A targeted Declared Rare and Priority Flora survey of the verges of a section of Doodlakine South Road

Prepared for

The Shire of Kellerberrin

by

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1.0 INTRODUCTION

1.1 Location and size of the survey area

The survey area (Map 1) is located in the eastern part of the Shire of Kellerberrin and about 195 kilometres slightly north of east of Perth. Its northern end is 19 kilometres east-south-east of the town of Kellerberrin (which is on Great Eastern Highway) on Doodlakine South Road and it extends about 6 kilometres south from there. The northern end of the survey area is located at 50J 0586340 6493538 N (= SLK 9.70).

Map 1: Location of the survey area section of Doodlakine South Road.

1.2 Purpose of the study

The study was commissioned to survey the verges of a section of Doodlakine South Road for Declared Rare and Priority Flora. The search was to target Declared Rare and Priority Flora likely to be in the area, but was not restricted to those taxa. The species targeted are given in Appendix 1.

1.3 Physical environment of the survey area

The survey area is located on the Yilgarn Plateau, a very old landscape. The section of road verges surveyed traverses a very gently undulating plain with slight relief. No significant landscape features, such as lateritic breakaways or granite outcrops, which occur in surrounding parts of the Yilgarn Plateau, were encountered. A small creek runs near the survey area in the paddocks to the east of the road.

2.0 METHODS AND LIMITATIONS

2.1 Field survey methods

The section of the South Doodlakine Road where the verges were surveyed was visited on the 9th of October 2023 with Mr Dylan Copeland (representing the Shire of Kellerberrin). All the verges were walked to examine them. Mr Copeland walked some sections with me and drove me back to my car when needed.

No flora specimens were collected; with photographs taken of any species it was considered should be recorded. A conservative approach was taken, that is any taxon that might possibly be either Declared Rare or Priority Flora was photographed, and its location recorded using a GPS device and the population size recorded.

All geocodes in the report are in the WGS84 datum.

2.2 Species identification

Species were identified by comparison of the photographs taken to previously identified reference specimens (at the Western Australian Herbarium reference collection) and by consulting FloraBase (DBCA 2023), Australasia's Virtual Herbarium (AVH 2023) and other online resources such as World Wide Wattle (2023).

2.3 Limitations of the targeted flora survey

As most of the survey area vegetation was quite degraded observation of the remaining native flora was quite straightforward as the number of species and number of individuals remaining was very low. However, there is a small possibility that isolated very small individuals of smaller native species could have been missed. However, due to the level of previous disturbance and weed invasion smaller native species were mostly absent from the survey area.

3.0 SURVEY RESULTS

3.1 Survey area condition, general comments

A more detailed assessment of the condition of the vegetation of the sections of road surveyed for this report will be provided in another report (Dylan Copeland, pers. comm.). This section is simply aimed at providing a general assessment of the condition to support the adequacy of the targeted rare flora search.

The condition of the road verges in the survey areas varied from completely degraded through various degrees of parkland cleared and areas of very poor condition to small areas of poor condition and some very small areas of good condition. Weed invasion is high in many parts of the road verges, but even then some native flora can persist, although this may diminish over time as weed levels increase and more aggressive species of weeds invade the verges.

Photograph 1: *Senna artemisioides* subsp. *filifolia* on the east side of the road looking north. Note the pipeline behind the narrow strip of *Senna*.

From near the northern end of the survey area on the east side of the road *Senna artemisioides* subsp. *filifolia* (Photograph 1) has either resisted degradation (*Senna* species are often clonal and can regenerate from their roots or bases after physical disturbance or fire) or invaded. This

vegetation is an artefact of clearing and differential survival. Some *Atriplex* and *Sclerolaena* species were present with the *Senna*.

A water pipeline runs along the verge of the eastern side of the road next to the fence lines. Construction and maintenance of this pipeline have meant that a strip of the verge next to the fence was completely degraded, although in places native species have re-established in this strip.

3.2 Some species recorded in the survey area excluded as target species

Some species recorded in the survey area are members of the same genera as target species. They are briefly discussed to show that target species have not been mis-determined. They include *Acacia*, *Melaleuca* and *Grevillea* species.

3.2.1 *Acacia* species recorded in the survey area

There are nine *Acacia* taxa on the list of target flora for the survey area; this is not surprising as *Acacia* is a very speciose genus. Several *Acacia* species were recorded during the survey, including *Acacia erinacea*, *Acacia merralii*, *Acacia enervia* subsp. *enervia*, *Acacia acuminata* (narrow phyllodes); *Acacia acuaria*, *Acacia hemiteles* and *Acacia microbotrya*. Photographs of some of these species are given below.

Acacia erinacea a very widely distributed taxon that is quite common. It was seen several times in the survey area, including at 0586370 E 6493270 N. *Acacia merralii* was also seen several times, including having regenerated adjacent to the water pipeline (Photograph 3, at 0586410 mE 6492746 mN). *Acacia enervia* subsp. *enervia* (Photograph 4) was less common in the survey area, but was recorded at 0586414 E 6492654 N and again 20 metres further south where there was a group of plants of this species.

Photograph 2: *Acacia erinacea*, on the east side of the road near the north end of the survey area.

Photograph 3: Two metre tall shrub of *Acacia merralii*, note the degraded, narrow verge. The prostrate, greyish plant is *Wilsonia humilis*.

Photograph 4: *Acacia enervia* subsp. *enervia*

It is noteworthy that species of *Acacia* are prominent in the species recorded. This may be due to the fact that they have very long lived seeds that may have germinated after disturbance that removed most of the native vegetation and most of the naturally occurring species.

3.2.2 *Grevillea* species recorded in the survey area

There is only one *Grevillea* on the target species list, *Grevillea dryandroides* subsp. *hirsuta*. The only *Grevillea* species recorded was *Grevillea paniculata* (Photograph 5), a very widespread species which was recorded 0586446 E 6492421 N.

Photograph 5: *Grevillea paniculata*, showing leaves and fruit.

3.2.3 *Melaleuca* species recorded in the survey area

Photograph 6: *Melaleuca hamata*

Two *Melaleuca* species are on the list of target species for the survey area; *Melaleuca manglesii* and *Melaleuca sciotostyla*. One *Melaleuca* was recorded during the survey, the widespread *Melaleuca hamata* (Photograph 6), a four metre tall shrub of which was recorded at 0586414 E 6492251 N

3.2.4 *Eremophila* species recorded in the survey area

The only *Eremophila* species on the "target" species list is *Eremophila viscida*, which has large more or less lanceolate leaves and pink flowers with red markings. The only *Eremophila* species recorded, was *Eremophila drummondii* (Photograph 7, at 0586411 E 6492532 N) which has narrow linear leaves and blue flowers. There were two plants.

Photograph 7 *Eremophila drummondii*

3.3 No Priority flora species recorded

No Priority flora species were recorded in the survey area.

3.4 No Declared rare flora species were recorded

No Declared Rare Flora species were recorded in the survey area.

4.0 ACKNOWLEDGEMENTS

Map 1 was provided by the Shire of Kellerberrin's representative Mr Dylan Copeland, who also provided some assistance in the field and the results of a Nature Map Declared Rare and Priority flora search for an area 20 km around the survey area.

5.0 REFERENCES

AVH (2023). The Australasian Virtual Herbarium. https://avh.ala.org.au/search/#tab_advanceSearch

DBCA (2023). FloraBase. https://florabase.dpaw.wa.gov.au/search/advanced

World Wide Wattle (2023). http://worldwidewattle.com/

6.0 APPENDIX 1. List of Declared Rare and Priority Flora from Nature Map for a 20 km radius from the survey area

Acacia ataxiphylla subsp. magna	Spreading to ascending shrub, 0.3-0.6 m high.	Fl. yellow, Jun to Jul.	Sandy soils. Lateritic ironstone rises, flats.	EN
Acacia cowaniana	Shrub or tree, 1-5(-8) m high, bark fibrous.	Fl. white-cream/cream-yellow, Apr to Jul.	Soil pockets. Granite outcrops.	P2
Acacia lirellata subsp. compressa	Bushy procumbent, spreading shrub, ca 0.5 m high, to 1.2 m wide.	Fl. yellow.	Yellow sand, clayey loam. Sandplains.	P2
Acacia merrickiae				P4
Acacia phaeocalyx				P3
Acacia sclerophylla var. pilosa	Low spreading to erect shrub, 0.2-1 m high.	Fl. yellow, Aug to Oct.	Sandy loam or clay.	P2
Acacia sclerophylla var. teretiuscula	Spreading, much-branched shrub, 0.25-2.5 m high.	Fl. yellow, Sep to Oct.	Clay & loamy soils.	P1
Acacia subflexuosa subsp. capillata	Rounded shrub, 0.25-1 m high.	Fl. yellow.	Laterite	CR
Acacia yorkrakinensis subsp. yorkrakinensis	Spreading, often rounded, dense to open shrub or tree, 1-4 m high, phyllodes narrowly elliptic to narrowly oblong-elliptic.	Fl. yellow, Jul to Sep or Dec.	Yellow or red sand, sandy clay. Sandplains.	P2
Angianthus micropodioides				P3
Baeckea exserta				P3
Baeckea sp. Kellerberrin (C.A. Gardner s.n. PERTH 03351009) (Balaustion exsertum)				P3
Baeckea sp. Tammin (R. Coveny 8319 & B. Habberley)				P3
Baeckea sp. Tampia Hill (J.C. Anway 327) (Balaustion exsertum)				P3
Conospermum eatoniae				P3
Conospermum galeatum	Open shrub, ca 0.9 m high.	Fl. white, Aug to Sep.	Yellow sand.	CR
Cryptandra beverleyensis				P3
Daviesia nudiflora subsp. drummondii				P3
Daviesia oxylobium				P4

Dicrastylis reticulata				P3
Dielsiodoxa leucantha subsp. leucantha				P3
Diuris recurva				P4
Eremophila viscida	Shrub, 1.2-4 m high.	Fl. green-white-yellow, Sep to Nov.	Granitic soils, sandy loam. Stony gullies, sandplains.	EN
Eucalyptus erythronema subsp. inornata				P3
Frankenia glomerata				P4
Frankenia parvula	Procumbent to ascending small shrub.			EN
Gastrolobium tenue	Low, bushy shrub, to 0.6 m high.	Fl. Orange &red &purple, Sep to Oct.	Yellow sand or sandy clay. Undulating dunes, stony outcrops.	P1
Grevillea dryandroides subsp. hirsuta	Prostrate, vigorously suckering shrub, 0.05-0.3 m high.	Fl. red/pink-red, May or Sep to Nov.	White or yellow sand, laterite.	VU
Guichenotia impudica				P3
Guichenotia seorsiflora	Multi-stemmed shrub, to 0.6 m high.	Finished. Fl. pink/pink-cream, Jul to Sep.	Sandy clay with lateritic gravel. Breakaways.	CR
Jacksonia rubra	Tangled dwarf shrub, ca 0.2 m high.	Fl. orange, Oct.	Clayey sand.	P2
Lepidium genistoides				P3
Leucopogon amplectens	Erect shrub, 0.3-0.75 m high.	Fl. white, Apr to Jul.	Sandy soils.	P2
Leucopogon sp. Bungulla (R.D. Royce 3435) (Styphelia caudata)				P3
Melaleuca manglesii	Upright shrub, to 1.2 m high.	Fl. purple, Sep.	White sand.	P1
Melaleuca sciotostyla	Spreading shrub, 0.6-1.5 m high.	Fl. Aug.	Orange clayey sand with lateritic pebbles. Scree slopes.	EN
Persoonia pungens				P3
Podotheca pritzelii				P3
Ptilotus fasciculatus				P4
Ricinocarpos tuberculatus	Erect shrub, 0.5-3 m high.	Fl. white, Sep to Oct.	White/grey sand. Coastal dunes.	P2

Roycea pycnophylloides	Perennial, herb, forming densely branched, silvery mats to 1 m wide.	Fl. Sep.	Sandy soils, clay. Saline flats.	VU
Scaevola tortuosa	Ascending perennial, herb, 0.1-0.2 m high.	Fl. blue-purple/pink, Oct.	Sandy clay. Margins of salt lakes.	P1
Stylidium merrallii				P4
Synaphea constricta				P3
Thysanotus tenuis				P3