

Appendix 22 Threatened and Priority Flora Search for Pinjarra Refinery Conveyor Project



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Threatened and Priority Flora search for Pinjarra refinery conveyor project area

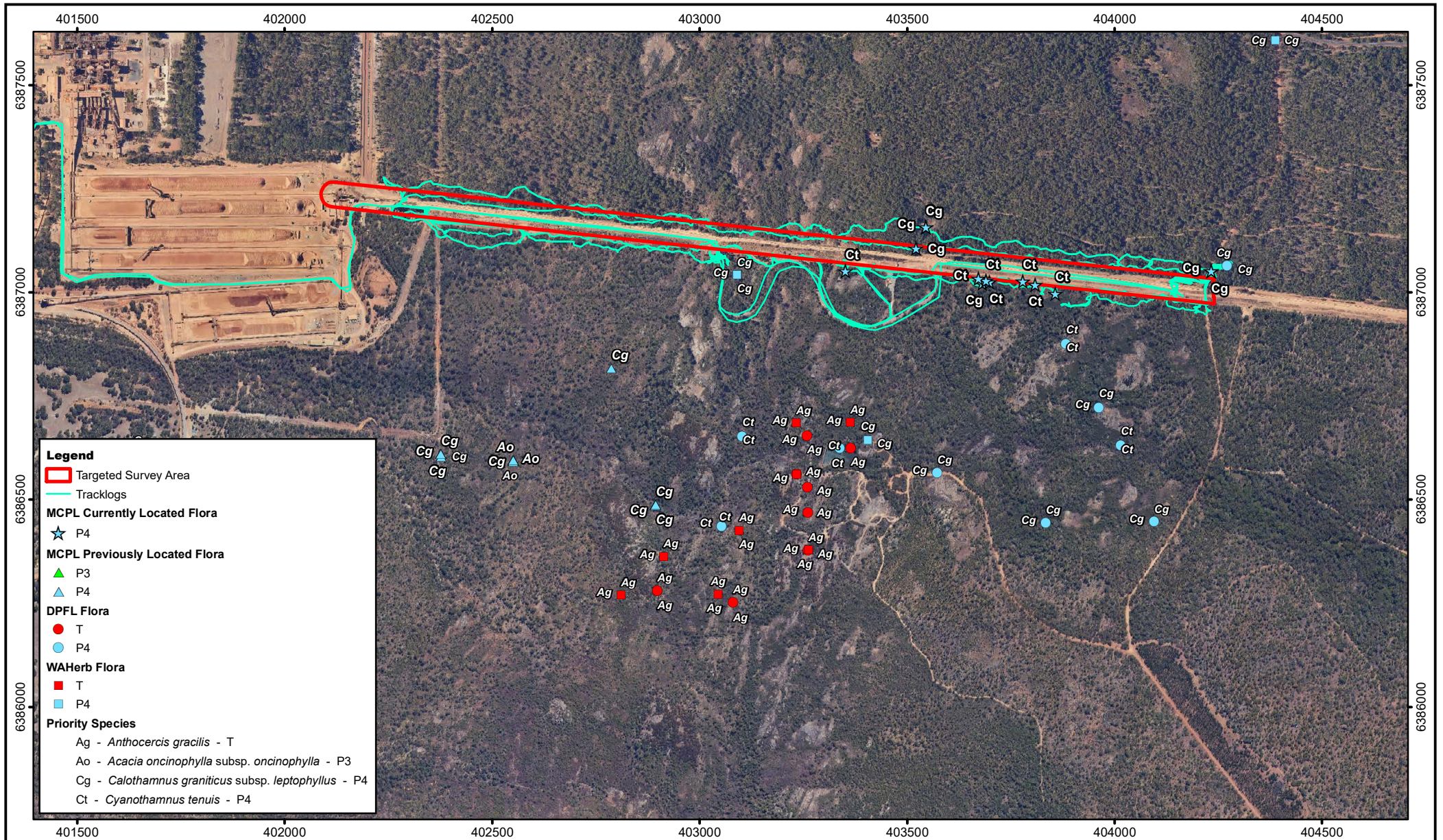
Introduction

Mattiske consulting was commissioned by Alcoa of Australia Ltd to undertake search along the Pinjarra refinery conveyor area for threatened and priority flora. The purpose of the survey was to determine the presence and/or location of any threatened or priority plant species within the targeted survey area. The Pinjarra refinery conveyor project area is located in the Northern Jarrah forest IBRA sub-region South-East of Jarrahdale townsite. The area is predominantly on the rocky escarpment of the Darling Scarp. The western section occurs on the fluvial slopes on the eastern edge of the Swan Coastal Plain. The native vegetation becomes more disturbed on the western section of the alignment (largely from agricultural activities) and finally it joins into the established Pinjarra Refinery as operated by Alcoa of Australia Ltd.

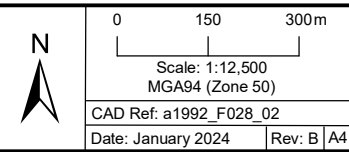
The search was undertaken by experienced botanists from Mattiske Consulting on the 4th of December 2023. Any individual plants with the potential to be a threatened or priority species were collected and submitted to the Western Australian Herbarium for identification. Collections were taken utilising valid collection licences to collect flora for scientific purposes, issued under the WC Act.

Methods

The survey consisted of one day trip by four botanists along a 2km portion of the Myara Conveyor. The survey area transitions from the Northern Jarrah Forest onto the Swan Coastal Plain. A 20 meter buffer either side of the conveyor was traversed and searched with two botanist on either side of the conveyor with 10 meter spacing between them. Location and population of any threatened or priority plant species were recorded. Due to the steepness and rocky scarp slopes in most of the area, traversed paths occasionally veered outside the survey area as seen in (Figure 1).



Notes:



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Pinjarra Refinery Survey on Scarp Survey Effort

Results

No threatened species were recorded within or in proximity to the Myara conveyor. A number of specimens were collected in order to confirm conservation status of the priority species. Identifications of these two species were confirmed at the Western Australian Herbarium by Mike Hislop (ACC10592/E).

Two priority 4 species were recorded, *Calothamnus graniticus* subsp. *leptophyllus* (Photograph 1) and *Cyanothamnus tenuis* (Photograph 2). The priority species were recorded in multiple location within the survey area (Table 1). At the time of the survey, all individuals were healthy. GPS locations can be found in Table 1 and indicated on the map in Figure 1.

Calothamnus graniticus subsp. *leptophyllus* (P4) is known from 32 specimens at the State Herbarium and occurs mainly on the escarpment near Pinjarra, although it does extend further inland east of Bunbury and on the coastal plains. In the Pinjarra area it occurs on the Darling Scarp either side of the conveyor corridor (Figure 1)

Cyanothamnus tenuis (P4) is known from 45 specimens at the State Herbarium and occurs mainly on the escarpment near Pinjarra, although it does extend further inland in the forestry areas and on the coastal plains. In the Pinjarra area it occurs on the Darling Scarp either side of the conveyor corridor (Figure 1).



Photograph 1: *Calothamnus graniticus* subsp. *leptophyllus* (P4)



Photograph 2: *Cyanothamnus tenuis* (P4)

Table 1: GPS locations of priority in the Pinjarra refinery conveyor survey area**Note: Condition of Plants (H – Healthy, SS - Slightly Stressed)****Reproductive Status (V – vegetative (no fruit or flowers, FLW – flowering, FT - fruiting)**

Datum	GPS Location (50H)		Species	Height	Population	Area (m)	Condition	Reproductive status	Within Buffer
	Easting	Northing							
GDA94	404232	6387051	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	150	5	10 x 10	H	V	In
GDA94	403545	6387157	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	150	30	20 x 20	H	FLW / FR	In
GDA94	403521	6387107	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	50	4	20 x 20	H	V	In
GDA94	403681	6387022	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	150	3	5 x 5	H	V	In
GDA94	404232	6387051	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	150	5	10 x 10	H	V	In
GDA94	403545	6387157	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> (P4)	150	30	20 x 20	H	FLW/ FR	In
GDA94	403857	6386998	<i>Cyanothamnus tenuis</i> (P4)	15	4	1 x 1	SS	V	In
GDA94	403778	6387027	<i>Cyanothamnus tenuis</i> (P4)	30	4	2 x 2	SS	V	In
GDA94	403698	6387025	<i>Cyanothamnus tenuis</i> (P4)	100	1	1 x 1	SS	V	In
GDA94	403690	6387028	<i>Cyanothamnus tenuis</i> (P4)	170	1	2 x 2	SS	V	In
GDA94	403672	6387033	<i>Cyanothamnus tenuis</i> (P4)	170	5	10 x 10	SS	V	In
GDA94	403351	6387052	<i>Cyanothamnus tenuis</i> (P4)	160	1	2 x 2	SS	FR	In
GDA94	403808	6387019	<i>Cyanothamnus tenuis</i> (P4)	40	15	10 x 10	SS	FR	In

Conclusion

Two Priority 4 species was recorded in the targeted survey area, *Calothamnus graniticus* subsp. *leptophyllus* and *Cyanothamnus tenuis*. These species were recorded in multiple locations within the survey area and in adjacent area which largely reflects their site preferences for the soils near the shallow granite outcrops on the Darling Scarp. If possible any disturbance to these locations should be avoided.

The site-vegetation types on the Darling Scarp occur in the Darling Scarp vegetation complex as defined by Hedde *et al.* (1980) and Mattiske and Havel (1998) as part of the regional studies on the south-west forests. As such the Darling Scarp (DS2 unit near Pinjarra) is represented by less than 10% (7.67%_ in the current percentage of lands protected (IUCN I-IV) for conservation lands) (DBCA 2017) and the current percentage remaining within all DBCA managed land is 10.13%. As such wherever possible clearing should be kept to a minimum on the steeper slopes of the escarpment.

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