	Fletcher	Ryde	Sept 1886
Genoplesium baueri (Orchidaceae)	Deane	Gladesville	1884, 1885, 1887
Glossogyne tannensis (Asteraceae)		Ryde	1884
Grevillea sphacelata (Proteaceae)		Gladesville	1914
Isolepis hookeriana (Cyperaceae)		Gladesville	1904
Linum marginale (Linaceae)	(pers.obs.)	Marsfield	(obs.) 1995
Persoonia hirsuta (Proteaceae)	Welch	North Ryde	1923
Petrophile sessilis (Proteaceae)		Gladesville	1914
Pterostylis parviflora (Orchidaceae)	Messmer & Rupp	Ryde	April 1941
Pterostylis reflexa (Orchidaceae)	Deane	Gladesville	May 1885
Scleranthus biflorus (Caryophyllaceae)		Gladesville	1904

Species and Family	Collector	Ryde Locality	Date Collected
Spiranthes sinensis (Orchidaceae)	Flockton	Gladesville	April 1905
Triglochin procerum (Juncaginaceae)		Gladesville	1888
Viola betonicifolia (Violaceae)		Ryde	1889

The records for orchids were sourced largely from Rupp (1969). Most of the other records were provided by L.McDougall & D.Benson (pers.comm.). Two of the records were personal observations made by the author.

It should be noted that some of these species may still be present in the remnant bushland of the Ryde district. This could particularly apply to less conspicuous species, which could easily be overlooked, e.g. *Isolepis hookeriana.*

APPENDIX 3:

Some Plant Species of Particular Conservation Significance Recorded in Field of Mars Reserve, Ryde.

Species	Family	Significance	Notes
Boronia polygalifolia	Rutaceae	Regionally significant	Very rare in Reserve
Caladenia caerulea	Orchidaceae	Sig. nthn. Syd. subs.	Very rare in Reserve
Caladenia testacea	Orchidaceae	Sig. nthn. Syd. subs.	Very rare in Reserve
Calystegia sepium	Convolvulaceae	Regionally significant	Buffalo Creek
Callistemon pinifolius	Myrtaceae	Sig. nthn. Syd. subs.	Small population
Diuris maculata	Orchidaceae	Sig. nthn. Syd. subs.	Rare in Reserve
Epacris purpurascens var. purpurascens	Epacridaceae	Vulnerable (TSC Act)	Small population - 2 sites
Epaltes australis	Asteraceae	Sig. nthn. Syd. subs.	Very rare in Reserve
Gompholobium pinnatum	Fabaceae	Regionally significant	Small population
Gompholobium uncinatum	Fabaceae	Regionally significant	C.Gibson (1989)
Olearia viscidula	Asteraceae	Sig. nthn. Syd. subs.	Very rare in Reserve
Pimelea curviflora var. curviflora	Thymelaeaceae	Vulnerable (TSC Act)	Fairly abundant after fire
Prasophyllum brevilabre	Orchidaceae	Sig. nthn. Syd. subs	Small population
Pultenaea mollis	Fabaceae	Regionally significant	Rare in Reserve
Pultenaea paleacea	Fabaceae	Regionally significant	Small population - localised.
Pultenaea villosa	Fabaceae	Sig. nthn. Syd. subs	Small population
Ranunculus plebeius	Ranunculaceae	Sig. nthn. Syd. subs	Very rare in Reserve
Styphelia longifolia	Epacridaceae	Regionally significant	Rare in Reserve

Species	Family	Significance	Notes
Trachymene incisa	Apiaceae	Sig. nthn. Syd. subs.	Rare in Reserve
Wahlenbergia stricta	Campanulaceae	Sig. nthn. Syd. subs.	Very rare in Reserve

APPENDIX 4:

Some Orchid Species Recorded from Ryde Localities in H.M.R. Rupp's "The Orchids of New South Wales."

Species	Locality	Collector & Page No.	Date Collected
Acianthus exsertus	Gladesville	Deane (p.48)	May 1884
Caladenia Fitzgeraldii	Gladesville	Flockton (p.59)	Oct 1903
Caladenia tentaculata (as *C.dilatata)*	Gladesville	Fletcher (p.60)	Sept 1885
Caladenia testacea	Gladesville	Fletcher (p.67)	Sept 1885
Caleana minor	Gladesville	Deane (p.42)	Nov 1884
Corybas aconitiflorus	Ryde	Deane (p.74)	June 1884
Corybas pruinosus	Ryde	Deane (p.74)	June 1884
	Ryde	Fletcher (p.74)	May 1887
Diuris aurea	Ryde	R.C.Dixson (p.18)	Oct 1903
Diuris bracteata	Gladesville	Deane (p.16)	Before 1889
Diuris punctata	Ryde	Fletcher (p.12)	Sept 1886
Genoplesium baueri	Gladesville	Deane (p.31)	1884, 1885, 1887
Genoplesium rufum	Gladesville	Flockton (p.33)	July 1914
Prasophyllum brevilabre	Ryde	Fletcher (p.27)	Aug 1885
Pterostylis acuminata	Gladesville	Deane (p.85)	May 1884 & Feb 1887
Pterostylis grandiflora	Ryde	Deane (p.89)	May 1884
	Gladesville	Deane (p.89)	July 1884
Pterostylis parviflora	Ryde	Messmer & Rupp (p.94)	April 1941
Pterostylis reflexa	Gladesville	Deane (p.91)	May 1885
Spiranthes sinensis	Gladesville	Flockton(p.106)	April 1905

The source of these records is: *Rupp,H.M.R.(1969). "The Orchids of New South Wales." Facsimile Edition, Government Printer of New South Wales. (Originally issued: 1943).*

The dates for the collections of *Genoplesium baueri* were derived from NSW DEC (2004) and McDougall & Benson (pers. comm.).

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