

**Flora Survey**  
of the  
**AurionGold**  
**Natal Project**

**M24/708 and M24/796**

Conducted by  
**Ecotec (WA) Pty Ltd**  
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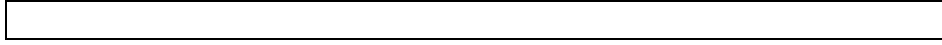
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## SUMMARY

This report details the results of a floristic survey of the Natal Project area, located approximately 20 kilometres southwest of the Paddington mill site and approximately 40 kilometres north of Kalgoorlie-Boulder.

The objectives of the survey were to compile a list of the floral species present and to determine the presence or potential location of any Priority plant species. This information will assist in planning the layout of the site and rehabilitation of disturbed areas on completion of mining.

A list of the flora species identified during this survey is provided as Appendix A. A total of 68 species from 18 families were recorded during the survey. The most abundant vascular plant families recorded were Chenopodiaceae (17 species), Myoporaceae (8 species), Myrtaceae (7 species) and Asteraceae (7 species). Eight species of *Eremophila* were located within the survey area and six main vegetation types were identified.

The only significant plant species located during the survey was Sandalwood (*Santalum spicatum*). As this plant is a “managed” species it may only be removed by a licensed person. Arrangements for salvage of Sandalwood to be disturbed by the mining operation should be made with the Kalgoorlie office of the Forest Products Commission well before any further activity takes place.

Numerous large temporary water courses pass through the project area with most being fed by runoff from the surface of the prominent hill, being the main landform feature of the Natal area.

Minimising further disturbance to the environment during the mining operation is highly recommended. This can be achieved by leaving as much vegetation intact as possible and allowing waterways to run their natural course. Large trees or very dense stands of vegetation should be avoided. Minimisation of disturbance will reduce the detrimental effects of the mining operation and ensure rapid revegetation when the project is decommissioned.

## 1. INTRODUCTION

This report presents the results of the flora survey of the Natal Project area conducted by Ecotec (WA) Pty Ltd on the 3rd of July 2002. The survey was completed by foot and vehicle traverse with data collection from 15 transects placed at various locations across the site.

The objectives of the survey were to establish an inventory of the vascular plant species present in the area and to determine the potential for any Priority plant species to be disturbed by the proposed mining operation.

Particular attention was paid to the following areas:

- The flora present in the area;
- The vegetation communities present and their distributions with relation to the mining activity;
- The degree of disturbance present and effect of future disturbance to floral and faunal composition of the survey site.

## 2. GEOLOGY, LANDFORM AND SOILS

The regional surface geology has been mapped on a broad scale by Kriewaldt (1969). The region is underlain by Archaean rocks that are highly modified. The north northwest to south southeast trending belts of metamorphic rocks (known locally as Greenstones) are the predominant regional feature. There are also intrusions of Proterozoic granite, but these are small and few (Dell, *et al.*, 1985). Laterisation occurred during the Cenozoic and the alluvial, colluvial and aeolian deposits have formed since then. These remain in patches as small rises and outcrops between the open flats often up to five metres above the surrounding areas (Dell, *et al.*, 1985).

Soils across the Goldfields are old, being Pre-Cambrian or Archaean in composition, and deeply weathered. Deep weathering in the soil profile has either partially or wholly removed large volumes of rock forming minerals to solution. Once in solution, these minerals have been transported in the groundwater systems and discharged into the many salt lakes typical of the region, or redeposited (Pringle *et al.*, 1994). Salt accumulation has further accentuated weathering of these soils. Consequently, there is a present regime dominated by hypersaline conditions along deep paleochannels. Soils in Australia are typically poor and the significant nutrients of nitrogen and phosphorous in inland semi-arid areas are much lower again when compared to the non-arid coastal areas.

Within the ten Landform units developed by Newbey and Milewski (Dell, *et al.*, 1985) two units best represent the Natal Project area. These units are described as “Breakaways (B)” and “Salt Lake Features (L)” and are defined as follows:

**“Breakaways (B):** Bluffs 3-4m high with a free face and scree slopes of 12-15<sup>0</sup> are formed in lateritic deposits, generally over deeply weathered granitic rocks. Breakaways occur particularly in the east-central parts of the [Kurnalpi-Kalgoorlie] Study Area and generally form the southwestern edge of Sandplains, associated with Granite Exposures. The soil is gritty loam of variable depth, limited to shallow pockets in exposures of duricrust, or soil sheets on scree slopes. Colluvial soil at the foot of the bluff is relatively deep and may be waterlogged by runoff from above during rain events.”

**“Salt Lake Features (L):** Salt lakes are flat-floored with ephemeral water up to 30cm after rain. Peripheral dunes, 1-4m high, occur mainly on the south eastern margins. Most salt lakes represent former major drainage courses reduced to disjunct closed basins with extensive subsaline flats at a level slightly above the salt lake floor. The soil of Salt Lake Features has a complex history including colluvial, alluvial and aeolian influences, and intermittent reworking, especially by wind during recent arid periods (Bowler, 1976). Lake dunes, of fine and loose sand to clayey loam are generally stabilised by vegetation. Sandy deposits are interrupted on the western margins of some salt lakes formed over greenstone. The lakes appear to be eroding the rock at this edge to produce

an abrupt boundary with limited influence of salinity up to 1m above the lake floor. The main salt lakes in the Kurnalpi-Kalgoorlie Study Area are Lake Yindarlgooda (south-central), Lake Rebecca (north east) and the Black Flag - White Lake group (west central), while Lake Goongarrie straddles the northern border.”

The dominant landform feature of the area is a series of rocky hills rising sharply from the surrounding flood plain. The top surface of these hills are generally flat and shed large volumes of water following rainfall. Medium to large gullies feature strongly on all sides of the hills, directing runoff to White Flag Lake or the surrounding flood plain. Soils are generally clay-loam in nature and appear to be deep surrounding the hills. On the western side they support large Salmon Gum (*Eucalyptus salmonophloia*), while the soils on the eastern side are more saline and support mainly halophytes such as the Samphires (*Halosarcia* species). Soil on the hills is generally shallow, being composed predominately of fractured rock. Smaller Eucalypt species including Gimlet (*E. salubris*), Cleland’s Blackbutt (*E. clelandii*) and Mirret (*E. celestroides*) as well as *Casuarina obesa* are present in these areas.

### **3. CLIMATE**

The regional climate has been variously described as ‘non-seasonal desert’ or semi-desert with a Mediterranean tendency (Beard, 1978) depending on which classification system is used. The nearest official long-term meteorological recording station is at Kalgoorlie-Boulder. The study area has hot, dry summers, and cool/cold winters. The mean daily maximum temperature is 25.1°C (Kalgoorlie). Average daily maximum temperatures range from 16.6°C for July to 33.6°C in January. Average daily minimum temperatures for the same months are 4.8°C and 18.2°C. Recorded extremes for Kalgoorlie are -3.4°C and 46.5°C (Bureau of Meteorology, 1999).

Rain can be expected throughout the year with the monthly averages showing slight peaks in the months of February and June. The annual average rainfall is 264.1 mm with the months of May to August showing the greatest number of raindays. Total precipitation is unpredictable, with annual totals recorded from as low as 120 mm to almost 570 mm after cyclonic rainfall in the summer/autumn months. All months of the year have recorded negligible rainfall since records have been kept.

### **4. FLORA**

#### **4.1 Introduction**

Six distinct vegetation types were identified during the Natal flora survey. These are described in Section 4.4. The area has been highly disturbed through historic mining activity and, more recently, exploration. As such, some plant species originally present may no longer exist in the area.

The timing of the survey was such that most plant species were not flowering and hence some were not able to be fully identified. These are listed as “sp” in the flora list (Appendix A) and are not considered likely to be Rare, Endangered or Priority species. Annual species are generally not present at this time of year either, resulting in a diminished list of plant species inhabiting the area. The plant species in Appendix A should therefore not be considered as a definitive list.

#### **4.2 Methods**

The species list provided in Appendix A was compiled following a foot and vehicle traverse of the proposed mining area and surroundings. 15 transects surrounding the proposed pit, each 50m by approximately 4m, were surveyed and the species present recorded. Samples of plants unable to be identified in the field were preserved and later identified in the Ecotec and Goldfields herbariums. The data is contained in Appendix 3 of this report.

Particular attention was paid to the possibility of Priority plant species during the survey and in the follow-up identification. Table 1 defines the conservation codes used by the Department of Conservation and Land Management to describe the status of plants considered to be under threat or in need of special protection.

#### **4.3 Flora Species Present**

A list of the flora species identified during this survey is provided as Appendix A. A total of 68 species of vascular plants from 18 families were recorded during the survey. The high number of species present is due to the variety of habitats existing in the Natal area.

The most abundant vascular plant families recorded were Chenopodiaceae (17 species), Myoporaceae (8 species), Myrtaceae (7 species) and Asteraceae (7 species). Nine species of *Maireana* (Chenopodiaceae) and eight species of *Eremophila* (Myoporaceae) were recorded.

Four specimens collected in the area were unable to be fully identified at this time due to the lack of significant features such as flowers, fruit or seed cases. None of these are likely to be classified as Rare, Endangered or Priority listed species.

Notably, only one introduced plant species was located during the survey. This may be due to the recent prolonged period of drought experienced by the region. The amount of historic disturbance in the area makes it quite likely that more weeds will be apparent following significant rainfall.

#### 4.3.1 Significant Species

Sandalwood (*Santalum spicatum*) was the only significant plant species located in the survey area. This plant is a managed species and must only be removed by a licensed Sandalwood collector. The Kalgoolie office of the Forest Products Commission should be notified well before any further clearing takes place so that Sandalwood can be removed.

22 species of plant classified as “Priority” and one species classified as “Rare” are known to inhabit the Paddington and Mt Pleasant leases. None of these have been recorded within the immediate vicinity of the Natal Project area. Appendix D of this report provides details of these plant species.

**Table 1. Conservation codes as defined by the Department of Conservation and Land Management 2001**

<b>CONSERVATION CODES</b>	
<b>R:</b> Declared Rare Flora – Extant Taxa	<b>Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.</b>
<b>X:</b> Declared Rare Flora - Presumed Extinct Taxa	<b>Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.</b>
<b>1:</b> Priority One - Poorly Known Taxa	<b>Taxa which are known from one or a few (generally &lt;5) populations which are under threat</b> , either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
<b>2:</b> Priority Two- Poorly Known Taxa	<b>Taxa which are known from one or a few (generally &lt;5) populations, at least some of which are not believed to be under immediate threat</b> (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
<b>3:</b> Priority Three - Poorly Known Taxa	<b>Taxa which are known from several populations, and the taxa are not believed to be under immediate threat</b> (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

4: Priority Four -  
Rare Taxa

**Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors.** These taxa require monitoring every 5-10 years.

#### 4.4 Vegetation

Remnant vegetation in the Natal Project area appears to have been relatively undisturbed. Generally, those areas suffering disturbance have been completely cleared. Trees in the area, particularly on the flood plain to the west of the site, are very large Eucalypts and Casuarinas (Sheoaks). A range of smaller Eucalypt species are present on the hills and do not appear to have been felled as part of the “woodlining” activity of the early part of the 1900s, most likely due to inaccessibility (see Photograph 7).

To the east of the survey site is a broad expanse of ground described in this report as Salt Lake Margin (Photograph 1). The area is subject to infrequent inundation but has highly saline soils resulting in the dominance of salt tolerant species such as the Samphires (*Halosarcia* species). Transects were placed at the interface between the Salt Lake Margin and the Break-aways above. This area is less saline and has consequently resulted in a wider range of species being recorded than what would be expected further away from the hills.

The Natal area is characterised by the steep, rocky Break-aways (Photograph 2) that form the perimeter of the hills. Topsoil is scarce in these areas and consequently the plants are generally deep-rooted shrub species that have managed to gain a root-hold in the unstable surface. Some areas with a more gentle slope support larger tree species (Photograph 3).

Eucalypt Woodland (Photographs 4 and 5) interspersed with Casuarina Woodland (Photograph 6) occupies the largest portion of the Natal Project, covering the top surfaces of the hills which are generally quite flat. The understorey in these areas consists of a range of common Goldfields plants including *Acacia*, *Eremophila*, *Atriplex* and *Dodonaea* species.

Vegetation to the west and north of the Natal site is dominated by Eucalypt Open Woodland (Photograph 7), supporting a range of large Eucalypts such as *E. salmonophloia*, *E. clelandii* and *E. salubris*. Understorey species include a range of Chenopods as well as *Acacias* and *Eremophilas*. An Area of Casuarina dominated Open Woodland (Photograph 8) is apparent within the defined Eucalypt Open Woodland. It is not certain whether this vegetation is naturally occurring or is the result of the removal of large Eucalypts. For this reason the area has been included within the vegetation defined as Eucalypt Open Woodland.

Drainage Channels and gullies (Photographs 9 and 10) are a prominent feature of the hills in the Natal area. The top of the hills are generally quite flat and provide a large catchment area. Being predominately rocky, the surface allows for little rainfall penetration, resulting in large volumes of runoff following a significant rainfall event, hence the creation of the channels and gullies. These areas generally have very few of the smaller understorey species, with vegetation being limited to deeper rooted shrubs and small trees.

#### 4.5 Existing Environment

The Natal area has been highly disturbed by small scale mining and exploration activity since the early 1900s. The area of proposed mining activity has many small shafts, costeans and diggings throughout (Photograph 11 - 13). Exploration has also been ongoing for many years. Uncapped drill holes from previous exploration work are common, particularly on the eastern side of the hills (Photograph 14).

Recent exploration work has concentrated on the western and northern sides of the Natal hills. Drilling has been close-spaced and has resulted in very high disturbance, but limited to the areas where the proposed open pits will be installed (Photograph 15).



## 5. CONCLUSIONS AND RECOMMENDATIONS

Although much of the proposed mining area has been previously disturbed by exploration activity, the remainder of the Natal area is in fair condition. With the exception of Sandalwood (*Santalum spicatum*), no rare, endangered or otherwise classified plant species were located during this survey. There is, however, potential for a number of species of rare plant to be located within the surrounding area. It is therefore recommended that disturbance be minimised. Thick stands of vegetation and large solitary trees should be avoided to limit destruction of micro habitats and animal nesting locations.

The survey located only one introduced plant species which is surprising considering the extent of historic disturbance and exploration activity. Weeds generally establish quickly in disturbed areas and compete with native species used in rehabilitation. A number of species are common in the Paddington area including Saffron Thistle and Ruby Dock. Increased vehicular activity to the site may result in the transfer of weed seeds from infested areas. Regular monitoring and weed eradication programs may be necessary to assist in the control of unwanted species. Regular monitoring along the access roads will also be important.

Being predominately flat and relatively impermeable, the surface of the hills in the Natal area act as a water shed, feeding the White Flag salt lake system to the east. Numerous gullies and drainage channels are apparent on the hills and disturbance to these areas should be avoided where possible. Contamination or inadvertent damming may have adverse effects on the surrounding flood plains and salt lake system. Salt lakes such as White Flag Lake play an important role in the Goldfields ecosystem.

Sub-surface water is likely to be highly saline. Should dewatering of the pit be required care must be taken to prevent spillages entering the surrounding vegetation. Likewise dust suppression should be closely monitored to ensure over-spray and excess application do not occur.

The following recommendations will facilitate the successful preservation of existing vegetation and rehabilitation of the area on completion of mining:

- Remove and stockpile topsoil, where available, in low heaps (<1m) at least 5 metres from road verges;
- Remove and stockpile the outer 500mm of material from any hills to be disturbed by mining. This material can be used in place of topsoil and will contain a natural seed bank;
- Stockpile of cleared vegetation for later use in rehabilitation;
- Preserve areas of dense vegetation where the risk of fire, road accidents or other interference is low;
- Where possible avoid clearing or disturbance to large trees and the immediate vicinity;
- Monitor of dewatering and dust suppression activities to ensure damage to remnant vegetation does not occur;
- Rip any unnecessary tracks or disturbed areas to discourage the use of shortcuts;
- Employ weed control measures with regular monitoring;
- Use locally gathered seed for rehabilitation, mixed in proportions that are representative of the natural vegetation.

Close monitoring from the commencement of any further activity in the Natal Project area will ensure that the least possible disturbance is created by mining and greatly assist in the rehabilitation of the area on completion of operations. Provided adequate environmental management is carried out during the development, mining and rehabilitation stages of the project, insignificant impact on the surrounding environment is to be expected.

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## **Appendix A**

**Plant Species Recorded in the Acorn  
Project Area - 21/5/02**

<b>Family</b>	<b>Genus</b>	<b>Species</b>	<b>Common Name</b>
Amaranthaceae	Ptilotus	obovatus	Cotton bush
Asteraceae	*Dittrichia	graveolens	Stinkwort
	Cratystylis	conocephala	False bluebush
	Cratystylis	microphylla	
	Cratystylis	subspinescens	
	Olearia	muelleri	Goldfields daisy
	Olearia	trifurcata ( <i>manuscript</i> )	
	Podolepis	capillaris	
Aizoaceae	Disphyma	crassifolium subsp. clavellatum	Round leaf pigface
Caesalpiniaceae	Senna	artemisioides subsp filifolia	Desert Cassia
Casuarinaceae	Casuarina	obesa	Sheoak
Chenopodiaceae	Atriplex	nummularia	Old Man Saltbush
	Atriplex	vesicaria	Bladder Saltbush
	Dissocarpus	paradoxus	Cannon balls
	Enchylaena	tomentosa	Ruby saltbush
	Halosarcia	doleformis	Samphire
	Halosarcia	sp	"Thin"
	Mairaena	tricophtera	Pink seeded bluebush
	Maireana	aff. tomentosa	Breakaway bluebush
	Maireana	amoena	Brittle bluebush
	Maireana	georgei	Golden bluebush
	Maireana	glomerifolia	Ball leaf bluebush
	Maireana	pentatropis	
	Maireana	pyramidata	Sago Bush
	Maireana	sedifolia	Pearl bluebush
	Maireana	triptera	Three winged bluebush
	Rhagodia	drummondii	Lake fringed rhagodia
	Sclerolaena	diacantha	Grey Bindi
Frankeniaceae	Frankenia	aff. drummondii	
	Frankenia	spp 1	
	Frankenia	spp 2	
Goodeniaceae	Scaevola	spinescens	Currant bush
Mimosaceae	Acacia	aneura	
	Acacia	erinaceae	
	Acacia	hemiteles	Tan wattle

	Acacia	tetragonophylla	Kurara
Myoporaceae	Eremophila	caerulea	
	Eremophila	parvifolia	
	Eremophila	scoparia	Broombush
	Eremophila	oldfieldii	
	Eremophila	latrobei	
	Eremophila	interstans	
	Eremophila	glabra	Tar bush
	Eremophila	ionantha	
Myrtaceae	Eucalyptus	salubris	Gimlet
	Eucalyptus	celastroides	Mirret
	Eucalyptus	clelandii	Cleland's blackbutt
	Eucalyptus	sp M	
	Eucalyptus	salmonophloia	Salmon Gum
	Melaleuca	lateriflora	
	Melaleuca	sheathiana	
	Melaleuca	uncinata	
Pittosporaceae	Pittosporum	phylliraeoides	Native willow
Poaceae	Austrostipa	elegantissima	Silver spear grass
	Austrostipa	nitida	Spear grass
	Eragrostis	?dielsii	(heavily grazed)
Proteaceae	Grevillea	acuaria	
	Grevillea	sarissa	
	Hakea	preissii	
	Hakea	uncinata	
Santalaceae	Exocarpos	aphyllus	Leafless ballart
	Santalum	acuminatum	Quangdong
	Santalum	spicatum	Sandalwood
Sapindaceae	Dodonaea	lobulata	Bead hop bush
	Dodonaea	viscosa	Sticky Hop Bush
	Alectryon	oleaefolium	Bullock Bush
Solanaceae	Lycium	australe	Water bush
	Solanum	lasiophyllum	Flannel Bush
Thymelaceae	Pimelea	microcephala	Shrubby rice flower

\* = introduced species

**Appendix B**  
**Photographs.**



**Photograph 1: Vegetation typical of the areas described as Salt Lake Margin.**



**Photograph 2: Vegetation typical of areas described as Break-away.**



**Photograph 3: *E. salubris* below the Break-away on the eastern side of the Natal hills.**



**Photograph 4: Eucalypt Woodland on the top of the hills in the Natal area.**



**Photograph 5: More dense Eucalypt Woodland on the top of the hills.**



**Photograph 6: Casuarina Woodland, also found on top of the Natal hills .**





**Photograph 7: Eucalypt Open Woodland typical of that surrounding the hills.**



**Photograph 8: Casuarina Open Woodland located within areas of Eucalypt Open Woodland.**



**Photograph 9: Drainage Channel vegetation in a gully descending from the top of one of the hills.**



**Photograph 10: A more gentle sloping gully on the northern side of the survey area.**



**Photograph 11: An historic shaft on the Natal hill.**



**Photograph 12: Early diggings on the top of the hill. A recent drill pad can be seen in the background.**



**Photograph 13: A costean on the north eastern side of the Natal Project.**



**Photograph 14: Uncapped drill holes are common on the eastern side of the hills.**



**Photograph 15: Recent exploration activity has mainly concentrated on the western side of the hills.**

**Appendix C**  
**Transect Data.**

<b>Transect Number:</b>	1	<b>Vegetation Type:</b>	1
<b>Description:</b>	Salt Lake Margin		
<b>GPS:</b>	330962E 6615563N		

Vascular plant species present:

Atriplex nummularia  
Atriplex vesicaria  
Casuarina obesa  
Disphyma crassifolium subsp. clavellatum  
Dodonaea lobulata  
Eragrostis sp.  
Frankenia spp1.  
Halosarcia doleiformis  
Halosarcia sp  
Maireana amoena  
Maireana glomerifolia  
Podolepis capillaris  
Solanum lasiophyllum

<b>Transect Number:</b>	2	<b>Vegetation Type:</b>	2
<b>Description:</b>	Break-away		
<b>GPS:</b>	330872E 6615544N		

Vascular plant species present:

*Atriplex nummularia*  
*Atriplex vesicaria*  
*Casuarina obesa*  
*Cratystylis subspinescens*  
*Disphyma crassifolium* subsp. *clavellatum*  
*Dodonaea lobulata*  
*Eragrostis* sp.  
*Eremophila oldfieldii*  
*Frankenia* sp1.  
*Grevillea sarissa*  
*Hakea preissii*  
*Halosarcia* sp.  
*Lycium australe*  
*Maireana glomerifolia*  
*Maireana sedifolia*  
*Olearia muelleri*  
*Pimelea microcephala*  
*Pittosporum phylliraeoides*  
*Podolepis capillaris*  
*Ptilotus obovatus*  
*Rhagodia drummondii*  
*Santalum spicatum*  
*Scaevola spinescens*  
*Sclerolaena diacantha*  
*Senna artemisioides* subsp. *filifolia*  
*Solanum lasiophyllum*

<b>Transect Number:</b>	3	<b>Vegetation Type:</b>	1
<b>Description:</b>	Salt Lake Margin		
<b>GPS:</b>	331021E 6614994N		

Vascular plant species present:

*Atriplex vesicaria*  
*Casuarina obesa*  
*Cratystylis subspinescens*  
*Disphyma crassifolium* subsp. *clavellatum*  
*Dodonaea lobulata*  
*Dodonaea viscosa*  
*Eremophila interstans*  
*Eremophila oldfieldii*  
*Frankenia* sp1.  
*Hakea uncinata*  
*Halosarcia doleiformis*  
*Halosarcia* sp.  
*Maireana amoena*  
*Maireana glomerifolia*  
*Pimelea microcephala*  
*Ptilotus obovatus*  
*Rhagodia drummondii*  
*Scaevola spinescens*  
*Solanum lasiophyllum*

<b>Transect Number:</b>	4	<b>Vegetation Type:</b>	2
<b>Description:</b>	Break-away		
<b>GPS:</b>	330899E 6614982N		

Vascular plant species present:

Acacia erinaceae  
 Acacia tetragonophylla  
 Atriplex nummularia  
 Atriplex vesicaria  
 Austrostipa elegantissima  
 Casuarina obesa  
 Cratystylis subspinescens  
 Disphyma crassifolium subsp. clavellatum  
 Dodonaea lobulata  
 Eremophila glabra  
 Eremophila oldfieldii  
 Eremophila scoparia  
 Exocarpos aphyllus  
 Eucalyptus salubris  
 Frankenia aff. drummondii  
 Grevillea acuaria  
 Halosarcia sp.  
 Maireana aff. tomentosa  
 Maireana georgei  
 Olearia muelleri  
 Pimelea microcephala  
 Pittosporum phyllaraeoides  
 Ptilotus obovatus  
 Rhagodia drummondii  
 Scaevola spinescens  
 Sclerolaena diacantha  
 Senna artemisioides subsp. filifolia  
 Solanum lasiophyllum



<b>Transect Number:</b>	5	<b>Vegetation Type:</b>	1
<b>Description:</b>	Salt Lake Margin		
<b>GPS:</b>	330926E 6614468N		

Vascular plant species present:

Atriplex nummularia  
 Atriplex vesicaria  
 Austrostipa nitida  
 Cratystylis microphylla  
 Cratystylis subspinescens  
 Disphyma crassifolium subsp. clavellatum  
 Dittrichia graveolens  
 Dodonaea lobulata  
 Dodonaea viscosa  
 Eremophila parvifolia  
 Eremophila scoparia  
 Eucalyptus clelandii  
 Eucalyptus salubris  
 Exocarpos aphyllus  
 Frankenia sp1.  
 Frankenia sp 2.  
 Halosarcia doleiformis  
 Lycium australe  
 Maireana amoena  
 Maireana glomerifolia  
 Melaleuca lateriflora  
 Melaleuca sheathiana  
 Melaleuca uncinata  
 Olearia trifurcata (*ms*)  
 Pimelea microcephala  
 Scaevola spinescens

(*ms*) = “*manuscript*” - only recently named.

<b>Transect Number:</b>	6	<b>Vegetation Type:</b>	2
<b>Description:</b>	Break-away		
<b>GPS:</b>	330619E 6614515N		

Vascular plant species present:

Acacia erinaceae  
 Atriplex vesicaria  
 Cratystylis microphylla  
 Disphyma crassifolium subsp. clavellatum  
 Dodonaea viscosa  
 Enchylaena tomentosa  
 Eremophila parvifolia  
 Eremophila scoparia  
 Eucalyptus celastroides  
 Frankenia aff. drummondii  
 Frankenia sp 2.  
 Halosarcia doleiformis  
 Lycium australe  
 Maireana aff. tomentosa  
 Maireana amoena  
 Maireana glomerifolia  
 Maireana pentatropis  
 Pittosporum phyllaraeoides  
 Ptilotus obovatus  
 Sclerolaena diacantha

<b>Transect Number:</b>	7	<b>Vegetation Type:</b>	3
<b>Description:</b>	Casuarina Woodland		
<b>GPS:</b>	331042E 6614648N		

Vascular plant species present:

Acacia hemiteles  
Casuarina obesa  
Dodonaea lobulata  
Eremophila glabra  
Eremophila oldfieldii  
Exocarpos aphyllus  
Maireana trichoptera  
Olearia muelleri  
Ptilotus obovatus  
Santalum spicatum  
Scaevola spinescens  
Senna artemisioides subsp. filifolia

<b>Transect Number:</b>	8	<b>Vegetation Type:</b>	4
<b>Description:</b>	Eucalypt Open Woodland / Break-away		
<b>GPS:</b>	330155E 6615129N		

Vascular plant species present:

Acacia erinaceae  
 Atriplex nummularia  
 Atriplex vesicaria  
 Casuarina obesa  
 Dissocarpus paradoxus  
 Eremophila oldfieldii  
 Eremophila scoparia  
 Eucalyptus celastroides  
 Eucalyptus salmonophloia  
 Halosarcia doleiformis  
 Maireana aff. tomentosa  
 Maireana pyramidata  
 Maireana sedifolia  
 Maireana triptera  
 Olearia muelleri  
 Ptilotus obovatus  
 Rhagodia drummondii  
 Scaevola spinescens  
 Sclerolaena diacantha

<b>Transect Number:</b>	9	<b>Vegetation Type:</b>	3
<b>Description:</b>	Casuarina Open Woodland		
<b>GPS:</b>	330377E 6615475N		

Vascular plant species present:

*Atriplex nummularia*  
*Atriplex vesicaria*  
*Austrostipa elegantissima*  
*Austrostipa nitida*  
*Casuarina obesa*  
*Cratystylis subspinescens*  
*Disphyma crassifolium* subsp. *clavellatum*  
*Eremophila ionantha*  
*Eremophila glabra*  
*Eremophila latrobei*  
*Eremophila oldfieldii*  
*Eremophila scoparia*  
*Halosarcia doleiformis*  
*Maireana* aff. *tomentosa*  
*Maireana pyramidata*  
*Maireana triptera*  
*Pittosporum phylliraeoides*  
*Ptilotus obovatus*  
*Rhagodia drummondii*  
*Scaevola spinescens*  
*Sclerolaena diacantha*  
*Solanum lasiophyllum*

<b>Transect Number:</b>	10	<b>Vegetation Type:</b>	3
<b>Description:</b>	Casuarina Woodland		
<b>GPS:</b>	330249E 661577N		

Vascular plant species present:

*Acacia hemiteles*  
*Atriplex nummularia*  
*Atriplex vesicaria*  
*Austrostipa nitida*  
*Alectryon oleaefolium*  
*Casuarina obesa*  
*Dissocarpus paradoxus*  
*Dodonaea lobulata*  
*Enchylaena tomentosa*  
*Eremophila oldfieldii*  
*Maireana georgei*  
*Maireana pentatropis*  
*Maireana trichoptera*  
*Maireana triptera*  
*Ptilotus obovatus*  
*Rhagodia drummondii*  
*Scaevola spinescens*  
*Sclerolaena diacantha*  
*Senna artemisioides* subsp. *filifolia*  
*Solanum lasiophyllum*

<b>Transect Number:</b>	11	<b>Vegetation Type:</b>	5
<b>Description:</b>	Eucalypt Open Woodland		
<b>GPS:</b>	329832E 6615580N		

Vascular plant species present:

Atriplex vesicaria  
Austrostipa nitida  
Casuarina obesa  
Cratystylis microphylla  
Dissocarpus paradoxus  
Distichia graeolem  
Eremophila glabra  
Eremophila oldfieldii  
Eremophila parvifolia  
Eremophila scoparia  
Eucalyptus clelandii  
Frankenia sp1.  
Halosarcia doleiformis  
Halosarcia sp.  
Lycium australe  
Maireana amoena  
Maireana trichoptera  
Ptilotus obovatus  
Sclerolaena diacantha  
Solanum lasiophyllum

<b>Transect Number:</b>	12	<b>Vegetation Type:</b>	6
<b>Description:</b>	Casuarina Woodland		
<b>GPS:</b>	329535E 6615104N		

Vascular plant species present:

*Acacia aneura*  
*Acacia erinaceae*  
*Atriplex vesicaria*  
*Casuarina obesa*  
*Cratystylis microphylla*  
*Dodonaea lobulata*  
*Eremophila caerulea*  
*Eremophila glabra*  
*Eremophila latrobei*  
*Eremophila parvifolia*  
*Eremophila scoparia*  
*Halosarcia doleiformis*  
*Halosarcia* sp  
*Maireana pentatropis*  
*Maireana trichoptera*  
*Maireana triptera*  
*Olearia muelleri*  
*Ptilotus obovatus*  
*Scaevola spinescens*  
*Sclerolaena diacantha*  
*Senna artemisioides* subsp. *filifolia*



<b>Transect Number:</b>	13	<b>Vegetation Type:</b>	7
<b>Description:</b>	Drainage Channel		
<b>GPS:</b>	329557E 6615036N		

Vascular plant species present:

Acacia erinaceae  
Atriplex nummularia  
Eremophila ionantha  
Eremophila caerulea  
Eremophila glabra  
Eremophila parvifolia  
Eremophila scoparia  
Eucalyptus celastroides  
Eucalyptus clelandii  
Maireana pentatropis  
Maireana triptera  
Olearia muelleri  
Santalum acuminatum  
Sclerolaena diacantha  
Senna artemisioides subsp. filifolia

<b>Transect Number:</b>	14	<b>Vegetation Type:</b>	7
<b>Description:</b>	Drainage Channel		
<b>GPS:</b>	329349E 6614926N		

Vascular plant species present:

Acacia erinaceae  
 Atriplex nummularia  
 Atriplex vesicaria  
 Casuarina obesa  
 Dissocarpus paradoxus  
 Eremophila ionantha  
 Eremophila caerulea  
 Eremophila glabra  
 Eremophila interstans  
 Eremophila parvifolia  
 Eucalyptus celastroides  
 Eucalyptus sp M  
 Exocarpos aphyllus  
 Halosarcia doleiformis  
 Maireana georgei  
 Maireana pentatropis  
 Maireana pyramidata  
 Maireana trichoptera  
 Olearia muelleri  
 Ptilotus obovatus  
 Rhagodia drummondii  
 Santalum acuminatum  
 Scaevola spinescens  
 Senna artemisioides subsp. filifolia  
 Solanum lasiophyllum

<b>Transect Number:</b>	15	<b>Vegetation Type:</b>	6
<b>Description:</b>	Eucalypt Woodland		
<b>GPS:</b>	329319E 6614832N		

Vascular plant species present:

Acacia erinaceae  
 Atriplex vesicaria  
 Casuarina obesa  
 Dissocarpus paradoxus  
 Dodonaea lobulata  
 Eremophila caerulea  
 Eremophila oldfieldii  
 Eucalyptus clelandii  
 Maireana georgei  
 Maireana pentatropis  
 Maireana triptera  
 Olearia muelleri  
 Podolepis capillaris  
 Ptilotus obovatus  
 Scaevola spinescens  
 Sclerolaena diacantha  
 Senna artemisioides subsp. filifolia  
 Solanum lasiophyllum

## **Appendix D**

**Priority Plant Species Known To  
Inhabit Paddington Leases.**

## Priority plant species recorded on Paddington leases as at January 2002

### Mount Burgess Station

Family	Genus	Species	Priority
Papilionaceae	Gompholobium	asperulum	3
Proteaceae	Hakea	rigida	2
Rutaceae	Phebalium	appressum	1

### Black Flag

Family	Genus	Species	Priority
Myoporaceae	Eremophila	praecox	1

### Surrounding areas (within 50km of Goongarrie, Jaurdi, Mt Vettors and Credo boundaries)

Family	Genus	Species	Priority
Mimosaceae	Acacia	acanthoclada	3
Mimosaceae	Acacia	epedunculata	1
Apocynaceae	Alyxia	tetanifolia	3
Poaceae	Austrostipa	blackii	3
Myrtaceae	Calytrix	creswellii	1
Asteraceae	Elachanthus	pusillus	2
Myoporaceae	Eremophila	caerulea subsp. merrallii	4
Myrtaceae	Eucalyptus	crucis subsp. crucis	R
Myrtaceae	Eucalyptus	jutsonii	2
Asteraceae	Gnephosis	sp. Norseman	1
Proteaceae	Grevillea	georgeana	3
Asteraceae	Haegiela	tatei	2
Restionaceae	Lepidobolus	deserti	4
Epacridaceae	Leucopogon	sp. Marvel Loch	2
Myrtaceae	Melaleuca	filifolia	2
Haloragaceae	Myriophyllum	lapidicola	2
Lamiaceae	Newcastelia	insignis	2
Rutaceae	Philotheca	coateana	3
Anthericaceae	Sowerbaea	multicaulis	4