



Pilbara Flora

ABN 641 460 857 40

Vegetation Surveys
Clearing Permits
Rehabilitation

Flora and Vegetation Survey of Main Roads Western Australia Potential Borrow Material Investigation Areas at Kununurra

Prepared for Strategen Environmental Consultants Pty Ltd on behalf of Main Roads Western Australia
by Pilbara Flora



September 2009

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<i>Client:</i>	<i>Strategen Environmental Consultants Pty Ltd on behalf of Main Roads Western Australia</i>	
<i>Job:</i>	<i>Flora and Vegetation Survey of Material Investigation Areas at Kununurra</i>	
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<i>Version:</i>	<i>Draft 1</i>	
<i>Version date:</i>	<i>22 September 2009</i>	

Executive Summary

Pilbara Flora was commissioned by Strategen Environmental Consultants Pty Ltd ('Strategen') on behalf of Main Roads Western Australia ('Main Roads') in May 2009 to conduct a flora and vegetation survey of 11 potential borrow material investigation areas in the Kununurra locality.

The 11 areas surveyed by Pilbara Flora included seven circular borrow pits ('BWPT's) and four material investigation areas ('MIA's). In this report, the 11 areas surveyed by Pilbara Flora are known as the 'vegetation survey areas' and collectively totaled 5519.46ha.

Pilbara Flora conducted a 'one season' Level 2 equivalent flora and vegetation survey of the vegetation survey areas in accordance with the Environmental Protection Authority's Guidance Statement No. 51 "*Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*". The vegetation survey was conducted for the purposes of Environmental Impact Assessment under clearing permit number CPS 818/4 issued to the Commissioner of Main Roads.

The vegetation survey was undertaken by Pilbara Flora over two field trips, 20 to 29 May 2009 and 28 June to 08 July 2009, in which a total of 90 person field days were completed. Floristic data was recorded from a total of 151 quadrats and 163 GPS survey points during the surveys.

A total of 458 vascular taxa from 218 genera and 72 families were recorded from the vegetation survey areas. No Rare Flora species pursuant to Section 23F(2) of the *Wildlife Conservation Act 1950* or Threatened Flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* were recorded. Three Priority Flora species were recorded, these being:

- *Brachychiton tuberculatus* (Priority 3);
- *Goodenia brachypoda* (Priority 1); and
- *Schoenus punctatus* (Priority 3).

Two species recorded during the vegetation survey were identified as range extensions. These species are located in the Kimberley Region but occur outside of their previously recorded range as published by Florabase (2009a). These species are:

- *Eriachne glauca* var *barbinodis*; and
- *Isotoma armstrongii*.

A total of 48 vegetation types and mosaic units were identified at the vegetation survey areas. These fall within three major vegetation groups:

- Grasslands (2.57% of the vegetation survey areas).
- Mosaic woodlands (88.11% of the vegetation survey areas).
- Woodlands (9.32% of the vegetation survey areas).

Landforms identified in the vegetation survey areas included:

- Alluvial plains (95.20% of the vegetation survey areas).
- Black soil plains (3.80% of the vegetation survey areas).
- Sandstone hills (0.58% of the vegetation survey areas).
- Watercourse areas (0.27% of the vegetation survey areas).

- Disturbed areas (0.15% of the vegetation survey areas).

There were no vegetation types identified that were considered as being rare, restricted, unique or representing Threatened or Priority Ecological Communities.

Overall the majority of the vegetation types and mosaic units were rated as in excellent condition, with no or very few introduced species being recorded and vegetation was generally undisturbed. Grazing levels and presence of weed species reduced the condition ranking of some vegetation types and mosaic units. Two grasslands, G1 and G2, were rated as completely degraded with previous clearing causing complete loss of vegetation structure. Vegetation types at Borrow Pit 7 were all rated as poor with heavy weed infestations influenced by the proximity to the Ord River, developed agricultural areas and the presence of cattle. At Borrow Pit 7, 14 introduced species were present including *Cenchrus ciliaris* recorded with 70 percent cover, *Vachellia farnesiana* and *Urochloa mosambicensis* recorded with 20 percent cover and *Cynodon dactylon* recorded with 15 percent cover.

Twenty three introduced weed species were recorded in the vegetation survey areas including two Declared Plants as listed by the Agricultural Protection Board pursuant to the *Agricultural and Related Resources Protection Act 1976* (DAFWA 2009b). These declared weeds are:

- *Parkinsonia aculeata* – listed as P1 for the whole state and listed as P4 for the Wyndham - East Kimberley district (DAFWA 2009b); and
- *Sida cordifolia* – listed as P1 for the Wyndham - East Kimberley district (DAFWA 2009b).

Declared Plants have different control requirements dependent on the ranking code, the movement of P1 plants or their seed is prohibited within the State while P4 plants must be managed in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery.

Declared Plants have different control requirements dependent on the ranking code, the movement of P1 plants or their seed is prohibited within the State while P4 plants must be managed in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery.

1 Introduction

Pilbara Flora was commissioned by Strategen Environmental Consultants Pty Ltd ('Strategen') on behalf of Main Roads Western Australia ('Main Roads') in May 2009 to conduct a flora and vegetation survey of 11 potential borrow material investigation areas in the Kununurra locality. Kununurra is located in the northeastern Kimberley Region of Western Australia, approximately 30km west of the Northern Territory boarder (Figure 1).

Eleven areas were surveyed by Pilbara Flora, including seven circular borrow pits ('BWPT's) and four material investigation areas ('MIA's) (Table 1, Figures 3 to 9), located between 3 to 40km from Kununurra (Figure 2). In this report, the 11 areas surveyed by Pilbara Flora are known as the 'vegetation survey areas' and collectively total 5519.46ha (Table 1).

Pilbara Flora conducted a 'one season' Level 2 equivalent flora and vegetation survey of the vegetation survey areas in accordance with the Environmental Protection Authority's Guidance Statement No. 51 "*Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*" (EPA 2004). The vegetation survey was conducted for the purposes of Environmental Impact Assessment under clearing permit number CPS 818/4 issued to the Commissioner of Main Roads (DEC 2007a).

The vegetation survey was undertaken by Pilbara Flora over two field trips, 20 to 29 May 2009 and 28 June to 08 July 2009, in which a total of 90 person field days were completed. Floristic data was recorded from a total of 151 quadrats and 163 GPS survey points during the surveys.

Table 1: Summary of material investigation areas surveyed

Survey Area*	Code	Area (ha)
Borrow Pit 4	BWPT 4	19.61
Borrow Pit 5	BWPT 5	19.61
Borrow Pit 6	BWPT 6	19.61
Borrow Pit 7	BWPT 7	19.61
Borrow Pit 8	BWPT 8	19.61
Borrow Pit 9	BWPT 9	19.61
Borrow Pit 10	BWPT 10	19.61
Material Investigation Area 6	MIA 6	113.38
Material Investigation Area 8	MIA 8	1069.80
Material Investigation Area 13	MIA 13	1032.65
Material Investigation Area 14	MIA 14	3166.36
Total		5519.46

*The numbering of the sites is consistent with those provided in GIS ArcView Shapefiles by Main Roads.

1.1 Objectives

The objectives of the flora and vegetation survey were to:

- Conduct a desktop review of Declared Rare Flora¹ ('DRF') and Priority Flora² species previously recorded in the region.
- Conduct a Level 2 flora and vegetation survey of the vegetation survey areas.
- Search for, identify, record and map any DRF, Priority Flora species or introduced species occurring within the vegetation survey areas.
- Map vegetation communities occurring within the vegetation survey areas.

The results of the Pilbara Flora survey are provided in this report. A general overview of the typical vegetation types occurring within the vegetation survey areas is provided in Plates 1 to 3.



Plate 1: Borrow Pit 9 - Alluvial plain with low woodland of *Corymbia* species over grasses

¹ Declared Rare Flora are taxa considered as being threatened or endangered pursuant to Section 23F(2) of the *Wildlife Conservation Act 1950*. The Department of Environment and Conservation publishes a list of rare flora in the Government Gazette (Atkins 2009).

² Priority Flora are flora that are considered by the Department of Environment and Conservation as being potentially threatened or endangered but are not declared under the *Wildlife Conservation Act 1950* (Atkins 2009, Florabase 2009b).



Plate 2: Material Investigations Area 14 – Alluvial plain with mixed species tussock grassland



Plate 3: Borrow Pit 7 – Sandstone hillsides with low woodland of *Corymbia* and *Eucalyptus* species over spinifex.

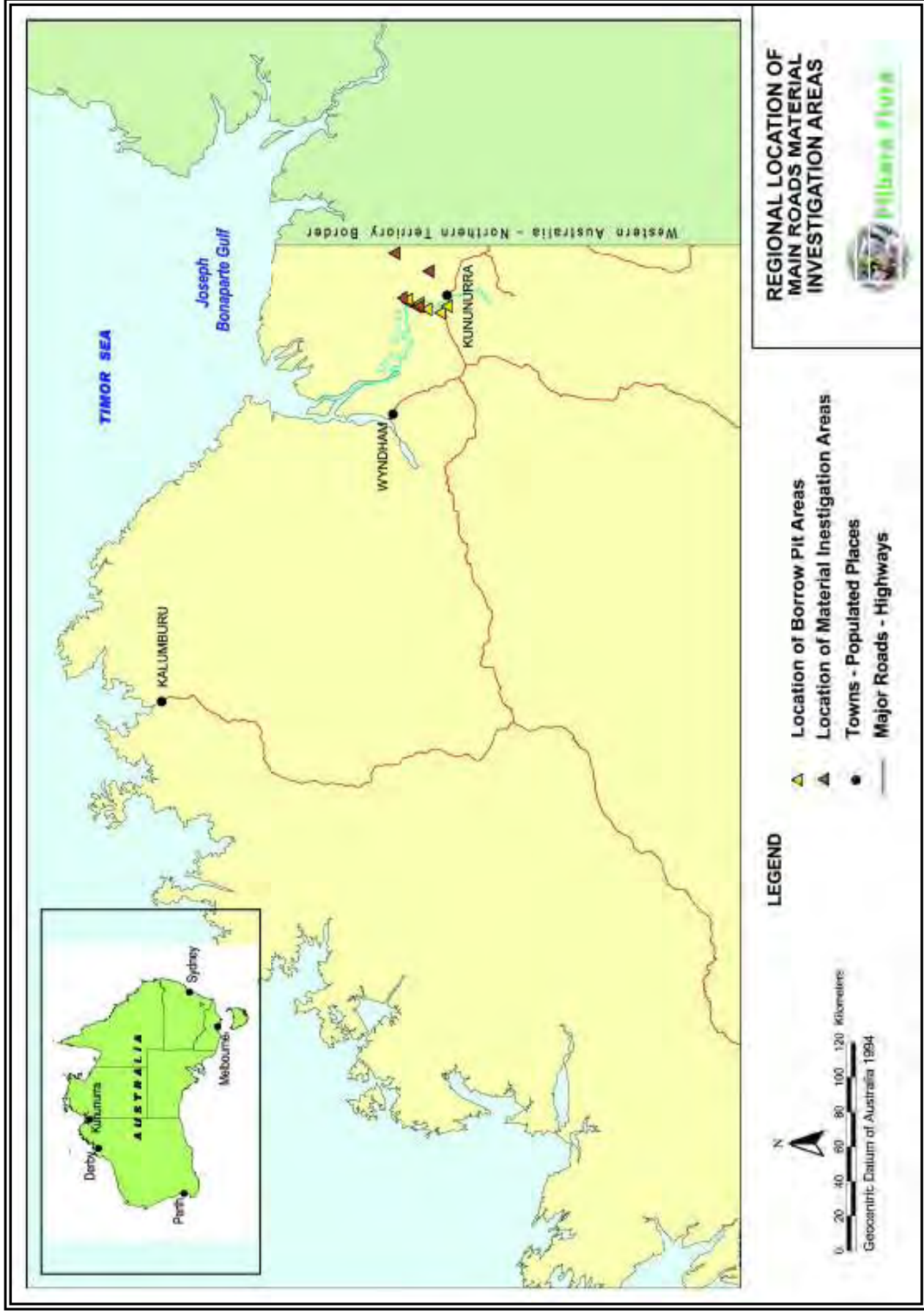


Figure 1: Regional location of the Main Roads material investigation areas

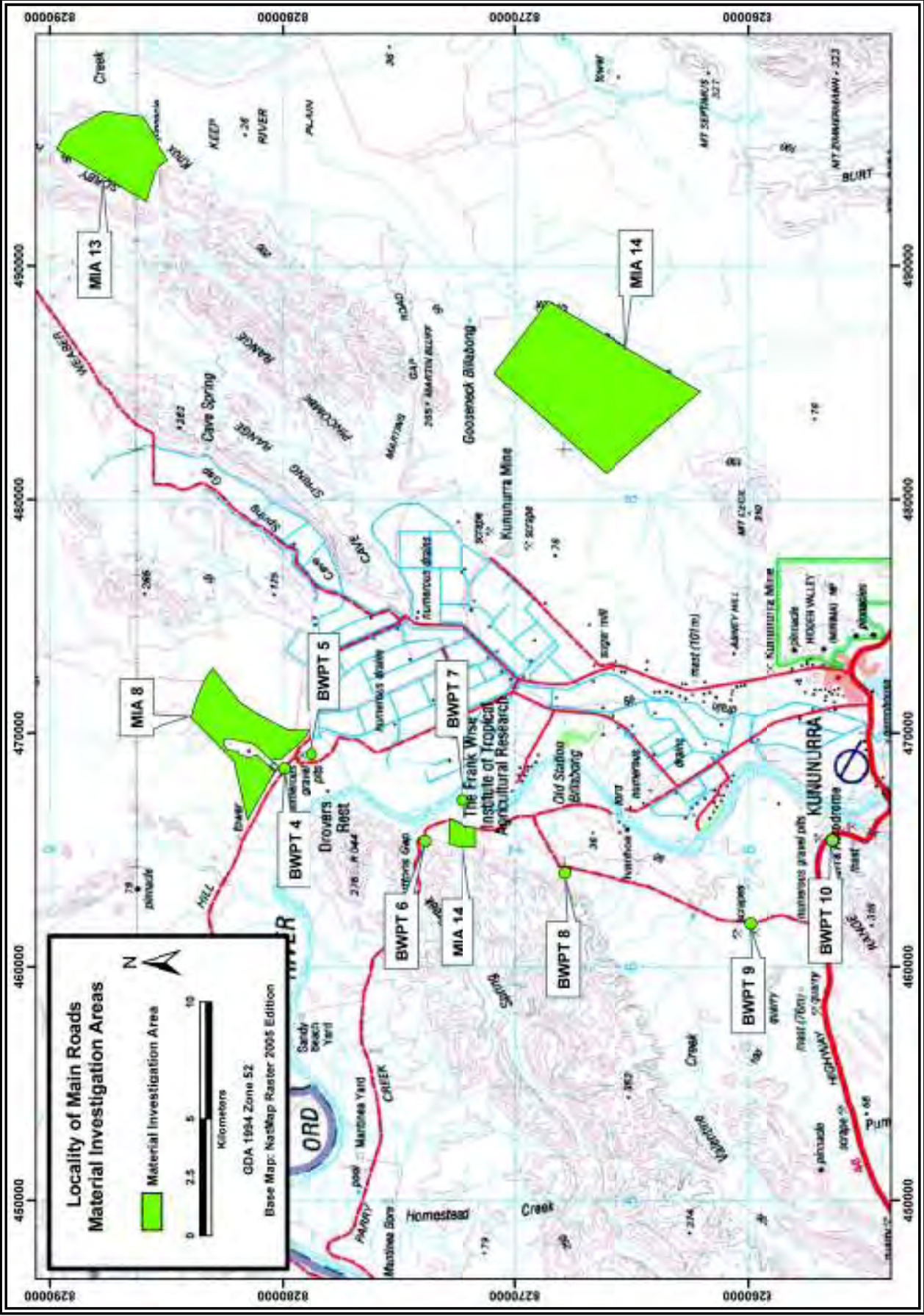


Figure 2: Location of the Main Roads potential borrow material investigation areas

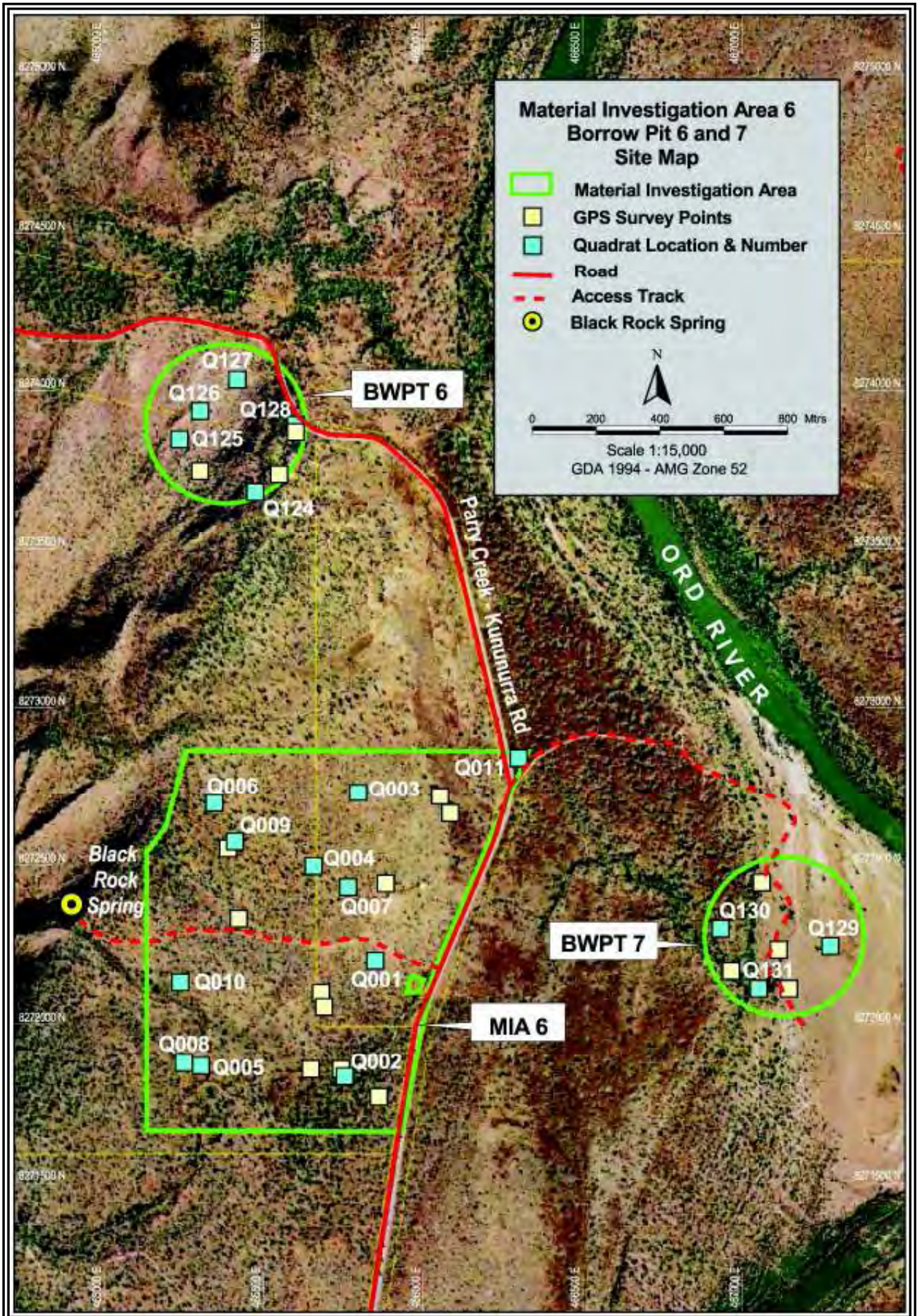


Figure 4: Site map of survey areas for Material Investigation Area 6 and Borrow Pits 6 and 7

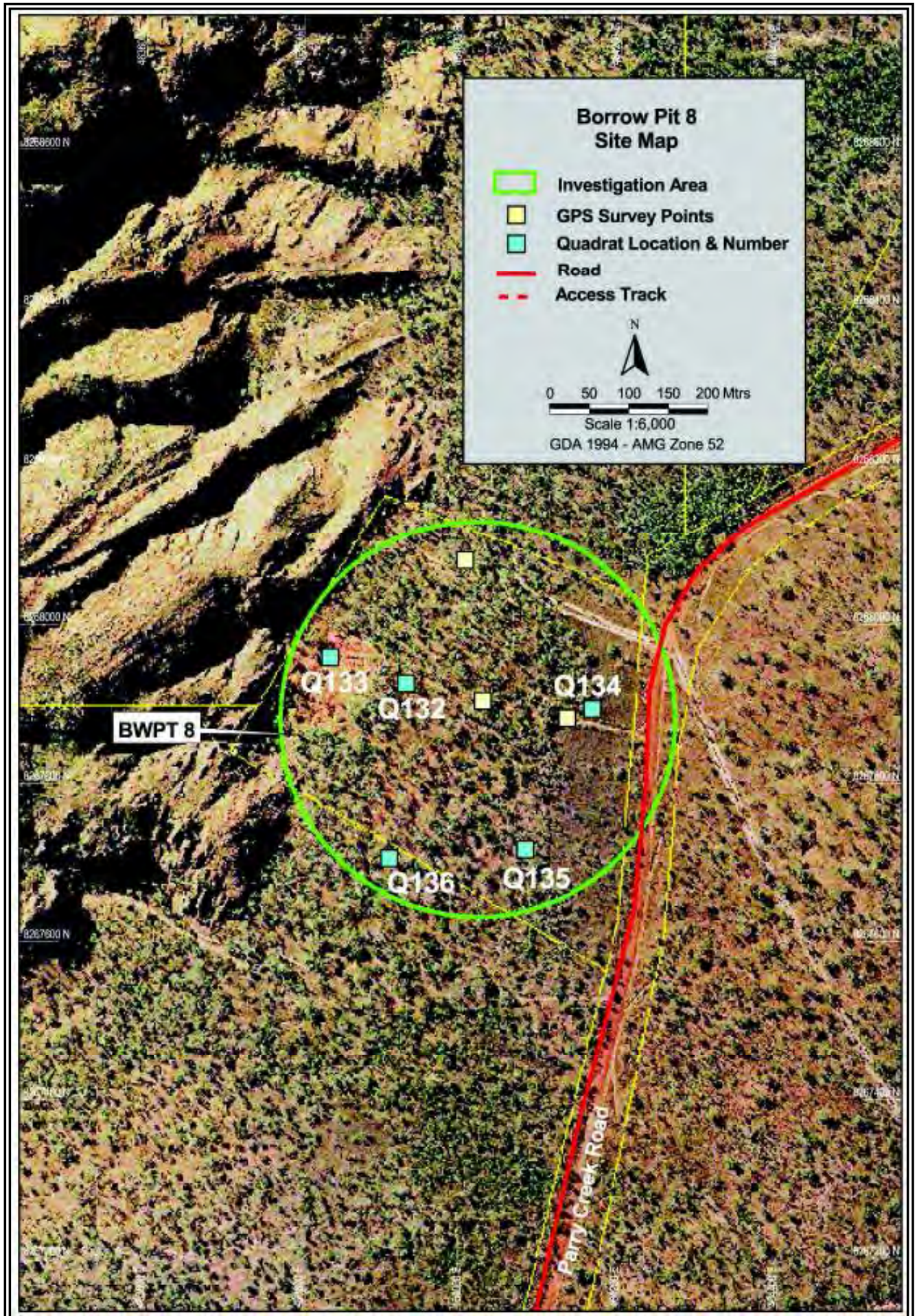


Figure 5: Site map of survey area for Borrow Pit 8

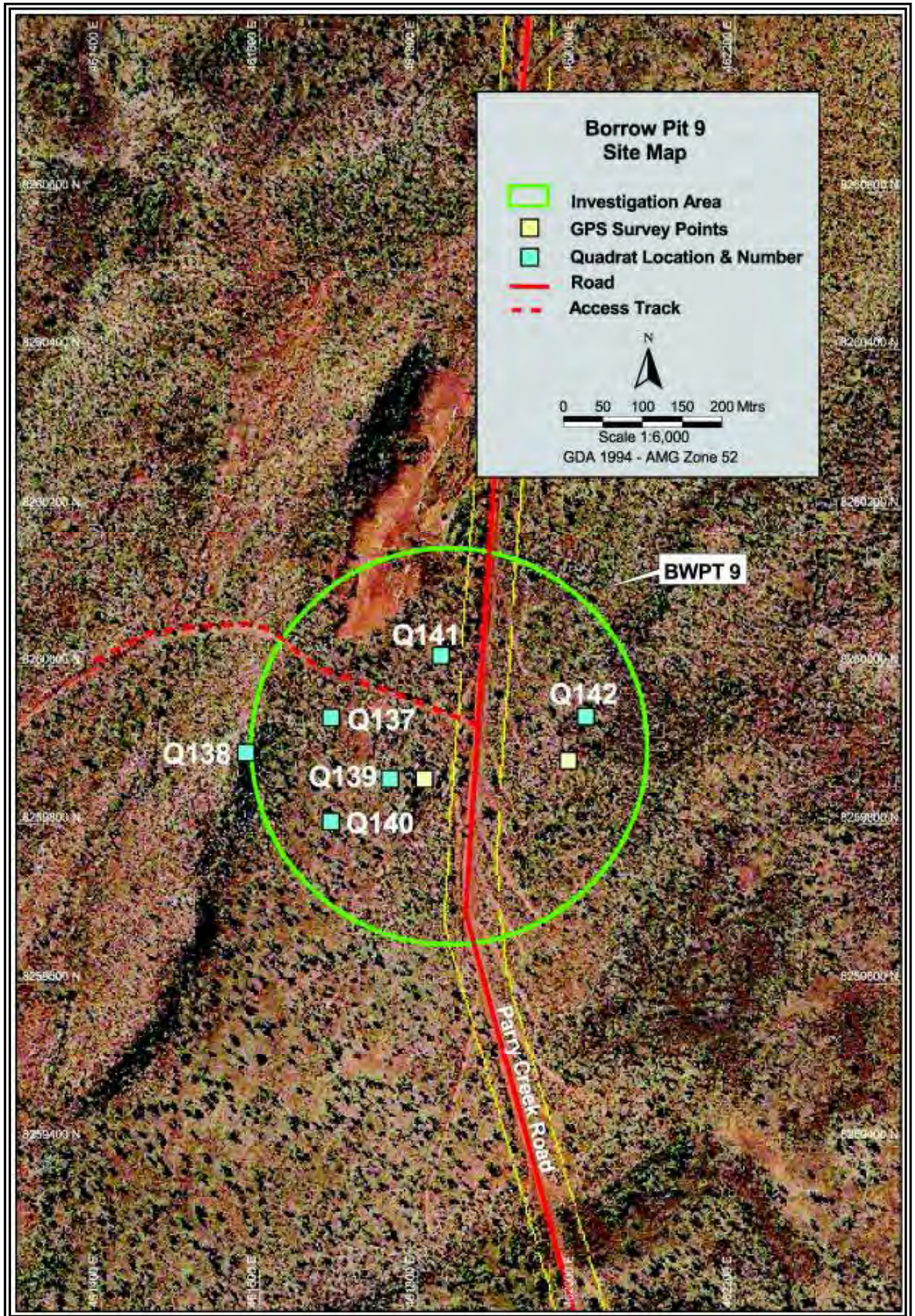


Figure 6: Site map of survey area for Borrow Pit 9

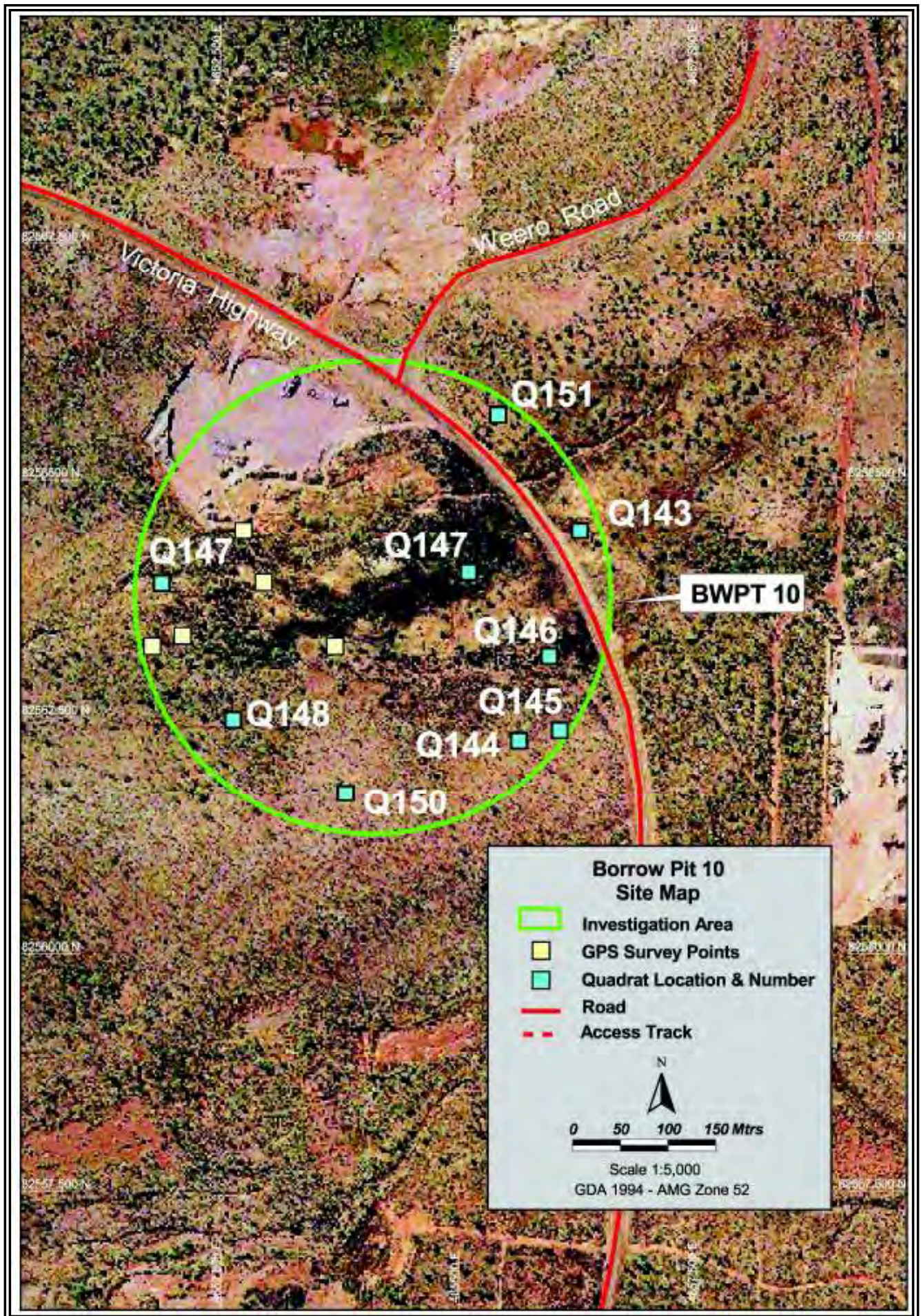


Figure 7: Site map of survey area for Borrow Pit 10

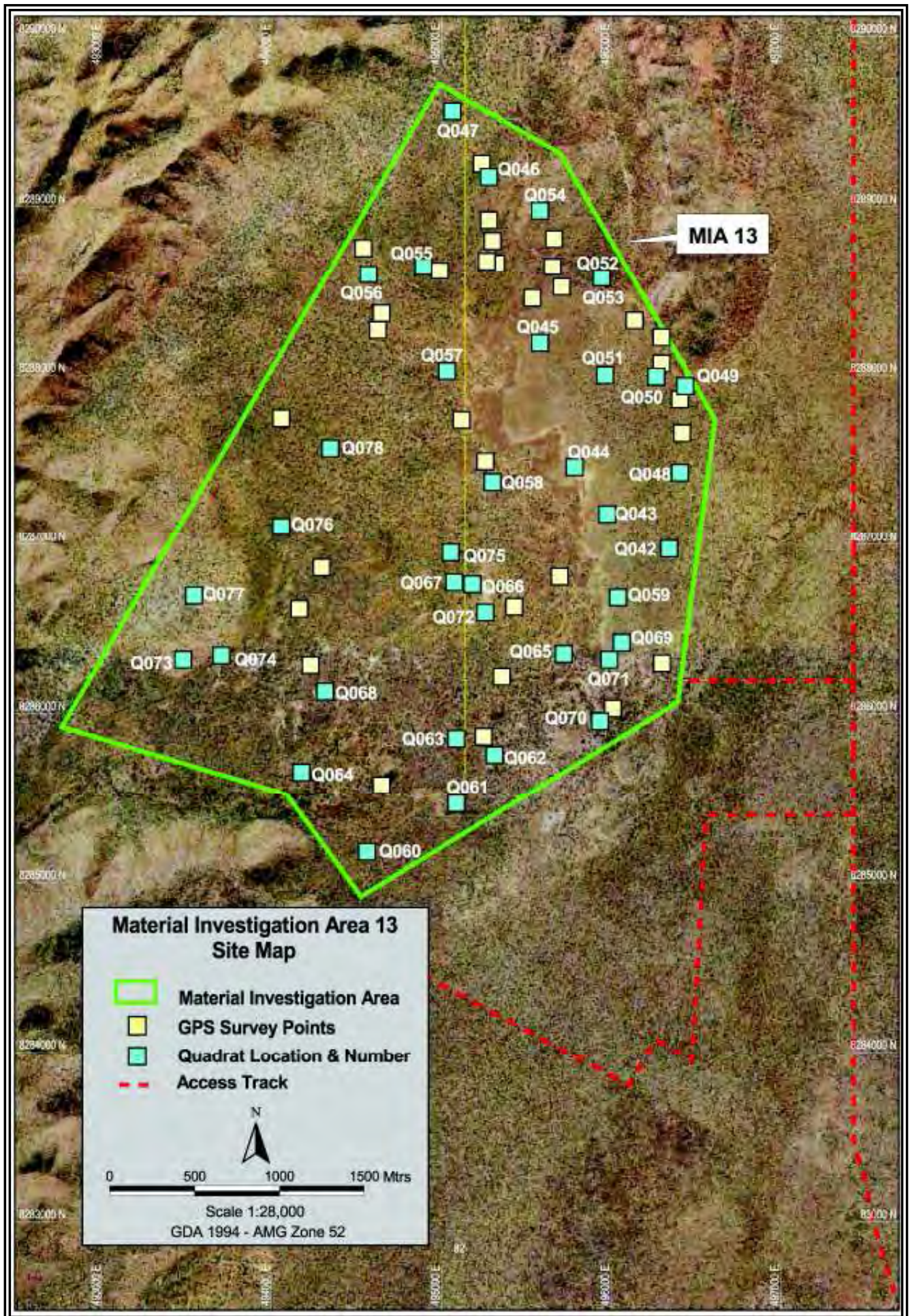


Figure 8: Site plan of survey area for Material Investigation Area 13

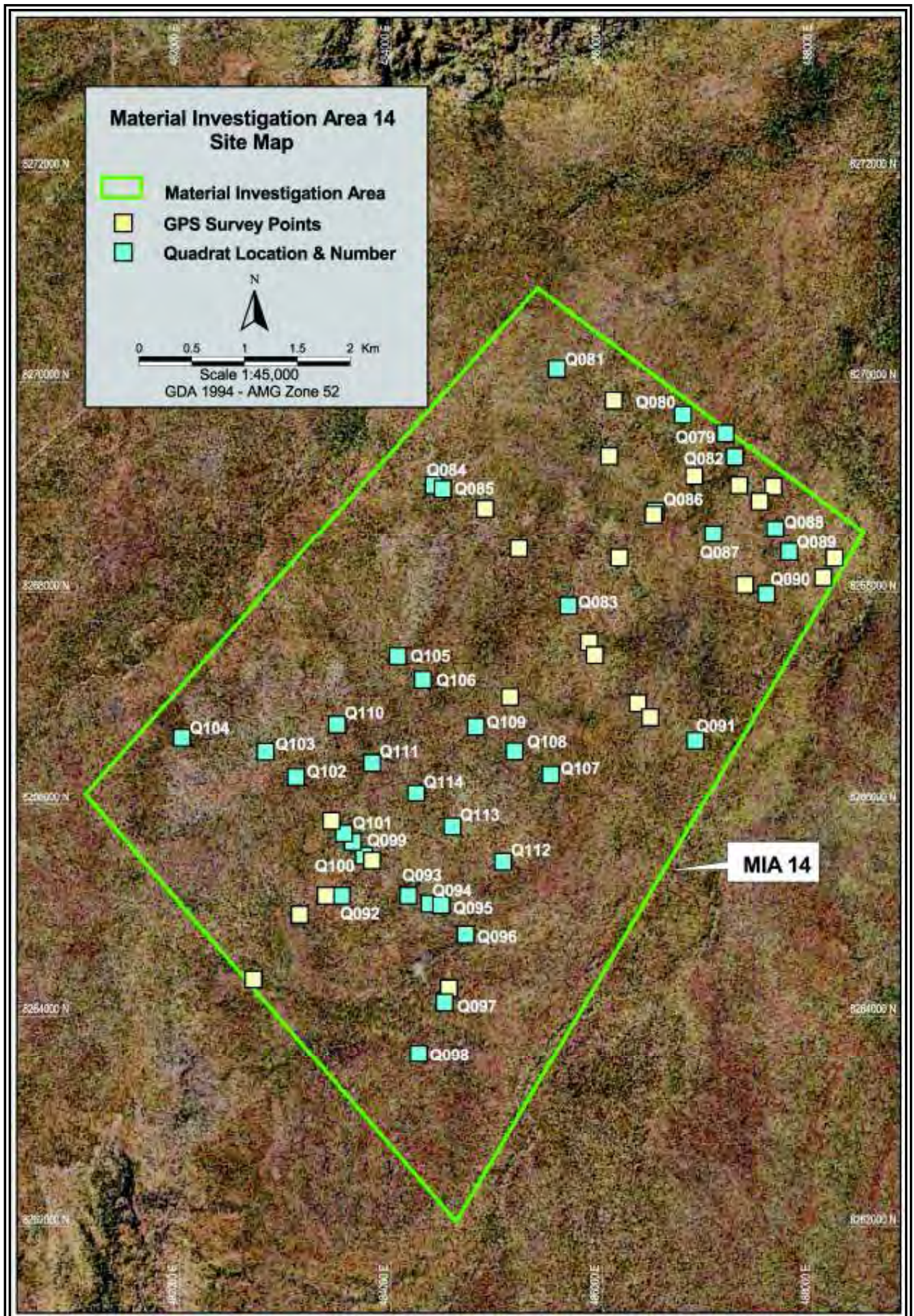


Figure 9: Site map of survey area for Material Investigation Area 14

2 Background Information

2.1 Biogeographical Location

The vegetation survey areas are located in the northeastern Kimberley Region which is situated within the Gardner Botanical District (Beard 1979) and Interim Biogeographic Regionalisation of Australia ('IBRA') Victoria Bonaparte 1 Subregion (DEC 2007b, Graham 2001). The Victoria Bonaparte 1 Subregion has diverse landforms and vegetation, including Proterozoic sandstone ranges with low tree savannahs and hummock grasslands, and black or red soil plains with savannah woodlands (Graham 2001).

2.2 Climate and Seasonality

Weather data from the Bureau of Meteorology ('BOM') Kununurra Aero station is presented in Table 2 (BOM 2009). Kununurra Aero is the closest full BOM weather station to the vegetation survey areas, located at the Kununurra Airport.

The climate of Kununurra is typical of the Kimberley Region, with a hot summer 'wet season' and a warm winter 'dry' season. The mean annual rainfall is 835.5mm (Table 2). The majority of rainfall occurs during the summer 'wet season', typically from November to April. Rainfall events are dominated by cyclonic activity or thunderstorms related to subtropical low pressure systems off the Kimberley coast. This high rainfall is accompanied by high temperatures and high humidity. Summer temperatures range from a mean maximum temperature of 35 to 37.1°C and a mean minimum temperature of 24.8 to 25.5°C (Table 2).

The winter 'dry season', typically from May to October, has very low average rainfall with rain that does occur typically being caused by localised thunderstorms. The temperature is also lower, with the winter temperatures ranging from a mean maximum temperature of 30.3 to 32.5°C and a mean minimum temperature of 15.1 to 16.2°C (Table 2).

Seasonality can have a large bearing on the effectiveness of a vegetation survey. The 'wet season' summer rainfall is essential for many ephemeral flora species in the Kimberley Region. Rainfall data from Kununurra Aero was examined for seasonality trends. The 12 month period prior to the vegetation survey had a higher than average total rainfall, 966.6mm versus 835.5mm (Table 3). Ninety seven percent of this total rainfall was from the summer 'wet season' rainfall, with 940mm falling from November 2008 to April 2009 (Table 3, Figure 10). It was considered that sufficient 'wet season' rainfall occurred over an extended period (4 months) to facilitate an effective mid-year vegetation survey (Figure 10). This was evidenced during the survey by the large number of forbs and annuals being recorded, wet soils and areas of rangeland remaining inundated.

Table 2: Climatic information for Kununurra Aero Weather Station

Statistic Element*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean maximum temperature (°C)	36	35	35.7	35.4	33	30.3	30.5	32.5	36.5	38.8	39	37.1	35
Highest temperature (°C)	25.1	24.8	24.2	22	19	16.2	15.1	16.1	20.3	23.8	25.4	25.5	21.5
Mean minimum temperature (°C)	43	41.7	43	40	38.5	36.4	36.5	38.1	41	43.9	45.1	45.3	45.3
Lowest temperature (°C)	19.3	20.5	16.1	13	9.8	7.8	7.2	8	10.1	14.4	17.3	19	7.2
Mean rainfall (mm)	194.4	208.4	146.6	26	5.7	4	1.8	0	3.4	19.1	64.8	134.4	835.5
Highest rainfall (mm)	352.2	414.8	522.4	131	67.2	98.8	30.8	0.4	62.2	82.2	250.4	382	1220.6
Lowest rainfall (mm)	40.6	57.5	3.6	0	0	0	0	0	0	0	0	6.2	439.4
Highest daily rainfall (mm)	162.2	110.4	123.7	50.8	42.8	47.6	22.5	0.4	45.4	44.8	90	113.6	162.2
Mean number of days of rain	15	15.3	11	3	0.9	0.6	0.3	0	0.6	3.4	7.2	11.7	69
Mean daily evaporation (mm)	36	35	35.7	35.4	33	30.3	30.5	32.5	36.5	38.8	39	37.1	35

*Data from the Bureau of Meteorology website: www.bom.gov.au for Kununurra Aero # 2056 (1971 to 2009).

Table 3: Previous 12 months of rainfall at Kununurra Aero Weather Station compared to monthly average

Statistic Element*	2008						2009						Annual
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Mean rainfall (mm)	5.7	4	1.8	0	3.4	19.1	64.8	134.4	194.4	208.4	146.6	26	835.5
Total rainfall in previous 12 months (mm)	0	4.2	0	0	2.2	20.2	0.4	382	257.6	273	26.6	0.4	966.6

*Data from the Bureau of Meteorology website: www.bom.gov.au for Kununurra Aero # 2056 (1971 to 2009).

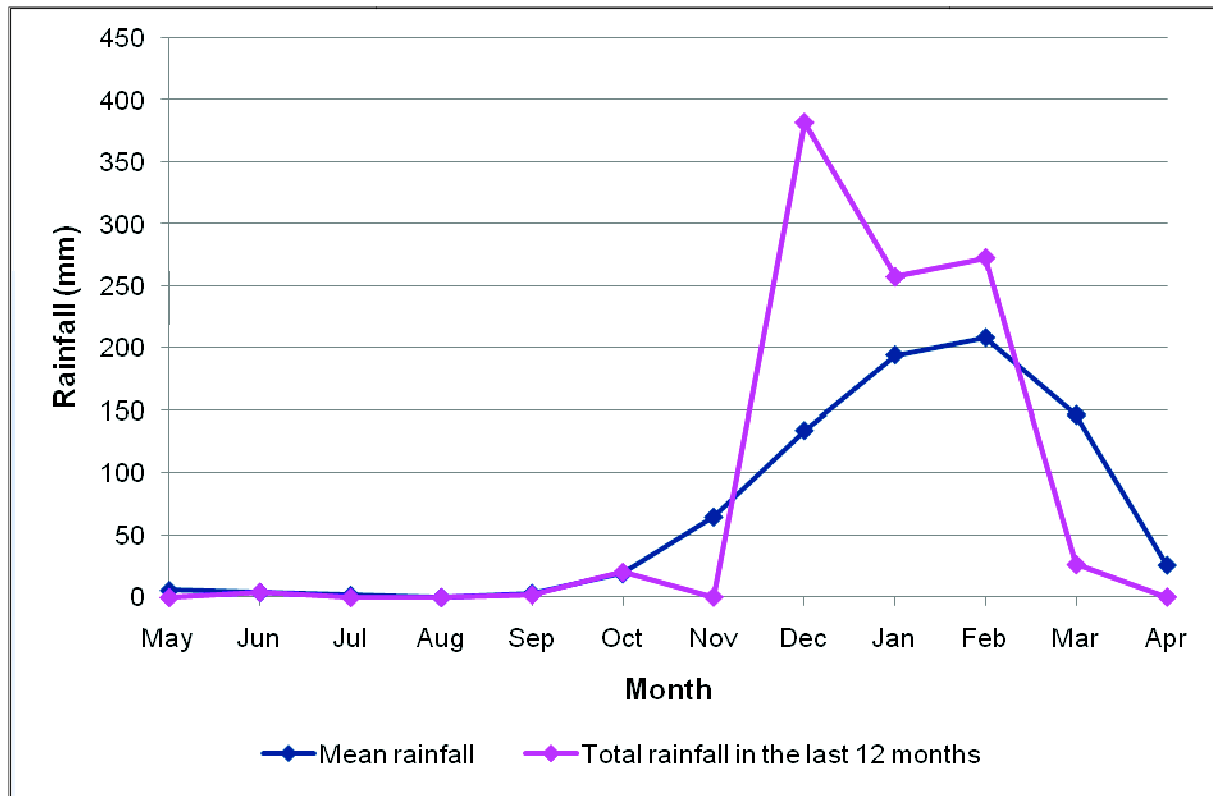


Figure 10: Kununurra Aero mean rainfall versus previous 12 months rainfall

2.3 Geology

The geology of the vegetation survey areas was assessed using the Geological Survey of Western Australia's 1:500,000 interpreted bedrock geology spatial dataset (GSWA 2008). In general terms, the vegetation survey areas occurs over two broad geological systems, Proterozoic sandstones or Phanerozoic sedimentary/volcanic rocks. Eight geological types occur within the vegetation survey areas (GSWA 2008):

- **Ningbing Group** - undivided; limestone reef complexes; cyanobacterial limestone, limestone breccia, shale, and sandstone; includes Djilliri, Wungabal, and Garimala Limestones, and Kamilili and Buttons Formations (MIA 8, MIA 13, MIA 14, BWPT 5, and BWPT 7).
- **Carr Boyd Group** - undivided; sandstone, ferruginous sandstone, siltstone, and mudstone (MIA 13 and BWPT 10).
- **Langfield Group** - undivided; sandstone, limestone, shale and siltstone; includes Bonaparte (subsurface only) and Burt Range Formations, Enga and Zimmerman Sandstones, and Septimus Limestone (MIA 13).
- **Cockatoo Group** - undivided; sandstone, conglomerate, and limestone; minor dolomite and siltstone; includes Steeple Peak, Kelly's Knob, Cyril, Abney, Maudobar and Cecil Sandstones, Kununurra, Galloping Creek, and Hargreaves Formations, and Ragged Range Cong (MIA 6, MIA 8, MIA 14, BWPT 4, BWPT 7 and BWPT 8).
- **Carlton Group** - undivided; sandstone, siltstone, shale, and stromatolitic dolomite; includes Tarrara and Skewthorpe Formations, Hart Spring, Pretlove and Clark Sandstones, and Pander Greensand (MIA 8 and BWPT 4).

- **Antrim Plateau Volcanics** - vesicular, amygdaloidal and porphyritic basalt, conglomerate, sandstone; minor interbedded agglomerate, tuff, siltstone, and stromatolitic and laminated chert (BWPT 6 and BWPT 9).
- **Warton Sandstone** – sandstone (BWPT 6).
- **Elgee Siltstone** - siltstone, shale, stromatolitic dolomite, sandy dolomite, oolitic dolomite, and sandstone (BWPT 6).

2.4 Surface Hydrology

Two major drainage basins occur in the Kununurra region, the Ord River basin covering 43,995km² and the Keep River basin covering 6,100km² (ANRA 2009).

The major river in the vegetation survey area is the Ord River. The Ord River is 320km long, beginning below Mount Wells, flowing around the edge of Purnululu National Park before heading north through Lake Argyle, passing west of Kununurra and discharging into the Indian Ocean in Cambridge Gulf. The longest tributaries are the Bow River, Nicholson River, Dunham River, Panton River and Negri River.

Two areas are listed as RAMSAR³ sites of international importance, the Ord River Floodplain and the Lake Argyle / Lake Kununurra area (ANRA 2009). The Ord River Floodplain RAMSAR site is a large system of river, tidal mudflat and floodplain wetlands (ANRA 2009). The Lake Argyle and Kununurra RAMSAR site is large system of man-made reservoirs and associated wetlands (ANRA 2009). There are no RAMSAR sites occurring at or near the vegetation survey areas (DEC 2009c). The Ord River Floodplain RAMSAR site occurs 32km west of MIA 8 (DEC 2009c). The Lake Argyle and Kununurra RAMSAR site occurs 14km south-southwest of MIA 14 (DEC 2009c).

2.5 Regional Vegetation

The vegetation survey areas are located in the Gardner Botanical District (Beard 1979) and the IBRA Victoria Bonaparte 1 Subregion (DEC 2007b, Graham 2001). The Victoria Bonaparte 1 Subregion has diverse landforms and vegetation, including Proterozoic sandstone ranges with low tree savannahs and hummock grassland, and black or red soil plains with savannah woodlands (Graham 2001).

The vegetation survey areas occur over five of Beard's Vegetation Associations, these being: 52, 59, 901, 909 and 916 (DAFWA 2006). The Beard descriptions are provided below:

- **52:** Victoria Bonaparte; Grasslands, high grass savanna woodland; bloodwood and stringybark over upland tall grass and curly spinifex.
- **59:** Victoria Bonaparte; Grasslands, high grass savanna sparse tree; bauhinia and coolabah over mitchell, blue and tall upland grasses.
- **901:** Victoria Bonaparte; Grasslands, high grass savanna woodland; stringybark and woolybutt over upland tall grass and curly spinifex.
- **909:** Victoria Bonaparte; Grasslands, high grass savanna woodland; bloodwood, stringybark and woolybutt over upland tall grass and curly spinifex on sandplain.

³ The RAMSAR Convention (on Wetlands of International Importance) is an intergovernmental treaty. RAMSAR sites are those wetlands listed under this convention.

- **916:** Victoria Bonaparte; Grasslands, high grass savanna woodland; grey box, *Eucalyptus confertifolia* and *E. foelscheana* over spinifex, white and tall upland grass on sandy plain on limestone.

Beard's Vegetation Associations have been further refined by the Department of Agriculture and Food Western Australia ('DAFWA') into Vegetation Sub-associations (DAFWA 2006), described below:

- **52:** Victoria Bonaparte; *Eucalyptus* woodland/*Acacia* mixed open shrubland/*Triodia* mixed hummock grassland.
- **59:** Victoria Bonaparte; *Eucalyptus* mixed isolated trees/*Astrebla* mixed tussock grassland.
- **901:** Victoria Bonaparte; *Eucalyptus* woodland/*Sorghum* mixed tussock grassland.
- **909:** Victoria Bonaparte; *Eucalyptus* woodland/*Sorghum* mixed tussock grassland.
- **916:** Victoria Bonaparte; *Eucalyptus* woodland/*Sehima* mixed tussock grassland.

The type, status, pre-European area (based on Beard 1979) and remaining extent of native vegetation for the entire state has been assessed by the Department of Environment and Conservation ('DEC') and DAFWA using remote sensing techniques and GIS analysis to produce a statistical compendium called the 'Comprehensive, Adequate and Representative' (CAR) Reserves System (Shepherd *et al.* 2002). Data has been updated on a regular basis with the information from the latest update being in 2009 (DAFWA 2009a). Information on the extent of Vegetation Sub-associations 52, 59, 901, 906 and 916 is provided in Table 4.

Table 4: Extent of pre-European vegetation remaining in the Pilbara (DAFWA 2009a)

Vegetation Sub-association	Pre-European area (ha)	Current extent (ha)	Remaining %	Pre-European % in IUCN Class I-IV Reserves*
52	271,480	271,442	100	8.3
59	139,451	122,929	88	8.5
901	4,780,630	4,725,495	99	17.9
909	281,736	280,622	100	1.1
916	82,331	82,331	100	1.3

*The International Union of Conservation ('IUCN') Reserve Classes 1 to 4 are used as an indicator of areas considered as being protected under conservation estate.

The remaining percentage of pre-European vegetation remaining for each of these five vegetation sub-associations is very high, with approximately 100 percent for Vegetation Sub-associations 52, 901, 909 and 916 (Table 4, Shepherd *et al.* 2002). All five vegetation sub-associations have representation within internationally recognised conservation estates (IUCN Reserve classes 1 to 4).

2.6 Threatened and Priority Ecological Communities

Significant conservation areas within Western Australia include Threatened Ecological Communities ('TECs') and Priority Ecological Communities ('PECs') (DEC 2007c). A TEC is listed under one of four categories: presumed totally destroyed, critically endangered,

endangered or vulnerable (DEC 2007c). A PEC is listed under one of five categories: Priority 1 to Priority 5 (DEC 2007c).

A DEC database search was requested for records of TECs and PECS in the eastern Kimberley Region (DEC 2009a). The location of TECs and PECs in relation to the vegetation survey areas were determined using an ArcView GIS shapefile provided by the DEC.

There are 11 TECs listed for the Kimberley region (DEC 2008a) occurring within four IBRA subregions: Dampierland 1, Dampierland 2, North Kimberley 1 and Great Sandy Desert 1 (May and MacKenzie 2003). No TECs occur within the Victoria Bonaparte 1 IBRA subregion (Graham 2001) and the DEC have no records of TECs in or near the vegetation survey area (DEC 2008a).

There are 15 PECs listed for the Kimberley region (DEC 2008b). One occurs approximately 10km north east of MIA 13 (DEC 2008b), this PEC being:

- **PEC 2:** Assemblages of Point Spring and Long Spring rainforest swamps.

No springs or rainforest swamps were recorded during the vegetation surveys. It is highly unlikely that this PEC occurs in any of the vegetation survey areas.

2.7 Declared Rare and Priority Flora

Under the *Wildlife Conservation Act 1950*, the Minister for the Environment may declare species considered to be in danger of extinction, are rare or otherwise in need of special protection, as Declared Rare Flora ('DRF') (Appendix A, Florabase 2009b).

DEC also maintains a Priority Flora list for flora that may be threatened or endangered but are not formally protected under the *Wildlife Conservation Act 1950* (Atkins 2009). Priority Flora species are listed under four priority categories by DEC (Appendix A, Florabase 2009b).

DEC maintains databases for the locations of DRF and Priority Flora. A DRF and Priority Flora search was conducted by DEC for the Kununurra region and the results are presented in Appendix B and C (DEC 2009b) and discussed in Section 2.11.1.

At a National level, endangered flora can also be listed as a Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* ('EPBCA'). An EPBCA search was conducted and the results are presented in Section 2.10.

2.8 Environment Protection and Biodiversity Conservation Act 1999

A search was conducted using the Department of Environment, Water, Heritage and the Arts ('DEWHA') "Protected Matters Search Tool" for the *Environment Protection and Biodiversity Conservation Act 1999* ('EPBCA') listings based from a mid-point between the vegetation survey areas (15°38'47"S, 128°46'44"E) with a 50km buffer (DEWHA 2009a).

There were no Federal TECs listed under the EPBCA occurring within the vegetation survey areas or 50km search buffer (DEWHA 2009a).

One threatened species was listed, *Hibiscus cravenii*, listed as Vulnerable (DEWHA 2009a). This shrub is endemic to the Northern Territory and is currently known from six populations in the Keep River National Park (DEWHA 2009b). This species is not listed by Florabase as occurring in Western Australian (Florabase 2009a).

Two RAMSAR sites were listed, the Ord River Floodplain RAMSAR site and the Lake Argyle and Lake Kununurra RAMSAR site. As discussed in Section 2.4, neither of these sites occur within or near the vegetation survey areas.

2.9 Literature Review

Prior to the Pilbara Flora survey, a desktop study was conducted and involved a threatened flora search requested from DEC and reviewing previous flora survey reports for the Kununurra region.

1.1.1 DEC Search

The DEC search was requested for records of DRF and Priority Flora for a search area 95km by 75km (15° 19' to 16° 00'S and 128° 10' to 129° 04'E) that included the vegetation survey areas (DEC 2009b). The location of the search area and the DEC search results are provided in Appendix B and C.

In December 2009, DEC commenced a review of conservation taxa within Western Australia. The review continued until March 2009. A combined DEC database listing of DRF and Priority Flora is provided in Appendix C and has been checked using Florabase (2009a) against the recent changes in the status of conservation flora.

Thirty four conservation taxa were listed by DEC for the Kununurra region of which 22 were assessed as having a realistic possibility of occurring within the vegetation survey areas (Appendix C). Of these, none are Declared Rare Flora, nine are Priority 1, two are Priority 2 and 11 are Priority 3 flora species.

Location and habitat information on each of these 22 species was obtained from Western Australian Herbarium database records through Florabase (2009a). There were no populations of conservation taxa listed by DEC that appeared to have any particular habitat or spatial specificity in relation to the vegetation survey areas (Appendix C).

2.1.1 Desktop Study

A desktop study was conducted and involved reviewing previous flora survey reports for the Kununurra region. Four reports were reviewed:

- 'Ord River Stage 2 M2 Development Area Terrestrial Biological Assessment.' Unpublished report prepared for the Department of Resource Development (Ecologia Environmental Consultants 1997).
- 'Ord Sugar Project. A vegetation survey to map the vegetation communities of the M2 Development Area of the Ord River Scheme.' Report for Wesfarmers Sugar Company Pty Ltd, Marubeni Corporation and the Water Corporation of Western Australia (Kinhill Pty Ltd 1999).
- 'Ord River Irrigation Area Stage 2 Proposed Development of the M2 Area. Environmental Review and Management Programme. Draft Environmental Impact Statement'. Published report for Wesfarmers Sugar Company Pty Ltd, Marubeni Corporation and the Water Corporation of Western Australia (Kinhill Pty Ltd 2000).
- "Location of Vegetation Units Outside of Proposed ORIA Stage 2". Unpublished report prepared for the Department of Industry and Resources (Kellogg Brown and Root Pty Ltd 2005).

The relevant floristic information from these reports is summarised below.

Ecologia Environmental Consultants (1997) M2 Development Area

The M2 Development Area, including the Weaber Plains, Knox Creek and Keep River Plains (totalling 32,000ha), was surveyed by Ecologia over two field trips: an October 1996 'dry' season survey and a February 1997 'wet' season survey. A total of 131 sites were recorded: 86 'dry' season sites and 45 'wet' season sites.

A total of 682 plant taxa from 276 genera and 87 families were recorded. No DRF were recorded. Three Western Australian Priority Flora species were recorded:

- *Fimbristylis laxiglumis* (P2);
- *Brachychiton tuberculatus* (P3); and
- *Plectrachne caroliniana* (P1)⁴.

Eighteen introduced species were recorded. Those with a wide distribution included:

- *Passiflora foetida* var *hispida*;
- *Echinochloa colona*;
- *Achyranthes aspera*⁵; and
- *Stylosanthes hamata*.

Seventeen vegetation associations were described under four categories:

- Myrtaceous woodlands over grasslands;
- *Lysiphyllum cunninghamii*⁶ over grasslands;
- *Excoecaria parvifolia* woodlands over grasslands; and
- Grasslands.

Kinhill Pty Ltd (1999) M2 Development Area

This report expanded on the results of the Ecologia (1997) M2 Development Area vegetation survey to enhance the understanding of vegetation in the area and produce a draft vegetation map. Additional field data was collected over two field trips: 17 to 20 May 1999 and 6 to 11 June 1999.

An additional 40 plant taxa were recorded, in addition to the Ecologia Environmental Consultants (1997) count of 682, totalling 722 taxa.

A total of 72 vegetation communities were described (derived from Ecologia 1997 and the Kinhill additional field work) grouped into 17 categories within three larger groups:

- Grasslands and sedgeland;

⁴ *Plectrachne caroliniana* (P1) has since had a name change to *Triodia acutispicula* (P3) (Florabase 2009a).

⁵ *Achyranthes aspera* is no longer listed as an introduced species (Florabase 2009a).

⁶ *Lysiphyllum cunninghamii* has since had a name change to *Bauhinia cunninghamii* (Florabase 2009a).

- Grasslands with emergent trees; and
- Woodlands.

Kinhill Pty Ltd (2000) M2 Development Area ERMP

This report summarises the vegetation and flora of the M2 Development Area using data collected by Ecologia (1997) and Kinhill (1999) to produce vegetation maps.

Kellogg Brown and Root Pty Ltd (2005) Vegetation Units Outside of Proposed ORIA Stage 2

Additional fieldwork was undertaken from 18 to 23 May 2004 to locate six vegetation units described in Kinhill (1999) in existing and proposed conservation reserves adjacent to the M2 Development Project Area. These vegetation units had less than 30 percent of the pre-clearing extent within conservation areas and included black soil plains.

Four of the six vegetation units were found to be sufficiently represented outside of the proposed M2 Development Area. One vegetation unit was only represented in a small location and another was not located during the survey.

3 Survey Methodology

The vegetation survey was undertaken by Pilbara Flora personnel over two field trips, 20 to 29 May 2009 and 28 June to 08 July 2009, in which a total of 90 person field days were completed. The survey team consisted of:

- Supervising Botanist/Arid Zone Ecologist Charles Newland (Flora Licence SL008596);
- Senior Botanist Kate Rose (Flora Licence SL008499);
- Senior Botanist/Rangeland Scientist Alan Rose;
- Botanist Basil Byrne;
- Biologist/Environmental Scientist Fiona Bennett (Flora Licence SL008597);
- Biologist/ Environmental Scientist Clare Taylor; and
- Botanical Field Technician Val Large (Flora Licence SL008598).

With reference to the EPA Guidance Statement No. 51 "*Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*" (EPA 2004), a 'one season' Level 2 equivalent flora and vegetation survey was conducted. The Level 2 equivalent survey consists of a background study and a comprehensive flora and vegetation survey. In the Kimberley, a 50 x 50m quadrat has been adopted as the standard plot (Trish Handyside DEC Kununurra pers com).

Prior to the field survey, a desktop study was undertaken (provided in Section 2) and preliminary mapping of the vegetation survey areas undertaken using .ecw orthorectified aerial photo images on Arcview GIS. Survey requirements were also discussed with the DEC Regional Botanist at Kununurra.

The field survey was conducted by traversing the vegetation survey area on foot. Vegetation communities were differentiated visually and were mapped using 50 x 50m quadrats. For creeklines where a 50 x 50m quadrat was not possible, traverses were made for approximately 100m along the creek.

Vegetation and floristic data collected for quadrats included: species presence, height, percentage foliage cover, community structure, vegetation condition, fire age, general information on soil, landform, GPS coordinates for the centre of the quadrat and a 'north-east-south-west' photo series. GPS survey points were also collected to assist in mapping areas between quadrats. Data collected at the GPS survey points consisted of species dominance, community structure, vegetation condition, landform, soil types, GPS coordinates and a 'north-east-south-west' photo series. A total of 151 quadrats and 163 GPS survey points were undertaken. The locations of quadrats and GPS survey points are provided in Figures 3 to 9.

A 100 percent floristic collection was made of all taxa encountered during the survey. Taxa were collected with reference names used in a field herbarium with identical specimens pressed for taxonomic confirmation. Taxonomic determinations were made by Sharnya Thomson using reference material at the Western Australian State Herbarium. Nomenclature of all species recorded was checked against the Florabase (2009a). Problematic species were determined in conjunction with Russell Barrett.

Vegetation types were mapped in accordance with vegetation classifications based on Specht with modification by Aplin and Trudgen (Appendix D). Vegetation condition was mapped in accordance with vegetation condition scale developed by Trudgen for the Pilbara (Appendix D).

3.1 Limitations of Vegetation Survey

Various factors can limit the effectiveness of a vegetation survey. Pursuant to EPA Guidance Statement 51, these factors have been identified and their potential to impact on the effectiveness of the survey has been assessed (Table 5).

Table 5: Potential limitations affecting the effectiveness of the vegetation survey

Potential limitations	Constraint	Comment
Competency and experience of the Botanists undertaking the survey	No	All botanists/biologist involved in this survey have had extensive experience in previous vegetation surveys in Northern Australia. Three botanists have undertaken surveys previously in the Kununurra region. A Senior Botanist was placed as leader in each field team. Prior to commencing the survey, all personnel attended a ½ day training and data collection standardisation session to ensure that information was collected consistently between teams.
Spatial uncertainty	No	Mobile Mapper Office™ software was used to create a map of the vegetation survey areas and relevant land features. This map was then downloaded into the GPS units (Magellan Explorist XL and Magellan Triton). The location of the botanist can then be viewed in real-time on the GPS screen map, thus removing any spatial uncertainty. The field personnel are very experienced in the use of this system for field work. GPS points were also checked against known survey points and road alignments for spatial error.
Seasonality	No	The 12 month period prior to the vegetation survey had higher than average total rainfall, 966.6mm versus 835.5mm (Table 3). Ninety seven percent of this total rainfall was from the 'wet season' summer rainfall, with 940mm falling from November 2008 to April 2009 (Table 3, Figure 5). It was considered that sufficient 'wet season' summer rainfall occurred over an extended period to facilitate an effective mid-year vegetation survey (Figure 5). This was evidenced during the survey by the large number of forbs and annuals being recorded, wet soils and areas of rangeland remaining inundated.
Adequate ground coverage and intensity of survey effort	No	The vegetation survey areas were traversed on foot. It is considered the 151 quadrats and 163 GPS survey points provided adequate ground coverage and survey intensity.
Burn Cycle	No	The majority of the vegetation survey areas had a burn age of >3 years. Some areas had been recently burnt (<6 months) however sufficient remnant unburnt vegetation was present to undertake survey.
Resources	No	Adequate resources were available to conduct the survey.
Access restrictions	No	All areas were accessible although some areas had no vehicle access which required hiking considerable distances on foot. All required sites as determined by preliminary vegetation mapping were reached.

Potential limitations	Constraint	Comment
Taxonomic uncertainty	No	The flora of the Kimberley region has a number of taxonomic uncertainties. Currently the flora of the Kimberley region is being extensively revised by taxonomic experts. Sharnya Thomson is a taxonomic specialist who works daily at the WA Herbarium. Indeterminate taxonomies are checked in consultation with those working on the Kimberley Flora and other WA Herbarium specialist botanists. All potential DRF and priority species are checked against reference specimens in the herbarium. Even to the best abilities of all parties concerned, there will always be some taxonomic uncertainty but this uncertainty is part of the modus operandi and hence not listed as a constraint.

In summary, no factors were identified that were considered as being likely to limit the effectiveness of the flora and vegetation survey conducted by Pilbara Flora at the MIAs.

4 Survey Results

4.1 Floristics

A total of 458 vascular taxa from 218 genera and 72 families were recorded from the vegetation survey areas (Table 6). Five families were dominant in terms of taxa numbers; Poaceae, Papilionaceae, Myrtaceae, Cyperaceae and Mimosaceae. Poaceae, Papilionaceae and Cyperaceae were also dominant in terms of genera numbers (Table 6). A total list of botanical taxa by vegetation type is provided in Appendix G. Quadrat data sheets are presented in Appendix H.

Table 6: Floristic summary of the flora and vegetation survey

Family No.	Family	Genera	Taxa
031	Poaceae	32	64
165	Papilionaceae	20	43
273	Myrtaceae	6	43
032	Cyperaceae	12	35
163	Mimosaceae	4	23
090	Proteaceae	4	15
345	Asteraceae	8	14
331	Rubiaceae	4	13
185	Euphorbiaceae	7	12
316	Scrophulariaceae	6	12
106	Amaranthaceae	5	12
221	Malvaceae	5	10
341	Goodeniaceae	2	10
307	Convolvulaceae	5	7
313	Lamiaceae	5	7
207	Sapindaceae	4	7
223	Sterculiaceae	3	7
272	Combretaceae	1	7
343	Stylidiaceae	1	7
220	Tiliaceae	3	6
310	Boraginaceae	3	6
164	Caesalpiniaceae	5	5
325	Acanthaceae	5	5
265	Lythraceae	3	5
305	Asclepiadaceae	3	5
087	Moraceae	1	5
302	Loganiaceae	1	5
111	Portulacaceae	2	4

Family No.	Family	Genera	Taxa
113	Caryophyllaceae	1	4
143	Droseraceae	1	3
047	Commelinaceae	2	2
054F	Anthericaceae	2	2
086	Ulmaceae	2	2
097	Loranthaceae	2	2
137A	Capparaceae	2	2
178	Meliaceae	2	2
199	Celastraceae	2	2
202	Stackhousiaceae	2	2
304	Apocynaceae	2	2
021	Pandanaceae	1	2
110	Aizoaceae	1	2
194	Anacardiaceae	1	2
235	Elatinaceae	1	2
275	Onagraceae	1	2
339	Campanulaceae	1	2
007	Adiantaceae	1	1
009A	Platyzomataceae	1	1
013	Marsileaceae	1	1
040	Centrolepidaceae	1	1
042	Xyridaceae	1	1
043	Eriocaulaceae	1	1
055	Haemodoraceae	1	1
092	Santalaceae	1	1
122	Menispermaceae	1	1
132	Hernandiaceae	1	1
154	Byblidaceae	1	1
183	Polygalaceae	1	1
215	Rhamnaceae	1	1
216	Vitaceae	1	1
222	Bombacaceae	1	1
241	Cochlospermaceae	1	1
243	Violaceae	1	1
248	Passifloraceae	1	1
263	Thymelaeaceae	1	1
268	Lecythidaceae	1	1

Family No.	Family	Genera	Taxa
281	Apiaceae	1	1
297	Ebenaceae	1	1
301	Oleaceae	1	1
317	Bignoniaceae	1	1
323	Lentibulariaceae	1	1
337	Cucurbitaceae	1	1
340	Lobeliaceae	1	1
Total	72	213	458

As observed in the field, these results indicate a floristic diversity. In comparison to the M2 Development Area vegetation survey with 682 taxa over 32,000ha (Ecologia Environmental Consultants 1997), the Pilbara Flora survey recorded 458 taxa from 5,519ha (one quarter of the survey area of the M2 Development Area).

The high floristic diversity seems to be particularly prevalent in the Kununurra Region as other areas report lower diversity. For example, a vegetation survey in the North Kimberley over a 40km proposed road reported 243 taxa from 156 genera and 65 families (Striker 2002). A vegetation survey in the central Kimberley recorded 265 taxa from 155 genera and 64 families over a 600ha survey area (Mattiske 2003). These other sites correspond to much lower rainfall areas.

4.2 Conservation Taxa

No Declared Rare Flora species pursuant to Section 23F(2) of the *Wildlife Conservation Act 1950* or Threatened Flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* were recorded within the vegetation survey areas.

Three Priority Flora species were recorded during the flora and vegetation survey:

- *Goodenia brachypoda* (Priority 1);
- *Brachychiton tuberculatus* (Priority 3); and
- *Schoenus punctatus* (Priority 3).

Locations of Priority Flora species recorded are presented in Table 7 and Appendix E Maps 1 to 7.

Goodenia brachypoda was recorded at eight locations within MIA 6 and MIA 8, with one plant recorded at each location (Table 7). This species is described as a prostrate herb with stems to 0.25m with yellow flowers during September (Florabase 2009a). *Goodenia brachypoda* has been recorded on red sandy loam soils (Florabase 2009a).

A search for the distribution of *Goodenia brachypoda* was conducted on Australia's Virtual Herbarium (AVH 2009). This species has been recorded in the northeast Kimberly, north of the Prince Regent River, at the Pentecost River west of Kununurra, near Wyndham, on Carlton Plains northwest of Kununurra, south of Lake Argyle and in the Northern Territory, south of Victoria River and near Bullo River (Plate 4). The main population distribution is an area approximately 300km by 150km that straddles the border near Kununurra. This species has a recorded distribution that occurs well outside of the vegetation survey areas.

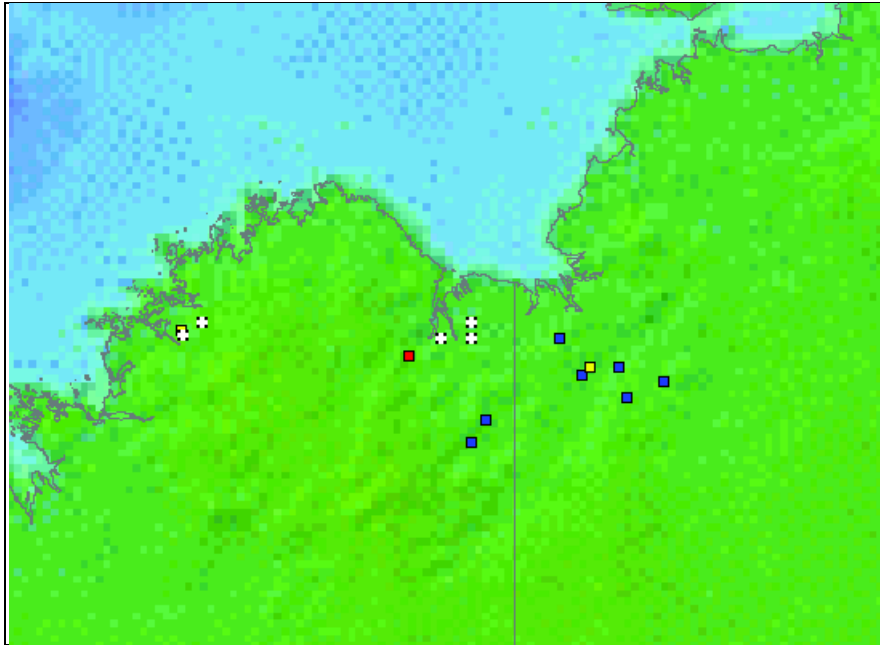


Plate 4: Distribution of *Goodenia brachypoda* (P1) sourced from Australian's Virtual Herbarium (AVH 2009) (new map under prep)

Brachychiton tuberculatus was recorded at 38 locations in MIA 6, MIA 8, MIA 14, BWPT 4, BWPT 8 and BWPT 9, ranging from one to 50 plants recorded at each location (Table 7). This species is described as a shrub or tree growing to 7m high with cream, green, orange and red flowers from April/August to November (Florabase 2009a, Plate 5). *Brachychiton tuberculatus* has been recorded on red or yellow sand and undulating plains (Florabase 2009a).



Plate 5: *Brachychiton tuberculatus* (P3) at Material Investigation Area 8

A search for the distribution of *Brachychiton tuberculatus* was conducted on Australia's Virtual Herbarium (AVH 2009). This species has been recorded in the Kununurra region extending north to the Cambridge Gulf, west to Carlton Plains and east past the border, and also north of Lake Argyle and in the Northern Territory, near the Daly River and near Fitzmaurice River (Plate 6).

The two population distributions are an area approximately 140km by 90km centred on Kununurra and a second area along the Daily River (Plate 6). This species has a recorded distribution that occurs outside of the vegetation survey areas. *Brachychiton tuberculatus* was so common in some areas that it was recorded as dominant species in the tall shrub layer (Borrow Pits 8 and 14).

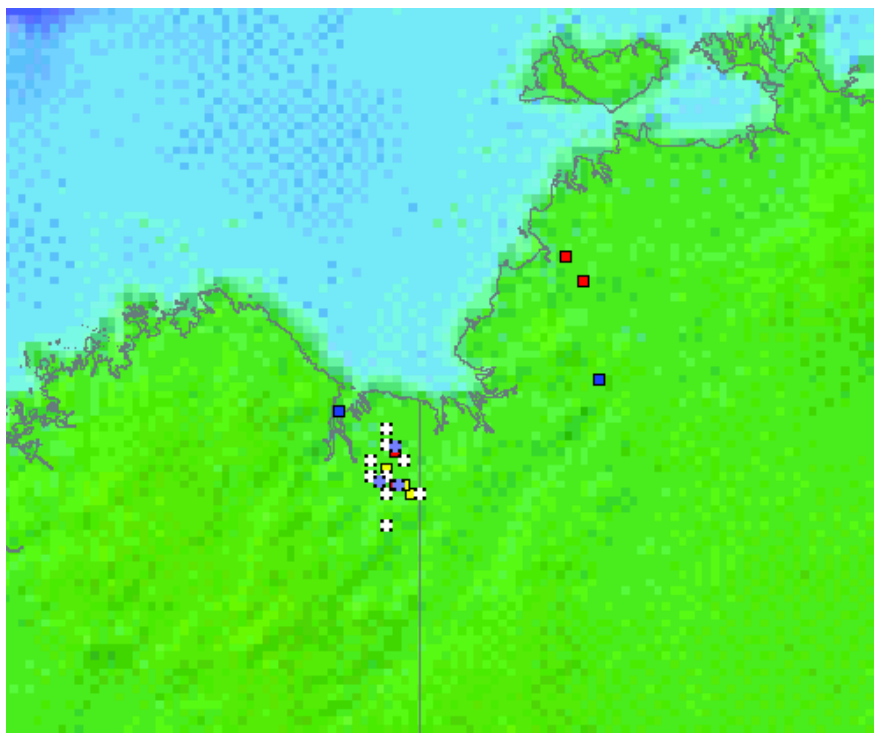


Plate 6: Distribution of *Brachychiton tuberculatus* (P3) sourced from the Australian Virtual Herbarium (AVH 2009)

Schoenus punctatus was recorded at six locations within MIA14, ranging from 2 to 30% cover (Table 7). This species is described as a rhizomatous tufted perennial sedge growing to approximately 0.6m high with brown flowers in August (Florabase 2009a).

A search for the distribution of *Schoenus punctatus* was conducted on Australia's Virtual Herbarium (AVH 2009). This species has been recorded across the top of Australia from Karratha in Western Australia, through the Kimberley and Northern Territory and from Rockhampton in Queensland extending north to Cape York and into Papua New Guinea (Plate 7).

This species was dominant as a sedge layer in many areas of MIA14.

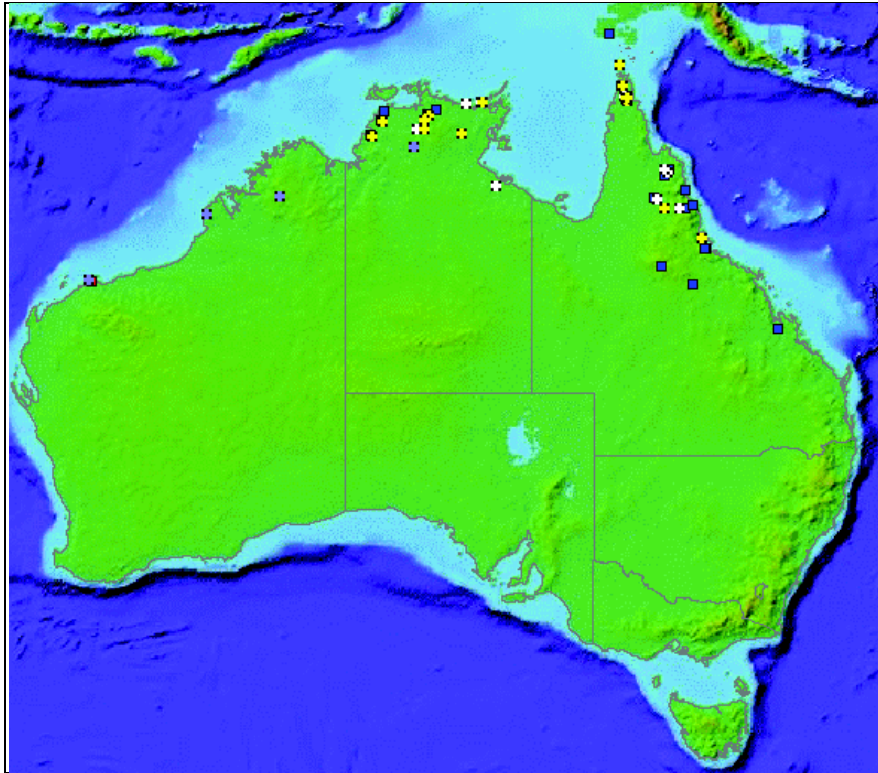


Plate 7: Distribution of *Schoenus punctatus* (P3) sourced from the Australian Virtual Herbarium (AVH 2009)

Table 7: GPS locations of Priority Flora species recorded in the vegetation survey area

Species	Quadrat No.	Number of Plants or % cover*	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
<i>Goodenia brachypoda</i> (Priority 1)	Q005	1	MIA 6	465304	8271865
	Q027	1	MIA 8	468035	8280906
	Q030	1	MIA 8	8281695	470286
	Q031	1	MIA 8	8282005	470457
	Q032	1	MIA 8	8282115	470596
	Q033	1	MIA 8	8282071	470779
	Q123	1	BWPT 5	8278840	469271
	GPS Point	1	MIA8	8280917	467724

Species	Quadrat No.	Number of Plants or % cover*	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
<i>Brachychiton tuberculatus</i> (Priority 3)	Q006	1	MIA 6	465345	8272695
	Q022	1	MIA 8	470340	8281352
	Q027	8	MIA 8	468035	8280906
	Q030	10	MIA 8	470286	8281695
	Q031	7	MIA 8	470457	8282005
	Q037	1	MIA 8	470744	8283852
	Q039	1	MIA 8	470305	8283376
	Q080	2	MIA 14	486764	8269687
	Q081	10	MIA 14	485574	8270117
	Q084	6	MIA 14	484406	8269022
	Q086	10	MIA 14	486507	8268780
	Q088	5	MIA 14	487643	8268603
	Q090	10	MIA 14	487558	8267984
	Q092	1	MIA 14	483530	8265127
	Q093	Sc1	MIA 14	484163	8265128
	Q094	5	MIA 14	484366	8265051
	Q095	5	MIA 14	484473	8265040
	Q099	5	MIA 14	483744	8265504
	Q100	1	MIA 14	483637	8265636
	Q101	1	MIA 14	483551	8265714
	Q102	1	MIA 14	483101	8266255
	Q104	1	MIA 14	482018	8266631
	Q105	50	MIA 14	484065	8267395
	Q106	10	MIA 14	484301	8267174
	Q107	1	MIA 14	485512	8266279
	Q109	10	MIA 14	484804	8266732
	Q110	5	MIA 14	483486	8266753
	Q112	30	MIA 14	485063	8265449
	Q113	30	MIA 14	484580	8265781
	Q114	2	MIA 14	484237	8266101
Q115	35	BWPT 4	468304	8280011	
Q140	5	BWPT 9	461690	8259803	
GPS Point	1	MIA 8	467724	8280917	
GPS Point	8	MIA 8	469162	8280288	

Species	Quadrat No.	Number of Plants or % cover*	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
<i>Brachychiton tuberculatus</i> (Priority 3)	GPS Point	10	MIA 14	488201	8268327
	GPS Point	30	MIA 14	483820	8265459
	GPS Point	1	MIA 8	470511	8282082
	GPS Point	1	BWPT 8	464088	8268080
<i>Schoenus punctatus</i> (Priority 3)	Q080	10%	MIA 14	486764	8269687
	Q081	5%	MIA 14	485574	8270117
	Q085	2%	MIA 14	484492	8268988
	Q086	30%	MIA 14	486507	8268780
	Q101	5%	MIA 14	483551	8265714
	Q104	3%	MIA 14	482018	8266631

* The number of individual plants is given for *Brachychiton tuberculatus* and *Goodenia brachypoda* however a percentage cover value has been given for *Schoenus punctatus* as they are rhizomatous tufted perennial sedges and individual plant counts are inaccurate.

4.3 Range Extensions

Two species recorded during the vegetation survey were identified as range extensions. These species are located in the Kimberley Region but occur outside of their previously recorded range (Florabase 2009a). These species are:

- *Eriachne glauca* var *barbinodis*; and
- *Isotoma armstrongii*.

Eriachne glauca var *barbinodis* has been previously recorded northwest of Halls Creek in the Kimberley region with three specimen records (Florabase 2009a).

Isotoma armstrongii has approximately eight specimen records in the Northern Kimberley region (Florabase 2009a).

4.4 Introduced Species

Twenty three introduced weed species were recorded in the vegetation survey areas:

- *Aerva javanica* - Kapok Bush
- *Azadirachta indica* – Neem Tree
- *Bidens pilosa* - Cobbler's Pegs
- *Calotropis procera* - Calotrope
- *Cardiospermum halicacabum* var *halicacabum* – Balloon Vine
- *Cenchrus ciliaris* - Buffel Grass
- *Clitoria ternatea* – Butterfly Pea
- *Corchorus olitorius* - Jute
- *Crotalaria gorensis* - Gambia Pea

- *Cynodon dactylon* - Couch
- *Digitaria ciliaris* - Summer Grass
- *Echinochloa colona* - Awnless Barnyard Gras,
- *Hyptis suaveolens* - Hyptis
- *Macroptilium lathyroides var semierectum*
- *Malvastrum americanum* - Spiked Malvastrum
- *Parkinsonia aculeata* - Parkinsonia
- *Sida cordifolia* - Flannel Weed
- *Sida rhombifolia* - Paddy's Lucerne
- *Stylosanthes hamata* - Verano Stylo
- *Stylosanthes scabra* – Shrubby Stylo
- *Trianthema portulacastrum* – Giant Pigweed
- *Urochloa mosambicensis* - Sabi Grass
- *Vachellia farnesiana* - Mimosa Bush

GPS locations of these species are presented in Table 8 and illustrated in Appendix E Maps 1 to 7.

Heavy weed infestation was prevalent at Borrow Pit 7 with a total of 14 weed species present (Table 8, Appendix E Map 2). The larger infestations included; *Cenchrus ciliaris* recorded with 70 percent cover at quadrat Q129, *Vachellia farnesiana* and *Urochloa mosambicensis* recorded with 20 percent cover at quadrats Q130 and Q131 respectively, and *Cynodon dactylon* recorded with 15 percent cover at quadrat Q131 (Table 8,). The proximity of Borrow Pit 7 to the Ord River developed agricultural areas and the presence of cattle is thought to have influenced the heavy weed infestation in this area.

Two weed species are listed as Declared Plants by the Agricultural Protection Board pursuant to the *Agricultural and Related Resources Protection Act 1976* (DAFWA 2009b):

- *Parkinsonia aculeata* – listed as P1 for the whole state and listed as P4 for the Wyndham - East Kimberley district (DAFWA 2009b). Recorded in Borrow Pit 7 at Q129 (Table 9, Appendix E Map 2).
- *Sida cordifolia* – listed as P1 for the Wyndham - East Kimberley district (DAFWA 2009b). Recorded in Materials Investigation Area 13 at Q070 (Table 8, Appendix E Map 6).

Declared Plants have different control requirements dependent on the ranking code:

- P1: The movement of plants or their seeds is prohibited within the State. This prohibits the movement of contaminated machinery and produce including livestock and fodder.
- P4: The infested area must be managed in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery. Treat to destroy and prevent seed set of all plants:
 - Within 100m inside of the boundaries of the infested property.
 - Within 50m of roads and highwater mark on waterways.
 - Within 50m of sheds, stock yards and houses.

Treatment must be done prior to seed set each year. Properties with less than 2ha of infestation must treat the entire infestation. Additional areas may be ordered to be treated

Table 8: GPS locations of introduced species recorded in the vegetation survey area

Species	Quadrat No.	% Cover	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
<i>Aerva javanica</i>	Q130	1	BWPT 7	8272299	466932
<i>Azadirachta indica</i>	Q002	<1	MIA 6	8271833	465754
	Q002	<1	MIA 6	8271833	465754
	Q005	<1	MIA 6	8271865	465304
	Q131	<1	BWPT 7	8272111	467051
<i>Bidens pilosa</i>	GPS point	<1	BP4	8279790	468541
<i>Calotropis procera</i>	Q011	2	MIA 6	8272840	466299
	Q115	<1	BWPT 4	8280011	468304
	Q129	2	BWPT 7	8272244	467276
	Q131	<1	BWPT 7	8272111	467051
<i>Cardiospermum halicacabum var halicacabum</i>	Q131	<1	BWPT 7	8272111	467051
<i>Cenchrus ciliaris</i>	Q129	70	BWPT 7	8272244	467276
<i>Clitoria ternatea</i>	GPS point	<1	MIA8	8279382	469849
	Q017	5	MIA 8	8279382	469849
	Q018	<1	MIA 8	8279592	469624
	Q128	1	BWPT 6	8273890	465601
	Q130	1	BWPT 7	8272299	466932
	Q131	<1	BWPT 7	8272111	467051
<i>Corchorus olitorius</i>	GPS point	<1	MIA8	8279382	469849
	Q019	<1	MIA 8	8280577	470298
	Q042	<1	MIA 13	8286968	496343
<i>Crotalaria gorensis</i>	Q128	<1	BWPT 6	8273890	465601
<i>Cynodon dactylon</i>	Q071	<1	MIA 13	8286315	495989
	Q131	15	BWPT 7	8272111	467051
<i>Digitaria ciliaris</i>	Q131	<1	BWPT 7	8272111	467051
<i>Echinochloa colona</i>	Q049	2	MIA 13	8287930	496439
	Q057	<1	MIA 13	8288018	495034
<i>Hyptis suaveolens</i>	Q002	<1	MIA 6	8271833	465754
	Q030	5	MIA 8	8281695	470286
	Q031	5	MIA 8	8282005	470457
	Q037	2	MIA 8	8283852	470744
	Q038	<1	MIA 8	8283322	471045
	Q039	<1	MIA 8	8283376	470305
	Q130	5	BWPT 7	8272299	466932
	Q146	<1	BWPT 10	8256314	465595
Q147	<1	BWPT 10	8256402	465510	

Species	Quadrat No.	% Cover	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
<i>Macroptilium lathyroides</i> var <i>semirectum</i>	GPS point	<1	MIA8	8279382	469849
	Q018	<1	MIA 8	8279592	469624
	Q032	<1	MIA 8	8282115	470596
	Q038	<1	MIA 8	8283322	471045
	Q123	1	BWPT 5	8278840	469271
<i>Malvastrum americanum</i>	Q130	<1	BWPT 7	8272299	466932
<i>Parkinsonia aculeata</i>	Q129	<1	BWPT 7	8272244	467276
<i>Sida cordifolia</i>	Q070	<1	MIA 13	8285950	495935
<i>Sida rhombifolia</i>	Q070	1	MIA 13	8285950	495935
<i>Stylosanthes hamata</i>	Q001	<1	MIA 6	8272198	465850
	Q050	<1	MIA 13	8287985	496267
	Q054	<1	MIA 13	8288969	495581
	Q058	<1	MIA 13	8287366	495302
	Q063	1	MIA 13	8285850	495088
	Q065	<1	MIA 13	8286348	495721
	Q068	<1	MIA 13	8286127	494316
	Q075	<1	MIA 13	8286945	495055
	Q121	2	BWPT 5	8278717	468917
	Q123	1	BWPT 5	8278840	469271
	Q128	<1	BWPT 6	8273890	465601
	Q131	<1	BWPT 7	8272111	467051
	Q137	<1	BWPT 9	8259935	461690
	Q140	<1	BWPT 9	8259803	461690
	Q143	<1	BWPT 10	8256446	465627
	Q146	<1	BWPT 10	8256314	465595
	Q147	<1	BWPT 10	8256402	465510
Q151	<1	BWPT 10	8256568	465541	
<i>Stylosanthes scabra</i>	Q007	1	MIA 6	8272430	465764
	Q121	<1	BWPT 5	8278717	468917
	Q122	<1	BWPT 5	8278640	469046
<i>Trianthema portulacastrum</i>	Q063	1	MIA 13	8285850	495088
<i>Urochloa mosambicensis</i>	Q129	2	BWPT 7	8272244	467276
	Q130	<1	BWPT 7	8272299	466932
	Q131	20	BWPT 7	8272111	467051
	Q131	<1	BWPT 7	8272111	467051
<i>Vachellia farnesiana</i>	GPS point	<1	MIA8	8279836	469806
	GPS point	<1	MIA8	8279382	469849
	Q011	<1	MIA 6	8272840	466299
	Q017	<1	MIA 8	8279382	469849
	Q019	<1	MIA 8	8280577	470298
	Q020	<1	MIA 8	8280965	470609
	Q044	<1	MIA 13	8287454	495785

Species	Quadrat No.	% Cover	Vegetation Survey Area	GDA 94 MGA Zone 52	
				Easting	Northing
	Q044	<1	MIA 13	8287454	495785
	Q087	<1	MIA 14	8268559	487054
	Q129	<1	BWPT 7	8272244	467276
	Q130	20	BWPT 7	8272299	466932
	Q131	2	BWPT 7	8272111	467051

4.5 Vegetation Types

A total of 48 vegetation types and mosaic units were identified in the vegetation survey areas. These vegetation types fell into three major groupings:

- Grasslands (2.57% of the vegetation survey areas).
- Mosaic woodlands (88.11% of the vegetation survey areas).
- Woodlands (9.32% of the vegetation survey areas).

Within the grasslands vegetation group, four vegetation types were recorded (Table 9).

The mosaic woodland group comprises of three vegetation types divided into nine mosaic units (Table 9). The mosaic units identified represent the diversity of the mosaic woodland areas which, although have different vegetation types, cannot be accurately mapped at the scale required. Additionally, the mosaic woodlands can have vegetation changes at short spaced intervals which would make mapping overly complex. The regularity of occurrence of species and vegetation types within the mosaic woodlands is considered sufficient to warrant the clumping of mosaic types into this one group.

Seventeen vegetation types were mapped within the woodland group (Table 9). These woodland vegetation types were able to be mapped as distinct types rather than mosaic units.

A detailed description of each vegetation type is provided in Appendix F and maps of vegetation types provided in Appendix E Maps 8 to 21. There were no vegetation types identified that were considered as being rare, restricted, unique or representing Threatened or Priority Ecological Communities.

Landforms identified in the vegetation survey area included:

- Alluvial plains (95.20% of the vegetation survey areas)
- Black soil plains (3.80% of the vegetation survey areas)
- Sandstone hills (0.58% of the vegetation survey areas)
- Watercourse areas (0.27% of the vegetation survey areas)
- Disturbed areas (0.15% of the vegetation survey areas)

Table 9: Vegetation types recorded in the vegetation survey areas

Grasslands					
Type	Description	Typical Vegetation Structure	Landform	Area (ha)	
G1	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.	Tussock grassland of <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> over <i>Ludwigia perennis</i> and <i>Flemingia pauciflora</i> .	Black soil plain	52.67	
G2	<i>Sorghum ?stipoides</i> tussock grassland on previously cleared alluvial plains.	<i>Sorghum ?stipoides</i> tussock grassland over <i>Crotalaria medicaginea</i> var <i>neglecta</i> and <i>Melaleuca nervosa</i> subsp <i>?nervosa</i> .	Alluvial plain	2.42	
G3	Mixed grass species tussock grassland on alluvial plains.	Tussock grassland of <i>Chrysopogon</i> sp, <i>Oryza australiensis</i> , <i>Themeda triandra</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> and <i>Panicum decompositum</i> .	Alluvial plain	72.93	
G4	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.	<i>Cenchrus ciliaris</i> , <i>Heteropogon contortus</i> and <i>Urochloa mosambicensis</i> with <i>Calotropis procera</i> scattered shrubs.	Alluvial plain	13.71	
Mosaic Woodlands					
Type	Mosaic Unit	Description	Typical Vegetation Structure	Landform	Area (ha)
W1	W1A	<i>Corymbia greeniana</i> woodland on alluvial plains.	Woodland of <i>Corymbia greeniana</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> , <i>Petalostigma pubescens</i> and <i>Planchonia careya</i> with occasional patches of <i>Melaleuca nervosa</i> subsp <i>?nervosa</i> over mixed grassland of <i>Heteropogon contortus</i> , <i>Themeda triandra</i> and <i>Sorghum stipoides</i> .	Alluvial plain	844.6
	W1B	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.	Low woodland of <i>Terminalia canescens</i> and <i>Melaleuca argentea</i> with scattered <i>Corymbia greeniana</i> over <i>Themeda triandra</i> , <i>Eragrostis fallax</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .	Alluvial plain	
	W1C	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.	Open woodland of <i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> over <i>Melaleuca viridiflora</i> over <i>Ludwigia perennis</i> and <i>Fimbristylis tetragona</i> .	Alluvial plain	
	W1D	<i>Corymbia bella</i> woodland on alluvial plains.	Woodland of <i>Corymbia bella</i> over <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i> and <i>Erythrina vespertilio</i> over Poaceae sp.	Alluvial plain	

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W1E	<i>Corymbia ? grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Open woodland of <i>Corymbia ? grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> over <i>Acacia difficilis</i> and <i>Terminalia canescens</i> over <i>Sorghum ? stipoideum</i> .	Alluvial plain
W1F	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.	<i>Eucalyptus miniata</i> , <i>Corymbia ? confertiflora</i> and <i>Corymbia greeniana</i> over <i>Gardenia dactyoides</i> and <i>Acacia difficilis</i> over <i>Sorghum ? stipoideum</i> .	Alluvial plain
W1G	<i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> woodland on alluvial plains.	Low woodland of <i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> over <i>Sorghum ? stipoideum</i> , <i>Crotalaria cunninghamii</i> , <i>Abildgaardia schoenoides</i> and <i>Microstachys chamaelea</i> .	Alluvial plain
W1H	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> woodland on alluvial plains.	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> over <i>Sorghum ? stipoideum</i> .	Alluvial plain
W1I	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> woodland on alluvial plains.	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> over <i>Sorghum ? stipoideum</i> .	Alluvial plain
W2A	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	Low woodland of <i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> over <i>Schizachyrium fragile</i> , <i>Sorghum ? stipoideum</i> and <i>Fimbristylis microcarpa</i> .	Alluvial plain
W2B	<i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	Low woodland of <i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> over <i>Sorghum ? stipoideum</i> , <i>Eriachne ciliata</i> and <i>Setaria apiculata</i> .	Alluvial plain
W2C	<i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> woodland on alluvial plains.	Low woodland of <i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> over <i>Rhynchospora exserta</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> and <i>Chrysopogon</i> sp.	Alluvial plain
W2D	<i>Melaleuca minutifolia</i> woodland on alluvial plains.	Low woodland of <i>Melaleuca minutifolia</i> over <i>Themeda triandra</i> , <i>Sorghum ? stipoideum</i> , <i>Rhynchospora affinis</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .	Alluvial plain
W2E	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> woodland on alluvial plains.	Low woodland of <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> over <i>Themeda triandra</i> , <i>Panicum decompositum</i> , <i>Eragrostis tenellula</i> and <i>Sorghum stipoideum</i> .	Alluvial plain
W2F	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i>	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> over	Alluvial plain

W2

851.95

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		Sorghum ?stipoides and Triodia bitextura.		
	and <i>Eucalyptus microtheca</i> woodland on alluvial plains.			Alluvial plain
W2G	<i>Eucalyptus microtheca</i> woodland in soak areas.	Open woodland of <i>Eucalyptus microtheca</i> over <i>Chrysopogon</i> sp and <i>Eriachne glauca</i> var <i>barbinodis</i> .		Watercourse
W2H	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ? <i>Eucalyptus tectifica</i> woodland on creek banks.	Woodland of <i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ? <i>Eucalyptus tectifica</i> over <i>Adansonia gregorii</i> and <i>Pandanus ?spiralis</i> over <i>Panicum decompositum</i> and <i>Poaceae</i> sp.		Sandstone hill
W2I	<i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophileum chlorostachys</i> woodland on sandstone hillsides.	Low open woodland of <i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophileum chlorostachys</i> over <i>Grevillea heliosperma</i> over <i>Petalostigma quadriculare</i> , <i>Themeda triandra</i> and <i>Sorghum stipoides</i> over <i>Triodia bitextura</i> and <i>Schizachyrium fragile</i> .		
W3A	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> over <i>Gardenia megasperma</i> and <i>Grevillea heliosperma</i> over <i>Abildgaardia schoenoides</i> , <i>Panicum decompositum</i> and <i>Sorghum ?stipoides</i> .		Alluvial plain
W3B	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodland of <i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> over <i>Sorghum ?stipoides</i> , <i>Panicum decompositum</i> , <i>Themeda triandra</i> and <i>Abildgaardia schoenoides</i> .		Alluvial plain
W3C	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> over <i>Melaleuca argentea</i> over <i>Sorghum ?stipoides</i> , <i>Schoenus punctatus</i> <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Abildgaardia schoenoides</i> .		Alluvial plain
W3D	<i>Eucalyptus tectifica</i> woodland on alluvial plains.	Low woodland of <i>Eucalyptus tectifica</i> over <i>Melaleuca ?viridiflora</i> over <i>Sorghum ?stipoides</i> , <i>Abildgaardia schoenoides</i> and <i>Platzoma microphyllum</i> .		Alluvial plain
W3E	<i>Melaleuca ?viridiflora</i> woodland on alluvial plains.	Low open woodland of <i>Melaleuca ?viridiflora</i> over <i>Rotala diandra</i> , <i>Triodia bitextura</i> , <i>Abildgaardia schoenoides</i> and <i>Blumea diffusa</i> .		Alluvial plain
W3F	<i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.	Low open woodland of <i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> over <i>Excoecaria parvifolia</i> and <i>Melaleuca viridiflora</i> over <i>Fimbristylis microcarya</i> , <i>Triodia bitextura</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .		Alluvial plain
W3G	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> over <i>Eragrostis</i> sp, <i>Eriachne</i> sp, <i>Sorghum ?stipoides</i> , <i>Triodia bitextura</i> and <i>Abildgaardia schoenoides</i> .		Alluvial plain
				3166.26

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Type	Description	Typical Vegetation Structure	Landform	Area (ha)	Woodlands	
W3H	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> over * <i>Hyptis suaveolens</i> , <i>Corchorus siccoides</i> subsp <i>siccoides</i> and <i>Crotalaria ramosissima</i> and mixed grassland of <i>Heteropogon contortus</i> and <i>Eragrostis cunningii</i> .	Alluvial plain	48.64	Corymbia flavescens and Eucalyptus tectifica over Melaleuca viridiflora over Sorghum ?stipoidesum, Abildgaardia schoenoides and Triodia ?bifextura.	
W3I	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.		Woodland of <i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> over <i>Sorghum ?stipoidesum</i> , <i>Eriachne</i> sp and <i>Triodia</i> sp.		Alluvial plain	
W4	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> woodland on alluvial plains.	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> over * <i>Hyptis suaveolens</i> , <i>Corchorus siccoides</i> subsp <i>siccoides</i> and <i>Crotalaria ramosissima</i> and mixed grassland of <i>Heteropogon contortus</i> and <i>Eragrostis cunningii</i> .	Alluvial plain	48.64		
W5	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.	Low woodland of <i>Eucalyptus microtheca</i> over <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Excoecaria parvifolia</i> over <i>Schoenoplectus praelongatus</i> .	Alluvial plain	99.80		
W6	<i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platytera</i> low woodland on alluvial plains.	Low woodland of <i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platytera</i> over <i>Ludwigia perennis</i> , <i>Themeda triandra</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Eriachne sulcata</i> and <i>Rhynchospora exserta</i> .	Alluvial plain	7.77		
W7	<i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.	Low woodland of <i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> over <i>Calytrix exstipulata</i> and <i>Petalostigma pubescens</i> over <i>Triodia bynoei</i> .	Sandstone hill	6.21		
W8	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> over <i>Eragrostis</i> sp, <i>Ludwigia perennis</i> and <i>Eragrostis tenellula</i> .	Black soil plain	44.64		
W9	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.	Low woodland <i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> over <i>Oryza australiensis</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Ludwigia perennis</i> and <i>Chrysopogon</i> sp.	Black soil plain	112.56		
W10	<i>Corymbia grandifolia</i> subsp	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia</i>	Alluvial plain	56.40		

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	<i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.	<i>gregorii</i> over <i>Sorghum ?stipoideum</i> , <i>Eriachne obtusa</i> and <i>Abilgaardia schoenoides</i> .		
W11	<i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachycton diversifolius</i> woodland on creek banks.	Woodland of <i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachycton diversifolius</i> subsp <i>diversifolius</i> over Poaceae sp.	Watercourse	11.04
W12	<i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.	Low woodland of <i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> over <i>Sorghum ?stipoideum</i> , <i>Themeda triandra</i> and <i>Fimbristylis pterygosperma</i> .	Alluvial plain	37.50
W13	<i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.	Low woodland of <i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> over <i>Vachellia farnesiana</i> , <i>Hypitis suaveolens</i> , <i>Flueggea virosa</i> subsp <i>melanthesoides</i> , <i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i> , <i>Waltheria indica</i> and <i>Heteropogon contortus</i> .	Alluvial plain	12.25
W14	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus ?microtheca</i> woodland on creek banks.	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus ?microtheca</i> over <i>Terminalia hadleyana</i> over <i>Vachellia farnesiana</i> and <i>Chionachne hubbardiana</i> over <i>Urochloa mosambicensis</i> and <i>Cynodon dactylon</i> .	Watercourse	3.86
W15	<i>Corymbia ?bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.	Low woodland of <i>Corymbia ?bella</i> and <i>Corymbia confertiflora</i> over <i>Terminalia canescens</i> , <i>Owenia vermicosa</i> , <i>Terminalia latipes</i> , <i>Gardenia dacryoides</i> and <i>Calytrix exstipulata</i> over <i>Sorghum ?stipoideum</i> , <i>Cajanus pubescens</i> and <i>Triodia bynoei</i> .	Alluvial plain	18.79
W16	<i>Melaleuca nervosa</i> subsp <i>?nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.	Low open woodland of <i>Acacia dunnii</i> , <i>Melaleuca nervosa</i> subsp <i>?nervosa</i> and <i>Verticordia cunninghamii</i> over <i>Sorghum stipoideum</i> and <i>Eragrostis fallax</i> over <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i> , <i>Fuirena ciliaris</i> and <i>Eriachne obtusa</i> .	Alluvial plain	5.33
W17	<i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Woodland of <i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> over <i>Sorghum ?stipoideum</i> .	Alluvial plain	13.20
W18	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> over <i>Terminalia canescens</i> over <i>Sorghum ?stipoideum</i> and <i>Triodia ?pungens</i> .	Alluvial plain	17.08
W19	<i>Corymbia grandifolia</i> subsp	Low woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> ,	Sandstone	7.22

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	<i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> woodland on hillsides and undulating plains.	<i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> over <i>Terminalia platyptera</i> and <i>Calytrix exstipulata</i> over <i>Triodia bitextura</i> .	hills	
W20	<i>Terminalia canescens</i> woodland on sandstone hillsides.	Low open woodland of <i>Terminalia canescens</i> over <i>Triodia bitextura</i> .	Sandstone hills	4.21
0	Disturbed area	No vegetation, previously disturbed areas such as roads or existing borrow pits.	Alluvial plain	8.03
Total				5519.46

Previous vegetation survey in the M2 Development Area by Kinhill Pty Ltd (1999) recorded a hierarchy of vegetation categories with three major groups, 17 categories and 72 vegetation types. Comparison of the vegetation types and mosaic units to the Kinhill Pty Ltd (1999) categories was undertaken.

Overall, the 48 vegetation types and mosaic units recorded in the vegetation survey areas were in general terms comparable to the major vegetation groups of Kinhill Pty Ltd (1999):

- Grasslands and sedgeland - Vegetation types G1, G2, G3 and G4.
- Woodlands - All mosaic woodland and woodland vegetation types, W1 to W20.

Thirty four vegetation types and mosaic units recorded by Pilbara Flora in the vegetation survey areas were considered similar to the Kinhill Pty Ltd (1999) 17 categories (Table 10). However, 14 vegetation types and mosaic units recorded by Pilbara Flora were not comparable to Kinhill Pty Ltd (1999) categories due to different dominant tree species. These differences are expected given that different areas were surveyed.

Although similarities were evident between the Pilbara Flora and Kinhill Pty Ltd vegetation types/categories, without site data analysis and an assessment of compatibility between methodologies used (1999 versus 2009 methodologies), a direct comparison between the Pilbara Flora vegetation types and the Kinhill Pty Ltd (1999) vegetation categories has not been undertaken. Additionally, the Pilbara Flora survey was undertaken as a much closer mapping scale compare to the regional nature of Kinhill Pty Ltd surveys, thus also making comparison difficult.

Table 10: Pilbara Flora vegetation types and mosaic units and their comparable Kinhill Pty Ltd (1999) category

Grasslands			
Type	Description		Kinhill Pty Ltd (1999) category
G1	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.		Grasslands and sedgeland
G2	<i>Sorghum ?stipoideum</i> tussock grassland on previously cleared alluvial plains.		Grasslands and sedgeland
G3	Mixed grass species tussock grassland on alluvial plains.		Grasslands and sedgeland
G4	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.		Grasslands and sedgeland
Mosaic Woodlands			
Type	Mosaic Unit	Description	Kinhill Pty Ltd (1999) category
W1	W1A	<i>Corymbia greeniana</i> woodland on alluvial plains.	N/A
	W1B	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.	Woodlands of <i>Terminalia canescens</i> or Woodlands of <i>Melaleuca species</i>
	W1C	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.	Woodlands of <i>Corymbia confertiflora</i>
	W1D	<i>Corymbia bella</i> woodland on alluvial plains.	Woodlands of <i>Corymbia bella</i>

	W1E	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	N/A
	W1F	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.	Woodlands of <i>Eucalyptus miniata</i>
	W1G	<i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> woodland on alluvial plains.	Woodland of <i>Eucalyptus tetradonta</i>
	W1H	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> woodland on alluvial plains.	N/A
	W1I	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> woodland on alluvial plains.	N/A
W2	W2A	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	Woodlands of <i>Eucalyptus microtheca</i> , <i>Atalaya hemiglauca</i> , <i>Bauhinia cunninghamii</i> and <i>Excoecaria parvifolia</i>
	W2B	<i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	N/A
	W2C	<i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> woodland on alluvial plains.	Woodlands of <i>Melaleuca</i> species
	W2D	<i>Melaleuca minutifolia</i> woodland on alluvial plains.	Woodlands of <i>Melaleuca</i> species
	W2E	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> woodland on alluvial plains.	N/A
	W2F	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	Woodlands of <i>Corymbia confertiflora</i> .
	W2G	<i>Eucalyptus microtheca</i> woodland in soak areas.	Woodlands of <i>Eucalyptus microtheca</i> and <i>Melaleuca</i> species.
	W2H	<i>Eucalyptus camaldulensis</i> var <i>obtusata</i> and ? <i>Eucalyptus tectiflora</i> woodland on creek banks.	N/A
	W2I	<i>Eucalyptus tectiflora</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> woodland on sandstone hillsides.	Woodlands of <i>Corymbia tectiflora</i> or Woodlands of <i>Corymbia confertiflora</i>
W3	W3A	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodlands of <i>Corymbia confertiflora</i>
	W3B	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodlands of <i>Corymbia confertiflora</i>
	W3C	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	N/A
	W3D	? <i>Eucalyptus tectiflora</i> woodland on alluvial plains.	Woodlands of <i>Corymbia tectiflora</i>
	W3E	<i>Melaleuca ?viridiflora</i> woodland on alluvial plains.	Woodlands of <i>Melaleuca</i> species
	W3F	<i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.	Woodlands of <i>Corymbia confertiflora</i> or Woodlands of <i>Corymbia bella</i>
	W3G	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.	N/A

	W3H	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Woodlands of <i>Corymbia tectifica</i>
	W3I	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Woodlands of <i>Eucalyptus miniata</i> or Woodlands of <i>Corymbia tectifica</i>
Woodlands			
Type	Description	Kinhill Pty Ltd (1999) category	
W4	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> woodland on alluvial plains.	N/A	
W5	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.	Woodlands of <i>Eucalyptus microtheca</i> and <i>Melaleuca</i> species.	
W6	<i>Eucalyptus</i> ? <i>tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platyptera</i> low woodland on alluvial plains.	Woodlands of <i>Corymbia tectifica</i>	
W7	<i>Corymbia</i> ? <i>bella</i> , <i>Corymbia</i> ? <i>grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.	Woodlands of <i>Corymbia bella</i> or Woodlands of <i>Eucalyptus miniata</i>	
W8	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.	Woodlands of <i>Corymbia tectifica</i>	
W9	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.	Woodlands of <i>Eucalyptus microtheca</i> , <i>Atalaya hemiglauca</i> , <i>Bauhinia cunninghamii</i> and <i>Excoecaria parvifolia</i>	
W10	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.	N/A	
W11	<i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> woodland on creek banks.	Woodlands of <i>Corymbia confertiflora</i>	
W12	<i>Terminalia platyptera</i> , <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.	Woodlands of <i>Melaleuca</i> species	
W13	<i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.	Woodlands of <i>Corymbia confertiflora</i>	
W14	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus</i> ? <i>microtheca</i> woodland on creek banks.	N/A	
W15	<i>Corymbia</i> ? <i>bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.	Woodlands of <i>Corymbia bella</i> or Woodlands of <i>Corymbia confertiflora</i>	
W16	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.	Woodlands of <i>Melaleuca</i> species	
W17	<i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Woodlands of <i>Eucalyptus miniata</i>	

W18	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.	N/A
W19	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> woodland on hillsides and undulating plains.	N/A
W20	<i>Terminalia canescens</i> woodland on sandstone hillsides.	Woodlands of <i>Terminalia canescens</i>

4.6 Condition of Native Vegetation

An assessment of vegetation condition by vegetation type was undertaken (Table 11, Appendix E Maps 22 to 28). The number of vegetation types and mosaic units in each condition category are:

- 34 rated as excellent,
- 6 rated as very good,
- 3 rated as good,
- 3 rated as poor, and
- 2 rated as completely degraded.

Overall the majority of the vegetation types and mosaic units were rated as in excellent condition, with no or very few weed species recorded and vegetation was generally undisturbed. MIA 14 had no access tracks into the area and was completely undisturbed with the entire site in excellent vegetation condition. Grazing levels and presence of introduced species reduced the condition ranking of the other vegetation types and mosaic units. Two grasslands, G1 (MIA 8) and G2 (BWPT 6), were rated as completely degraded with previous clearing causing complete loss of vegetation structure (Map 22). Vegetation types at Borrow Pit 7 were all rated as poor with heavy weed infestations influenced by the proximity to the Ord River, developed agricultural areas and the presence of cattle (Map 23).

Table 11: Condition of vegetation within the vegetation survey areas

Grasslands					
Type	Description	Landform	Condition	Comments	
G1	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.	Black soil plain	Completely degraded	Previously cleared, complete loss of structure, two weed species recorded with low % cover.	
G2	<i>Sorghum ? stipoides</i> tussock grassland on previously cleared alluvial plains.	Alluvial plain	Completely degraded	Previously cleared, complete loss of structure, some regrowth present, tree logs and stumps in piles, one weed species recorded with low % cover.	
G3	Mixed grass species tussock grassland on alluvial plains.	Alluvial plain	Good	Heavily grazed in some areas, one weed species recorded with low % cover.	
G4	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.	Alluvial plain	Poor	Heavy <i>Cenchrus ciliaris</i> infestation, four other weed species recorded, heavily grazed.	
Mosaic Woodlands					
Type	Mosaic Unit	Description	Landform	Condition	Comments
W1	W1A	<i>Corymbia greeniana</i> woodland on alluvial plains.	Alluvial plain	Very good	Four weeds recorded, low levels of grazing in some areas, tracks in some areas.
	W1B	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.	Alluvial plain	Very good	No weeds recorded, low levels of grazing in some areas.
	W1C	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W1D	<i>Corymbia bella</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed recorded with low % cover, no disturbances recorded.
	W1E	<i>Corymbia ? grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W1F	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W1G	<i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W1H	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia</i>	Alluvial plain	Excellent	No weeds or disturbances recorded.

		holosericea woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W1	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W2A	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	Alluvial plain	Good	One weed recorded with low % cover, heavily grazed in some areas.
	W2B	<i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed recorded with low % cover, no disturbances recorded.
	W2C	<i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed with low % cover, no disturbances recorded.
	W2D	<i>Melaleuca minutifolia</i> woodland on alluvial plains.	Alluvial plain	Excellent	Two weeds with low % cover, no disturbances recorded.
	W2E	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed with low % cover, no disturbances recorded.
W2	W2F	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W2G	<i>Eucalyptus microtheca</i> woodland in soak areas.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W2H	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ? <i>Eucalyptus tectifica</i> woodland on creek banks.	Watercourse	Excellent	Four weeds recorded with low % cover, no disturbances recorded.
	W2I	<i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> woodland on sandstone hillsides.	Sandstone hill	Excellent	Two weed recorded with low % cover, no disturbances recorded.
	W3A	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W3B	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W3	W3C	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W3D	? <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W3E	<i>Melaleuca ?viridiflora</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
	W3F	<i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed recorded with low % cover, no disturbances recorded.

W3G	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W3H	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W3I	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
Woodlands				
Type	Description	Landform	Condition	Comments
W4	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> woodland on alluvial plains.	Alluvial plain	Very good	One weed recorded, low levels of grazing in some areas, old tracks, one small rubbish dump recorded.
W5	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.	Alluvial plain	Very good	No weeds recorded, low levels of grazing in some areas.
W6	<i>Eucalyptus</i> ? <i>tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platyptera</i> low woodland on alluvial plains.	Alluvial plain	Excellent	One weed species recorded with low % cover, no disturbances recorded.
W7	<i>Corymbia</i> ? <i>bella</i> , <i>Corymbia</i> ? <i>grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.	Sandstone hill	Excellent	One weed recorded with low % cover, no disturbances recorded.
W8	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.	Black soil plain	Very good	Four weed species recorded with low % cover, low levels of grazing in some areas.
W9	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.	Black soil plain	Good	Three weeds recorded, heavily grazed in some areas.
W10	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed species recorded with low % cover, no disturbances recorded.
W11	<i>Corymbia conferiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> woodland on creek banks.	Watercourse	Excellent	Two weeds recorded with low % cover, no disturbances recorded.
W12	<i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.	Alluvial plain	Very good	Two weeds recorded with low % cover, one small old borrow pit recorded.
W13	<i>Corymbia conferiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.	Alluvial plain	Poor	Heavily infested with weeds.

Borrow Material Investigation Areas Kununurra

September 2009

		Watercourse	Poor	Heavily infested with weeds.
W14	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus</i> ? <i>microtheca</i> woodland on creek banks.		Poor	Heavily infested with weeds.
W15	<i>Corymbia</i> ? <i>bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W16	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W17	<i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Alluvial plain	Excellent	No weeds or disturbances recorded.
W18	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.	Alluvial plain	Excellent	One weed species recorded with low % cover, no disturbances recorded.
W19	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophloeum chlorostachys</i> woodland on hillsides and undulating plains.	Sandstone hills	Excellent	Two weeds recorded with low % cover, no disturbances recorded.
W20	<i>Terminalia canescens</i> woodland on sandstone hillsides.	Sandstone hills	Excellent	No weeds or disturbances recorded.
0	Disturbed area.	Alluvial plain	Completely degraded	No vegetation, previously disturbed areas such as roads or existing borrow pits.

* The condition ratings are in accordance with the vegetation condition scale, refer to Appendix D (repeated below).

Vegetation Condition Scale for use on Pilbara Rangeland Surveys*

E = Excellent (= Pristine of BushForever)

Pristine or nearly so; no obvious signs of damage caused by the activities of European man.

VG = Very Good (= Excellent of BushForever)

Some relatively slight signs of damage caused by the activities of European man. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds such as **Ursinia anthemoides* or **Briza* spp., or occasional vehicle tracks.

G = Good (= Very Good of BushForever)

More obvious signs of damage caused by the activities of European man, including some obvious impact on the vegetation structure

such as that caused by low levels of grazing or by selective logging. Weeds as above, possibly plus some more aggressive ones such as * <i>Ehrharta</i> spp.
P = Poor (= Good of BushForever) Still retains basic vegetation structure or ability to regenerate to it after very obvious impacts of activities of European man, such as grazing, partial clearing (chaining) or frequent fires. Weeds as above, probably plus some more aggressive ones such as * <i>Ehrharta</i> spp.
VP = Very Poor (= Degraded of BushForever) Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species including very aggressive species.
D = Completely Degraded (= Completely Degraded of BushForever) Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

* Based on Trudgen M.E. (1988). A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.

5 Summary

Pilbara Flora conducted a vegetation survey of 11 potential borrow material investigation areas near Kununurra. The vegetation survey was undertaken over two field trips between 20 to 29 May 2009 and 28 June to 08 July 2009 in which a total of 90 person field days were completed. Within the vegetation survey areas, floristic data was recorded from a total of 151 quadrats and 163 GPS survey points.

A total of 458 vascular taxa from 218 genera and 72 families were recorded from the vegetation survey areas (Table 6). No Rare Flora species pursuant to Section 23F(2) of the *Wildlife Conservation Act 1950* or Threatened Flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* were recorded. Three Priority Flora species were recorded, these being:

- *Brachychiton tuberculatus* (Priority 3);
- *Goodenia brachypoda* (Priority 1); and
- *Schoenus punctatus* (Priority 3).

Two species recorded during the vegetation survey were identified as range extensions. These species are located in the Kimberley Region but occur outside of their previously recorded range as published by Florabase (2009a). These species are:

- *Eriachne glauca* var *barbinodis*; and
- *Isotoma armstrongii*.

A total of 48 vegetation types and mosaic units were identified at the vegetation survey areas. These fall within three major vegetation groups:

- Grasslands (2.57% of the vegetation survey areas).
- Mosaic woodlands (88.11% of the vegetation survey areas).
- Woodlands (9.32% of the vegetation survey areas).

Landforms identified in the vegetation survey areas included:

- Alluvial plains (95.20% of the vegetation survey areas).
- Black soil plains (3.80% of the vegetation survey areas).
- Sandstone hills (0.58% of the vegetation survey areas).
- Watercourse areas (0.27% of the vegetation survey areas).
- Disturbed areas (0.15% of the vegetation survey areas).

There were no vegetation types identified that were considered as being rare, restricted, unique or representing Threatened or Priority Ecological Communities.

Overall the majority of the vegetation types and mosaic units were rated as in excellent condition, with no or very few introduced species being recorded and vegetation was generally undisturbed. Grazing levels and presence of weed species reduced the condition ranking of the other vegetation types and mosaic units. Two grasslands, G1 and G2, were rated as completely degraded with previous clearing causing complete loss of vegetation structure. Vegetation types at Borrow Pit 7 were all rated as poor with heavy weed infestations influenced by the proximity to the Ord River, developed agricultural areas and the presence of cattle. At Borrow Pit 7, 14 introduced species were present including *Cenchrus ciliaris* recorded with 70 percent cover, *Vachellia farnesiana* and *Urochloa*

mosambicensis recorded with 20 percent cover and *Cynodon dactylon* recorded with 15 percent cover.

Twenty three introduced weed species were recorded in the vegetation survey areas including two Declared Plants as listed by the Agricultural Protection Board pursuant to the *Agricultural and Related Resources Protection Act 1976* (DAFWA 2009b). These declared weeds are:

- *Parkinsonia aculeata* – listed as P1 for the whole state and listed as P4 for the Wyndham - East Kimberley district (DAFWA 2009b); and
- *Sida cordifolia* – listed as P1 for the Wyndham - East Kimberley district (DAFWA 2009b).

Declared Plants have different control requirements dependent on the ranking code, the movement of P1 plants or their seed is prohibited within the State while P4 plants must be managed in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery.

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Appendices

Appendix A

Declared Rare and Priority Flora Category Definitions (Florabase 2009b)

Declared Rare Flora - Extant: 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, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee. (= Threatened Flora = Endangered + Vulnerable)

P1: Priority One - Poorly Known: Taxa which are known from one or a few (generally <5) populations which are under threat, 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.

P2: Priority Two - Poorly Known: Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

P3: Priority Three - Poorly Known: Taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

P4: Priority Four - Rare: 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.

Appendix B

Department of Environment and Conservation
Request for Rare Flora Information
3 June 2009

The search area was extended to the coordinates 15° 19' to 16° 00'S and 128° 10' to 129° 04'E on 3 June 2009. Results are from the extended search area.



**Department of
Environment and Conservation**

Our environment, our future



Your Ref: LAN09025 02b
Our Ref: 5-0509
Enquiries: Bridgitte Long
Phone: (08) 9334 0123
Fax: (08) 9334 0278
Email: bridgitte.long@dec.wa.gov.au

Stratagen
PO Box 383
Leederville WA 6903

Attention: Jess Lee

Dear Ms Lee

REQUEST FOR RARE FLORA INFORMATION

I refer to your request of 29th April 2009 for information on rare flora in the Kununurra area. The search co-ordinates used were 15^o 14' - 15^o 55' S and 128^o 02' - 129^o 10' E (GDA94).

A search was undertaken for this area of (1) the Department's *Threatened (Declared Rare) Flora* database (for results, *if any*, see "DEFL" – coordinates are GDA94), (2) the *Western Australian Herbarium Specimen* database for priority species opportunistically collected in the area of interest (for results, *if any*, see "WAHERB"- coordinates are GDA94 – see condition number 9 in the attached 'Conditions in Respect of Supply' and (3), the Department's *Declared Rare and Priority Flora List* [this list is searched using 'place names'. This list which may also be used as a species target list, contains species that are declared rare (Conservation Code R or X for those presumed to be extinct), poorly known (Conservation Codes 1, 2 or 3), or require monitoring (Conservation Code 4) – for results, *if any*, see "DP List"]. The results are attached electronically to this email.

Attached also are the conditions under which this information has been supplied. Your attention is specifically drawn to the seventh point, which refers to the requirement to undertake field investigations for the accurate determination of rare flora occurrence at a site. *The information supplied should be regarded as an indication only of the rare flora that may be present and may be used as a target list in any surveys undertaken.*

The information provided does not preclude you from obtaining and complying with, where necessary, land clearing approvals from other agencies.

An invoice for \$300 (plus GST) to supply this information will be forwarded.

It would be appreciated if any populations of rare flora encountered by you in the area could be reported to this Department to ensure their ongoing management.

If you require any further details, or wish to discuss rare flora management, please contact Dr Ken Atkins, Manager, Species and Communities Branch, on (08) 9334 0455.

Yours faithfully

BA Long

.....
for Keiran McNamara
DIRECTOR GENERAL

6th May, 2009

Please note: Co-ordinates supplied for all data search requests must be provided in latitude/longitude format. 'eastings and northings' are no longer suitable. Thank you.

Species and Communities Branch
17 Dick Perry Ave, Technology Park, Kensington
Phone: (08) 9334 0455 Fax: (08) 9334 0278
Locked Bag 104, Bentley Delivery Centre, Bentley, Western Australia 6983

www.dec.wa.gov.au

6/05/2009		DEPARTMENT OF ENVIRONMENT AND CONSERVATION DECLARED RARE AND PRIORITY FLORA LIST 6 October 2008			Page 1
SPECIES / TAXON	CONS CODE	DEC REGION	DISTRIBUTION	FLOWER PERIOD	
<i>Acacia richardsii</i>	3	K,*	Kununurra, Keep River N.P., Northern Carr Boyd Ranges, Gardner Plateau, N.T.	Mar-Aug	
<i>Brachychiton tuberculatus</i>	3	K	Ord River, Kununurra	Aug-Nov	
<i>Desmodium flagellare</i>	1	K	Kununurra, Ord River Basin		
<i>Eriochloa decumbens</i>	3	P,K	Cooyapooya, Derby, Wyndham		
<i>Eucalyptus ceracea</i>	R	K	NW of Wyndham, King George River	Aug-Nov	
<i>Eucalyptus ordiana</i>	2	K	Kununurra	Jan,Jun,Jul	
<i>Euphorbia stevenii</i>	3	P,K	Karijini N.P., Kununurra		
<i>Ficus lilliputiana</i>	4	K,*	Ord River, Lake Argyle, Hidden Valley, Kununurra, Northern Territory	Apr-Oct	
<i>Fuirena nudiflora</i>	1	GLD,K,*	Rawlinson Range, Kununurra, NT, Qld	Jun	
<i>Goodenia brachypoda</i>	1	K	Carlton Hill, Wyndham, Augustus Is	Sep	
<i>Goodenia durackiana</i>	1	K	Ord River, Kununurra	Mar	
<i>Goodenia strangfordii</i>	1	K	Kununurra, Sturt Creek	Sep	
<i>Jacquemontia</i> sp. Keep River (J.L. Egan 5051)	1	K	Kununurra	-	
<i>Platysace saxatilis</i>	2	K*	Hidden Valley, Kununurra, NT	Mar-May, Sep	
<i>Stylidium prophyllum</i>	3	K	Mt Hart Stn, Beverley Springs Stn, Kununurra	May-Jun	
<i>Trachymene oleracea</i> subsp. <i>sedimenta</i>	1	K	Napier Range, Wyndham	May	
<i>Triumfetta rubiginosa</i>	2	K	Prince Regent River Reserve, Wyndham	Aug	
<i>Typhonium</i> sp. Kununurra (AN Start 1467)	1	K	Kununurra		
<i>Vigna</i> sp. Silver leaf (T.E.H. Aplin 6300)	3	P,K	Meentheena Stn, Yarraloola Stn, Kununurra	Aug-Sep	
<i>Whiteochloa capillipes</i>	3	P,K	Kununurra, Madora Stn, Hamersley Stn, Lacrosse Island		

Appendix C

Reassessment of Department of Environment and Conservation Rare and Priority Flora Listings

In December 2009, DEC commenced a review of conservation taxa within Western Australia. The review continued until March 2009. A combined DEC/WAHERB database listing of rare and priority flora is provided in this appendix and has been checked against the recent changes in the status of conservation flora.

Declared Rare and Priority Flora search results

Species	Current Status	Description (Florabase 2009a)	Habitat (Florabase 2009a)	Distribution (Florabase 2009a)	Possible Occurrence in survey
<i>Acacia richardsii</i>	P3	Bushy, rounded shrub, 1.5 to 4 m high. Flowers yellow from March to August.	Sandstone. Hills, creek beds, rocky areas.	Victoria Bonaparte.	Yes
<i>Brachychiton incanus</i>	P3	Tree, 4 to 6m (max 15m) high. Flowers red, pink, July to September.	Sandy soils over sandstone or quartzite. Rocky slopes, scarps & ridges.	Central Kimberley, Northern Kimberley, Victoria Bonaparte.	No
<i>Brachychiton tuberculatus</i>	P3	Shrub or tree, 2 to 7m high. Flowers cream, green, orange, red, April/Aug to Nov.	Red or yellow sand. Undulating plains.	Victoria Bonaparte	Yes
<i>Desmodium flagellare</i>	P1	Spreading annual herb, 0.15 to 0.25m high.	Cracking clay.	Victoria Bonaparte.	Yes
<i>Echinochloa kimberleyensis</i>	P1	Tufted or single-stemmed annual grass-like or herb, 0.7 to 2m high. Flowers April to July.	Black soils. Swamps.	Central Kimberley, Victoria Bonaparte.	Yes
<i>Eriochloa decumbens</i>	P3	Tufted perennial grass-like or herb, 0.2 to 1m high. Flowers in April.	Regularly flooded areas, river banks.	Dampierland, Pilbara.	Yes
<i>Eucalyptus ceracea</i>	R	Tree (sometimes a mallee), 3 to 6m high, bark fibrous-flaky. Flowers orange, June to November.	Skeletal sandy soils. Sandstone ridges and scree slopes.	Northern Kimberley.	No
<i>Eucalyptus ordiana</i>	P2	Mallee or tree, 2 to 5.5m high, bark smooth, powdery. Flowers, white, April to May.	Skeletal soils over sandstone or quartzite. Steep rocky outcrops.	Central Kimberley, Ord-Victoria Plains, Victoria Bonaparte.	No
<i>Euphorbia stevenii</i>	P3	Somewhat succulent perennial herb, 0.1 to 0.5m high.	Clay, sandy soils.	Victoria Bonaparte, Pilbara.	Yes
<i>Ficus lilliputiana</i>	P4	Diminutive shrub to 0.45m high. Flowers yellow, red, brown, April to October.	Sandstone. Rocky sites.	Victoria Bonaparte.	No

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September 2009

Species	Current Status	Description (Florabase 2009a)	Habitat (Florabase 2009a)	Distribution (Florabase 2009a)	Possible Occurrence in survey
<i>Fimbristylis laxiglumis</i>	P2	Tufted annual grass-like or herb (sedge), 0.6m high. Flowers brown, April.	Black clay.	Victoria Bonaparte.	Yes
<i>Fuirena incrassata</i>	P3	Annual grass-like or herb (sedge), 0.1 to 0.3m high, perianth of 3 bristles and 3 clawed scales; scales 3-veined in basal part and thickened distally. Flowers May to August.	Sand, sandy clay. Swamps, creek beds, claypans, semi-saline lakes.	Central Kimberley, Dampierland, Ord-Victoria Plains, Great Sandy Desert, Pilbara.	Yes
<i>Fuirena nudiflora</i>	P1	Tufted annual grass-like or herb (sedge), 0.05 to 0.2m high, perianth absent; 1 stamen. Flowers brown, April to July.	Sand. Swamps, creek beds.	Victoria Bonaparte, Central Ranges.	Yes
<i>Gardenia sericea</i>	P3	Shrub or tree to 6m high. Flowers in July.	Sandstone.	Northern Kimberley, Victoria Bonaparte.	No
<i>Goodenia brachypoda</i>	P1	Prostrate herb, stems to 25cm. Flowers yellow, September.	Red sandy loam.	Northern Kimberley, Victoria Bonaparte.	Yes
<i>Goodenia byrnesii</i>	P1	Prostrate to decumbent herb, stems to 30cm. Flowers yellow, January to February.	Sand. Edge of creek.	Dampierland, Northern Kimberley, Ord-Victoria Plains, Victoria Bonaparte.	Yes
<i>Goodenia durackiana</i>	P1	Erect short-lived annual herb, 0.3m high. Flowers yellow, March to May.	Black clay. Grassland.	Central Kimberley, Northern Kimberley, Victoria Bonaparte.	Yes
<i>Goodenia purpurascens</i>	P3	Erect perennial or annual herb, 0.1 to 0.3m high. Flowers blue, purple, white, yellow, January to December.	Clay, mud. Swamps and seasonally wet depressions.	Northern Kimberley, Victoria Bonaparte, Little Sandy Desert.	Yes
<i>Goodenia strangfordii</i>	P1	Erect, diffuse herb, to 0.3 m high. Flowers yellow.	Heavy and seasonally wet soils.	Great Sandy Desert.	Yes



Species	Current Status	Description (Florabase 2009a)	Habitat (Florabase 2009a)	Distribution (Florabase 2009a)	Possible Occurrence in survey
<i>Jacquemontia</i> sp. <i>Keep River</i> (J.L. Egan 5051)	P1	Description unavailable.	Sandy soil over sandstone hillsides.	Victoria Bonaparte.	Yes
<i>Minuria macrorhiza</i>	P2	Erect perennial herb to 0.6m high. Flowers white, purple, pink, January/May to October.	Red clay or loam, laterite, bauxite. Sandstone gullies, exposed sheets basalt, among tumbled boulders, in grasslands.	Central Kimberley, Northern Kimberley, Victoria Bonaparte.	No
<i>Phyllanthus aridus</i>	P3	Erect, much-branched shrub, to 0.25m high. Flowers cream, green, May to June.	Sandstone, gravel, red sand.	Central Kimberley, Dampierland, Northern Kimberley, Ord-Victoria Plains, Victoria Bonaparte, Great Sandy Desert, Pilbara.	Yes
<i>Pityrodia obliqua</i>	P3	Erect shrub, 0.4 to 2m high. Flowers pink, white, May to July.	Sandstone or quartzite. Rocky faces in mountain ranges.	Central Kimberley, Dampierland, Victoria Bonaparte.	No
<i>Platysace saxatilis</i>	P2	Slender erect shrub, to 1.5m high. Flowers white, cream, March to July/November.	Sand, sandstone. Valleys and hills, in crevices in the rock face, on sides of gorges, on Cliff-sides.	Victoria Bonaparte.	No
<i>Scaevola</i> sp. <i>Cockburn Range</i> (G.W. Carr 3369 & A.C. Beauglehole 47147)	P1	Description unavailable.	Description unavailable.	Victoria Bonaparte	No
<i>Stylidium prophyllum</i>	P3	Annual herb, to 0.3m high. Flowers pink, May to June.	Sandy, black silty or clayey sandy soils loam. Seasonally wet floodway depressions and seepage areas.	Central Kimberley, Northern Kimberley, Victoria Bonaparte.	Yes
<i>Tephrosia valleculata</i>	P3	Erect few-stemmed shrub, to 2m high. Flowers orange, green, April to September.	Sandy, often shallow, soil around sandstone. Rock outcrops.	Northern Kimberley.	Yes
<i>Trachymene oleracea subsp. sedimenta</i>	P1	Annual herb, 0.3 to 0.6m high, indumentum of short glandular hairs on the young stems, leaves and bracts. Flowers	Limestone or sandstone on inland ranges.	Dampierland, Victoria Bonaparte.	No

Borrow Material Investigation Areas Kununurra

September 2009

Species	Current Status	Description (Florabase 2009a)	Habitat (Florabase 2009a)	Distribution (Florabase 2009a)	Possible Occurrence in survey
		white, blue, May to June.			
<i>Triumfetta rubiginosa</i>	P2	Shrub, 0.5 to 1m high. Flowers yellow, May.	Rocky sandstone hills and amongst sandstone boulders.	Northern Kimberley.	No
<i>Typhonium</i> sp. <i>Kununurra</i> (A.N. Start ANS 1467)	P1	Erect perennial herb (with hastate, basal leaves), to 0.2m high.	Dark grey clay, black soil. Sites which are waterlogged in summer and inundated after rain.	Victoria Bonaparte.	Yes
<i>Utricularia aurea</i>	P2	Submerged, aquatic perennial herb. Flowers yellow, January to Dec.	River edges.	Northern Kimberley, Victoria Bonaparte.	Yes
<i>Vigna</i> sp. <i>silver leaf</i> (T.E.H. Aplin 6300)	P3	Description unavailable.	Creek banks.	Victoria Bonaparte, Pilbara.	Yes
<i>Whiteochloa capillipes</i>	P3	Annual or perennial grass-like or herb, 0.4 to 1m high. Flowers red, brown, February to June.	Sandplains, crabhole plains.	Dampierland, Northern Kimberley, Victoria Bonaparte, Pilbara.	Yes

Appendix D

Vegetation Condition Scale and Vegetation Classifications

Vegetation Condition Scale for use on Pilbara Rangeland Surveys*

E = Excellent (= Pristine of BushForever)	Pristine or nearly so; no obvious signs of damage caused by the activities of European man.
VG = Very Good (= Excellent of BushForever)	Some relatively slight signs of damage caused by the activities of European man. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds such as * <i>Ursinia anthemoides</i> or * <i>Briza</i> spp., or occasional vehicle tracks.
G = Good (= Very Good of BushForever)	More obvious signs of damage caused by the activities of European man, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or by selective logging. Weeds as above, possibly plus some more aggressive ones such as * <i>Ehrharta</i> spp.
P = Poor (= Good of BushForever)	Still retains basic vegetation structure or ability to regenerate to it after very obvious impacts of activities of European man, such as grazing, partial clearing (chaining) or frequent fires. Weeds as above, probably plus some more aggressive ones such as * <i>Ehrharta</i> spp.
VP = Very Poor (= Degraded of BushForever)	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species including very aggressive species.
D = Completely Degraded (= Completely Degraded of BushForever)	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

* Based on Trudgen M.E. (1988). A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.

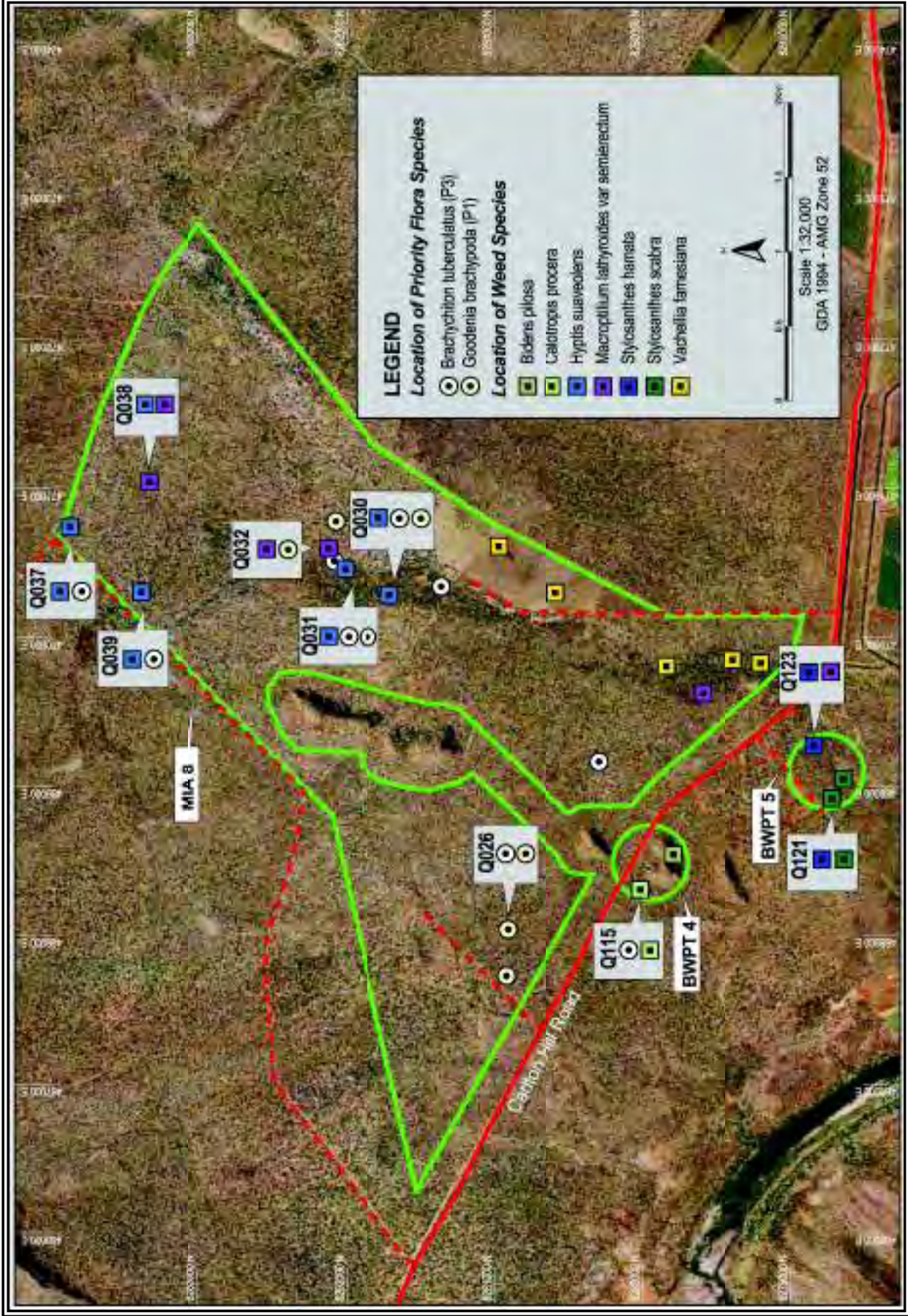
Vegetation Classifications for the Pilbara based on Specht with modification by Aplin & Trudgen

Life form	Canopy Cover				
	100 - 70%	70 - 30%	30 - 10%	10 - 2%	< 2%
Height Class					
Trees > 30m	High Closed Forest	High Open Forest	High Woodland	High Open Woodland	Scattered Tall Trees
Trees 10-30m	Closed Forest	Open Forest	Woodland	Open Woodland	Scattered Trees
Trees < 10m	Low Closed Woodland	Low Open Forest	Low Woodland	Low Open Woodland	Scattered Low Trees
Mallee	Closed Mallee	Mallee	Open Mallee	Very Open Mallee	Scattered Mallees
Shrubs > 2m	Closed Scrub	Open Scrub	High Shrubland	High Open Shrubland	Scattered Tall Shrubs
Shrubs 1-2m	Closed Heath	Open Heath	Shrubland	Open Shrubland	Scattered Shrubs
Shrubs < 1m	Low Closed Heath	Low Open Heath	Low Shrubland	Low Open Shrubland	Low Scattered Shrubs
Hummock Grass	Closed Hummock Grassland	Hummock Grassland	Open Hummock Grassland	Very Open Hummock Grassland	Scattered Hummock Grass
Tussock Grass	Closed Tussock Grassland	Tussock Grassland	Open Tussock Grassland	Very Open Tussock Grassland	Scattered Tussock Grass
Bunch Grass	Closed Bunch Grassland	Bunch Grassland	Open Bunch Grassland	Very Open Bunch Grassland	Scattered Bunch Grass
Sedges	Closed Sedges	Sedges	Open Sedges	Very Open Sedges	Scattered Sedges
Herbs	Closed Herbs	Herbs	Open Herbs	Very Open Herbs	Scattered Herbs

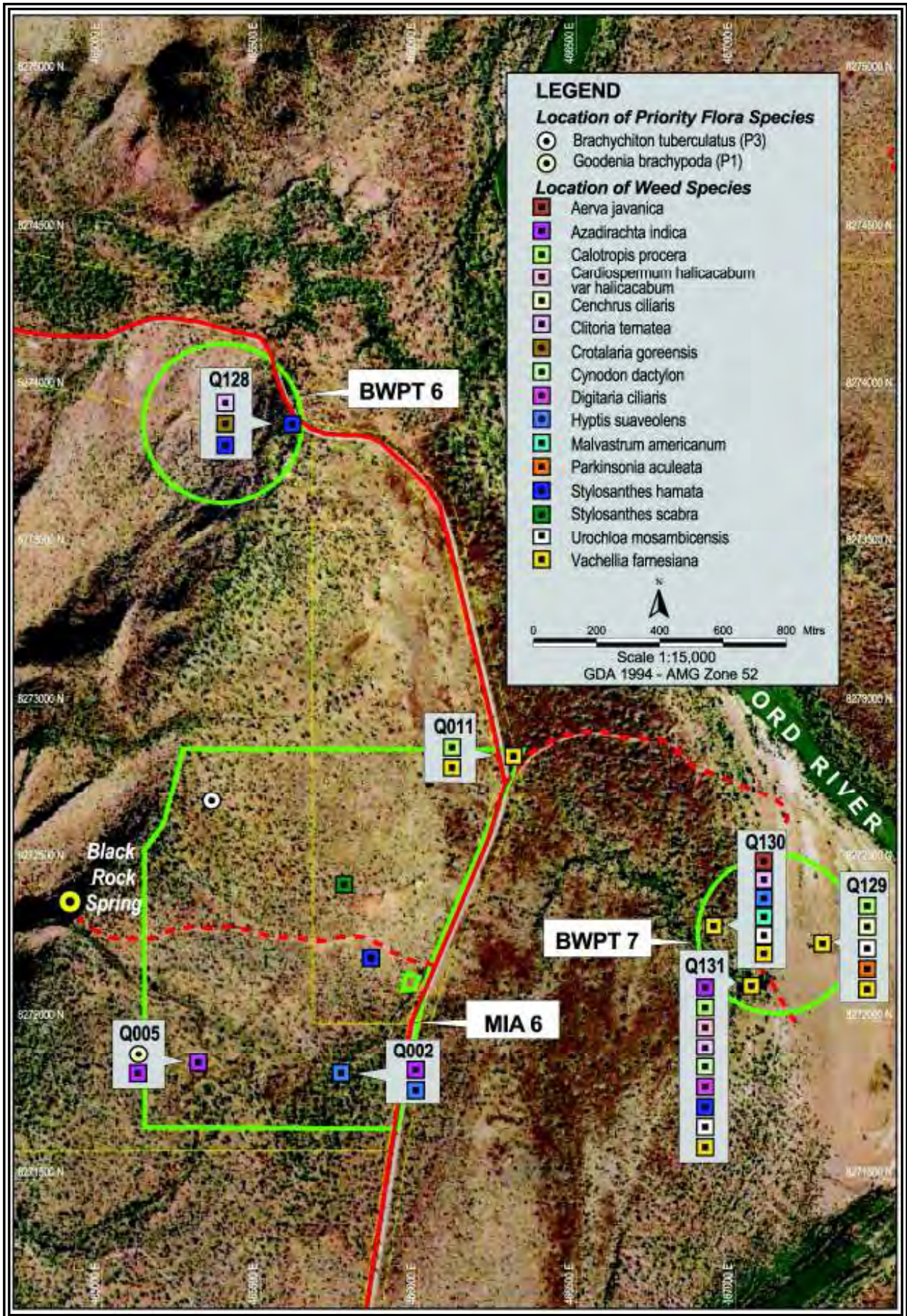
Appendix E

Maps of Priority and Weed Species Locations, Vegetation Types and Vegetation Condition

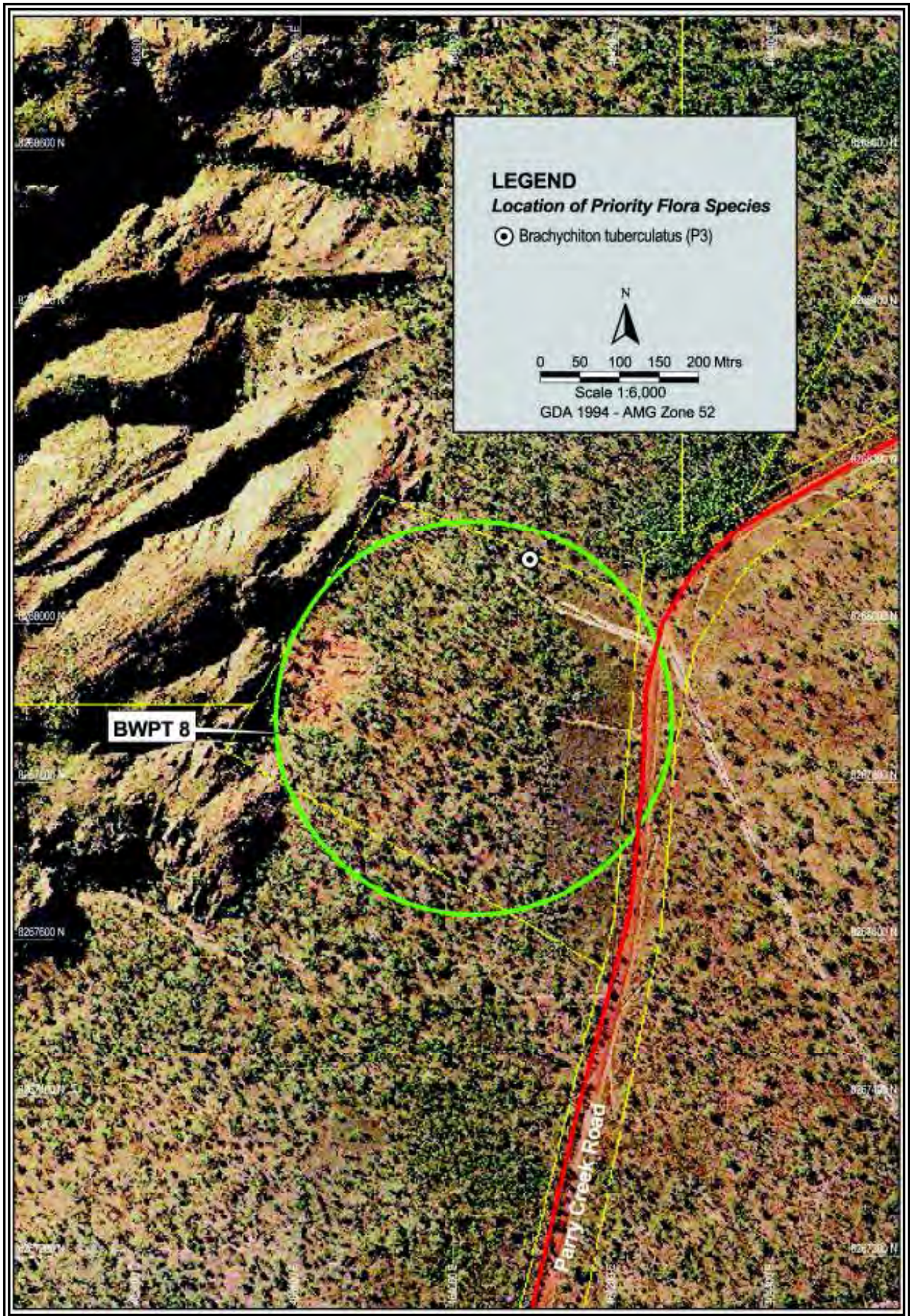
- Priority Flora and Weed Species Location Maps 1 to 7
- Vegetation Type Maps 8 to 14
- Vegetation Type over Aerial Maps 15 to 21
- Vegetation Condition Maps 22 to 28



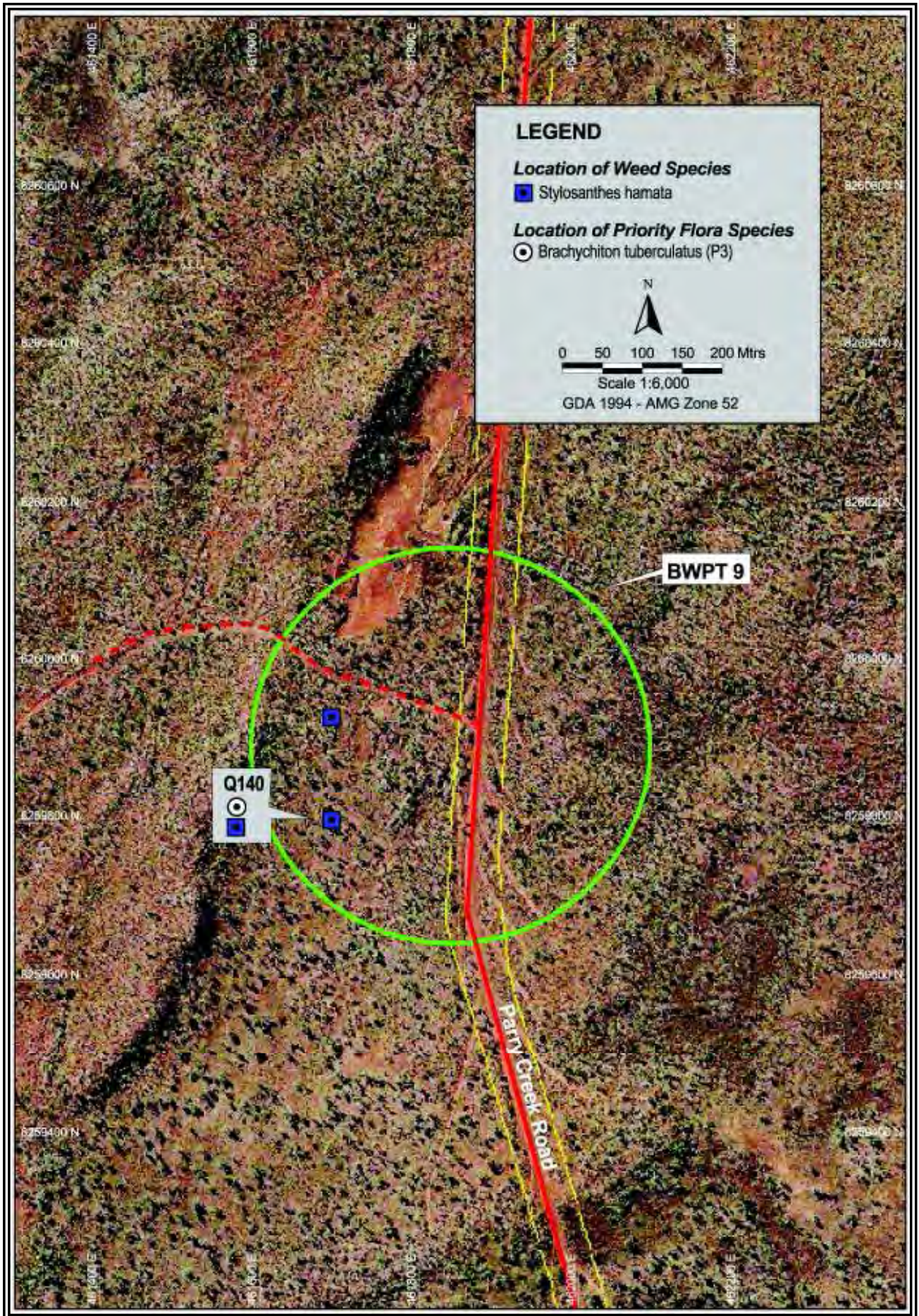
Map 1: Locations of Priority Flora and Weed species at Material Investigation Area 8 and Borrow Pits 4 and 5



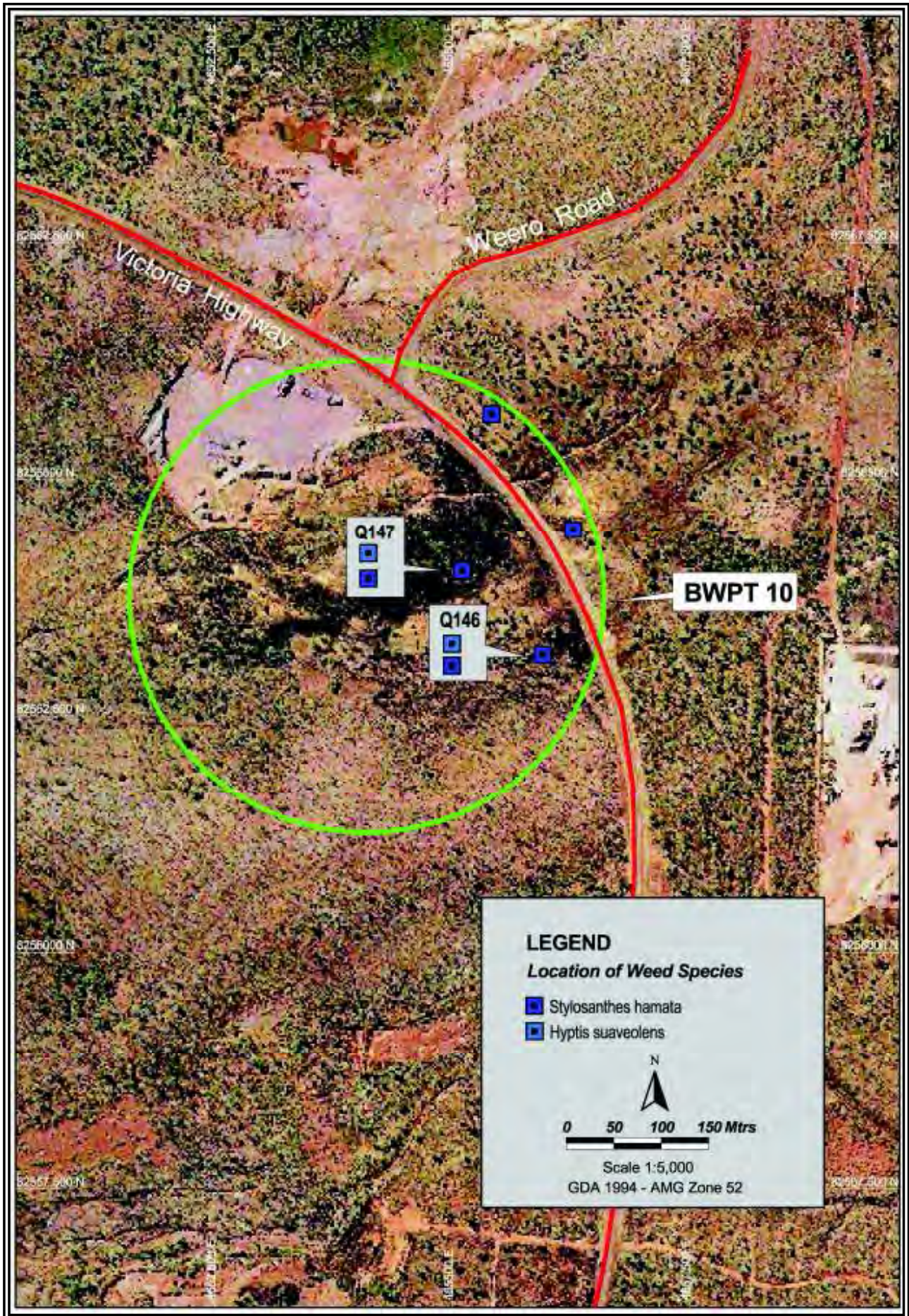
Map 2: Locations of Priority Flora and Weed species at Material Investigation Area 6 and Borrow Pits 6 and 7



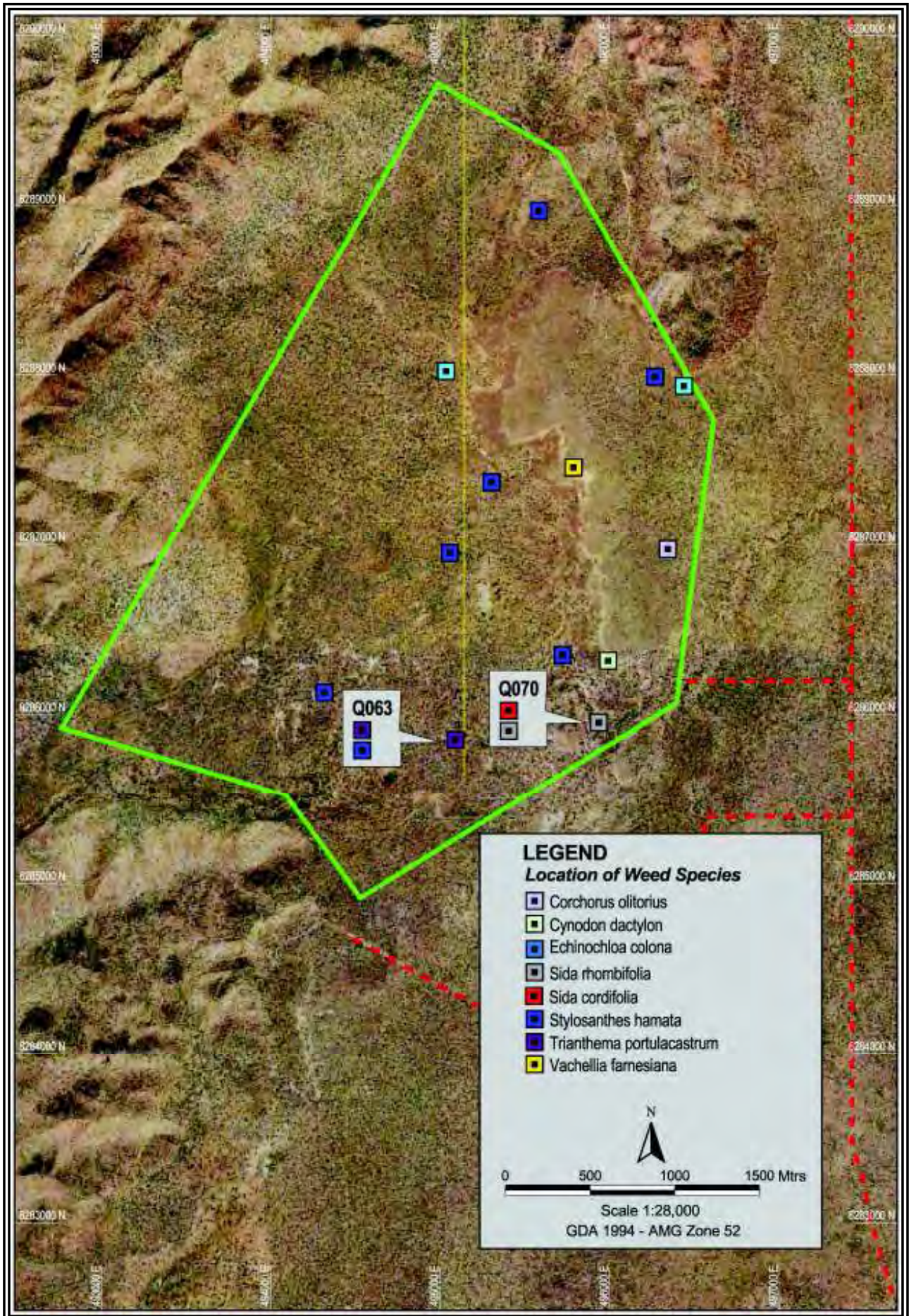
Map 3: Locations of Priority Flora and Weed species at Borrow Pit 8



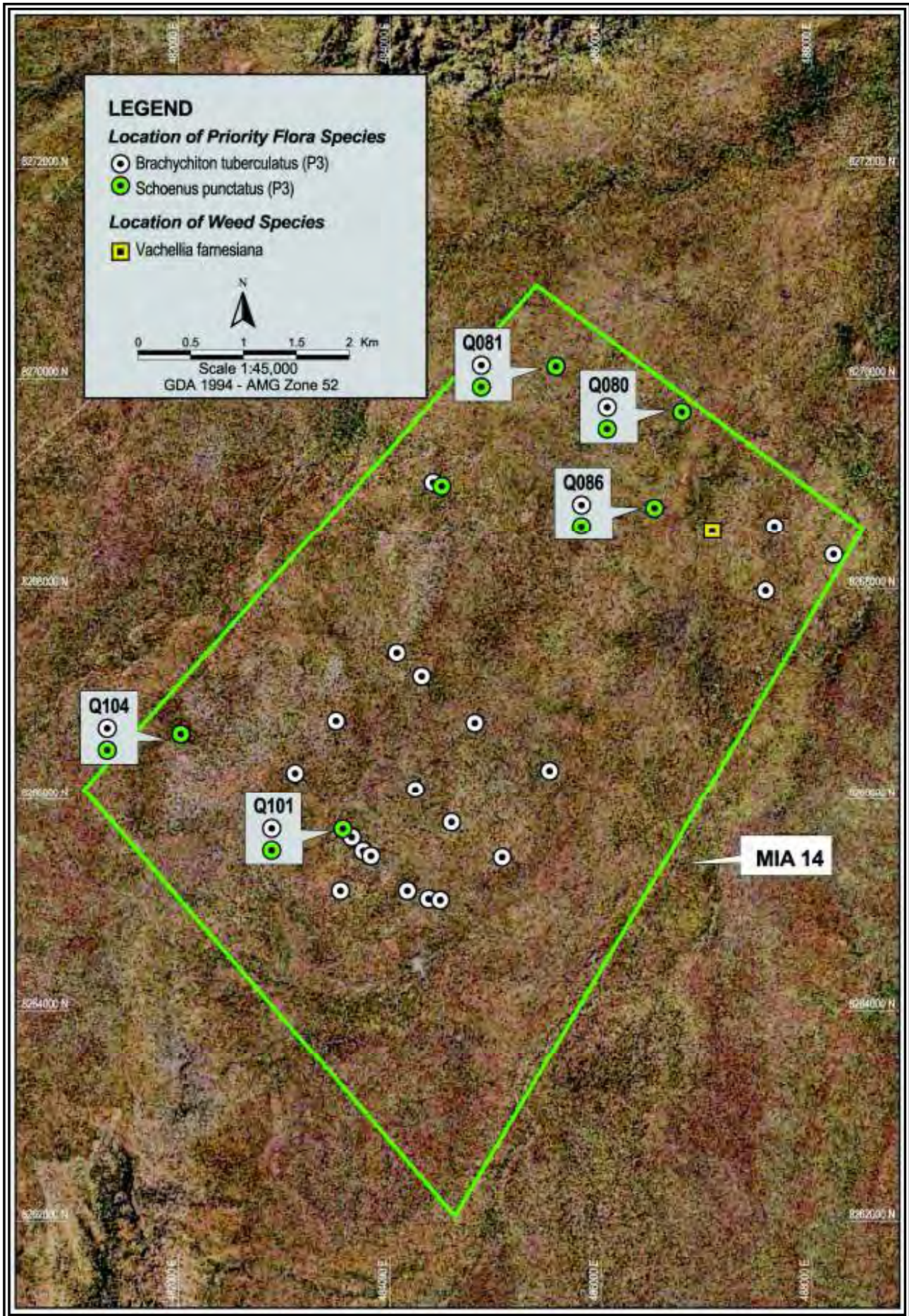
Map 4: Locations of Priority Flora and Weed species at Borrow Pit 9



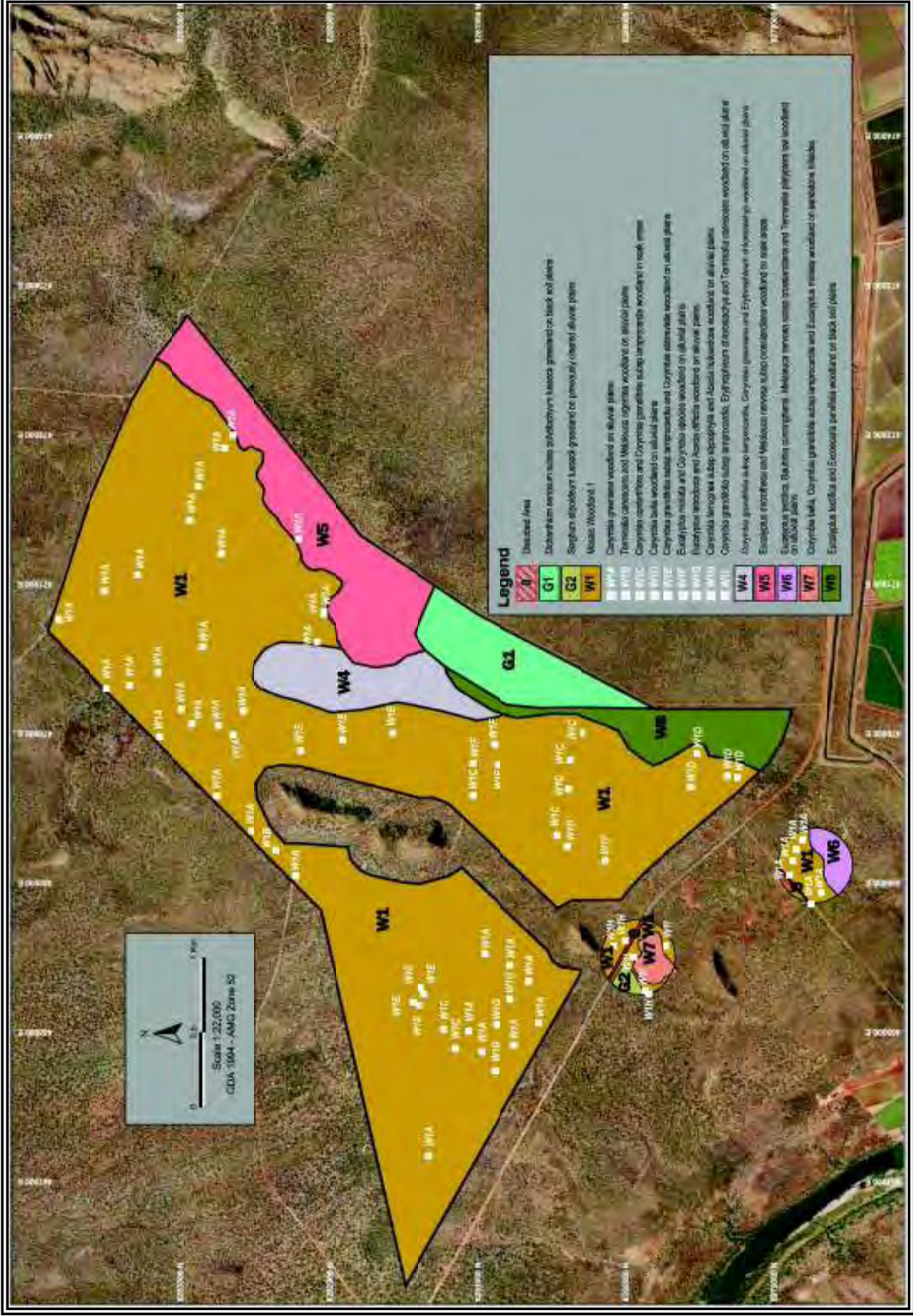
Map 5: Locations of Priority Flora and Weed species at Borrow Pit 10



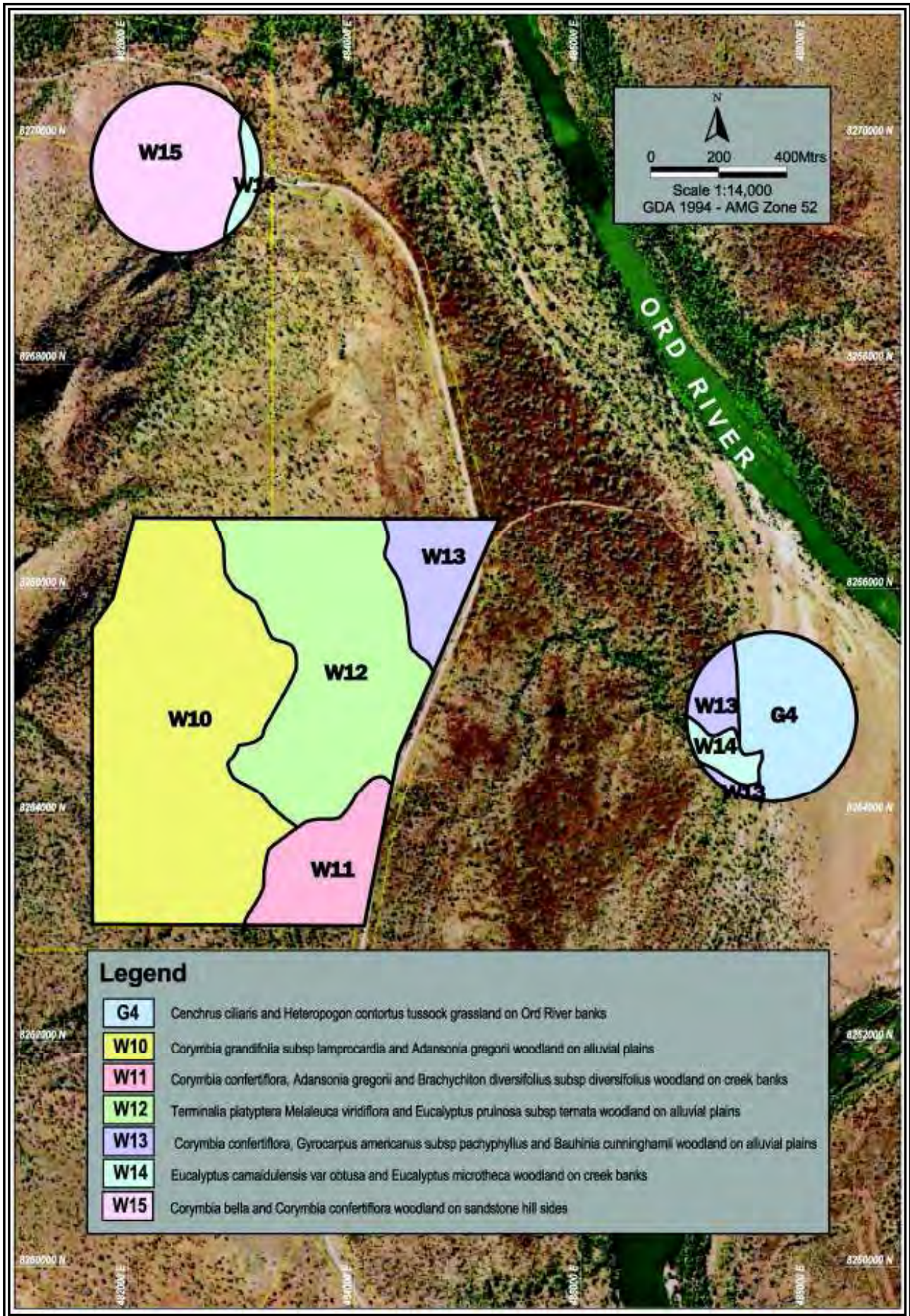
Map 6: Locations of Priority Flora and Weed species at Material Investigation Area 13



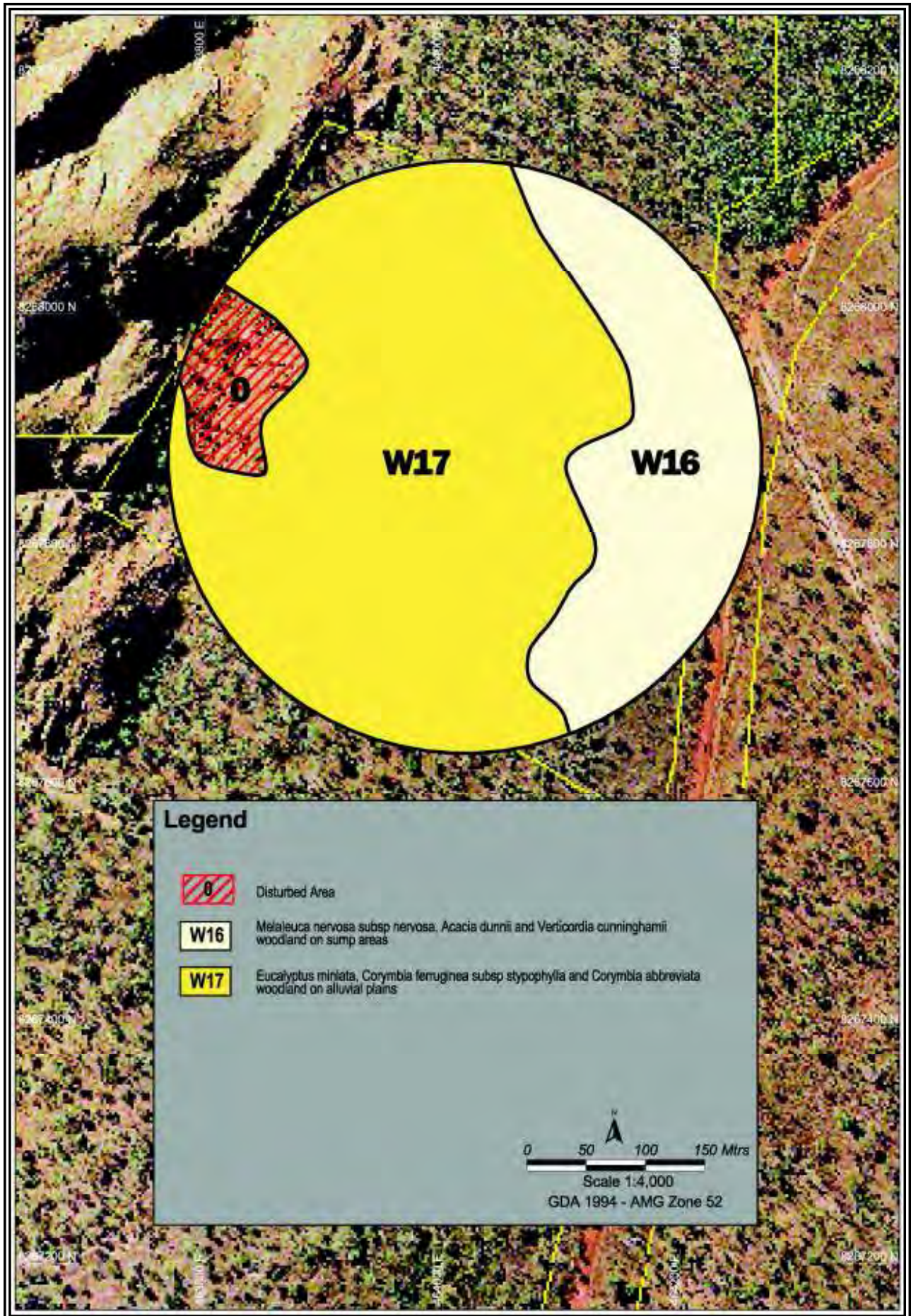
Map 7: Locations of Priority Flora and Weed species at Material Investigation Area 14



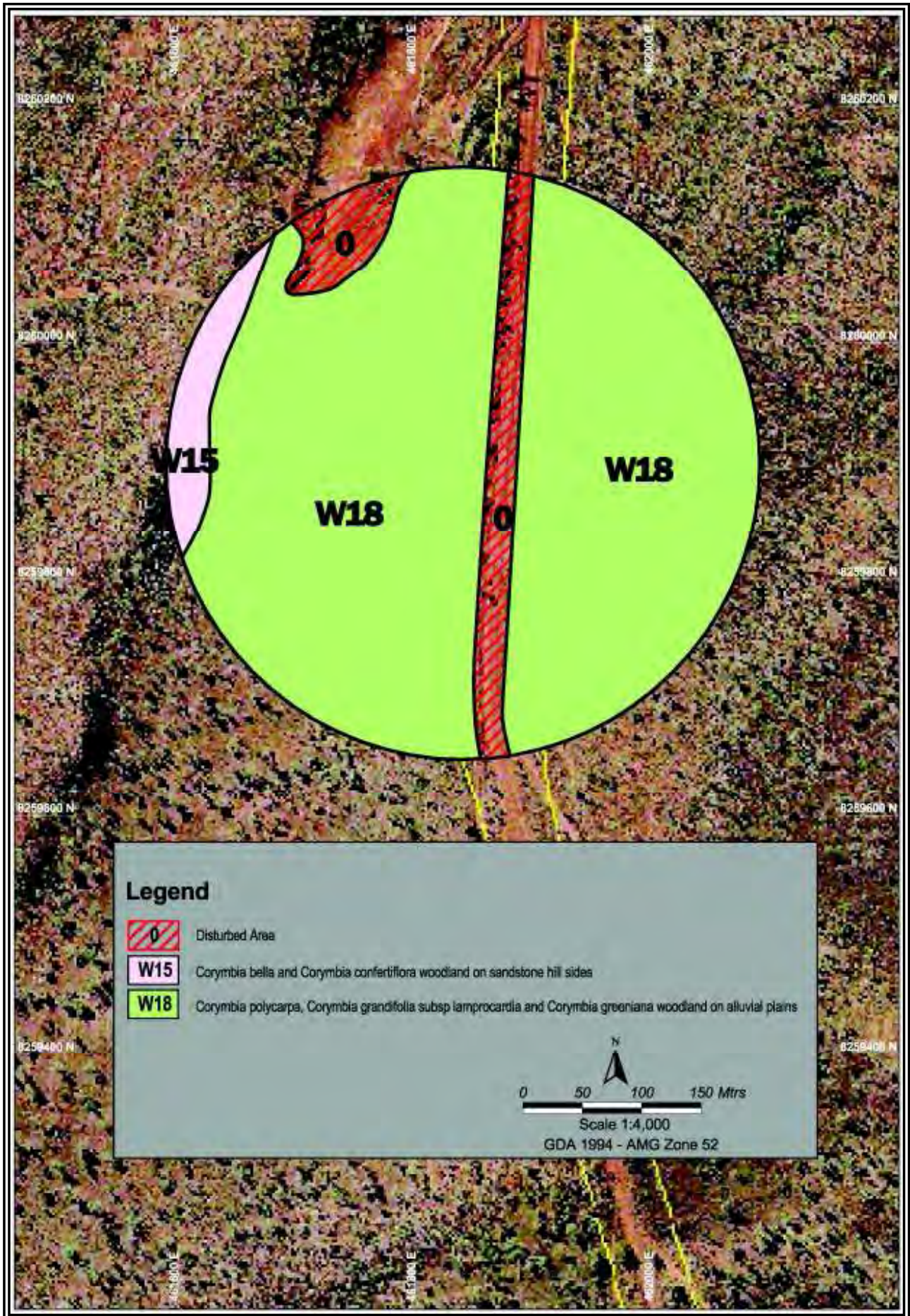
Map 8: Vegetation Types at Material Investigation Area 8 and Borrow Pits 4 and 5



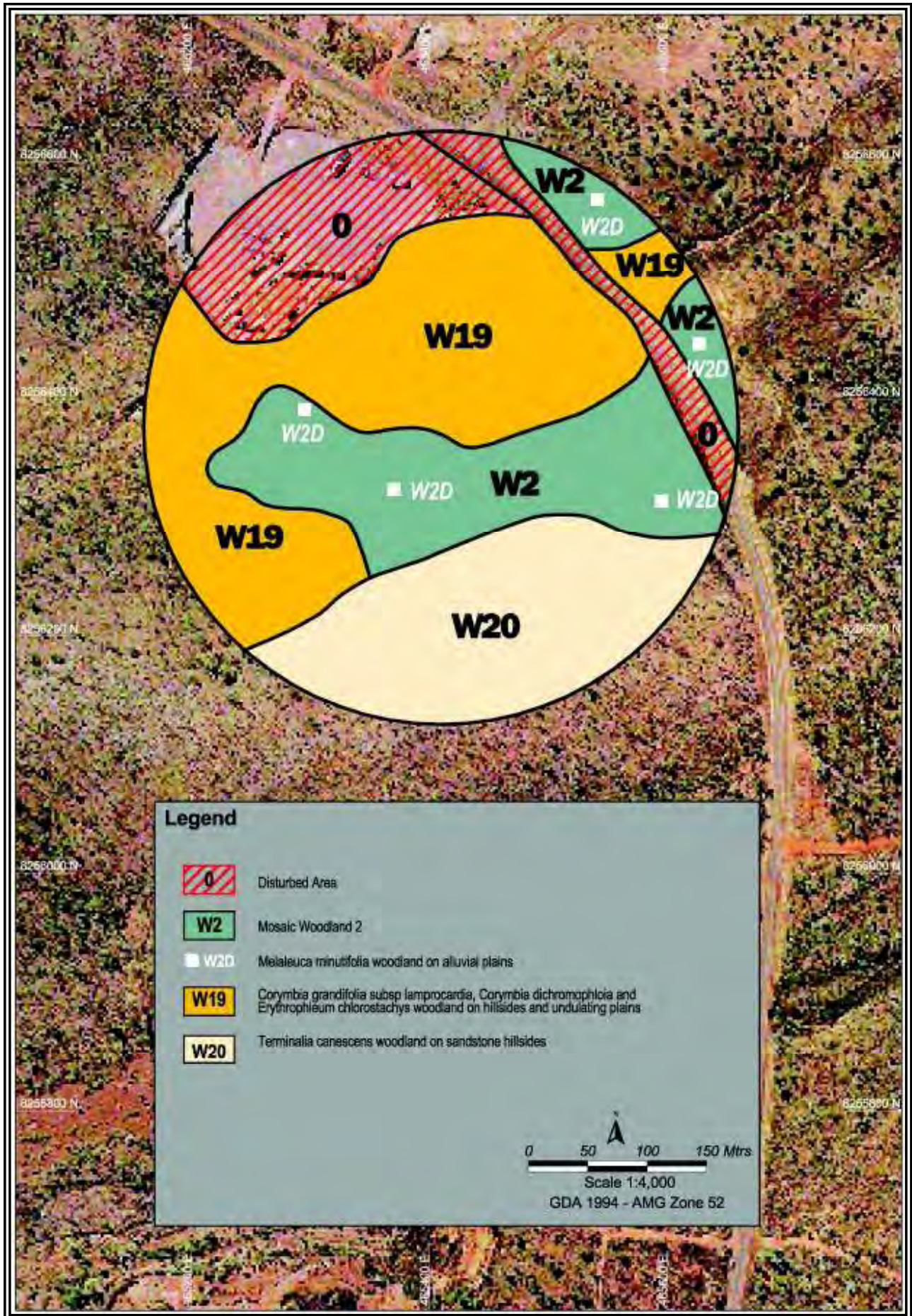
Map 9: Vegetation Types at Material Investigation Area 6 and Borrow Pits 6 and 7



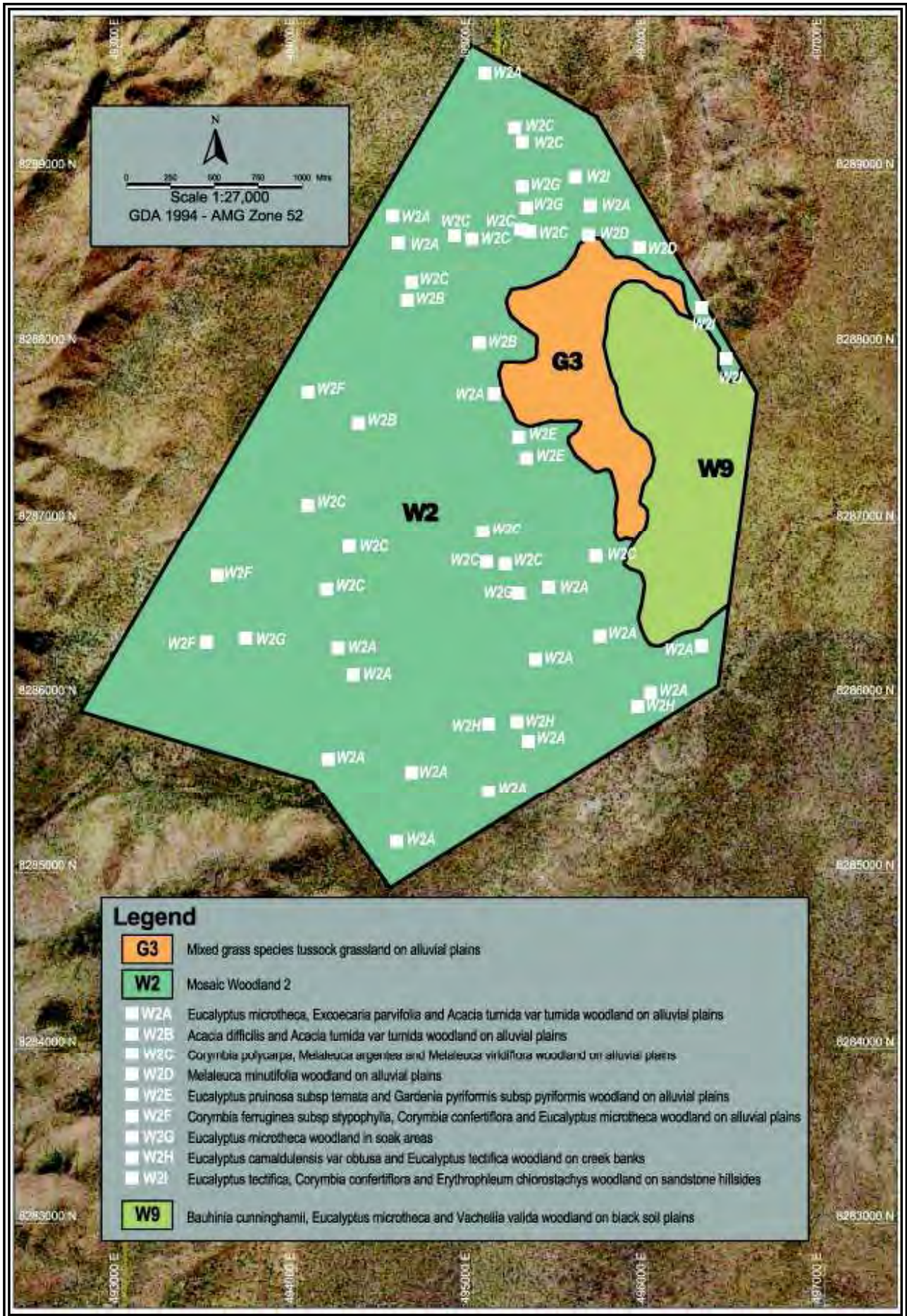
Map 10: Vegetation Types at Borrow Pit 8



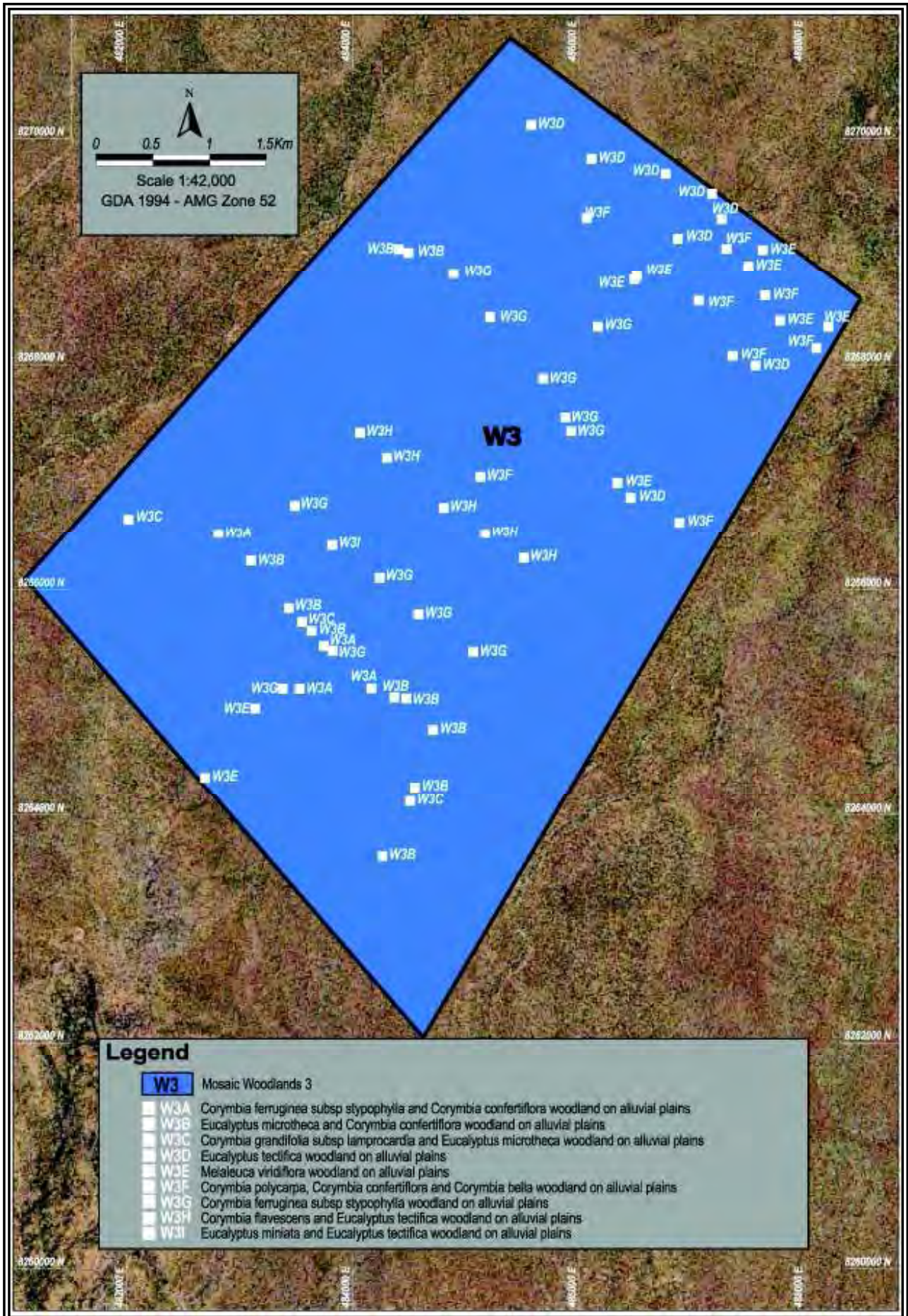
Map 11: Vegetation Types at Borrow Pits 9



Map 12: Vegetation Types at Borrow Pit 10



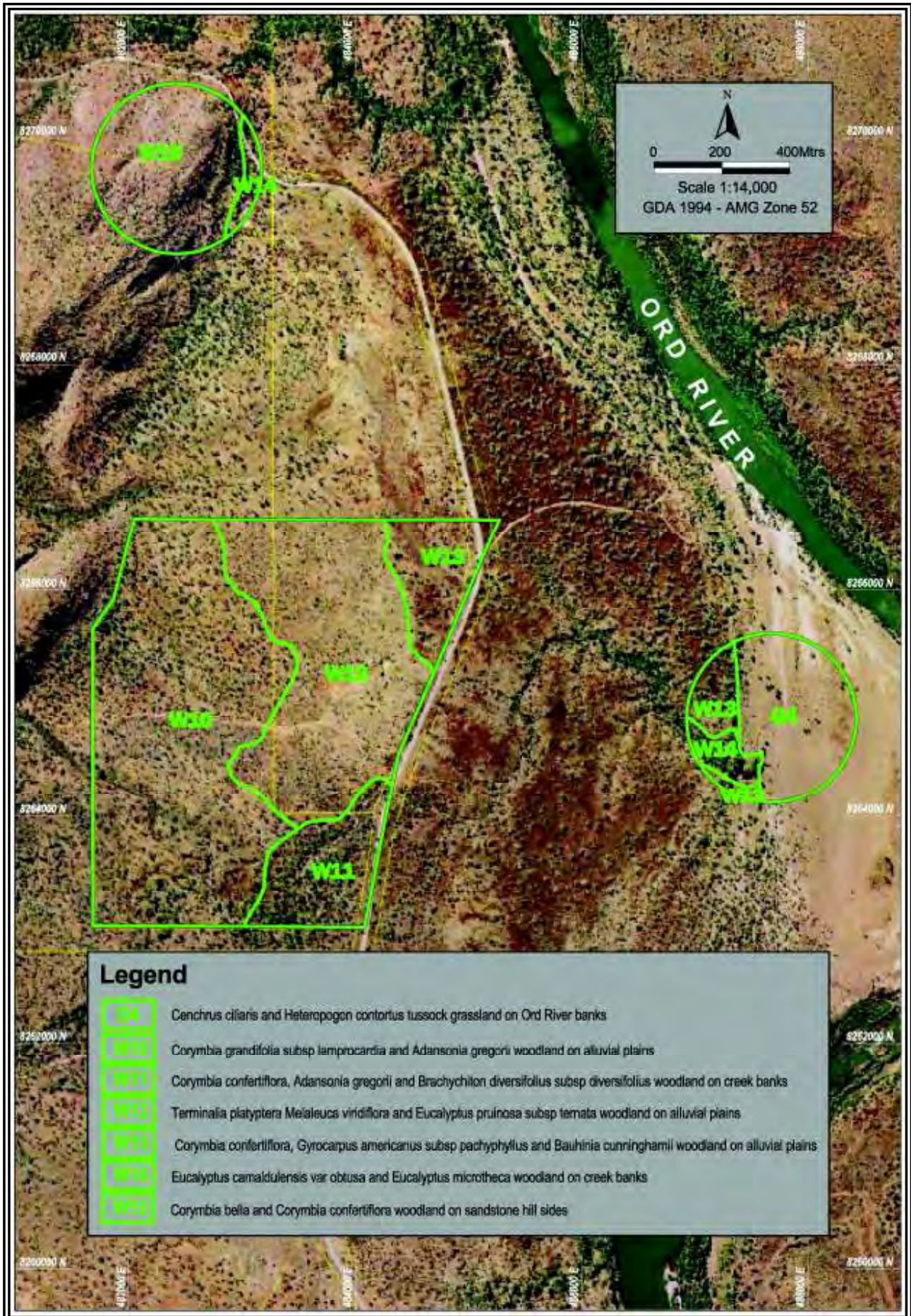
Map 13: Vegetation Types at Material Investigation Area 13



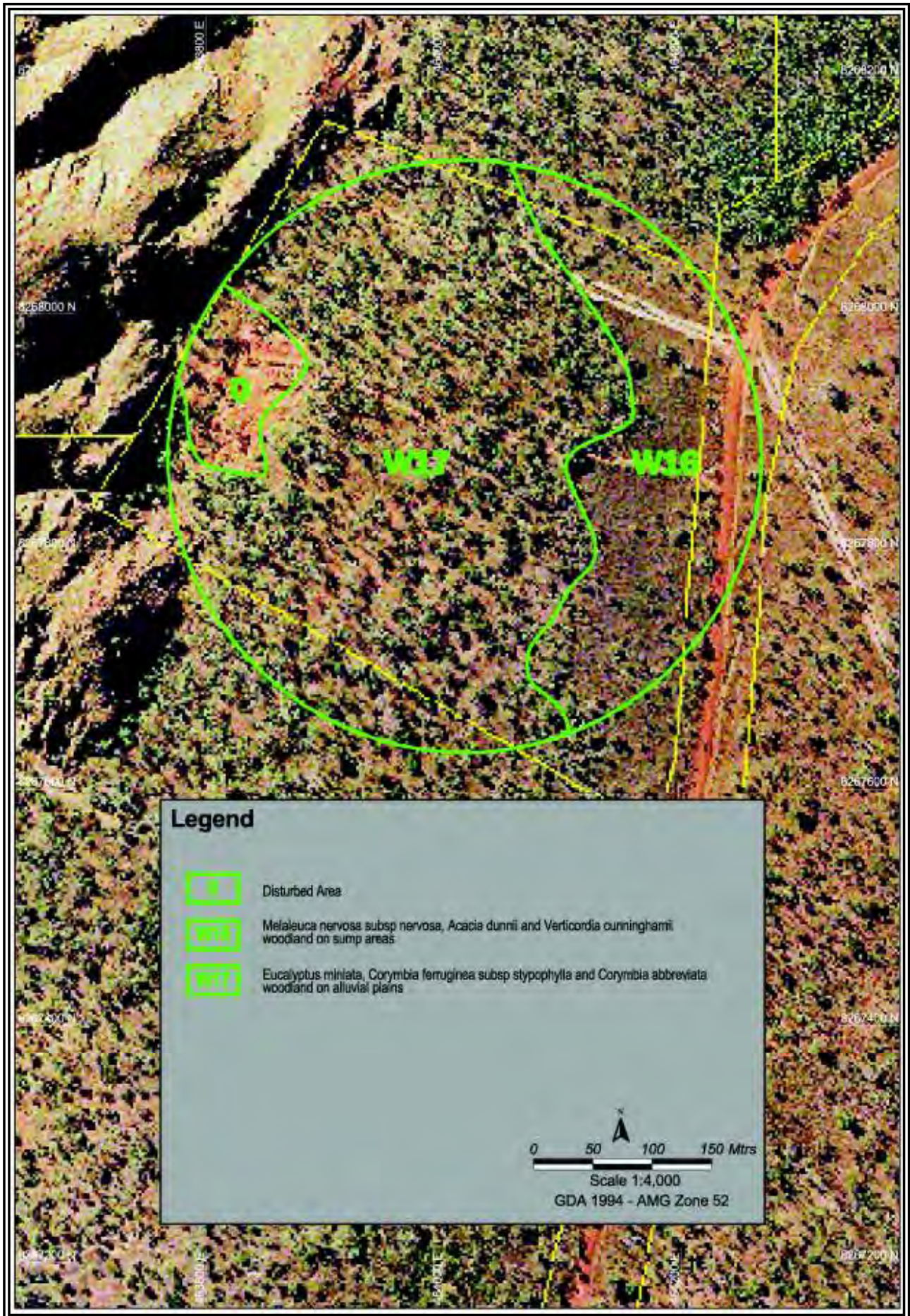
Map 14: Vegetation Types at Material Investigation Area 14



Map 15: Vegetation Types over aerial at Material Investigation Area 8 and Borrow Pits 4 and 5



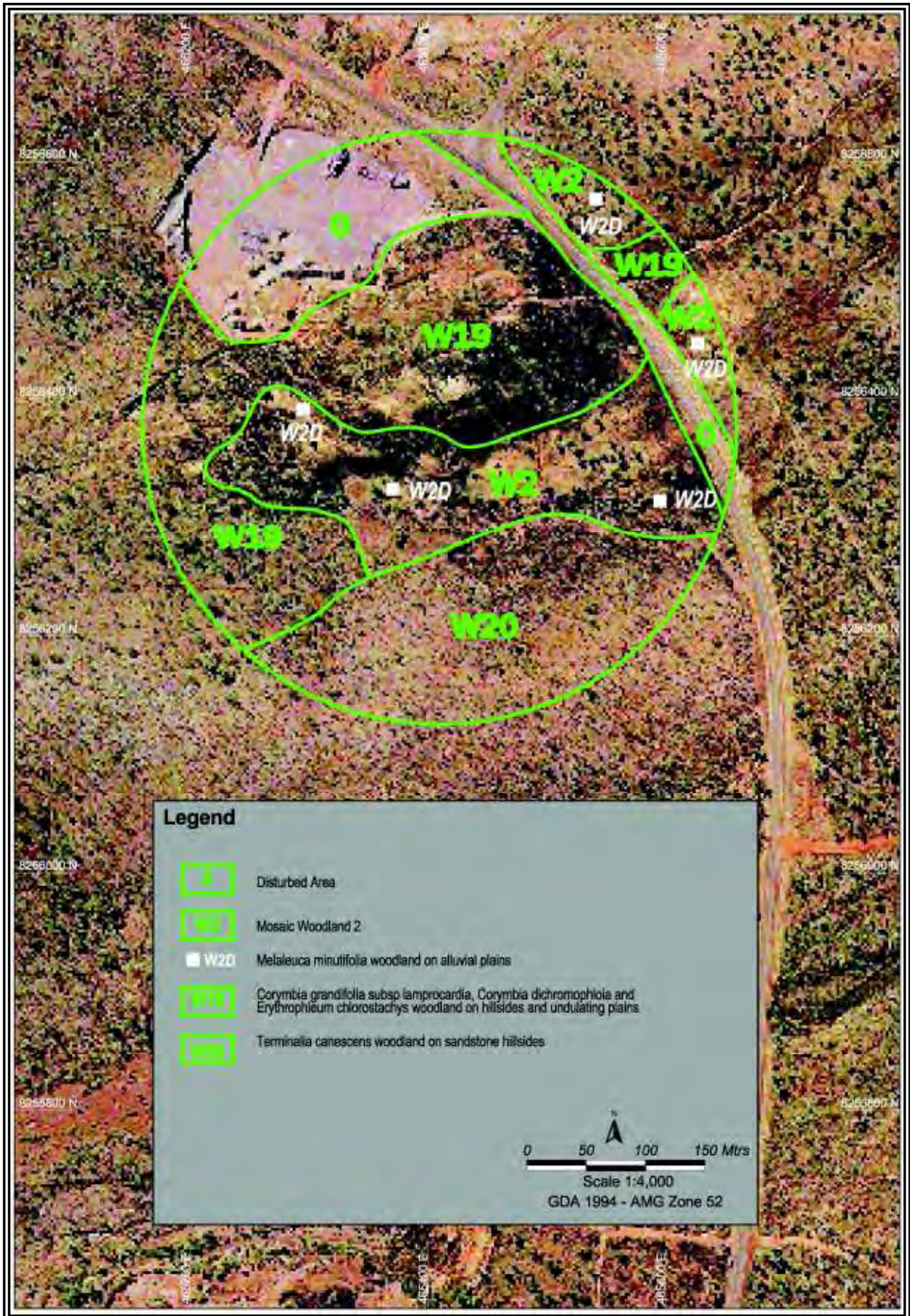
Map 16: Vegetation Types over aerial at Material Investigation Area 6 and Borrow Pits 6 and 7



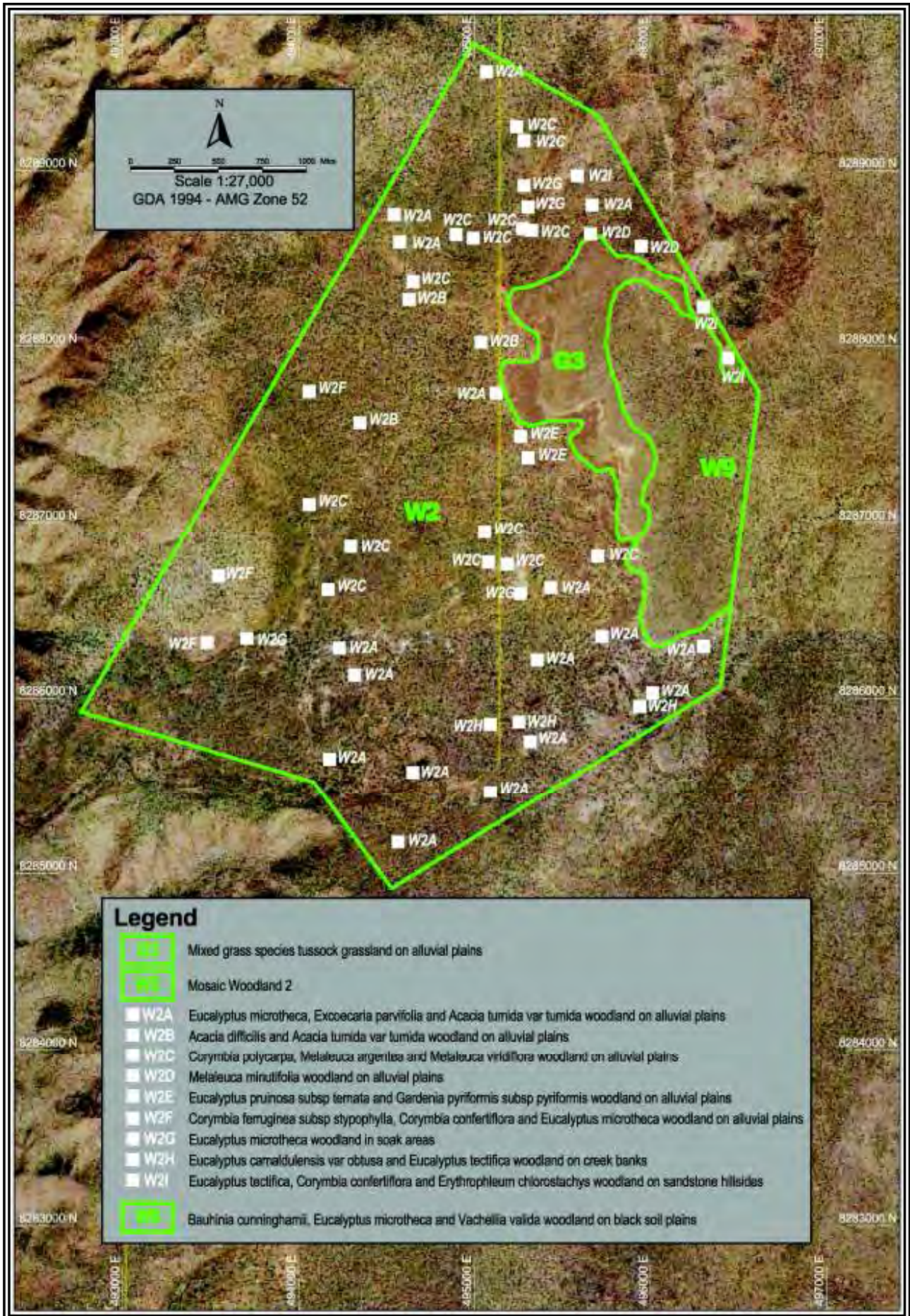
Map 17: Vegetation Types over aerial at Borrow Pit 8



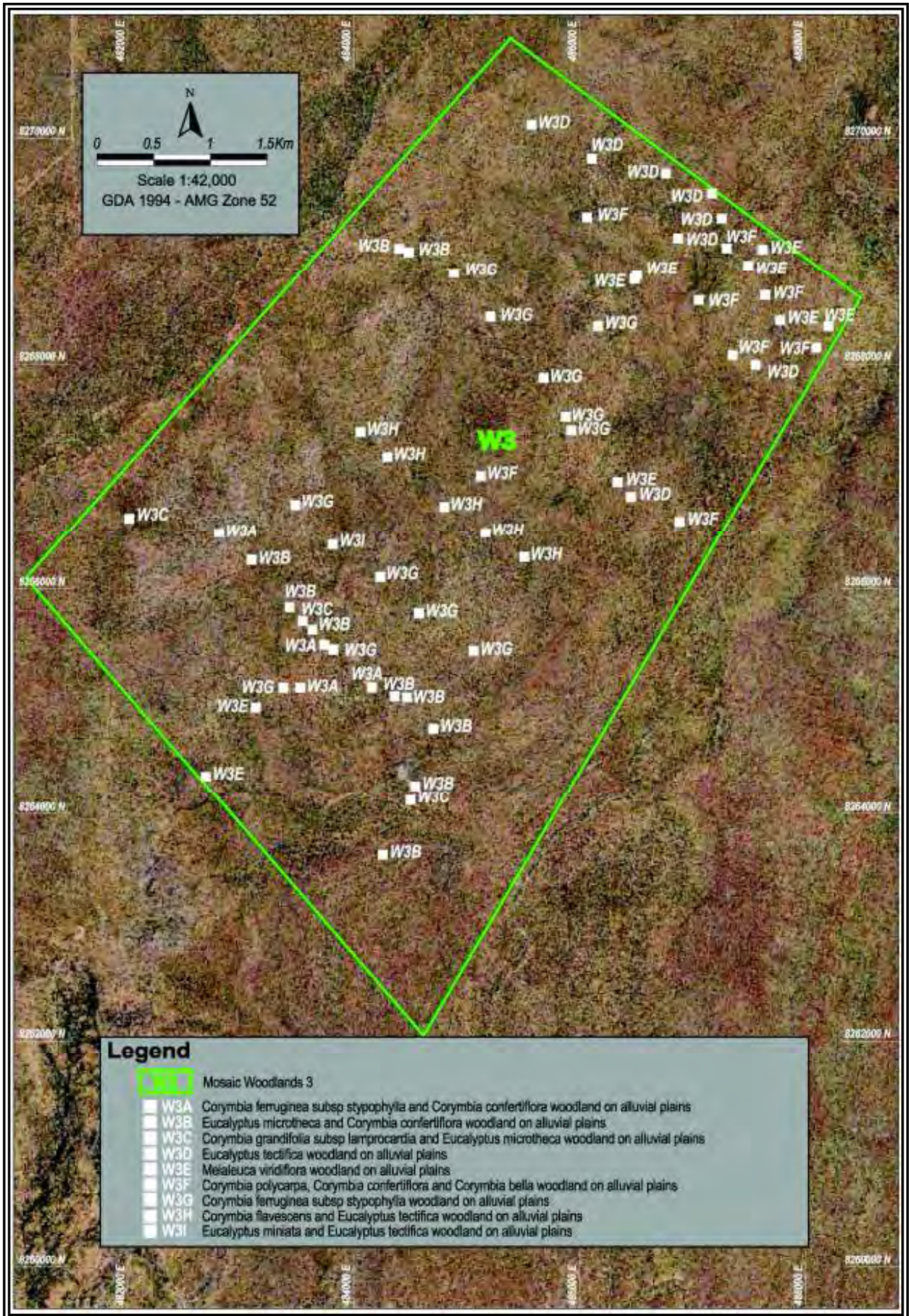
Map 18: Vegetation Types over aerial at Borrow Pits 9



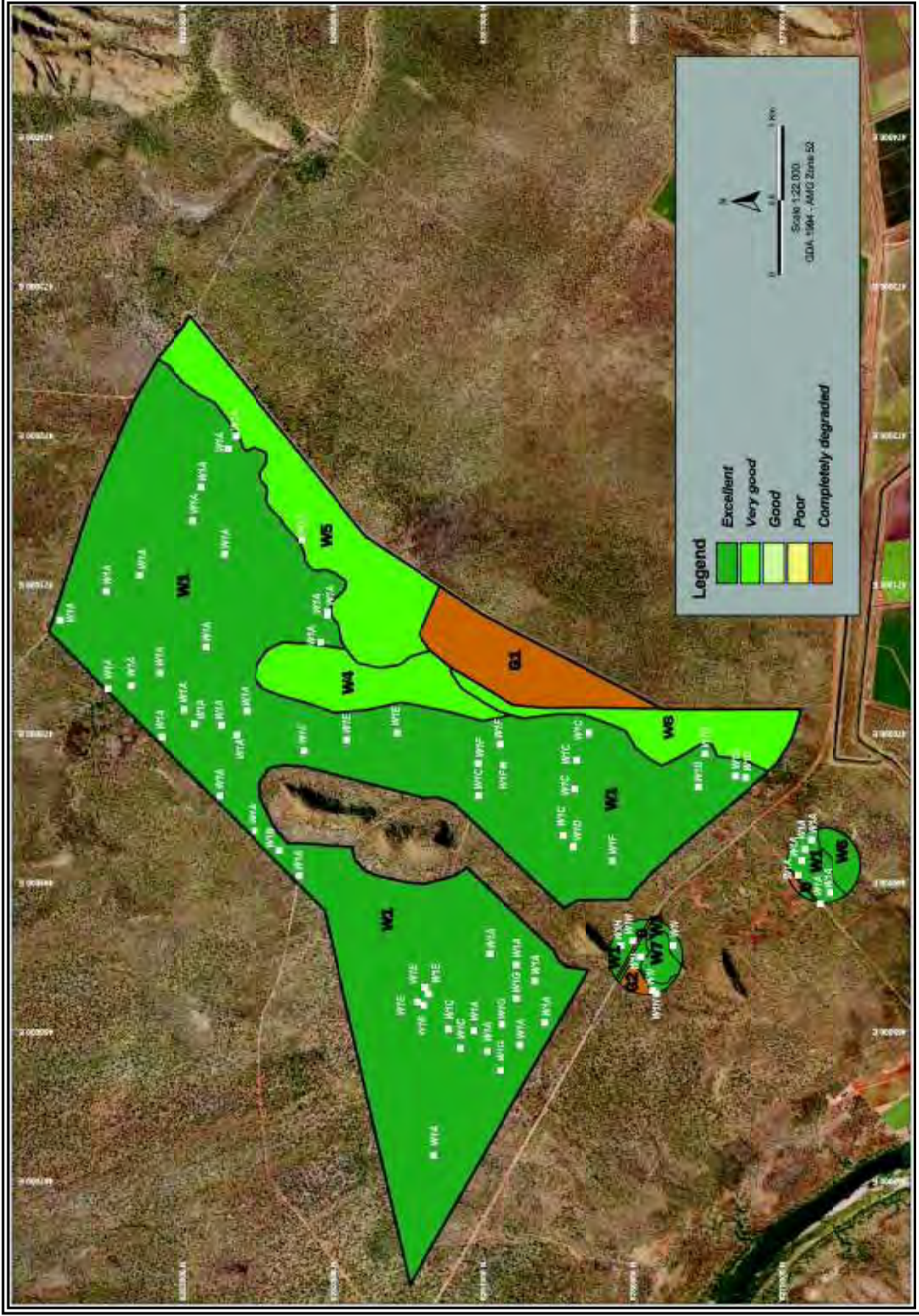
Map 19: Vegetation Types over aerial at Borrow Pit 10



Map 20: Vegetation Types over aerial at Material Investigation Area 13

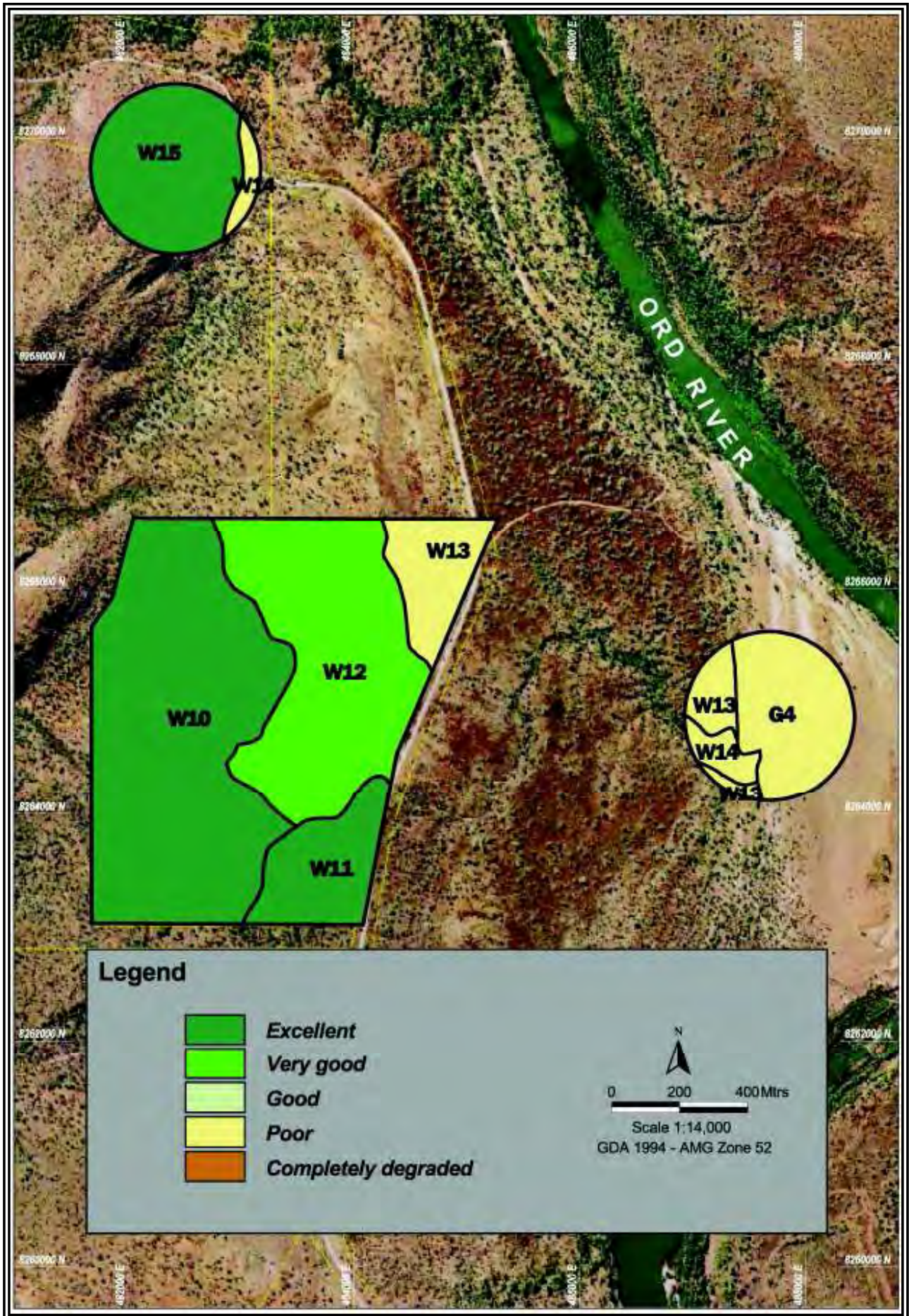


Map 21: Vegetation Types over aerial at Material Investigation Area 14

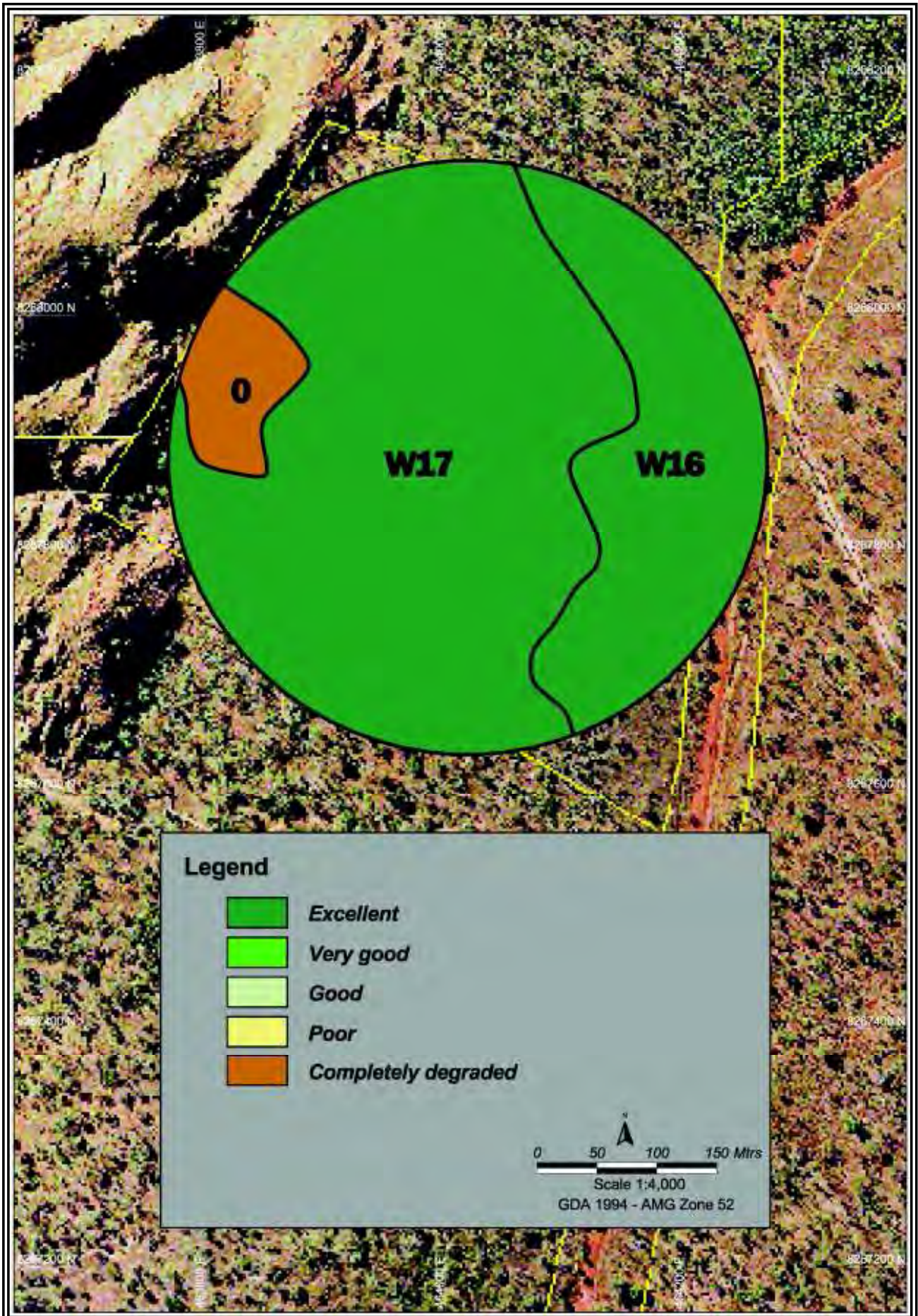


Map 22: Vegetation Condition at Material Investigation Area 8 and Borrow Pits 4 and 5

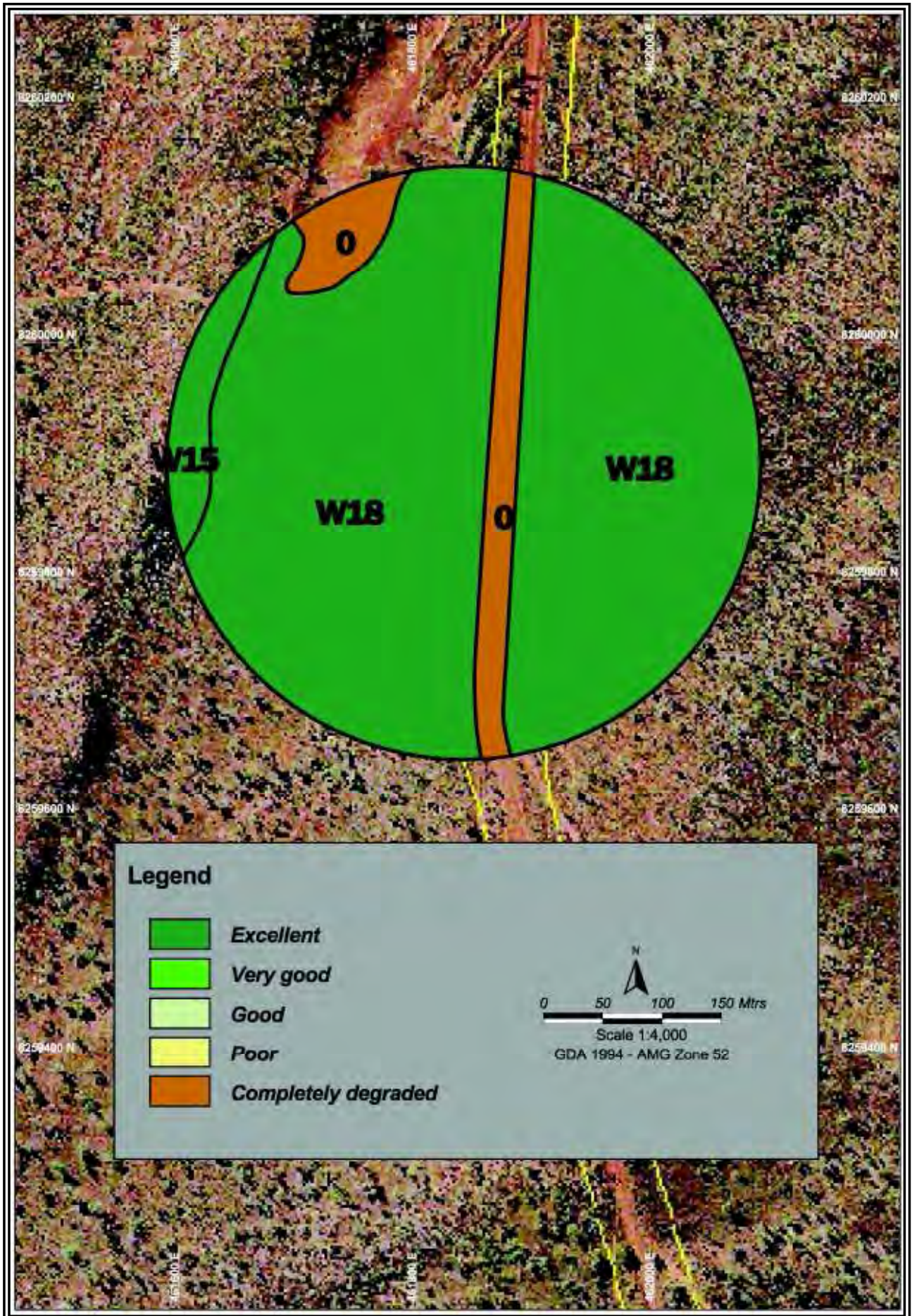




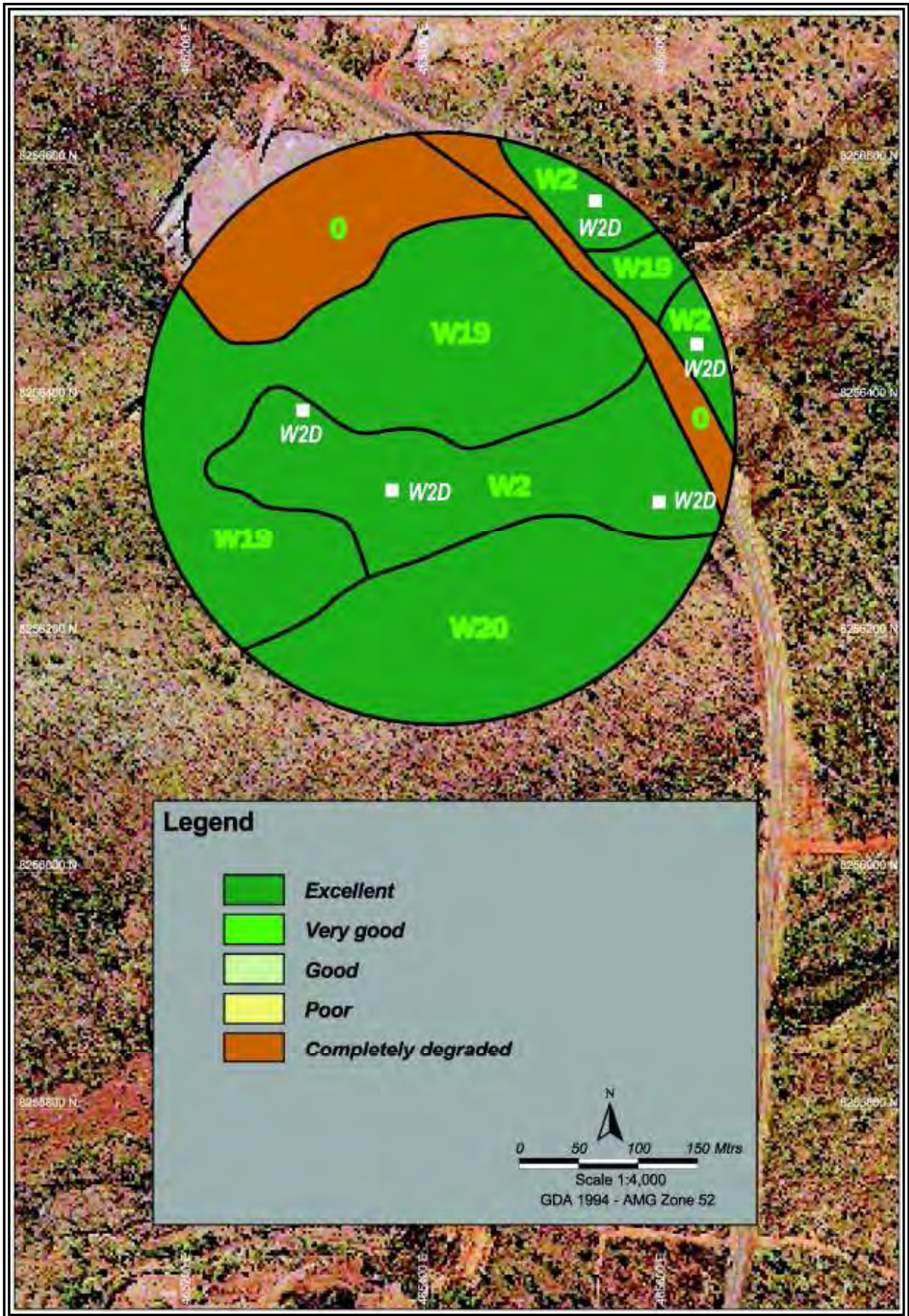
Map 23: Vegetation Condition at Material Investigation Area 6 and Borrow Pits 6 and 7



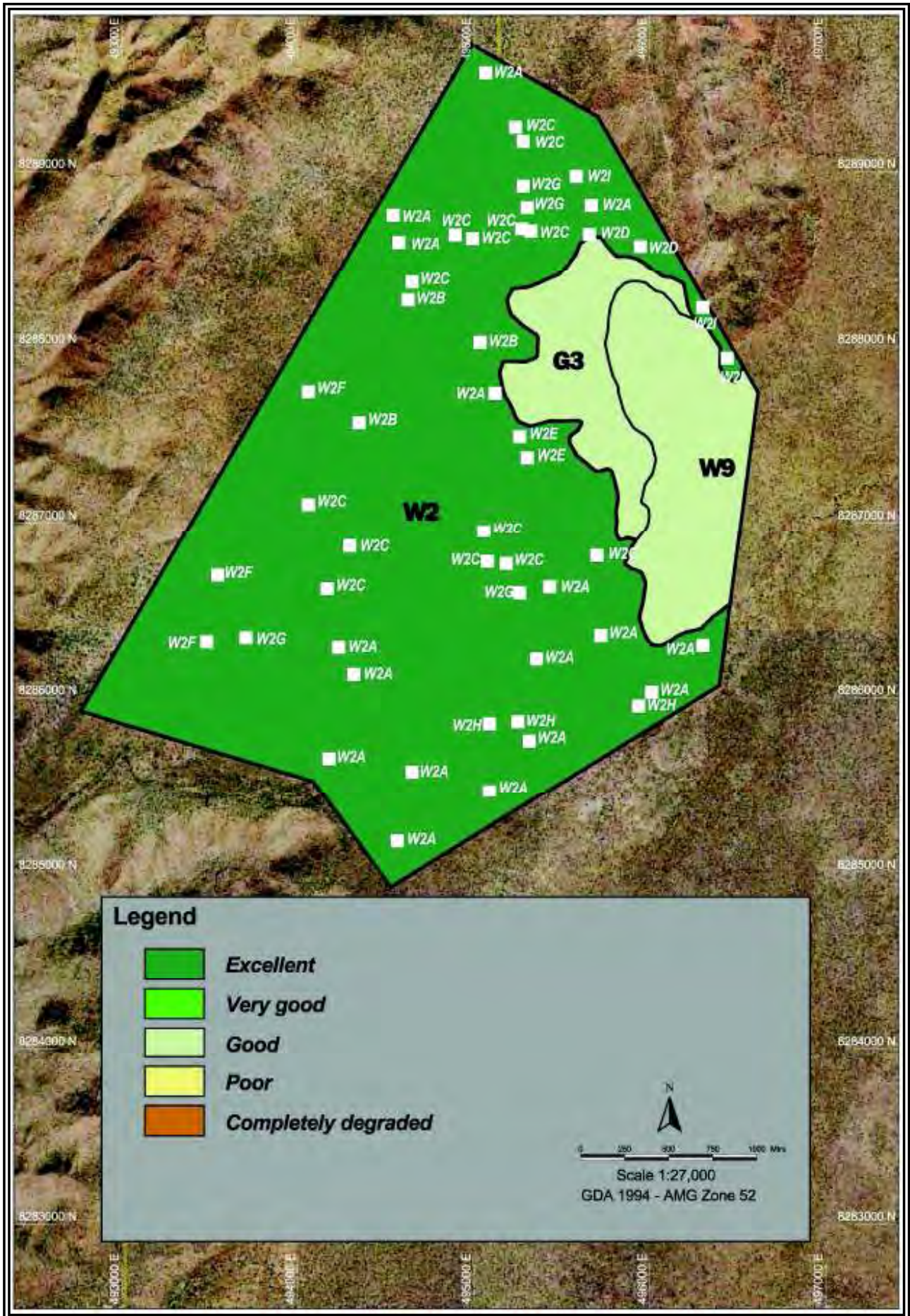
Map 24: Vegetation Condition at Borrow Pit 8



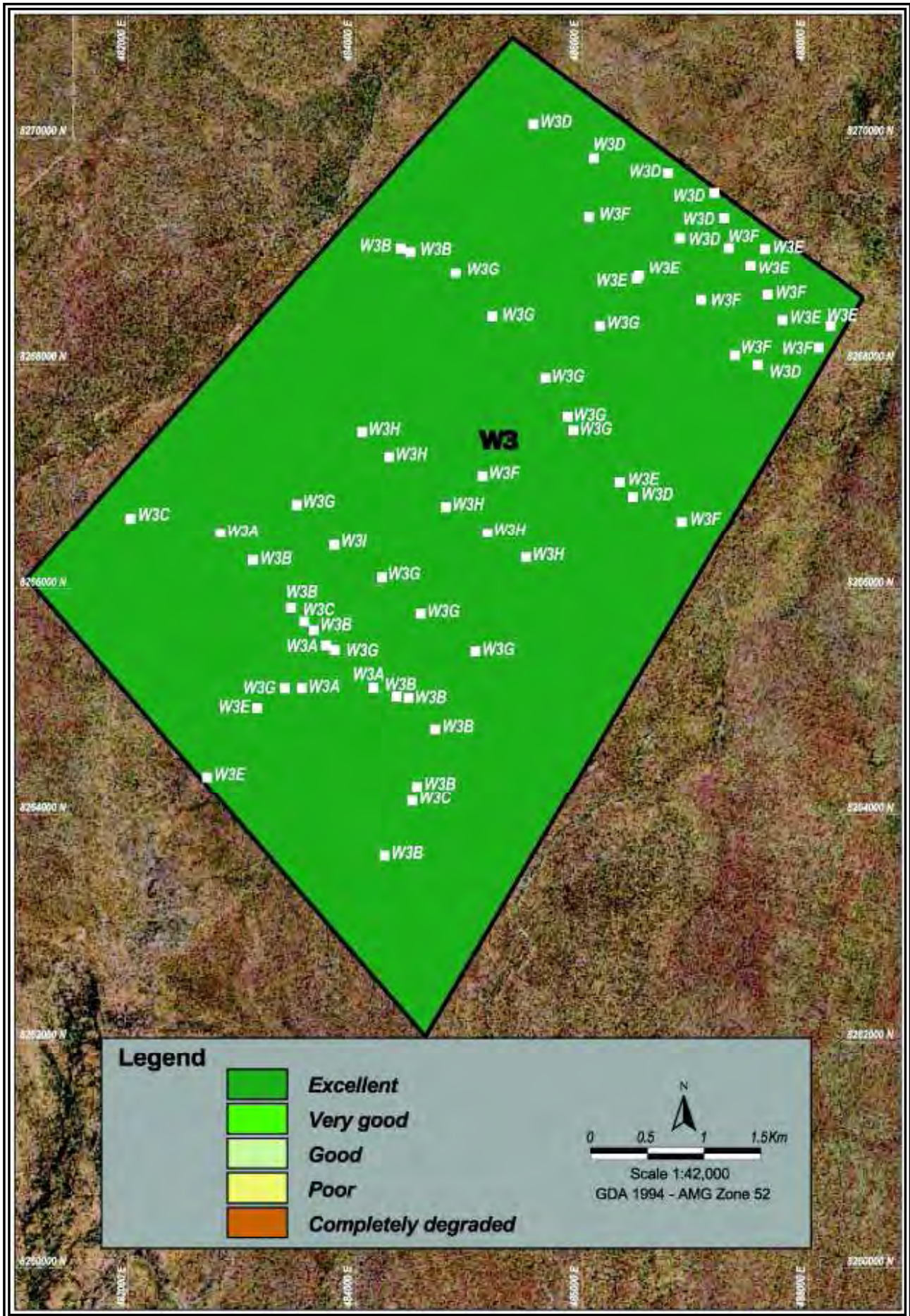
Map 25: Vegetation Condition at Borrow Pits 9



Map 26: Vegetation Condition at Borrow Pit 10



Map 27: Vegetation Condition at Material Investigation Area 13



Map 28: Vegetation Condition at Material Investigation Area 14

Appendix F

Description of Vegetation Types Occurring within the Vegetation Survey Areas

- Refer to Appendix E

Table of Vegetation Types

Grasslands		
Type	Description	Typical Vegetation Structure
G1	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.	Tussock grassland of <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> over <i>Ludwigia perennis</i> and <i>Flemingia pauciflora</i> .
G2	<i>Sorghum</i> ? <i>stipoides</i> tussock grassland on previously cleared alluvial plains.	<i>Sorghum</i> ? <i>stipoides</i> tussock grassland over <i>Crotalaria medicaginea</i> var <i>neglecta</i> and <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> .
G3	Mixed grass species tussock grassland on alluvial plains.	Tussock grassland of <i>Chrysopogon</i> sp, <i>Oryza australiensis</i> , <i>Themeda triandra</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> and <i>Panicum decompositum</i> .
G4	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.	<i>Cenchrus ciliaris</i> , <i>Heteropogon contortus</i> and <i>Urochloa mosambicensis</i> with <i>Calotropis procera</i> scattered shrubs.

Mosaic Woodlands			
Type	Mosaic Unit	Description	Typical Vegetation Structure
W1	W1A	<i>Corymbia greeniana</i> woodland on alluvial plains.	Woodland of <i>Corymbia greeniana</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> , <i>Petalostigma pubescens</i> and <i>Planchonia careya</i> with occasional patches of <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> over mixed grassland of <i>Heteropogon contortus</i> , <i>Themeda triandra</i> and <i>Sorghum stipoides</i> .
	W1B	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.	Low woodland of <i>Terminalia canescens</i> and <i>Melaleuca argentea</i> with scattered <i>Corymbia greeniana</i> over <i>Themeda triandra</i> , <i>Eragrostis fallax</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .
	W1C	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.	Open woodland of <i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> over <i>Melaleuca viridiflora</i> over <i>Ludwigia perennis</i> and <i>Fimbristylis tetragona</i> .
	W1D	<i>Corymbia bella</i> woodland on alluvial plains.	Woodland of <i>Corymbia bella</i> over <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Erythrina vesperillo</i> over Poaceae sp.
	W1E	<i>Corymbia</i> ? <i>grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.	Open woodland of <i>Corymbia</i> ? <i>grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> over <i>Acacia difficilis</i> and <i>Terminalia canescens</i> over <i>Sorghum</i> ? <i>stipoides</i> .
	W1F	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.	<i>Eucalyptus miniata</i> , <i>Corymbia</i> ? <i>confertiflora</i> and <i>Corymbia greeniana</i> over <i>Gardenia dacryoides</i> and <i>Acacia difficilis</i> over <i>Sorghum</i> ? <i>stipoides</i> .

Mosaic Woodlands (Cont...)			
Type	Mosaic Unit	Description	Typical Vegetation Structure
W2	W2I	<i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> woodland on sandstone hillsides.	Low open woodland of <i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> over <i>Grevillea heliosperma</i> over <i>Petalostigma quadriloculare</i> , <i>Themeda triandra</i> and <i>Sorghum stipoides</i> over <i>Triodia bitextura</i> and <i>Schizachyrium fragile</i> .
	W3A	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> over <i>Gardenia megasperma</i> and <i>Grevillea heliosperma</i> over <i>Abildgaardia schoenoides</i> , <i>Panicum decompositum</i> and <i>Sorghum ?stipoides</i> .
W3	W3B	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.	Woodland of <i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> over <i>Sorghum ?stipoides</i> , <i>Panicum decompositum</i> , <i>Themeda triandra</i> and <i>Abildgaardia schoenoides</i> .
	W3C	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> over <i>Melaleuca argentea</i> over <i>Sorghum ?stipoides</i> , <i>Schoenus punctatus</i> <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Abildgaardia schoenoides</i> .
	W3D	? <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Low woodland of ? <i>Eucalyptus tectifica</i> over <i>Melaleuca ?viridiflora</i> over <i>Sorghum ?stipoides</i> , <i>Abildgaardia schoenoides</i> and <i>Platyzoma microphyllum</i> .
	W3E	<i>Melaleuca ?viridiflora</i> woodland on alluvial plains.	Low open woodland of <i>Melaleuca ?viridiflora</i> over <i>Rotala diandra</i> , <i>Triodia bitextura</i> , <i>Abildgaardia schoenoides</i> and <i>Blumea diffusa</i> .
	W3F	<i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.	Low open woodland of <i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> over <i>Excoecaria parvifolia</i> and <i>Melaleuca viridiflora</i> over <i>Fimbristylis microcarpa</i> , <i>Triodia bitextura</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .
	W3G	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> over <i>Eragrostis</i> sp, <i>Eriachne</i> sp, <i>Sorghum ?stipoides</i> , <i>Triodia bitextura</i> and <i>Abildgaardia schoenoides</i> .
	W3H	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> over <i>Melaleuca viridiflora</i> over <i>Sorghum ?stipoides</i> , <i>Abildgaardia schoenoides</i> and <i>Triodia ?bitextura</i> .
	W3I	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.	Woodland of <i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> over <i>Sorghum ?stipoides</i> , <i>Eriachne</i> sp and <i>Triodia</i> sp.

Woodlands		
Type	Description	Typical Vegetation Structure
W4	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophileum chlorostachys</i> woodland on alluvial plains.	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophileum chlorostachys</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> over * <i>Hyptis suaveolens</i> , <i>Corchorus soidoides</i> subsp <i>soidoides</i> and <i>Crotalaria ramosissima</i> and mixed grassland of <i>Heteropogon contortus</i> and <i>Eragrostis cumingii</i> .
W5	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.	Low woodland of <i>Eucalyptus microtheca</i> over <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Excoecaria parvifolia</i> over <i>Schoenoplectus praelongatus</i> .
W6	<i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platyptera</i> low woodland on alluvial plains.	Low woodland of <i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platyptera</i> over <i>Ludwigia perennis</i> , <i>Themeda triandra</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Eriachne sulcata</i> and <i>Rhynchospora exserta</i> .
W7	<i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.	Low woodland of <i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> over <i>Calyx exstipulata</i> and <i>Petalostigma pubescens</i> over <i>Triodia bynoei</i> .
W8	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.	<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> over <i>Eragrostis</i> sp, <i>Ludwigia perennis</i> and <i>Eragrostis tenellula</i> .
W9	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.	Low woodland <i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> over <i>Oryza australiensis</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Ludwigia perennis</i> and <i>Chrysopogon</i> sp.
W10	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> over <i>Sorghum ?stipoides</i> , <i>Eriachne obtusa</i> and <i>Abidgaardia schoenoides</i> .
W11	<i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> woodland on creek banks.	Woodland of <i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> over <i>Poaceae</i> sp.
W12	<i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.	Low woodland of <i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> over <i>Sorghum ?stipoides</i> , <i>Themeda triandra</i> and <i>Fimbristylis pterygosperma</i> .
W13	<i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.	Low woodland of <i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> over <i>Vachellia farnesiana</i> , <i>Hyptis suaveolens</i> , <i>Flueggea virosa</i> subsp <i>melanthesoides</i> , <i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i> , <i>Waltheria indica</i> and <i>Heteropogon contortus</i> .

Woodlands (Cont...)	
Type	Description
W14	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus</i> ? <i>microtheca</i> woodland on creek banks.
W15	<i>Corymbia</i> ? <i>bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.
W16	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.
W17	<i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.
W18	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.
W19	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> woodland on hillsides and undulating plains.
W20	<i>Terminalia canescens</i> woodland on sandstone hillsides.
0	Disturbed area
	Typical Vegetation Structure
	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus</i> ? <i>microtheca</i> over <i>Terminalia hadleyana</i> over <i>Vachellia farnesiana</i> and <i>Chionachne hubbardiana</i> over <i>Urochloa mosambicensis</i> and <i>Cynodon dactylon</i> .
	Low woodland of <i>Corymbia</i> ? <i>bella</i> and <i>Corymbia confertiflora</i> over <i>Terminalia canescens</i> , <i>Owenia vernicosa</i> , <i>Terminalia latipes</i> , <i>Gardenia dacryoides</i> and <i>Calytrix exstipulata</i> over <i>Sorghum</i> ? <i>stipoideum</i> , <i>Cajanus pubescens</i> and <i>Triodia bynoei</i> .
	Low open woodland of <i>Acacia dunnii</i> , <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> and <i>Verticordia cunninghamii</i> over <i>Sorghum stipoideum</i> and <i>Eragrostis fallax</i> over <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i> , <i>Fuirena ciliaris</i> and <i>Eriachne obtusa</i> .
	Woodland of <i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> over <i>Sorghum</i> ? <i>stipoideum</i> .
	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> over <i>Terminalia canescens</i> over <i>Sorghum</i> ? <i>stipoideum</i> and <i>Triodia</i> ? <i>pungens</i> .
	Low woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> over <i>Terminalia platyptera</i> and <i>Calytrix exstipulata</i> over <i>Triodia bitextura</i> .
	Low open woodland of <i>Terminalia canescens</i> over <i>Triodia bitextura</i> .
	No vegetation, previously disturbed areas such as roads or existing borrow pits.

Vegetation Type G1:	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.		
Vegetation:	Regrowth vegetation – Previously cleared.	Area (ha):	52.67
Landscape:	Black soil plain.		
Soil:	Black/brown sandy loam – cracking.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Tussock grassland of <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> over <i>Ludwigia perennis</i> and <i>Flemingia pauciflora</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Corchorus olitorius</i> and <i>Vachellia farnesiana</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Completely degraded – previously cleared, complete loss of structure, two weed species recorded with low % cover.		



Vegetation Type G1 – *Dichanthium sericeum* subsp *polystachyum* tussock grassland



Vegetation Type G1 – Typical ground surface

Vegetation Type G2:	<i>Sorghum ?stipoideum</i> tussock grassland on previously cleared alluvial plains.		
Vegetation:	Regrowth vegetation - previously cleared.	Area (ha):	2.42
Landscape:	Alluvial plain.		
Soil:	Orange/brown sandy silt.		
Rock Type:	Sandstone – scattered pebbles on surface.		
Typical Vegetation Structure:	<i>Sorghum ?stipoideum</i> tussock grassland over <i>Crotalaria medicaginea</i> var <i>neglecta</i> and <i>Melaleuca nervosa</i> subsp <i>?nervosa</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q115.		
Weeds:	<i>Calotropis procera</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Completely degraded – previously cleared, complete loss of structure, some regrowth present, tree logs and stumps in piles, one weed species recorded with low % cover.		



Vegetation Type G2 – *Sorghum ?stipoideum* tussock grassland



Vegetation Type G2 – Typical ground surface

Vegetation Type G3:	Mixed grass species tussock grassland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	72.93
Landscape:	Alluvial plain.		
Soil:	Grey sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Tussock grassland of <i>Chrysopogon</i> sp, <i>Oryza australiensis</i> , <i>Themeda triandra</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> and <i>Panicum decompositum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Vachellia farnesiana</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Good – heavily grazed in some areas, one weed species recorded with low % cover.		



Vegetation Type G3 – Mixed grass species tussock grassland



Vegetation Type G3 – Typical ground surface

Vegetation Type G4:	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.		
Vegetation:	Native vegetation.	Area (ha):	13.71
Landscape:	Ord River bank.		
Soil:	Brown sand.		
Rock Type:	Sandstone – cobble stones.		
Typical Vegetation Structure:	<i>Cenchrus ciliaris</i> , <i>Heteropogon contortus</i> and <i>Urochloa mosambicensis</i> with <i>Calotropis procera</i> scattered shrubs.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Cenchrus ciliaris</i> dominant with 70% cover. <i>Urochloa mosambicensis</i> and <i>Calotropis procera</i> with 2% cover. <i>Vachellia farnesiana</i> and <i>Parkinsonia aculeata</i> with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Poor – heavy <i>Cenchrus ciliaris</i> infestation, four other weed species recorded, heavily grazed.		



Vegetation Type G4 – *Cenchrus ciliaris* and *Heteropogon contortus* tussock grassland



Vegetation Type G4 – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1A:	<i>Corymbia greeniana</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Brown/orange sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Corymbia greeniana</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> , <i>Petalostigma pubescens</i> and <i>Planchonia careya</i> with occasional patches of <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> over mixed grassland of <i>Heteropogon contortus</i> , <i>Themeda triandra</i> and <i>Sorghum stipoides</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q037 and Q039. <i>Goodenia brachypoda</i> (P1) recorded at Q032, Q033 and Q123.		
Weeds:	<i>Stylosanthes hamata</i> recorded with 3% cover. <i>Hyptis suaveolens</i> recorded with 2% cover. <i>Macroptilium lathyroides</i> var <i>semirectum</i> , and <i>Stylosanthes scabra</i> recorded with low % cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Very good – four weeds recorded, low levels of grazing in some areas, tracks in some areas.		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1A – *Corymbia greeniana* woodland



Mosaic Unit W1A – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1B:	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Grey/brown silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Terminalia canescens</i> and <i>Melaleuca argentea</i> with scattered <i>Corymbia greeniana</i> over <i>Themeda triandra</i> , <i>Eragrostis fallax</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Very good – no weeds recorded, low levels of grazing in some areas.		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1B – *Terminalia canescens* and *Melaleuca argentea* woodland



Mosaic Unit W1B – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1C:	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Soak area.		
Soil:	Grey/brown silt – damp when surveyed.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Open woodland of <i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> over <i>Melaleuca viridiflora</i> over <i>Ludwigia perennis</i> and <i>Fimbristylis tetragona</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1C – *Corymbia confertiflora* and *Corymbia grandifolia* subsp *lamprocardia* woodland



Mosaic Unit W1C – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1D:	<i>Corymbia bella</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Grey/brown silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Corymbia bella</i> over <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Erythrina vespertilio</i> over Poaceae sp.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Clitoria ternatea</i> and <i>Macroptilium lathyroides</i> var <i>semierectum</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed recorded with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1D – *Corymbia bella* woodland



Mosaic Unit W1D – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1E:	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.ch		
Soil:	Grey/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Open woodland of <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> over <i>Acacia difficilis</i> and <i>Terminalia canescens</i> over <i>Sorghum ?stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1E – *Corymbia ?grandifolia* subsp *lamprocardia* and *Corymbia abbreviata* woodland



Mosaic Unit W1E – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1F:	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Grey/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	<i>Eucalyptus miniata</i> , <i>Corymbia ?confertiflora</i> and <i>Corymbia greeniana</i> over <i>Gardenia dacryoides</i> and <i>Acacia difficilis</i> over <i>Sorghum ?stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1F – *Eucalyptus miniata* and *Corymbia* species woodland



Mosaic Unit W1F – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1G:	<i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Red/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> over <i>Sorghum ?stipoides</i> , <i>Crotalaria cunninghamii</i> , <i>Abildgaardia schoenoides</i> and <i>Microstachys chamaelea</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at a GPS survey point and Q027. <i>Goodenia brachypoda</i> (P1) recorded at Q027 and one GPS survey point.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1G – *Eucalyptus tetradonta* and *Acacia difficilis* woodland



Mosaic Unit W1G – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1H:	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Red/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> over <i>Sorghum ?stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1H – *Corymbia ferruginea* subsp *stypophylla* and *Acacia holosericea* woodland



Mosaic Unit W1H – Typical ground surface

Vegetation Type W1:	Mosaic woodlands over mixed grasslands 1		
Mosaic Unit W1:	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>, <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	844.6*
Landscape:	Alluvial plain.		
Soil:	Red/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> over <i>Sorghum ?stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		

* Total combined area for all mosaic types in the Vegetation Type W1 mosaic unit.



Mosaic Unit W1 – *Corymbia grandifolia* subsp *lamprocardia*, *Erythrophleum chlorostachys* and *Terminalia canescens* woodland



Mosaic Unit W11 – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2A:	<i>Eucalyptus microtheca</i>, <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Alluvial plains.		
Soil:	Red/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> over <i>Schizachyrium fragile</i> , <i>Sorghum ?stipoideum</i> and <i>Fimbristylis microcarya</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Good – one weed recorded with low % cover, heavily grazed in some areas.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2A – *Eucalyptus microtheca*, *Excoecaria parvifolia* and *Acacia tumida* var *tumida* woodland



Vegetation Type W2A – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2B:	<i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	
Landscape:	Alluvial plains.		
Soil:	Red/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> over <i>Sorghum ?stipoideum</i> , <i>Eriachne ciliata</i> and <i>Setaria apiculata</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Echinochloa colona</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed recorded with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2B – *Acacia difficilis* and *Acacia tumida* var *tumida* woodland



Type W2B – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2C:	<i>Corymbia polycarpa</i>, <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Alluvial plains.		
Soil:	Grey sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> over <i>Rhynchospora exserta</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> and <i>Chrysopogon</i> sp.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2C – *Corymbia polycarpa*, *Melaleuca argentea* and *Melaleuca viridiflora* woodland



Type W2C – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2D:	<i>Melaleuca minutifolia</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Alluvial plains.		
Soil:	Grey sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Melaleuca minutifolia</i> over <i>Themeda triandra</i> , <i>Sorghum ?stipoides</i> , <i>Rhynchospora affinis</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Hyptis suaveolens</i> and <i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt at MIA 14, >3 years. Most of area at BWPT 10 recently burnt <6 months.		
Condition Rating:	Excellent – two weeds with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2D – *Melaleuca minutifolia* woodland



Type W2D – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2E:	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Alluvial plains.		
Soil:	Grey sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> over <i>Themeda triandra</i> , <i>Panicum decompositum</i> , <i>Eragrostis tenellula</i> and <i>Sorghum stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2E – *Eucalyptus pruinosa* subsp *ternata* and *Gardenia pyriformis* subsp *pyriformis* woodland



Type W2E – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2F:	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>, <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Alluvial plains.		
Soil:	Grey sandy gravelly silt.		
Rock Type:	Sandstone gravel.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> over <i>Sorghum ?stipoides</i> and <i>Triodia bitextura</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2F – *Corymbia ferruginea* subsp *stypophylla*, *Corymbia confertiflora* and *Eucalyptus microtheca* woodland.



Type W2F – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2G:	<i>Eucalyptus microtheca</i> woodland in soak areas.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Soak areas – dry when surveyed.		
Soil:	Grey sandy silt.		
Rock Type:	Sandstone gravel.		
Typical Vegetation Structure:	Open woodland of <i>Eucalyptus microtheca</i> over <i>Chrysopogon</i> sp and <i>Eriachne glauca</i> var <i>barbinodis</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2G – *Eucalyptus microtheca* woodland



Type W2G – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands 2		
Mosaic Unit W2H:	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ?<i>Eucalyptus tectifica</i> woodland on creek banks.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Creek – 5m wide, several pools of water present during survey.		
Soil:	Orange sand.		
Rock Type:	Sandstone gravel.		
Typical Vegetation Structure:	Woodland of <i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ? <i>Eucalyptus tectifica</i> over <i>Adansonia gregorii</i> and <i>Pandanus ?spiralis</i> over <i>Panicum decompositum</i> and Poaceae sp.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Sida rhombifolia</i> , <i>Stylosanthes hamata</i> and <i>Trianthema portulacastrum</i> recorded with 1% cover. <i>Sida cordifolia</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – four weeds recorded with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2H – *Eucalyptus camaldulensis* var *obtusa* and ?*Eucalyptus tectifica* woodland



Type W2H – Typical ground surface

Vegetation Type W2:	Mosaic woodlands over mixed grasslands		
Mosaic Unit W2I:	<i>Eucalyptus tectifica</i>, <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> woodland on sandstone hillsides.		
Vegetation:	Native vegetation.	Area (ha):	851.95*
Landscape:	Sandstone hill.		
Soil:	N/A.		
Rock Type:	Sandstone – colluvial scree.		
Typical Vegetation Structure:	Low open woodland of <i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> over <i>Grevillea heliosperma</i> over <i>Petalostigma quadriloculare</i> , <i>Themeda triandra</i> and <i>Sorghum stipoideum</i> over <i>Triodia bitextura</i> and <i>Schizachyrium fragile</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes hamata</i> and <i>Echinochloa colona</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed recorded with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W2 mosaic unit.



Vegetation Type W2I – *Eucalyptus tectifica*, *Corymbia confertiflora* and *Erythrophleum chlorostachys* woodland



Type W2I – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3A:	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> over <i>Gardenia megasperma</i> and <i>Grevillea heliosperma</i> over <i>Abildgaardia schoenoides</i> , <i>Panicum decompositum</i> and <i>Sorghum ?stipoideum</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q092, Q093 and Q099.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3A – *Corymbia ferruginea* subsp *stypophylla* and *Corymbia confertiflora* woodland



Type W3A – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3B:	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Woodland of <i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> over <i>Sorghum ?stipoideum</i> , <i>Panicum decompositum</i> , <i>Themeda triandra</i> and <i>Abildgaardia schoenoides</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q084, Q094, Q095, Q100 and Q102. <i>Schoenus punctatus</i> (P3) recorded at Q085.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3B – *Eucalyptus microtheca* and *Corymbia confertiflora* woodland



Type W3B – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3C:	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> over <i>Melaleuca argentea</i> over <i>Sorghum ?stipoideum</i> , <i>Schoenus punctatus</i> <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Abildgaardia schoenoides</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded and <i>Schoenus punctatus</i> (P3) both recorded at Q101 and Q104.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3C – *Corymbia ?grandifolia* subsp *lamprocardia* and *Eucalyptus microtheca* woodland



Type W3C – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3D:	<i>Eucalyptus tectifica</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Low woodland of ? <i>Eucalyptus tectifica</i> over <i>Melaleuca ?viridiflora</i> over <i>Sorghum ?stipoideum</i> , <i>Abildgaardia schoenoides</i> and <i>Platyzoma microphyllum</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q080, Q081 and Q090. <i>Schoenus punctatus</i> (P3) recorded at Q080 and Q081.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3D – *Eucalyptus tectifica* woodland



Type W3D – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3E:	<i>Melaleuca ? viridiflora</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Orange sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Low open woodland of <i>Melaleuca ? viridiflora</i> over <i>Rotala diandra</i> , <i>Triodia bitextura</i> , <i>Abildgaardia schoenoides</i> and <i>Blumea diffusa</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q086 and Q114. <i>Schoenus punctatus</i> (P3) recorded at Q086.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3E – *Melaleuca ? viridiflora* woodland



Type W3E – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3F:	<i>Corymbia polycarpa</i>, <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Orange sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Low open woodland of <i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> over <i>Excoecaria parvifolia</i> and <i>Melaleuca viridiflora</i> over <i>Fimbristylis microcarya</i> , <i>Triodia bitextura</i> and <i>Eriachne glauca</i> var <i>barbinodis</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q088.		
Weeds:	<i>Vachellia farnesiana</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed recorded with low % cover, no disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3F – *Corymbia polycarpa*, *Corymbia confertiflora* and *Corymbia bella* woodland



Type W3F – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3G:	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Orange sandy silt.		
Rock Type:	N/A		
Typical Vegetation Structure:	Low woodland of <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> over <i>Eragrostis</i> sp, <i>Eriachne</i> sp, <i>Sorghum ?stipoideum</i> , <i>Triodia bitextura</i> and <i>Abildgaardia schoenoides</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q110, Q112 and Q113.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3G – *Corymbia ferruginea* subsp *stypophylla* woodland



Type W3G – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3H:	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	<i>Corymbia flavescens</i> and <i>Eucalyptus tectifica</i> over <i>Melaleuca viridiflora</i> over <i>Sorghum ?stipoides</i> , <i>Abildgaardia schoenoides</i> and <i>Triodia ?bitextura</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q105, Q106, Q107 and Q109.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3H – *Corymbia flavescens* and *Eucalyptus tectifica* woodland



Type W3H – Typical ground surface

Vegetation Type W3:	Mosaic woodlands over mixed grasslands 3		
Mosaic Unit W3H:	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	3166.26*
Landscape:	Alluvial plain.		
Soil:	Brown silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> over <i>Sorghum ?stipoideum</i> , <i>Eriachne</i> sp and <i>Triodia</i> sp.		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		

* Total combined area for all mosaic types in the Vegetation Type W3 mosaic unit.



Vegetation Type W3I – *Eucalyptus miniata* and *Eucalyptus tectifica* woodland



Type W3I – Typical ground surface

Vegetation Type W4:	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>, <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	48.64
Landscape:	Alluvial plain.		
Soil:	Orange/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> over <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i> over * <i>Hyptis suaveolens</i> , <i>Corchorus sidioides</i> subsp <i>sidioides</i> and <i>Crotalaria ramosissima</i> and mixed grassland of <i>Heteropogon contortus</i> and <i>Eragrostis cumingii</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q022, Q030 and Q031. <i>Goodenia brachypoda</i> (P1) recorded at Q030 and Q031.		
Weeds:	<i>Hyptis suaveolens</i> recorded with 5% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Very good – one weed recorded, low levels of grazing in some areas, old tracks, one small rubbish dump recorded.		



Vegetation Type W4 – *Corymbia grandifolia* subsp *lamprocardia*, *Corymbia greeniana* and *Erythrophleum chlorostachys* woodland



Vegetation Type W4 – Typical ground surface

Vegetation Type W5:	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.		
Vegetation:	Native vegetation.	Area (ha):	99.80
Landscape:	Soak area - partially inundated during the survey.		
Soil:	Brown/grey silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Eucalyptus microtheca</i> over <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Excoecaria parvifolia</i> over <i>Schoenoplectus praelongatus</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Very good – no weeds recorded, low levels of grazing in some areas.		



Vegetation Type W5 – *Eucalyptus microtheca* and *Melaleuca nervosa* subsp ?*crosslandiana* woodland



Vegetation Type W5 – Typical ground surface

Vegetation Type W6:	<i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i> and <i>Terminalia platyptera</i> low woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	7.77
Landscape:	Alluvial plain.		
Soil:	Grey sandy clayey silt, cracking in small areas.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Eucalyptus ?tectifica</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i> and <i>Terminalia platyptera</i> over <i>Ludwigia perennis</i> , <i>Themeda triandra</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Eriachne sulcata</i> and <i>Rhynchospora exserta</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes scabra</i> recorded at <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed species recorded with low % cover, no disturbances recorded.		



Vegetation Type W6 – *Eucalyptus ?tectifica*, *Bauhinia cunninghamii*, *Melaleuca nervosa* subsp *?crosslandiana* and *Terminalia platyptera* low woodland



Vegetation Type W6 – Typical ground surface

Vegetation Type W7:	<i>Corymbia ?bella</i>, <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.		
Vegetation:	Native vegetation.	Area (ha):	6.21
Landscape:	Sandstone hill.		
Soil:	Red/brown silt with sandstone boulder scree.		
Rock Type:	Sandstone.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> over <i>Calytrix exstipulata</i> and <i>Petalostigma pubescens</i> over <i>Triodia bynoei</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Bidens pilosa</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – one weed recorded with low % cover, no disturbances recorded.		



Vegetation Type W7 – *Corymbia* species and *Eucalyptus miniata* woodland



Vegetation Type W7 – Typical ground surface

Vegetation Type W8:	?<i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.		
Vegetation:	Native vegetation.	Area (ha):	44.64
Landscape:	Black soil plain.		
Soil:	Black/brown clay – self mulching.		
Rock Type:	N/A.		
Typical Vegetation Structure:	? <i>Eucalyptus tectifica</i> and <i>Excoecaria parvifolia</i> over <i>Eragrostis</i> sp, <i>Ludwigia perennis</i> and <i>Eragrostis tenellula</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Clitoria ternatea</i> recorded with 5% cover. <i>Corchorus olitorius</i> , <i>Macroptilium lathyroides</i> var <i>semirectum</i> and <i>Vachellia farnesiana</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Very good – four weed species recorded with low % cover, low levels of grazing in some areas.		



Vegetation Type W8 – ?*Eucalyptus tectifica* and *Excoecaria parvifolia* woodland



Vegetation Type W8 – Typical ground surface

Vegetation Type W9:	<i>Bauhinia cunninghamii</i>, <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.		
Vegetation:	Native vegetation.	Area (ha):	112.56
Landscape:	Black soil plain.		
Soil:	Black/brown clay – cracking.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland <i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> over <i>Oryza australiensis</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Ludwigia perennis</i> and <i>Chrysopogon</i> sp.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Corchorus olitorius</i> , <i>Cynodon dactylon</i> and <i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Good – three weeds recorded, heavily grazed in some areas.		



Vegetation Type W9 – *Bauhinia cunninghamii*, *Eucalyptus microtheca* and *Vachellia valida* woodland



Type W9 – Typical ground surface

Vegetation Type W10:	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	56.40
Landscape:	Alluvial plains.		
Soil:	Orange brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> over <i>Sorghum ?stipoideum</i> , <i>Eriachne obtusa</i> and <i>Abildgaardia schoenoides</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (P3) recorded at Q006 and <i>Goodenia brachypoda</i> (P1) recorded at Q005.		
Weeds:	<i>Azadirachta indica</i> recorded with <1% cover.		
Fire Age:	Some of area recently burnt <6 months.		
Condition Rating:	Excellent – one weed species recorded with low % cover, no disturbances recorded.		



Vegetation Type W10 – *Corymbia grandifolia* subsp *lamprocardia* and *Adansonia gregorii* woodland



Type W10 – Typical ground surface

Vegetation Type W11:	<i>Corymbia confertiflora</i>, <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> woodland on creek banks.		
Vegetation:	Native vegetation.	Area (ha):	11.04
Landscape:	Creek – 5m wide, dry.		
Soil:	Orange sand.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> over Poaceae sp.		
Conservation Taxa:	None recorded.		
Weeds:	<i>Azadirachta indica</i> and <i>Hyptis suaveolens</i> recorded with <1% cover.		
Fire Age:	Most of area recently burnt <6 months.		
Condition Rating:	Excellent – two weeds recorded with low % cover, no disturbances recorded.		



Vegetation Type W11 – *Corymbia confertiflora*, *Adansonia gregorii* and *Brachychiton diversifolius* subsp *diversifolius* woodland



Type W11 – Typical ground surface

Vegetation Type W12:	<i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	37.50
Landscape:	Alluvial plain.		
Soil:	Orange sand.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> over <i>Sorghum ?stipoideum</i> , <i>Themeda triandra</i> and <i>Fimbristylis pterygosperma</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Stylosanthes scabra</i> recorded with 1% cover, <i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	Half of area recently burnt <6 months.		
Condition Rating:	Very good – two weeds recorded with low % cover, one small old borrow pit recorded.		



Vegetation Type W12 – *Terminalia platyptera* *Melaleuca viridiflora* and *Eucalyptus pruinosa* subsp *ternata* woodland



Type W12 – Typical ground surface

Vegetation Type W13:	<i>Corymbia confertiflora</i>, <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	12.25
Landscape:	Alluvial plain.		
Soil:	Brown silty sand.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> over <i>Vachellia farnesiana</i> , <i>Hyptis suaveolens</i> , <i>Flueggea virosa</i> subsp <i>melanthesoides</i> , <i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i> , <i>Waltheria indica</i> and <i>Heteropogon contortus</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Vachellia farnesiana</i> and <i>Hyptis suaveolens</i> dominant species. <i>Aerva javanica</i> , <i>Clitoria ternatea</i> , <i>Urochloa mosambicensis</i> , <i>Malvastrum americanum</i> and <i>Calotropis procera</i> recorded with low % cover.		
Fire Age:	Area at MIA 6 recently burnt <6 months. Area at BWPT 7 not recently burnt, >3 years.		
Condition Rating:	Poor– heavily infested with weeds.		



Vegetation Type W13 – *Corymbia confertiflora*, *Gyrocarpus americanus* subsp *pachyphyllus* and *Bauhinia cunninghamii* woodland



Type W13 – Typical ground surface

Vegetation Type W14:	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus ?microtheca</i> woodland on creek banks.		
Vegetation:	Native vegetation.	Area (ha):	3.86
Landscape:	Creeks – small to large in size		
Soil:	Brown silty sand.		
Rock Type:	N/A.		
Typical Vegetation Structure:	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus ?microtheca</i> over <i>Terminalia hadleyana</i> over <i>Vachellia farnesiana</i> and <i>Chionachne hubbardiana</i> over <i>Urochloa mosambicensis</i> and <i>Cynodon dactylon</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Urochloa mosambicensis</i> recorded with 20% cover. <i>Cynodon dactylon</i> recorded with 15% cover. <i>Vachellia farnesiana</i> recorded with 2% cover. <i>Azadirachta indica</i> , <i>Calotropis procera</i> , <i>Cardiospermum halicacabum</i> var <i>halicacabum</i> , <i>Clitoria ternatea</i> , <i>Crotalaria goreensis</i> , <i>Digitaria ciliaris</i> and <i>Stylosanthes hamata</i> and recorded with low % cover.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Poor– heavily infested with weeds.		



Vegetation Type W14 – *Eucalyptus camaldulensis* var *obtusa* and *Eucalyptus ?microtheca* woodland



Type W14 – Typical ground surface

Vegetation Type W15:	<i>Corymbia ?bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.		
Vegetation:	Native vegetation.	Area (ha):	18.79
Landscape:	Sandstone hill.		
Soil:	Orange silt.		
Rock Type:	Sandstone – colluvial scree and outcropping.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia ?bella</i> and <i>Corymbia confertiflora</i> over <i>Terminalia canescens</i> , <i>Owenia vernicosa</i> , <i>Terminalia latipes</i> , <i>Gardenia dacryoides</i> and <i>Calytrix exstipulata</i> over <i>Sorghum ?stipoideum</i> , <i>Cajanus pubescens</i> and <i>Triodia bynoei</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	Most of area recently burnt <6 months.		
Condition Rating:	Excellent – no weeds or disturbances recorded		



Vegetation Type W15 – *Corymbia ?bella* and *Corymbia confertiflora* woodland



Type W15 – Typical ground surface

Vegetation Type W16:	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.		
Vegetation:	Native vegetation.	Area (ha):	5.33
Landscape:	Sump area – damp when surveyed.		
Soil:	Brown sand.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Low open woodland of <i>Acacia dunnii</i> , <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> and <i>Verticordia cunninghamii</i> over <i>Sorghum stipoides</i> and <i>Eragrostis fallax</i> over <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i> , <i>Fuirena ciliaris</i> and <i>Eriachne obtusa</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		



Vegetation Type W16 – *Melaleuca nervosa* subsp ?*nervosa*, *Acacia dunnii* and *Verticordia cunninghamii* woodland



Type W16 – Typical ground surface

Vegetation Type W17:	<i>Eucalyptus miniata</i>, <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	13.20
Landscape:	Alluvial plain.		
Soil:	Orange/brown sandy silt.		
Rock Type:	N/A.		
Typical Vegetation Structure:	Woodland of <i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> over <i>Sorghum .?stipoideum</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	No areas recently burnt, >3 years.		
Condition Rating:	Excellent – no weeds or disturbances recorded		



Vegetation Type W17 – *Eucalyptus miniata*, *Corymbia ferruginea* subsp *stypophylla* and *Corymbia abbreviata* woodland



Type W17 – Typical ground surface

Vegetation Type W18:	<i>Corymbia polycarpa</i>, <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.		
Vegetation:	Native vegetation.	Area (ha):	17.08
Landscape:	Alluvial plain.		
Soil:	Brown sandy silt.		
Rock Type:	Sandstone – pebbles on surface.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> over <i>Terminalia canescens</i> over <i>Sorghum ?stipoideum</i> and <i>Triodia ?pungens</i> .		
Conservation Taxa:	<i>Brachychiton tuberculatus</i> (Priority 3) recorded at Q140.		
Weeds:	<i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	Half of area recently burnt <6 months.		
Condition Rating:	Excellent – one weed species recorded with low % cover, no disturbances recorded.		



Vegetation Type W18 – *Corymbia polycarpa*, *Corymbia grandifolia* subsp *lamprocardia* and *Corymbia greeniana* woodland



Type W18 – Typical ground surface

Vegetation Type W19:	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>, <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> woodland on hillsides and undulating plains.		
Vegetation:	Native vegetation.	Area (ha):	7.22
Landscape:	Lower hillsides and undulating plains.		
Soil:	Brown silt.		
Rock Type:	Sandstone – scattered rocks on surface or colluvial scree.		
Typical Vegetation Structure:	Low woodland of <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> over <i>Terminalia platyptera</i> and <i>Calytrix exstipulata</i> over <i>Triodia bitextura</i> .		
Conservation Taxa:	None recorded.		
Weeds:	<i>Hyptis suaveolens</i> and <i>Stylosanthes hamata</i> recorded with <1% cover.		
Fire Age:	Half of area recently burnt <6 months.		
Condition Rating:	Excellent – two weeds recorded with low % cover, no disturbances recorded.		



Vegetation Type W19 – *Corymbia grandifolia* subsp *lamprocardia*, *Corymbia dichromophloia* and *Erythrophleum chlorostachys* woodland



Type W19 – Typical ground surface

Vegetation Type W20:	<i>Terminalia canescens</i> woodland on sandstone hillsides.		
Vegetation:	Native vegetation.	Area (ha):	4.21
Landscape:	Sandstone hill.		
Soil:	Orange/brown silt.		
Rock Type:	Sandstone – colluvial scree.		
Typical Vegetation Structure:	Low open woodland of <i>Terminalia canescens</i> over <i>Triodia bitextura</i> .		
Conservation Taxa:	None recorded.		
Weeds:	None recorded.		
Fire Age:	Area recently burnt <6 months.		
Condition Rating:	Excellent – no weeds or disturbances recorded.		



Vegetation Type W20 –



Type W20 – Typical ground surface

Appendix G

List of all Botanical Taxa by Vegetation Type recorded in the Vegetation Survey Areas

- Table A: List of all Botanical Taxa Recorded during the Pilbara Flora Vegetation Survey – Grassland G1 to Mosaic Woodland 3B
- Table B: List of all Botanical Taxa Recorded during the Pilbara Flora Vegetation Survey – Mosaic Woodland 3C to Woodland 20

Summary Table of Vegetation Types

Vegetation Group: Grasslands		
Type	Description	
G1	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> tussock grassland on black soil plains.	
G2	<i>Sorghum ?stipoideum</i> tussock grassland on previously cleared alluvial plains.	
G3	Mixed grass species tussock grassland on alluvial plains.	
G4	<i>Cenchrus ciliaris</i> and <i>Heteropogon contortus</i> tussock grassland on Ord River banks.	
Vegetation Group: Mosaic Woodlands		
Type	Mosaic Unit	Description
W1	W1A	<i>Corymbia greeniana</i> woodland on alluvial plains.
	W1B	<i>Terminalia canescens</i> and <i>Melaleuca argentea</i> woodland on alluvial plains.
	W1C	<i>Corymbia confertiflora</i> and <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> woodland in soak areas.
	W1D	<i>Corymbia bella</i> woodland on alluvial plains.
	W1E	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.
	W1F	<i>Eucalyptus miniata</i> and <i>Corymbia</i> species woodland on alluvial plains.
	W1G	<i>Eucalyptus tetradonta</i> and <i>Acacia difficilis</i> woodland on alluvial plains.
	W1H	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Acacia holosericea</i> woodland on alluvial plains.
	W1I	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> and

		<i>Terminalia canescens</i> woodland on alluvial plains.
W2	W2A	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.
	W2B	<i>Acacia difficilis</i> and <i>Acacia tumida</i> var <i>tumida</i> woodland on alluvial plains.
	W2C	<i>Corymbia polycarpa</i> , <i>Melaleuca argentea</i> and <i>Melaleuca viridiflora</i> woodland on alluvial plains.
	W2D	<i>Melaleuca minutifolia</i> woodland on alluvial plains.
	W2E	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> and <i>Gardenia pyriformis</i> subsp <i>pyriformis</i> woodland on alluvial plains.
	W2F	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.
	W2G	<i>Eucalyptus microtheca</i> woodland in soak areas.
	W2H	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and ? <i>Eucalyptus tectiflora</i> woodland on creek banks.
	W2I	<i>Eucalyptus tectiflora</i> , <i>Corymbia confertiflora</i> and <i>Erythrophleum chlorostachys</i> woodland on sandstone hillsides.
W3	W3A	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.
	W3B	<i>Eucalyptus microtheca</i> and <i>Corymbia confertiflora</i> woodland on alluvial plains.
	W3C	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus microtheca</i> woodland on alluvial plains.
	W3D	? <i>Eucalyptus tectiflora</i> woodland on alluvial plains.
	W3E	<i>Melaleuca ?viridiflora</i> woodland on alluvial plains.
	W3F	<i>Corymbia polycarpa</i> , <i>Corymbia confertiflora</i> and <i>Corymbia bella</i> woodland on alluvial plains.
	W3G	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> woodland on alluvial plains.
	W3H	<i>Corymbia flavescens</i> and <i>Eucalyptus tectiflora</i> woodland on alluvial plains.
	W3I	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectiflora</i> woodland on alluvial plains.
Vegetation Group: Woodlands		
Type	Description	
W4	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> and <i>Erythrophleum chlorostachys</i> woodland on alluvial plains.	
W5	<i>Eucalyptus microtheca</i> and <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> woodland on soak areas.	
W6	<i>Eucalyptus ?tectiflora</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> and <i>Terminalia platyptera</i> low woodland on alluvial plains.	
W7	<i>Corymbia ?bella</i> , <i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> and <i>Eucalyptus miniata</i> woodland on sandstone hillsides.	
W8	<i>Eucalyptus tectiflora</i> and <i>Excoecaria parvifolia</i> woodland on black soil plains.	
W9	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus microtheca</i> and <i>Vachellia valida</i> woodland on black soil plains.	
W10	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Adansonia gregorii</i> woodland on alluvial plains.	
W11	<i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> and <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> woodland on creek banks.	
W12	<i>Terminalia platyptera</i> <i>Melaleuca viridiflora</i> and <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> woodland on alluvial plains.	
W13	<i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> and <i>Bauhinia cunninghamii</i> woodland on alluvial plains.	
W14	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> and <i>Eucalyptus ?microtheca</i> woodland on creek banks.	

W15	<i>Corymbia ?bella</i> and <i>Corymbia confertiflora</i> woodland on sandstone hill sides.
W16	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> and <i>Verticordia cunninghamii</i> woodland on sump areas.
W17	<i>Eucalyptus miniata</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> and <i>Corymbia abbreviata</i> woodland on alluvial plains.
W18	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> and <i>Corymbia greeniana</i> woodland on alluvial plains.
W19	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia dichromophloia</i> and <i>Erythrophleum chlorostachys</i> woodland on hillsides and undulating plains.
W20	<i>Terminalia canescens</i> woodland on sandstone hillsides.

Family No	Family	Status [†]	Confirmed Taxa	Mosaic Woodland 3										Woodlands													
				3C	3D	3E	3F	3G	3H	3I	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
032	Cyperaceae		<i>Rhynchospora exserta</i>	✓																							
032	Cyperaceae		<i>Schoenoplectus lateriflorus</i>																								
032	Cyperaceae		<i>Schoenoplectus praelongatus</i>																								
032	Cyperaceae	P3, RE	<i>Schoenus punctatus</i>	✓																							
032	Cyperaceae		<i>Scleria rugosa</i>	✓																							
040	Centropodiaceae		<i>Centropogon exserta</i>	✓																							
042	Xyridaceae		<i>Xyris complanata</i>	✓																							
043	Eriocaulaceae		<i>Eriocaulon cinereum</i>	✓																							
047	Commelinaceae		<i>Cartonema parviflorum</i>	✓																							
047	Commelinaceae		<i>Commelina ensifolia</i>																								
047	Commelinaceae		<i>Corynotheca micrantha</i> var <i>gracilis</i>																								
054F	Anthricaceae		<i>Thysanotus chinensis</i>																								
055	Haemodoridaeae		<i>Haemodorum</i> sp	✓																							
086	Ulmaceae		<i>Celtis philippensis</i>																								
086	Ulmaceae		<i>Trema tomentosa</i> var <i>aspera</i>																								
087	Moraceae		<i>Ficus aculeata</i> var <i>indecora</i>																								
087	Moraceae		<i>Ficus atricha</i>																								
087	Moraceae		<i>Ficus coronulata</i>																								
087	Moraceae		<i>Ficus platypoda</i>																								
087	Moraceae		<i>Ficus sp</i>	✓																							
090	Proteaceae		<i>Grevillea agrifolia</i> subsp <i>agrifolia</i>																								
090	Proteaceae		<i>Grevillea dimidiata</i>																								
090	Proteaceae		<i>Grevillea erythroclada</i>																								
090	Proteaceae		<i>Grevillea heliosperma</i>	✓																							
090	Proteaceae		<i>Grevillea pteridifolia</i>																								
090	Proteaceae		<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>																								
090	Proteaceae		<i>Grevillea refracta</i> subsp <i>refracta</i>	✓																							
090	Proteaceae		<i>Grevillea sp</i>																								
090	Proteaceae		<i>Grevillea striata</i>																								
090	Proteaceae		<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>																								
090	Proteaceae		<i>Hakea arborescens</i>																								
090	Proteaceae		<i>Hakea sp</i>																								
090	Proteaceae		<i>Persoonia falcata</i>																								
090	Proteaceae		<i>Stenocarpus acacioides</i>																								
092	Santalaceae		<i>Exocarpos latifolius</i>																								
097	Loranthaceae		<i>Amyema villosiflora</i> subsp <i>villosiflora</i>																								
097	Loranthaceae		<i>Lysiana spathulata</i> subsp <i>spathulata</i>																								
106	Amaranthaceae		<i>Achyranthes aspera</i>																								
106	Amaranthaceae	*	<i>Aerva javanica</i>																								
106	Amaranthaceae		<i>Altermannia angustifolia</i>																								
106	Amaranthaceae		<i>Gomphrena canescens</i> subsp <i>canescens</i>	✓																							
106	Amaranthaceae		<i>Gomphrena cunninghamii</i>																								
106	Amaranthaceae		<i>Gomphrena humifusa</i>																								
106	Amaranthaceae		<i>Gomphrena lanata</i>																								
106	Amaranthaceae		<i>Ptilotus corymbosus</i>																								
106	Amaranthaceae		<i>Ptilotus ? corymbosus</i>																								
106	Amaranthaceae		<i>Ptilotus exaltatus</i> var <i>exaltatus</i>																								
106	Amaranthaceae		<i>Ptilotus fusiformis</i>																								
106	Amaranthaceae		<i>Ptilotus spicatus</i>																								

Family No	Family	Status [†]	Confirmed Taxa	Mosaic Woodland 3								Woodlands															
				3C	3D	3E	3F	3G	3H	3I	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
110	Aizoaceae		<i>Trianthema pilosa</i>																								
110	Aizoaceae	*	<i>Trianthema portulacastrum</i>																								
111	Portulacaceae		<i>Calandrinia quadrivalvis</i>				√																				
111	Portulacaceae		<i>Calandrinia quadrivalvis sens lat</i>	√																							
111	Portulacaceae		<i>Calandrinia uniflora</i>																								
111	Portulacaceae		<i>Portulaca pilosa</i>																								
113	Caryophyllaceae		<i>Polycarpaea corymbosa</i>																								
113	Caryophyllaceae		<i>Polycarpaea corymbosa var corymbosa</i>																								
113	Caryophyllaceae		<i>Polycarpaea holzlei</i>																								
113	Caryophyllaceae		<i>Polycarpaea longiflora</i>																								
122	Menispermaceae		<i>Tinospora smilacina</i>				√																				
132	Hernandiaceae		<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>																								
137A	Capparaceae		<i>Capparis lasiantha</i>																								
137A	Capparaceae		<i>Cleome viscosa</i>																								
143	Droseraceae		<i>Drosera indica</i>																								
143	Droseraceae		<i>Drosera ordensis</i>																								
154	Byblidaceae		<i>Byblis filifolia</i>																								
163	Mimosaceae		<i>Acacia adoxa</i> var <i>adoxo</i>																								
163	Mimosaceae		<i>Acacia coleii</i>																								
163	Mimosaceae		<i>Acacia diffractilis</i>																								
163	Mimosaceae		<i>Acacia durinii</i>																								
163	Mimosaceae		<i>Acacia hemignosta</i>																								
163	Mimosaceae		<i>Acacia holosericea</i>																								
163	Mimosaceae		<i>Acacia lamprocarpa</i>																								
163	Mimosaceae		<i>Acacia ?lamprocarpa</i>																								
163	Mimosaceae		<i>Acacia lycopodiifolia</i>																								
163	Mimosaceae		<i>Acacia neurocarpa</i>																								
163	Mimosaceae		<i>Acacia nuperrima</i>																								
163	Mimosaceae		<i>Acacia perryi</i>																								
163	Mimosaceae		<i>Acacia platycarpa</i>																								
163	Mimosaceae		<i>Acacia plectocarpa</i> subsp <i>plectocarpa</i>																								
163	Mimosaceae		<i>Acacia sp</i>																								
163	Mimosaceae		<i>Acacia stigmatophylla</i>																								
163	Mimosaceae		<i>Acacia tumida</i> var <i>tumida</i>																								
163	Mimosaceae		<i>Acacia ?tumida</i> var <i>tumida</i>																								
163	Mimosaceae		<i>Cathartium umbellatum</i> subsp <i>moniliforme</i>																								
163	Mimosaceae		<i>Cathartium umbellatum</i>																								
163	Mimosaceae		<i>Dichrostachys spicata</i>																								
163	Mimosaceae	*	<i>Vachella farnesiana</i>																								
163	Mimosaceae		<i>Vachella valida</i>																								
164	Caesalpinaceae		<i>Bauhinia cunninghamii</i>																								
164	Caesalpinaceae		<i>Chamaecrista mimosoides</i>																								
164	Caesalpinaceae		<i>Erythrophleum chlorostachys</i>																								
164	Caesalpinaceae	*	<i>Parkinsonia aculeata</i>																								
164	Caesalpinaceae		<i>Senna oligoclada</i>																								
164	Caesalpinaceae		<i>Caesalpinia</i>																								
165	Papilionaceae		<i>Abrus precatorius</i> subsp <i>precatorius</i>																								
165	Papilionaceae		<i>Cajanus acutifolius</i>																								
165	Papilionaceae		<i>Cajanus hirtipilosus</i>																								
165	Papilionaceae		<i>Cajanus latiseptalus</i>																								



Borrow Material Investigation Areas Kununurra

Family No	Family	Status†	Confirmed Taxa	Mosaic Woodland 3										Woodlands														
				3C	3D	3E	3F	3G	3H	3I	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	
185	Euphorbiaceae		<i>Petalostigma quadriloculare</i>																									
185	Euphorbiaceae		<i>Petalostigma</i> sp	√																								
185	Euphorbiaceae		<i>Phyllanthus virgatus</i>		√																							
185	Euphorbiaceae		<i>Poranthra microphylla</i>																									
194	Anacardiaceae		<i>Buchanania obovata</i>	√																								
194	Anacardiaceae		<i>Buchanania obovata</i>																									
199	Celastraceae		<i>Denthamnia obscura</i>																									
199	Celastraceae		<i>Maytenus ferdinandi</i>																									
202	Stackhousiaceae		<i>Stackhousia intermedia</i>	√																								
202	Stackhousiaceae		<i>Sternodia lathraia</i>																									
207	Sapindaceae		<i>Atalaya hemigleuca</i>																									
207	Sapindaceae	*	<i>Atalaya varifolia</i>	√																								
207	Sapindaceae		<i>Cardiospermum halicacabum</i> var <i>halicacabum</i>																									
207	Sapindaceae		<i>Distichostemon hispidulus</i> var <i>aridus</i>																									
207	Sapindaceae		<i>Distichostemon hispidulus</i> var <i>?aridus</i>																									
207	Sapindaceae		<i>Distichostemon hispidulus</i> var <i>phylopteris</i>																									
207	Sapindaceae		<i>Dodonaea physocarpa</i>	√																								
215	Rhamnaceae		<i>Ziziphus quadrilocularis</i>																									
216	Vitaceae		<i>Cayratia trifolia</i>																									
220	Tiliaceae	*	<i>Corchorus olitorius</i>																									
220	Tiliaceae		<i>Corchorus siccoides</i> subsp <i>siccoides</i>	√																								
220	Tiliaceae		<i>Grewia breviflora</i>																									
220	Tiliaceae		<i>Grewia retusifolia</i>	√																								
220	Tiliaceae		<i>Triumfetta olivorum</i> subsp <i>olivorum</i>																									
220	Tiliaceae		<i>Triumfetta nyctea</i> subsp <i>nyctea</i>																									
221	Malvaceae		<i>Abelmoschus ficulneus</i>																									
221	Malvaceae		<i>Abutilon hannii</i>																									
221	Malvaceae		<i>Hibiscus austrinus</i> var <i>austrinus</i>																									
221	Malvaceae		<i>Hibiscus leptocladus</i>																									
221	Malvaceae		<i>Hibiscus meraukensis</i>																									
221	Malvaceae	*	<i>Malvastrum americanum</i>																									
221	Malvaceae	*	<i>Sida cordifolia</i>																									
221	Malvaceae		<i>Sida fibulifera</i>																									
221	Malvaceae	*	<i>Sida rhombifolia</i>																									
221	Malvaceae		<i>Sida spinosa</i>																									
222	Bombacaceae		<i>Adansonia gregorii</i>	√																								
223	Sterculiaceae		<i>Brachycton diversifolius</i>																									
223	Sterculiaceae		<i>Brachycton diversifolius</i> subsp <i>diversifolius</i>																									
223	Sterculiaceae		<i>Brachycton fitzgeraldianus</i>																									
223	Sterculiaceae	P3	<i>Brachycton tuberculatus</i>	√																								
223	Sterculiaceae		<i>Melochia corchorifolia</i>																									
223	Sterculiaceae		<i>Melochia pyramidata</i>																									
223	Sterculiaceae		<i>Waltheria indica</i>																									
235	Elatinaceae		<i>Bergia ammannioides</i>																									
235	Elatinaceae		<i>Bergia pedicellaris</i>																									
241	Cochlospermaceae		<i>Cochlospermum fraseri</i>	√																								
243	Violaceae		<i>Hybanthus enneaspermus</i> subsp <i>enneaspermus</i>																									
248	Passifloraceae		<i>Passiflora foetida</i> var <i>hispida</i>																									



Family No	Family	Status [†]	Confirmed Taxa	Mosaic Woodland 3								Woodlands															
				3C	3D	3E	3F	3G	3H	3I	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
345	Asteraceae	*	<i>Bidens pilosa</i>	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
345	Asteraceae		<i>Blumea diffusa</i>																								
345	Asteraceae		<i>Blumea tenella</i>																								
345	Asteraceae		<i>Cyanthillium cinereum</i>																								
345	Asteraceae		<i>Emilia sonchifolia</i>																								
345	Asteraceae		<i>Iotaspertia australense</i>																								
345	Asteraceae		<i>Pterocaulon serrulatum</i>																								√
345	Asteraceae		<i>Pterocaulon sphaeranthoides</i>																								
345	Asteraceae		<i>Pterocaulon verbascifolium</i>																								
345	Asteraceae		<i>Streptoglossa odora</i>																								
345	Asteraceae		<i>Streptoglossa</i> sp																								
345	Asteraceae		<i>Vittadinia spechti</i> var <i>kimberleyensis</i>																								



Appendix H - Part A

Quadrat Data Sheets Quadrat 001 to Quadrat 075

This appendix is from a document entitled “Flora and Vegetation Survey of Main Roads Western Australia Potential Borrow Material Investigation Areas at Kununurra”, prepared for Strategen Environmental Consultants Pty Ltd on behalf of Main Roads Western Australia by Pilbara Flora, September 2009.

Quadrat Locations (taken by GPS at centre of quadrat)

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q001	465850	8272198	Q025	469867	8282225
Q002	465754	8271833	Q026	468207	8280807
Q003	465796	8272729	Q027	468035	8280906
Q004	465657	8272496	Q028	468281	8281415
Q005	465304	8271865	Q029	468238	8281393
Q006	465345	8272695	Q030	470286	8281695
Q007	465764	8272430	Q031	470457	8282005
Q008	465250	8271876	Q032	470596	8282115
Q009	465410	8272573	Q033	470779	8282071
Q010	465239	8272131	Q034	470811	8281961
Q011	466299	8272840	Q035	469783	8281064
Q012	470919	8281662	Q036	471636	8282913
Q013	468002	8281260	Q037	470744	8283852
Q014	469130	8280167	Q038	471045	8283322
Q015	469301	8280499	Q039	470305	8283376
Q016	470010	8279836	Q040	470135	8282613
Q017	469849	8279382	Q041	469202	8282390
Q018	469624	8279592	Q042	496343	8286968
Q019	470298	8280577	Q043	495978	8287178
Q020	470609	8280965	Q044	495785	8287454
Q021	469988	8280323	Q045	495581	8288184
Q022	470340	8281352	Q046	495280	8289168
Q023	467155	8281359	Q047	495066	8289556
Q024	469986	8281606	Q048	496407	8287421

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q049	496439	8287930	Q090	487558	8267984
Q050	496267	8287985	Q091	486884	8266601
Q051	495967	8287996	Q092	483530	8265127
Q052	495945	8288571	Q093	484163	8265128
Q053	495945	8288571	Q094	484366	8265051
Q054	495581	8288969	Q095	484473	8265040
Q055	494894	8288637	Q096	484709	8264763
Q056	494572	8288593	Q097	484506	8264122
Q057	495034	8288018	Q098	484260	8263635
Q058	495302	8287366	Q099	483744	8265504
Q059	496042	8286680	Q100	483637	8265636
Q060	494563	8285175	Q101	483551	8265714
Q061	495088	8285463	Q102	483101	8266255
Q062	495313	8285751	Q103	482811	8266498
Q063	495088	8285850	Q104	482018	8266631
Q064	494176	8285651	Q105	484065	8267395
Q065	495721	8286348	Q106	484301	8267174
Q066	495184	8286757	Q107	485512	8266279
Q067	495077	8286768	Q108	485169	8266500
Q068	494316	8286127	Q109	484804	8266732
Q069	496064	8286414	Q110	483486	8266753
Q070	495935	8285950	Q111	483819	8266389
Q071	495989	8286315	Q112	485063	8265449
Q072	495259	8286591	Q113	484580	8265781
Q073	493479	8286314	Q114	484237	8266101
Q074	493704	8286337	Q115	468304	8280011
Q075	495055	8286945	Q116	468616	8279878
Q076	494058	8287100	Q117	468380	8279723
Q077	493543	8286690	Q118	468487	8279978
Q078	494347	8287564	Q119	468262	8279900
Q079	487171	8269510	Q120	468562	8280111
Q080	486764	8269687	Q121	468917	8278717
Q081	485574	8270117	Q122	469046	8278640
Q082	487257	8269289	Q123	469271	8278840
Q083	485682	8267872	Q124	465473	8273680
Q084	484406	8269022	Q125	465236	8273845
Q085	484492	8268988	Q126	465301	8273934
Q086	486507	8268780	Q127	465418	8274033
Q087	487054	8268559	Q128	465601	8273890
Q088	487643	8268603	Q129	467276	8272244
Q089	487772	8268382	Q130	466932	8272299

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q131	467051	8272111	Q142	462012	8259936
Q132	463927	8267925	Q143	465627	8256446
Q133	463831	8267958	Q144	465563	8256225
Q134	464163	8267893	Q145	465606	8256236
Q135	464078	8267715	Q146	465595	8256314
Q136	463906	8267704	Q147	465510	8256402
Q137	461690	8259935	Q148	465188	8256390
Q138	461583	8259891	Q149	465263	8256247
Q139	461765	8259858	Q150	465381	8256169
Q140	461690	8259803	Q151	465541	8256568
Q141	461829	8260013			

Survey Area:		Material Investigation Area 6		Quadrat:	Q001
Method:		50x50m quadrat		Date:	21/05/2009
Quadrat Centre:		Easting mE: 465850	Northing mN: 8272198	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-6	10	Open woodland	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> , <i>Terminalia platyptera</i>	
	0-1.5	70	Tussock grassland	<i>Themeda triandra</i> <i>Fimbristylis pterygosperma</i> , <i>Sorghum ?stipoideum</i> ,	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.3	+	Weed
<i>Abildgaardia schoenoides</i>			0.5	+	
<i>Calandrinia uniflora</i>			0.25	+	
<i>Carissa lanceolata</i>			1.5	1	
<i>Cartonema parviflorum</i>			0.4	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Dolichandrone heterophylla</i>			0.1	+	
<i>Eragrostis cumingii</i>			0.5	+	
<i>Eriachne avenacea</i>			0.3	+	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			4.0	10	
<i>Euphorbia</i> sp			0.1	+	
<i>Fimbristylis pterygosperma</i>			0.4	15	
<i>Fimbristylis schultzei</i>			0.5	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Melaleuca viridiflora</i>			4.0	+	
<i>Rhynchospora exserta</i>			0.75	+	
<i>Sorghum ?stipoideum</i>			1.5	10	
<i>Terminalia platyptera</i>			6.0	15	
<i>Themeda triandra</i>			0.5	20	
<i>Triodia bitextura</i>			1.0	+	



Photo 1: View of the vegetation at Q001



Photo 2: View of the ground surface at Q001

Survey Area:		Material Investigation Area 6		Quadrat:	Q002
Method:		50x50m quadrat		Date:	21/05/2009
Quadrat Centre:		Easting mE: 465754	Northing mN: 8271833	GDA 1994 Zone 52	
Landscape:		Watercourse area - major creek 10m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orangey red sand			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – two weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	7-12	10	Open woodland	<i>Corymbia confertiflora</i> , <i>Adansonia gregorii</i> , <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>	
	1.5	90	Tussock grassland	Poaceae sp	
Species			Height (m)	Cover (%)	Comments
<i>Azadirachta indica</i>			1.0	+	Weed
<i>Hyptis suaveolens</i>			0.75	+	Weed
<i>Acacia plectocarpa</i> subsp <i>plectocarpa</i>			5.0	+	
<i>Adansonia gregorii</i>			10.0	4	
<i>Asteraceae</i> sp			1.0	+	
<i>Bacopa floribunda</i>			0.5	+	
<i>Bauhinia cunninghamii</i>			1.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			10	10	
<i>Buchanania oblongifolia</i>			5.0	+	
<i>Clerodendrum floribundum</i> var <i>?floribundum</i>			2.0	+	
<i>Corymbia confertiflora</i>			12.0	20	
<i>Elytrophorus spicatus</i>			0.1	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.5	+	Range extension
<i>Eriachne obtusa</i>			0.5		
<i>Eriocaulon cinereum</i>			0.1	+	
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.5	+	
<i>Fuirena ciliaris</i>			0.25	+	
<i>Goodenia</i> sp			0.1	+	
<i>Grevillea agrifolia</i>			3.0	+	
<i>Grewia retusifolia</i>			1.2	+	
<i>Hybanthus enneaspermus</i> subsp <i>enneaspermus</i>			0.75	+	
<i>Limnophila fragrans</i>			0.1	+	
<i>Ludwigia perennis</i>			0.5	+	
<i>Nelsonia campestris</i>			0.75	+	
<i>Pandanus</i> sp			5.0	5	
<i>Passiflora foetida</i> var <i>hispida</i>			0.25	+	
<i>Poaceae</i> sp			1.5	90	
<i>Sacciolepis myosuroides</i>			0.5	+	
<i>Stylidium</i> sp			0.1	+	
<i>Stylidium turbinatum</i>			0.1	+	
<i>Wrightia saligna</i>			2.0	+	



Photo 3: View of the vegetation at Q002



Photo 4: View of the ground surface at Q002

Survey Area:		Material Investigation Area 6		Quadrat:	Q003
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465796	Northing mN: 8272729	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Pale orange sandy clayey loam			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-8	10	Open woodland	<i>Melaleuca viridiflora</i> , <i>Terminalia platyptera</i>	
	0-1	10	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Gomphrena canescens</i> subsp <i>canescens</i> , <i>Drosera ordensis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida inaequiglumis</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			5.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			2.0	+	
<i>Buchnera linearis</i>			0.5	+	
<i>Cochlospermum fraseri</i>			5.0	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			12.0	1	
<i>Drosera ordensis</i>			0.1	2	
<i>Eriachne</i> sp			0.75	+	
<i>Euphorbia</i> sp			0.1	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	2	
<i>Haemodorum</i> sp			1.5	+	
<i>Melaleuca viridiflora</i>			6.0	5	
<i>Rhynchospora affinis</i>			0.5	1	
<i>Sorghum ?stipoideum</i>			2.0	10	
<i>Terminalia canescens</i>			2.	+	
<i>Terminalia platyptera</i>			6.0	5	
<i>Wrightia saligna</i>			1.5	+	



Photo 5: View of the vegetation at Q003



Photo 6: View of the ground surface at Q003

Survey Area:		Material Investigation Area 6		Quadrat:	Q004
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465657	Northing mN: 8272496	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red sandy loam			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	3-15	15	Open woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>	
	0.5-3	5	Scattered shrubs	<i>Jacksonia forrestii</i>	
	0-0.5	15	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia platycarpa</i>			5.0	+	
<i>Adansonia gregorii</i>			15.0	+	
<i>Calandrinia quadrivalvis sens lat</i>			0.1	+	
<i>Chamaecrista mimosoides</i>			1.0	+	
<i>Chrysopogon sp</i>			0.2	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			15.0	15	
<i>Erythrophleum chlorostachys</i>			12.0	1	
<i>Jacksonia forrestii</i>			3.0	5	
<i>Platyzoma microphyllum</i>			0.5	5	
<i>Sorghum ?stipoideum</i>			2.0	10	



Photo 7: View of the vegetation at Q004



Photo 8: View of the ground surface at Q004

Survey Area:		Material Investigation Area 6		Quadrat:	Q005
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465304	Northing mN: 8271865	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Yellowy red sandy clay			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-15	25	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Adansonia gregorii</i> , <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>	
	0-1.5	70	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Azadirachta indica</i>		1.5	+	Weed	
<i>Eulalia aurea</i>		2.0	+		
<i>Acacia platycarpa</i>		3.0	+		
<i>Adansonia gregorii</i>		12.0	5		
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>		15.0	10		
<i>Buchnera ramosissima</i>		0.25	+		
<i>Cartonema parviflorum</i>		0.5	+		
<i>Chrysopogon</i> sp		1.0	+		
<i>Corchorus sidoides</i> subsp <i>sidoides</i>		0.5	+		
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>		12	10		
<i>Drosera ordensis</i>		0.1	+		
<i>Eriachne obtusa</i>		0.25	+		
<i>Erythrophleum chlorostachys</i>		10.0	+		
<i>Gomphrena canescens</i> subsp <i>canescens</i>		0.75	+		
<i>Goodenia brachypoda</i>		0.1	+	Priority 1	
<i>Grevillea pteridifolia</i>		4.0	+		
<i>Grevillea striata</i>		3.0	+		
<i>Haemodorum</i> sp		1.5	+		
<i>Pseudopogonatherum contortum</i>		1.5	+		
<i>Sorghum ?stipoideum</i>		1.5	70		
<i>Stemodia lythrifolia</i>		0.5	+		
<i>Terminalia hadleyana</i>		8.0	+		
<i>Wrightia saligna</i>		1.5	+		



Photo 9: View of the vegetation at Q005

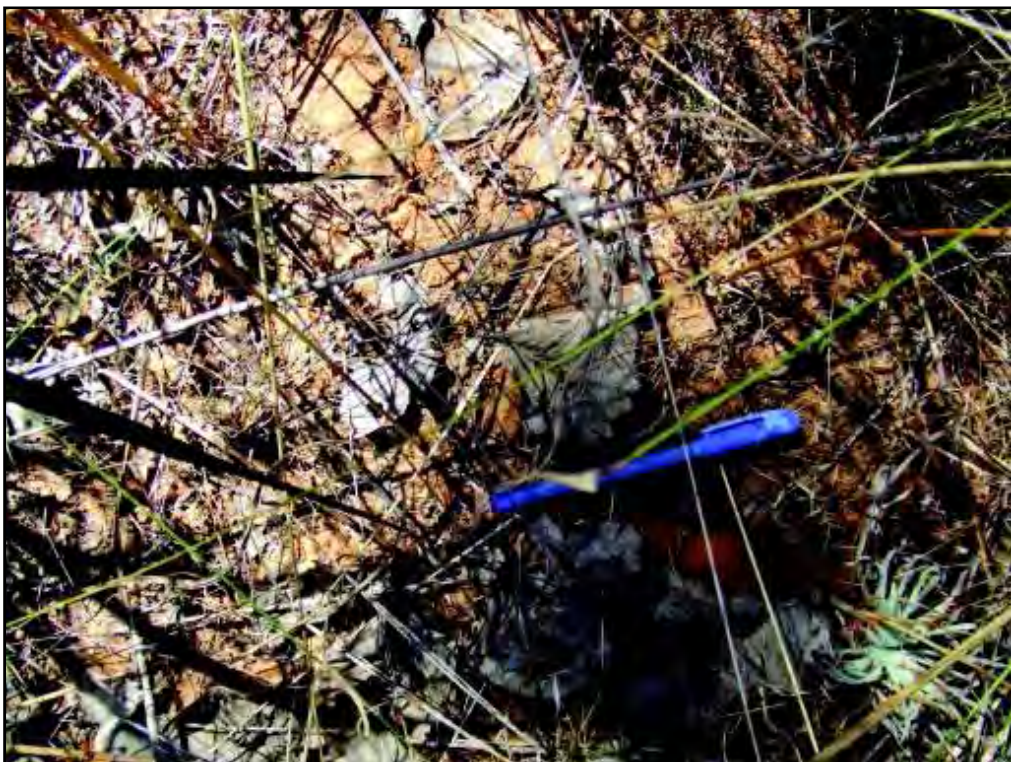


Photo 10: View of the ground surface at Q005

Survey Area:		Material Investigation Area 6		Quadrat:	Q006
Method:		50x50m quadrat		Date:	21/05/2009
Quadrat Centre:		Easting mE: 465345	Northing mN: 8272695	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-10	25	Woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Adansonia gregorii</i>	
	0-1.5	70	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Crotalaria medicaginea</i> var <i>neglecta</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia ?tumida</i> var <i>tumida</i>			4.0	+	
<i>Acacia platycarpa</i>			6.0	1	
<i>Adansonia gregorii</i>			10.0	3	
<i>Aristida hygrometrica</i>			0.7	1	
<i>Blumea diffusa</i>			0.1	1	
<i>Brachychiton tuberculatus</i>			8.0	+	Priority 3
<i>Buchnera asperata</i>			0.4	+	
<i>Byblis filifolia</i>			0.3	+	
<i>Calandrinia quadrivalvis</i> sens lat			0.1	+	
<i>Cartonema parviflorum</i>			0.3	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>			10.0	25	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			1.5	2	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.03	+	
<i>Drosera burmanni</i>			0.01	+	
<i>Drosera ordensis</i>			0.01	+	
<i>Ectrosia schultzei</i> var <i>schultzei</i>			1.0	+	
<i>Eriachne avenacea</i>			0.9	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Gomphrena humifusa</i>			0.01	1	
<i>Jacksonia forrestii</i>			2.0	1	
<i>Lindernia chrysoplectra</i>			1.0	+	
<i>Melaleuca</i> sp			7.0	1	
<i>Mitrasacme connata</i>			1.0	+	
<i>Persoonia falcata</i>			5.0	+	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Poranthera microphylla</i>			0.2	+	
<i>Pterocaulon sphacelatum</i>			0.9	+	
<i>Sorghum ?stipoideum</i>			1.5	70	
<i>Spermacoce laevigata</i>			0.01	1	
<i>Stemodia lythrifolia</i>			0.6	+	
<i>Stylidium turbinatum</i>			0.1	+	
<i>Tinospora smilacina</i>			-	+	

Species	Height (m)	Cover (%)	Comments
<i>Xyris complanata</i>	0.4	+	
<i>Zornia prostrata</i> var <i>prostrata</i>	-	+	



Photo 11: View of the vegetation at Q006



Photo 12: View of the ground surface at Q006

Survey Area:		Material Investigation Area 6		Quadrat:	Q007
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465764	Northing mN: 8272430	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red brown silty sand			
Fire Age:		>3 years			
Condition:		Very good - one weed recorded, one small old borrow pit recorded near by			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-10	20	Open woodland	<i>Melaleuca viridiflora</i> , <i>Terminalia platyptera</i> , <i>Cochlospermum fraseri</i>	
	0-1	70	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes scabra</i>			1.2	1	Weed
<i>Adansonia gregorii</i>			10	1	
<i>Aristida hygrometrica</i>			0.7	+	
<i>Buchnera ramosissima</i>			0.4	+	
<i>Carissa lanceolata</i>			1.5	+	
<i>Cartonema parviflorum</i>			0.3	+	
<i>Chamaecrista mimosoides</i>			1.0	+	
<i>Cochlospermum fraseri</i>			6.0	3	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.9	+	
<i>Crotalaria montana</i> var <i>angustifolia</i>			0.1	+	
<i>Desmodium brownii</i>			0.8	+	
<i>Dodonaea physocarpa</i>			1.5	+	
<i>Drosera ordensis</i>			0.05	1	
<i>Ectrosia leporina</i>			0.5	+	
<i>Eragrostis speciosa</i>			1.0	+	
<i>Eriachne avenacea</i>			0.5	+	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			8.0	1	
<i>Fimbristylis pterygosperma</i>			0.3	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.5	+	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Grewia retusifolia</i>			1.5	+	
<i>Heteropogon contortus</i>			1.5	+	
<i>Melaleuca viridiflora</i>			7.0	10	
<i>Oldenlandia delicata</i>			0.3	+	
<i>Rhynchospora exserta</i>			0.2	+	
<i>Schizachyrium fragile</i>			0.3	+	
<i>Setaria apiculata</i>			0.6	+	
<i>Spermacoce laevigata</i>			0.05	+	
<i>Sorghum ?stipoideum</i>			1.5	70	
<i>Stackhousia intermedia</i>			0.5	+	
<i>Stemodia lythrifolia</i>			0.6	1	
<i>Terminalia platyptera</i>			8.0	10	
<i>Wrightia saligna</i>			1.5	+	
<i>Xyris complanata</i>			0.4	1	
<i>Zornia prostrata</i> var <i>prostrata</i>			0.1	+	



Photo 13: View of the vegetation at Q007



Photo 14: View of the ground surface at Q007

Survey Area:		Material Investigation Area 6		Quadrat:	Q008
Method:		50x50m quadrat		Date:	21/05/2009
Quadrat Centre:		Easting mE: 465250	Northing mN: 8271876	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red brown sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	3-8	25	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Adansonia gregorii</i>	
	0-2	90	Tussock grassland	<i>Eriachne obtusa</i> , <i>Eriachne speciosa</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia plectocarpa</i> subsp <i>plectocarpa</i>			2.0	+	
<i>Adansonia gregorii</i>			7.0	5	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			2.0	+	
<i>Buchnera linearis</i>			0.4	+	
<i>Cartonema parviflorum</i>			0.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.75	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			6.0	20	
<i>Crotalaria ramosissima</i>			0.2	+	
<i>Drosera ordensis</i>			0.4	+	
<i>Eriachne obtusa</i>			1.5	20	
<i>Eriachne speciosa</i>			1.5	20	
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			1.0	+	
<i>Fimbristylis sphaerocephala</i>			0.3	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.6	+	
<i>Goodenia coronopifolia</i> sens <i>lat</i>			0.4	+	
<i>Grevillea pteridifolia</i>			6.0	+	
<i>Haemodorum</i> sp			0.4	+	
<i>Hybanthus enneaspermus</i> subsp <i>enneaspermus</i>			0.2	+	
<i>Indigofera colutea</i>			0.3	+	
<i>Melaleuca</i> ? <i>argentea</i>			4-5	+	
<i>Mitrasacme connata</i>			0.4	+	
<i>Nelsonia campestris</i>			0.4	+	
<i>Oldenlandia delicata</i>			0.3	+	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Rhynchospora exserta</i>			0.4	+	
<i>Sorghum stipoideum</i>			1.5	50	
<i>Stackhousia intermedia</i>			0.5	+	
<i>Stylidium lobuliflorum</i>			0.2	+	
<i>Thysanotus chinensis</i>			0.3	+	
<i>Wahlenbergia caryophylloides</i>			0.3	+	
<i>Wrightia saligna</i>			1.0	+	



Photo 15: View of the vegetation at Q008



Photo 16: View of the ground surface at Q008

Survey Area:		Material Investigation Area 6		Quadrat:	Q009
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465410	Northing mN: 8272573	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red brown sand			
Fire Age:		Recently burnt <6 months			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	4-8	25	Open woodland	<i>Adansonia gregorii</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i>	
	1.0	5	Grassland	<i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Adansonia gregorii</i>			10.0	5	
<i>Cajanus hirtopilosus</i>			0.1	+	
<i>Cochlospermum fraseri</i>			5.0	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			10.0	15	
<i>Corymbia sp</i>			8.0	2	
<i>Erythrophleum chlorostachys</i>			8.0	5	
<i>Persoonia falcata</i>			4.0	1	
<i>Platyzoma microphyllum</i>			0.3	15	
<i>Tephrosia ?remotiflora</i>			0.1	+	



Photo 17: View of the vegetation at Q009



Photo 18: View of the ground surface at Q009

Survey Area:		Material Investigation Area 6		Quadrat:	Q010
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 465239	Northing mN: 8272131	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		Some nearby			
Soil:		Brown sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-8	20	Open woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> ,	
	1.5-5	2	Scattered shrubs	<i>Acacia neurocarpa</i>	
	0-1.5	80	Mixed grassland	<i>Sorghum stipoideum</i> , <i>Abildgaardia schoenoides</i> , <i>Eriachne obtusa</i> , <i>Haemodorum</i> sp, <i>Themeda triandra</i> , <i>Triodia bitextura</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Abildgaardia schoenoides</i>		0.4	20		
<i>Acacia neurocarpa</i>		5.0	2		
<i>Adansonia gregorii</i>		8.0	5		
<i>Blumea diffusa</i>		0.2	+		
<i>Bonamia media</i>		0.2	+		
<i>Buchnera linearis</i>		0.3	+		
<i>Calandrinia quadrivalvis sens lat</i>		0.1	+		
<i>Cartonema parviflorum</i>		0.3	+		
<i>Corchorus sidoides</i> subsp <i>sidoides</i>		0.5	+		
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>		8.0	15		
<i>Crotalaria ramosissima</i>		0.2	+		
<i>Drosera ordensis</i>		0.1	+		
<i>Eriachne obtusa</i>		0.4	20		
<i>Fimbristylis pterygosperma</i>		0.3	+		
<i>Gomphrena canescens</i> subsp <i>canescens</i>		0.5	+		
<i>Goodenia coronopifolia sens lat</i>		0.4	+		
<i>Haemodorum</i> sp		1.0	6		
<i>Sorghum stipoideum</i>		1.5	40		
<i>Spermacoce laevigata</i>		0.2	+		
<i>Stackhousia intermedia</i>		0.4	+		
<i>Stylidium adenophorum</i>		0.1	+		
<i>Themeda triandra</i>		1.5	2		
<i>Triodia bitextura</i>		0.6	2		
<i>Vigna lanceolata</i> var <i>filiformis</i>		0.1	+		
<i>Wrightia saligna</i>		1.0	1		



Photo 19: View of the vegetation at Q010



Photo 20: View of the ground surface at Q010

Survey Area:		Material Investigation Area 6		Quadrat:	Q011
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 466299	Northing mN: 8272840	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/brown silt			
Fire Age:		Recently burnt, < 6 months			
Condition:		Poor – two weeds recorded, surrounding vegetation highly infested with weeds			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-15	8	Open woodland	<i>Corymbia confertiflora</i> , <i>Eucalyptus sp</i> , <i>Corymbia sp</i>	
	0-1	10	Open grassland	<i>Heteropogon contortus</i> , <i>Calotropis procera</i>	
Species			Height (m)	Cover (%)	Comments
<i>Calotropis procera</i>			1.0	2	Weed
<i>Vachellia farnesiana</i>			1.5	+	Weed
<i>Adansonia gregorii</i>			6.5	+	
<i>Cochlospermum fraseri</i>			5.0	+	
<i>Corymbia confertiflora</i>			15.0	2	
<i>Corymbia sp</i>			8.0	2	
<i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i>			0.8	+	
<i>Eucalyptus sp</i>			8.0	5	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Heteropogon contortus</i>			1.0	10	
<i>Pterocaulon sphacelatum</i>			0.5	+	



Photo 21: View of the vegetation at Q011



Photo 22: View of the ground surface at Q011

Survey Area:		Material Investigation Area 8		Quadrat:	Q012
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 470919	Northing mN: 8281662	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey loamy clay - waterlogged			
Fire Age:		>3 years			
Condition:		Very good – no weed species recorded, low levels of grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-10	40	Open woodland	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i>	
	0-0.5	40	Grassland and sedgeland	<i>Schoenoplectus praelongatus</i> , <i>Schoenoplectus lateriflorus</i> , <i>Poaceae</i> sp	
Species		Height (m)	Cover (%)	Comments	
<i>Diospyros rugosula</i>		3.0	+		
<i>Eleocharis brassii</i>		0.5	+		
<i>Eucalyptus microtheca</i>		8.0	30		
<i>Excoecaria parvifolia</i>		6.0	10		
<i>Haemodorum</i> sp		0.5	+		
<i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i>		7.0	5		
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>		6.0	+		
<i>Oryza australiensis</i>		2.5	+		
<i>Poaceae</i> sp		0.5	30		
<i>Schoenoplectus lateriflorus</i>		0.3	5		
<i>Schoenoplectus praelongatus</i>		0.3	5		



Photo 23: View of the vegetation at Q012

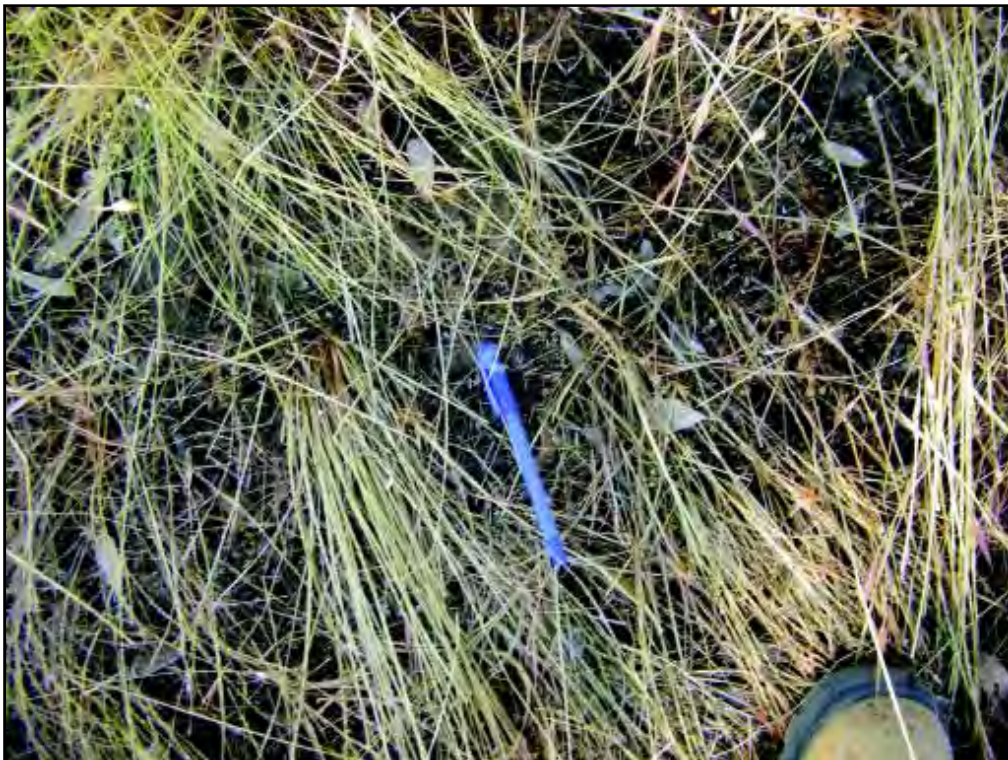


Photo 24: View of the ground surface at Q012

Survey Area:		Material Investigation Area 8		Quadrat:	Q013
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 468002	Northing mN: 8281260	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown black sandy loam - waterlogged			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.25-8	15	Open woodland	<i>Melaleuca viridiflora</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>	
	0-0.25	95	Sedgeland	<i>Fimbristylis tetragona</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.1	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			8.0	10	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.1	+	Range extension
<i>Fimbristylis tetragona</i>			0.5	95	
<i>Fuirena ciliaris</i>			0.1	+	
<i>Isotoma armstrongii</i>			0.1	+	Range extension
<i>Lindernia tectanthera</i>			0.1	+	
<i>Ludwigia perennis</i>			0.2	+	
<i>Melaleuca viridiflora</i>			5.0	5	
<i>Phyllanthus virgatus</i>			0.1	+	
<i>Rhynchospora affinis</i>			0.25	+	
<i>Rotala occultiflora</i>			0.1	+	
<i>Sorghum stipoideum</i>			0.1	+	
<i>Utricularia chrysantha</i>			0.1	+	



Photo 25: View of the vegetation at Q013



Photo 26: View of the ground surface at Q013

Survey Area:		Material Investigation Area 8		Quadrat:	Q014
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 469130	Northing mN: 8280167	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light orange sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	5-10	20	Woodland	<i>Eucalyptus miniata</i> , <i>Corymbia ?confertiflora</i> , <i>Corymbia greeniana</i> , <i>Gardenia dacryoides</i> , <i>Acacia difficilis</i>	
	0-2	90	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			5.0	2	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			2.0	+	
<i>Buchanania oblongifolia</i>			3.0	+	
<i>Buchnera ramosissima</i>			0.25	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			1.0	+	
<i>Corymbia ?confertiflora</i>			8.0	5	
<i>Corymbia greeniana</i>			8.0	5	
<i>Crosslandia setifolia</i>			0.1	+	
<i>Crotalaria crispata</i>			0.25	+	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.75	+	
<i>Crotalaria montana</i> var <i>angustifolia</i>			0.25	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			1.5	+	
<i>Dolichandrone heterophylla</i>			2.0	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne obtusa</i>			1.0	+	
<i>Erythrophleum chlorostachys</i>			8.0	+	
<i>Eucalyptus miniata</i>			10	5	
<i>Gardenia dacryoides</i>			7.0	2	
<i>Goodenia coronopifolia</i>			0.5	+	
<i>Grevillea erythroclada</i>			2.0	+	
<i>Grevillea heliosperma</i>			0.5	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.1	+	
<i>Petalostigma pubescens</i>			2.0	+	
<i>Planchonia careya</i>			3.0	+	
<i>Pterocaulon verbascifolium</i>			1.0	+	
<i>Sorghum ?stipoideum</i>			2.0	90	
<i>Sorghum stipoideum</i>			1.5	+	
<i>Spermacoce constricta</i>			0.25	+	
<i>Terminalia canescens</i>			7.0	+	
<i>Utricularia chrysantha</i>			0.1	+	



Photo 27: View of the vegetation at Q014



Photo 28: View of the ground surface at Q014

Survey Area:		Material Investigation Area 8		Quadrat:	Q015
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 469301	Northing mN: 8280499	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brownly black loam			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	8-12	35	Open woodland	<i>Adansonia gregorii</i> , <i>Corymbia confertiflora</i> , <i>Melaleuca viridiflora</i>	
	0-0.5	100	Sedgeland	<i>Fimbristylis tetragona</i> , <i>Eriachne glauca</i> var <i>barbinodis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Terminalia canescens</i>			0.75	+	
<i>Adansonia gregorii</i>			8.0	15	
<i>Bacopa floribunda</i>			0.1	+	
<i>Corymbia confertiflora</i>			12.0	5	
<i>Dichanthium sp</i>			1.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	5	Range extension
<i>Fimbristylis tetragona</i>			0.5	95	
<i>Fuirena ciliaris</i>			0.25	+	
<i>Ludwigia perennis</i>			0.5	2	
<i>Melaleuca viridiflora</i>			8.0	15	
<i>Mimulus uvedaliae</i> var <i>uvedaliae</i>			0.2	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.1	+	
<i>Phyllanthus virgatus</i>			0.3	+	
<i>Rotala occuliflora</i>			0.1	+	
<i>Stylidium lobuliflorum</i>			0.4	+	
<i>Utricularia chrysantha</i>			0.1	+	



Photo 29: View of the vegetation at Q015



Photo 30: View of the ground surface at Q015

Survey Area:		Material Investigation Area 8		Quadrat:	Q016
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470010	Northing mN: 8279836	GDA 1994 Zone 52	
Landscape:		Black soil plain			
Surface:		Alluvial soil - cracking			
Rock Type:		N/A			
Soil:		Black clay			
Fire Age:		>3 years			
Condition:		Very good – no weed species recorded, low levels of grazing in some areas			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-10	15	Open woodland	<i>Eucalyptus tectifica</i> , <i>Excoecaria parvifolia</i>	
	0.5-1.5	70	Shrubland	<i>Eragrostis tenellula</i> , <i>Ludwigia perennis</i> , <i>Stemodia tephropelina</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			10.0	5	
<i>Atalaya hemiglauca</i>			3.0	+	
<i>Blumea diffusa</i>			0.3	+	
<i>Cyperus ? bifax</i>			0.6	+	
<i>Eragrostis tenellula</i>			0.75	10	
<i>Excoecaria parvifolia</i>			6.0	5	
<i>Hibiscus austrinus var austrinus</i>			1.5	+	
<i>Ludwigia perennis</i>			1.5	60	
<i>Panicum decompositum</i>			1.0	+	
<i>Stemodia tephropelina</i>			0.2	4	
<i>Terminalia sp</i>			5.0	1	



Photo 31: View of the vegetation at Q016



Photo 32: View of the ground surface at Q016

Survey Area:		Material Investigation Area 8		Quadrat:	Q017
Method:		50x50m quadrat		Date:	27/05/2009
Quadrat Centre:		Easting mE: 469849	Northing mN: 8279382	GDA 1994 Zone 52	
Landscape:		Black soil plain			
Surface:		Alluvial soil - cracking			
Rock Type:		N/A			
Soil:		Black clay			
Fire Age:		>3 years			
Condition:		Very good – two weed species recorded, low levels of grazing in some areas			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	5-10	30	Woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia bella</i> , <i>Excoecaria parvifolia</i> , <i>Bauhinia cunninghamii</i>	
	0-1.5	20	Tussock grassland	<i>Ludwigia perennis</i> , <i>Poaceae sp</i> , <i>Themeda triandra</i> , <i>Jasminum molle</i> , <i>Clitoria ternatea</i> , <i>Grewia retusifolia</i>	
Species			Height (m)	Cover (%)	Comments
<i>Clitoria ternatea</i>			1.0	5	Weed
<i>Vachellia farnesiana</i>			0.1	+	Weed
<i>Eucalyptus tectifica</i>			8.0	30	
<i>Atalaya hemiglauca</i>			0.2	+	
<i>Bauhinia cunninghamii</i>			5.0	2	
<i>Corymbia bella</i>			12.0	4	
<i>Crotalaria montana var angustifolia</i>			0.5	+	
<i>Cyperus ? bifax</i>			0.25	+	
<i>Dolichandrone heterophylla</i>			0.5	+	
<i>Elytrophorus spicatus</i>			0.5	+	
<i>Eragrostis tenellula</i>			0.75	1	
<i>Excoecaria parvifolia</i>			7.0	3	
<i>Flemingia pauciflora</i>			0.5	+	
<i>Flueggea virosa subsp melanthesoides</i>			1.0	+	
<i>Grewia retusifolia</i>			0.75	5	
<i>Jasminum molle</i>			1.0	2	
<i>Ludwigia perennis</i>			1.5	10	
<i>Poaceae sp</i>			1.5	20	
<i>Themeda triandra</i>			1.0	5	
<i>Vachellia valida</i>			2.0	+	



Photo 33: View of the vegetation at Q017



Photo 34: View of the ground surface at Q017

Survey Area:		Material Investigation Area 8		Quadrat:	Q018
Method:		50x50m quadrat		Date:	27/05/2009
Quadrat Centre:		Easting mE: 469624	Northing mN: 8279592	GDA 1994 Zone 52	
Landscape:		Black soil plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black sandy clay			
Fire Age:		>3 years			
Condition:		Excellent - two weeds recorded with low % cover, no disturbances recorded.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-15	15	Open woodland	<i>Corymbia bella</i> , <i>Erythrina vespertilio</i> , <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>	
	0-2	60	Tussock grassland	<i>Poaceae</i> sp	
Species			Height (m)	Cover (%)	Comments
<i>Clitoria ternatea</i>			0.5	+	Weed
<i>Macroptilium lathyroides</i> var <i>semirectum</i>			0.5	+	Weed
<i>Melaleuca alsophila</i>			5.0	+	
<i>Acacia difficilis</i>			3.0	+	
<i>Atalaya hemiglauc</i>			2.0	+	
<i>Atalaya variifolia</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			5.0	+	
<i>Brachychiton diversifolius</i>			1.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			6.0	2	
<i>Buchanania oblongifolia</i>			6.0	+	
<i>Cayratia trifolia</i>			0.5	+	
<i>Corymbia bella</i>			15.0	5	
<i>Crotalaria montana</i> var <i>angustifolia</i>			0.5	+	
<i>Elytrophorus spicatus</i>			0.1	+	
<i>Erythrina vespertilio</i>			8.0	2	
<i>Ficus aculeata</i> var <i>indecora</i>			4.0	1	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.0	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hakea arborescens</i>			4.0	+	
<i>Hibiscus meraukensis</i>			1.0	+	
<i>Indigofera linifolia</i>			0.2	+	
<i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>			6.0	5	
<i>Melaleuca nervosa</i> subsp <i>?nervosa</i>			6.0	+	
<i>Nomismia rhomboidea</i>			0.5	+	
<i>Planchonia careya</i>			5.0	+	
<i>Poaceae</i> sp			0.75	60	
<i>Pterocaulon sphaeranthoides</i>			0.5	+	
<i>Pterocaulon verbascifolium</i>			1.0	+	
<i>Sida spinosa</i>			0.5	+	



Photo 35: View of the vegetation at Q018



Photo 36: View of the ground surface at Q018

Survey Area:		Material Investigation Area 8		Quadrat:	Q019
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 470298	Northing mN: 8280577	GDA 1994 Zone 52	
Landscape:		Black soil plain			
Surface:		Alluvial soil - cracking			
Rock Type:		N/A			
Soil:		Black sandy loam			
Fire Age:		>3 years			
Condition:		Completely degraded - previously cleared, complete loss of structure, two weed recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-2.5	100	Tussock grassland	<i>Dichanthium sericeum</i> subsp, <i>polystachyum Sorghum stipoideum</i> , <i>Ludwigia perennis</i> , <i>Flemingia pauciflora</i>	
Species			Height (m)	Cover (%)	Comments
<i>Corchorus olitorius</i>			0.1	+	Weed
<i>Vachellia farnesiana</i>			0.25	+	Weed
<i>Bauhinia cunninghamii</i>			3.0	+	
<i>Bergia pedicellaris</i>			0.25	+	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.1	+	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.5	70	
<i>Eragrostis tenellula</i>			1.0	+	
<i>Flemingia pauciflora</i>			0.25	15	
<i>Grewia retusifolia</i>			0.75	+	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			1.5	+	
<i>Ludwigia perennis</i>			1.5	5	
<i>Melochia pyramidata</i>			0.25	+	
<i>Nelsonia campestris</i>			0.1	+	
<i>Panicum decompositum</i>			1.0	+	
<i>Ptilotus spicatus</i>			0.5	+	
<i>Rostellularia adscendens</i> var <i>clementii</i>			0.25	+	
<i>Sida spinosa</i>			0.25	+	
<i>Sorghum stipoideum</i>			2.5	10	



Photo 37: View of the vegetation at Q019



Photo 38: View of the ground surface at Q019

Survey Area:		Material Investigation Area 8		Quadrat:	Q020
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 470609	Northing mN: 8280965	GDA 1994 Zone 52	
Landscape:		Black soil plain			
Surface:		Alluvial soil - cracking			
Rock Type:		N/A			
Soil:		Black sandy loam			
Fire Age:		>3 years			
Condition:		Completely degraded - previously cleared, complete loss of structure, one weed recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-1	60	Tussock grassland	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Ludwigia perennis</i> , <i>Flemingia pauciflora</i> , <i>Goodenia corynocarpa</i> , <i>Nelsonia campestris</i>	
Species			Height (m)	Cover (%)	Comments
<i>Vachellia farnesiana</i>			0.1	+	Weed
<i>Atalaya variifolia</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			3.0	+	
<i>Bergia ammannioides</i>			0.25	+	
<i>Bergia pedicellaris</i>			0.25	+	
<i>Chrysopogon sp</i>			1.5	+	
<i>Cyperus ? bifax</i>			1.0	+	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.0	10	
<i>Excoecaria parvifolia</i>			3.0	+	
<i>Flemingia pauciflora</i>			0.25	15	
<i>Goodenia corynocarpa</i>			0.25	15	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			1.5	+	
<i>Ludwigia perennis</i>			1.5	10	
<i>Nelsonia campestris</i>			0.1	10	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.5	+	
<i>Panicum decompositum</i>			1.0	+	



Photo 39: View of the vegetation at Q020



Photo 40: View of the ground surface at Q020

Survey Area:		Material Investigation Area 8		Quadrat:	Q021
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 469988	Northing mN: 8280323	GDA 1994 Zone 52	
Landscape:		Alluvial plain – soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown sandy clay			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-10	25	Open woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia bella</i> , <i>Corymbia confertiflora</i> , <i>Melaleuca ?viridiflora</i>	
	0-0.5	90	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Fimbristylis microcarya</i> , <i>Ludwigia perennis</i> , <i>Poaceae</i> sp	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			8.0	5	
<i>Corymbia bella</i>			10.0	5	
<i>Corymbia confertiflora</i>			10.0	5	
<i>Elytrophorus spicatus</i>			0.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	5	Range extension
<i>Excoecaria parvifolia</i>			4.0	4	
<i>Fimbristylis microcarya</i>			0.3	90	
<i>Grewia retusifolia</i>			0.3	1	
<i>Ludwigia perennis</i>			1.0	5	
<i>Melaleuca ?viridiflora</i>			6.0	10	
<i>Poaceae</i> sp			1.0	5	
<i>Sida spinosa</i>			0.5	+	
<i>Sorghum stipoideum</i>			2.0	+	



Photo 41: View of the vegetation at Q021



Photo 42: View of the ground surface at Q021

Survey Area:		Material Investigation Area 8		Quadrat:	Q022
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 470340	Northing mN: 8281352	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown sand			
Fire Age:		>3 years			
Condition:		Very good – no weed species recorded, low levels of grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-10	15	Open woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Acacia colei</i> , <i>Petalostigma pubescens</i>	
	0-2	20	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia colei</i>			6.0	10	
<i>Adansonia gregorii</i>			0.4	+	
<i>Aristida hygrometrica</i>			0.6	1	
<i>Brachychiton tuberculatus</i>			0.8	+	Priority 3
<i>Buchanania obovata</i>			0.8	+	
<i>Buchnera asperata</i>			0.15	+	
<i>Cochlospermum fraseri</i>			4.0	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.6	+	
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>			10.0	2	
<i>Corymbia abbreviata</i>			8.0	1	
<i>Corymbia ptychocarpa</i> subsp <i>ptychocarpa</i>			8.0	1	
<i>Crosslandia setifolia</i>			0.2	+	
<i>Crotalaria crispata</i>			0.3	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			1.2	+	
<i>Eriachne avenacea</i>			0.7	+	
<i>Erythrophleum chlorostachys</i>			10.0	1	
<i>Fimbristylis punctata</i>			0.4	+	
<i>Gardenia megasperma</i>			5.0	+	
<i>Gomphrena humifusa</i>			0.1	+	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Lysiana spathulata</i> subsp <i>spathulata</i>			0.1	+	
<i>Microstachys chamaelea</i>			0.5	+	
<i>Mitrasacme connata</i>			0.8	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	+	
<i>Persoonia falcata</i>			3.5	+	
<i>Petalostigma pubescens</i>			5.0	4	
<i>Platyzoma microphyllum</i>			0.3	+	
<i>Schizachyrium fragile</i>			0.4	+	
<i>Senna oligoclada</i>			1.5	+	
<i>Setaria apiculata</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Spermacoce laevigata</i>			0.1	+	

<i>Stemodia lythrifolia</i>	1.0	+	
<i>Tinospora smilacina</i>	0.1	+	
<i>Trachymene microcephala</i>	0.7	+	
<i>Triodia bynoei</i>	0.2	+	
<i>Wrightia saligna</i>	0.25	+	
<i>Zornia prostrata</i> var <i>prostrata</i>	0.1	+	



Photo 43: View of the vegetation at Q022



Photo 44: View of the ground surface at Q022

Survey Area:		Material Investigation Area 8		Quadrat:	Q023
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 467155	Northing mN: 8281359	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown sandy silt			
Fire Age:		>3 years			
Condition:		Very good – no weeds recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	10	15	Open woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>	
	2	40	Grassland and sedegland	<i>Sorghum ?stipoideum</i> , <i>Platyzoma microphyllum</i> , <i>Rhynchospora exserta</i> , <i>Schizachyrium fragile</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Buchnera asperata</i>		0.6	+		
<i>Byblis filifolia</i>		0.3	+		
<i>Calandrinia quadrivalvis sens lat</i>		0.1	+		
<i>Cartonema parviflorum</i>		0.2	+		
<i>Centrolepis exserta</i>		0.1	+		
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>		8.0	10		
<i>Crotalaria crispata</i>		0.2	+		
<i>Drosera burmanni</i>		0.01	+		
<i>Drosera ordensis</i>		0.3	+		
<i>Ectrosia schultzi</i> var <i>schultzi</i>		0.3	+		
<i>Fimbristylis rara</i>		0.4	+		
<i>Gardenia megasperma</i>		3.0	1		
<i>Jacksonia forrestii</i>		5.0	1		
<i>Lindernia chrysoplectra</i>		0.3	+		
<i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>		7.0	5		
<i>Oldenlandia delicata</i>		0.2	+		
<i>Planchonia careya</i>		3.0	+		
<i>Platyzoma microphyllum</i>		0.4	20		
<i>Rhynchospora exserta</i>		0.5	2		
<i>Schizachyrium fragile</i>		0.3	2		
<i>Sorghum ?stipoideum</i>		1.0	20		
<i>Thecanthes sanguinea</i>		0.25	+		
<i>Tinospora smilacina</i>		0.1	+		
<i>Unknown species</i>		0.8	+		
<i>Waltheria indica</i>		1.2	+		
<i>Xyris complanata</i>		0.5	+		
<i>Yakirra pauciflora</i>		0.6	+		
<i>Zornia prostrata</i> var <i>prostrata</i>		0.2	+		



Photo 45: View of the vegetation at Q023



Photo 46: View of the ground surface at Q023

Survey Area:		Material Investigation Area 8		Quadrat:	Q024
Method:		50x50m quadrat		Date:	27/05/2009
Quadrat Centre:		Easting mE: 469986	Northing mN: 8281606	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil - scattered gravel			
Rock Type:		N/A			
Soil:		Orange/grey sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-12	30	Woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia abbreviata</i> , <i>Terminalia canescens</i> , <i>Acacia difficilis</i> ,	
	0-1	40	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Acacia difficilis</i>		3.5	10		
<i>Blumea tenella</i>		0.3	+		
<i>Buchnera asperata</i>		0.4	+		
<i>Cochlospermum fraseri</i>		1.0	+		
<i>Corchorus sidoides</i> subsp <i>sidoides</i>		0.5	+		
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>		12.0	5		
<i>Corymbia abbreviata</i>		12.0	5		
<i>Crosslandia setifolia</i>		0.2	+		
<i>Crotalaria crispata</i>		0.2	+		
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>		0.6	+		
<i>Drosera ordensis</i>		0.03	+		
<i>Eriachne ciliata</i>		0.2	+		
<i>Erythrophleum chlorostachys</i>		5	+		
<i>Gomphrena lanata</i>		0.3	+		
<i>Goodenia coronopifolia</i>		0.3	+		
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>		0.3	+		
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>		2.0	+		
<i>Melaleuca viridiflora</i>		0.2	+		
<i>Mitrasacme connata</i>		0.3	+		
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>		0.3	+		
<i>Petalostigma pubescens</i>		3.0	1		
<i>Schizachyrium fragile</i>		0.3	+		
<i>Sorghum ?stipoideum</i>		1.0	40		
<i>Spermacoce laevigata</i>		0.1	+		
<i>Tephrosia leptoclada</i>		0.4	1		
<i>Terminalia canescens</i>		9.0	10		
<i>Terminalia platyphylla</i>		10.0	1		
<i>Trachymene microcephala</i>		0.1	+		
<i>Unknown species</i>		0.6	+		



Photo 47: View of the vegetation at Q024



Photo 48: View of the ground surface at Q024

Survey Area:		Material Investigation Area 8		Quadrat:	Q025
Method:		50x50m quadrat		Date:	27/05/2009
Quadrat Centre:		Easting mE: 469867	Northing mN: 8282225	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil with scattered gravel			
Rock Type:		N/A			
Soil:		Orange/grey sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	8-12	30	Woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia abbreviata</i> , <i>Terminalia canescens</i> , <i>Acacia difficilis</i> ,	
	0-1	50	Tussock grassland	<i>Sorghum ?stipoideum</i> ,	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			3.5	10	
<i>Blumea tenella</i>			0.3	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			5.0	+	
<i>Buchnera asperata</i>			0.4	+	
<i>Cochlospermum fraseri</i>			1.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>			12.0	10	
<i>Corymbia abbreviata</i>			12.0	2	
<i>Crosslandia setifolia</i>			0.2	+	
<i>Crotalaria crispata</i>			0.2	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			0.6	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne ciliata</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.0	+	
<i>Gomphrena lanata</i>			0.2	+	
<i>Goodenia coronopifolia</i>			0.3	+	
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>			0.3	+	
<i>Grevillea agrifolia</i> subsp <i>agrifolia</i>			2.5	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			2.0	+	
<i>Melaleuca viridiflora</i>			0.2	+	
<i>Mitrasacme connata</i>			0.3	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	+	
<i>Persoonia falcata</i>			3.0	+	
<i>Petalostigma pubescens</i>			3.0	1	
<i>Planchonia careya</i>			4.0	+	
<i>Schizachyrium fragile</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			1.0	50	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Tephrosia leptoclada</i>			0.4	1	
<i>Terminalia canescens</i>			9.0	10	
<i>Terminalia platyphylla</i>			10.0	1	
<i>Trachymene microcephala</i>			0.2	+	



Photo 49: View of the vegetation at Q025



Photo 50: View of the ground surface at Q025

Survey Area:		Material Investigation Area 8		Quadrat:	Q026
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 468207	Northing mN: 8280807	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-10	25	Woodland	<i>Eucalyptus tetrodonta</i> , <i>Acacia difficilis</i>	
	0-3	50	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Abildgaardia schoenoides</i> , <i>Crotalaria cunninghamii</i>	
Species			Height (m)	Cover (%)	Comments
<i>Euphorbia</i> sp			0.1	+	
<i>Abildgaardia schoenoides</i>			0.6	5	
<i>Acacia difficilis</i>			6.0	10	
<i>Aristida holathera</i> var <i>holathera</i>			1.0	1	
<i>Cajanus acutifolius</i>			0.4	1	
<i>Crotalaria crispata</i>			0.3	+	
<i>Crotalaria cunninghamii</i>			1.0	5	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.25	+	
<i>Cyperus bifax</i>			0.5	+	
<i>Eucalyptus tetrodonta</i>			8.0	15	
<i>Gomphrena humifusa</i>			0.2	+	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Microstachys chamaelea</i>			0.4	2	
<i>Persoonia falcata</i>			2.0	+	
<i>Polygala tepperi</i>			0.1	+	
<i>Sorghum ?stipoideum</i>			2.0	40	
<i>Spermacoce constricta</i>			0.1	+	
<i>Stackhousia intermedia</i>			0.4	+	
<i>Triodia bynoei</i>			0.5	1	
<i>Waltheria indica</i>			0.2	+	



Photo 51: View of the vegetation at Q026



Photo 52: View of the ground surface at Q026

Survey Area:		Material Investigation Area 8		Quadrat:	Q027
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 468035	Northing mN: 8280906	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-10	25	Woodland	<i>Eucalyptus tetrodonta</i> , <i>Acacia difficilis</i>	
	0-3	45	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Abildgaardia schoenoides</i> , <i>Crotalaria cunninghamii</i>	
Species			Height (m)	Cover (%)	Comments
<i>Euphorbia</i> sp			0.1	+	
<i>Abildgaardia schoenoides</i>			0.6	5	
<i>Acacia difficilis</i>			6.0	10	
<i>Aristida holathera</i> var <i>holathera</i>			1.0	1	
<i>Brachychiton tuberculatus</i>			1.0	+	Priority 3
<i>Buchanania oblongifolia</i>			7.0	+	
<i>Cajanus acutifolius</i>			0.4	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.75	+	
<i>Corynotheca micrantha</i> var <i>gracilis</i>			1.0	+	
<i>Crotalaria crispata</i>			0.3	+	
<i>Crotalaria cunninghamii</i>			1.0	5	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.25	+	
<i>Cyperus bifax</i>			0.5	+	
<i>Eucalyptus tetrodonta</i>			8.0	15	
<i>Gomphrena humifusa</i>			0.2	+	
<i>Goodenia brachypoda</i>			0.1	+	Priority 1
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Indigofera haplophylla</i>			0.5	+	
<i>Microstachys chamaelea</i>			0.4	2	
<i>Persoonia falcata</i>			2.0	+	
<i>Petalostigma pubescens</i>			5.0	+	
<i>Polygala tepperi</i>			0.1	+	
<i>Sorghum ?stipoideum</i>			2.0	40	
<i>Spermacoce constricta</i>			0.1	+	
<i>Stackhousia intermedia</i>			0.4	+	
<i>Triodia bynoei</i>			0.5	1	
<i>Velleia panduriformis</i>			1.0	+	
<i>Waltheria indica</i>			0.2	+	
<i>Waltheria indica</i>			0.75	+	



Photo 53: View of the vegetation at Q027



Photo 54: View of the ground surface at Q027

Survey Area:		Material Investigation Area 8		Quadrat:	Q028
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 468281	Northing mN: 8281415	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil with gravel			
Rock Type:		N/A			
Soil:		Red sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-5	30	Sparse woodland	<i>Acacia difficilis</i> , <i>Terminalia canescens</i> , <i>Corymbia ?abbreviata</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>	
	0-1.5	30	Medium Tussock grassland	<i>Abildgaardia schoenoides</i> , <i>Sorghum stipoideum</i> , <i>Triodia bitextura</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Abildgaardia schoenoides</i>		0.3	10		
<i>Acacia difficilis</i>		5.0	20		
<i>Buchnera ramosissima</i>		0.5	+		
<i>Corchorus sidoides</i> subsp <i>sidoides</i>		0.5	1		
<i>Corymbia ?abbreviata</i>		5.0	2		
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>		5.0	2		
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>		0.4	+		
<i>Eriachne ciliata</i>		0.3	+		
<i>Eriachne obtusa</i>		0.4	1		
<i>Goodenia coronopifolia</i>		0.4	+		
<i>Grevillea pteridifolia</i>		3.0	+		
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>		0.3	+		
<i>Senna oligoclada</i>		0.2	+		
<i>Sorghum stipoideum</i>		1.5	25		
<i>Spermacoce laevigata</i>		0.1	+		
<i>Terminalia canescens</i>		5.0	7		
<i>Triodia bitextura</i>		0.5	5		
<i>Unknown species</i>		1.0	+		



Photo 55: View of the vegetation at Q028



Photo 56: View of the ground surface at Q028

Survey Area:		Material Investigation Area 8		Quadrat:	Q029
Method:		50x50m quadrat		Date:	25/05/2009
Quadrat Centre:		Easting mE: 468238	Northing mN: 8281393	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-8	15	Open woodland	<i>Melaleuca viridiflora</i> , <i>Terminalia canescens</i> , <i>Corymbia ?abbreviata</i>	
	0-0.5	50	Tussock Grassland	<i>Fimbristylis cardiocarpa</i> , <i>Eriachne obtusa</i> , <i>Schizachyrium fragile</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			5.0	1	
<i>Bacopa floribunda</i>			0.1	+	
<i>Buchnera ramosissima</i>			1.0	+	
<i>Corymbia ?abbreviata</i>			8.0	2	
<i>Eragrostis fallax</i>			0.5	+	
<i>Eriachne obtusa</i>			0.6	2	
<i>Fimbristylis cardiocarpa</i>			0.5	50	
<i>Fuirena ciliaris</i>			0.5	+	
<i>Goodenia coronopifolia</i>			0.3	+	
<i>Haemodorum sp</i>			0.5	+	
<i>Ludwigia perennis</i>			0.8	+	
<i>Melaleuca viridiflora</i>			5.0	15	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Rotala mexicana</i>			0.1	+	
<i>Schizachyrium fragile</i>			0.5	2	
<i>Sorghum stipoideum</i>			1.0	+	
<i>Terminalia canescens</i>			5.0	5	
<i>Xyris complanata</i>			0.3	+	



Photo 57: View of the vegetation at Q029



Photo 58: View of the ground surface at Q029

Survey Area:		Material Investigation Area 8		Quadrat:	Q030
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470286	Northing mN: 8281695	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown slightly loamy			
Fire Age:		>3 years			
Condition:		Very good – one weed species recorded, low levels of grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-10	20	Mixed woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> , <i>Erythrophleum chlorostachys</i> , <i>Buchanania obovata</i> , <i>Bauhinia cunninghamii</i>	
	0-1.5	15	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Crotalaria ramosissima</i> , <i>Hyptis suaveolens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			1.5	5	Weed
<i>Petalostigma sp</i>			3.0	2	
<i>Anisomeles malabarica</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			4.0	4	
<i>Brachychiton tuberculatus</i>			1.0	+	Priority 3
<i>Buchanania obovata</i>			4.0	2	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			10.0	10	
<i>Corymbia greeniana</i>			8.0	5	
<i>Crotalaria ramosissima</i>			0.2	2	
<i>Dicliptera armata</i>			0.2	+	
<i>Ectrosia leporina</i>			0.3	1	
<i>Eragrostis cumingii</i>			0.3	15	
<i>Erythrophleum chlorostachys</i>			8.0	5	
<i>Goodenia brachypoda</i>			0.1	+	Priority 1
<i>Grevillea pteridifolia</i>			0.5	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hibiscus meraukensis</i>			0.3	+	
<i>Pterocaulon sphacelatum</i>			1.0	+	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.3	+	



Photo 59: View of the vegetation at Q030



Photo 60: View of the ground surface at Q030

Survey Area:		Material Investigation Area 8		Quadrat:	Q031
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470457	Northing mN: 8282005	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red sand			
Fire Age:		>3 years			
Condition:		Very good – one weed species recorded, low levels of grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	6-10	30	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Corymbia greeniana</i> , <i>Erythrophleum chlorostachys</i> , <i>Bauhinia cunninghamii</i> , <i>Buchanania obovata</i>	
	0-2	15	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Heteropogon contortus</i> , <i>Crotalaria ramosissima</i> , <i>Hyptis suaveolens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			1.5	5	Weed
<i>Petalostigma</i> sp			3.0	2	
<i>Adansonia gregorii</i>			10.0	+	
<i>Anisomeles malabarica</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			4.0	4	
<i>Blumea tenella</i>			0.3	+	
<i>Brachychiton tuberculatus</i>			1.5	+	Priority 3
<i>Buchanania obovata</i>			4.0	2	
<i>Buchnera linearis</i>			0.3	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			10.0	10	
<i>Corymbia greeniana</i>			8.0	5	
<i>Crotalaria ramosissima</i>			0.2	2	
<i>Dicliptera armata</i>			0.2	+	
<i>Ectrosia leporina</i>			0.3	1	
<i>Eragrostis cumingii</i>			0.3	15	
<i>Erythrophleum chlorostachys</i>			8.0	5	
<i>Evolvulus alsinoides</i> var <i>decumbens</i>			0.2	+	
<i>Goodenia brachypoda</i>			0.1	+	Priority 1
<i>Grevillea pteridifolia</i>			0.5	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Heteropogon contortus</i>			0.5	2	
<i>Hibiscus meraukensis</i>			0.3	+	
<i>Indigofera linifolia</i>			0.2	+	
<i>Polycarpaea corymbosa</i> var <i>corymbosa</i>			0.2	+	
<i>Pterocaulon sphacelatum</i>			1.0	+	
<i>Schizachyrium fragile</i>			0.2	+	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Tephrosia ?remotiflora</i>			0.1	+	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.3	+	
<i>Waltheria indica</i>			0.6	+	



Photo 61: View of the vegetation at Q031



Photo 62: View of the ground surface at Q031

Survey Area:		Material Investigation Area 8		Quadrat:	Q032
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470596	Northing mN: 8282115	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black/grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	7-10	15	Open woodland	<i>Corymbia greeniana</i> , <i>Corymbia confertiflora</i> , <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Bauhinia cunninghamii</i> , <i>Planchonia careya</i>	
	0-1	50	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Heteropogon contortus</i> , <i>Grewia retusifolia</i> , <i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>	
Species			Height (m)	Cover (%)	Comments
<i>Macroptilium lathyroides</i> var <i>semirectum</i>			-	+	Weed
<i>Abildgaardia schoenoides</i>			0.1	+	
<i>Bacopa floribunda</i>			0.1	+	
<i>Bauhinia cunninghamii</i>			4.0	3	
<i>Blumea diffusa</i>			0.2	+	
<i>Buchanania obovata</i>			0.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	+	
<i>Corymbia confertiflora</i>			10.0	3	
<i>Corymbia greeniana</i>			8.0	6	
<i>Cyperus bifax</i>			0.4	+	
<i>Dolichandrone heterophylla</i>			0.5	+	
<i>Eragrostis cumingii</i>			0.3	10	
<i>Eragrostis fallax</i>			0.5	+	
<i>Goodenia brachypoda</i>			0.2	+	Priority 1
<i>Grewia retusifolia</i>			0.5	4	
<i>Heteropogon contortus</i>			0.6	40	
<i>Ludwigia perennis</i>			0.5	+	
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>			5.0	10	
<i>Nelsonia campestris</i>			0.2	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	2	
<i>Passiflora foetida</i> var <i>hispida</i>			-	+	
<i>Planchonia careya</i>			3.0	4	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Rotala mexicana</i>			0.05	+	
<i>Stemodia lathraia</i>			0.2	+	



Photo 63: View of the vegetation at Q032



Photo 64: View of the ground surface at Q032

Survey Area:		Material Investigation Area 8		Quadrat:	Q033
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470779	Northing mN: 8282071	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black/grey silty sand			
Fire Age:		>3 years			
Condition:		Very good – no weeds recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	7-10	15	Open woodland	<i>Corymbia greeniana</i> , <i>Bauhinia cunninghamii</i> , <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Planchonia careya</i> , <i>Buchanania obovata</i>	
	0-1.5	70	Tussock grassland	<i>Themeda triandra</i> , <i>Grewia retusifolia</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Acacia neurocarpa</i>		2.5	+		
<i>Bauhinia cunninghamii</i>		5.0	3		
<i>Buchanania obovata</i>		3.0	2		
<i>Corymbia greeniana</i>		10.0	3		
<i>Corymbia greeniana</i>		6.0	+		
<i>Erythrina vespertilio</i>		10.0	+		
<i>Ficus aculeata</i> var <i>indecora</i>		1.2	+		
<i>Goodenia brachypoda</i>		0.1	+	Priority 1	
<i>Grevillea dimidiata</i>		5.0	+		
<i>Grewia breviflora</i>		0.3	1		
<i>Grewia retusifolia</i>		1.0	2		
<i>Hakea arborescens</i>		1.0	+		
<i>Heteropogon contortus</i>		1.0	+		
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>		5.0	5		
<i>Planchonia careya</i>		4.0	5		
<i>Themeda triandra</i>		1.0	70		



Photo 65: View of the vegetation at Q033



Photo 66: View of the ground surface at Q033

Survey Area:		Material Investigation Area 8		Quadrat:	Q034
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 470811	Northing mN: 8281961	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black/grey sandy clay loam			
Fire Age:		>3 years			
Condition:		Very good – no weed species recorded, low levels of grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.2-8	15	Open woodland	<i>Eucalyptus microtheca</i> , <i>Eucalyptus camaldulensis</i> var <i>obtusa</i> , <i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i> , <i>Excoecaria parvifolia</i>	
	0-0.2	5	Very open grassland	<i>Eragrostis cumingii</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cyperus holoschoenus</i>			1.0	+	
<i>Diospyros rugosula</i>			4.0	1	
<i>Eragrostis cumingii</i>			0.2	5	
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			7.0	2	
<i>Eucalyptus microtheca</i>			8.0	10	
<i>Excoecaria parvifolia</i>			5.0	2	
<i>Haemodorum sp</i>			0.3	+	
<i>Melaleuca nervosa</i> subsp ? <i>crosslandiana</i>			8.0	5	
<i>Poaceae sp</i>			0.1	+	
<i>Schoenoplectus lateriflorus</i>			0.4	1	
<i>Schoenoplectus praelongatus</i>			0.3	+	



Photo 67: View of the vegetation at Q034



Photo 68: View of the ground surface at Q034

Survey Area:		Material Investigation Area 8		Quadrat:	Q035
Method:		50x50m quadrat		Date:	26/05/2009
Quadrat Centre:		Easting mE: 469783	Northing mN: 8281064	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil with gravel			
Rock Type:		N/A			
Soil:		Orange/grey sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-8	20	Open woodland	<i>Corymbia sp</i> , <i>Acacia perryi</i> , <i>Erythrophleum chlorostachys</i> , <i>Cochlospermum fraseri</i> , <i>Corymbia</i> <i>?ptychocarpa</i> subsp <i>ptychocarpa</i> , <i>Terminalia platyptera</i>	
	0-1	75	Tussock grassland	<i>Eriachne sulcata</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia perryi</i>			5.0	10	
<i>Brachychiton diversifolius</i>			6.0	+	
<i>Buchnera ramosissima</i>			0.4	+	
<i>Cochlospermum fraseri</i>			6.0	2	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	+	
<i>Corymbia ?ptychocarpa</i> subsp <i>ptychocarpa</i>			5.0	2	
<i>Corymbia sp</i>			8.0	10	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			0.3	+	
<i>Eriachne sulcata</i>			0.5	5	
<i>Erythrophleum chlorostachys</i>			6.0	10	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.6	+	
<i>Goodenia coronopifolia</i>			0.3	+	
<i>Grevillea sp</i>			2.5	+	
<i>Haemodorum sp</i>			0.6	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.2	+	
<i>Ptilotus corymbosus</i>			0.4	+	
<i>Senna oligoclada</i>			0.4	+	
<i>Sorghum stipoideum</i>			1.0	70	
<i>Spermacoce laevigata</i>			0.1	1	
<i>Stemodia lythrifolia</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Terminalia platyptera</i>			2.5	2	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.3	+	
<i>Wrightia saligna</i>			0.4	+	



Photo 69: View of the vegetation at Q035



Photo 70: View of the ground surface at Q035

Survey Area:		Material Investigation Area 8		Quadrat:	Q036
Method:		50x50m quadrat		Date:	27/05/2009
Quadrat Centre:		Easting mE: 471636	Northing mN: 8282913	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey sand clay loam			
Fire Age:		>3 years			
Condition:		Very good – no weeds recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.6-6	40	Woodland	<i>Eucalyptus ?tectifica</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>	
Vegetation Structure:	0-0.6	20	Sedgeland	<i>Diospyros rugosula</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Leptochloa neesii</i> , <i>Cyperus holoschoenus</i> , <i>Diospyros rugosula</i> , <i>Eragrostis cumingii</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Alternanthera angustifolia</i>		0	+		
<i>Bauhinia cunninghamii</i>		5.0	1		
<i>Bergia pedicellaris</i>		0	+		
<i>Cyperus holoschoenus</i>		0.6	2		
<i>Diospyros rugosula</i>		0.3	10		
<i>Eragrostis cumingii</i>		0.3	4		
<i>Eriachne glauca</i> var <i>barbinodis</i>		1.0	5	Range extension	
<i>Eriachne sulcata</i>		1.0	1		
<i>Eucalyptus ?tectifica</i>		10.0	10		
<i>Euphorbia bifida</i> senslat		0.2	+		
<i>Hakea arborescens</i>		4.0	+		
<i>Leptochloa neesii</i>		1.2	2		
<i>Ludwigia perennis</i>		1.0	+		
<i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>		5.0	30		
<i>Sesbania cannabina</i>		2.0	+		



Photo 71: View of the vegetation at Q036



Photo 72: View of the ground surface at Q036

Survey Area:		Material Investigation Area 8		Quadrat:	Q037
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 470744	Northing mN: 8283852	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey silty sand			
Fire Age:		>3 years			
Condition:		Very good – one weed recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-10	30	Woodland	<i>Corymbia confertiflora</i> , <i>Bauhinia cunninghamii</i> , <i>Corymbia greeniana</i> , <i>Eucalyptus ?tectifica</i> , <i>Terminalia platyptera</i> , <i>Erythrophleum chlorostachys</i>	
	0-1.5	70	Grassland and sedgeland	<i>Abildgaardia schoenoides</i> , <i>Heteropogon contortus</i> , <i>Rhynchospora exserta</i> , <i>Schizachyrium fragile</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			0.6	2	Weed
<i>Abildgaardia schoenoides</i>			0.3	5	
<i>Acacia dunnii</i>			0.6	+	
<i>Acacia holosericea</i>			2.5	+	
<i>Bacopa floribunda</i>			0.1	+	
<i>Bauhinia cunninghamii</i>			6.0	5	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchanania obovata</i>			4.0	1	
<i>Buchnera ramosissima</i>			0.3	+	
<i>Cartonema parviflorum</i>			0.4	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	+	
<i>Corymbia confertiflora</i>			10.0	2	
<i>Corymbia greeniana</i>			10.0	5	
<i>Dolichandrone heterophylla</i>			0.5	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Ectrosia leporina</i>			0.3	+	
<i>Ectrosia schultzii</i> var <i>schultzii</i>			0.4	+	
<i>Eragrostis cumingii</i>			0.2	2	
<i>Eragrostis fallax</i>			0.4	+	
<i>Erythrophleum chlorostachys</i>			8.0	3	
<i>Eucalyptus ?tectifica</i>			10.0	10	
<i>Ficus aculeata</i> var <i>indecora</i>			5.0	1	
<i>Fimbristylis microcarya</i>			0.3	2	
<i>Fimbristylis rara</i>			0.4	+	
<i>Fimbristylis schultzii</i>			0.5	+	
<i>Gardenia ?resinosa</i> subsp <i>resinosa</i>			5.0	+	
<i>Gomphrena humifusa</i>			0.1	+	
<i>Goodenia coronopifolia</i>			0.3	+	
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>			0.1	+	
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>			2.0	+	
<i>Grewia retusifolia</i>			1.0	1	
<i>Haemodorum</i> sp			0.3	+	

Species	Height (m)	Cover (%)	Comments
<i>Heteropogon contortus</i>	1.0	5	
<i>Ludwigia perennis</i>	2.0	+	
<i>Melaleuca viridiflora</i>	4.0	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>	0.2	+	
<i>Petalostigma pubescens</i>	5.0	+	
<i>Planchonia careya</i>	5.0	1	
<i>Pterocaulon sphacelatum</i>	0.8	+	
<i>Rhynchospora exserta</i>	0.2	5	
<i>Schizachyrium fragile</i>	0.3	20	
<i>Sorghum stipoideum</i>	1.5	40	
<i>Terminalia platyptera</i>	8.0	8	
<i>Triodia bitextura</i>	0.3	+	
<i>Waltheria indica</i>	0.5	+	



Photo 73: View of the vegetation at Q037



Photo 74: View of the ground surface at Q037

Survey Area:		Material Investigation Area 8		Quadrat:	Q038
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 471045	Northing mN: 8283322	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/brown sandy silt			
Fire Age:		>3 years			
Condition:		Very good – two weeds recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-12	30	Woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia greeniana</i> , <i>Petalostigma pubescens</i> , <i>Terminalia canescens</i>	
	0-0.6	60	Tussock grassland	<i>Heteropogon contortus</i> , <i>Eriachne sp</i> , <i>Aristida sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			1.0	+	Weed
<i>Macroptilium lathyroides</i> var <i>semierectum</i>			0.2	+	Weed
<i>Eriachne sp</i>			0.5	10	
<i>Aristida sp</i>			0.6	20	
<i>Bauhinia cunninghamii</i>			7.0	+	
<i>Bonamia media</i>			0.1	+	
<i>Buchanania obovata</i>			1.5	+	
<i>Bulbostylis barbata</i>			0.1	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia greeniana</i>			12.0	10	
<i>Crotalaria ramosissima</i>			0.2	+	
<i>Cyperus sp</i>			0.3	+	
<i>Dolichandrone heterophylla</i>			0.6	+	
<i>Eragrostis fallax</i>			0.3	+	
<i>Eragrostis speciosa</i>			0.5	+	
<i>Eucalyptus tectifica</i>			10.0	10	
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>			0.4	+	
<i>Grevillea erythroclada</i>			3.0	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Heteropogon contortus</i>			0.6	30	
<i>Petalostigma pubescens</i>			6.0	5	
<i>Terminalia canescens</i>			6.0	5	
<i>Waltheria indica</i>			0.5	+	



Photo 75: View of the vegetation at Q038



Photo 76: View of the ground surface at Q038

Survey Area:		Material Investigation Area 8		Quadrat:	Q039
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 470305	Northing mN: 8283376	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Dark grey silt			
Fire Age:		>3 years			
Condition:		Very good – one weed recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-12	30	Woodland	<i>Corymbia confertiflora</i> , <i>Corymbia greeniana</i> , <i>Eucalyptus tectiflora</i> , <i>Planchonia careya</i>	
	0-1	70	Tussock grassland	<i>Heteropogon contortus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			1.0	+	Weed
<i>Adansonia gregorii</i>			8.0	+	
<i>Anisomeles malabarica</i>			0.4	+	
<i>Bauhinia cunninghamii</i>			5.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			4.0	+	
<i>Brachychiton tuberculatus</i>			1.0	+	Priority 3
<i>Buchanania obovata</i>			4.0	+	
<i>Cochlospermum fraseri</i>			5.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia confertiflora</i>			10.0	5	
<i>Corymbia greeniana</i>			10.0	10	
<i>Eragrostis fallax</i>			0.2	+	
<i>Eragrostis tenellula</i>			0.3	+	
<i>Eucalyptus tectiflora</i>			12.0	10	
<i>Ficus aculeata</i> var <i>indecora</i>			1.0	+	
<i>Glycine tomentella</i>			0.2	+	
<i>Grevillea erythroclada</i>			4.0	+	
<i>Grewia retusifolia</i>			0.8	+	
<i>Hakea arborescens</i>			0.4	+	
<i>Heteropogon contortus</i>			0.5	70	
<i>Panicum decompositum</i>			0.2	+	
<i>Planchonia careya</i>			5.0	5	
<i>Terminalia platyphylla</i>			7.0	+	
<i>Themeda triandra</i>			0.7	+	



Photo 77: View of the vegetation at Q039



Photo 78: View of the ground surface at Q039

Survey Area:		Material Investigation Area 8		Quadrat:	Q040
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 470135	Northing mN: 8282613	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey sandy silt			
Fire Age:		>3 years			
Condition:		Very good – no weeds recorded, low levels of grazing in some areas			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-12	25	Woodland	<i>Corymbia greeniana</i> , <i>Terminalia latipes</i> , <i>Buchanania obovata</i>	
	0-0.6	70	Tussock grassland	<i>Eragrostis fallax</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Adansonia gregorii</i>			5.0	+	
<i>Aristida sp</i>			0.6	+	
<i>Bonamia media</i>			0.2	+	
<i>Buchanania obovata</i>			6.0	2	
<i>Buchnera linearis</i>			0.6	+	
<i>Corchorus sideoles</i> subsp <i>sideoles</i>			0.5	+	
<i>Corymbia greeniana</i>			8.0	20	
<i>Crotalaria ramosissima</i>			0.2	+	
<i>Eragrostis fallax</i>			0.5	30	
<i>Eragrostis speciosa</i>			0.7	+	
<i>Ficus aculeata</i> var <i>indecora</i>			3.0	+	
<i>Fimbristylis cardiocarpa</i>			0.5	+	
<i>Hakea arborescens</i>			4.0	+	
<i>Heteropogon contortus</i>			1.0	+	
<i>Microstachys chamaelea</i>			0.2	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.2	+	
<i>Petalostigma pubescens</i>			5.0	+	
<i>Planchonia careya</i>			6.0	1	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Setaria apiculata</i>			0.2	+	
<i>Sorghum ?stipoideum</i>			0.6	4	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Terminalia latipes</i>			12.0	5	
<i>Waltheria indica</i>			0.8	+	



Photo 79: View of the vegetation at Q040



Photo 80: View of the ground surface at Q040

Survey Area:		Material Investigation Area 8		Quadrat:	Q041
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 469202	Northing mN: 8282390	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silt			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-10	25	Woodland	<i>Corymbia greeniana</i> , <i>Melaleuca argentea</i> , <i>Terminalia canescens</i>	
	0-0.6	60	Tussock grassland	<i>Eragrostis fallax</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			0.8	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Carissa lanceolata</i>			0.6	+	
<i>Corymbia greeniana</i>			10.0	10	
<i>Eragrostis fallax</i>			0.5	10	
<i>Eragrostis tenellula</i>			0.3	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.5	30	Range extension
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hakea arborescens</i>			2.0	+	
<i>Ludwigia perennis</i>			1.0	+	
<i>Melaleuca argentea</i>			6.0	10	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.5	+	
<i>Rhynchospora exserta</i>			0.4	+	
<i>Sorghum ?stipoideum</i>			1.5	+	
<i>Terminalia canescens</i>			6.0	2	
<i>Themeda triandra</i>			0.6	20	



Photo 81: View of the vegetation at Q041



Photo 82: View of the ground surface at Q041

Survey Area:		Material Investigation Area 13		Quadrat:	Q042
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 496343	Northing mN: 8286968	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Cracking clay			
Rock Type:		N/A			
Soil:		Grey/black cracking clay			
Fire Age:		>3 years			
Condition:		Good – one weed recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	3-5	25	Woodland	<i>Bauhinia cunninghamii</i> , <i>Terminalia</i> sp, <i>Atalaya hemiglauca</i>	
	0-0.5	60	Tussock grassland	<i>Chrysopogon</i> sp, <i>Fimbristylis schultzei</i> , <i>Iseilema fragile</i>	
Species			Height (m)	Cover (%)	Comments
<i>Corchorus olitorius</i>			0.5	+	Weed
<i>Chrysopogon</i> sp			0.5	30	
<i>Abelmoschus ficulneus</i>			1.0	+	
<i>Ammannia multiflora</i>			0.6	+	
<i>Atalaya hemiglauca</i>			4	5	
<i>Bauhinia cunninghamii</i>			5	10	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			1.0	+	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.0	+	
<i>Elytrophorus spicatus</i>			0.3	+	
<i>Eragrostis tenellula</i>			0.5	+	
<i>Eucalyptus microtheca</i>			6.0	+	
<i>Excoecaria parvifolia</i>			6.0	+	
<i>Fimbristylis schultzei</i>			0.25	25	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			1.5	+	
<i>Hygrophila angustifolia</i>			0.5	1	
<i>Iseilema fragile</i>			0.5	5	
<i>Ludwigia perennis</i>			0.75	1	
<i>Panicum decompositum</i>			1.0	1	
<i>Ptilotus spicatus</i>			1.0	+	
<i>Stemodia tephropelina</i>			0.2	+	
<i>Terminalia</i> sp			5	10	
<i>Vachellia valida</i>			0.25	+	



Photo 83: View of the vegetation at Q042



Photo 84: View of the ground surface at Q042

Survey Area:		Material Investigation Area 13		Quadrat:	Q043
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 495978	Northing mN: 8287178	GDA 1994 Zone 52	
Landscape:		Open woodland			
Surface:		SM Clay			
Rock Type:		N/A			
Soil:		Grey/black cracking clay			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-7	20	Low open woodland	<i>Bauhinia cunninghamii</i> , <i>Excoecaria parvifolia</i> , <i>Vachellia valida</i> , <i>Terminalia sp</i>	
	0-1.5	70	Tussock grassland	<i>Oryza australiensis</i> , <i>Chrysopogon sp</i> , <i>Ludwigia perennis</i> , <i>Panicum decompositum</i> , <i>Fimbristylis microcarya</i>	
Species			Height (m)	Cover (%)	Comments
<i>Ammannia multiflora</i>			0.5	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.5	+	
<i>Bauhinia cunninghamii</i>			7.0	7	
<i>Chrysopogon sp</i>			0.5	30	
<i>Crotalaria crispata</i>			1.0	+	
<i>Elytrophorus spicatus</i>			0.6	1	
<i>Eragrostis tenellula</i>			0.5	+	
<i>Excoecaria parvifolia</i>			6	7	
<i>Fimbristylis microcarya</i>			1.0	5	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			1.0	+	
<i>Hygrophila angustifolia</i>			0.5	+	
<i>Iseilema fragile</i>			0.5	+	
<i>Ludwigia perennis</i>			1.5	20	
<i>Oryza australiensis</i>			1.5	15	
<i>Panicum decompositum</i>			0.75	2	
<i>Poaceae sp</i>			0.5	+	
<i>Polygala tepperi</i>			0.3	+	
<i>Ptilotus spicatus</i>			0.75	+	
<i>Rotala diandra</i>			0.25	+	
<i>Stemodia tephropelina</i>			0.2	+	
<i>Terminalia sp</i>			6.0	3	
<i>Vachellia valida</i>			6.0	7	



Photo 85: View of the vegetation at Q043



Photo 86: View of the ground surface at Q043

Survey Area:		Material Investigation Area 13		Quadrat:	Q044
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 495785	Northing mN: 8287454	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Sandy silt			
Fire Age:		>3 years			
Condition:		Good – one weed recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-0.75	50	Tussock grassland	<i>Chrysopogon sp</i> , <i>Ectrosia leporina</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Vachellia farnesiana</i>			1.0	+	Weed
<i>Atalaya variifolia</i>			0.75	+	
<i>Carissa lanceolata</i>			0.5	1	
<i>Chrysopogon sp</i>			0.25	30	
<i>Ectrosia leporina</i>			0.25	5	
<i>Eragrostis cumingii</i>			0.25	1	
<i>Eragrostis tenellula</i>			0.5	1	
<i>Eucalyptus microtheca</i>			0.5	+	
<i>Euphorbia coghlanii</i>			0.25	+	
<i>Excoecaria parvifolia</i>			2.0	+	
<i>Fimbristylis microcarya</i>			0.3	5	
<i>Hibiscus austrinus var austrinus</i>			1.0	+	
<i>Ipomoea optica</i>			0.1	+	
<i>Ludwigia perennis</i>			0.3	+	
<i>Panicum decompositum</i>			0.5	3	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Sida spinosa</i>			0.25	+	
<i>Themeda triandra</i>			0.75	10	



Photo 87: View of the vegetation at Q044



Photo 88: View of the ground surface at Q044

Survey Area:		Material Investigation Area 13		Quadrat:	Q045
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 495581	Northing mN: 8288184	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silty sand			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-2	80	Tussock grassland	<i>Chrysopogon sp</i> , <i>Oryza australiensis</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Chrysopogon sp</i>			0.5	40	
<i>Commelina ensifolia</i>			0.25	+	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.5	3	
<i>Eucalyptus microtheca</i>			2.0	1	
<i>Fimbristylis microcarya</i>			0.75	1	
<i>Hygrophila angustifolia</i>			0.3	+	
<i>Ludwigia perennis</i>			1.0	2	
<i>Neptunia monosperma</i>			0.5	+	
<i>Oryza australiensis</i>			2.0	40	
<i>Poaceae sp</i>			0.7	1	



Photo 89: View of the vegetation at Q045



Photo 90: View of the ground surface at Q045

Survey Area:		Material Investigation Area 13		Quadrat:	Q046
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 495280	Northing mN: 8289168	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black loam - waterlogged			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.25-8	25	Woodland	<i>Corymbia polycarpa</i> , <i>Melaleuca viridiflora</i>	
	0-0.25	100	Sedgeland	<i>Cyperaceae sp</i> , <i>Limnophila fragrans</i> , <i>Eriachne glauca</i> var <i>barbinodis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.25	+	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Corymbia polycarpa</i>			8.0	25	
<i>Cyperaceae sp</i>			0.25	100	
<i>Drosera indica</i>			0.3	+	
<i>Eragrostis fallax</i>			0.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	3	Range extension
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Fuirena ciliaris</i>			0.25	+	
<i>Grevillea pteridifolia</i>			3.0	+	
<i>Hygrophila angustifolia</i>			0.3	+	
<i>Isotoma armstrongii</i>			0.2	1	Range extension
<i>Limnophila fragrans</i>			0.25	3	
<i>Lindernia chrysoplectra</i>			0.2	+	
<i>Melaleuca viridiflora</i>			6.0	2	
<i>Mimulus uvedaliae</i> var <i>uvedaliae</i>			0.25	+	
<i>Mitrasacme galbina</i>			0.3	+	
<i>Mitrasacme nummularia</i>			0.05	+	
<i>Panicum decompositum</i>			1.5	+	
<i>Stemodia tephropelina</i>			0.15	+	



Photo 91: View of the vegetation at Q046



Photo 92: View of the ground surface at Q046

Survey Area:		Material Investigation Area 13		Quadrat:	Q047
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 495066	Northing mN: 8289556	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	6-12	35	Woodland	<i>Corymbia greeniana</i> , <i>Corymbia</i> ? <i>ptychocarpa</i> subsp <i>ptychocarpa</i> , <i>Corymbia</i> ? <i>dichromophloia</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Eucalyptus tetrodonta</i> , <i>Brachychiton fitzgeraldianus</i>	
	0.5-4	4	Scattered shrubs	<i>Grevillea heliosperma</i> , <i>Petalostigma pubescens</i>	
	0-0.5	65	Tussock grassland	<i>Schizachyrium fragile</i> , <i>Triodia bitextura</i> , <i>Rhynchospora exserta</i> , <i>Eragrostis cumingii</i> , <i>Rhynchospora affinis</i> , <i>Cyperus castaneus</i> var <i>brevimucronatus</i> , <i>Sorghum</i> ? <i>stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Adansonia gregorii</i>			8.0	+	
<i>Blumea diffusa</i>			0.5	+	
<i>Brachychiton fitzgeraldianus</i>			7.0	2	
<i>Buchanania oblongifolia</i>			4.0	+	
<i>Calytrix exstipulata</i>			1.5	+	
<i>Corymbia</i> ? <i>dichromophloia</i>			8.0	3	
<i>Corymbia</i> ? <i>ptychocarpa</i> subsp <i>ptychocarpa</i>			7.0	5	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	10	
<i>Corymbia greeniana</i>			14.0	10	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.1	5	
<i>Eragrostis cumingii</i>			0.2	5	
<i>Eucalyptus tetrodonta</i>			8.0	10	
<i>Euphorbia</i> sp			0.05	+	
<i>Excoecaria parvifolia</i>			2.0	+	
<i>Fimbristylis</i> sp A Kimberley flora (A.S George 13584)			0.4	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.7	+	
<i>Grevillea agrifolia</i>			4.0	1	
<i>Grevillea heliosperma</i>			4.0	2	
<i>Ludwigia perennis</i>			0.75	+	
<i>Pandanus</i> ? <i>spiralis</i>			4.0	1	
<i>Persoonia falcata</i>			4.0	+	
<i>Petalostigma pubescens</i>			4.0	2	
<i>Planchonia careya</i>			4.0	+	
<i>Rhynchospora affinis</i>			0.2	5	
<i>Rhynchospora exserta</i>			0.3	10	

<i>Schizachyrium fragile</i>	0.5	25	
<i>Sorghum ?stipoideum</i>	1.5	2	
<i>Stemodia lythrifolia</i>	0.5	+	
<i>Triodia bitextura</i>	0.5	30	
<i>Waltheria indica</i>	0.8	+	



Photo 93: View of the vegetation at Q047



Photo 94: View of the ground surface at Q047

Survey Area:		Material Investigation Area 13		Quadrat:	Q048
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 496407	Northing mN: 8287421	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil-cracking clay			
Rock Type:		N/A			
Soil:		Grey/black clay			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	4-6	25	Woodland	<i>Bauhinia cunninghamii</i> , <i>Excoecaria parvifolia</i> , <i>Eucalyptus microtheca</i> , <i>Terminalia sp</i> , <i>Atalaya hemiglauca</i>	
	0.5	35	Tussock grassland	<i>Chrysopogon sp</i> , <i>Panicum decompositum</i> , <i>Fimbristylis microcarya</i>	
Species			Height (m)	Cover (%)	Comments
<i>Chrysopogon sp</i>			0.5	25	
<i>Abelmoschus ficulneus</i>			0.75	+	
<i>Ammannia multiflora</i>			0.25	+	
<i>Atalaya hemiglauca</i>			4.0	2	
<i>Bauhinia cunninghamii</i>			4-5	15	
<i>Elytrophorus spicatus</i>			0.5	+	
<i>Eucalyptus microtheca</i>			6.0	2	
<i>Excoecaria parvifolia</i>			4-5	7	
<i>Fimbristylis microcarya</i>			0.5	2	
<i>Hibiscus austrinus var austrinus</i>			1.5	+	
<i>Hygrophila angustifolia</i>			0.5	+	
<i>Iseilema fragile</i>			0.5	+	
<i>Ludwigia perennis</i>			1.0	2	
<i>Panicum decompositum</i>			0.5	10	
<i>Ptilotus spicatus</i>			1.0	+	
<i>Sehima nervosum</i>			1.0	+	
<i>Terminalia sp</i>			5.0	5	
<i>Vachellia valida</i>			2.0	+	



Photo 95: View of the vegetation at Q048



Photo 96: View of the ground surface at Q048

Survey Area:		Material Investigation Area 13		Quadrat:	Q049
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 496439	Northing mN: 8287930	GDA 1994 Zone 52	
Landscape:		Hill - ridgeline			
Surface:		Outcropping			
Rock Type:		Sandstone			
Soil:		Black silt			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-5	15	Low woodland	<i>Corymbia greeniana</i> , <i>Flueggea virosa</i> subsp <i>melanthesoides</i> , <i>Bauhinia cunninghamii</i> , <i>Grevillea dimidiata</i> , <i>Terminalia</i> sp	
	0-1.5	20	Herbs	<i>Sehima nervosum</i> , <i>Glycine tomentella</i>	
Species			Height (m)	Cover (%)	Comments
<i>Echinochloa colona</i>			0.3	+	Weed
<i>Asclepiadaceae</i> sp			1.5	+	
<i>Abrus precatorius</i> subsp <i>precatorius</i>			0.05	+	
<i>Acacia hemignosta</i>			4.0	1	
<i>Atalaya hemiglauc</i>			3.0	+	
<i>Bauhinia cunninghamii</i>			5.0	3	
<i>Buchanania oblongifolia</i>			5.0	1	
<i>Buchnera ramosissima</i>			0.25	+	
<i>Carissa lanceolata</i>			0.1	+	
<i>Celtis philippensis</i>			5.0	1	
<i>Christia australasica</i>			0.1	1	
<i>Cleome viscosa</i>			1.0	+	
<i>Corymbia greeniana</i>			7.0	2	
<i>Denhamia obscura</i>			1.5	+	
<i>Ehretia saligna</i> var <i>saligna</i>			4.0	+	
<i>Ficus atricha</i>			4.0	1	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			4.0	5	
<i>Glycine tomentella</i>			0.25	7	
<i>Grevillea dimidiata</i>			4.0	2	
<i>Grevillea erythroclada</i>			1.0	+	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			3.0	+	
<i>Pterocaulon sphacelatum</i>			0.25	+	
<i>Sehima nervosum</i>			1.5	20	
<i>Sorghum stipoideum</i>			0.5	+	
<i>Terminalia</i> sp			3.0	2	
<i>Wrightia saligna</i>			5.0	+	
<i>Ziziphus quadrilocularis</i>			4.0	+	



Photo 97: View of the vegetation at Q049



Photo 98: View of the ground surface at Q049

Survey Area:		Material Investigation Area 13		Quadrat:	Q050
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 496267	Northing mN: 8287985	GDA 1994 Zone 52	
Landscape:		Hill - ridgeline			
Surface:		Outcropping			
Rock Type:		Sandstone			
Soil:		Black silt			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	4-6	25	Low woodland	<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> , <i>Bauhinia cunninghamii</i> , <i>Exocarpos latifolius</i> , <i>Atalaya hemiglauca</i> , <i>Celtis philippensis</i> , <i>Ehretia saligna</i> var <i>saligna</i>	
	0-1.5	45	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Sehima nervosum</i> , <i>Operculina aequisejala</i> , <i>Indigofera trita</i> subsp <i>trita</i> , <i>Passiflora foetida</i> var <i>hispida</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.5	+	Weed
<i>Atalaya hemiglauca</i>			5.0	10	
<i>Bauhinia cunninghamii</i>			5.0	2	
<i>Buchnera ramosissima</i>			0.25	+	
<i>Celtis philippensis</i>			5.0	10	
<i>Cleome viscosa</i>			1.0	+	
<i>Denhamia obscura</i>			1.0	+	
<i>Diospyros rugosula</i>			4	+	
<i>Ehretia saligna</i> var <i>saligna</i>			3.0	2	
<i>Evolvulus alsinoides</i> var <i>decumbens</i>			0.1	+	
<i>Exocarpos latifolius</i>			5.0	2	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			6.0	2	
<i>Indigofera trita</i>			0.25	1	
<i>Indigofera trita</i> subsp <i>trita</i>			0.1	2	
<i>Marsdenia geminata</i>			0.1	+	
<i>Operculina aequisejala</i>			0.75	2	
<i>Owenia vernicosa</i>			3.0	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.1	2	
<i>Sehima nervosum</i>			1.5	10	
<i>Sorghum ?stipoideum</i>			1.0	30	



Photo 99: View of the vegetation at Q050



Photo 100: View of the ground surface at Q050

Survey Area:		Material Investigation Area 13		Quadrat:	Q051
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495967	Northing mN: 8287996	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Cracking clay			
Rock Type:		N/A			
Soil:		Black cracking clay			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-6	20	Woodland	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> , <i>Vachellia valida</i>	
	0-1	90	Tussock grassland	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Oryza australiensis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cyperaceae</i> sp			0.5	1	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.0	10	
<i>Eucalyptus microtheca</i>			6.0	10	
<i>Excoecaria parvifolia</i>			5.0	5	
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Oryza australiensis</i>			2.5	80	
Poaceae sp			0.5	+	
<i>Vachellia valida</i>			5.0	7	



Photo 101: View of the vegetation at Q051



Photo 102: View of the ground surface at Q051

Survey Area:		Material Investigation Area 13		Quadrat:	Q052
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495945	Northing mN: 8288571	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Cracking clay			
Rock Type:		N/A			
Soil:		Black cracking clay			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-6	5	Very open woodland	<i>Eucalyptus microtheca</i>	
	0-1	95	Tussock grassland	<i>Dichanthium sericeum</i> subsp <i>polystachyum</i> , <i>Chrysopogon</i> sp, <i>Oryza australiensis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Chrysopogon</i> sp			0.5	5	
<i>Cyperaceae</i> sp			0.5	1	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.0	10	
<i>Eucalyptus microtheca</i>			6.0	5	
<i>Excoecaria parvifolia</i>			6.0	1	
<i>Oryza australiensis</i>			2.5	80	
<i>Oryza rufipogon</i>			0.5	2	



Photo 103: View of the vegetation at Q052



Photo 104: View of the ground surface at Q052

Survey Area:		Material Investigation Area 13		Quadrat:	Q053
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495945	Northing mN: 8288571	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.75-7	40	Low woodland	<i>Melaleuca minutifolia</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Gardenia pyriformis</i> subsp <i>pyriformis</i>	
	0-0.75	85	Tussock grassland	<i>Themeda triandra</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Ludwigia perennis</i> , <i>Rhynchospora affinis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cochlospermum fraseri</i>			5.0	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			7.0	2	
<i>Eragrostis tenellula</i>			0.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	2	Range extension
<i>Excoecaria parvifolia</i>			3.0	1	
<i>Fimbristylis microcarya</i>			1.0	1	
<i>Fimbristylis sphaerocephala</i>			0.25	1	
<i>Gardenia pyriformis</i> subsp <i>pyriformis</i>			7.0	3	
<i>Grewia retusifolia</i>			1.5	+	
<i>Hygrophila angustifolia</i>			0.25	1	
<i>Ludwigia perennis</i>			0.5	3	
<i>Melaleuca minutifolia</i>			7.0	35	
<i>Poaceae</i> sp			0.5	+	
<i>Rhynchospora affinis</i>			0.5	2	
<i>Scleria rugosa</i>			0.25	+	
<i>Themeda triandra</i>			0.75	80	



Photo 105: View of the vegetation at Q053



Photo 106: View of the ground surface at Q053

Survey Area:		Material Investigation Area 13		Quadrat:	Q054
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 495581	Northing mN: 8288969	GDA 1994 Zone 52	
Landscape:		Hill – ridgeline			
Surface:		Alluvial soil			
Rock Type:		Silt stone			
Soil:		Red silt stone			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-6	25	Woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia confertiflora</i> , <i>Erythrophleum chlorostachys</i> , <i>Grevillea heliosperma</i> , <i>Petalostigma quadriloculare</i>	
	0-1	60	Tussock grassland	<i>Triodia bitextura</i> , <i>Themeda triandra</i> , <i>Schizachyrium fragile</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.25	+	Weed
<i>Buchanania oblongifolia</i>			0.5	+	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Calytrix achaeta</i>			1.0	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Corymbia confertiflora</i>			4.0	2	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			3.0	+	
<i>Cymbopogon bombycinus</i>			1.0	1	
<i>Cymbopogon bombycinus</i>			1.0	+	
<i>Desmodium</i> sp			0.25	1	
<i>Eriachne ? mucronata</i>			0.25	+	
<i>Eriachne ciliata</i>			0.25	+	
<i>Erythrophleum chlorostachys</i>			6.0	3	
<i>Eucalyptus tectifica</i>			6.0	5	
<i>Fimbristylis</i> sp			0.1	+	
<i>Grevillea heliosperma</i>			4.0	5	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			0.5	+	
<i>Heliotropium tachyglossoides</i>			0.25	+	
<i>Petalostigma quadriloculare</i>			1.0	7	
<i>Schizachyrium fragile</i>			0.25	2	
<i>Sorghum stipoideum</i>			2.0	3	
<i>Spermacoce constricta</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Tephrosia ? polyzyga</i>			0.5	+	
<i>Terminalia canescens</i>			2.0	+	
<i>Themeda triandra</i>			1.5	5	
<i>Triodia bitextura</i>			0.4	40	



Photo 107: View of the vegetation at Q054



Photo 108: View of the ground surface at Q054

Survey Area:		Material Investigation Area 13		Quadrat:	Q055
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 494894	Northing mN: 8288637	GDA 1994 Zone 52	
Landscape:		Hill - ridgeline			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey/brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.5-8	15	Open woodland	<i>Melaleuca ?viridiflora</i> , <i>Eucalyptus tectifica</i>	
	0-0.5	100	Grassland/ sedgeland	<i>Fimbristylis tetragona</i> , <i>Cyperaceae sp.</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Fimbristylis ?cardiocarpa</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			8.0	2	
<i>Blumea diffusa</i>			0.05	+	
<i>Buchnera ramosissima</i>			0.2	+	
<i>Cyperaceae sp</i>			0.25	10	
<i>Drosera ordensis</i>			0.05	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	10	Range extension
<i>Fimbristylis ?cardiocarpa</i>			0.25	5	
<i>Fimbristylis tetragona</i>			0.5	90	
<i>Ludwigia perennis</i>			1.0	+	
<i>Melaleuca ?viridiflora</i>			6.0	15	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	+	
<i>Rhynchospora affinis</i>			0.4	1	
<i>Rotala diandra</i>			0.05	1	
<i>Sorghum ?stipoideum</i>			1.5	1	



Photo 109: View of the vegetation at Q055



Photo 110: View of the ground surface at Q055

Survey Area:		Material Investigation Area 13		Quadrat:	Q056
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 494572	Northing mN: 8288593	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-12	35	Woodland	<i>Eucalyptus tectifica</i> , <i>Acacia tumida</i> var <i>tumida</i> , <i>Excoecaria parvifolia</i>	
	0-1.5	50	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Aristida holathera</i> var <i>holathera</i> , <i>Chrysopogon</i> sp, <i>Spermacoce gibba</i> , <i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			10.0	25	
<i>Abildgaardia schoenoides</i>			0.5	1	
<i>Acacia platycarpa</i>			1.0	+	
<i>Acacia tumida</i> var <i>tumida</i>			6.0	5	
<i>Aristida holathera</i> var <i>holathera</i>			0.75	3	
<i>Blumea diffusa</i>			0.1	+	
<i>Blumea tenella</i>			0.25	+	
<i>Buchnera ramosissima</i>			1.0	+	
<i>Calandrinia quadrivalvis</i>			0.05	+	
<i>Chrysopogon</i> sp			0.25	3	
<i>Diospyros rugosula</i>			6.0	+	
<i>Dolichandrone heterophylla</i>			1.5	+	
<i>Drosera ordensis</i>			0.05	1	
<i>Ectrosia leporina</i>			0.5	+	
<i>Eragrostis</i> sp			1.0	+	
<i>Excoecaria parvifolia</i>			12.0	5	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			6.0	+	
<i>Jacksonia forrestii</i>			1.0	+	
<i>Melaleuca</i> sp			2.0	+	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Sorghum ?stipoideum</i>			1.5	40	
<i>Spermacoce gibba</i>			1.0	4	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Stylidium lobuliflorum</i>			0.25	+	
<i>Triodia bitextura</i>			0.5	2	
<i>Waltheria indica</i>			1.5	+	
<i>Wrightia saligna</i>			2.0	+	



Photo 111: View of the vegetation at Q056



Photo 112: View of the ground surface at Q056

Survey Area:		Material Investigation Area 13		Quadrat:	Q057
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 495034	Northing mN: 8288018	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-10	40	Woodland	<i>Acacia tumida</i> var <i>tumida</i> , <i>Eucalyptus tectifera</i> , <i>Excoecaria parvifolia</i>	
	0.5-1	35	Tussock grassland	<i>Schizachyrium fragile</i> , <i>Setaria apiculata</i> , <i>Sorghum ?stipoideum</i> , <i>Nelsonia campestris</i>	
Species			Height (m)	Cover (%)	Comments
<i>Echinochloa colona</i>			0.25	+	Weed
<i>Eucalyptus tectifera</i>			10.0	10	
<i>Abutilon hannii</i>			1.5	+	
<i>Acacia tumida</i> var <i>tumida</i>			8.0	25	
<i>Adansonia gregorii</i>			8	+	
<i>Bacopa floribunda</i>			0.2	+	
<i>Blumea diffusa</i>			0.5	+	
<i>Calandrinia quadrivalvis</i>			0.05	+	
<i>Crotalaria crispata</i>			0.4	+	
<i>Dolichandrone heterophylla</i>			3.0	+	
<i>Ectrosia leporina</i>			0.5	2	
<i>Eragrostis cumingii</i>			0.5	1	
<i>Excoecaria parvifolia</i>			10.0	5	
<i>Ficus aculeata</i> var <i>indecora</i>			1.5	+	
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.5	+	
<i>Grewia retusifolia</i>			1.5	+	
<i>Hygrophila angustifolia</i>			0.25	+	
<i>Jacksonia forrestii</i>			4.0	+	
<i>Ludwigia perennis</i>			1.0	1	
<i>Melaleuca ?viridiflora</i>			2.0	+	
<i>Melaleuca</i> sp			2.0	+	
<i>Nelsonia campestris</i>			0.1	10	
<i>Rotala diandra</i>			0.11	+	
<i>Schizachyrium fragile</i>			0.4	5	
<i>Setaria apiculata</i>			0.5	20	
<i>Sorghum ?stipoideum</i>			1.5	20	
<i>Stemodia lathraia</i>			0.3	+	
<i>Verticordia verticillata</i>			5.0	+	
<i>Waltheria indica</i>			1.0	+	



Photo 113: View of the vegetation at Q057



Photo 114: View of the ground surface at Q057

Survey Area:		Material Investigation Area 13		Quadrat:	Q058
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 495302	Northing mN: 8287366	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – one weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	6-8	30	Woodland	<i>Eucalyptus pruinosa</i> subsp <i>ternata</i> , <i>Gardenia pyriformis</i> subsp <i>pyriformis</i>	
	0-0.5	35	Tussock grassland	<i>Eragrostis tenellula</i> , <i>Panicum decompositum</i> , <i>Scleria rugosa</i> , <i>Themeda triandra</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.25	+	Weed
<i>Bacopa floribunda</i>			0.2	1	
<i>Cathormion umbellatum</i> subsp <i>moniliforme</i>			6.0	+	
<i>Eragrostis cumingii</i>			0.25	+	
<i>Eragrostis tenellula</i>			0.5	5	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	+	Range extension
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			6.0-8.0	15	
<i>Gardenia pyriformis</i> subsp <i>pyriformis</i>			5.0-8.0	15	
<i>Grewia retusifolia</i>			1.0	+	
<i>Panicum decompositum</i>			0.4	10	
<i>Scleria rugosa</i>			0.2	10	
<i>Sorghum stipoideum</i>			0.5	2	
<i>Terminalia platyptera</i>			2.0	+	
<i>Themeda triandra</i>			0.75	10	



Photo 115: View of the vegetation at Q058



Photo 116: View of the ground surface at Q058

Survey Area:		Material Investigation Area 13		Quadrat:	Q059
Method:		50x50m quadrat		Date:	05/07/2009
Quadrat Centre:		Easting mE: 496042	Northing mN: 8286680	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Cracking clay			
Rock Type:		N/A			
Soil:		Grey cracking clay			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.5-6	10	Open woodland	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> , <i>Bauhinia cunninghamii</i>	
	0-0.5	95	Tussock grassland	<i>Chrysopogon sp</i> , <i>Dichanthium sericeum</i> subsp <i>polystachyum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Chrysopogon sp</i>			0.4	70	
<i>Bauhinia cunninghamii</i>			5.0	3	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			0.5	20	
<i>Eucalyptus microtheca</i>			5.0	5	
<i>Excoecaria parvifolia</i>			5.0	3	
<i>Fimbristylis microcarya</i>			0.5	2	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			2.0	+	
<i>Hygrophila angustifolia</i>			0.4	+	
<i>Iseilema fragile</i>			0.75	+	
<i>Ludwigia perennis</i>			1.5	3	
<i>Vachellia valida</i>			6.0	3	



Photo 117: View of the vegetation at Q059



Photo 118: View of the ground surface at Q059

Survey Area:		Material Investigation Area 13		Quadrat:	Q060
Method:		50x50m quadrat		Date:	07/07/2009
Quadrat Centre:		Easting mE: 494563	Northing mN: 8285175	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light brown sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-8	10	Open woodland	<i>Eucalyptus microtheca</i>	
Vegetation Structure:	0-1.5	65	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Rhynchospora exserta</i> , <i>Fimbristylis microcarya</i> , <i>Sorghum stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia tumida</i> var <i>tumida</i>			3.0	+	
<i>Bacopa floribunda</i>			0.3	1	
<i>Blumea diffusa</i>			0.05	1	
<i>Buchanania oblongifolia</i>			3.0	+	
<i>Cyperus holoschoenus</i>			0.5	+	
<i>Dolichandrone heterophylla</i>			1.0	+	
<i>Eragrostis cumingii</i>			0.5	20	
<i>Eucalyptus microtheca</i>			8.0	10	
<i>Excoecaria parvifolia</i>			2.0	+	
<i>Fimbristylis microcarya</i>			0.3	3	
<i>Grewia retusifolia</i>			0.5	+	
<i>Ludwigia perennis</i>			1.0	+	
<i>Rhynchospora exserta</i>			0.4	40	
<i>Setaria apiculata</i>			0.25	+	
<i>Sorghum stipoideum</i>			1.0	3	
<i>Stemodia lythrifolia</i>			0.25	1	



Photo 119: View of the vegetation at Q060



Photo 120: View of the ground surface at Q060

Survey Area:		Material Investigation Area 13		Quadrat:	Q061
Method:		50x50m quadrat		Date:	07/07/2009
Quadrat Centre:		Easting mE: 495088	Northing mN: 8285463	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	8-12	5	Very open woodland	<i>Eucalyptus microtheca</i>	
	0-1	100	Sedgeland	<i>Fimbristylis microcarya</i> , <i>Rhynchospora affinis</i> , <i>Scleria rugosa</i> , <i>Eriachne glauca</i> var <i>barbinodis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Corymbia ?opaca</i>			7.0	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	2	Range extension
<i>Eucalyptus microtheca</i>			12.0	5	
<i>Fimbristylis microcarya</i>			0.5	20	
<i>Grevillea striata</i>			2.0	+	
<i>Ludwigia perennis</i>			1.0	1	
<i>Melaleuca ?viridiflora</i>			7.0	1	
<i>Rhynchospora affinis</i>			0.4	80	
<i>Scleria rugosa</i>			0.25	10	
<i>Sorghum ?stipoideum</i>			2.0	+	
<i>Themeda triandra</i>			0.5	3	



Photo 121: View of the vegetation at Q061



Photo 122: View of the ground surface at Q061

Survey Area:		Material Investigation Area 13		Quadrat:	Q062
Method:		50x50m quadrat		Date:	07/07/2009
Quadrat Centre:		Easting mE: 495313	Northing mN: 8285751	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red silty sand			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.5-10	35	Woodland	<i>Acacia tumida</i> var <i>tumida</i> , <i>Eucalyptus microtheca</i>	
Vegetation Structure:	0-0.5	65	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Schizachyrium fragile</i> , <i>Aristida inaequiglumis</i> , <i>Setaria apiculata</i> , <i>Sorghum stipoideum</i> , <i>Stemodia tephropelina</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia tumida</i> var <i>tumida</i>			6.0	30	
<i>Aristida inaequiglumis</i>			1.5	2	
<i>Bauhinia cunninghamii</i>			4.0	+	
<i>Blumea diffusa</i>			0.5	1	
<i>Calytrix exstipulata</i>			3.0	+	
<i>Carissa lanceolata</i>			2.0	+	
<i>Cochlospermum fraseri</i>			0.5	+	
<i>Corymbia confertiflora</i>			6.0	4	
<i>Diospyros rugosula</i>			5.0	+	
<i>Dolichandrone heterophylla</i>			2.0	+	
<i>Ectrosia leporina</i>			0.3	+	
<i>Eragrostis cumingii</i>			0.3	30	
<i>Eucalyptus microtheca</i>			10.0	15	
<i>Excoecaria parvifolia</i>			6.0	1	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Gardenia pyriformis</i> subsp <i>pyriformis</i>			6.0	+	
<i>Grevillea striata</i>			4.0	1	
<i>Grewia retusifolia</i>			1.0	+	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			8.0	1	
<i>Hibiscus austrinus</i> var <i>austrinus</i>			1.0	+	
<i>Hibiscus meraukensis</i>			0.5	+	
<i>Hygrophila angustifolia</i>			0.5	+	
<i>Ludwigia perennis</i>			0.75	+	
<i>Melaleuca</i> sp			2.0	+	
<i>Nelsonia campestris</i>			0.2	1	
<i>Panicum decompositum</i>			0.5	+	
<i>Pterocaulon sphacelatum</i>			0.1	+	
<i>Schizachyrium fragile</i>			0.4	30	
<i>Scleria rugosa</i>			0.25	+	
<i>Setaria apiculata</i>			0.4	2	
<i>Sorghum stipoideum</i>			1.0	2	
<i>Stemodia tephropelina</i>			0.75	2	
<i>Tinospora smilacina</i>			1.0	+	
<i>Waltheria indica</i>			1.0	3	



Photo 123: View of the vegetation at Q062



Photo 124: View of the ground surface at Q062

Survey Area:		Material Investigation Area 13		Quadrat:	Q063
Method:		50x50m quadrat		Date:	07/07/2009
Quadrat Centre:		Easting mE: 495088	Northing mN: 8285850	GDA 1994 Zone 52	
Landscape:		Watercourse area – moderate creek 6m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red sand			
Fire Age:		>3 years			
Condition:		Excellent – two weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-12	20	Woodland	<i>Eucalyptus tectifica</i> , <i>Eucalyptus camaldulensis</i> var <i>obtusa</i> , <i>Acacia tumida</i> var <i>tumida</i> , <i>Pandanus</i> sp	
	0-1	15	Tussock grassland	<i>Panicum decompositum</i> , <i>Poaceae</i> sp, <i>Nelsonia campestris</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.25	1	Weed
<i>Trianthema portulacastrum</i>			0.05	+	Weed
<i>Eucalyptus tectifica</i>			10.0	5	
<i>Acacia tumida</i> var <i>tumida</i>			4.0	5	
<i>Buchanania oblongifolia</i>			0.5	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ?opaca</i>			12.0	2	
<i>Ectrosia leporina</i>			0.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	1	Range extension
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			10.0	10	
<i>Fimbristylis microcarya</i>			0.5	+	
<i>Fuirena ciliaris</i>			0.1	+	
<i>Nelsonia campestris</i>			0.1	3	
<i>Pandanus</i> sp			6.0	5	
<i>Panicum decompositum</i>			1.0	5	
<i>Planchonia careya</i>			4.0	+	
<i>Poaceae</i> sp			0.2	10	
<i>Setaria apiculata</i>			0.25	+	
<i>Tinospora smilacina</i>			1.0	+	



Photo 125: View of the vegetation at Q063



Photo 126: View of the ground surface at Q063

Survey Area:		Material Investigation Area 13		Quadrat:	Q064
Method:		50x50m quadrat		Date:	07/07/2009
Quadrat Centre:		Easting mE: 494176	Northing mN: 8285651	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-8	50	Woodland	<i>Corymbia ?opaca, Corymbia greeniana, Eucalyptus microtheca, Acacia neurocarpa, Acacia tumida var tumida</i>	
	0-1.5	70	Tussock grassland	<i>Eragrostis cumingii, Schizachyrium fragile, Sorghum stipoideum, Eragrostis tenellula</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Acacia neurocarpa</i>		4.0	15		
<i>Acacia tumida var tumida</i>		6.0	20		
<i>Adansonia gregorii</i>		20.0	+		
<i>Blumea diffusa</i>		0.75	+		
<i>Buchnera ramosissima</i>		0.75	+		
<i>Chrysopogon sp</i>		1.5	+		
<i>Corymbia ?opaca</i>		6.0	5		
<i>Corymbia confertiflora</i>		12.0	1		
<i>Corymbia greeniana</i>		7.0	2		
<i>Crotalaria crispata</i>		0.2	+		
<i>Diospyros rugosula</i>		0.6	+		
<i>Eragrostis cumingii</i>		0.5	10		
<i>Eragrostis tenellula</i>		1.0	2		
<i>Erythrophleum chlorostachys</i>		0.6	+		
<i>Eucalyptus microtheca</i>		8.0	15		
<i>Eucalyptus pruinosa subsp ternata</i>		3.0	+		
<i>Ficus aculeata var indecora</i>		3.0	1		
<i>Goodenia sepalosa var sepalosa</i>		0.2	+		
<i>Grewia retusifolia</i>		0.5	+		
<i>Melaleuca sp</i>		2.0	+		
<i>Pandanus sp</i>		6.0	2		
<i>Pterocaulon sphacelatum</i>		0.5	+		
<i>Schizachyrium fragile</i>		0.4	20		
<i>Setaria apiculata</i>		0.5	+		
<i>Sorghum stipoideum</i>		1.0	30		
<i>Spermacoce constricta</i>		0.2	+		
<i>Stemodia lythrifolia</i>		0.4	1		



Photo 127: View of the vegetation at Q064



Photo 128: View of the ground surface at Q064

Survey Area:		Material Investigation Area 13		Quadrat:	Q065
Method:		50x50m quadrat		Date:	08/07/2009
Quadrat Centre:		Easting mE: 495721	Northing mN: 8286348	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Yellow sandy soil			
Fire Age:		>3 years			
Condition:		Good - one weeds recorded, moderate grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-8	30	Woodland	<i>Eucalyptus microtheca</i> , <i>Corymbia confertiflora</i> , <i>Grevillea striata</i>	
	0-1.5	50	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Panicum decompositum</i> , <i>Schizachyrium fragile</i> , <i>Scleria rugosa</i> , <i>Sorghum stipoideum</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.2	+	Weed
<i>Acacia neurocarpa</i>			1.5	+	
<i>Aristida holathera</i> var <i>holathera</i>			1.5	1	
<i>Bacopa floribunda</i>			0.2	+	
<i>Bauhinia cunninghamii</i>			4.0	+	
<i>Carissa lanceolata</i>			1.0	2	
<i>Corymbia confertiflora</i>			6.0	2	
<i>Crotalaria crispata</i>			0.25	+	
<i>Dolichandrone heterophylla</i>			3.0	+	
<i>Eragrostis cumingii</i>			0.5	10	
<i>Eragrostis tenellula</i>			0.25	+	
<i>Eragrostis tenellula</i>			0.4	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	+	Range extension
<i>Eucalyptus microtheca</i>			8.0	15	
<i>Fimbristylis microcarya</i>			0.2	3	
<i>Grevillea striata</i>			8.0	15	
<i>Grewia retusifolia</i>			1.5	+	
<i>Ludwigia perennis</i>			0.5	+	
<i>Melaleuca minutifolia</i>			3.0	+	
<i>Nelsonia campestris</i>			0.05	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.75	+	
<i>Panicum decompositum</i>			0.5	5	
<i>Rhynchospora exserta</i>			0.25	+	
<i>Schizachyrium fragile</i>			0.5	10	
<i>Scleria rugosa</i>			0.25	10	
<i>Sorghum stipoideum</i>			1.5	5	
<i>Themeda triandra</i>			1.0	15	



Photo 129: View of the vegetation at Q065



Photo 130: View of the ground surface at Q065

Survey Area:		Material Investigation Area 13		Quadrat:	Q066
Method:		100x100m quadrat		Date:	08/07/2009
Quadrat Centre:		Easting mE: 495184	Northing mN: 8286757	GDA 1994 Zone 52	
Landscape:		Alluvial plain – soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.25-12	30	Woodland	<i>Melaleuca argentea</i> , <i>Melaleuca viridiflora</i> , <i>Corymbia polycarpa</i>	
	0-0.25	30	Tussock grassland	<i>Oryza rufipogon</i> , <i>Cyperus pygmaeus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Centrolepis exserta</i>			0.05	+	
<i>Corymbia polycarpa</i>			12.0	15	
<i>Cyperus holoschoenus</i>			1.5	1	
<i>Cyperus pygmaeus</i>			0.05	10	
<i>Eragrostis cumingii</i>			0.3	1	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.5	+	Range extension
<i>Goodenia bicolor</i>			0.3	+	
<i>Heliotropium</i> sp			0.05	+	
<i>Lophostemon grandiflorus</i> subsp <i>riparius</i>			12.0	+	
<i>Melaleuca argentea</i>			7.0	15	
<i>Melaleuca viridiflora</i>			5.0	2	
<i>Oryza rufipogon</i>			0.25	20	
<i>Rotala diandra</i>			0.1	+	
<i>Rubiaceae</i> sp			0.01	+	



Photo 131: View of the vegetation at Q066



Photo 132: View of the ground surface at Q066

Survey Area:		Material Investigation Area 13		Quadrat:	Q067
Method:		50x50m quadrat		Date:	08/07/2009
Quadrat Centre:		Easting mE: 495077	Northing mN: 8286768	GDA 1994 Zone 52	
Landscape:		Alluvial plain – soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light grey/pink sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	5-7	50	Woodland	<i>Melaleuca argentea, Corymbia polycarpa</i>	
	0-0.4	35	Tussock grassland	<i>Poaceae sp, Centrolepis exserta</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida holathera</i> var <i>holathera</i>			0.5	+	
<i>Centrolepis exserta</i>			0.05	5	
<i>Corymbia polycarpa</i>			7.0	10	
<i>Drosera ordensis</i>			0.05	+	
<i>Eragrostis sp</i>			0.5	+	
<i>Fimbristylis microcarya</i>			0.25	+	
<i>Fimbristylis sp</i>			0.25	1	
<i>Hygrophila angustifolia</i>			0.25	+	
<i>Ludwigia perennis</i>			0.75	+	
<i>Melaleuca argentea</i>			6.0	40	
<i>Nelsonia campestris</i>			0.05	+	
<i>Planchonia careya</i>			4.0	+	
Poaceae sp			0.4	30	
<i>Rhynchospora affinis</i>			0.25	+	
<i>Xyris complanata</i>			0.25	+	



Photo 133: View of the vegetation at Q067



Photo 134: View of the ground surface at Q067

Survey Area:		Material Investigation Area 13		Quadrat:	Q068
Method:		50x50m quadrat		Date:	08/07/2009
Quadrat Centre:		Easting mE: 494316	Northing mN: 8286127	GDA 1994 Zone 52	
Landscape:		Open woodland			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Pale brown silty sand			
Fire Age:		>3 years			
Condition:		Good – one weed species recorded, some grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-14	25	Woodland	<i>Eucalyptus microtheca</i> , <i>Excoecaria parvifolia</i> , <i>Acacia tumida</i> var <i>tumida</i>	
	0-1.5	70	Tussock grassland	<i>Enneapogon polyphyllus</i> , <i>Schizachyrium fragile</i> , <i>Sorghum ?stipoideum</i> , <i>Fimbristylis sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.1	+	Weed
<i>Acacia tumida</i> var <i>tumida</i>			4.0	3	
<i>Adansonia gregorii</i>			10.0	+	
<i>Blumea diffusa</i>			0.05	+	
<i>Buchanania oblongifolia</i>			5.0	+	
<i>Crotalaria crispata</i>			0.05	+	
<i>Dolichandrone heterophylla</i>			4.0	+	
<i>Enneapogon polyphyllus</i>			0.5	10	
<i>Eragrostis cumingii</i>			0.5	2	
<i>Erythrophleum chlorostachys</i>			10.0	+	
<i>Eucalyptus microtheca</i>			14.0	10	
<i>Excoecaria parvifolia</i>			8.0	15	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	1	
<i>Fimbristylis sp</i>			0.3	20	
<i>Grewia retusifolia</i>			1.0	+	
<i>Ludwigia perennis</i>			0.5	+	
<i>Poaceae sp</i>			1.5	+	
<i>Pterocaulon sphacelatum</i>			1.0	+	
<i>Rhynchospora affinis</i>			0.1	+	
<i>Schizachyrium fragile</i>			0.5	30	
<i>Sorghum ?stipoideum</i>			1.5	10	
<i>Stemodia lathraia</i>			0.3	+	
<i>Stemodia lythrifolia</i>			0.05	+	



Photo 135: View of the vegetation at Q068



Photo 136: View of the ground surface at Q068

Survey Area:		Material Investigation Area 13		Quadrat:	Q069
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 496064	Northing mN: 8286414	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Cracking clay			
Rock Type:		N/A			
Soil:		Black cracking clay			
Fire Age:		>3 years			
Condition:		Good – no weeds recorded, low level grazing			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.7-10	10	Woodland	<i>Bauhinia cunninghamii</i>	
	0-0.7	40	Tussock grassland	<i>Fimbristylis microcarya</i> , <i>Chrysopogon sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abelmoschus ficulneus</i>			0.8	+	
<i>Aristida latifolia</i>			1.0	+	
<i>Atalaya hemiglauc</i>			5.0	+	
<i>Bauhinia cunninghamii</i>			10	8	
<i>Carissa lanceolata</i>			1.5	+	
<i>Chrysopogon sp</i>			0.5	30	
<i>Cleome viscosa</i>			1.0	+	
<i>Cynanchum floribundum</i>			0.05	+	
<i>Ehretia saligna var saligna</i>			0.6	+	
<i>Elytrophorus spicatus</i>			0.6	+	
<i>Eucalyptus microtheca</i>			10.0	1	
<i>Euphorbia sp B Kimberley Flora (B.J. Carter 629)</i>			0.5	+	
<i>Excoecaria parvifolia</i>			5.0	1	
<i>Fimbristylis microcarya</i>			0.7	10	
<i>Hibiscus austrinus var austrinus</i>			1.2	+	
<i>Hygrophila angustifolia</i>			0.5	+	
<i>Iseilema fragile</i>			0.6	+	
<i>Ludwigia perennis</i>			0.7	1	
<i>Microstachys chamaelea</i>			0.5	+	
<i>Nesaea arnhemica</i>			0.3	+	
<i>Oryza australiensis</i>			1.0	+	
<i>Panicum decompositum</i>			0.7	+	
<i>Vachellia valida</i>			0.5	+	



Photo 137: View of the vegetation at Q069



Photo 138: View of the ground surface at Q069

Survey Area:		Material Investigation Area 13		Quadrat:	Q070
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495935	Northing mN: 8285950	GDA 1994 Zone 52	
Landscape:		Watercourse area – Minor creek 2m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silt			
Fire Age:		>3 years			
Condition:		Excellent – two weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.8-12	45	Woodland	<i>Eucalyptus camaldulensis</i> var <i>obtusa</i> , <i>Eucalyptus microtheca</i> , <i>Acacia holosericea</i> , <i>Adansonia gregorii</i>	
	0-0.8	30	Tussock grassland	<i>Panicum decompositum</i> , <i>Eragrostis fallax</i> , <i>Heteropogon contortus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Sida cordifolia</i>			1.0	+	Weed
<i>Sida rhombifolia</i>			0.6	1	Weed
<i>Acacia holosericea</i>			8.0	3	
<i>Acacia plectocarpa</i> subsp <i>plectocarpa</i>			8.0	1	
<i>Adansonia gregorii</i>			10.0	3	
<i>Atalaya hemiglauc</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			5.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			8.0	+	
<i>Calandrinia quadrivalvis</i> sens <i>lat</i>			0.1	+	
<i>Carissa lanceolata</i>			2.0	1	
<i>Cathormium umbellatum</i>			0.3	+	
<i>Cayratia trifolia</i>			2.0	+	
<i>Chrysopogon</i> sp			0.6	1	
<i>Dichanthium sericeum</i> subsp <i>polystachyum</i>			1.3	+	
<i>Dichanthium sericeum</i> subsp <i>sericeum</i>			0.7	1	
<i>Dolichandrone heterophylla</i>			2.0	+	
<i>Elytrophorus spicatus</i>			0.6	+	
<i>Eragrostis fallax</i>			1.0	2	
<i>Eragrostis tenellula</i>			0.3	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	+	Range extension
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			12.0	15	
<i>Eucalyptus microtheca</i>			10.0	30	
<i>Ficus aculeata</i> var <i>indecora</i>			3.0	+	
<i>Fimbristylis littoralis</i>			0.2	+	
<i>Fimbristylis microcarya</i>			0.3	+	
<i>Fimbristylis</i> sp			0.3	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			5.0	1	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			4.0	+	
<i>Grewia retusifolia</i>			0.6	+	

<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>	3.0	+	
<i>Heteropogon contortus</i>	0.8	5	
<i>Hygrophila angustifolia</i>	0.5	1	
<i>lotasperma australiense</i>	0.3	+	
<i>Lophostemon grandiflorus</i> subsp <i>riparius</i>	4.0	1	
<i>Ludwigia perennis</i>	0.6	+	
<i>Nelsonia campestris</i>	0.2	1	
<i>Panicum decompositum</i>	0.8	25	
<i>Passiflora foetida</i> var <i>hispida</i>	6.0	+	
<i>Planchonia careya</i>	3.0	+	
<i>Poaceae</i> sp	0.1	+	
<i>Pterocaulon sphacelatum</i>	1.0	+	
<i>Schizachyrium fragile</i>	0.4	+	
<i>Setaria apiculata</i>	0.4	+	
<i>Sorghum ?stipoideum</i>	1.2	+	
<i>Timonius timon</i>	3.0	+	
<i>Tinospora smilacina</i>	8.0	+	



Photo 139: View of the vegetation at Q070



Photo 140: View of the ground surface at Q070

Survey Area:		Material Investigation Area 13		Quadrat:	Q071
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495989	Northing mN: 8286315	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty clay			
Fire Age:		>3 years			
Condition:		Good – one weed recorded, heavily grazed			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-5	10	Very open woodland	<i>Bauhinia cunninghamii</i>	
	1-2	5	Scattered shrubs	<i>Carissa lanceolata</i>	
	0-1	50	Tussock grassland	<i>Dichanthium sericeum</i> subsp <i>sericeum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cynodon dactylon</i>			0.5	+	Weed
<i>Atalaya hemiglauca</i>			5	+	
<i>Bauhinia cunninghamii</i>			5	10	
<i>Capparis lasiantha</i>			2	+	
<i>Carissa lanceolata</i>			1.5	5	
<i>Dichanthium sericeum</i> subsp <i>sericeum</i>			1.0	50	
<i>Eucalyptus microtheca</i>			5.0	+	
<i>Streptoglossa odora</i>			0.5	1	
<i>Terminalia platyphylla</i>			5.5	+	



Photo 141: View of the vegetation at Q071



Photo 142: View of the ground surface at Q071

Survey Area:		Material Investigation Area 13		Quadrat:	Q072
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495259	Northing mN: 8286591	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.3-12	15	Open woodland	<i>Melaleuca argentea</i> , <i>Lophostemon grandiflorus</i> subsp <i>riparius</i> , <i>Eucalyptus camaldulensis</i> var <i>obtusa</i>	
	0-0.3	80	Tussock grassland	Poaceae sp	
Species			Height (m)	Cover (%)	Comments
<i>Acacia holosericea</i>			3.0	+	
<i>Bauhinia cunninghamii</i>			5.0	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			10.0	+	
<i>Eragrostis fallax</i>			0.5	+	
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			12.0	3	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Hakea</i> sp			2.0	+	
<i>Hygrophila angustifolia</i>			0.2	+	
<i>Lophostemon grandiflorus</i> subsp <i>riparius</i>			12.0	5	
<i>Melaleuca argentea</i>			8.0	10	
Poaceae sp			0.3	80	



Photo 143: View of the vegetation at Q072



Photo 144: View of the ground surface at Q072

Survey Area:		Material Investigation Area 13		Quadrat:	Q073
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 493479	Northing mN: 8286314	GDA 1994 Zone 52	
Landscape:		Hillside - colluvial foot slope			
Surface:		Colluvial scree			
Rock Type:		N/A			
Soil:		Brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2.5-8	10	Open woodland	<i>Corymbia confertiflora</i> , <i>Eucalyptus microtheca</i>	
	0.5-2.5	10	Open shrubland	<i>Petalostigma pubescens</i> , <i>Grevillea heliosperma</i>	
	0-0.5	30	Hummock grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Calytrix achaeta</i>			2.0	1	
<i>Cheilanthes brownii</i>			0.2	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia confertiflora</i>			7.0	3	
<i>Eriachne ciliata</i>			0.2	1	
<i>Erythrophleum chlorostachys</i>			6.0	+	
<i>Eucalyptus microtheca</i>			8.0	8	
<i>Fimbristylis schultzei</i>			0.2	+	
<i>Grevillea heliosperma</i>			2.5	2	
<i>Maytenus ferdinandi</i>			2.0	+	
<i>Mitrasacme connata</i>			0.05	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	+	
<i>Petalostigma pubescens</i>			1.0	5	
<i>Schizachyrium fragile</i>			0.3	+	
<i>Terminalia platyphylla</i>			4.0	+	
<i>Triodia bitextura</i>			0.5	30	



Photo 145: View of the vegetation at Q073



Photo 146: View of the ground surface at Q073

Survey Area:		Material Investigation Area 13		Quadrat:	Q074
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 493704	Northing mN: 8286337	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black/brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.5-12	10	Open woodland	<i>Eucalyptus microtheca</i>	
	0-0.5	90	Tussock grassland	<i>Chrysopogon sp, Eriachne glauca var barbinodis</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Acacia holosericea</i>		1.5	1		
<i>Chrysopogon sp</i>		0.5	80		
<i>Eriachne glauca var barbinodis</i>		0.5	10	Range extension	
<i>Eucalyptus microtheca</i>		12.0	10		
<i>Melaleuca argentea</i>		1.5	1		
<i>Planchonia careya</i>		0.2	1		



Photo 147: View of the vegetation at Q074



Photo 148: View of the ground surface at Q074

Survey Area:		Material Investigation Area 13		Quadrat:	Q075
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 495055	Northing mN: 8286945	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-9	20	Woodland	<i>Melaleuca argentea</i>	
	0-0.6	70	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Aristida holathera</i> var <i>holathera</i> , <i>Chrysopogon</i> sp, <i>Rhynchospora exserta</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.3	+	Weed
<i>Acacia ?lamprocarpa</i>			5.0	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.6	10	
<i>Chrysopogon</i> sp			0.5	10	
<i>Corymbia confertiflora</i>			7.0	+	
<i>Corymbia polycarpa</i>			9.0	1	
<i>Cyperus holoschoenus</i>			0.6	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.6	30	Range extension
<i>Fimbristylis</i> sp			0.5	+	
<i>Hygrophila angustifolia</i>			0.5	+	
<i>Ludwigia perennis</i>			0.7	+	
<i>Melaleuca argentea</i>			7.0	20	
<i>Nelsonia campestris</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.6	20	
<i>Scleria rugosa</i>			0.4	+	



Photo 149: View of the vegetation at Q075



Photo 150: View of the ground surface at Q075

Appendix H - Part B

Quadrat Data Sheets Quadrat 076 to Quadrat 151

This appendix is from a document entitled “Flora and Vegetation Survey of Main Roads Western Australia Potential Borrow Material Investigation Areas at Kununurra”, prepared for Strategen Environmental Consultants Pty Ltd on behalf of Main Roads Western Australia by Pilbara Flora, September 2009.

Quadrat Locations (taken by GPS at centre of quadrat)

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q001	465850	8272198	Q025	469867	8282225
Q002	465754	8271833	Q026	468207	8280807
Q003	465796	8272729	Q027	468035	8280906
Q004	465657	8272496	Q028	468281	8281415
Q005	465304	8271865	Q029	468238	8281393
Q006	465345	8272695	Q030	470286	8281695
Q007	465764	8272430	Q031	470457	8282005
Q008	465250	8271876	Q032	470596	8282115
Q009	465410	8272573	Q033	470779	8282071
Q010	465239	8272131	Q034	470811	8281961
Q011	466299	8272840	Q035	469783	8281064
Q012	470919	8281662	Q036	471636	8282913
Q013	468002	8281260	Q037	470744	8283852
Q014	469130	8280167	Q038	471045	8283322
Q015	469301	8280499	Q039	470305	8283376
Q016	470010	8279836	Q040	470135	8282613
Q017	469849	8279382	Q041	469202	8282390
Q018	469624	8279592	Q042	496343	8286968
Q019	470298	8280577	Q043	495978	8287178
Q020	470609	8280965	Q044	495785	8287454
Q021	469988	8280323	Q045	495581	8288184
Q022	470340	8281352	Q046	495280	8289168
Q023	467155	8281359	Q047	495066	8289556
Q024	469986	8281606	Q048	496407	8287421

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q049	496439	8287930	Q090	487558	8267984
Q050	496267	8287985	Q091	486884	8266601
Q051	495967	8287996	Q092	483530	8265127
Q052	495945	8288571	Q093	484163	8265128
Q053	495945	8288571	Q094	484366	8265051
Q054	495581	8288969	Q095	484473	8265040
Q055	494894	8288637	Q096	484709	8264763
Q056	494572	8288593	Q097	484506	8264122
Q057	495034	8288018	Q098	484260	8263635
Q058	495302	8287366	Q099	483744	8265504
Q059	496042	8286680	Q100	483637	8265636
Q060	494563	8285175	Q101	483551	8265714
Q061	495088	8285463	Q102	483101	8266255
Q062	495313	8285751	Q103	482811	8266498
Q063	495088	8285850	Q104	482018	8266631
Q064	494176	8285651	Q105	484065	8267395
Q065	495721	8286348	Q106	484301	8267174
Q066	495184	8286757	Q107	485512	8266279
Q067	495077	8286768	Q108	485169	8266500
Q068	494316	8286127	Q109	484804	8266732
Q069	496064	8286414	Q110	483486	8266753
Q070	495935	8285950	Q111	483819	8266389
Q071	495989	8286315	Q112	485063	8265449
Q072	495259	8286591	Q113	484580	8265781
Q073	493479	8286314	Q114	484237	8266101
Q074	493704	8286337	Q115	468304	8280011
Q075	495055	8286945	Q116	468616	8279878
Q076	494058	8287100	Q117	468380	8279723
Q077	493543	8286690	Q118	468487	8279978
Q078	494347	8287564	Q119	468262	8279900
Q079	487171	8269510	Q120	468562	8280111
Q080	486764	8269687	Q121	468917	8278717
Q081	485574	8270117	Q122	469046	8278640
Q082	487257	8269289	Q123	469271	8278840
Q083	485682	8267872	Q124	465473	8273680
Q084	484406	8269022	Q125	465236	8273845
Q085	484492	8268988	Q126	465301	8273934
Q086	486507	8268780	Q127	465418	8274033
Q087	487054	8268559	Q128	465601	8273890
Q088	487643	8268603	Q129	467276	8272244
Q089	487772	8268382	Q130	466932	8272299

Quadrat No.	GDA94 MGA Zone 52		Quadrat No.	GDA94 MGA Zone 52	
	Easting (mE)	Northing (mN)		Easting (mE)	Northing (mN)
Q131	467051	8272111	Q142	462012	8259936
Q132	463927	8267925	Q143	465627	8256446
Q133	463831	8267958	Q144	465563	8256225
Q134	464163	8267893	Q145	465606	8256236
Q135	464078	8267715	Q146	465595	8256314
Q136	463906	8267704	Q147	465510	8256402
Q137	461690	8259935	Q148	465188	8256390
Q138	461583	8259891	Q149	465263	8256247
Q139	461765	8259858	Q150	465381	8256169
Q140	461690	8259803	Q151	465541	8256568
Q141	461829	8260013			

Survey Area:		Material Investigation Area 13		Quadrat:	Q076
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 494058	Northing mN: 8287100	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-6	20	Woodland	<i>Melaleuca argentea</i>	
	0-0.6	70	Tussock grassland	<i>Chrysopogon sp, Rhynchospora exserta</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.4	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.3	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Buchnera asperata</i>			0.2	+	
<i>Calandrinia quadrivalvis</i>			0.2	+	
<i>Centrolepis exserta</i>			0.2	+	
<i>Chrysopogon sp</i>			0.6	60	
<i>Corymbia confertiflora</i>			7.0	+	
<i>Corymbia polycarpa</i>			7.0	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.6	+	Range extension
<i>Ludwigia perennis</i>			1.0	+	
<i>Melaleuca argentea</i>			6.0	20	
<i>Oldenlandia delicata</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.5	10	
<i>Sorghum ?stipoideum</i>			1.0	+	
<i>Spermacoce laevigata</i>			0.3	+	
<i>Triodia sp</i>			0.3	+	



Photo 1: View of the vegetation at Q076



Photo 2: View of the ground surface at Q076

Survey Area:		Material Investigation Area 13		Quadrat:	Q077
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 493543	Northing mN: 8286690	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial - scattered gravel			
Rock Type:		N/A			
Soil:		Light grey/brown gravelly sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.8-10	20	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Melaleuca viridiflora</i>	
	0-0.8	30	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Panicum sp</i>			0.6	+	
<i>Buchanania obovata</i>			2.0	+	
<i>Buchnera asperata</i>			0.3	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	10	
<i>Crosslandia setifolia</i>			0.3	+	
<i>Crotalaria ramosissima</i>			0.2	+	
<i>Eragrostis fallax</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.5	2	
<i>Grevillea heliosperma</i>			1.5	+	
<i>Haemodorum sp</i>			0.6	+	
<i>Melaleuca viridiflora</i>			6.0	10	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.3	+	
<i>Owenia vernicosa</i>			4.0	+	
<i>Persoonia falcata</i>			5.0	+	
<i>Sorghum ?stipoideum</i>			0.8	30	
<i>Spermacoce laevigata</i>			0.5	+	
<i>Tephrosia coriacea</i>			0.5	+	
<i>Triodia sp</i>			0.3	+	



Photo 3: View of the vegetation at Q077



Photo 4: View of the ground surface at Q077

Survey Area:		Material Investigation Area 13		Quadrat:	Q078
Method:		50x50m quadrat		Date:	04/07/2009
Quadrat Centre:		Easting mE: 494347	Northing mN: 8287564	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-10	45	Woodland	<i>Acacia difficilis</i> , <i>Corymbia polycarpa</i>	
	0-0.6	70	Tussock grassland	<i>Aristida holathera</i> var <i>holathera</i> , <i>Eriachne ciliata</i> , <i>Platyzoma microphyllum</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	+	
<i>Acacia difficilis</i>			7.0	40	
<i>Acacia platycarpa</i>			0.4	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.6	10	
<i>Atalaya variifolia</i>			0.4	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Buchnera asperata</i>			0.4	+	
<i>Corymbia polycarpa</i>			10.0	5	
<i>Corynotheca micrantha</i> var <i>gracilis</i>			0.3	+	
<i>Crotalaria crispata</i>			0.2	+	
<i>Crotalaria cunninghamii</i>			1.0	+	
<i>Dolichandrone heterophylla</i>			1.0	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Ectrosia schultzii</i> var <i>schultzii</i>			0.4	+	
<i>Eriachne ciliata</i>			0.6	50	
<i>Ficus aculeata</i> var <i>indecora</i>			4.0	+	
<i>Goodenia ?sepalosa</i> subsp <i>sepalosa</i>			0.3	+	
<i>Grevillea heliosperma</i>			2.0	+	
<i>Haemodorum</i> sp			0.4	+	
<i>Jacksonia forrestii</i>			2.5	+	
<i>Microstachys chamaelea</i>			0.2	+	
<i>Nelsonia campestris</i>			0.3	+	
<i>Oldenlandia delicata</i>			0.2	+	
<i>Owenia vernicosa</i>			4.0	+	
<i>Platyzoma microphyllum</i>			0.4	5	
<i>Scleria rugosa</i>			6.0	+	
<i>Sorghum ?stipoideum</i>			0.8	3	
<i>Spermacece laevigata</i>			0.3	+	
<i>Tephrosia coriacea</i>			0.3	+	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.2	+	
<i>Waltheria indica</i>			1.0	+	
<i>Xyris complanata</i>			0.3	+	



Photo 5: View of the vegetation at Q078



Photo 6: View of the ground surface at Q078

Survey Area:		Material Investigation Area 14		Quadrat:	Q079
Method:		50x50m quadrat		Date:	29/06/2009
Quadrat Centre:		Easting mE: 487171	Northing mN: 8269510	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Black/grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.75-12	15	Open woodland	<i>Eucalyptus tectifica</i> , <i>Melaleuca ?viridiflora</i>	
	0-0.75	95	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Themeda triandra</i> , <i>Chrysopogon sp</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			12.0	5	
<i>Bacopa floribunda</i>			0.25	+	
<i>Chrysopogon sp</i>			0.25	2	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			6.0	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	15	Range extension
<i>Fimbristylis sphaerocephala</i>			0.5	+	
<i>Ludwigia perennis</i>			0.75	+	
<i>Melaleuca ?viridiflora</i>			6.0	10	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.25	15	
<i>Rhynchospora affinis</i>			0.25	+	
<i>Setaria apiculata</i>			0.25	+	
<i>Sorghum ?stipoideum</i>			2.5	45	
<i>Themeda triandra</i>			0.5	20	



Photo 7: View of the vegetation at Q079



Photo 8: View of the ground surface at Q079

Survey Area:		Material Investigation Area 14		Quadrat:	Q080
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 486764	Northing mN: 8269687	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light grey/red silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-8	10	Open woodland	<i>Eucalyptus tectifica</i>	
	0-1.5	60	Tussock grassland	<i>Schoenus punctatus</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia bitextura</i> , <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			8.0	10	
<i>Acacia difficilis</i>			1.0	+	
<i>Blumea diffusa</i>			0.25	+	
<i>Brachychiton tuberculatus</i>			2.0	+	Priority 3
<i>Buchnera ramosissima</i>			0.5	+	
<i>Centrolepis exserta</i>			0.25	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Drosera ordensis</i>			0.05	+	
<i>Gardenia resinosa</i> subsp <i>resinosa</i>			4.0	1	
<i>Grevillea erythroclada</i>			5.	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			1.5	+	
<i>Ludwigia perennis</i>			0.75	+	
<i>Oldenlandia delicata</i>			0.1	+	
<i>Owenia vernicosa</i>			8.0	1	
<i>Platyzoma microphyllum</i>			0.25	2	
<i>Rotala diandra</i>			0.1	+	
<i>Schoenus punctatus</i>			0.35	10	Priority 3, Range Extension
<i>Sorghum ?stipoideum</i>			1.5	15	
<i>Spermacoce constricta</i>			0.25	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Stylidium lobuliflorum</i>			0.25	+	
<i>Triodia bitextura</i>			0.5	2	
<i>Verticordia cunninghamii</i>			3.0	+	
<i>Xyris complanata</i>			0.25	10	



Photo 9: View of the vegetation at Q080



Photo 10: View of the ground surface at Q080

Survey Area:		Material Investigation Area 14		Quadrat:	Q081
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 485574	Northing mN: 8270117	GDA 1994 Zone 52	
Landscape:		Open woodland			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light grey/reddish silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-10	10	Woodland	<i>Eucalyptus tectifica</i> , <i>Erythrophleum chlorostachys</i>	
	0-2	50	Tussock grassland/sedges	<i>Abildgaardia schoenoides</i> , <i>Sorghum ?stipoideum</i> , <i>Schoenus punctatus</i> , <i>Triodia bitextura</i> , <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			10.0	10	
<i>Abildgaardia schoenoides</i>			0.3	10	
<i>Acacia difficilis</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			4.0	+	
<i>Blumea diffusa</i>			0.25	1	
<i>Brachychiton tuberculatus</i>			4.0	1	Priority 3
<i>Buchnera ramosissima</i>			0.5	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Dolichandrone heterophylla</i>			4.0	+	
<i>Drosera ordensis</i>			0.05	+	
<i>Erythrophleum chlorostachys</i>			8.0	2	
<i>Ficus aculeata</i> var <i>indecora</i>			1.0	+	
<i>Gardenia resinosa</i> subsp <i>resinosa</i>			4.0	1	
<i>Grevillea erythroclada</i>			5.0	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			1.5	+	
<i>Grewia retusifolia</i>			1.0	1	
<i>Ludwigia perennis</i>			0.75	+	
<i>Oldenlandia delicata</i>			0.1	+	
<i>Owenia vernicosa</i>			8.0	1	
<i>Platyzoma microphyllum</i>			0.25	2	
<i>Rotala diandra</i>			0.05	+	
<i>Schoenus punctatus</i>			0.25	5	Priority 3, Range Extension
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Spermacoce constricta</i>			0.25	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Triodia bitextura</i>			0.5	15	
<i>Unknown species</i>			0.25	+	
<i>Verticordia cunninghamii</i>			3.0	+	
<i>Xyris complanata</i>			0.25	10	



Photo 11: View of the vegetation at Q081



Photo 12: View of the ground surface at Q081

Survey Area:		Material Investigation Area 14		Quadrat:	Q082
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 487257	Northing mN: 8269289	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.2-7	20	Woodland	<i>Melaleuca sp, Melaleuca ?viridiflora</i>	
Vegetation Structure:	0-0.2	65	Forbs / Tussock grassland	<i>Poaceae sp, Rotala diandra, Wahlenbergia queenslandica, Aristida holathera var holathera</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida holathera var holathera</i>			0.75	2	
<i>Bacopa floribunda</i>			0.1	+	
<i>Drosera ordensis</i>			0.01	+	
<i>Elytrophorus spicatus</i>			0.1	+	
<i>Eragrostis fallax</i>			0.2	+	
<i>Eriachne glauca var barbinodis</i>			0.75	+	Range extension
<i>Ludwigia perennis</i>			1.0	+	
<i>Melaleuca ?viridiflora</i>			7.0	2	
<i>Melaleuca sp</i>			5.0	20	
<i>Pandanus ?spiralis</i>			4.0	1	
<i>Poaceae sp</i>			0.2	30	
<i>Rotala diandra</i>			0.15	20	
<i>Wahlenbergia queenslandica</i>			0.1	15	



Photo 13: View of the vegetation at Q082



Photo 14: View of the ground at Q082

Survey Area:		Material Investigation Area 14		Quadrat:	Q083
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 485682	Northing mN: 8267872	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Reddish grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	8-10	40	Woodland	<i>Acacia tumida</i> var <i>tumida</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i>	
	0-3	60	Tussock grassland	<i>Abildgaardia schoenoides</i> , <i>Eragrostis</i> sp, <i>Sorghum ?stipoideum</i> , <i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.25	5	
<i>Acacia platycarpa</i>			1.5	1	
<i>Acacia</i> sp			1.5	2	
<i>Acacia tumida</i> var <i>tumida</i>			8.0	20	
<i>Blumea diffusa</i>			3.2	+	
<i>Blumea tenella</i>			0.3	+	
<i>Bonamia pannosa</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			10.0	20	
<i>Crosslandia setifolia</i>			0.25	2	
<i>Diospyros rugosula</i>			6.0	1	
<i>Eragrostis</i> sp			0.75	20	
<i>Grevillea agrifolia</i>			2.0	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			1.0	+	
<i>Microstachys chamaelea</i>			0.5	+	
<i>Persoonia falcata</i>			5.0	+	
<i>Sorghum ?stipoideum</i>			4.0	20	
<i>Spermacoce constricta</i>			0.1	+	
<i>Triodia bitextura</i>			0.5	20	



Photo 15: View of the vegetation at Q083



Photo 16: View of the ground at Q083

Survey Area:		Material Investigation Area 14		Quadrat:	Q084
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 484406	Northing mN: 8269022	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Reddish grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	3-8	25	Woodland	<i>Acacia tumida</i> var <i>tumida</i> , <i>Erythrophleum chlorostachys</i> , <i>Eucalyptus microtheca</i>	
	0-3	65	Tussock grassland	<i>Eragrostis</i> sp, <i>Sorghum</i> ? <i>stipoideum</i> , <i>Triodia bitextura</i> , <i>Blumea tenella</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			1.5	1	
<i>Acacia nuperrima</i>			0.5	+	
<i>Acacia tumida</i> var <i>tumida</i>			6.0	5	
<i>Blumea diffusa</i>			0.25	1	
<i>Blumea tenella</i>			0.25	2	
<i>Brachychiton tuberculatus</i>			4.0	+	Priority 3
<i>Buchanania oblongifolia</i>			1.0	+	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Calandrinia quadrivalvis</i>			0.25	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Drosera ordensis</i>			0.01	1	
<i>Eragrostis</i> sp			0.75	30	
<i>Erythrophleum chlorostachys</i>			8.0	5	
<i>Eucalyptus microtheca</i>			6.0-8.0	15	
<i>Gardenia resinosa</i> subsp <i>resinosa</i>			5.0	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			2.0	+	
<i>Haemodorum</i> sp			0.75	+	
<i>Jasminum molle</i>			0.5	+	
<i>Rotala mexicana</i>			0.5	+	
<i>Sorghum</i> ? <i>stipoideum</i>			3.0	20	
<i>Spermacoce constricta</i>			0.1	+	
<i>Stemodia lathraia</i>			0.5	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Thecanthes sanguinea</i>			0.3	+	
<i>Tinospora smilacina</i>			0.01	+	
<i>Triodia bitextura</i>			0.5	15	
<i>Wrightia saligna</i>			?	+	



Photo 17: View of the vegetation at Q084



Photo 18: View of the ground at Q084

Survey Area:		Material Investigation Area 14		Quadrat:	Q085
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 484492	Northing mN: 8268988	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.5-8	10	Open woodland	<i>Eucalyptus microtheca</i>	
	0-0.5	85	Sedgeland	<i>Rhynchospora exserta</i> , <i>Blumea diffusa</i> , <i>Rotala diandra</i> , <i>Xyris complanata</i> , <i>Schoenus punctatus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			0.5	+	
<i>Blumea diffusa</i>			0.25	5	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Drosera ordensis</i>			0.01	+	
<i>Eucalyptus microtheca</i>			8.0	10	
<i>Fimbristylis sphaerocephala</i>			0.25	1	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.5	+	
<i>Platyzoma microphyllum</i>			0.5	+	
<i>Rhynchospora exserta</i>			0.5	10	
<i>Rotala diandra</i>			0.1	10	
<i>Schoenus punctatus</i>			0.5	2	Priority 3, Range Extension
<i>Sorghum ?stipoideum</i>			2.5	1	
<i>Xyris complanata</i>			0.5	60	



Photo 19: View of the vegetation at Q085



Photo 20: View of the ground at Q085

Survey Area:		Material Investigation Area 14		Quadrat:	Q086
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 486507	Northing mN: 8268780	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Reddish grey silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.5-8	10	Open Woodland	<i>Melaleuca ?viridiflora</i>	
	0-0.5	85	Sedgeland	<i>Abildgaardia schoenoides, Rotala diandra, Schoenus punctatus, Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i> , <i>Triodia bitextura</i> , <i>Centrolepis exserta</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.25	10	
<i>Adansonia gregorii</i>			8.0	+	
<i>Blumea diffusa</i>			0.2	4	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchnera ramosissima</i>			0.25	+	
<i>Centrolepis exserta</i>			0.1	2	
<i>Drosera ordensis</i>			0.1	+	
<i>Eragrostis sp</i>			0.5	2	
<i>Melaleuca ?viridiflora</i>			8.0	10	
<i>Mitrasacme nummularia</i>			0.1	1	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.25	10	
<i>Planchonia careya</i>			3.0	+	
<i>Poaceae sp</i>			0.5	+	
<i>Rhynchospora exserta</i>			0.5	+	
<i>Rotala diandra</i>			0.1	10	
<i>Schoenus punctatus</i>			0.5	30	Priority 3, Range Extension
<i>Sorghum ?stipoideum</i>			2.0	3	
<i>Stackhousia intermedia</i>			0.25	+	
<i>Stylidium lobuliflorum</i>			0.1	+	
<i>Thecanthes sanguinea</i>			0.25	+	
<i>Triodia bitextura</i>			0.25	20	
<i>Xyris complanata</i>			0.25	+	



Photo 21: View of the vegetation at Q086



Photo 22: View of the ground at Q086

Survey Area:		Material Investigation Area 14		Quadrat:	Q087
Method:		50x50m quadrat		Date:	06/07/2009
Quadrat Centre:		Easting mE: 487054	Northing mN: 8268559	GDA 1994 Zone 52	
Landscape:		Watercourse area – minor creek 4m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Fine red sand			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.5-8	15	Open woodland	<i>Corymbia polycarpa</i> , <i>Pandanus sp</i>	
	0-0.5	70	Tussock grassland	<i>Eragrostis cumingii</i> , <i>Chrysopogon sp</i> , <i>Cyperus holoschoenus</i> <i>Rotala diandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Vachellia farnesiana</i>			1.0	+	Weed
<i>Adansonia gregorii</i>			6.0	+	
<i>Bacopa floribunda</i>			0.25	+	
<i>Centrolepis exserta</i>			0.5	+	
<i>Chrysopogon sp</i>			0.5	20	
<i>Corymbia polycarpa</i>			8.0	10	
<i>Cyperus holoschoenus</i>			0.75	3	
<i>Elytrophorus spicatus</i>			4.0	+	
<i>Eragrostis cumingii</i>			0.5	20	
<i>Grewia retusifolia</i>			0.5	+	
<i>Ludwigia octovalvis</i>			1.0	+	
<i>Melaleuca ?viridiflora</i>			5.0	+	
<i>Nelsonia campestris</i>			0.5	+	
<i>Pandanus sp</i>			5.0	5	
<i>Planchonia careya</i>			4.0	+	
<i>Rotala diandra</i>			0.05	20	



Photo 23: View of the vegetation at Q087



Photo 24: View of the ground at Q087

Survey Area:		Material Investigation Area 14		Quadrat:	Q088
Method:		50x50m quadrat		Date:	06/07/2009
Quadrat Centre:		Easting mE: 487643	Northing mN: 8268603	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red sandy			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-10	15	Open woodland	<i>Corymbia polycarpa</i> , <i>Excoecaria parvifolia</i> , <i>Brachychiton tuberculatus</i>	
	0-2	50	Tussock grassland	<i>Aristida holathera</i> var <i>holathera</i> , <i>Sorghum ?stipoideum</i> , <i>Glycine tomentella</i> , <i>Triodia bitextura</i> , <i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			4.0	+	
<i>Acacia platycarpa</i>			1.5	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.75	10	
<i>Brachychiton tuberculatus</i>			4.0	3	Priority 3
<i>Buchnera ramosissima</i>			0.5	+	
<i>Corymbia polycarpa</i>			8.0	10	
<i>Crotalaria crispata</i>			0.5	1	
<i>Excoecaria parvifolia</i>			10.0	5	
<i>Glycine tomentella</i>			0.1	10	
<i>Indigofera linifolia</i>			0.1	+	
<i>Jasminum molle</i>			0.75	+	
<i>Owenia vernicosa</i>			4.0	+	
<i>Petalostigma</i> sp			8.0	5	
<i>Platyzoma microphyllum</i>			0.5	2	
<i>Polymeria ambigua</i>			0.25	1	
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Spermacoce constricta</i>			0.25	1	
<i>Stylidium floodii</i>			0.1	+	
<i>Stylidium lobuliflorum</i>			0.2	+	
<i>Tinospora smilacina</i>			0.5	+	
<i>Triodia bitextura</i>			0.4	20	
<i>Waltheria indica</i>			1.0	+	



Photo 25: View of the vegetation at Q088



Photo 26: View of the ground at Q088

Survey Area:		Material Investigation Area 14		Quadrat:	Q089
Method:		50x50m quadrat		Date:	06/07/2009
Quadrat Centre:		Easting mE: 487772	Northing mN: 8268382	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvia soil			
Rock Type:		N/A			
Soil:		Light grey silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.25-6	20	Woodland	<i>Melaleuca ?viridiflora, Melaleuca sp</i>	
	0-0.25	70	Sedgeland	<i>Fimbristylis microcarya, Fimbristylis rara, Rotala diandra, Wahlenbergia queenslandica</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.2	+	
<i>Centrolepis exserta</i>			0.1	+	
<i>Ectrosia leporina</i>			0.1	+	
<i>Fimbristylis microcarya</i>			0.25	30	
<i>Fimbristylis rara</i>			0.25	5	
<i>Grewia retusifolia</i>			1.5	+	
<i>Leptochloa neesii</i>			0.3	+	
<i>Marsilea angustiflora</i>			0.05	+	
<i>Melaleuca ?viridiflora</i>			5.0	5	
<i>Melaleuca sp</i>			6.0	15	
<i>Melochia corchorifolia</i>			1.5	+	
<i>Phyllanthus virgatus</i>			0.2	1	
<i>Rotala diandra</i>			0.05	25	
<i>Wahlenbergia queenslandica</i>			0.2	5	
<i>Xyris complanata</i>			0.25	+	



hoto 27: View of the vegetation at Q089



Photo 28: View of the ground at Q089

Survey Area:		Material Investigation Area 14		Quadrat:	Q090
Method:		50x50m quadrat		Date:	06/07/2009
Quadrat Centre:		Easting mE: 487558	Northing mN: 8267984	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red sandy soil			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-10	25	Woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia polycarpa</i> , <i>Excoecaria parvifolia</i> , <i>Brachychiton tuberculatus</i>	
	0-2	60	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triodia bitextura</i> , <i>Aristida holathera</i> var <i>holathera</i> , <i>Glycine tomentella</i> , <i>Platyzoma microphyllum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			5.0	10	
<i>Acacia platycarpa</i>			1.0	+	
<i>Adansonia gregorii</i>			15.0	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.75	5	
<i>Blumea diffusa</i>			0.25	+	
<i>Brachychiton tuberculatus</i>			3.0-5.0	5	Priority 3
<i>Buchnera ramosissima</i>			0.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			1.0	+	
<i>Corymbia polycarpa</i>			10.0	10	
<i>Crotalaria crispata</i>			0.25	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Excoecaria parvifolia</i>			0.25	2	
<i>Glycine tomentella</i>			0.2	7	
<i>Grewia retusifolia</i>			1.5	+	
<i>Jasminum molle</i>			0.5	3	
<i>Petalostigma</i> sp			1.0	+	
<i>Platyzoma microphyllum</i>			0.5	2	
<i>Polymeria ambigua</i>			0.2	2	
<i>Sorghum ?stipoideum</i>			2.0	30	
<i>Spermacoce constricta</i>			0.5	+	
<i>Stylidium lobuliflorum</i>			0.25	1	
<i>Tinospora smilacina</i>			1.0	+	
<i>Triodia bitextura</i>			0.5	20	



Photo 29: View of the vegetation at Q090



Photo 30: View of the ground at Q090

Survey Area:		Material Investigation Area 14		Quadrat:	Q091
Method:		50x50m quadrat		Date:	06/07/2009
Quadrat Centre:		Easting mE: 486884	Northing mN: 8266601	GDA 1994 Zone 52	
Landscape:		Watercourse area – minor creek 3m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Fine red sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-10	30	Woodland	<i>Eucalyptus tectifica</i> , <i>Corymbia bella</i> , <i>Corymbia confertiflora</i> , <i>Melaleuca ?viridiflora</i> , <i>Excoecaria parvifolia</i>	
	0-1	90	Tussock grassland	<i>Fimbristylis microcarya</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Ludwigia perennis</i> , <i>Poaceae</i> sp	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus tectifica</i>			8.0	5	
<i>Corymbia bella</i>			10.0	5	
<i>Corymbia confertiflora</i>			10.0	5	
<i>Elytrophorus spicatus</i>			0.5	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	5	Range extension
<i>Excoecaria parvifolia</i>			4.0	4	
<i>Fimbristylis microcarya</i>			0.3	70	
<i>Grewia retusifolia</i>			0.3	1	
<i>Ludwigia perennis</i>			1.0	5	
<i>Melaleuca ?viridiflora</i>			6.0	10	
<i>Poaceae</i> sp			1.0	5	
<i>Sida spinosa</i>			0.5	+	
<i>Sorghum stipoideum</i>			2.0	+	



Photo 31: View of the vegetation at Q091



Photo 32: View of the ground at Q091

Survey Area:		Material Investigation Area 14		Quadrat:	Q092
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 483530	Northing mN: 8265127	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.5-6	15	Open woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Gardenia megasperma</i>	
	0-0.5	25	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triodia sp</i> , <i>Panicum decompositum</i> , <i>Panicum sp</i> , <i>Abildgaardia schoenoides</i> ,	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	5	
<i>Acacia coleii</i>			5.0	1	
<i>Blumea diffusa</i>			0.3	1	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchnera asperata</i>			0.8	+	
<i>Cajanus pubescens</i>			0.7	+	
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Cochlospermum fraseri</i>			3.0	1	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			10.0	15	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.1	+	
<i>Drosera ordensis</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.0	+	
<i>Gardenia megasperma</i>			5.0	2	
<i>Grevillea heliosperma</i>			6.0	1	
<i>Grevillea refracta</i> subsp <i>refracta</i>			3.0	+	
<i>Jacksonia forrestii</i>			0.5	+	
<i>Melaleuca argentea</i>			4.0	1	
<i>Mitrasacme connata</i>			1.0	+	
<i>Mitrasacme epigaea</i>			0.01	+	
<i>Panicum decompositum</i>			0.5	5	
<i>Panicum sp</i>			0.5	5	
<i>Petalostigma pubescens</i>			5.0	1	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Polycarpaea corymbosa</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			3.5	5	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stylidium turbinatum</i>			0.3	+	
<i>Triodia sp</i>			0.5	10	
<i>Verticordia cunninghamii</i>			2.5	+	
<i>Vigna lanceolata</i> var <i>filiformis</i>			0.8	+	
<i>Xyris complanata</i>			0.3	+	



Photo 33: View of the vegetation at Q092



Photo 34: View of the ground at Q092

Survey Area:		Material Investigation Area 14		Quadrat:	Q093
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484163	Northing mN: 8265128	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-10	15	Open woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Corymbia confertiflora</i> , <i>Erythrophleum chlorostachys</i> , <i>Grevillea heliosperma</i>	
	0-2	25	Tussock grassland	<i>Abildgaardia schoenoides</i> , <i>Panicum decompositum</i> , <i>Panicum sp</i> , <i>Triodia sp</i> , <i>Planchonia careya</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	5	
<i>Acacia coleii</i>			8.0	+	
<i>Blumea diffusa</i>			0.3	1	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchanania obovata</i>			5.0	+	
<i>Buchnera asperata</i>			0.8	+	
<i>Cajanus pubescens</i>			0.7	+	
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Cochlospermum fraseri</i>			3.0	1	
<i>Corymbia confertiflora</i>			10.0	2	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			10.0	8	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.1	+	
<i>Drosera ordensis</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.0	4	
<i>Gardenia megasperma</i>			5.0	1	
<i>Grevillea agrifolia</i> subsp <i>agrifolia</i>			5.0	1	
<i>Grevillea heliosperma</i>			6.0	2	
<i>Grevillea refracta</i> subsp <i>refracta</i>			1.5	+	
<i>Jacksonia forrestii</i>			0.5	+	
<i>Melaleuca argentea</i>			4.0	1	
<i>Mitrasacme connata</i>			1.0	+	
<i>Mitrasacme epigaea</i>			0.01	+	
<i>Owenia vernicosa</i>			7.0	1	
<i>Panicum decompositum</i>			0.5	5	
<i>Panicum sp</i>			1.0	5	
<i>Petalostigma pubescens</i>			5.0	1	
<i>Planchonia careya</i>			7.0	3	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Polycarpaea corymbosa</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			2.0	3	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stylidium turbinatum</i>			0.3	+	
<i>Triodia sp</i>			0.5	5	
<i>Verticordia cunninghamii</i>			2.5	+	
<i>Vigna lanceolata</i> var <i>filiformis</i>			0.8	+	

Species	Height (m)	Cover (%)	Comments
<i>Wrightia saligna</i>	1.5	+	
<i>Xyris complanata</i>	0.3	+	



Photo 35: View of the vegetation at Q093



Photo 36: View of the ground at Q093

Survey Area:		Material Investigation Area 14		Quadrat:	Q094
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484366	Northing mN: 8265051	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	3-12	20	Woodland	<i>Eucalyptus microtheca</i> , <i>Erythrophleum chlorostachys</i>	
	0-3	20	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triodia bynoei</i> , <i>Panicum decompositum</i> , <i>Triodia sp</i> , <i>Panicum sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia difficilis</i>			7.0	+	
<i>Bauhinia cunninghamii</i>			10.0	1	
<i>Blumea diffusa</i>			0.2	+	
<i>Bonamia pannosa</i>			0.7	+	
<i>Triodia sp</i>			0.6	5	Priority 3
<i>Buchnera ramosissima</i>			0.5	+	
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Ehretia saligna var saligna</i>			3.0	+	
<i>Erythrophleum chlorostachys</i>			12.0	10	
<i>Eucalyptus microtheca</i>			12.0	10	
<i>Ficus aculeata var indecora</i>			1.5	+	
<i>Gardenia megasperma</i>			6.0	1	
<i>Gomphrena humifusa</i>			0.01	+	
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>			0.3	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			5.0	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			1.5	+	
<i>Melaleuca argentea</i>			0.3	+	
<i>Mitrasacme epigaea</i>			0.05	+	
<i>Mitrasacme exserta</i>			0.5	+	
<i>Panicum decompositum</i>			0.8	3	
<i>Panicum sp</i>			0.8	5	
<i>Persoonia falcata</i>			3.0	+	
<i>Petalostigma pubescens</i>			5.0	+	
<i>Platyzoma microphyllum</i>			0.5	+	
<i>Polygala tepperi</i>			0.6	+	
<i>Sorghum ?stipoideum</i>			3.0	5	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Stylidium multiscapum</i>			0.2	+	
<i>Stylidium turbinatum</i>			0.2	+	
<i>Tinospora smilacina</i>			8.0	+	
<i>Triodia bynoei</i>			0.7	3	
<i>Wrightia saligna</i>			0.6	+	
<i>Xyris complanata</i>			0.8	+	



Photo 37: View of the vegetation at Q094



Photo 38: View of the ground at Q094

Survey Area:		Material Investigation Area 14		Quadrat:	Q095
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484473	Northing mN: 8265040	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-10	20	Woodland	<i>Eucalyptus microtheca</i>	
	0-1.5	15	Tussock grassland	<i>Abildgaardia schoenoides</i> , <i>Triodia bynoei</i> , <i>Panicum decompositum</i> , <i>Panicum sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.6	2	
<i>Bauhinia cunninghamii</i>			4.0	1	
<i>Blumea diffusa</i>			0.3	+	
<i>Brachychiton tuberculatus</i>			4.0	1	Priority 3
<i>Chrysopogon ?fallax</i>			0.5	1	
<i>Crotalaria montana var angustifolia</i>			0.5	+	
<i>Dichanthium sericeum</i>			2.0	1	
<i>Drosera ordensis</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.0	+	
<i>Eucalyptus microtheca</i>			10	20	
<i>Gardenia megasperma</i>			5.0	+	
<i>Panicum decompositum</i>			0.6	5	
<i>Panicum sp</i>			0.6	3	
<i>Planchonia careya</i>			4.0	1	
<i>Sorghum ?stipoideum</i>			1.5	1	
<i>Triodia bynoei</i>			0.6	3	



Photo 39: View of the vegetation at Q095



Photo 40: View of the ground at Q095

Survey Area:		Material Investigation Area 14		Quadrat:	Q096
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484709	Northing mN: 8264763	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.3-12	25	Woodland	<i>Corymbia confertiflora</i> , <i>Eucalyptus microtheca</i>	
	0-1.3	45	Tussock grassland	<i>Chrysopogon ?fallax</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Chrysopogon ?fallax</i>			1.3	20	
<i>Corymbia confertiflora</i>			10.0	10	
<i>Dichanthium sericeum</i>			1.3	1	
<i>Eucalyptus microtheca</i>			12.0	10	
<i>Themeda triandra</i>			1.3	25	



Photo 41: View of the vegetation at Q096



Photo 42: View of the ground at Q096

Survey Area:		Material Investigation Area 14		Quadrat:	Q097
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484506	Northing mN: 8264122	GDA 1994 Zone 52	
Landscape:		Drain line			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-12	25	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Pandanus ?spiralis</i>	
	0-1.5	80	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.3	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			12.0	5	
<i>Drosera ordensis</i>			0.1	+	
<i>Ectrosia schultzii</i> var <i>schultzii</i>			0.3	+	
<i>Ludwigia perennis</i>			0.5	+	
<i>Pandanus ?spiralis</i>			4.0	20	
<i>Panicum sp</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			1.5	80	



Photo 43: View of the vegetation at Q097



Photo 44: View of the ground at Q097

Survey Area:		Material Investigation Area 14		Quadrat:	Q098
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484260	Northing mN: 8263635	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silt clay			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.2-10	25	Woodland	<i>Corymbia confertiflora</i> , <i>Eucalyptus microtheca</i> , <i>Bauhinia cunninghamii</i> , <i>Gardenia megasperm</i> , <i>Terminalia sp</i>	
	0-1.2	25	Tussock grassland	<i>Dichanthium sericeum</i> subsp <i>sericeum</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Adansonia gregorii</i>			10.0	+	
<i>Bauhinia cunninghamii</i>			8.0	5	
<i>Cochlospermum fraseri</i>			4.0	1	
<i>Corymbia confertiflora</i>			10.0	10	
<i>Dichanthium sericeum</i> subsp <i>sericeum</i>			1.3	5	
<i>Eucalyptus microtheca</i>			10.0	10	
<i>Ficus aculeata</i> var <i>indecora</i>			4.0	+	
<i>Gardenia megasperma</i>			10.0	5	
<i>Grewia retusifolia</i>			5.0	+	
<i>Indigofera haplophylla</i>			2.0	+	
<i>Terminalia sp</i>			8.0	3	
<i>Themeda triandra</i>			1.2	20	



Photo 45: View of the vegetation at Q098



Photo 46: View of the ground at Q098

Survey Area:		Material Investigation Area 14		Quadrat:	Q099
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483744	Northing mN: 8265504	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-12	8	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>	
	0-1	30	Tussock grassland	<i>Eriachne avenacea</i> , <i>Panicum</i> sp, <i>Triodia bynoei</i>	
Species			Height (m)	Cover (%)	Comments
<i>Vachellia valida</i>			1.5	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Brachychiton tuberculatus</i>			4.0	1	Priority 3
<i>Buchnera asperata</i>			0.3	+	
<i>Buchnera linearis</i>			0.3	+	
<i>Cajanus pubescens</i>			0.8	1	
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Cochlospermum fraseri</i>			5.0	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			12.0	8	
<i>Crotalaria crispata</i>			0.3	+	
<i>Cyperus bifax</i>			0.6	1	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne avenacea</i>			0.5	5	
<i>Eucalyptus microtheca</i>			10.0	1	
<i>Fimbristylis punctata</i>			0.4	1	
<i>Gardenia megasperma</i>			4.0	+	
<i>Grevillea heliosperma</i>			1.5	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			1.0	+	
<i>Indigofera haplophylla</i>			0	+	
<i>Microstachys chamaelea</i>			0.6	+	
<i>Mitrasacme exserta</i>			0.6	+	
<i>Owenia vernicosa</i>			8.0	+	
<i>Panicum decompositum</i>			0.6	1	
<i>Panicum</i> sp			0.8	10	
<i>Petalostigma pubescens</i>			4.0	1	
<i>Planchonia careya</i>			4.0	+	
<i>Platyzoma microphyllum</i>			0.3	1	
<i>Polygala tepperi</i>			0.3	+	
<i>Pterocaulon sphacelatum</i>			0.5	+	
<i>Sorghum</i> ? <i>stipoideum</i>			4.0	3	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Stackhousia intermedia</i>			0.5	+	
<i>Stylidium turbinatum</i>			0.2	+	
<i>Triodia bynoei</i>			1.0	15	



Photo 47: View of the vegetation at Q099



Photo 48: View of the ground at Q099

Survey Area:		Material Investigation Area 14		Quadrat:	Q100
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483637	Northing mN: 8265636	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.0-12	10	Open woodland	<i>Eucalyptus microtheca</i> , <i>Petalostigma pubescens</i>	
	0-1.0	40	Tussock grassland	<i>Triodia bynoei</i> , <i>Fimbristylis punctata</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.3	+	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			12.0	1	
<i>Crosslandia setifolia</i>			0.3	+	
<i>Eucalyptus microtheca</i>			10.0	10	
<i>Fimbristylis punctata</i>			0.6	3	
<i>Mitrasacme epigaea</i>			0.05	+	
<i>Owenia vernicosa</i>			12.0	1	
<i>Petalostigma pubescens</i>			5.0	2	
<i>Platyzoma microphyllum</i>			0.5	+	
<i>Stemodia lythrifolia</i>			0.6	+	
<i>Stylidium multiscapum</i>			0.3	+	
<i>Triodia bynoei</i>			1.0	40	



Photo 49: View of the vegetation at Q100



Photo 50: View of the ground at Q100

Survey Area:		Material Investigation Area 14		Quadrat:	Q101
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483551	Northing mN: 8265714	GDA 1994 Zone 52	
Landscape:		Drainage area – minor creek 2m wide			
Surface:		Alluvial soil			
Rock Type:		Sandstone stones in creek bed			
Soil:		Red sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.2-10	30	Woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Eucalyptus microtheca</i> , <i>Eucalyptus pruinosa</i> subsp <i>ternata</i> , <i>Melaleuca argentea</i>	
	0-1.2	35	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Sorghum ?stipoideum</i> , <i>Fimbristylis punctata</i> , <i>Fimbristylis</i> sp, <i>Schoenus punctatus</i> , <i>Xyris complanata</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia nuperrima</i>			1.0	+	
<i>Adansonia gregorii</i>			10.0	+	
<i>Bauhinia cunninghamii</i>			7.0	+	
<i>Blumea diffusa</i>			0.3	+	
<i>Brachychiton tuberculatus</i>			1.0	+	Priority 3
<i>Buchnera asperata</i>			0.6	+	
<i>Buchnera linearis</i>			0.4	+	
<i>Byblis filifolia</i>			0.3	+	
<i>Cajanus marmoratus</i>			0.4	+	
<i>Cartonema parviflorum</i>			0.2	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>			10.0	8	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.2	+	
<i>Dichanthium</i> sp			0.7	+	
<i>Dodonaea physocarpa</i>			0.8	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.2	2	Range extension
<i>Eucalyptus microtheca</i>			10.0	5	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			8.0	5	
<i>Euphorbia</i> sp			0.05	+	
<i>Fimbristylis punctata</i>			0.5	2	
<i>Fimbristylis</i> sp			0.3	20	
<i>Gardenia megasperma</i>			5.0	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Goodenia sepalosa</i> var <i>sepalosa</i>			3.0	+	
<i>Lindernia chrysoplectra</i>			0.2	+	
<i>Melaleuca argentea</i>			10.0	8	
<i>Mitrasacme exserta</i>			0.6	+	
<i>Petalostigma pubescens</i>			5.0	+	
<i>Planchonia careya</i>			3.0	+	
<i>Platyzoma microphyllum</i>			0.4	1	
<i>Rhynchospora exserta</i>			0.4	+	

Species	Height (m)	Cover (%)	Comments
<i>Schoenus punctatus</i>	0.6	5	Priority 3, Range Extension
<i>Scleria rugosa</i>	0.3	+	
<i>Sorghum ?stipoideum</i>	2.0	5	
<i>Stackhousia intermedia</i>	0.6	+	
<i>Stemodia lythrifolia</i>	0.5	+	
<i>Stylidium schizanthum</i>	0.2	+	
<i>Terminalia canescens</i>	2.0	+	
<i>Verticordia cunninghamii</i>	5.0	+	
<i>Vigna lanceolata</i> var <i>filiformis</i>	0.5	+	
<i>Xyris complanata</i>	0.5	2	



Photo 51: View of the vegetation at Q101



Photo 52: View of the ground at Q101

Survey Area:		Material Investigation Area 14		Quadrat:	Q102
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483101	Northing mN: 8266255	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	3-10	15	Woodland	<i>Eucalyptus microtheca</i> , <i>Corymbia ferruginea</i> subsp <i>stypophylla</i>	
	0-3	25	Tussock grassland	<i>Fimbristylis punctata</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida latifolia</i>			0.5	1	
<i>Brachychiton tuberculatus</i>			4.0	+	Priority 3
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			10.0	5	
<i>Eucalyptus microtheca</i>			10.0	10	
<i>Fimbristylis punctata</i>			0.3	20	
<i>Sorghum ?stipoideum</i>			3.0	5	
<i>Spermacoce laevigata</i>			0.1	+	



Photo 53: View of the vegetation at Q102



Photo 54: View of the ground at Q102

Survey Area:		Material Investigation Area 14		Quadrat:	Q103
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 482811	Northing mN: 8266498	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	10	25	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Eucalyptus miniata</i>	
	3	30	Tussock grassland	<i>Eriachne avenacea</i> , <i>Sorghum</i> <i>?stipoideum</i> , <i>Panicum sp</i> , <i>Triodia bynoei</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia nuperrima</i>			0.8	+	
<i>Aristida latifolia</i>			1.0	+	
<i>Blumea diffusa</i>			0.3	+	
<i>Buchnera linearis</i>			0.3	+	
<i>Cajanus pubescens</i>			0.6	1	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	5	
<i>Crosslandia setifolia</i>			0.3	+	
<i>Crotalaria crispata</i>			0.2	+	
<i>Cyperus cunninghamii</i> subsp <i>uniflorus</i>			0.4	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			1.0	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne avenacea</i>			0.8	5	
<i>Eucalyptus miniata</i>			10.0	20	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			8.0	+	
<i>Ludwigia perennis</i>			0.6	+	
<i>Mitrasacme exserta</i>			0.3	+	
<i>Panicum sp</i>			0.8	8	
<i>Polycarpaea corymbosa</i>			0.8	+	
<i>Sorghum ?stipoideum</i>			3.0	3	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Tephrosia leptoclada</i>			0.3	+	
<i>Triodia bynoei</i>			0.6	10	
<i>Vigna lanceolata</i>			0.5	+	
<i>Vigna lanceolata</i> var <i>filiformis</i>			0.2	+	
<i>Wrightia saligna</i>			0.5	+	



Photo 55: View of the vegetation at Q103



Photo 56: View of the ground at Q103

Survey Area:		Material Investigation Area 14		Quadrat:	Q104
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 482018	Northing mN: 8266631	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2-6	10	Woodland	<i>Melaleuca argentea</i>	
	0-2	20	Grasses and sedges	<i>Byblis filifolia</i> , <i>Triodia bynoei</i> , <i>Schoenus punctatus</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.4	+	
<i>Blumea diffusa</i>			0.3	1	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchnera ramosissima</i>			0.4	1	
<i>Byblis filifolia</i>			0.3	7	
<i>Calandrinia quadrivalvis sens lat</i>			0.2	+	
<i>Cartonema parviflorum</i>			0.2	+	
<i>Centrolepis exserta</i>			0.1	1	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	+	
<i>Dichanthium sp</i>			0.8	+	
<i>Drosera burmanni</i>			0.1	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eucalyptus microtheca</i>			10.0	1	
<i>Fuirena ciliaris</i>			0.3	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Grevillea heliosperma</i>			0.5	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			0.5	+	
<i>Lindernia chrysoplectra</i>			0.2	1	
<i>Ludwigia perennis</i>			0.8	+	
<i>Melaleuca argentea</i>			6.0	10	
<i>Platyzoma microphyllum</i>			0.6	1	
<i>Schoenus punctatus</i>			0.6	3	Priority 3, Range Extension
<i>Sorghum ?stipoideum</i>			2.0	2	
<i>Stackhousia intermedia</i>			0.6	+	
<i>Stylidium schizanthum</i>			0.2	1	
<i>Thecanthes sanguinea</i>			0.3	+	
<i>Triodia bynoei</i>			0.6	10	
<i>Xyris complanata</i>			0.3	+	



Photo 57: View of the vegetation at Q104



Photo 58: View of the ground at Q104

Survey Area:		Material Investigation Area 14		Quadrat:	Q105
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484065	Northing mN: 8267395	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-12	30	Woodland	<i>Corymbia flavescens</i> , <i>Eucalyptus tectifera</i> , <i>Melaleuca viridiflora</i> , <i>Brachychiton tuberculatus</i>	
	0-1.5	90	Tussock grassland	<i>Abildgaardia schoenoides</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia ?bitextura</i> , <i>Eriachne sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	10	
<i>Atalaya variifolia</i>			0.5	+	
<i>Bauhinia cunninghamii</i>			3.0	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			3.0	+	
<i>Brachychiton tuberculatus</i>			2.5	5	Priority 3
<i>Buchnera linearis</i>			0.1	+	
<i>Buchnera linearis</i>			0.7	+	
<i>Cajanus latisepalus</i>			0.5	+	
<i>Cajanus marmoratus</i>			0.2	+	
<i>Calandrinia quadrivalvis</i>			0.1	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.6	+	
<i>Corymbia flavescens</i>			12.0	10	
<i>Corymbia greeniana</i>			8.0	+	
<i>Crotalaria crispata</i>			0.3	+	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.1	+	
<i>Dolichandrone heterophylla</i>			0.5	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne sp</i>			0.6	10	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			7.0	+	
<i>Eucalyptus tectifera</i>			10.0	10	
<i>Euphorbia sp</i>			0.6	+	
<i>Gomphrena humifusa</i>			0.1	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hakea arborescens</i>			5.0	+	
<i>Melaleuca viridiflora</i>			6.0	8	
<i>Owenia vernicosa</i>			5.5	1	
<i>Planchonia careya</i>			5.0	+	
<i>Sorghum ?stipoideum</i>			2.0	60	
<i>Spermacece sp</i>			0.2	+	
<i>Triodia ?bitextura</i>			0.5	10	



Photo 59: View of the vegetation at Q105



Photo 60: View of the ground at Q105

Survey Area:		Material Investigation Area 14		Quadrat:	Q106
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484301	Northing mN: 8267174	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-10	30	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Eucalyptus tectifera</i> , <i>Planchonia careya</i>	
	0-1.5	40	Tussock grassland	<i>Eriachne avenacea</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.2	+	
<i>Brachychiton tuberculatus</i>			2.0	+	Priority 3
<i>Buchnera linearis</i>			0.2	+	
<i>Buchnera linearis</i>			0.5	+	
<i>Cajanus latisepalus</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	25	
<i>Corymbia flavescens</i>			10.0	+	
<i>Eriachne avenacea</i>			0.6	40	
<i>Eucalyptus tectifera</i>			10.0	5	
<i>Ficus sp</i>			0.5	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			3.0	+	
<i>Planchonia careya</i>			5.0	2	
<i>Polycarpaea longiflora</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			2.0	2	
<i>Spermacoce sp</i>			0.2	1	



Photo 61: View of the vegetation at Q106

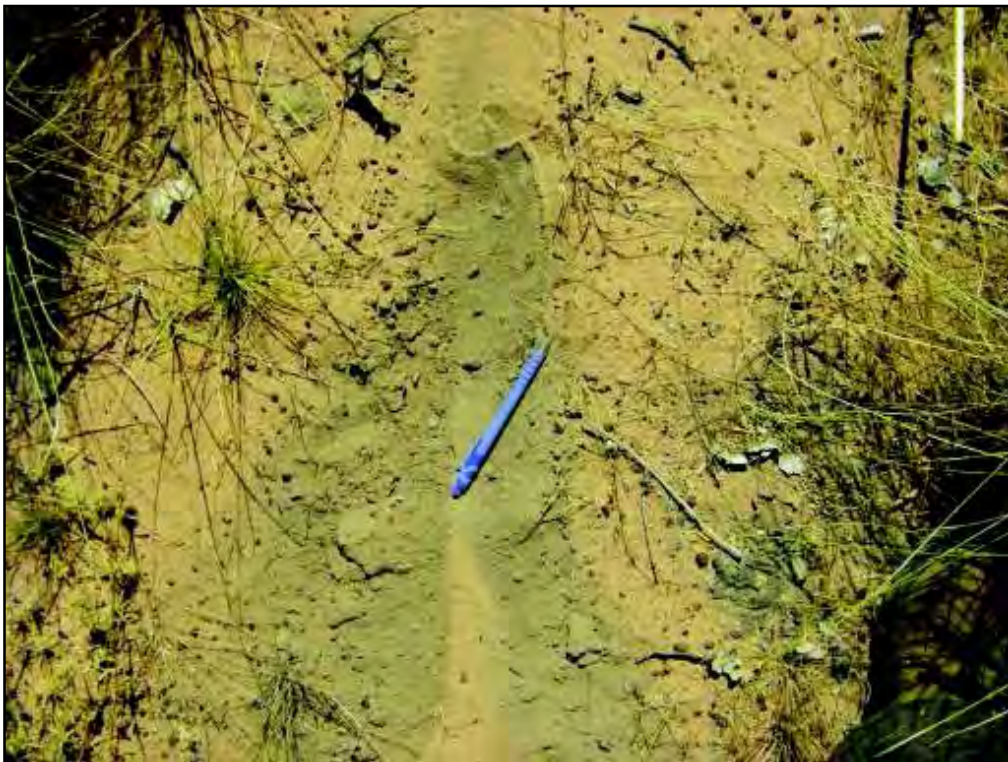


Photo 62: View of the ground at Q106

Survey Area:		Material Investigation Area 14		Quadrat:	Q107
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 485512	Northing mN: 8266279	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	0.6-10	30	Woodland	<i>Eucalyptus tectifica</i> , <i>Melaleuca sp</i>	
	0-0.6	85	Tussock grassland/sedges	<i>Abildgaardia schoenoides</i> , <i>Sorghum ?stipoideum</i> , <i>Eragrostis sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cyperus sp</i>			0.4	+	
<i>Abildgaardia schoenoides</i>			0.6	60	
<i>Acacia sp</i>			0.1	+	
<i>Adansonia gregorii</i>			8.0	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Brachychiton tuberculatus</i>			0.3	+	Priority 3
<i>Buchnera linearis</i>			0.3	+	
<i>Centrolepis exserta</i>			0.1	+	
<i>Centrolepis exserta</i>			0.1	+	
<i>Crotalaria montana var angustifolia</i>			0.1	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eragrostis sp</i>			0.5	15	
<i>Eucalyptus tectifica</i>			10.0	20	
<i>Ficus sp</i>			0.5	+	
<i>Fimbristylis sp</i>			0.2	+	
<i>Grevillea pteridifolia</i>			5.0	+	
<i>Lindernia clausa</i>			0.1	+	
<i>Melaleuca sp</i>			6.0	10	
<i>Oldenlandia delicata</i>			0.1	+	
<i>Panicum decompositum</i>			0.5	+	
<i>Platyzoma microphyllum</i>			0.3	1	
<i>Rotala mexicana</i>			0.1	+	
<i>Sorghum ?stipoideum</i>			0.8	10	
<i>Stackhousia intermedia</i>			0.7	+	
<i>Stylidium lobuliflorum</i>			0.1	+	
<i>Xyris complanata</i>			0.3	+	
<i>Zornia prostrata var prostrata</i>			0.1	+	



Photo 63: View of the vegetation at Q107



Photo 64: View of the ground at Q107

Survey Area:		Material Investigation Area 14		Quadrat:	Q108
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 485169	Northing mN: 8266500	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	6-10	20	Woodland	<i>Eucalyptus tectifica</i> , <i>Melaleuca</i> sp, <i>Corymbia flavescens</i>	
	0-1	70	Tussock grassland	<i>Buchnera linearis</i> , <i>Sorghum ?stipoideum</i> , <i>Eragrostis</i> sp, <i>Triodia</i> sp	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Buchnera linearis</i>			0.6	10	
<i>Cajanus marmoratus</i>			0.5	+	
<i>Corymbia flavescens</i>			10.0	2	
<i>Corymbia greeniana</i>			9.0	1	
<i>Crotalaria crispata</i>			0.3	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eragrostis</i> sp			0.5	20	
<i>Eucalyptus tectifica</i>			8.0	15	
<i>Ficus</i> sp			5.0	+	
<i>Fimbristylis</i> sp			0.3	+	
<i>Grevillea pteridifolia</i>			6.5	1	
<i>Melaleuca</i> sp			6.0	5	
<i>Melaleuca viridiflora</i>			6.0	2	
<i>Platyzoma microphyllum</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			1.0	20	
<i>Stackhousia intermedia</i>			0.7	+	
<i>Stylidium lobuliflorum</i>			0.1	+	
<i>Triodia</i> sp			0.6	30	
<i>Xyris complanata</i>			0.5	+	



Photo 65: View of the vegetation at Q108



Photo 66: View of the ground at Q108

Survey Area:		Material Investigation Area 14		Quadrat:	Q109
Method:		50x50m quadrat		Date:	30/06/2009
Quadrat Centre:		Easting mE: 484804	Northing mN: 8266732	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-10	15	Woodland	<i>Corymbia flavescens</i> , <i>Eucalyptus tectifera</i>	
	0-1.5	85	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triodia sp</i> , <i>Abildgaardia schoenoides</i> , <i>Eriachne sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	5	
<i>Acacia lamprocarpa</i>			6.0	+	
<i>Adansonia gregorii</i>			8.0	+	
<i>Bauhinia cunninghamii</i>			3.0	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Brachychiton tuberculatus</i>			4.0	+	Priority 3
<i>Buchnera linearis</i>			0.2	+	
<i>Buchnera linearis</i>			0.5	+	
<i>Corymbia flavescens</i>			10.0	10	
<i>Crotalaria crispata</i>			0.2	+	
<i>Drosera ordensis</i>			0.2	+	
<i>Eriachne sp</i>			0.5	5	
<i>Eucalyptus tectifera</i>			8.0	5	
<i>Fimbristylis sp</i>			0.5	+	
<i>Grewia retusifolia</i>			0.6	+	
<i>Hakea arborescens</i>			6.0	+	
<i>Melaleuca sp</i>			5.0	2	
<i>Melaleuca viridiflora</i>			5.0	+	
<i>Panicum decompositum</i>			0.6	+	
<i>Pterocaulon sphacelatum</i>			0.5	+	
<i>Rhynchospora exserta</i>			0.3	1	
<i>Sorghum ?stipoideum</i>			1.5	40	
<i>Spermacoce sp</i>			0.3	+	
<i>Triodia sp</i>			0.4	30	
<i>Xyris complanata</i>			0.3	+	



Photo 67: View of the vegetation at Q109



Photo 68: View of the ground at Q109

Survey Area:		Material Investigation Area 14		Quadrat:	Q110
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483486	Northing mN: 8266753	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1-7	25	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>	
	0-1	70	Tussock grassland/sedges	<i>Abildgaardia schoenoides</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Abildgaardia schoenoides</i>			0.5	20	
<i>Acacia sp</i>			6.0	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.5	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton tuberculatus</i>			2.0	+	Priority 3
<i>Buchnera linearis</i>			0.1	+	
<i>Cajanus latisepalus</i>			0.4	+	
<i>Calandrinia quadrivalvis</i>			0.1	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.6	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			7.0	25	
<i>Distichostemon hispidulus</i> var <i>aridus</i>			0.2	+	
<i>Eriachne avenacea</i>			0.5	+	
<i>Ficus sp</i>			6.0	+	
<i>Grevillea heliosperma</i>			3.0	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			2.0	+	
<i>Haemodorum sp</i>			0.6	+	
<i>Mitrasacme epigaea</i>			0.1	+	
<i>Panicum decompositum</i>			0.6	+	
<i>Planchonia careya</i>			5.0	+	
<i>Platyzoma microphyllum</i>			0.6	+	
<i>Sorghum ?stipoideum</i>			1.5	10	
<i>Spermacece sp</i>			0.2	+	
<i>Stackhousia intermedia</i>			0.5	+	
<i>Stylidium lobuliflorum</i>			0.1	+	
<i>Triodia sp</i>			0.5	40	
<i>Xyris complanata</i>			0.5	1	
<i>Zornia prostrata</i> var <i>prostrata</i>			0.2	+	



Photo 69: View of the vegetation at Q110



Photo 70: View of the ground at Q110

Survey Area:		Material Investigation Area 14		Quadrat:	Q111
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 483819	Northing mN: 8266389	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	2.5-12	25	Woodland	<i>Eucalyptus miniata</i> , <i>Eucalyptus tectifica</i>	
	0-2.5	80	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Eriachne sp</i> , <i>Triodia sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Jasminum molle</i>			0.8	+	
<i>Acacia sp</i>			3.5	+	
<i>Blumea diffusa</i>			0.2	+	
<i>Buchanania obovata</i>			6.0	+	
<i>Buchnera linearis</i>			0.3	+	
<i>Cajanus latisepalus</i>			0.6	+	
<i>Calandrinia quadrivalvis</i>			0.2	+	
<i>Crotalaria crispata</i>			0.5	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne sp</i>			0.5	30	
<i>Eucalyptus miniata</i>			12.0	20	
<i>Eucalyptus tectifica</i>			10.0	5	
<i>Ficus sp</i>			5.0	+	
<i>Fimbristylis denudata</i>			0.1	+	
<i>Grevillea pteridifolia</i>			4.0	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			2.0	+	
<i>Haemodorum sp</i>			0.6	+	
<i>Platyzoma microphyllum</i>			0.4	+	
<i>Sorghum ?stipoideum</i>			2.5	30	
<i>Spermacoce sp</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.2	+	
<i>Triodia sp</i>			0.5	20	
<i>Xyris complanata</i>			0.4	+	



Photo 71: View of the vegetation at Q111



Photo 72: View of the ground at Q111

Survey Area:		Material Investigation Area 14		Quadrat:	Q112
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 485063	Northing mN: 8265449	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.3-8	20	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Brachychiton tuberculatus</i>	
	0-1.3	70	Grassland	<i>Abildgaardia schoenoides</i> , <i>Sorghum</i> <i>?stipoideum</i> , <i>Triodia sp</i> , <i>Eriachne sp</i> ,	
Species			Height (m)	Cover (%)	Comments
<i>Jasminum molle</i>			0.6	+	
<i>Abildgaardia schoenoides</i>			0.6	10	
<i>Acacia nuperrima</i>			0.3	+	
<i>Acacia sp</i>			0.5	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton tuberculatus</i>			3.0	2	Priority 3
<i>Buchanania obovata</i>			5.5	+	
<i>Buchnera linearis</i>			0.1	+	
<i>Buchnera linearis</i>			0.3	+	
<i>Cajanus latisepalus</i>			0.5	1	
<i>Cochlospermum fraseri</i>			2.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	20	
<i>Crotalaria crispata</i>			0.2	+	
<i>Dolichandrone heterophylla</i>			0.3	+	
<i>Eriachne ciliata</i>			0.3	+	
<i>Eriachne sp</i>			0.6	10	
<i>Fimbristylis schultzei</i>			0.1	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			1.5	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.4	+	
<i>Planchonia careya</i>			3.0	1	
<i>Pterocaulon sphacelatum</i>			0.4	+	
<i>Scleria rugosa</i>			0.2	+	
<i>Sorghum ?stipoideum</i>			1.3	20	
<i>Spermacoce sp</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.2	+	
<i>Tephrosia coriacea</i>			0.6	+	
<i>Tinospora smilacina</i>			0.5	+	
<i>Triodia sp</i>			0.5	30	
<i>Unknown species</i>			5.0	+	



Photo 73: View of the vegetation at Q112



Photo 74: View of the ground at Q112

Survey Area:		Material Investigation Area 14		Quadrat:	Q113
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 484580	Northing mN: 8265781	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.5-8	20	Woodland	<i>Corymbia greeniana</i> , <i>Erythrophleum chlorostachys</i>	
	0-1.5	60	Grassland	<i>Eriachne sp</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Jasminum molle</i>			0.8	+	
<i>Abildgaardia schoenoides</i>			0.6	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.6	+	
<i>Atalaya variifolia</i>			0.6	+	
<i>Bauhinia cunninghamii</i>			0.8	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			8.0	1	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Buchnera linearis</i>			0.3	+	
<i>Cajanus latisepalus</i>			0.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.7	+	
<i>Corymbia greeniana</i>			8.0	15	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne avenacea</i>			0.6	1	
<i>Eriachne sp</i>			0.6	20	
<i>Erythrophleum chlorostachys</i>			7.0	5	
<i>Ficus sp</i>			6.0	+	
<i>goodenia sepalosa</i> var <i>sepalosa</i>			0.2	+	
<i>Grevillea refracta</i> subsp <i>refracta</i>			2.0	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hakea arborescens</i>			3.5	2	
<i>Melaleuca sp</i>			5.0	+	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.4	+	
<i>Panicum decompositum</i>			0.6	+	
<i>Platyzoma microphyllum</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			1.5	10	
<i>Spermacoce sp</i>			0.2	+	
<i>Stemodia lathraia</i>			0.2	+	
<i>Triodia sp</i>			0.5	30	



Photo 75: View of the vegetation at Q113



Photo 76: View of the ground at Q113

Survey Area:		Material Investigation Area 14		Quadrat:	Q114
Method:		50x50m quadrat		Date:	01/07/2009
Quadrat Centre:		Easting mE: 484237	Northing mN: 8266101	GDA 1994 Zone 52	
Landscape:		Alluvial plain - slightly rolling			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
Vegetation Structure:	1.8-6	20	Open woodland	<i>Melaleuca viridiflora</i>	
	0-1.8	60	Grassland	<i>Fimbristylis sphaerocephala</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Cyperus sp</i>			0.3	+	
<i>Aristida sp</i>			0.5	+	
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton tuberculatus</i>			2.0	+	Priority 3
<i>Buchnera linearis</i>			0.3	+	
<i>Centrolepis exserta</i>			0.1	+	
<i>Cochlospermum fraseri</i>			3.5	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia sp</i>			10.0	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eriachne sp</i>			0.5	2	
<i>Erythrophleum chlorostachys</i>			5.0	+	
<i>Ficus sp</i>			6.0	+	
<i>Fimbristylis sphaerocephala</i>			0.5	5	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Hakea arborescens</i>			6.0	+	
<i>Melaleuca viridiflora</i>			6.0	20	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.4	+	
<i>Panicum decompositum</i>			0.5	+	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Rotala mexicana</i>			0.1	+	
<i>Sorghum ?stipoideum</i>			1.8	15	
<i>Triodia sp</i>			0.5	40	
<i>Wrightia saligna</i>			1.0	+	



Photo 77: View of the vegetation at Q114



Photo 78: View of the ground at Q114

Survey Area:		Borrow Pit 4		Quadrat:	Q115
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 468304	Northing mN: 8280011	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orangey brown sandy clay			
Fire Age:		>3 years			
Condition:		Completely degraded - previously cleared, complete loss of structure, one weed recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-1.5	60	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Calotropis procera</i>			2.0	+	Weed
<i>Acacia difficilis</i>			1.0	+	
<i>Bauhinia cunninghamii</i>			0.5	+	
<i>Brachychiton diversifolius</i>			0.75	+	
<i>Brachychiton tuberculatus</i>			1.5	2	Priority 3
<i>Buchanania oblongifolia</i>			2.0	+	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.25	+	
<i>Corymbia confertiflora</i>			1.0	+	
<i>Corymbia greeniana</i>			1.0	+	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			1.0	1	
<i>Ficus aculeata</i> var <i>indecora</i>			1.0	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.75	1	
<i>Goodenia sepalosa</i> var <i>sepalosa</i>			0.1	+	
<i>Grevillea agrifolia</i>			1.0	+	
<i>Grevillea erythroclada</i>			1.5	+	
<i>Grewia retusifolia</i>			0.75	+	
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>			0.5	+	
<i>Melaleuca viridiflora</i>			1.0	+	
<i>Owenia vernicosa</i>			2.0	+	
<i>Passiflora foetida</i> var <i>hispida</i>			1.0	+	
<i>Petalostigma pubescens</i>			1.0	+	
<i>Sorghum ?stipoideum</i>			1.5	60	
<i>Stemodia lathraia</i>			0.5	+	
<i>Waltheria indica</i>			0.5	+	
<i>Wrightia saligna</i>			1.0	+	



Photo 79: View of the vegetation at Q115



Photo 80: View of the ground surface at Q115

Survey Area:		Borrow Pit 4		Quadrat:	Q116
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 468616	Northing mN: 8279878	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial – boulder scree and outcropping			
Rock Type:		Sandstone			
Soil:		Red/brown silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-8	20	Open woodland	<i>Corymbia ?bella, Eucalyptus miniata</i>	
	0.5-1.5	15	Shrubland	<i>Petalostigma pubescens</i>	
	0-0.5	25	Hummock grassland	<i>Triodia bynoei</i>	
Species			Height (m)	Cover (%)	Comments
<i>Eucalyptus sp</i>			4.0	+	
<i>Blumea tenella</i>			0.3	+	
<i>Buchanania obovata</i>			1.5	+	
<i>Bulbostylis barbata</i>			0.2	+	
<i>Calytrix exstipulata</i>			1.5	1	
<i>Cheilanthes brownii</i>			0.3	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia ?bella</i>			7.0	10	
<i>Dicliptera armata</i>			0.2	+	
<i>Eriachne ciliata</i>			0.3	1	
<i>Erythrophleum chlorostachys</i>			2.0	+	
<i>Eucalyptus miniata</i>			8.0	10	
<i>Gomphrena lanata</i>			0.3	+	
<i>Grevillea heliosperma</i>			1.5	+	
<i>Maytenus ferdinandi</i>			2.5	+	
<i>Mitrasacme connata</i>			0.5	+	
<i>Owenia vernicosa</i>			4.0	+	
<i>Persoonia falcata</i>			2.0	+	
<i>Petalostigma pubescens</i>			1.5	15	
<i>Schizachyrium fragile</i>			0.3	+	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Stemodia lythrifolia</i>			0.2	+	
<i>Tephrosia laxa</i>			0.5	+	
<i>Terminalia platyphylla</i>			3.0	+	
<i>Triodia bynoei</i>			1.5	25	
<i>Zornia prostrata</i> var <i>prostrata</i>			0.3	+	



Photo 81: View of the vegetation at Q116



Photo 82: View of the ground surface at Q116

Survey Area:		Borrow Pit 4		Quadrat:	Q117
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 468380	Northing mN: 8279723	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial – boulder scree and outcropping			
Rock Type:		Sandstone			
Soil:		Red/brown silt			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-10	10	Open woodland	<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i> , <i>Owenia vernicosa</i>	
	0-1	5	Creepers	<i>Passiflora foetida</i> var <i>hispida</i>	
Species			Height (m)	Cover (%)	Comments
<i>Atalaya variifolia</i>			1.0	+	
<i>Blumea tenella</i>			0.1	+	
<i>Buchanania obovata</i>			0.1	+	
<i>Calytrix exstipulata</i>			1.5	1	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia ?grandifolia</i> subsp <i>lamprocardia</i>			10.0	10	
<i>Dicliptera armata</i>			0.3	+	
<i>Ficus aculeata</i> var <i>indecora</i>			0.4	+	
<i>Ficus platypoda</i>			5.0	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			2.0	1	
<i>Galactia tenuiflora</i>			0.1	+	
<i>Owenia vernicosa</i>			8.0	2	
<i>Passiflora foetida</i> var <i>hispida</i>			0.1	3	
<i>Pterocaulon serrulatum</i>			2.0	+	
<i>Sorghum ?stipoideum</i>			2.5	+	
<i>Terminalia platyphylla</i>			3.0	+	
<i>Triodia bynoei</i>			1.5	+	
<i>Wrightia saligna</i>			3.0	+	



Photo 83: View of the vegetation at Q117



Photo 84: View of the ground surface at Q117

Survey Area:		Borrow Pit 4		Quadrat:	Q118
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 468487	Northing mN: 8279978	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.6-8	20	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Acacia holosericea</i>	
	0-0.6	20	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia holosericea</i>			6.0	10	
<i>Calytrix exstipulata</i>			1.5	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	10	
<i>Distichostemon hispidulus</i> var <i>aridus</i>			0.8	+	
<i>Erythrophleum chlorostachys</i>			2.5	+	
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>			1.5	+	
<i>Haemodorum</i> sp			0.6	+	
<i>Owenia vernicosa</i>			2.0	+	
<i>Setaria apiculata</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			0.6	20	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.3	+	
<i>Terminalia platyphylla</i>			6.0	+	
<i>Triodia bitextura</i>			0.5	+	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.4	+	
<i>Wrightia saligna</i>			1.5	+	



Photo 85: View of the vegetation at Q118



Photo 86: View of the ground surface at Q118

Survey Area:		Borrow Pit 4		Quadrat:	Q119
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 468262	Northing mN: 8279900	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.6-15	30	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Erythrophleum chlorostachys</i> , <i>Terminalia canescens</i>	
	0-0.6	70	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Atalaya variifolia</i>			1.5	+	
<i>Bauhinia cunninghamii</i>			2.0	+	
<i>Calytrix exstipulata</i>			1.0	+	
<i>Cochlospermum fraseri</i>			2.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			14.0	20	
<i>Crotalaria ramosissima</i>			0.3	+	
<i>Dolichandrone heterophylla</i>			0.8	+	
<i>Erythrophleum chlorostachys</i>			10.0	10	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.7	+	
<i>Indigofera hirsuta</i>			0.6	+	
<i>Sorghum ?stipoideum</i>			0.6	70	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.3	+	
<i>Terminalia canescens</i>			9.0	2	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.3	+	



Photo 87: View of the vegetation at Q119



Photo 88: View of the ground surface at Q119

Survey Area:		Borrow Pit 4		Quadrat:	Q120
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 468562	Northing mN: 8280111	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/brown sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.6-8	20	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Acacia holosericea</i>	
	0-0.6	20	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia holosericea</i>			6.0	10	
<i>Calytrix exstipulata</i>			1.5	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	10	
<i>Distichostemon hispidulus</i> var <i>aridus</i>			0.8	+	
<i>Erythrophleum chlorostachys</i>			2.5	+	
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>			1.5	+	
<i>Haemodorum</i> sp			0.6	+	
<i>Owenia vernicosa</i>			2.0	+	
<i>Setaria apiculata</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			0.6	20	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Stemodia lythrifolia</i>			0.3	+	
<i>Terminalia platyphylla</i>			6.0	+	
<i>Triodia bitextura</i>			0.5	+	
<i>Vittadinia spechtii</i> var <i>kimberleyensis</i>			0.4	+	
<i>Wrightia saligna</i>			1.5	+	



Photo 89: View of the vegetation at Q120



Photo 90: View of the ground surface at Q120

Survey Area:		Borrow Pit 5		Quadrat:	Q121
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 468917	Northing mN: 8278717	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil - scattered gravel			
Rock Type:		N/A			
Soil:		Orange/brown silty clay			
Fire Age:		>3 years			
Condition:		Very good – two weeds recorded, low levels of grazing in some areas			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	7-10	45	Woodland	<i>Eucalyptus ?tectifica</i> , <i>Terminalia platyptera</i> , <i>Petalostigma pubescens</i> , <i>Bauhinia cunninghamii</i> , <i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>	
	0-1.5	40	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Heteropogon contortus</i> , <i>Sorghum stipoideum</i> , <i>Stylosanthes hamata</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.5	2	Weed
<i>Stylosanthes scabra</i>			1.5	+	Weed
<i>Adansonia gregorii</i>			10.0	+	
<i>Bauhinia cunninghamii</i>			3.0	2	
<i>Blumea tenella</i>			0.2	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			4.0	2	
<i>Buchnera ramosissima</i>			0.2	+	
<i>Calytrix exstipulata</i>			2.5	+	
<i>Chrysopogon ?fallax</i>			0.3	+	
<i>Cochlospermum fraseri</i>			4.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	+	
<i>Corymbia ?abbreviata</i>			3.0	+	
<i>Corymbia confertiflora</i>			10.0	1	
<i>Corymbia greeniana</i>			10.0	1	
<i>Crotalaria montana</i> var <i>angustifolia</i>			0.2	+	
<i>Dicliptera armata</i>			0.2	+	
<i>Dodonaea physocarpa</i>			2.0	+	
<i>Dolichandrone heterophylla</i>			1.0	+	
<i>Ehretia saligna</i> var <i>saligna</i>			1.5	+	
<i>Eragrostis cumingii</i>			0.3	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.5	10	Range extension
<i>Erythrophleum chlorostachys</i>			5.0	1	
<i>Eucalyptus ?tectifica</i>			10.0	6	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.5	+	
<i>Grevillea pteridifolia</i>			0.5	+	
<i>Hakea arborescens</i>			2.0	+	
<i>Heteropogon contortus</i>			0.5	10	
<i>Jasminum molle</i>			2.0	3	
<i>Persoonia falcata</i>			2.5	+	
<i>Petalostigma pubescens</i>			4.0	20	
<i>Schizachyrium fragile</i>			0.2	3	
<i>Sorghum stipoideum</i>			1.5	20	
<i>Spermacoce laevigata</i>			0.2	+	
<i>Terminalia platyptera</i>			8.0	15	

Species	Height (m)	Cover (%)	Comments
<i>Waltheria indica</i>	1.0	+	



Photo 91: View of the vegetation at Q121



Photo 92: View of the ground surface at Q121

Survey Area:		Borrow Pit 5		Quadrat:	Q122
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 469046	Northing mN: 8278640	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey silty sand/clay			
Fire Age:		>3 years			
Condition:		Excellent – one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-8	15	Open woodland	<i>Eucalyptus ?tectifica</i> , <i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>	
	0-1	75	Tussock grassland	<i>Themeda triandra</i> , <i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Eriachne sulcata</i> , <i>Rhynchospora exserta</i> ,	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes scabra</i>			1.0	+	Weed
<i>Abildgaardia schoenoides</i>			0.1	+	
<i>Bacopa floribunda</i>			0.2	+	
<i>Bauhinia cunninghamii</i>			4.0	1	
<i>Corymbia confertiflora</i>			6.0	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			0.3	+	
<i>Dolichandrone heterophylla</i>			4.0	1	
<i>Elytrophorus</i> sp			0.4	+	
<i>Enneapogon polyphyllus</i>			0.2	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	10	Range extension
<i>Eriachne sulcata</i>			0.7	5	
<i>Eucalyptus ?tectifica</i>			8.0	5	
<i>Fimbristylis microcarya</i>			0.3	+	
<i>Grevillea striata</i>			2.0	1	
<i>Grewia retusifolia</i>			1.0	+	
<i>Heteropogon contortus</i>			0.8	+	
<i>Iseilema vaginiflorum</i>			0.3	+	
<i>Ludwigia perennis</i>			1.0	2	
<i>Melaleuca nervosa</i> subsp <i>?crosslandiana</i>			5.0	5	
<i>Polycarpaea corymbosa</i> var <i>corymbosa</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.3	2	
<i>Rotala mexicana</i>			0.05	+	
<i>Scleria rugosa</i>			0.5	+	
<i>Streptoglossa</i> sp			0.2	+	
<i>Terminalia platyptera</i>			3.0	1	
<i>Themeda triandra</i>			1.0	60	



Photo 93: View of the vegetation at Q122



Photo 94: View of the ground surface at Q122

Survey Area:		Borrow Pit 5		Quadrat:	Q123
Method:		50x50m quadrat		Date:	28/05/2009
Quadrat Centre:		Easting mE: 469271	Northing mN: 8278840	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Grey clay/loam			
Fire Age:		>3 years			
Condition:		Very good – no weeds recorded, low levels of grazing in some areas, tracks in some areas.			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-8	20	Open woodland	<i>Corymbia confertiflora</i> , <i>Eucalyptus ?tectifica</i> , <i>Terminalia platyptera</i> , <i>Bauhinia cunninghamii</i>	
	0-1	70	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Fuirena ciliaris</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Macroptilium lathyroides</i> var <i>semirectum</i>			1.0	1	Weed
<i>Stylosanthes hamata</i>			0.5	1	Weed
<i>Acacia holosericea</i>			3.0	+	
<i>Acacia lamprocarpa</i>			2.0	+	
<i>Ammannia multiflora</i>			0.5	+	
<i>Bacopa floribunda</i>			0.2	1	
<i>Bauhinia cunninghamii</i>			5.0	2	
<i>Buchanania obovata</i>			2.0	+	
<i>Chrysopogon ?fallax</i>			0.5	+	
<i>Cochlospermum fraseri</i>			2.0	+	
<i>Corymbia bella</i>			10.0	3	
<i>Corymbia confertiflora</i>			6.0	10	
<i>Corymbia greeniana</i>			8.0	+	
<i>Dolichandrone heterophylla</i>			2.0	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.5	5	Range extension
<i>Eucalyptus ?tectifica</i>			8.0	8	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			0.3	+	
<i>Fuirena ciliaris</i>			0.3	40	
<i>Goodenia brachypoda</i>			0.1	+	Priority 1
<i>Grewia breviflora</i>			0.3	+	
<i>Grewia retusifolia</i>			1.0	+	
<i>Hakea arborescens</i>			3.0	+	
<i>Hibiscus meraukensis</i>			0.3	+	
<i>Hygrophila angustifolia</i>			0.3	+	
<i>Ludwigia perennis</i>			0.6	+	
<i>Nelsonia campestris</i>			0.2	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.5	+	
<i>Petalostigma pubescens</i>			3.0	2	
<i>Planchonia careya</i>			2.0	+	
<i>Pterocaulon verbascifolium</i>			0.7	+	
<i>Rotala mexicana</i>			0.05	+	
<i>Scleria rugosa</i>			0.2	+	
<i>Stemodia lathraia</i>			0.3	+	
<i>Terminalia platyptera</i>			6.0	6	
<i>Themeda triandra</i>			1.0	30	



Photo 95: View of the vegetation at Q123



Photo 96: View of the ground surface at Q123

Survey Area:		Borrow Pit 6		Quadrat:	Q124
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 465473	Northing mN: 8273680	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial scree			
Rock Type:		Sandstone			
Soil:		Red/brown silty sand			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-12	35	Woodland	<i>Calytrix exstipulata</i> , <i>Corymbia bella</i> , <i>Terminalia canescens</i> , <i>Erythrophleum chlorostachys</i>	
	1-2	20	Tussock grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Buchanania oblongifolia</i>			4.0	1	
<i>Cajanus pubescens</i>			1.5	+	
<i>Calytrix exstipulata</i>			4.0	30	
<i>Cochlospermum fraseri</i>			2.0	+	
<i>Corymbia ?opaca</i>			4.0	+	
<i>Corymbia bella</i>			10.0	5	
<i>Eriachne ciliata</i>			0.5	+	
<i>Erythrophleum chlorostachys</i>			6.0	4	
<i>Owenia vernicosa</i>			5.0	+	
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Terminalia canescens</i>			10.0	3	
<i>Terminalia hadleyana</i>			3.0	+	



Photo 97: View of the vegetation at Q124



Photo 98: View of the ground surface at Q124

Survey Area:		Borrow Pit 6		Quadrat:	Q125
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 465236	Northing mN: 8273845	GDA 1994 Zone 52	
Landscape:		Hillside – ridgeline			
Surface:		Colluvial – scree and outcropping			
Rock Type:		Sandstone			
Soil:		Red/brown silty sand			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	10	30	Woodland	<i>Calytrix exstipulata</i> , <i>Corymbia bella</i> , <i>Gardenia dacryoides</i> , <i>Owenia vernicosa</i> , <i>Terminalia canescens</i> , <i>Terminalia hadleyana</i>	
	0-2	55	Grassland	<i>Cyperus cunninghamii</i> subsp <i>cunninghamii</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia bynoei</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia adoxa</i> var <i>adoxo</i>			0.25	+	
<i>Buchanania oblongifolia</i>			6.0	+	
<i>Cajanus pubescens</i>			1.5	+	
<i>Cajanus pubescens</i>			1.5	+	
<i>Calytrix exstipulata</i>			4.0	10	
<i>Corymbia ?opaca</i>			4.0	+	
<i>Corymbia bella</i>			8.0	5	
<i>Cyperus cunninghamii</i> subsp <i>cunninghamii</i>			0.25	20	
<i>Eriachne ciliata</i>			0.5	+	
<i>Gardenia dacryoides</i>			4.0	4	
<i>Owenia vernicosa</i>			8.0	2	
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Terminalia canescens</i>			10.0	3	
<i>Terminalia hadleyana</i>			3.0	2	
<i>Triodia bynoei</i>			0.75	15	



Photo 99: View of the vegetation at Q125



Photo 100: View of the ground surface at Q125

Survey Area:		Borrow Pit 6		Quadrat:	Q126
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 465301	Northing mN: 8273934	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial – scree and outcropping			
Rock Type:		Sandstone			
Soil:		Brown silty sand			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-10	40	Open woodland	<i>Corymbia ?bella</i> , <i>Corymbia confertiflora</i> , <i>Owenia vernicosa</i> , <i>Terminalia canescens</i> , <i>Terminalia latipes</i> , <i>Gardenia dacryoides</i> , <i>Calytrix exstipulata</i>	
	0-1.5	10	Scattered grasses	<i>Triodia bynoei</i> , <i>Sorghum ?stipoideum</i> , <i>Cajanus pubescens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia adoxa</i> var <i>adoxo</i>			0.3	+	
<i>Acacia lycopodiifolia</i>			0.4	+	
<i>Atalaya variifolia</i>			5.0	+	
<i>Brachychiton fitzgeraldianus</i>			3.5	+	
<i>Buchanania obovata</i>			6.0	+	
<i>Cajanus pubescens</i>			1.5	4	
<i>Calytrix exstipulata</i>			3.0	5	
<i>Clerodendrum floribundum</i> var <i>ovatum</i>			1.7	+	
<i>Cochlospermum fraseri</i>			4.0	1	
<i>Corymbia ?bella</i>			10.0	20	
<i>Corymbia confertiflora</i>			8.0	5	
<i>Cyperus cunninghamii</i> subsp <i>uniflorus</i>			0.2	+	
<i>Dicliptera armata</i>			0.2	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			1.5	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.5	+	
<i>Gardenia dacryoides</i>			5.0	2	
<i>Gomphrena lanata</i>			0.25	+	
<i>Lysiana spathulata</i> subsp <i>spathulata</i>			0.1	+	
<i>Maytenus ferdinandi</i>			2.0	+	
<i>Owenia vernicosa</i>			6.0	10	
<i>Persoonia falcata</i>			4.0	+	
<i>Sorghum ?stipoideum</i>			1.5	2	
<i>Sorghum sp</i>			1.5	+	
<i>Stemodia lythrifolia</i>			0.2	+	
<i>Terminalia canescens</i>			4.0	2	
<i>Terminalia latipes</i>			5.0	2	
<i>Themeda triandra</i>			1.0	+	
<i>Tinospora smilacina</i>			0.1	+	
<i>Triodia bynoei</i>			1.5	5	
<i>Wrightia saligna</i>			1.5	+	



Photo 101: View of the vegetation at Q126



Photo 102: View of the ground surface at Q126

Survey Area:		Borrow Pit 6		Quadrat:	Q127
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 465418	Northing mN: 8274033	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial – scree and outcropping			
Rock Type:		Sandstone			
Soil:		Brown silty sand			
Fire Age:		Partially burnt, <6 months to >3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-7	10	Open woodland	<i>Corymbia confertiflora</i> , <i>Owenia vernicosa</i> , <i>Terminalia canescens</i> , <i>Terminalia latipes</i> , <i>Gardenia dacryoides</i> , <i>Calytrix exstipulata</i>	
	0-1.5	5	Scattered grasses	<i>Sorghum ?stipoideum</i> , <i>Cajanus pubescens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia adoxa</i> var <i>adoxo</i>			0.3	+	
<i>Adansonia gregorii</i>			6.0	+	
<i>Brachychiton fitzgeraldianus</i>			3.0	+	
<i>Buchanania obovata</i>			6.0	+	
<i>Cajanus pubescens</i>			1.5	3	
<i>Calytrix exstipulata</i>			3.0	5	
<i>Cochlospermum fraseri</i>			4.0	1	
<i>Corymbia confertiflora</i>			8.0	5	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.4	+	
<i>Cyperus cunninghamii</i> subsp <i>uniflorus</i>			4.0	+	
<i>Gardenia dacryoides</i>			5.0	2	
<i>Gomphrena lanata</i>			0.25	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			2.0	+	
<i>Maytenus ferdinandi</i>			2.0	+	
<i>Owenia vernicosa</i>			6.0	10	
<i>Sorghum ?stipoideum</i>			1.5	2	
<i>Sorghum sp</i>			1.5	+	
<i>Stemodia lythrifolia</i>			0.6	+	
<i>Terminalia canescens</i>			4.0	2	
<i>Terminalia latipes</i>			5.0	2	
<i>Vitex glabrata</i>			8.0	+	
<i>Wrightia saligna</i>			3.5	+	



Photo 103: View of the vegetation at Q127



Photo 104: View of the ground surface at Q127

Survey Area:		Borrow Pit 6		Quadrat:	Q128
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 465601	Northing mN: 8273890	GDA 1994 Zone 52	
Landscape:		Watercourse area - moderate creek 5m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty sand			
Fire Age:		>3 years			
Condition:		Good – three weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2.5-10	15	Open woodland	<i>Terminalia ?hadleyana, Corymbia sp</i>	
	1-2.5	10	Open shrub layer	<i>Acacia holosericea, Dichrostachys spicata</i>	
	0-1	50	Tussock grassland	<i>Eriachne glauca var barbinodis, Heteropogon contortus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Clitoria ternatea</i>			0.5	1	Weed
<i>Crotalaria goreensis</i>			0.5	+	Weed
<i>Stylosanthes hamata</i>			0.5	+	Weed
<i>Acacia holosericea</i>			2.5	5	
<i>Acacia plectocarpa</i> subsp <i>plectocarpa</i>			3.0	+	
<i>Ammannia multiflora</i>			0.3	+	
<i>Asteraceae sp</i>			0.5	+	
<i>Atalaya hemiglauc</i>			2.5	+	
<i>Bacopa floribunda</i>			0.2	+	
<i>Bauhinia cunninghamii</i>			3.0	1	
<i>Buchanania obovata</i>			2.0	+	
<i>Calytrix exstipulata</i>			3.0	+	
<i>Corymbia sp</i>			10.0	2	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			0.2	+	
<i>Cyperus holoschoenus</i>			0.7	+	
<i>Dichrostachys spicata</i>			2.5	5	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	10	Range extension
<i>Eriachne speciosa</i>			1.5	+	
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			6.0	1	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Fimbristylis microcarya</i>			0.2	+	
<i>Fimbristylis rara</i>			0.3	+	
<i>Fuirena ciliaris</i>			0.3	+	
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>			3.0	+	
<i>Hakea arborescens</i>			2.5	1	
<i>Heteropogon contortus</i>			1.0	40	
<i>Lipocarpa microcephala</i>			0.2	+	
<i>Lophostemon grandiflorus</i> subsp <i>riparius</i>			6.0	2	
<i>Ludwigia perennis</i>			0.3	+	
<i>Melaleuca ?argentea</i>			6.0	1	
<i>Nelsonia campestris</i>			0.2	+	
<i>Nomismia rhomboidea</i>			0.7	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.8	+	

Species	Height (m)	Cover (%)	Comments
<i>Rotala mexicana</i>	0.05	+	
<i>Stemodia lythrifolia</i>	0.5	+	
<i>Terminalia hadleyana</i>	8.0	10	



Photo 105: View of the vegetation at Q128



Photo 106: View of the ground surface at Q128

Survey Area:		Borrow Pit 7		Quadrat:	Q129
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 467276	Northing mN: 8272244	GDA 1994 Zone 52	
Landscape:		Water course area - Ord River bank			
Surface:		Alluvial soil with cobblestones			
Rock Type:		N/A			
Soil:		Brown sand			
Fire Age:		>3 years			
Condition:		Poor – heavy weed infestation			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-0.5	75	Tussock grassland	<i>Cenchrus ciliaris</i> , <i>Heteropogon contortus</i> , <i>Urochloa mosambicensis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Calotropis procera</i>			2.0	+	Weed
<i>Cenchrus ciliaris</i>			0.5	70	Weed
<i>Parkinsonia aculeata</i>			3.0	+	Weed
<i>Urochloa mosambicensis</i>			0.5	2	Weed
<i>Vachellia farnesiana</i>			3.0	+	Weed
<i>Aristida holathera</i> var <i>holathera</i>			2.0	1	
<i>Eucalyptus camaldulensis</i> var <i>obtusata</i>			5.0	+	
<i>Heteropogon contortus</i>			1.0	5	
<i>Indigofera linifolia</i>			0.5	+	
<i>Lophostemon grandiflorus</i> subsp ?			2.0	+	
<i>Panicum decompositum</i>			1.5	+	
<i>Passiflora foetida</i> var <i>hispida</i>			1.0	+	
<i>Portulaca pilosa</i>			0.5	+	



Photo 107: View of the vegetation at Q129



Photo 108: View of the ground surface at Q129

Survey Area:		Borrow Pit 7		Quadrat:	Q130
Method:		50x50m quadrat		Date:	22/05/2009
Quadrat Centre:		Easting mE: 466932	Northing mN: 8272299	GDA 1994 Zone 52	
Landscape:		Alluvial plain - upper Ord River bank plains			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty sand			
Fire Age:		>3 years			
Condition:		Poor – heavy weed infestation, signs of cattle present			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2.5-10	40	Woodland	<i>Corymbia confertiflora</i> , <i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i> , <i>Bauhinia cunninghamii</i>	
	1.5-2.5	65	Shrubs	<i>Vachellia farnesiana</i> <i>Clerodendrum floribundum</i> var <i>ovatum</i> , <i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i> , <i>Hyptis suaveolens</i> , <i>Waltheria indica</i>	
	0-1.5	10	Tussock grassland	<i>Heteropogon contortus</i> , <i>Panicum decompositum</i> , <i>Poaceae</i> sp	
Species			Height (m)	Cover (%)	Comments
<i>Aerva javanica</i>			1.2	1	Weed
<i>Clitoria ternatea</i>			0.3	1	Weed
<i>Hyptis suaveolens</i>			1.7	5	Weed
<i>Malvastrum americanum</i>			1.2	+	Weed
<i>Urochloa mosambicensis</i>			0.5	+	Weed
<i>Vachellia farnesiana</i>			2.5	20	Weed
<i>Asteraceae</i> sp			0.5	1	
<i>Bauhinia cunninghamii</i>			8.0	5	
<i>Clerodendrum floribundum</i> var <i>ovatum</i>			2.5	5	
<i>Corymbia confertiflora</i>			9.0	15	
<i>Corymbia</i> sp			1.0	+	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			1.5	+	
<i>Crotalaria novae-hollandiae</i> subsp <i>novae-hollandiae</i>			1.5	40	
<i>Ehretia saligna</i> var <i>saligna</i>			2.0	+	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.5	2	
<i>Gyrocarpus americanus</i> subsp <i>pachyphyllus</i>			10.0	5	
<i>Heteropogon contortus</i>			1.2	5	
<i>Hibiscus meraukensis</i>			1.0	+	
<i>Panicum decompositum</i>			1.5	5	
<i>Paspalidium rarum</i>			0.3	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.5	1	
<i>Poaceae</i> sp			0.6	10	
<i>Polycarpaea corymbosa</i> var <i>corymbosa</i>			1.0	1	
<i>Pterocaulon sphacelatum</i>			1.0	+	
<i>Waltheria indica</i>			1.5	10	



Photo 109: View of the vegetation at Q130



Photo 110: View of the ground surface at Q130

Survey Area:		Borrow Pit 7		Quadrat:	Q131
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 467051	Northing mN: 8272111	GDA 1994 Zone 52	
Landscape:		Watercourse area - major creek 10m wide			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silty sand			
Fire Age:		>3 years			
Condition:		Poor – heavy weed infestation			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2.5-15	85	Dense woodland	<i>Eucalyptus ?microtheca</i> , <i>Eucalyptus camaldulensis</i> var <i>obtusata</i> , <i>Terminalia hadleyana</i>	
	0.5-2.5	60	Tall grasses and shrubs	<i>Chionachne hubbardiana</i> , <i>Vachellia farnesiana</i>	
	0-0.5	35	Weeds	<i>Cynodon dactylon</i> , <i>Urochloa mosambicensis</i>	
Species			Height (m)	Cover (%)	Comments
<i>Azadirachta indica</i>			6.0	+	Weed
<i>Calotropis procera</i>			2.0	+	Weed
<i>Cardiospermum halicacabum</i> var <i>halicacabum</i>			0.3	+	Weed
<i>Clitoria ternatea</i>			0.5	+	Weed
<i>Cynodon dactylon</i>			0.25	15	Weed
<i>Digitaria ciliaris</i>			0.5	+	Weed
<i>Stylosanthes hamata</i>			0.4	+	Weed
<i>Urochloa mosambicensis</i>			0.5	20	Weed
<i>Vachellia farnesiana</i>			2.0	2	Weed
<i>Achyranthes aspera</i>			0.5	+	
<i>Ammannia multiflora</i>			0.4	+	
<i>Asteraceae</i> sp			0.6	+	
<i>Chionachne hubbardiana</i>			2.5	60	
<i>Commelina ensifolia</i>			0.2	+	
<i>Cyanthillium cinereum</i>			0.4	+	
<i>Dichanthium fecundum</i>			1.5	+	
<i>Emilia sonchifolia</i>			0.7	+	
<i>Eragrostis fallax</i>			0.5	+	
<i>Eucalyptus ?microtheca</i>			15.0	35	
<i>Eucalyptus camaldulensis</i> var <i>obtusata</i>			15.0	40	
<i>Ficus aculeata</i> var <i>indecora</i>			2.0	+	
<i>Ficus coronulata</i>			7.0	+	
<i>Fimbristylis littoralis</i>			0.4	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			2.5	1	
<i>Hygrophila angustifolia</i>			0.3	+	
<i>Lophostemon grandiflorus</i> subsp <i>riparius</i>			5.0	+	
<i>Ludwigia perennis</i>			0.5	+	
<i>Nelsonia campestris</i>			0.2	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.1	+	
<i>Poaceae</i> sp			0.5	+	
<i>Terminalia ?hadleyana</i>			10.0	10	



Photo 111: View of the vegetation at Q131



Photo 112: View of the ground surface at Q131

Survey Area:		Borrow Pit 8		Quadrat:	Q132
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 463927	Northing mN: 8267925	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soils			
Rock Type:		N/A			
Soil:		Orange red silty sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	3-15	40	Woodland	<i>Eucalyptus miniata</i> , <i>Corymbia abbreviata</i> , <i>Buchanania obovata</i> , <i>Terminalia platyphylla</i>	
	0-3	70	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Polymeria ambigua</i> , <i>Zornia prostrata</i> var <i>prostrata</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida</i> sp			0.3	+	
<i>Buchanania obovata</i>			4.0	3	
<i>Byblis filifolia</i>			0.2	+	
<i>Cajanus marmoratus</i>			0.6	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.4	+	
<i>Corymbia abbreviata</i>			10.0	5	
<i>Crosslandia setifolia</i>			0.15	+	
<i>Crotalaria crispata</i>			0.3	+	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.6	+	
<i>Cynanchum floribundum</i>			0.5	+	
<i>Desmodium brownii</i>			0.2	+	
<i>Eragrostis fallax</i>			0.4	+	
<i>Eriachne ciliata</i>			0.3	+	
<i>Eriachne obtusa</i>			0.6	1	
<i>Erythrophleum chlorostachys</i>			10.0	1	
<i>Eucalyptus miniata</i>			15.0	30	
<i>Euphorbia coghlanii</i>			0.6	+	
<i>Fimbristylis punctata</i>			0.4	+	
<i>Flueggea virosa</i> subsp <i>melanthesoides</i>			1.5	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.5	+	
<i>Goodenia</i> sp			0.3	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			1.5	+	
<i>Grewia retusifolia</i>			0.7	+	
<i>Heliotropium foliatum</i>			0.2	+	
<i>Hibiscus leptocladus</i>			1.5	+	
<i>Owenia vernicosa</i>			3.0	1	
<i>Passiflora foetida</i> var <i>hispida</i>			0.1	+	
<i>Persoonia falcata</i>			3.0	+	
<i>Platyzoma microphyllum</i>			0.3	1	
<i>Polycarpaea longiflora</i>			0.7	+	
<i>Polymeria ambigua</i>			0.1	10	
<i>Portulaca pilosa</i>			0.2	+	
<i>Premna acuminata</i>			1.5	1	
<i>Setaria apiculata</i>			0.3	+	
<i>Sorghum ?stipoideum</i>			3.0	60	

Species	Height (m)	Cover (%)	Comments
<i>Spermacoce laevigata</i>	0.1	+	
<i>Stemodia lythrifolia</i>	0.2	+	
<i>Terminalia platyphylla</i>	10.0	5	
<i>Trianthema pilosa</i>	0.2	+	
<i>Vigna lanceolata</i> var <i>filiformis</i>	0.5	+	
<i>Wrightia saligna</i>	1.5	+	
<i>Zornia prostrata</i> var <i>prostrata</i>	0.1	2	



Photo 113: View of the vegetation at Q132



Photo 114: View of the ground surface at Q132

Survey Area:		Borrow Pit 8		Quadrat:	Q133
Method:		50x50m quadrat		Date:	23/05/2009
Quadrat Centre:		Easting mE: 463831	Northing mN: 8267958	GDA 1994 Zone 52	
Landscape:		Alluvial plain - old borrow pit			
Surface:		Gravel - disturbed			
Rock Type:		Sandstone			
Soil:		Red sand			
Fire Age:		>3 years			
Condition:		Completely degraded – disturbed area, previously cleared			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-1.5	10	Scattered grass and shrubs	<i>Sorghum stipoideum</i> , <i>Triumfetta ryeae</i> subsp <i>ryeae</i> , <i>Acacia stigmatophylla</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia stigmatophylla</i>			1.5	2	
<i>Buchanania obovata</i>			4.0	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	1	
<i>Cyperus bifax</i>			0.3	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.4	1	
<i>Gomphrena lanata</i>			0.2	+	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Hibiscus leptocladus</i>			1.0	1	
<i>Polycarpaea longiflora</i>			0.4	+	
<i>Ptilotus corymbosus</i>			0.3	+	
<i>Ptilotus fusiformis</i>			0.4	+	
<i>Sorghum stipoideum</i>			2.0	5	
<i>Triodia bitextura</i>			0.4	1	
<i>Triumfetta ryeae</i> subsp <i>ryeae</i>			0.75	3	
<i>Zornia prostrata</i> var <i>prostrata</i>			0	+	



Photo 115: View of the vegetation at Q133



Photo 116: View of the ground surface at Q133

Survey Area:		Borrow Pit 8		Quadrat:	Q134
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 464163	Northing mN: 8267893	GDA 1994 Zone 52	
Landscape:		Alluvial plain - soak area			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown sand			
Fire Age:		>3 years			
Condition:		Excellent – no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-4	10	Open woodland low	<i>Acacia dunnii</i> , <i>Jacksonia forrestii</i> , <i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>	
	0-1.5	90	Grassland/herbs	<i>Eriachne obtusa</i> , <i>Sorghum stipoideum</i> , <i>Corchorus sidoides</i> subsp <i>sidoides</i> , <i>Ectrosia schultzii</i> var <i>schultzii</i> , <i>Eragrostis fallax</i> , <i>Fuirena ciliaris</i> , <i>Platyzoma microphyllum</i> , <i>Stemodia tephropelina</i> , <i>Xyris complanata</i>	
Species		Height (m)	Cover (%)	Comments	
<i>Abildgaardia schoenoides</i>		0.5	+		
<i>Acacia dunnii</i>		3.0	5		
<i>Blumea diffusa</i>		0.2	+		
<i>Buchnera ramosissima</i>		0.6	+		
<i>Byblis filifolia</i>		0.5	+		
<i>Calandrinia quadrivalvis sens lat</i>		0.2	+		
<i>Centrolepis exserta</i>		0.05	+		
<i>Corchorus sidoides</i> subsp <i>sidoides</i>		1.0	5		
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>		0.3	+		
<i>Cyperus conicus</i>		1.0	+		
<i>Drosera ordensis</i>		0.1	+		
<i>Ectrosia schultzii</i> var <i>schultzii</i>		1.2	2		
<i>Emilia sonchifolia</i>		0.4	+		
<i>Eragrostis fallax</i>		1.5	3		
<i>Eriachne obtusa</i>		0.8	50		
<i>Euphorbia bifida senslat</i>		0.6	+		
<i>Ficus aculeata</i> var <i>indecora</i>		2.0	1		
<i>Fuirena ciliaris</i>		0.3	5		
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>		4.0	1		
<i>Haemodorum</i> sp		0.6	1		
<i>Jacksonia forrestii</i>		3.0	10		
<i>Lindernia chrysoplectra</i>		0.2	+		
<i>Ludwigia perennis</i>		0.5	+		
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>		4.0	2		
<i>Nelsonia campestris</i>		0.3	1		
<i>Oldenlandia delicata</i>		0.1	+		
<i>Passiflora foetida</i> var <i>hispida</i>		0	+		
<i>Persoonia falcata</i>		0.8	+		
<i>Phyllanthus virgatus</i>		0.2	+		
<i>Platyzoma microphyllum</i>		0.5	5		
<i>Pseudopogonatherum contortum</i>		1.2	1		
<i>Rotala mexicana</i>		0.1	+		
<i>Sorghum stipoideum</i>		2.0	10		

Species	Height (m)	Cover (%)	Comments
<i>Stemodia lythrifolia</i>	0.5	1	
<i>Stemodia tephropelina</i>	0.5	4	
<i>Stylidium lobuliflorum</i>	0.2	+	
<i>Thysanotus chinensis</i>	0.4	+	
<i>Verticordia cunninghamii</i>	3.0	3	
<i>Vigna lanceolata</i> var <i>filiformis</i>	0	+	
<i>Vigna lanceolata</i> var <i>lanceolata</i>	0	+	
<i>Wahlenbergia queenslandica</i>	1.0	+	
<i>Xyris complanata</i>	0.5	6	



Photo 117: View of the vegetation at Q134



Photo 118: View of the ground surface at Q134

Survey Area:		Borrow Pit 8		Quadrat:	Q135
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 464078	Northing mN: 8267715	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown sand			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-8	15	Woodland	<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i> , <i>Acacia dunnii</i> , <i>Verticordia cunninghamii</i>	
	0-1.5	40	Grassland/herbs	<i>Sorghum stipoideum</i> , <i>Xyris complanata</i> , <i>Platyzoma microphyllum</i> , <i>Haemodorum</i> <i>sp</i> , <i>Fuirena ciliaris</i> , <i>Eragrostis fallax</i> , <i>Cyperus castaneus</i> var <i>brevimucronatus</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia dunnii</i>			4.0	5	
<i>Bacopa floribunda</i>			0.2	+	
<i>Blumea diffusa</i>			0.3	+	
<i>Calandrinia quadrivalvis sens lat</i>			0.3	+	
<i>Cyperus castaneus</i> var <i>brevimucronatus</i>			1.0	2	
<i>Cyperus conicus</i>			1.0	1	
<i>Eragrostis fallax</i>			1.0	5	
<i>Ficus aculeata</i> var <i>indecora</i>			1.5	+	
<i>Fuirena ciliaris</i>			0.2	5	
<i>Haemodorum sp</i>			0.6	2	
<i>Lindernia chrysoplectra</i>			0.5	+	
<i>Ludwigia perennis</i>			0.3	+	
<i>Melaleuca nervosa</i> subsp ? <i>nervosa</i>			8.0	15	
<i>Passiflora foetida</i> var <i>hispida</i>			0	+	
<i>Platyzoma microphyllum</i>			0.3	10	
<i>Rotala mexicana</i>			0.1	+	
<i>Sorghum stipoideum</i>			1.5	5	
<i>Stemodia lathraia</i>			0.6	+	
<i>Stemodia lythrifolia</i>			0.5	1	
<i>Stemodia lythrifolia</i>			0.4	+	
<i>Stemodia tephropelina</i>			0.3	+	
<i>Verticordia cunninghamii</i>			4.0	5	
<i>Vigna lanceolata</i> var <i>lanceolata</i>			0	+	
<i>Xyris complanata</i>			0.5	20	



Photo 119: View of the vegetation at Q135

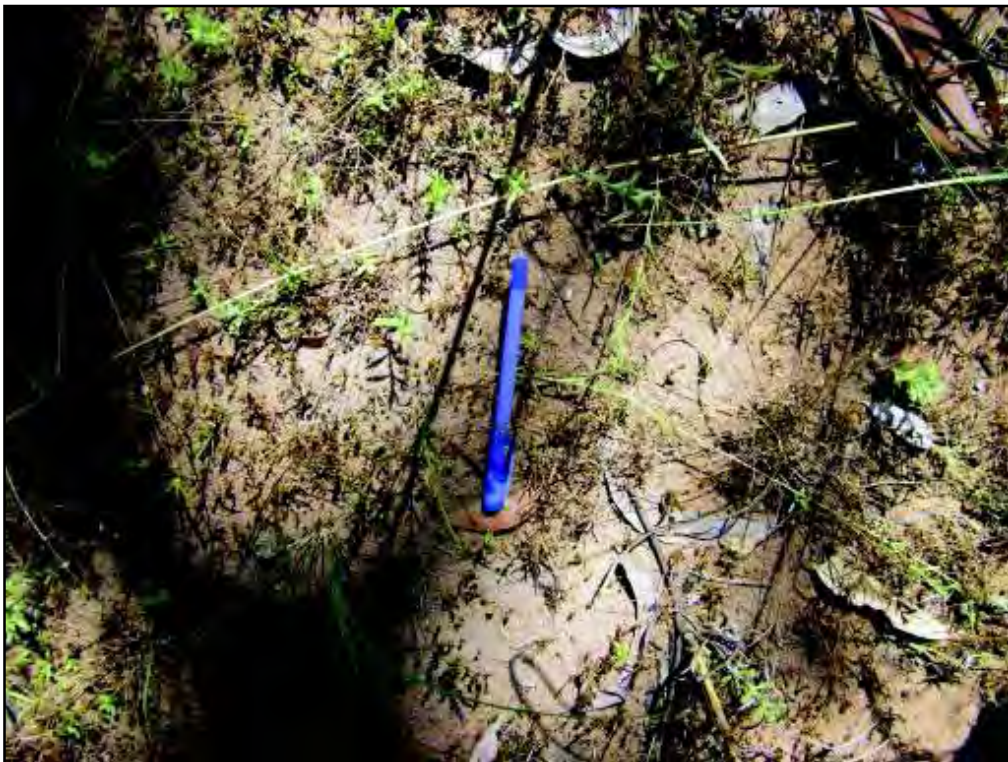


Photo 120: View of the ground surface at Q135

Survey Area:		Borrow Pit 8		Quadrat:	Q136
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 463906	Northing mN: 8267704	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange/grey sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	3.5-12	45	Woodland	<i>Corymbia ferruginea</i> subsp <i>stypophylla</i> , <i>Eucalyptus miniata</i> , <i>Erythrophleum chlorostachys</i>	
	0-3.5	80	Grassland	<i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Panicum sp</i>			0.5	+	
<i>Adansonia gregorii</i>			5.0	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.6	+	
<i>Atalaya variifolia</i>			0.6	+	
<i>Bonamia pannosa</i>			0.2	+	
<i>Buchanania obovata</i>			3.0	+	
<i>Bulbostylis barbata</i>			0.2	+	
<i>Cajanus marmoratus</i>			0.5	+	
<i>Cleome viscosa</i>			0.8	+	
<i>Cochlospermum fraseri</i>			1.5	+	
<i>Corymbia ferruginea</i> subsp <i>stypophylla</i>			8.0	10	
<i>Crotalaria ramosissima</i>			0.2	+	
<i>Dicliptera armata</i>			0.1	+	
<i>Dolichandrone heterophylla</i>			0.7	+	
<i>Erythrophleum chlorostachys</i>			8.0	10	
<i>Eucalyptus miniata</i>			12.0	25	
<i>Euphorbia sp</i>			0.4	+	
<i>Ficus aculeata</i> var <i>indecora</i>			0	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.8	+	
<i>Goodenia sepalosa</i> subsp <i>sepalosa</i>			0.4	+	
<i>Grevillea wickhamii</i> subsp <i>wickhamii</i>			2.0	+	
<i>Hibiscus leptocladus</i>			1.0	+	
<i>Jacksonia forrestii</i>			2.0	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0.2	+	
<i>Polycarpaea longiflora</i>			0.3	+	
<i>Premna acuminata</i>			0	+	
<i>Senna oligoclada</i>			0.2	+	
<i>Sorghum ?stipoideum</i>			3.5	80	
<i>Spermacoce laevigata</i>			0.3	+	
<i>Tinospora smilacina</i>			0.2	+	



Photo 121: View of the vegetation at Q136

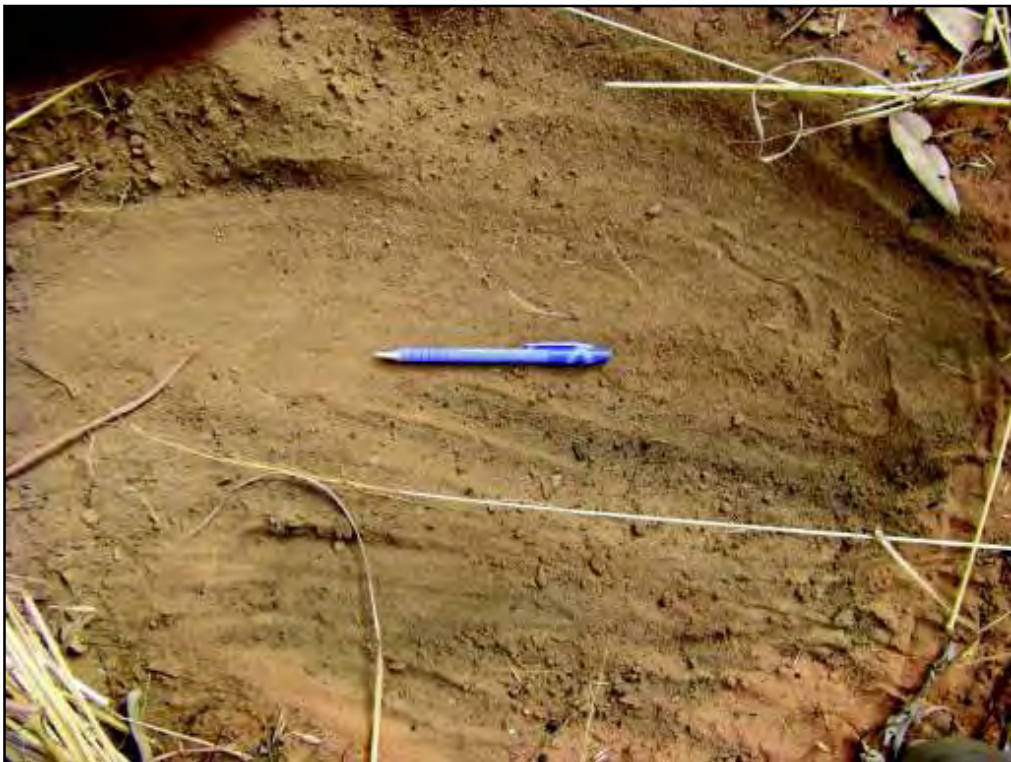


Photo 122: View of the ground surface at Q136

Survey Area:		Borrow Pit 9		Quadrat:	Q137
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 461690	Northing mN: 8259935	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil - scattered gravel			
Rock Type:		N/A			
Soil:		Brown loam			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-5	20	Woodland	<i>Corymbia polycarpa</i> , <i>Terminalia canescens</i>	
	0-2	45	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Chrysopogon sp.</i> , <i>Galactia tenuiflora</i> , <i>Sehima nervosum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.5	+	Weed
<i>Aristida inaequiglumis</i>			1.5	+	
<i>Bauhinia cunninghamii</i>			4.0	+	
<i>Buchnera ramosissima</i>			0.75	+	
<i>Calytrix exstipulata</i>			0.5	+	
<i>Calytrix exstipulata</i>			1.5	+	
<i>Christia australasica</i>			0.1	+	
<i>Chrysopogon sp.</i>			1.5	10	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			1.5	+	
<i>Corymbia polycarpa</i>			5.0	15	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			1.0	+	
<i>Cullen badocanum</i>			0.2	+	
<i>Dicliptera armata</i>			0.2	+	
<i>Dodonaea physocarpa</i>			1.5	+	
<i>Enneapogon polyphyllus</i>			0.5	+	
<i>Eriachne ciliata</i>			0.1	+	
<i>Erythrophleum chlorostachys</i>			7.0	+	
<i>Euphorbia coghlanii</i>			0.25	+	
<i>Fimbristylis schultzei</i>			0.25	+	
<i>Galactia tenuiflora</i>			0.25	4	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			1.0	+	
<i>Grevillea erythroclada</i>			4.0	1	
<i>Heliotropium dichotomum</i>			0.2	+	
<i>Indigofera colutea</i>			0.1	+	
<i>Indigofera linifolia</i>			0.25	+	
<i>Polycarpaea corymbosa</i>			0.2	+	
<i>Polycarpaea holtzei</i>			0.1	+	
<i>Ptilotus corymbosus</i>			0.2	+	
<i>Schizachyrium fragile</i>			0.25	1	
<i>Sehima nervosum</i>			1.5	10	
<i>Sorghum ?stipoideum</i>			2.0	20	
<i>Tephrosia leptoclada</i>			0.2	+	
<i>Terminalia canescens</i>			5.0	5	
<i>Wrightia saligna</i>			2.0	+	



Photo 123: View of the vegetation at Q137



Photo 124: View of the ground surface at Q137

Survey Area:		Borrow Pit 9		Quadrat:	Q138
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 461583	Northing mN: 8259891	GDA 1994 Zone 52	
Landscape:		Hillside – ridge			
Surface:		Outcropping			
Rock Type:		Sandstone			
Soil:		None			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-10	15	Open woodland	<i>Eucalyptus miniata</i> , <i>Owenia vernicosa</i> , <i>Terminalia canescens</i>	
	0-1.5	30	Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triumfetta clivorum</i> subsp <i>clivorum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Atalaya variifolia</i>			0.75	+	
<i>Christia australasica</i>			0.1	+	
<i>Cochlospermum fraseri</i>			3.0	+	
<i>Dicliptera armata</i>			0.5	+	
<i>Erythrophleum chlorostachys</i>			7.0	+	
<i>Eucalyptus miniata</i>			10.0	10	
<i>Euphorbia coghlanii</i>			0.25	+	
<i>Ficus aculeata</i> var <i>indecora</i>			1.0	+	
<i>Galactia tenuiflora</i>			0.25	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			4.0	+	
<i>Hybanthus enneaspermus</i> subsp <i>enneaspermus</i>			0.5	+	
<i>Maytenus ferdinandi</i>			3.0	+	
<i>Owenia vernicosa</i>			4.0	3	
<i>Passiflora foetida</i> var <i>hispida</i>			0.25	+	
<i>Sorghum ?stipoideum</i>			1.5	30	
<i>Terminalia canescens</i>			3.0	5	
<i>Trema tomentosa</i> var <i>aspera</i>			1.0	+	
<i>Triumfetta clivorum</i> subsp <i>clivorum</i>			0.5	2	
<i>Wrightia saligna</i>			0.75	+	



Photo 125: View of the vegetation at Q138



Photo 126: View of the ground surface at Q138

Survey Area:		Borrow Pit 9		Quadrat:	Q139
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 461765	Northing mN: 8259858	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Red/brown sandy loam			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1.5-10	15	Woodland	<i>Corymbia polycarpa</i> , <i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Terminalia canescens</i>	
	0-1.5	30	Tussock/Tussock grassland	<i>Sorghum ?stipoideum</i> , <i>Triodia sp</i>	
Species			Height (m)	Cover (%)	Comments
<i>Blumea diffusa</i>			0.1	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			8.0	+	
<i>Buchnera linearis</i>			0.1	+	
<i>Cajanus pubescens</i>			0	+	
<i>Corymbia ?greeniana</i>			5.0	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			10.0	2	
<i>Corymbia polycarpa</i>			6.0	15	
<i>Crotalaria medicaginea</i> var <i>neglecta</i>			0.5	+	
<i>Eragrostis tenellula</i>			0.2	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	+	Range extension
<i>Erythrophleum chlorostachys</i>			6.0	1	
<i>Ficus aculeata</i> var <i>indecora</i>			1.5	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			3.0	+	
<i>Ptilotus corymbosus</i>			0.5	+	
<i>Rotala mexicana</i>			0.1	+	
<i>Sorghum ?stipoideum</i>			1.5	30	
<i>Stemodia lathraia</i>			0.5	+	
<i>Terminalia canescens</i>			6.0	4	
<i>Triodia sp</i>			1.0	2	



Photo 127: View of the vegetation at Q139



Photo 128: View of the ground surface at Q139

Survey Area:		Borrow Pit 9		Quadrat:	Q140
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 461690	Northing mN: 8259803	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Orange sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-12	25	Woodland	<i>Corymbia greeniana</i> , <i>Eucalyptus</i> sp	
	0-1	70	Grassland	<i>Aristida holathera</i> var <i>holathera</i> , <i>Sorghum ?stipoideum</i> , <i>Triodia ?pungens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.3	+	Weed
<i>Terminalia canescens</i>			1.0	+	
<i>Aristida holathera</i> var <i>holathera</i>			0.6	20	
<i>Bauhinia cunninghamii</i>			0.5	+	
<i>Brachychiton diversifolius</i> subsp <i>diversifolius</i>			2.5	+	
<i>Brachychiton tuberculatus</i>			3.0	+	Priority 3
<i>Bulbostylis barbata</i>			0.1	+	
<i>Cajanus latisepalus</i>			0.5	+	
<i>Carissa lanceolata</i>			0.5	+	
<i>Cochlospermum fraseri</i>			5.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.5	+	
<i>Corymbia greeniana</i>			10.0	5	
<i>Dodonaea physocarpa</i>			0.8	+	
<i>Dolichandrone heterophylla</i>			0.6	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.6	+	Range extension
<i>Erythrophleum chlorostachys</i>			8.5	1	
<i>Eucalyptus</i> sp			10.0	20	
<i>Euphorbia</i> sp			0.5	+	
<i>Ficus aculeata</i> var <i>indecora</i>			1.5	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.6	+	
<i>Goodenia coronopifolia</i>			0.1	+	
<i>Heteropogon contortus</i>			1.2	+	
<i>Passiflora foetida</i> var <i>hispida</i>			0	+	
<i>Polycarpaea longiflora</i>			0.2	+	
<i>Pterocaulon sphacelatum</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			1.0	30	
<i>Spermacoce</i> sp			0.2	+	
<i>Terminalia canescens</i>			2.5	+	
<i>Triodia ?pungens</i>			0.3	20	
<i>Wrightia saligna</i>			1.0	+	



Photo 129: View of the vegetation at Q140

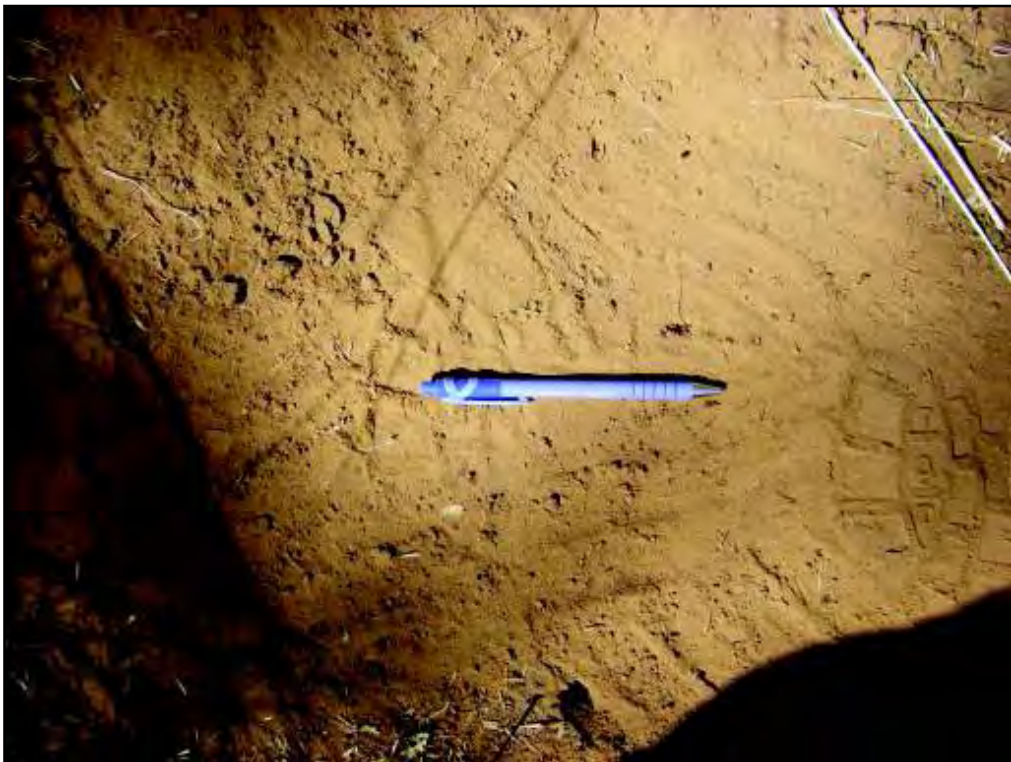


Photo 130: View of the ground surface at Q140

Survey Area:		Borrow Pit 9		Quadrat:	Q141
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 461829	Northing mN: 8260013	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-10	35	Woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Eucalyptus</i> sp, <i>Terminalia canescens</i>	
	0-1	65	Tussock grassland	<i>Aristida holathera</i> var <i>holathera</i> , <i>Heteropogon contortus</i> , <i>Triodia ?pungens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Aristida holathera</i> var <i>holathera</i>			0.6	20	
<i>Buchnera asperata</i>			4.0	+	
<i>Bulbostylis barbata</i>			0.3	+	
<i>Calytrix exstipulata</i>			3.0	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			8.0	5	
<i>Dodonaea physocarpa</i>			0.8	1	
<i>Eucalyptus</i> sp			8.0	30	
<i>Euphorbia</i> sp			0.1	+	
<i>Ficus aculeata</i> var <i>indecora</i>			1.0	+	
<i>Fimbristylis microcarya</i>			0.3	+	
<i>Glycine tomentella</i>			0.2	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.7	+	
<i>Goodenia coronopifolia</i>			0.3	+	
<i>Grevillea erythroclada</i>			1.5	+	
<i>Grewia retusifolia</i>			1.2	+	
<i>Heteropogon contortus</i>			1.0	20	
<i>Polycarpaea longiflora</i>			?	+	
<i>Sorghum ?stipoideum</i>			0.8	20	
<i>Spermacoce</i> sp			0.3	+	
<i>Terminalia canescens</i>			4.0	5	
<i>Triodia ?pungens</i>			0.3	5	
<i>Wrightia saligna</i>			1.0	+	
<i>Yakirra pauciflora</i>			0.6	+	



Photo 131: View of the vegetation at Q141



Photo 132: View of the ground surface at Q141

Survey Area:		Borrow Pit 9		Quadrat:	Q142
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 462012	Northing mN: 8259936	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Brown silt			
Fire Age:		Recently burnt - < 6months			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0-8	30	Woodland	<i>Bauhinia cunninghamii</i> , <i>Eucalyptus</i> sp, <i>Terminalia canescens</i>	
Species			Height (m)	Cover (%)	Comments
<i>Bauhinia cunninghamii</i>			5.0	2	
<i>Corchorus sidioides</i> subsp <i>sidioides</i>			0.2	+	
<i>Drosera ordensis</i>			0.1	+	
<i>Eucalyptus</i> sp			8.0	10	
<i>Excoecaria parvifolia</i>			0.5	+	
<i>Ficus aculeata</i> var <i>indecora</i>			0.2	+	
<i>Grevillea erythroclada</i>			2.5	+	
<i>Grewia retusifolia</i>			0.8	+	
<i>Heteropogon contortus</i>			0.2	1	
<i>Poaceae</i> sp			0.2	1	
<i>Scleria rugosa</i>			2.0	+	
<i>Sorghum</i> ? <i>stipoideum</i>			0.2	+	
<i>Terminalia canescens</i>			2.5	20	



Photo 133: View of the vegetation at Q142



Photo 134: View of the ground surface at Q142

Survey Area:		Borrow Pit 10		Quadrat:	Q143
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465627	Northing mN: 8256446	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil			
Rock Type:		N/A			
Soil:		Light orangey brown sandy clay			
Fire Age:		>3 years			
Condition:		Excellent - one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	2-4	3	Scattered trees	<i>Melaleuca minutifolia</i>	
	0-2	80	Tussock grassland	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Eriachne obtusa</i> , <i>Heteropogon contortus</i> , <i>Schizachyrium fragile</i> , <i>Sorghum ?stipoideum</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.5	+	Weed
<i>Terminalia canescens</i>			1	+	
<i>Buchnera linearis</i>			0.1	+	
<i>Buchnera ramosissima</i>			0.5	+	
<i>Cochlospermum fraseri</i>			3	+	
<i>Corymbia ?greeniana</i>			7	1	
<i>Dodonaea physocarpa</i>			1.5	+	
<i>Ehretia saligna</i> var <i>saligna</i>			2	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.75	30	Range extension
<i>Eriachne obtusa</i>			0.5	25	
<i>Eucalyptus camaldulensis</i> var <i>obtusa</i>			4	+	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			12	+	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.75	+	
<i>Heteropogon contortus</i>			1.5	10	
<i>Melaleuca minutifolia</i>			4	3	
<i>Ptilotus exaltatus</i> var <i>exaltatus</i>			1	+	
<i>Rhynchospora affinis</i>			0.5	+	
<i>Schizachyrium fragile</i>			0.5	10	
<i>Sida fibulifera</i>			0.5	+	
<i>Sorghum ?stipoideum</i>			2.0	10	
<i>Streptoglossa odora</i>			0.5	+	
<i>Terminalia platyptera</i>			5	1	



Photo 135: View of the vegetation at Q143



Photo 136: View of the ground surface at Q143

Survey Area:		Borrow Pit 10		Quadrat:	Q144
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465563	Northing mN: 8256225	GDA 1994 Zone 52	
Landscape:		Hillside – upper slope			
Surface:		Colluvial - boulder scree and outcropping			
Rock Type:		Sandstone			
Soil:		Orange brown silty sand			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.3-3	10	Open woodland	<i>Terminalia canescens</i>	
	0-0.3	20	Hummock grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Amyema villiflora</i> subsp <i>villiflora</i>			-	+	
<i>Buchnera asperata</i>			0.4	+	
<i>Calytrix exstipulata</i>			2.0	+	
<i>Cochlospermum fraseri</i>			2.0	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia ?bella</i>			12.0	1	
<i>Corymbia abbreviata</i>			4.0	+	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			1.5	+	
<i>Dodonaea physocarpa</i>			1.2	+	
<i>Eriachne ciliata</i>			0.2	+	
<i>Erythrophleum chlorostachys</i>			6.0	1	
<i>Fimbristylis schultzei</i>			0.15	+	
<i>Gomphrena lanata</i>			0.3	+	
<i>Grevillea heliosperma</i>			4.0	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			3.0	+	
<i>Ptilotus corymbosus</i>			0.5	+	
<i>Schizachyrium fragile</i>			0.6	+	
<i>Sorghum ?stipoideum</i>			2.0	+	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Stemodia lythrifolia</i>			0.5	1	
<i>Tephrosia laxa</i>			0.3	+	
<i>Terminalia canescens</i>			3.0	10	
<i>Terminalia platyphylla</i>			4.0	1	
<i>Triodia bitextura</i>			0.3	20	
<i>Wrightia saligna</i>			3.0	1	



Photo 137: View of the vegetation at Q144



Photo 138: View of the ground surface at Q144

Survey Area:		Borrow Pit 10		Quadrat:	Q145
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465606	Northing mN: 8256236	GDA 1994 Zone 52	
Landscape:		Hillside – lower slope			
Surface:		Colluvial - scree and outcropping			
Rock Type:		Sandstone			
Soil:		Orange brown silty sand			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-3	10	Open woodland	<i>Terminalia canescens</i>	
	0-1	60	Hummock grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia holosericea</i>			3.0	+	
<i>Bulbostylis barbata</i>			0.15	+	
<i>Calytrix exstipulata</i>			2.0	+	
<i>Carissa lanceolata</i>			1.3	+	
<i>Cochlospermum fraseri</i>			3.0	1	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.3	+	
<i>Corymbia</i> sp			0.3	+	
<i>Dicliptera armata</i>			0.3	+	
<i>Dodonaea physocarpa</i>			1.0	+	
<i>Eriachne ciliata</i>			0.2	+	
<i>Fimbristylis schultzei</i>			0.1	+	
<i>Gomphrena lanata</i>			0.2	+	
<i>Grevillea pyramidalis</i> subsp <i>pyramidalis</i>			3.0	+	
<i>Ipomoea polymorpha</i>			-	+	
<i>Mitrasacme connata</i>			0.8	+	
<i>Polycarpaea corymbosa</i>			0.2	+	
<i>Pterocaulon serrulatum</i>			1.0	+	
<i>Schizachyrium fragile</i>			0.5	+	
<i>Stemodia lythrifolia</i>			0.6	1	
<i>Terminalia canescens</i>			3.0	10	
<i>Terminalia platyphylla</i>			3.5	+	
<i>Triodia bitextura</i>			1.0	60	



Photo 139: View of the vegetation at Q145



Photo 140: View of the ground surface at Q145

Survey Area:		Borrow Pit 10		Quadrat:	Q146
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465595	Northing mN: 8256314	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil and rocks			
Rock Type:		Sandstone			
Soil:		Orange brown silty sand			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.8-5	15	Open woodland	<i>Melaleuca minutifolia</i> , <i>Terminalia platyptera</i>	
	0-0.8	7	Regrowth sedges	<i>Fuirena ciliaris</i> , <i>Fimbristylis microcarya</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			0.5	+	Weed
<i>Stylosanthes hamata</i>			0.5	+	Weed
<i>Buchnera ramosissima</i>			0.5	+	
<i>Calandrinia uniflora</i>			0.1	+	
<i>Carissa lanceolata</i>			2.5	+	
<i>Dicliptera armata</i>			0.5	+	
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			0.5	+	
<i>Fimbristylis microcarya</i>			0.5	2	
<i>Fuirena ciliaris</i>			0.8	5	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.6	+	
<i>Melaleuca minutifolia</i>			5.0	15	
<i>Polycarpaea corymbosa</i> var <i>corymbosa</i>			0.1	+	
<i>Ptilotus corymbosus</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.3	+	
<i>Stemodia lythrifolia</i>			0.6	1	
<i>Terminalia platyptera</i>			5.0	2	



Photo 141: View of the vegetation at Q146



Photo 142: View of the ground surface at Q146

Survey Area:		Borrow Pit 10		Quadrat:	Q147
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465510	Northing mN: 8256402	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil and rocks			
Rock Type:		N/A			
Soil:		Red/brown sand			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - two weeds recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	1-5.5	15	Open woodland	<i>Melaleuca viridiflora</i> , <i>Terminalia platyptera</i>	
	0-1	20	Regrowth grasses	<i>Eriachne glauca</i> var <i>barbinodis</i> , <i>Themeda triandra</i>	
Species			Height (m)	Cover (%)	Comments
<i>Hyptis suaveolens</i>			0.4	+	Weed
<i>Stylosanthes hamata</i>			0.3	+	Weed
<i>Adansonia gregorii</i>			7.0	1	
<i>Blumea diffusa</i>			0.1	+	
<i>Cochlospermum fraseri</i>			4.0	1	
<i>Eriachne glauca</i> var <i>barbinodis</i>			1.0	5	Range extension
<i>Eucalyptus pruinosa</i> subsp <i>ternata</i>			2.0	+	
<i>Melaleuca minutifolia</i>			5.0	1	
<i>Melaleuca viridiflora</i>			5.0	5	
<i>Stemodia lythrifolia</i>			0.5	+	
<i>Terminalia platyptera</i>			5.5	10	
<i>Themeda triandra</i>			1.0	15	



Photo 143: View of the vegetation at Q147



Photo 144: View of the ground surface at Q147

Survey Area:		Borrow Pit 10		Quadrat:	Q148
Method:		50x50m quadrat		Date:	24/05/2009
Quadrat Centre:		Easting mE: 465188	Northing mN: 8256390	GDA 1994 Zone 52	
Landscape:		Colluvial foot slope and rolling plain			
Surface:		Alluvial soil with rocks			
Rock Type:		Sandstone			
Soil:		Orange/brown sand			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.4-6	15	Open woodland	<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i> , <i>Calytrix exstipulata</i> , <i>Terminalia platyptera</i> , <i>Erythrophleum chlorostachys</i>	
	0-0.4	40	Hummock grassland	<i>Triodia bitextura</i> , <i>Schizachyrium fragile</i> , <i>Fimbristylis sphaerocephala</i>	
Species			Height (m)	Cover (%)	Comments
<i>Acacia holosericea</i>			2.2	+	
<i>Calytrix exstipulata</i>			3.0	5	
<i>Cochlospermum fraseri</i>			3.0	1	
<i>Corymbia ?abbreviata</i>			5.0	1	
<i>Corymbia grandifolia</i> subsp <i>lamprocardia</i>			6.0	4	
<i>Distichostemon hispidulus</i> var <i>phyllopterus</i>			0.5	1	
<i>Eriachne ciliata</i>			0.3	2	
<i>Erythrophleum chlorostachys</i>			2.0	3	
<i>Euphorbia</i> sp			0.05	+	
<i>Fimbristylis sphaerocephala</i>			0.3	2	
<i>Gomphrena canescens</i> subsp <i>canescens</i>			0.5	+	
<i>Goodenia coronopifolia</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.25	+	
<i>Schizachyrium fragile</i>			0.4	20	
<i>Sorghum stipoideum</i>			2.0	+	
<i>Spermacoce laevigata</i>			0.1	+	
<i>Stemodia lythrifolia</i>			0.3	+	
<i>Stemodia lythrifolia</i>			0.3	+	
<i>Terminalia canescens</i>			4.0	1	
<i>Terminalia platyptera</i>			3.0	7	
<i>Triodia bitextura</i>			0.4	25	
<i>Wrightia saligna</i>			1.0	+	



Photo 145: View of the vegetation at Q148



Photo 146: View of the ground surface at Q148

Survey Area:		Borrow Pit 10		Quadrat:	Q149
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 465263	Northing mN: 8256247	GDA 1994 Zone 52	
Landscape:		Hillside – mid slope			
Surface:		Colluvial – scree			
Rock Type:		Sandstone			
Soil:		Orange sandy silt			
Fire Age:		Burnt patches, <6 months to >3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.4-8	15	Open woodland	<i>Corymbia dichromophloia</i> , <i>Erythrophleum chlorostachys</i>	
	0-0.4	20	Hummock grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Calytrix exstipulata</i>			1.2	+	
<i>Cochlospermum fraseri</i>			1.8	+	
<i>Corchorus sidoides</i> subsp <i>sidoides</i>			0.8	+	
<i>Corymbia dichromophloia</i>			8.0	10	
<i>Distichostemon hispidulus</i> var <i>?aridus</i>			0.5	+	
<i>Eriachne ciliata</i>			0.1	+	
<i>Erythrophleum chlorostachys</i>			8.0	5	
<i>Gomphrena cunninghamii</i>			0.2	+	
<i>Goodenia coronopifolia</i>			0.4	+	
<i>Persoonia falcata</i>			2.0	+	
<i>Ptilotus ?corymbosus</i>			0.5	+	
<i>Stemodia lythrifolia</i>			0.4	+	
<i>Terminalia canescens</i>			3.0	1	
<i>Terminalia platyphylla</i>			8.0	1	
<i>Triodia bitextura</i>			0.4	20	
<i>Triodia sp</i>			0.2	2	
<i>Wrightia saligna</i>			0.7	+	



Photo 147: View of the vegetation at Q149



Photo 148: View of the ground surface at Q149

Survey Area:		Borrow Pit 10		Quadrat:	Q150
Method:		50x50m quadrat		Date:	02/07/2009
Quadrat Centre:		Easting mE: 465381	Northing mN: 8256169	GDA 1994 Zone 52	
Landscape:		Hillside – mid slope			
Surface:		Colluvial – scree			
Rock Type:		Sandstone			
Soil:		Orange sandy silt			
Fire Age:		>3 years			
Condition:		Excellent - no weeds or disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.5-4	10	Open woodland	<i>Terminalia canescens</i>	
	0-0.5	15	Hummock grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Buchnera linearis</i>			0.4	+	
<i>Bulbostylis barbata</i>			0.2	+	
<i>Calytrix exstipulata</i>			0.2	+	
<i>Cochlospermum fraseri</i>			2.5	+	
<i>Eriachne ciliata</i>			0.2	+	
<i>Gomphrena cunninghamii</i>			0.2	+	
<i>Sorghum ?stipoideum</i>			1.0	+	
<i>Terminalia canescens</i>			4.0	10	
<i>Triodia bitextura</i>			0.5	15	
<i>Triodia sp</i>			0.2	+	



Photo 149: View of the vegetation at Q150



Photo 150: View of the ground surface at Q150

Survey Area:		Borrow Pit 10		Quadrat:	Q151
Method:		50x50m quadrat		Date:	03/07/2009
Quadrat Centre:		Easting mE: 465541	Northing mN: 8256568	GDA 1994 Zone 52	
Landscape:		Alluvial plain			
Surface:		Alluvial soil – scattered stones			
Rock Type:		Sandstone			
Soil:		Orange brown silt			
Fire Age:		>3 years			
Condition:		Excellent - one weed recorded, no disturbances recorded			
Vegetation Structure:	Stratum (m)	Total %Cover	Description	Dominant species	
	0.6-6	20	Woodland	<i>Melaleuca minutifolia</i>	
	0-0.6	60	Grassland	<i>Triodia bitextura</i>	
Species			Height (m)	Cover (%)	Comments
<i>Stylosanthes hamata</i>			0.3	+	Weed
<i>Adansonia gregorii</i>			8.0	+	
<i>Buchnera linearis</i>			0.4	+	
<i>Calytrix exstipulata</i>			0.5	+	
<i>Dodonaea physocarpa</i>			1.0	+	
<i>Eriachne ciliata</i>			0.3	+	
<i>Eriachne glauca</i> var <i>barbinodis</i>			0.6	+	Range extension
<i>Heteropogon contortus</i>			1.0	+	
<i>Melaleuca minutifolia</i>			5.0	20	
<i>Oldenlandia mitrasacmoides</i> subsp <i>mitrasacmoides</i>			0.2	+	
<i>Rhynchospora exserta</i>			0.2	+	
<i>Sorghum ?stipoideum</i>			0.6	3	
<i>Terminalia canescens</i>			5.0	+	
<i>Themeda triandra</i>			0.6	+	
<i>Triodia bitextura</i>			0.3	50	



Photo 151: View of the vegetation at Q151



Photo 152: View of the ground surface at Q151