

MEMORANDUM

Date	9 October 2020	Title	Targeted Flora Report
Ref.	COT20003_MEM01_Rev0	Distribution	Kristen Watts - Coterra Environmental
Author	Lisa Chappell Senior Botanist	Review	Kellie Bauer-Simpson Principal Ecologist

Background

Coterra Environment (Coterra) is assisting a client with the proposed development of Lot 9103 Warton Road (the study area), Piara Waters. The study area is proposed to be developed as a school and the project is currently driven by an urgent timeline. A native vegetation clearing permit (NVCP) will need to be obtained from the Department of Water and Environmental Regulation (DWER). To expedite the application process, Coterra has lodged an application for a NVCP, based on the results of a field survey conducted by Focused Vision Consulting Pty Ltd (FVC) in March 2020, with a commitment to undertake a follow-up targeted survey during spring 2020.

The study area is located approximately 20 kilometres (km) south of Perth in the suburb of Piara Waters (**Figure 1**). The study area occupies approximately 12.7 ha.

FVC were commissioned by Coterra to conduct an overview site inspection (reconnaissance survey), which was undertaken by Kellie Bauer-Simpson (Principal Ecologist) and Adrian Barrett (Botanist/Ecologist) on 25 March 2020. The purpose of the survey was to verify the vegetation types and condition mapping of a previous assessment completed by Bennett (2011), with particular focus on Banksia woodlands which may represent the Banksia woodlands TEC.

The survey was also intended to identify any potentially suitable habitats for Threatened and Priority flora, with particular focus on the following Threatened flora; *Austrostipa jacobiana*, *Caladenia huegelii*, *Diuris purdiei* and *Drakaea elastica*.



Warton Road

Mason Road


0 25 50 75 100 m

GDA 94 / MGA Zone 50

Figure 1 - Study Area



Legend

 Study Area



Scope of Work

The outcomes of the vegetation review, conducted during March 2020 by FVC, included recommendations for a follow-up targeted flora survey during spring, targeting species that would not have been observable or able to be identified with certainty during the autumn survey. Species recommended for targeted survey are listed in **Table 1**.

FVC recommended undertaking suitably timed targeted flora surveys, focusing on three species that were considered to have the potential to occur; *Drakaea elastica*, *Caladenia huegelii* and *Jacksonia gracillima*, and also addressing other relevant species arising from the desktop assessment as listed in **Table 1**, to support the Native Vegetation Clearing Permit (NVCP) application.

A targeted survey during July was conducted for *Drakaea elastica* leaves, since July is the optimal timing to detect the leaf before flowering. Identifying the leaves is important since the flowers are not distinguishable from some other Hammer orchids, but the leaves are quite distinct and leaves and flowers are rarely observed at the same time, since the leaves shrivel up once the flower emerges. This targeted survey was undertaken only in optimal Spearwood thicket habitat vegetation units BaEtLW(-B) and EmBaLW(-B).

Caladenia huegelii and *Jacksonia gracillima* both flower in late September to early October, therefore, the main targeted survey was recommended to be conducted at this time.

Table 1 - Threatened and Priority Flora with the Potential to Occur within the Study Area

Species	EPBC Conservation Status	WA Conservation Status	Habitat Preference	Likelihood of Occurrence
<i>Austrostipa jacobiana</i>	Critically Endangered	Critically Endangered	Grey clay, sandy clay, sandy loam soils. Flats and damplands, fringing winter wet depressions. Flowers Sep-Nov.	Possible – suitable habitat may be present. Closest record approx. 6 km east.
<i>Caladenia huegelii</i>	Endangered	Critically Endangered	Grey, white or brown sand, clay loam soils. Margins of swamps, low depressions and flats. Mixed jarrah and Banksia woodlands. Flowers Sep-Oct.	Possible – suitable habitat present. Closest record approx. 1 km south-east.
<i>Drakaea elastica</i>	Endangered	Critically Endangered	Bare patches of white or grey sandy soils. Low lying situations adjoining winter wet swamps. Leaves emergent Jun-Jul, flowers Sept-Oct.	Possible – suitable habitat present. Closest record approx. 9 km south.
<i>Drakaea micrantha</i>	Vulnerable	Endangered	Bare patches of white-grey sandy soils. Winter wet swamps, disturbed areas. Flowers Sept-Oct.	Possible – suitable habitat may be present. Closest record approx. 3.5 km south-east.
<i>Levenhookia preissii</i>	-	Priority 1	Grey-brown sandy soil. Winter wet areas, undulating plains. Flowers Sep to Dec or Jan	Possible – suitable habitat may be present. Closest record approx. 5.5 km north-west.
<i>Acacia benthamii</i>	-	Priority 2	Brown, yellow, grey sandy soils. Flats and slopes, sometimes with limestone and wetlands. Flowers Aug-Sep.	Possible – suitable habitat may be present. Closest record approx. 5 km north.
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	-	Priority 2	Grey or yellow sand, sandy clayey soils. Gentle slopes and flats. Flowers Sep.	Possible – suitable habitat may be present. Closest record approx. 8 km east.

Species	EPBC Conservation Status	WA Conservation Status	Habitat Preference	Likelihood of Occurrence
<i>Stenanthemum sublineare</i>	-	Priority 2	Sand, sandy loam soils. Ridges, slopes and flats. Flowers Oct-Dec.	Possible – suitable habitat may be present. Closest record approx. 6 km north-east.
<i>Byblis gigantea</i>	-	Priority 3	Grey sandy clay, brown-white sand, loamy soils. Seasonally wet areas, swamps and flats. Flowers Sep-Dec or Jan.	Possible – suitable habitat may be present but likely disturbed. Closest record approx. 2.5 km east.
<i>Dampiera triloba</i>	-	Priority 3	Dark brown/black peaty, dry grey loamy soils. Wetlands, swamps, slopes and flats. Flowers Aug-Dec	Unlikely – unlikely peaty, loamy soils present and closest record approx. 8.5 km north-west.
<i>Jacksonia gracillima</i>	-	Priority 3	Sand and loam soils. Wetlands, winter wet flats, slopes and flats. Flowers Oct-Nov.	Possible – suitable habitat likely present. Closest record approx. 1.8 km south-east.
<i>Phlebocarya pilosissima</i> subsp. <i>pilosissima</i>	-	Priority 3	White or grey sandy soil, sometimes with lateritic gravel. Slopes. Flowers Aug-Oct.	Possible – suitable habitat may be present. Closest record approx. 5.5 km west.
<i>Styphelia filifolia</i>	-	Priority 3	Grey, yellow-brown sandy soils. Flats and slopes. Flowers Nov-Dec.	Possible – suitable habitat may be present. Closest record approx. 6 km north-east.
<i>Dodoniaeae hackettiana</i>	-	Priority 4	Sandy soils often associated with limestone outcropping. Limestone ridges, slopes and dunes. Flowers Jul-Oct.	Possible – suitable habitat may be present. Closest records approx. 7 km west.
<i>Drosera occidentalis</i>	-	Priority 4	White-yellow sand, clayey soils. Swamps, seasonally wet depressions and slopes. Flowers Oct-Dec or Jan.	Possible – suitable habitat may be present. Closest record approx. 3.5 km east.
<i>Jacksonia sericea</i>	-	Priority 4	Grey-white, yellow-brown sandy loam soils often associated with limestone. Limestone ridges, slopes and flats. Flowers Dec-Jan or Feb.	Possible – suitable habitat may be present. Closest records approx. 3 km east.
<i>Thysanotus glaucus</i>	-	Priority 4	Sandy soils. Undulating terrain.	Possible – suitable habitat likely present. Closest record approx. 5.5 km east but recorded in 1960.
<i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)	-	Priority 4	Grey-white sand, peaty sand over clay soils. Winter wet flats, shallow depressions, dry flats and slopes. Flowers Nov-Dec.	Possible – suitable habitat likely present. Closest record approx. 3 km north.

Methodology

The targeted flora assessment was undertaken for *Drakaea elastica* in only optimal Spearwood thicket habitat of vegetation units BaEtLW(-B) and EmBaLW(-B) on 7 July 2020. The targeted survey for *Caladenia huegelii* and *Jacksonia gracillima* was conducted on 29 September 2020 within all vegetation units containing Banksia species (BaEtLW, BaEtLW(-B), EmBaLW and EmBaLW(-B)).

The targeted surveys were carried out in accordance with:

- EPA (2016a), the *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*
- Commonwealth of Australia (Department of the Environment and Energy (DEE)) (2013) *Guidelines for detecting orchids listed as 'threatened' under the Environment Protection and Biodiversity Conservation Act 1999*.

The field surveys were carried out by experienced personnel as presented in **Table 2**.

Table 2 - Threatened and Priority Flora with the Potential to Occur within the Study Area

Targeted Survey	Date	Personnel
<i>Drakaea elastica</i>	7 July 2020	Lisa Chappell (Senior Botanist) Adrian Barrett (Botanist/Ecologist) Will Bauer-Simpson (Technician)
<i>Caladenia huegelii</i> and <i>Jacksonia gracillima</i>	29 September 2020	Lisa Chappell (Senior Botanist) Jeni Alford (Senior Botanist) Will Bauer-Simpson (Technician)

The timing of the spring targeted survey on 29 September was confirmed by a botanist from the Department of Water and Environmental Regulation (DWER) to be suitable to target all relevant species (in addition to the July survey targeting *Drakaea elastica* leaves), however, it was noted that *Austrostipa jacobiana* may not be flowering at this time and therefore, a commitment was made to collecting specimens from any plants observed that resemble *Austrostipa* sp., in order to verify whether these may *Austrostipa jacobiana*. No grasses resembling *Austrostipa* sp. were observed in the field during any of the three site visits conducted by FVC.

The field survey methodology involved personnel walking in parallel transects, spaced six to 10 m apart (depending on vegetation density and visibility) and tracked on GPS or GPS-enabled tablets to record track logs and enable shapefiles to be presented showing survey extents and effort within all of the surveyed areas.

If individuals or suspected individuals of significant taxa were observed, the following data was to be recorded:

- GPS locations of each individual plant
- vegetation type and condition at the recorded location
- condition of plants/populations recorded
- high quality photographs of plants/populations encountered and the surrounding vegetation.

Data collected was to be sufficient to allow the completion of DBCA Threatened and Priority Flora Report Forms, should species be determined to be of conservation significance.

This correspondence presents the results of the targeted flora survey, including figures showing search traverses and any recorded significant flora.

Results and Discussion

For each of the targeted species; *Drakaea elastica*, *Caladenia huegelii* and *Jacksonia gracillima*, the areas of suitable habitat for each species was traversed on foot. Search traverses are presented in **Figure 2** and **Figure 3**.

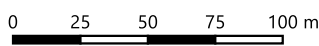
None of the targeted Threatened or Priority flora species were recorded to occur within the study area. The occurrence of *Jacksonia ?gracillima*, which was not able to be fully identified due to a lack of flowering material was confirmed as *Jacksonia sternbergiana*, which is a species of no conservation significance.

Closing

Should you require further information or clarification regarding the information provided in this report, please do not hesitate to contact the undersigned.

Best regards,

Kellie Bauer-Simpson
Director & Principal Ecologist/Environmental Manager
Focused Vision Consulting Pty Ltd



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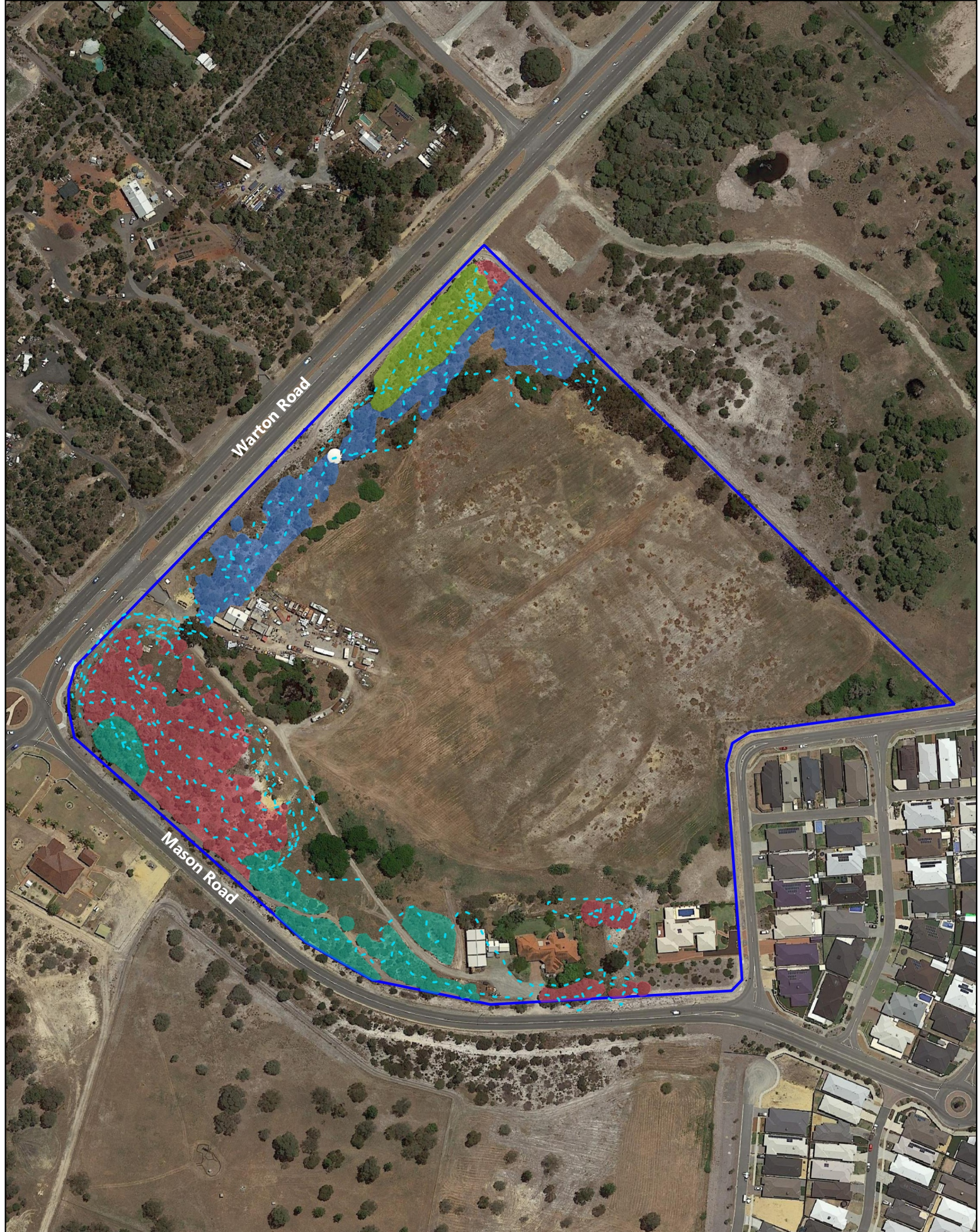
**Figure 2 - Targeted
Drakea elastica Survey**



Legend

- Study Area
- Search Traverses
- BaEtLW(-B)
- EmBaLW(-B)





0 25 50 75 100 m

GDA 94 / MGA Zone 50

**Figure 3 - Targeted
Caladenia huegelii and
Jacksonia gracillima Survey**



Legend

- Study Area
- Search Traverses
- BaEtLW
- BaEtLW(-B)
- EmBaLW
- EmBaLW(-B)

