



Vegetation Survey of Tenements
M53/1016 and L53/148
(Proposed Haul Road) for Golden
West Resources Ltd

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Final

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1 Introduction

Golden West Resources Ltd is scheduled to develop an Iron Ore project located approximately 26 km southwest of the township of Wiluna, Western Australia.

Jim's Seeds, Weeds & Trees Pty Ltd was commissioned by Keith Lindbeck and Associates to survey tenement (M53/1016), and the associated proposed haul road (L53/148) for flora and vegetation associations which occur in these areas.

1.1 Climate and Soils

The survey area is located in the Eremaean Botanical Province of Western Australia in the Austin Botanical District of the Murchison Region (Beard, 1990). The climate of this region is arid with summer and winter rain, with an annual average precipitation of 256 mm (Bureau of Meteorology, 2005).

The Murchison Region is characterised by undulating hills, with occasional ranges of low hills and extensive sand plains in the eastern half. The principal soil type is shallow earthy loam overlying red-brown hardpan; shallow stony loams on hills and red earthy sands on sand plains (Beard, 1990).

1.2 Flora and Vegetation

The Murchison area is known as the mulga region of Western Australia because of the dominance of *Acacia aneura* (mulga) in the most extensive communities (Beard, 1990). Dominant plant families within the Austin Botanical District include Mimosaceae, Myoporaceae, Myrtaceae, Chenopodiaceae and Poaceae. The Austin Botanical District is characterized by mulga low woodland on plains, reduced to scrub on hills (Beard 1990).

2 Methods

Jim's Seeds, Weeds & Trees Pty Ltd was commissioned on the 20th and 21st of September 2005 by Keith Lindbeck and Associates to conduct a flora survey of the vegetation groups occurring within mineral tenement M53/1016. The area of this tenement is approximately 600 ha and was traversed by two people via a Kawasaki Mule, Kawasaki quad bike and on foot where appropriate. The associated haul road was approximately 8km long and within L53/148. The tenement and proposed haul road was easily accessible throughout most areas, and was covered extensively.

The different vegetation groups encountered on site were recorded and described. The vegetation associations were additionally examined for the presence or absence of any Declared Rare Flora (DRF) and Priority flora species.

The optimum time for the survey would be during the early spring period, as this would also account for the annual species present in the area, although, conditions were quite dry for that time of year and annual flora species were not well represented. Therefore not all species that may occur in the area have been recorded in this survey.

Additionally not all species collected were in flower, and were, therefore, difficult to identify to a species level. These species are represented by a question mark (?) preceding the most likely taxonomical identification (Appendix 2).

Prior to the field survey, the results of the combined search of CALM's Declared Rare and Priority Flora (CALM 2005) and the Western Australian Herbarium (WAHERB 2005) databases, were examined for species recorded within the known coordinates (GDA94 50 J 701989 7233706 and 51 J 400920 7013320). The results of this search are listed in Appendix 1. These significant flora species were examined on the Western Australian Herbarium's web page (WAHERB 2005) prior to the survey. Specimens collected during the survey were identified with the aid of samples housed at the Western Australian Herbarium, and where necessary, specialists were consulted.

Table 1 represents the definitions of Declared Rare and Priority ratings under the *Wildlife Conservation Act (1950)* as extracted from Department of Conservation and Land Management 2005.

Table 1: Definitions of Rare and Priority Flora Species (CALM 2005).

<p>R: Declared Rare Flora – Extant Taxa 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.</p>
<p>X: Declared Rare flora – Presumed Extinct Taxa Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.</p>
<p>1: Priority One – Poorly known Taxa Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small populations size, or being on lands under immediate threat, eg road verges, urban areas, farmland, active mineral leases, etc, or the plants are under threat, eg. From disease, grazing by feral animals, etc. May include taxa with threatened populations in protected lands. Such taxa are under consideration for declaration as “rare flora”, but are in urgent need of further survey.</p>
<p>2: Priority Two – Poorly Known Taxa Taxa which are known from one of 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.</p>
<p>3: Priority Three – Poorly known Taxa Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally <5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as “rare flora” but are in need of further survey.</p>
<p>4: Priority Four – Rare Taxa Taxa, which are considered to have been adequately surveyed, and which whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years</p>

2.1 Objectives

The objectives of this report were to

- Traverse tenements M53/1016 and L53/148 at the proposed Golden West Wiluna Project.
- Identify and collect the vascular plant taxa in the survey area.
- Provide a description of the vegetation occurring within the survey area.
- Assess the vegetation condition in accordance with Keighery (1994).
- Assess the clearing principles specifically relating to native vegetation as outlined in Schedule 6 attached to the Environmental Protection Act 1986.

3 Results

Six vegetation communities were encountered in the survey area. These vegetation groups were Mulga creek line, Mulga broad flood plain, Mulga hill rise, Mulga woodland, Banded Ironstone Formation and Rocky Breakaways. These communities were all dominated by the *Acacia* genus and predominantly Mulga woodlands.

Vegetation encountered in the survey comprised a total of 28 Families, 50 Genus and 105 Species.

3.1 Mulga Creek line

3.1.1 Flora

Flora recorded in the Mulga creek line vegetation group was represented by 12 Families, 14 Genus and 26 Species (Appendix 2).

No DRF species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

No Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey.

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005).

3.1.2 Vegetation

In the northern end of the tenement a large creek line exists and this contains a large semi permanent pond of water. The pond and creekline was surrounded by Mulga hill rises. The vegetation recorded in this community was representative of Mulga creek line. The dominant species were *Acacia aneura*, *Acacia quadrimarginea*, *Eucalyptus camaldulensis* and *Acacia pruinocarpa*. The understorey comprised *Eremophila georgei*, *Eremophila fraseri*, *Acacia tetragonophylla*, *Eremophila latrobei* and *Santalum lanceolatum*.



Figure 1: Mulga creekline within the tenement, bordered by *Acacia quadrimarginea*.

3.2 Mulga Broad Floodway

3.2.1 Flora

Flora recorded in the Mulga broad floodway vegetation group was represented by 9 Families, 11 Genus and 23 Species (Appendix 2).

No Declared Rare Flora species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

No Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey.

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005).

3.2.2 Vegetation

The vegetation recorded in this community was representative of Mulga broad floodway, which acts as a broad water course to carry flood flows when larger than average rainfall occurs. This vegetation group was located on a soil type that had soil characteristics and qualities similar to a clay pan, only it was densely vegetated. The dominant species were *Acacia aneura*, *Acacia quadrimarginea* and *Acacia pruinocarpa*. The understorey was comprised of *Eremophila georgei*, *Eremophila fraseri ssp galeata*, *Acacia tetragonophylla*, *Eremophila exilifolia* and *Santalum lanceolatum*.



Figure 2: Mulga broad floodway within the survey area.

3.3 Mulga rocky slopes

3.3.1 Flora

Flora recorded in the Mulga rocky slopes vegetation group was represented by 12 Families, 14 Genus and 25 Species (Appendix 2).

No Declared Rare Flora species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

One Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey. This species is *Eremophila congesta*, a Priority 1 species.

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005), although this vegetation group is considered to have local significance due to the presence of a priority species.

3.3.2 Vegetation

The vegetation recorded in this community was representative of Mulga rocky slopes, with the dominant species being *Acacia aneura* and *Acacia rhodophloia*. The understorey comprised of *Ptilotus obovatus*, *Senna artemisioides ssp sturtii*, *S. artemisioides ssp helmsii*, *S. glutinosa ssp chatelainiana*, *Eremophila forrestii ssp forrestii*, *E. fraseri*, *E. latrobei*, *Acacia tetragonophylla* and *Santalum lanceolatum*.



Figure 3: Peak of the mulga rocky slopes containing *Eremophila congesta* (P1).

3.4 Mulga woodland

3.4.1 Flora

Flora recorded in the Mulga woodland vegetation group was represented by 15 Families, 21 Genus and 32 Species (Appendix 2).

No Declared Rare Flora species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

No Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey.

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005).

3.4.2 Vegetation

The vegetation recorded in this community was representative of Mulga woodland. The dominant species was *Acacia aneura*. The mid-storey was comprised of *Acacia pruinocarpa*, *A. tetragonophylla*, *E. fraseri ssp galeata*, , *Grevillea striata*, *Hakea kippistiana*, *Psydrax attenuata*, *Santalum acuminatum*, while the understorey comprised of *Ptilotus obovatus*, *P. rotundifolius*, *Brachyscome ciliocarpa*, *Senna artemisioides ssp sturtii*, *Maireana convexa*, *M. georgei*, *Sclerolaena diacantha*, *Sclerostegia disarticulata*, *Scaevola spinescens*, *Sida calyxhymenia*, *Eremophila flabellata*, *E. latrobei ssp latrobei*, *Solanum lasiophyllum*. Grass species included *Eragrostis eriopoda*.



Figure 4: Mulga woodland within the survey area

3.5 Banded Ironstone Formation (BIF)

3.5.1 Flora

Flora recorded in the BIF vegetation group was represented by 14 Families, 16 Genus and 28 Species (Appendix 2).

No Declared Rare Flora species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

No Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey.

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005).

3.5.2 Vegetation

The vegetation recorded in this community was representative of BIF to 15 metres in height. The dominant species was *Acacia aneura*. The understorey comprised *Ptilotus obovatus*, *P. albidus*, *Chrysocephalum puteale*, *Leiocarpa semicalva ssp semicalva*, *Senna artemisioides ssp sturtii*, *S. artemisioides ssp helmsii*, *S. glutinosa ssp chatelainiana*, *Prostanthera althoferi ssp althoferi*, *P. campbellii*, *Spartothamnella teucriflora*, *Isotoma petraea*, *Eremophila flabellata*, *E. latrobei ssp latrobei*, *Stenanthemum petraeum*, *Tribulus platypterus* and *T. suberosus*, while the mid-storey was comprised of *Acacia craspedocarpa*, *Hakea kippistiana* and *Psyrax rigidula*.



Figure 5: Banded Ironstone Formation vegetation within the survey area.

3.6 Rocky Breakaway

3.6.1 Flora

Flora recorded in the Rocky breakaway vegetation group was represented by 16 Families, 25 Genus and 49 Species (Appendix 2).

No Declared Rare Flora species, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* and as listed by the Department of Conservation and Land Management (2005) were found in the area surveyed.

Four Priority Species as defined by the Department of Conservation and Land Management (2005) were located during the survey. These species were *Ptilotus chrysocomus* (P1), *Maireana prosthochaeta* (P3), *Calytrix uncinata* (P3) and *Baeckea sp* Melita Station (P3).

The area has no national environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005), although this vegetation group is considered to have local significance due to the presence of the Priority species.

3.6.2 Vegetation

The vegetation recorded in this community was representative of mulga rocky breakaway. The dominant species were *Acacia aneura* and *A. quadrimarginea*. The understorey was comprised of *Sarcostemma viminale ssp australe*, *Atriplex quinii*, *Hibbertia arcuata*, *Goodenia macrplectra*, *Maireana georgei*, *M. tomentosa*, *Frankenia pauciflora*, *Sida calyxhymenia*, *Eremophila clarkei*, *E. forrestii ssp forrestii*, *E. georgei*, *Calytrix carinata*, *C. uncinata* (P4), *Thryptomene decussata*, *Mirbelia rhagodioides*, *Dodonaea rigida*, *D. viscosa ssp mucronata*, *D. viscosa ssp spatulata*, *Lycium australe* and *Solanum lasiophyllum*, while the mid-storey comprised of *Acacia cuthbertsonii ssp cuthbertsonii*, *A. tetragonophylla*, *Eremophila oppositifolia ssp angustifolia*, *Grevillea berryana* and *Hakea kippistiana*.



Figure 6: Rocky breakaways within the survey area

4 Significant Species

Five significant species were recorded in the vegetation survey. These species were *Ptilotus chrysocomus* (P1), *Maireana prosthochaeta* (P3), *Eremophila congesta* (P1), *Calytrix uncinata* (P3) and *Baeckea sp* Melita Station (P3).

Four of these species, *Ptilotus chrysocomus* (P1), *Maireana prosthochaeta* (P3), *Calytrix uncinata* (P3) and *Baeckea sp* Melita Station (P3), were recorded within the rocky breakaway vegetation community, while *Eremophila congesta* (P1) was recorded in the Mulga rocky slopes vegetation community.

Ptilotus chrysocomus is a Priority 1 species, and this recording is only the second location that has been submitted to the WAHERB. The previous location of this species was recorded in the Carnarvon Ranges, although recent surveys by CALM have failed to record this species again in this region. To date, the only recording of this species is this one alongside the Golden West Resources proposed haul road (L53/148).

Although there is no official description of this species provided on the Western Australian Herbarium's FloraBase, this species has yellow flowers and occurred at the base of a rocky breakaway. This species was not listed in the CALM and WAHERB databases search listed in Appendix 1. This species was recorded at the location shown in Appendix 4. Approximately 5 plants were present at this location.



Figure 7: *Ptilotus chrysocomus* (P1) within the rocky breakaway vegetation community.

Maireana prosthochaeta is a Priority 3 species. No collections of this species have been recorded south of Wiluna. This species is described as an open, densely-leaved shrub, 0.3–0.6 m high, on laterite, hills and saline areas. This species was recorded at the location shown in Appendix 4, and a sample has been lodged for verification at the WAHERB. Five plants were recorded at the location shown in Appendix 4.



Figure 8: *Maireana prosthochaeta* (P3) within the rocky breakaway vegetation community.

Eremophila congesta is a Priority 1 species and was lodged and verified with the WAHERB. This species is described as an upright shrub to 1.2 m high, with purple/blue flowers occurring in August–September, on lateritic outcrops in greenstone hills and stony quartzite slopes. The location of this species is shown in Appendix 4. The closest known CALM location of this species is 32 km northeast of the survey area. Jim’s Seeds, Weeds & Trees Pty Ltd has recorded a large number of locations of this species within the Wiluna area and these recordings and specimens have been lodged and verified with the WAHERB. The nearest location is situated 18 km northwest of the survey area. Approximately 5-10 plants were recorded at each of the areas shown in Appendix 4.



Figure 9: *Eremophila congesta* (P1) collected and recorded within the mulga rocky slopes vegetation community.

Calytrix uncinata is a Priority 3 species that was collected and recorded within the rocky breakaway vegetation community. This species is described as a shrub 0.3–1 m high with white flowers occurring in August–November on white or red sand, sandy clay, granite or sandstone breakaways and rocky rises. This species was collected and recorded at the locations shown in Appendix 4. Approximately 20-30 plants were recorded at each of these locations.



Figure 10: *Calytrix uncinata* (P3) collected and recorded within the rocky breakaway vegetation community.

Baeckea sp Melita Station is a Priority 3 species is described as an upright shrub 2.2–2.5 m high with a hooked leaf. It occurs within Mulga shrublands on dark red rocky soil over ironstone. The location that this species is recorded in Appendix 4. Approximately 5 plants were recorded at this location.



Figure 11: *Baeckea sp* Melita Station collected and recorded within the rocky breakaway vegetation community.

5 Introduced Species

Two introduced species were recorded in the survey area, *Cuscuta epithymum* (Lesser Dodder) and *Anagallis arvensis var caerulea* (Pimpernel). These species were recorded in the Mulga rocky slopes and Mulga woodland vegetation communities respectively. These two species are not listed as noxious weeds on the Department of Agriculture's Noxious Weed List for Australian States and Territories (2005).

6 Vegetation Condition

The health condition of the vegetation communities surveyed by Jim's Seeds, Weeds & Trees Pty Ltd is classed as a good health condition as depicted by Keighery (1994).

A good health condition is defined as the structure being affected by multiple disturbances, while still retaining its basic structure, and has the ability to regenerate.

The disturbances in this area are from pastoral grazing, with historical and recent mineral exploration activities.

7 Discussion/Recommendations

Of the 600 ha surveyed across tenement M53/1016 held by Golden West Resources and the associated proposed haul road, six major vegetation communities comprising a combined total of 28 Families, 50 Genus and 105 Species, were recorded.

Of these species recorded, five are Priority species, *Ptilotus chrysocomus* (P1), *Maireana prosthochaeta* (P3), *Eremophila congesta* (P1), *Calytrix uncinata* (P3) and *Baeckea sp* Melita Station (P3). Samples of these species have been sent to the WAHERB for verification and lodgement.

It is recommended that the 2 km section of Haul Road located on the rocky breakaway (L53/148) be avoided and an alternative route be identified to go around this area due to the presence of the Priority 1 species *Ptilotus chrysocomus*. This is only the second recording of this species and CALM is likely to oppose any disturbance in this area due to its high significance. Therefore, further survey work will be needed in order to search for this species and consequently a new route proposed to avoid the area this species inhabits.

No vegetation communities recorded within the survey area are considered to have regional environmental significance as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (Department of Environment and Heritage 2005), although vegetation groups containing Priority species are considered to have local significance.

8 Personnel Involved

- Jim Williams- Botanist (Diploma of Horticulture)
- Eren Reid- Biological Scientist (BSc- Biological Science)
- Frank Obbens- Consultant Botanist (BA-Environmental Studies, BSc- first class honours).

9 References

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Appendix 1: CALM and WAHERB Databases search results for Rare and Priority species within the Wiluna area.

Baeckea sp. Sandstone (CA Gardner s.n.) (P1)

Eremophila congesta ms (P1)

Eremophila flaccida subsp. *attenuata* ms (P1)

Eremophila pungens ms (P1)

Euryomyrtus inflata (P1)

Neurachne lanigera (P1)

Ptilotus astrolasius var *luteolus* (P1)

Gonocarpus ephemerus (P2)

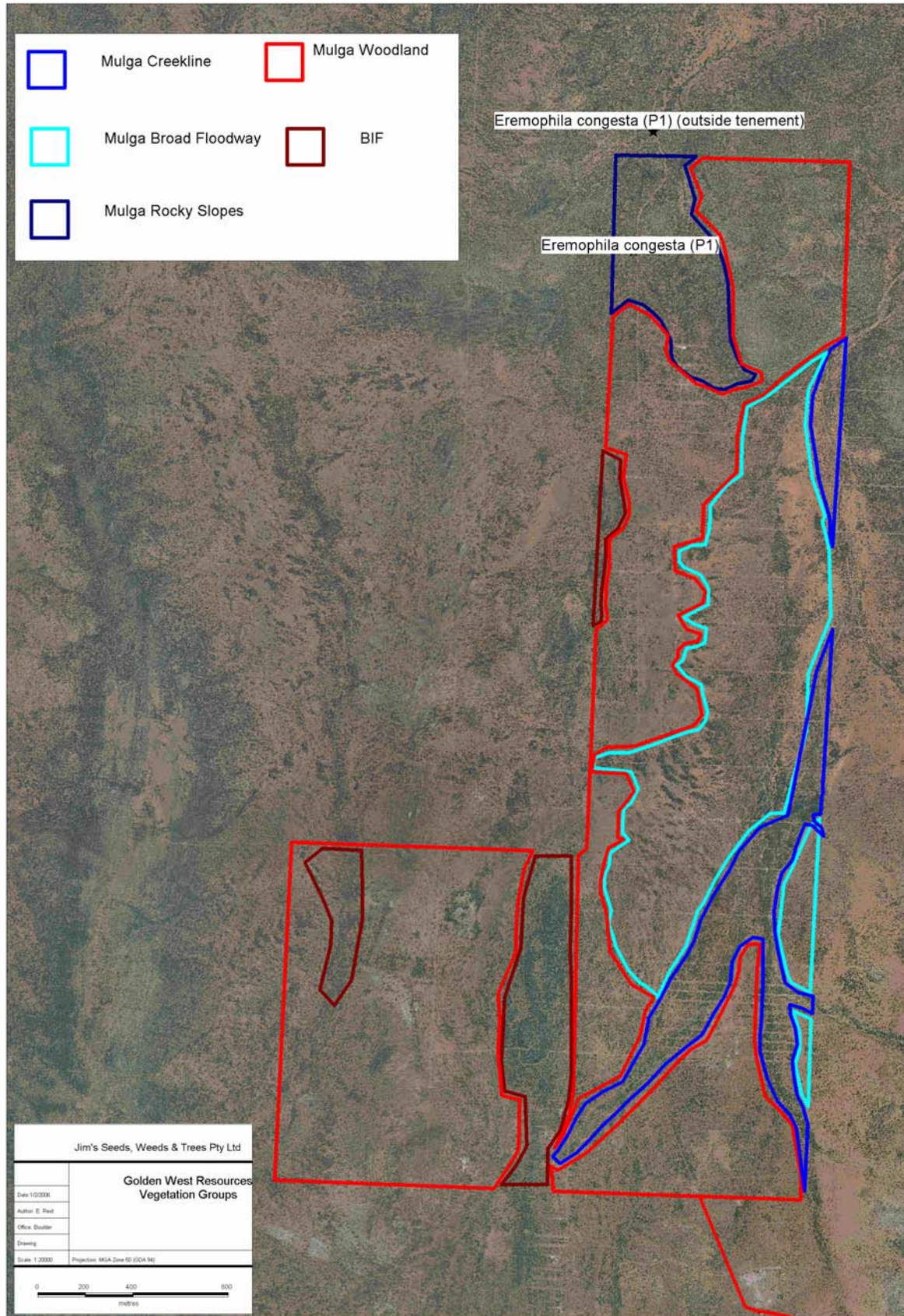
Mirbelia stipitata (P3)

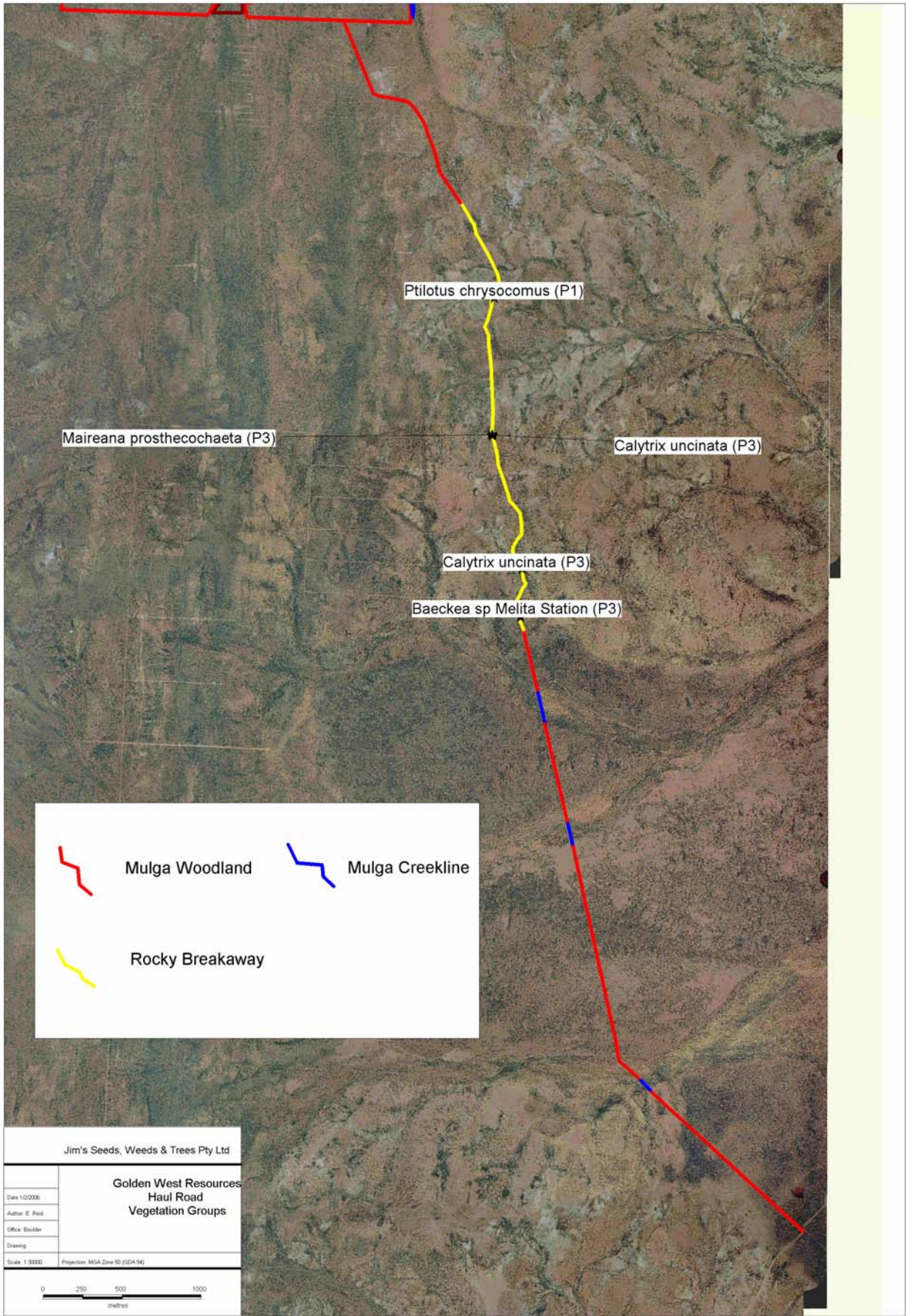
Appendix 2: Species list of the survey area

Family	Genus	Species	Mulga creekline	Mulga broad floodway	Mulga rocky slopes	Mulga woodland	BIF	Rocky Breakaway
Amaranthaceae	Ptilotus	albidus	*				*	
Amaranthaceae	Ptilotus	chrysocomus (P1)						*
Amaranthaceae	Ptilotus	obovatus	*	*	*		*	*
Amaranthaceae	Ptilotus	rotundifolius				*		
Amaranthaceae	Ptilotus	schwartzii					*	*
Asclepiadaceae	Sarcostemma	viminale ssp australe						*
Asteraceae	Brachyscome	ciliocarpa		*	*	*		*
Asteraceae	Calocephalus	multiflorus			*			
Asteraceae	Chrysocephalum	puteale	*				*	
Asteraceae	Erymophyllum	ramosum						*
Asteraceae	Gnephosis	tenuissima		*		*		
Asteraceae	Leiocarpa	semicalva ssp semicalva	*				*	
Asteraceae	Podolepis	? capillaris		*				
Asteraceae	Podolepis	canescens				*		
Asteraceae	Rhodanthe	charsleyae	*					
Caesalpiniaceae	Senna	artemisioides ssp filifolia		*				
Caesalpiniaceae	Senna	artemisioides ssp helmsii			*		*	
Caesalpiniaceae	Senna	artemisioides ssp sturtii		*	*	*	*	
Caesalpiniaceae	Senna	glutinosa ssp chatelainiana			*		*	
Chenopodiaceae	Atriplex	quinii						*
Chenopodiaceae	Maireana	carcosa						*
Chenopodiaceae	Maireana	convexa				*		*
Chenopodiaceae	Maireana	georgei				*		*
Chenopodiaceae	Maireana	glomerifolia						*
Chenopodiaceae	Maireana	prosthecochaeta (P3)						*
Chenopodiaceae	Maireana	tomentosa						*
Chenopodiaceae	Sclerolaena	diacantha				*		
Chenopodiaceae	Sclerolaena	eriacantha				*		
Chenopodiaceae	Sclerostegia	disarticulata				*		
Convolvulaceae	Porana	sericea	*					
Cuscutaceae	# Cuscuta	epithymum			*			
Dilleniaceae	Hibbertia	? arcuata						*
Frankeniaceae	Frankenia	pauciflora						*
Geraniaceae	Erodium	cygnorum	*					
Goodeniaceae	Goodenia	? quasilibera				*		
Goodeniaceae	Goodenia	macroplectra						*
Goodeniaceae	Goodenia	occidentalis						*
Goodeniaceae	Scaevola	spinescens				*		*
Lamiaceae	Prostanthera	althoferi ssp althoferi	*				*	
Lamiaceae	Prostanthera	campbellii					*	
Lamiaceae	Spartothamnella	teucriffora					*	
Liliaceae	Thysanotus	manglesianus			*			
Lobeliaceae	Isotoma	petraea					*	
Malvaceae	Hibiscus	burtonii						
Malvaceae	Sida	?sp unisexual			*		*	
Malvaceae	Sida	calyxhymenia	*	*		*		*
Mimosaceae	Acacia	? ramulosa var linophylla					*	
Mimosaceae	Acacia	?xanthocarpa						*
Mimosaceae	Acacia	acuminata	*					*
Mimosaceae	Acacia	aneura	*	*	*	*	*	*
Mimosaceae	Acacia	craspedocarpa	*	*			*	
Mimosaceae	Acacia	cuthbertsonii ssp cuthbertsonii						*
Mimosaceae	Acacia	hemiteles		*				

Family	Genus	Species	Mulga creekline	Mulga broad floodway	Mulga rocky slopes	Mulga woodland	BIF	Rocky Breakaway
Mimosaceae	Acacia	linophylla						*
Mimosaceae	Acacia	pruinocarpa	*	*	*	*		
Mimosaceae	Acacia	quadrifolia	*	*		*		*
Mimosaceae	Acacia	rhodophloia			*			*
Mimosaceae	Acacia	tetragonophylla	*	*	*	*	*	*
Myoporaceae	Eremophila	?shonae						*
Myoporaceae	Eremophila	clarkei	*	*				*
Myoporaceae	Eremophila	compacta ssp compacta				*		
Myoporaceae	Eremophila	congesta (P1)			*			
Myoporaceae	Eremophila	drummondii				*		
Myoporaceae	Eremophila	exilifolia		*				
Myoporaceae	Eremophila	flabellata			*	*	*	
Myoporaceae	Eremophila	forrestii ssp forrestii	*	*	*			*
Myoporaceae	Eremophila	fraseri ssp galeata	*	*		*	*	
Myoporaceae	Eremophila	georgei	*	*				*
Myoporaceae	Eremophila	latrobei ssp filiformis			*			*
Myoporaceae	Eremophila	latrobei ssp latrobei	*		*	*	*	
Myoporaceae	Eremophila	oppositifolia ssp angustifolia						*
Myoporaceae	Eremophila	punctata			*			
Myrtaceae	Aluta	maisonneuvei ?ssp auriculata				*		*
Myrtaceae	Baeckea	sp Melita Station (P3)						*
Myrtaceae	Calytrix	carinata						*
Myrtaceae	Calytrix	uncinata (P3)						*
Myrtaceae	Eucalyptus	camaldulensis	*					
Myrtaceae	Eucalyptus	carnei						*
Myrtaceae	Eucalyptus	kingsmillii			*			
Myrtaceae	Thryptomene	decussata						*
Papilionaceae	Mirbelia	rhagodioides						*
Poaceae	Eragrostis	eriopoda				*		*
Poaceae	Triodia	melvillei						
Primulaceae	# Anagallis	arvensis var caerulea				*		
Proteaceae	Grevillea	berryana						*
Proteaceae	Grevillea	striata				*		
Proteaceae	Hakea	kippistiana				*	*	*
Proteaceae	Hakea	lorea ssp lorea		*				
Rhamnaceae	Stenanthemum	petraeum					*	
Rubiaceae	Psychotria	attenuata	*	*	*	*		
Rubiaceae	Psychotria	latifolia	*	*	*	*		
Rubiaceae	Psychotria	rigidula					*	
Rubiaceae	Psychotria	suaveolens					*	
Santalaceae	Exocarpos	aphyllus			*			
Santalaceae	Santalum	acuminatum	*	*		*		
Santalaceae	Santalum	lanceolatum	*	*			*	
Sapindaceae	Dodonaea	? microzyga var acrolobata	*					*
Sapindaceae	Dodonaea	rigida						*
Sapindaceae	Dodonaea	viscosa ssp mucronata						*
Sapindaceae	Dodonaea	viscosa ssp spatulata						*
Solanaceae	Lycium	australe						*
Solanaceae	Nicotiana	rosulata			*			
Solanaceae	Solanum	lasiophyllum			*	*	*	*
Zygophyllaceae	Tribulus	platypterus					*	
Zygophyllaceae	Tribulus	suberosus					*	

Appendix 3: Map of the survey area







Ptilotus chrysocomus (P1)


Maireana prosthochaeta (P3)

Calytrix uncinata (P3)

Calytrix uncinata (P3)

Baeckea sp Melita Station (P3)

	Mulga Woodland		Mulga Creekline
	Rocky Breakaway		

Jim's Seeds, Weeds & Trees Pty Ltd	
Golden West Resources Haul Road Vegetation Groups	
Date: 1/2/2006	
Author: E. Reed	
Office: Stirling	
Drawing:	
Scale: 1:30000	Projection: MGA Zone 50 (GDA94)
	

Appendix 4: Coordinates of Priority species recorded in the survey area.

	GDA94 50 J	
Priority species	Easting	Northing
Eremophila congesta (P1)	794959	7046257
Eremophila congesta (P1)	794874	7045761
Ptilotus chrysocomus (P1)	796099	7040086
Baeckea sp Melita Station (P3)	796259	7038084
Calytrix uncinata (P3)	796271	7038387
Calytrix uncinata (P3)	796085	7039225
Maireana prosthocochaeta (P3)	796085	7039225