

A

Declared Rare

and Priority Flora search

of a small section of the Koorda Bullfinch Road

at the English Road intersection

in the Shire of Nungarin

Prepared for

The Shire of Nungarin

by

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1.0 INTRODUCTION

1.1 Survey area location, size and survey purpose

The survey area is a narrow strip (from less than five metres wide to almost 10metres wide) on both sides of a ca. 600 metre long section of the Koorda-Bullfinch Road. The road section to be surveyed is approximately 90 km east of Koorda and ca. 270 kilometres from Midland in a direct line, and includes the intersection with English Road (Map 1).

The purpose of the survey is to identify the presence of any species of Declared Rare or Priority Flora in the survey area.



1.2 Project area physical attributes

The Koorda Bullfinch Road survey lies on a moderately undulating part of the Yilgarn Plateau (the surface expression of the Yilgarn Craton), a very old landscape that is largely underlain by granitic rocks. It bends around most of an area of a gentle rise with scattered granitic outcrops, cutting through low lying parts of that landscape that have sheet outcrop in places.

The survey area includes places where the road has been built up creating a steep artificial slope at its edge and places where the road sits in the natural surface. Where the road sits in or close to the natural surface the verge is mostly significantly disturbed. However, in a few small places the natural surface has been little disturbed, or has regenerated well.



Image 1. Landscape view of the part of the Koorda Bullfinch Road with the English Road intersection, looking North.

Note: Image from Google Earth January 2025.

2.0 METHODS AND LIMITATIONS OF THE FLORA SURVEY

2.1 Flora survey methods

As the survey area is very narrow (from less than five metres wide to almost 10metres wide), a traverse was walked along it on each side of the road searching for flora. The traverse zig-zagged as necessary to examine parts of the strips adjacent to the road. Where the vegetation (mostly regrowth) was a little wider or was denser, extra searching was carried out to ensure no flora was missed.

A declared rare and priority flora database search was obtained for a 20 kilometre area around the survey area to enable familiarisation with such flora more likely to be in the survey area. To ensure that any other conservation significant flora was not missed, lists of flora were made at nineteen revele sites (see Map 2 and Appendix 1) and specimens collected for any flora not well known to the author of the report. Specimens were identified using keys, comparison to previously identified specimens, reference to books and taxonomic papers and use of online resources. As well as demonstrating the adequacy of the survey, the reveles provide data of the abundance and frequency of the flora recorded in the survey area. Note that the *Eremophila virens* individual was identified in the field as that species, photographed to check the field identification later, but was not collected.

2.2 Limitations of the flora survey

Due to the timing of the survey (the 11th and 12th of October 2024) native annual flora species were available to be recorded and perennial species either had flowers or were otherwise able to be identified. Possibly some native cryptophytes may not have been available due to the timing of the survey, but these are generally not very common in regrowth areas anyway. Therefore, it is thought that almost all of the flora of the survey area was recorded.

3.0 FLORA OF THE KOORDA BULLFINCH ROAD SURVEY AREA

3.1 Flora recorded

The flora recorded for the Koorda Bullfinch Road survey area in this study is not large, mainly due to the fact that the survey area is just narrow disturbed strips along the two sides of six hundred metres of road and at the intersection with English Road.

Seventy-three (73) flora species were recorded with sixty (60) of these being native species and thirteen (13) being introduced species. The flora recorded is listed in Table 1 (see below).

A *Goodenia* species recorded between releves 18 and 19 could not be identified. It was not thought to be the Declared Rare species *Goodenia granitica* during the field survey as it has a significantly different inflorescence. It also differs in the length of the calyx lobes, the width of the seed wing and the length of the corolla.

Table 1. Flora recorded in the Koorda Bullfinch Road survey area

Notes: The thirteen introduced (weed) species are given first then the native flora in alphabetical order.

TAXON	NUMBER OF RELEVES RECORDED AT.
* <i>Avena barbata</i>	2
* <i>Briza maxima</i>	2
* <i>Bromus rubens</i>	1
* <i>Cuscuta</i> sp.	1
* <i>Dicrastylis parvifolia</i>	1
* <i>Echium plantagineum</i>	1
* <i>Hypochaeris glabra</i>	2
* <i>Lolium</i> sp.	1
* <i>Mesembryanthemum crystallinum</i>	1
* <i>Monoculus monstrosus</i>	1
* <i>Oxalis corniculata</i>	1
* <i>Solanum hoplopetalum</i>	1
* <i>Vulpia myuros</i>	2
<i>Acacia acuaria</i>	2
<i>Acacia acuminata</i> (shrub form)	1
<i>Acacia burkittii</i>	10
<i>Acacia colletioides</i>	1
<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>	11
<i>Acacia prainii</i>	6
<i>Acacia tetragonophylla</i>	1
<i>Allocasuarina acutivalvis</i> subs. <i>acutivalvis</i>	1
<i>Allocasuarina campestris</i>	1
<i>Alyxia buxifolia</i>	1
<i>Amphipogon caricinus</i>	4

<i>Aristida contorta</i>	3
<i>Austrostipa elegantissima</i>	5
<i>Austrostipa hemipogon</i>	4
<i>Borya constricta</i>	1
<i>Comesperma integerimum</i>	5
<i>Dianella revoluta</i> var. <i>divaricata</i>	9
<i>Dodonaea inaeqifolia</i>	1
<i>Enchytraea tomentosa</i>	2
<i>Enekbatis clavifolius</i>	2
<i>Eremophila drummondii</i>	1
<i>Eremophila virens</i>	1
<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i>	6
<i>Exocarpos aphyllus</i>	3
<i>Gilberta tenuifolia</i>	1
<i>Glischrocaryon flavescent</i>	1
<i>Goodenia</i> sp.	
<i>Grevillea paniculata</i>	4
<i>Hakea recurva</i>	1
<i>Hibbertia glomerosa</i>	1
<i>Hysterobaeckea setifera</i> subsp. <i>meridionalis</i>	1
<i>Lobelia</i> sp.	1
<i>Lomandra</i> sp. (larger species)	1
<i>Lomandra</i> sp. (small species)	1
<i>Maireana carnosa</i>	1
<i>Maireana georgei</i>	1
<i>Melaleuca hamulosa</i>	4
<i>Melaleuca</i> cf. <i>uncinata</i>	1
<i>Melaleuca eleuterostachya</i>	3
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	5
<i>Melaleuca lateriflora</i>	4
<i>Mirbelia spinosa</i>	3
<i>Monachather paradox</i>	4
<i>Olearia</i> sp. <i>Eremicola</i>	5
<i>Podolepis aristata</i> subsp. <i>aristata</i>	2
<i>Ptilotus polystachyus</i>	2
<i>Rhagodia drummondii</i>	1
<i>Rhodanthe citrina</i>	3
<i>Santalum acuminatum</i>	2
<i>Schoenia cassiniana</i>	5
<i>Senna artemisioides</i> subsp. <i>filifolia</i>	2
<i>Senna pleurocarpa</i>	1
<i>Seringia velutina</i>	3

Siemssenia capillaris	2
Solanum cleistogamum?	1
Solanum orbiculatum subsp. orbiculatum	2
Spartochloa cyperoidea	3
Thysanotus patersonii/manglesii	1
Trachymene ornata	1
Waitzia acuminata var. acuminata	8

Somewhat predictably, the genera *Acacia* and *Melaleuca* with seven and five species respectively were the genera with the most species recorded for the survey.

3.2 Declared Rare flora species *Eremophila virens* recorded

One plant of the Declared Rare Flora species *Eremophila virens* was observed at 0637060 E 6566848 S in the Releve 16 area. The plant was healthy and in very old flower/young fruit (see image below).



Image 2. The plant of *Eremophila virens* observed at Releve 16.

3.3 No Priority flora species recorded

No Priority Flora species were recorded in the survey area.

4.0 VEGETATION OF THE KOORDA BULLFINCH ROAD SURVEY AREA

The vegetation of the survey area consists almost entirely of very variable regrowth on the highly disturbed margins of the six hundred metre long section of the Koorda Bullfinch Road and the very short part of English Road in the survey area. It is therefore not relevant to provide a vegetation classification of this regrowth as there would be no relevant scientific value in doing so.

However, the regrowth was described at nineteen relevés to provide a basis to demonstrate the thoroughness of the survey for conservation significant flora and these revele descriptions are given in Appendix 1 (see below).

The vegetation of the relevés are described using the schema of Aplin (1979), see Appendix 2.



Map 2. Location of the vegetation and flora relevés on the survey area section of the Koorda Bullfinch Road

Note: Image from Google Earth January 2025.

5.0 REFERENCES

Aplin, T.E.H. (1979) 'The Flora' in: *Environment and Science*, B.J. O'Brien (ed.). University of WA Press, Perth.

French, Malcolm (2012). Eucalypts of Western Australia's Wheatbelt. Published by Malcolm French.

6.0 ACKNOWLEDGEMENTS

Mr Dylan Copeland assisted in the field, kindly provided map 1 and organised the conservation significant flora database search.

7.0 APPENDICES

APPENDIX 1. Releve descriptions with their flora lists

Koorda-Bullfinch Site 01		11 th October 2024	MET & DC
Location geocode:	WGS84 50J	637059	6566739
<u>Habitat</u> : disturbed built up slope to road and some undisturbed flat areas with sheet granite exposed.			
<u>Vegetation</u> : <i>Acacia burkittii</i> , <i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i> open shrubland regrowth to <i>Acacia burkittii</i> closed scrub regrowth patches over <i>Amphipogon caricinus</i> scattered tussocks and <i>Asteraceae</i> spp. annual herbland			



Condition: Poor to Very Poor regrowth

<i>Acacia burkittii</i> ,		< 10 - > 30%	
<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>		< 2%	
<i>Acacia prainii</i>	+		
<i>Grevillea paniculata</i>	+		
<i>Dianella revoluta</i> var. <i>divaricata</i>	+		
<i>Austrostipa elegantissima</i>	+		
<i>Waitzia acuminata</i> var. <i>acuminata</i>	+		
<i>Seringia velutina</i>	+		
<i>Ptilotus polystachyus</i>	+		
<i>Austrostipa hemipogon</i>	+	Tussock with culms to 1 m tall.	
<i>Maireana georgei</i>	+		

Thysanotus patersonii/manglesii		+	
Olearia sp. Eremicola		+	
Lomandra sp.		+	Sterile.
Rhagodia drummondii		+	

[There was no site 2.]

Koorda-Bullfinch Site 03	11 th October 2024	MET & DC
Location geocode:	WGS84 50J	637129
<u>Habitat:</u> Slope and lower edges of built up roadwork.		
<u>Soil:</u> Yellow (brown tinge) silty fine sand; sheet granite outcrop in part of area.		
<u>Vegetation:</u> Acacia prainii regrowth scrub		
		

Notes: Species other than the Acacia had low cover.

Condition: Very Poor regrowth.

Acacia prainii		> 30%	
Dianella revoluta var. divaricata		+	
Eucalyptus loxophleba subsp. supralaevis		+	Bark smooth to base, greenish.
Acacia acuaria		+	
Melaleuca acuminata subsp. acuminata		+	
Melaleuca lateriflora		+	
Enchylaena		+	

tomentosa			
Comesperma integerrimum		+	Creepers
Alyxia buxifolia		+	
Hakea recurva		+	
Acacia tetragonophylla		+	

Koorda-Bullfinch Site 04		11 th October 2024	MET & DC
Location geocode:	WGS84 50J	637175	6566634
<u>Habitat:</u> Slope and lower edges of built up roadwork.			
<u>Vegetation:</u> Acacia prainii, Acacia burkittii, Melaleuca acuminata subsp. acuminata regrowth open scrub			
<u>Notes:</u> Site has poor regrowth. Very disturbed away from the road. Species poor. There was no photograph for this site.			
<u>Condition:</u> Very Poor regrowth, on roadwork			
Acacia prainii		> 20%	
Acacia burkittii		> 5%	
Melaleuca acuminata subsp. acuminata		> 5%	
*Mesembryanthemum crystallinum		+	
Maireana carnosa		+	

Koorda-Bullfinch Site 05	11 th October 2024	MET & DC
Location geocode:	WGS84 50J	637194
<u>Habitat:</u> Built up slope to road.		
<u>Soil:</u> Light brown clay loam. Granite exposed away from the road work.		
<u>Vegetation:</u> Acacia prainii regrowth open scrub, varying along roadwork to open scrub to scrub		
		
Site 05.		



Bush behind fence away from Site 05. This has *Acacia coolgardiensis* subsp. *coolgardiensis* high shrubland to patches of open scrub.

Notes: Quite species poor.

Condition: Very Poor regrowth

<i>Acacia prainii</i>	-	> 30 - 45%	
<i>Monachather paradoxa</i>	-	+	
<i>Waitzia acuminata</i> var. <i>acuminata</i>	-	+	
<i>Siemssenia capillaris</i>	-	+	Formerly in <i>Podolepis</i> .

Koorda-Bullfinch Site 06		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637245	6566585
<u>Habitat:</u> Steep built up road edge and moderate slope.			
<u>Vegetation:</u> <i>Allocasuarina acutivalvis</i> subs. <i>acutivalvis</i> open scrub			



Notes: This vegetation only occurred as a small patch.

Condition: Very Poor regrowth.

Allocasuarina acutivalvis subs. acutivalvis	-	> 30%	
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Koorda-Bullfinch Site 07		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637273	6566568

Habitat: Slope.

Vegetation: *Eucalyptus loxophleba* subsp. *supralaevis* scattered mallees over *Acacia burkittii*, *Melaleuca eleuterostachya* scattered shrubs to high open shrubland over *Austrostipa elegantissima* scattered tussocks



Notes: Small area.

Condition: Good.

<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i>	-	< 2%	
<i>Acacia burkittii</i>	-	< - > 2%	
<i>Dianella revoluta</i> var. <i>divaricata</i>	-	+	
<i>Melaleuca eleuterostachya</i>	-	< - > 2%	
<i>Monachather paradoxa</i>	-	+	
<i>Spartochloa cyperoidea</i>	-	+	

Koorda-Bullfinch Site 08		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637311	6566552
<u>Habitat:</u> Short steep slope on built up road edge and then slight slope.			
<u>Vegetation:</u> Melaleuca eleuterostachya high shrubland over *Vulpia myuros, Asteraceae annual herb/grassland			



<u>Condition:</u> Very Poor regrowth.			
Melaleuca eleuterostachya	-	< 1%	
*Vulpia myuros	-	> 5%	
Olearia sp. Eremicola	-	+	
Exocarpos aphyllus	-	+	
Acacia coolgardiensis subsp. coolgardiensis	-	+	
Melaleuca lateriflora	-	+	

Koorda-Bullfinch Site 09		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637337	6566542
<u>Habitat:</u> Short steep slope on built up road edge and then slight slope.			
<u>Vegetation:</u> Eucalyptus loxophleba subsp. supralaevis scattered mallees over Melaleuca lateriflora, Acacia coolgardiensis subsp. coolgardiensis, Exocarpos aphyllus high open shrubland			
<u>Notes:</u> Inside the fence the vegetation was in Very Good condition..			
<u>Condition:</u> Very Poor regrowth outside fence (a few patches Good).			
Eucalyptus loxophleba subsp. supralaevis	7+-10 m	< 2%	
Melaleuca lateriflora	-	< 1%	
Acacia coolgardiensis subsp. coolgardiensis	-	< 1%	
Exocarpos aphyllus	-	< 1%	
Melaleuca hamulosa	-	+	
Amphipogon caricinus	-	+	
Dianella revoluta var. divaricata	-	+	
Austrostipa elegantissima	-	+	
Acacia colletioides	-	+	
Hysterobaeckea setifera subsp. meridionalis	-	+	One plant.
Enchytraea tomentosa	-	+	
Acacia acuminata	-	+	Bush form.

Koorda-Bullfinch Site 10		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637390	6566521
<u>Habitat:</u> Small built up road shoulder then gentle slope.			

Vegetation: Melaleuca hamulosa shrubland to high shrubland and open scrub over Asteraceae, *Vulpia myuros, *Briza maxima herb/grassland



Condition: Very Poor regrowth.			
Melaleuca hamulosa	-	> 10 - 30%	
Asteraceae spp.		-	
*Vulpia myuros			
*Briza maxima			
Acacia burkittii			
*Lolium sp.			
Senna artemissioides subsp. filifolia			
Hysterobaeckeia setifera subsp. meridionalis			

Koorda-Bullfinch Site 11	12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637421 6566526
Habitat: narrow road shoulder with slight drain then flat to gentle slope..		
Vegetation: Eucalyptus loxophleba subsp. supralaevis scattered mallees over Austrostipa hemipogon, Aristida contorta, Asteraceae etc. grass/herbland		
		

Condition: Very Poor regrowth.			
Eucalyptus loxophleba subsp. supralaevis		< 2%	
Austrostipa hemipogon		+	

* <i>Hypochaeris glabra</i>		+	
<i>Lomandra</i> sp.			
<i>Acacia</i> <i>prainii</i>			
* <i>Avena barbata</i>		+	
<i>Ptilotus polystachyus</i>		+	
* <i>Bromus rubens</i>		+	
* <i>Hypochaeris glabra</i>		+	
<i>Aristida contorta</i>		> 5%	
<i>Acacia burkittii</i>		+	
<i>Senna artemissioides</i> subsp. <i>filifolia</i>		+	
* <i>Cuscuta</i> sp.		+	
* <i>Echium</i> <i>plantagineum</i>		+	
<i>Lobelia</i> sp.		+	One small plant.

Koorda-Bullfinch Site 12		12 th October 2024	MET & DC
<u>Location geocode:</u>	WGS84 50J	637354	6566551
<u>Habitat:</u> Slight slope.			
<u>Vegetation:</u> <i>Melaleuca eleuterostachya</i> open scrub over <i>Waitzia acuminata</i> var. <i>acuminata</i> , <i>Podolepis aristata</i> subsp. <i>aristata</i> annual hermland			
<u>Condition:</u> Very poor regrowth.			
<i>Melaleuca</i> <i>eleuterostachya</i>	-	> 30%	
<i>Austrostipa</i> <i>elegantissima</i>	-	+	
<i>Siemssenia capillaris</i>	-	+	
<i>Austrostipa hemipogon</i>	-	+	
<i>Waitzia acuminata</i> var. <i>acuminata</i>	-	+	
<i>Acacia burkittii</i>	-	+	
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	-	+	
<i>Comesperma</i> <i>integerrimum</i>	-	+	
<i>Melaleuca hamulosa</i>	-	+	
<i>Olearia</i> sp. <i>Eremicola</i>	-	+	
<i>Podolepis aristata</i> subsp. <i>aristata</i>		+	

Koorda-Bullfinch Site 13			12 th October 2024	MET & DC
Location geocode:	WGS84 50J	To:	637250	6566602
<u>Habitat:</u> Slightly built up road shoulder then flat to gentle slope.				
<u>Vegetation:</u> <i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> scattered mallees over <i>Melaleuca acuminata</i> subsp. <i>acuminata</i> , <i>Acacia burkittii</i> scattered tall shrubs over Asteraceae annual herland				
				
<u>Condition:</u> Very Poor regrowth.				
<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i>	-	< 2%		
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	-	< 2%		
<i>Acacia burkittii</i>	-	< 1%		
* <i>Avena barbata</i>	-	+		
* <i>Monoculus monstrosus</i>	-	+		
<i>Dianella revoluta</i> var. <i>divaricata</i>	-	+		
<i>Austrostipa elegantissima</i>	-	+		
* <i>Oxalis corniculata</i>	-	+		
<i>Melaleuca hamulosa</i>	-	+		
<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>	2 m-	+		
<i>Hysterobaeckea setifera</i> subsp.	-	+		

meridionalis			
Mirbelia spinosa	-	+	
Santalum acuminatum	-	+	One individual.
Exocarpos aphyllus	-	+	
Acacia coolgardiensis subsp. coolgardiensis	-	+	

Koorda-Bullfinch Site 14		12 th October 2024	MET & DC
<u>Location geocode:</u>	WGS84 50J	637224	6566617

Habitat: Built up road shoulder then slope then flat to slight slope.

Vegetation: Acacia coolgardiensis subsp. coolgardiensis, Santalum acuminatum (Hysterobaeckea setifera subsp. meridionalis) high open shrubland over Amphipogon caricinus scattered tussocks with Asteraceae spp. annual herland



Condition: Very Poor regrowth.

Acacia coolgardiensis subsp. coolgardiensis	2 m	> 2%	
Santalum acuminatum		≤ 1%	
Hysterobaeckea setifera subsp. meridionalis		+	
*Dicrastylis parvifolia		+	Small patches on road edge. A native species, but probably weedy at this location.
Solanum cleistogamum?		+	
Waitzia acuminata var.		+	

acuminata			
Podolepis aristata subsp. aristata		+	
Monachather paradoxa		+	
Comesperma integerrimum		+	
Olearia sp. Eremicola		+	
Acacia prainii		+	
Acacia acuaria		+	
Enekbatus clavifolius		+	Three plants.
Eucalyptus loxophleba subsp. supralaevis		+	Two plants near culvert (mallees).
Solanum orbiculatum subsp. orbiculatum		+	
Eremophila drummondii		+	

Koorda-Bullfinch Site 15		12 th October 2024	MET & DC
<u>Location geocode:</u>	WGS84 50J	637149	6566688

Habitat: Slope on built up road shoulder then gentle slope.

Vegetation: Acacia coolgardiensis subsp. coolgardiensis (Acacia burkittii, Melaleuca acuminata subsp. acuminata) open scrub over Asteraceae spp. Annual herland



Notes: More open in patches

Condition: Very Poor regrowth.

Acacia coolgardiensis		> 20%	
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subsp. coolgardiensis			
Acacia burkittii		> 5%	
Melaleuca acuminata subsp. acuminata		> 5%	
Waitzia acuminata var. acuminata		+	
Hibbertia glomerosa		+	Only a few plants.
Dianella revoluta var. divaricata		+	
Amphipogon caricinus		+	
Schoenia cassiniana		+	
Melaleuca lateriflora		+	
Melaleuca hamulosa		+	
Rhodanthe citrina		+	
Olearia sp. Eremicola		+	
Mirbelia spinosa		+	A few plants.
Enebatus clavifolius		+	
Austrostipa hemipogon		+	
Seringia velutina		+	

Koorda-Bullfinch Site 16	12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637075

Habitat: Gentle slope to flat.

Soil: Light brown setting clay-loam. Some granitic sheet outcrop adjacent.

Vegetation: Acacia burkittii, Acacia coolgardiensis subsp. coolgardiensis scattered tall shrubs over Grevillea paniculata shrubland to open heath over Asteraceae annual hermland





Condition: Poor to Good regrowth.

<i>Acacia burkittii</i>		< 2%	
<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>		< 2%	
<i>Seringia velutina</i>		+	
<i>Grevillea paniculata</i>		< 10 40%	Very patchy
<i>Waitzia acuminata</i> var. <i>acuminata</i>		> 1%	
<i>Rhodanthe citrina</i>		+	
<i>Amphipogon caricinus</i>		+	
<i>Solanum orbiculatum</i> subsp. <i>orbiculatum</i>		+	
<i>Dianella revoluta</i> var. <i>divaricata</i>		+	
<i>Spartochloa cyperoidea</i>		+	
<i>Austrostipa elegantissima</i>		+	
<i>Schoenia cassiniana</i>		+	
<i>Dicrastylis parvifolia</i>		+	On the road edge only.
* <i>Briza maxima</i>		+	
* <i>Solanum hoplopetalum</i>		+	
<i>Aristida contorta</i>		+	

<i>Dodonaea inaeqifolia</i>		+	Leaves pinnate.
<i>Comesperma integerrimum</i>			
<i>Melaleuca cf. uncinata</i>			
<i>Eremophila virens</i>		+	One plant (see text).

Koorda-Bullfinch Site 17		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637037	6566932
<u>Habitat:</u> Slope on road shoulder then uneven (minor drain)			
<u>Vegetation:</u> Grevillea paniculata shrubland over Amphipogon caricinus very open tussock grassland over Asteraceae annual hermland			
			
<u>Condition:</u> Very poor regrowth.			
Grevillea paniculata		> 15%	
Glischrocaryon flavescent		+	
Allocasuarina campestris		+	
Waitzia acuminata var. acuminata		> 1%	
Acacia coolgardiensis subsp. coolgardiensis		+	
Trachymene ornata		+	
Schoenia cassiniana		+	
Dianella revoluta var. divaricata		+	
Amphipogon caricinus		+	
Aristida contorta		+	j

Koorda-Bullfinch Site 18		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637027	6566881
<u>Habitat:</u> Gentle slope.			
<u>Soil:</u> Yellow-brown hard setting clay-loam with some granitic rock exposure.			
<u>Vegetation:</u> <i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i> high bushland to open scrub over <i>Grevillea paniculata</i> scattered shrubs and Asteraceae annual herland			



<u>Condition:</u> Poor to Good regrowth.			
Acacia coolgardiensis subsp. coolgardiensis		> 10 - > 30%	
<i>Grevillea paniculata</i>		+	
<i>Dianella revoluta</i> var. <i>divaricata</i>		+	
<i>Comesperma</i> <i>integerrimum</i>		+	
<i>Rhodanthe citrina</i>		+	
<i>Schoenia cassiniana</i>		+	
<i>Borya constricta</i>		+	

Koorda-Bullfinch Site 19		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637049	6566811

Habitat: Flat area and road slope (recently disturbed), some granitic outcrop.

Soil: Yellow-brown hard setting clay-loam with some granitic rock exposure.

Vegetation: *Acacia coolgardiensis* subsp. *coolgardiensis* scattered low shrubs over *Monachather paradoxa* scattered tussocks over *Waitzia acuminata* var. *acuminata*, *Asteraceae* spp. annual herbland



Condition: Very Poor regrowth (recently disturbed).

<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>		< 2%	Young juveniles.
<i>Monachather paradoxa</i>		< 1%	
<i>Waitzia acuminata</i> var. <i>acuminata</i>		> 20%	
<i>Schoenia cassiniana</i>		+	
<i>Gilberta tenuifolia</i>		+	
<i>Senna pleurocarpa</i>		+	
<i>Dianella revoluta</i> var. <i>divaricata</i>		+	

Koorda-Bullfinch Site 20		12 th October 2024	MET & DC
Location geocode:	WGS84 50J	637064	6566770
<u>Habitat:</u> Gentle slope.			
<u>Soil:</u> Yellow-brown hard setting clay-loam with some granitic rock exposure.			
<u>Vegetation:</u> <i>Acacia prainii</i> , <i>Acacia burkittii</i> open scrub over <i>Grevillea paniculata</i> shrubland patches over <i>Amphipogon caricinus</i> scattered tussocks over Asteraceae annual herbland			
			

Condition: Poor to Good regrowth.

<i>Acacia prainii</i>		> 20%	
<i>Acacia burkittii</i>		> 10%	
<i>Spartochloa cyperoidea</i>		+	A small patch.
<i>Mirbelia spinosa</i>		+	1 plant.
<i>Grevillea paniculata</i>		< 2%	Occurred in small patches.

APPENDIX 2. Vegetation structural table of Specht as modified by Aplin (1979)

Life form and height of tallest stratum	Projective foliage cover of tallest stratum as %	Description
Trees over 30 metres	70 -100	High closed forest 30 -70 High open forest 10 - 30 high woodland 2 -10 high open woodland under 2 Scattered tall trees
Trees 10 - 30 metres	70 -100	Closed forest 30 -70 Open forest 10 - 30 Woodland 2 -10 Open woodland under 2 Scattered trees
Trees under 10 metres	70 -100	Low closed forest 30 - 70 Low open forest 10 - 30 Low woodland 2 -10 Low open woodland under 2 Scattered low trees
Shrubs over 2 metres	70 -100	Closed scrub 30 - 70 Open scrub 10 - 30 High shrubland 2 -10 High open shrubland under 2 Scattered tall shrubs
Shrubs 1 - 2 metres	70 -100	Closed heath 30 - 70 Open heath 10 - 30 Shrubland 2 -10 Open shrubland under 2 Scattered shrubs
Shrubs under 1 metre	70 -100	low closed heath 30 - 70 low open heath 10 - 30 low shrubland 2 -10 Low open shrubland under 2 Low scattered shrubs
Herbs/Sedges/Grasses	70 -100	Closed herb, sedge, grassland 30 - 70 Herb, sedge, grassland 10 - 30 Open herb, sedge, grassland 2 -10 Very open herb, sedge, g'land under 2 Scattered herbs sedges, grasses
Grasslands then divided into:		
Tussock grasslands (perennial tussock species, e.g. <u>Eragrostis</u> species);		
Hummock grasslands (<u>Triodia</u> and <u>Plectrachne</u> species that form hummocks)		
Curly spinifex grassland (<u>Plectrachne pungens</u> , which does not form hummocks)		
Annual tussock grassland (e.g. annual Sorghum species).		
The "curly spinifex grassland" division follows J.S. Beard.		

APPENDIX 3. Condition scale of Trudgen (1988)

A modified version of this scale has been published in Bush Forever.

E = Excellent. Pristine or nearly so, no obvious signs of damage caused by the activities of European man.

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

G = Good. More obvious signs of damage caused by the activities of European man, including some obvious impact on the vegetation structure such as caused by low levels of grazing or by selective logging. Weeds as above, possibly plus some more aggressive ones.

P = Poor. Still retains basic vegetation structure or ability to regenerate to it after very obvious impacts of activities of European man such as grazing or partial clearing (chaining) or very frequent fires. Weeds as above, probably plus some more aggressive ones such as *Ehrharta* spp.

VP = Very poor. Severely impacted by grazing, fire, 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 aggressive species.

D = Completely degraded. 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.

APPENDIX 4. Declared Rare and Priority Flora database search results

Declared rare and priority flora search result list for a 20 kilometre radius for the survey area.

Taxon	Conservation Status	WARank
<i>Acacia ascendens</i>	2	
<i>Acacia ascendens</i>	2	
<i>Acacia crenulata</i>	3	
<i>Acacia lobulata</i>	T	EN
<i>Acacia lobulata</i>	T	EN
<i>Balaustion bimucronatum</i>	1	
<i>Darwinia</i> sp. Chiddarcooping (S.D. Hopper 6944)	4	
<i>Eremophila resinosa</i>	T	EN
<i>Eremophila virens</i>	T	EN
<i>Eremophila virens</i>	T	EN
<i>Eremophila virens</i>	T	EN
<i>Eremophila viscosa</i>	T	EN
<i>Grevillea squiresiae</i>	1	
<i>Grevillea squiresiae</i>	1	
<i>Hakea rigida</i>	2	
<i>Hibbertia graniticola</i>	3	
<i>Myriophyllum lapidicola</i>	T	EN