

# Technical memorandum

**To:** Aoife Breathnach, Aurecon Australasia Pty Ltd  
**From:** Natasha Rogers, Botanist  
 Dr David Leach, Senior Botanist  
**Date:** 30 September 2025  
**Subject:** Targeted flora and vegetation survey for the Marri Wind Farm Project

---

## Background

Marri WF Pty Ltd as trustee for the Marri WF Unit Trust (the Proponent), a wholly owned subsidiary of Alinta Energy Pty Ltd (Alinta Energy), is seeking approval to develop Marri Wind Farm (the Proposal) located approximately 20 kilometres (km) south of the township of Dandaragan within the Shire of Dandaragan (Figure 1). The proposed Project involves the construction of a up to 500 MW wind farm in Dandaragan. The study area is located in the Shire of Dandaragan and the South West botanical province as defined in EPA (2016).

In June 2024 Phoenix Environmental Sciences Pty Ltd (Phoenix) was commissioned by Aurecon Group (Aurecon), on behalf of the Proponent, to undertake a fatal flaws desktop assessment and reconnaissance survey for the Project. The purpose of the assessment was to inform environmental impact assessment for the Project.

The desktop assessment and reconnaissance survey identified (Phoenix 2025):

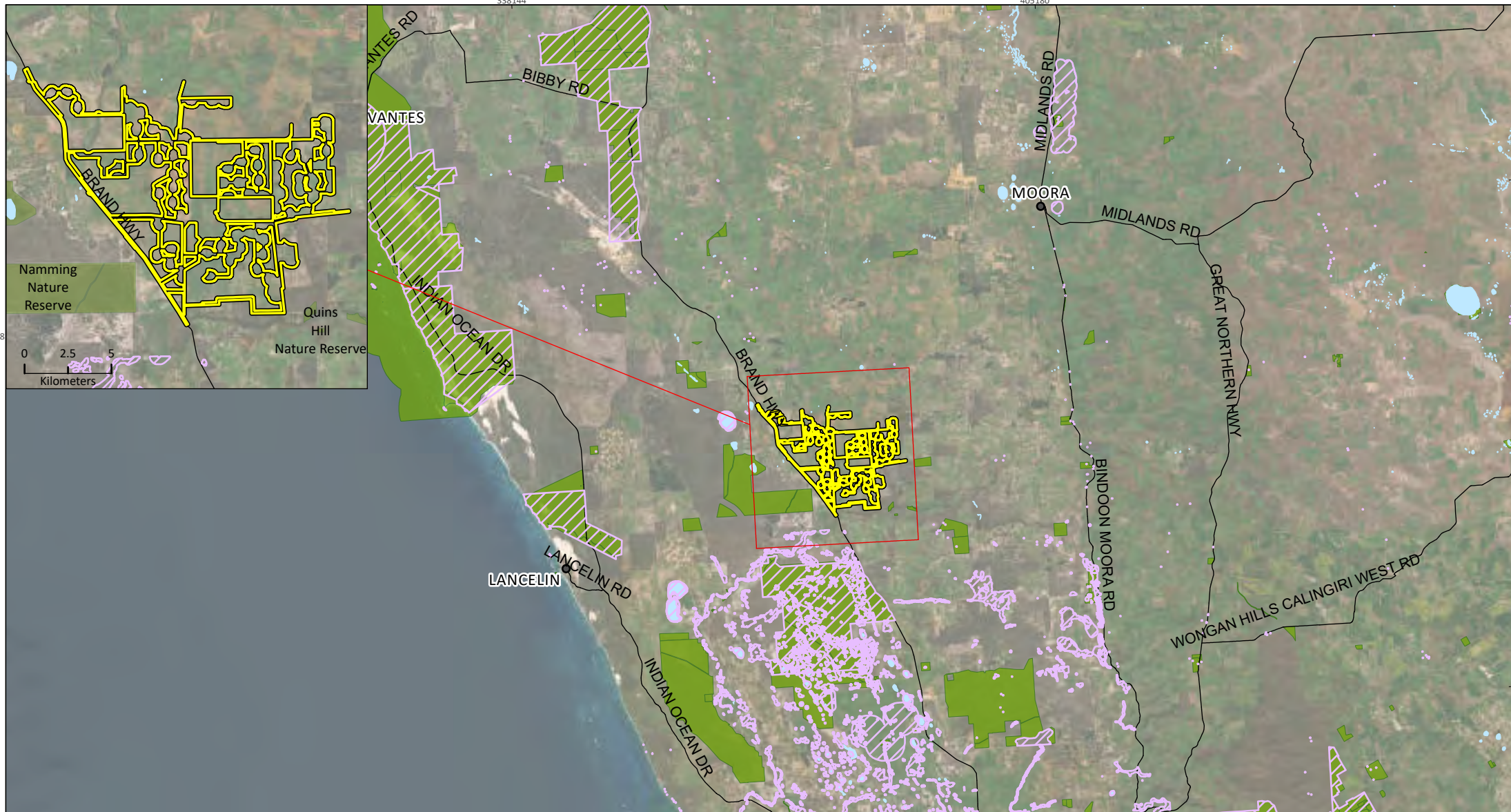
- The desktop assessment determined that records of 81 significant flora, comprising of 14 Threatened flora and 67 Priority flora occur within 30 km of the study area with records of 4 species *Hypocalymma serrulatum* (P2), *Banksia kippistiana* var. *paenepeccata* (P3), *Styphelia allittii* (P3) and *Anigozanthos humilis* subsp. *chrysanthus* (P4) within the study area.
- The field survey recorded the presence of one Priority flora, *Stylidium aceratum* (P3), within the study area.
- A post-field likelihood of occurrence assessment determined that 50 of the desktop significant flora may occur in the study area comprised of 8 Threatened, 4 P1, 7 P2, 22 P3, and 9 P4 species.
- The field survey recorded the presence of the *Banksia* Woodlands of the Swan Coastal Plain ecological community (P3 DBCA list; EN EBPC Act) within the study area.

Subsequent to the reconnaissance survey, the Proponent derived a potential Project footprint and commissioned Phoenix to conduct a targeted flora and vegetation survey within the Project footprint. The targeted flora and vegetation study area encompasses 5,841.2 ha and comprises of potential the wind turbine locations and access routes (Figure 1).

## Scope

The scope of the conducted targeted flora and vegetation survey for the Marri Wind Farm Project was to:

- Undertake targeted field survey of all areas of native vegetation within the internal portions and primary road access points of the provided assessment area to record the presence of:
  - significant flora.
  - the *Banksia* Woodlands of the Swan Coastal Plain Threatened Ecological Community (TEC).
  - locally significant vegetation (habitat for significant flora, highly diverse vegetation in Very Good to Excellent condition).
- Infill/supplementary reconnaissance level survey for portions of native vegetation along Brand Highway between primary road access points.
- Provide maps and spatial data of the presence of significant flora, TEC, and locally significant vegetation identified as no-go areas.
- Provide a brief technical memorandum outlining the methods and the results of the survey.



Alinta Energy Marri Wind Farm Project		
Project No	1707	
Date	19/05/2025	
Drawn by	BK	
Map author	NR	
1:673,400 (at A4)		GDA 1994 MGA Zone 51

- Study area
- DBCA managed land
- Lakes
- Environmentally Sensitive Areas
- Roads

**Figure 1-1**  
Project location and study area



All information within this map is current as of 19/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.

# Technical memorandum

## Methods

### Desktop assessment

Results from the previous Phoenix (2025) desktop assessment were used to inform the current survey of the regional and local contextual information.

### Field survey

The field survey was undertaken on 21-26 February 2025, by 2 field teams each with a Senior Botanist and Botanist (Figure 2). The survey timing is outside the recommended primary or supplementary survey periods for the South West Interzone Botanical Province (EPA 2016).

The initial method of conducting targeted searches in all areas of native vegetation within the provided Project footprint was not possible due to survey finding a greater extent and density of vegetation than anticipated. Where practicable all areas of vegetation were visited, with greater time priority and targeted search effort placed on remnant vegetation with higher condition and/or potential for significant flora. Potential access points of roadside vegetation along Brand highway were more intensive targeted at the request of Aurecon.

Targeted searches were undertaken on foot in meandering transects spaced a suitable distance apart for the particular vegetation type encountered, 10 to 25 m apart, dependent on vegetation density. Where plants considered representative of significant flora are encountered the following information was collected:

- GPS coordinates, including population boundary, where possible
- description of the habitat and floristic community of the population
- population size estimate, i.e. estimated number of individual plants
- specimen collection for taxonomic identification and lodgement at the Western Australian (WA) Herbarium
- photograph of live plants in-situ and description of important details, such as flower colour, height of individual, or average height of population.

As the survey was conducted outside of the recommended survey periods of the Technical Guidance (EPA 2016), difficulty identifying flora due to a lack of available reproductive specimen material was anticipated. In circumstances where it was not possible to fully identify a taxon, and the potential to be a conservation significant species could not be discounted, then a precautionary approach of assuming conservation significance was adopted.

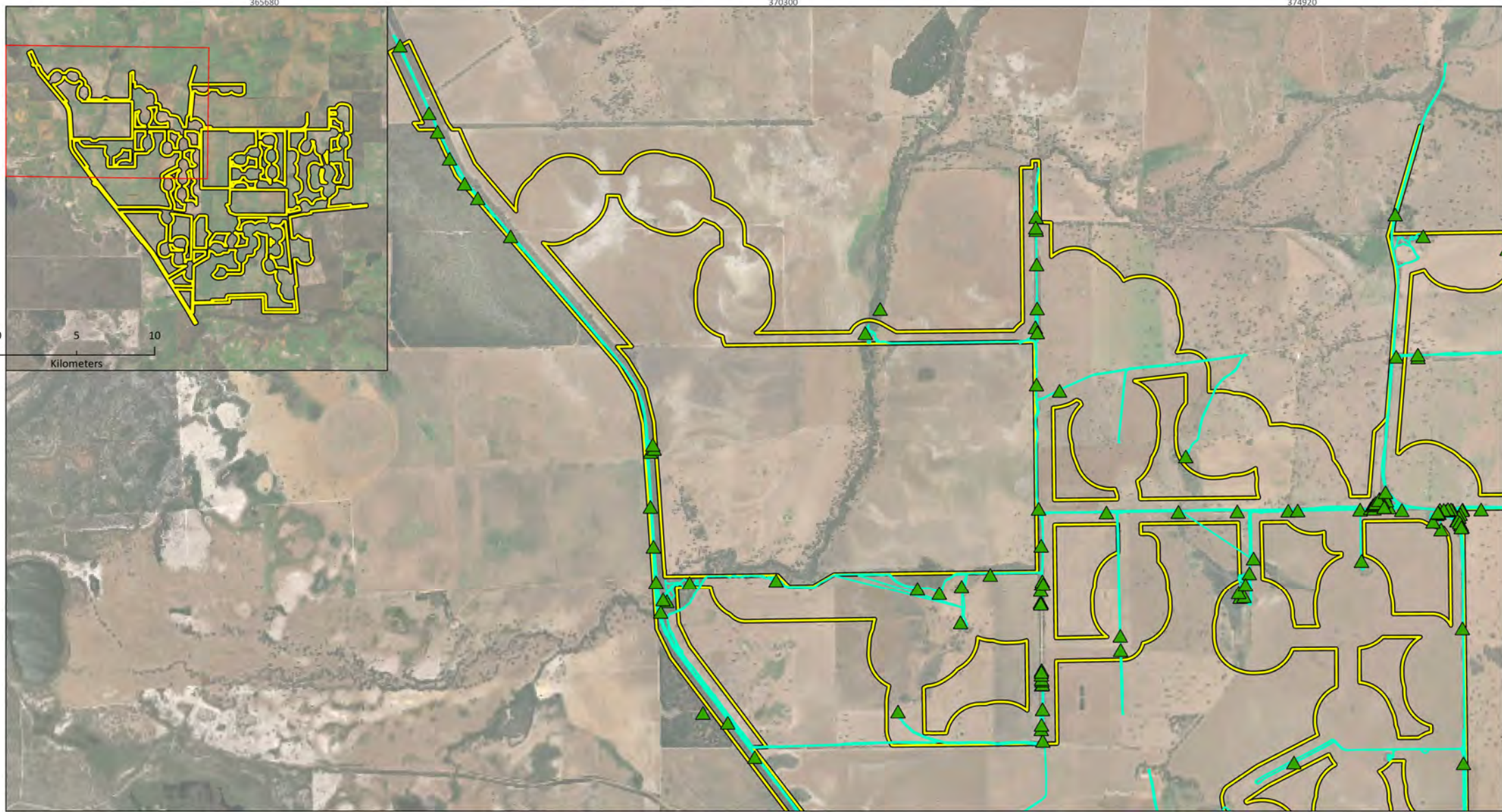
Assessment of remnant vegetation patches were conducted using relevés or site descriptions at representative locations (as appropriate), to provide sufficient data on species composition and environmental value. The following data was recorded (per assessment needs);

- location—a geographic coordinate
- description of vegetation—a broad description utilising the structural formation and height classes based on National Vegetation Information System (ESCAVI 2003) and in accordance with EPA (2016)
- habitat—a brief description of landform and habitat
- geology—a broad description of surface soil type and rock type
- disturbance history—a description of any observed disturbance including an estimate of time since last fire, weed invasions, soil disturbance, human activity, and fauna activity
- vegetation condition—using the condition scale in EPA (2016) for the South West Botanical Province
- height and percentage foliage cover—a visual estimate of cover of total vegetation cover, cover of shrubs and trees >2 m tall, cover of shrubs <2 m, total grass cover, and total herb cover
- photograph—a colour photograph of the vegetation within each quadrat in a south-easterly direction from the north-west corner of the quadrat
- flora species list—a list of dominant and key flora species recorded within the relevé.

## Technical memorandum

Vegetation encountered with potential to represent *Banksia* Woodlands of the Swan Coastal Plain TEC was assessed against the key diagnostic characteristics and condition thresholds presented by TSSC (2016).

To ensure accurate taxonomic identification of flora species present within the study area, collections were made of recorded and suspected significant flora species at least once and each collection pressed and documented for identification using the WA Herbarium resources. All plant specimens collected during the field surveys were identified using appropriate reference material or through comparisons with pressed specimens housed at the WA Herbarium, where necessary. Nomenclature of the species recorded is in accordance with DBCA's WA Flora Census Names Database (DBCA 2025).

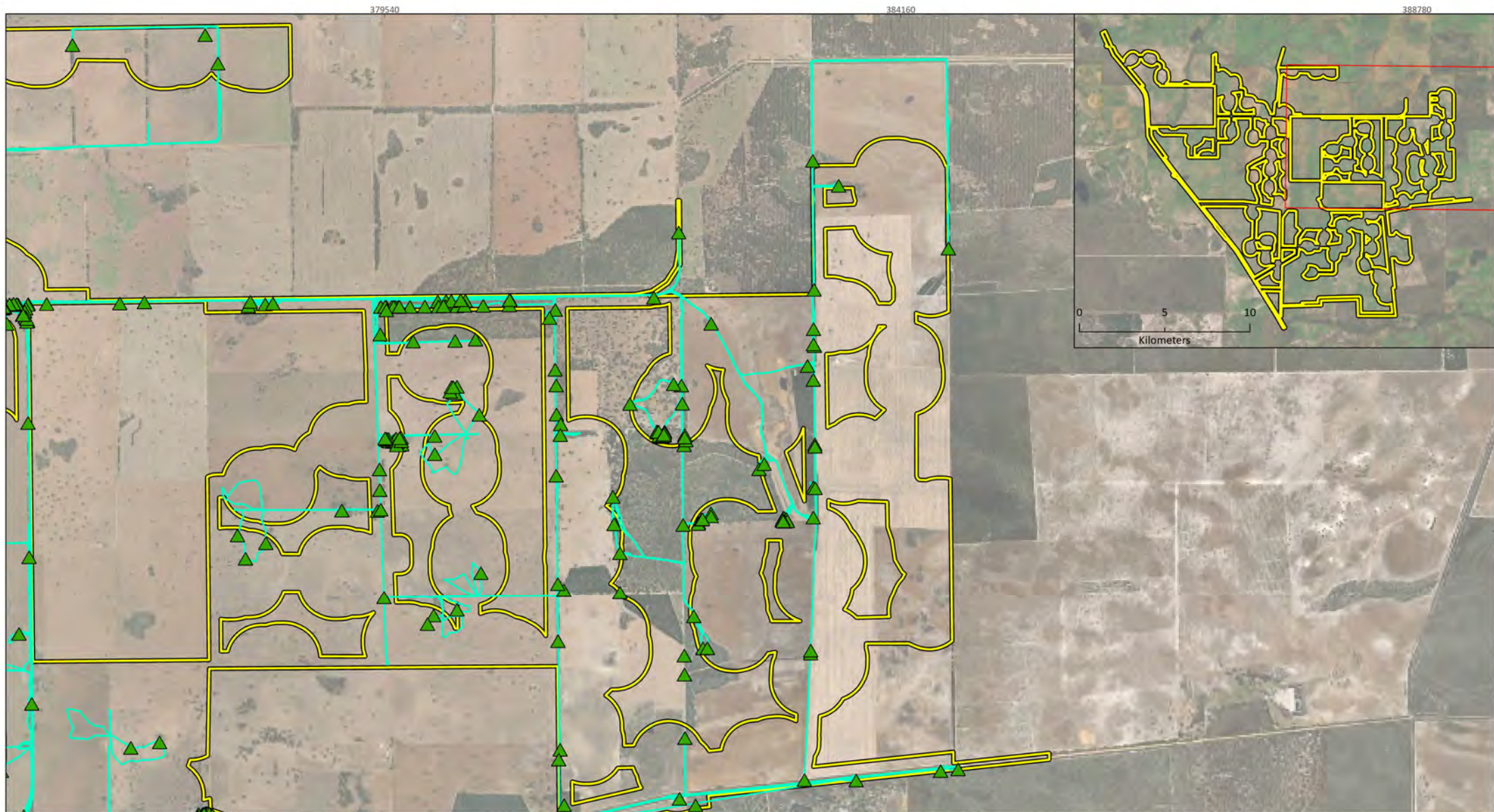


Alinta Energy Marri Wind Farm Project		
Project No	1707	
Date	20/05/2025	
Map author	NR	
1:46,200 (at A4)		GDA 1994 MGA Zone 50

- Study area
- Tracks
- Sites

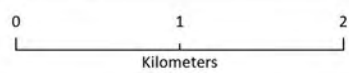
**Figure 2a**  
Data collection points and survey effort

All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.



**Alinta Energy  
Marri Wind Farm Project**

Project No	1707
Date	20/05/2025
Drawn by	BK
Map author	NR



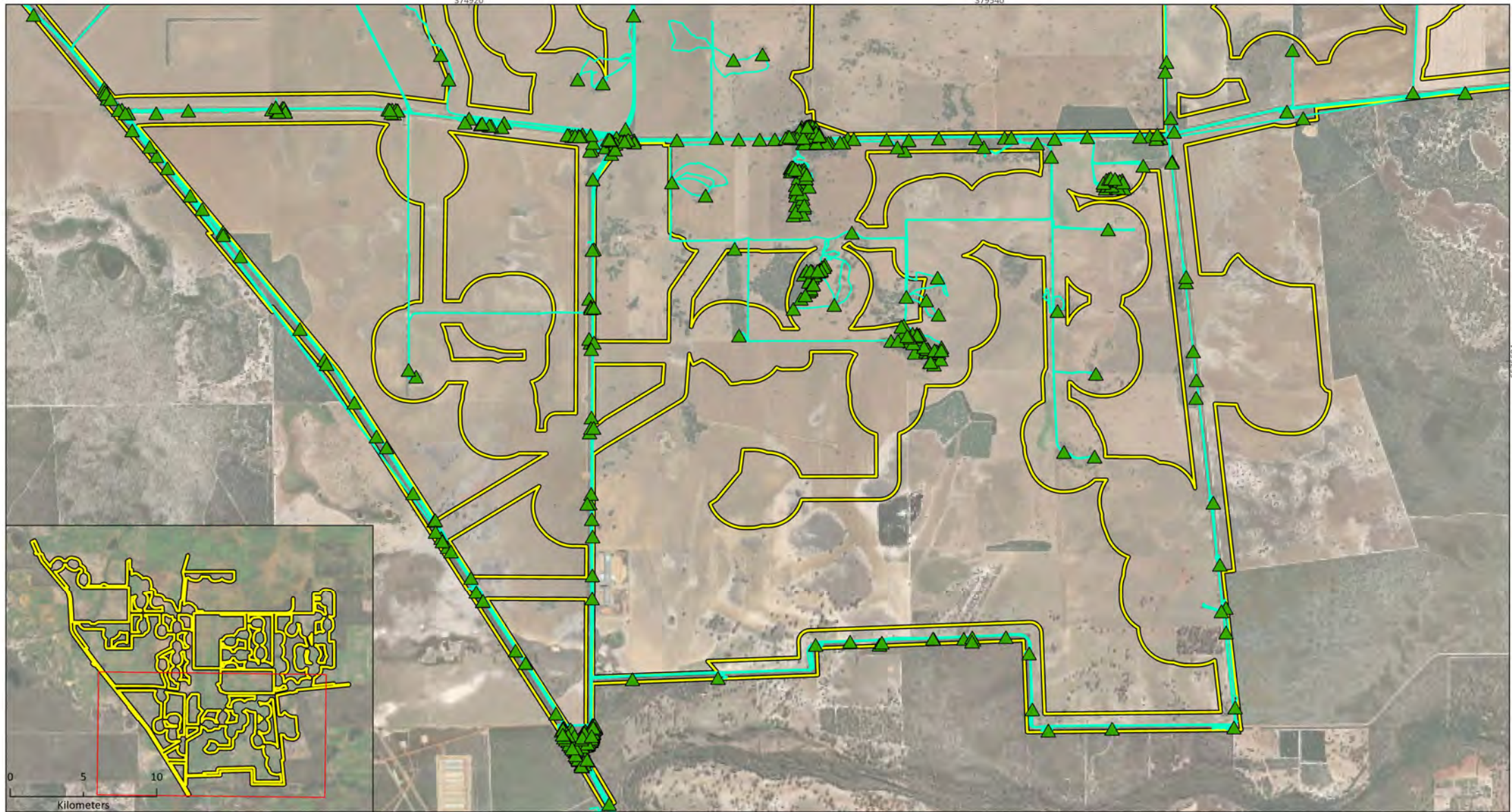
1:46,200 (at A4) GDA 1994 MGA Zone 50

- Study area
- Tracks
- ▲ Sites

All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.

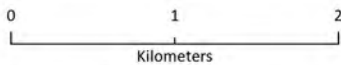
**Figure 2b**  
**Data collection points and survey effort**





**Alinta Energy  
Marri Wind Farm Project**

Project No	1707
Date	20/05/2025
Drawn by	BK
Map author	NR

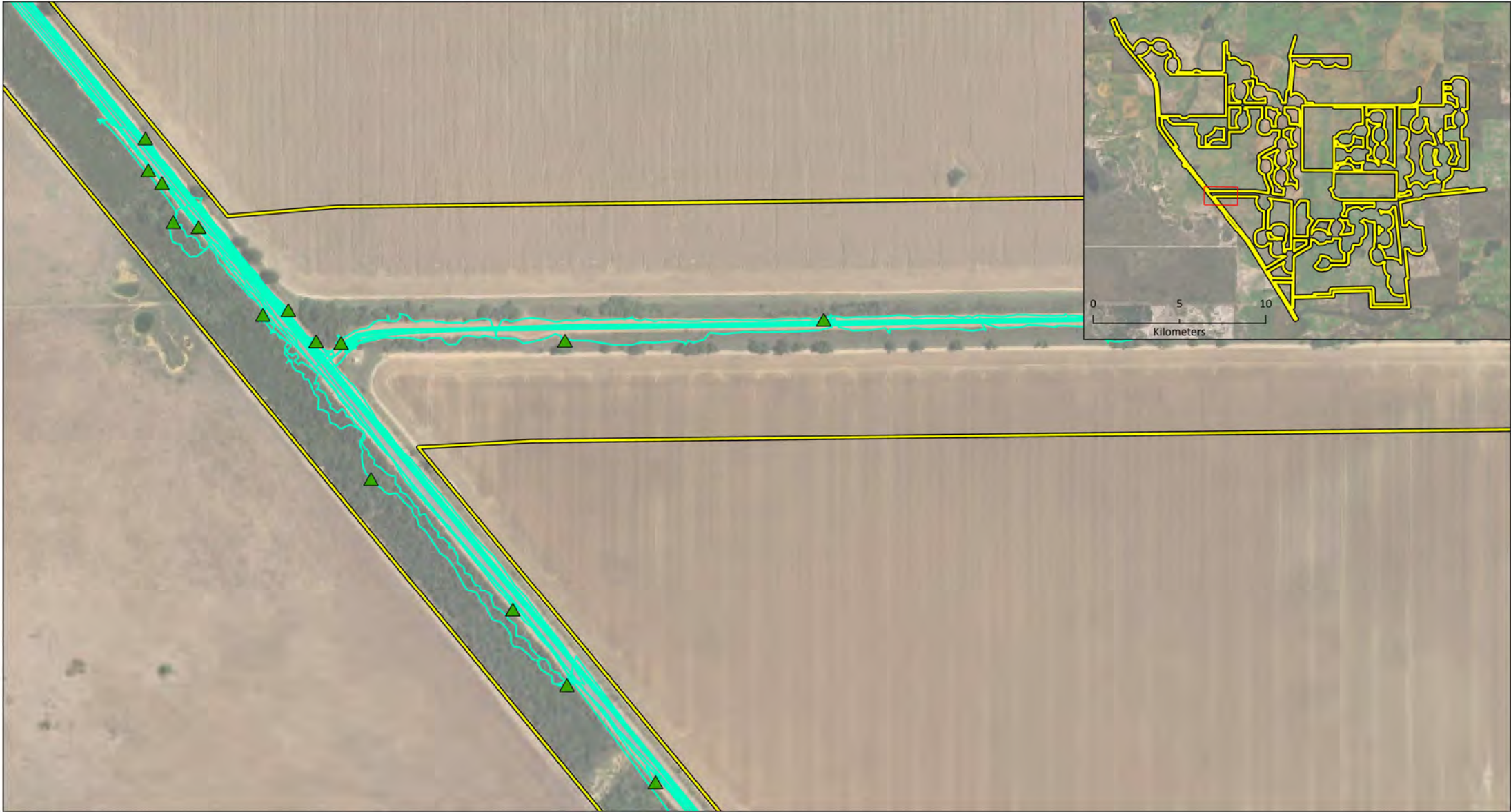


1:46,200 (at A4) GDA 1994 MGA Zone 50

- Study area
- Tracks
- ▲ Sites

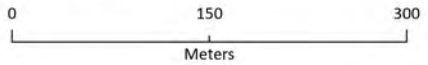
**Figure 2c**

**Data collection points and survey effort**



**Alinta Energy  
Marri Wind Farm Project**

Project No	1707
Date	20/05/2025
Drawn by	BK
Map author	NR



1:5,750 (at A4) GDA 1994 MGA Zone 50

- Study area
- Tracks
- Sites

**Figure 2d**  
**Data collection points and survey effort**



All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.



<b>Alinta Energy</b>		
<b>Marri Wind Farm Project</b>		
Project No	1707	
Date	20/05/2025	
Drawn by	BK	
Map author	NR	
1:3,675 (at A4)		GDA 1994 MGA Zone 50


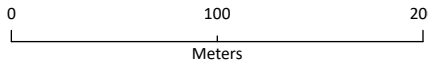
- Study area
- Tracks
- Sites




**Figure 2e**  
**Data collection points and survey effort**



All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.



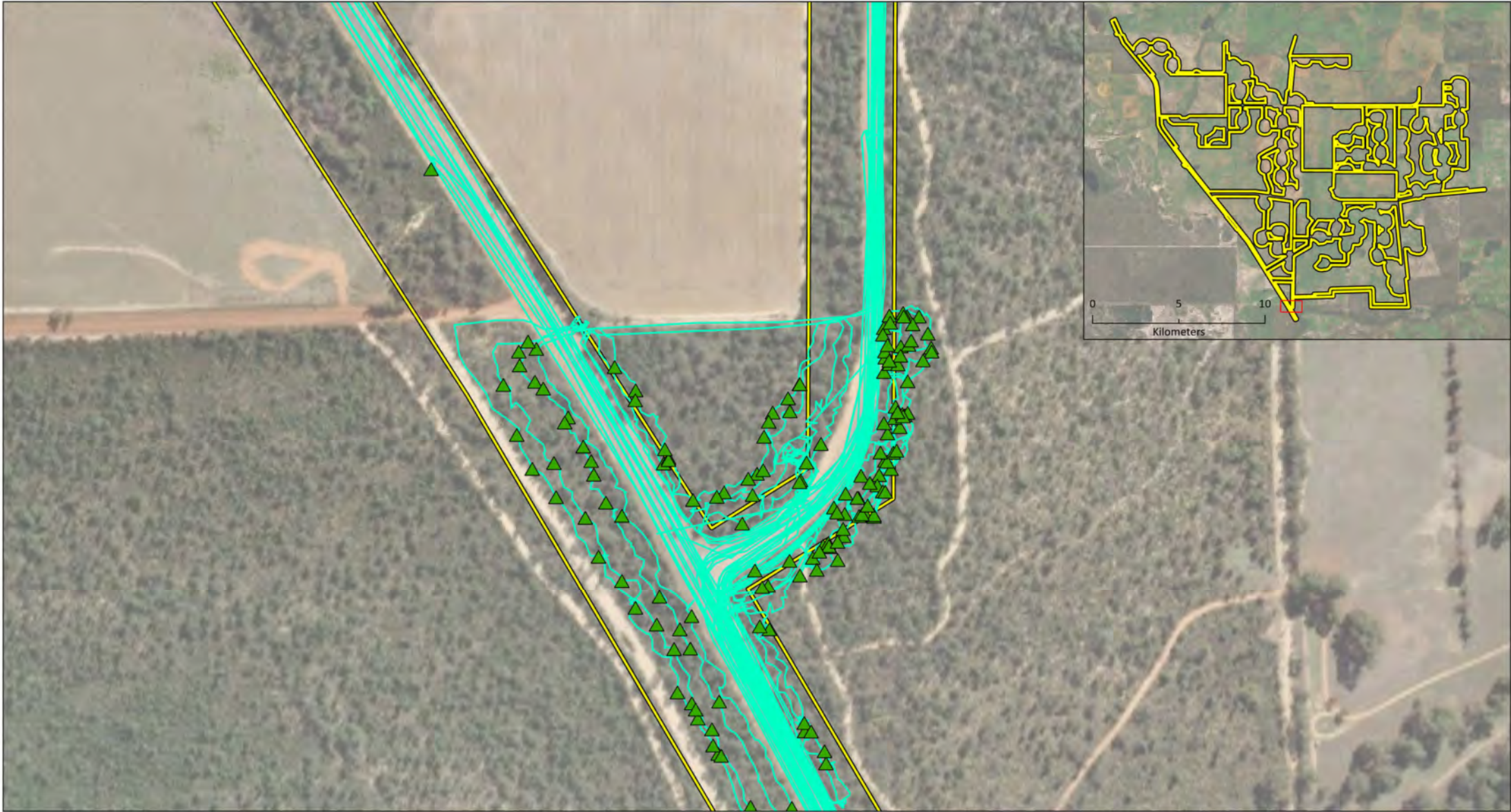
<b>Alinta Energy</b>		
<b>Marri Wind Farm Project</b>		
Project No	1707	
Date	20/05/2025	
Drawn by	BK	
Map author	NR	
1:3,675 (at A4)		GDA 1994 MGA Zone 50

-  Study area
-  Tracks
-  Sites

**Figure 2f**  
**Data collection points and survey effort**

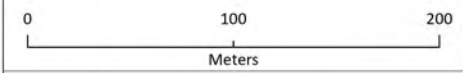


All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.



**Alinta Energy  
Marri Wind Farm Project**

Project No	1707
Date	20/05/2025
Drawn by	BK
Map author	NR



1:3,675 (at A4) GDA 1994 MGA Zone 50

- Study area
- Tracks
- Sites

**Figure 2g**  
**Data collection points and survey effort**



All information within this map is current as of 20/05/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.

# Technical memorandum

## Results

### Flora

The targeted survey identified 4 significant flora, consisting of one confirmed Priority flora, *Banksia dallanneyi* subsp. *pollostata* (P3) and 3 potential Priority flora (Table 1). The previous Phoenix (2025) reconnaissance survey recorded one additional Priority 3 species, *Stylidium aceratum* (Figure 3).

*Banksia dallanneyi* subsp. *pollostata* (P3) was widespread within the study area and often found to co-occur with the common non-significant taxon *Banksia dallanneyi* subsp. *dallanneyi*. These 2 subspecies are morphologically very similar and difficult to distinguish during the field survey. Full identity to subspecies was possible for some populations of both subspecies (positive field identification supported by identifiable specimens). Full identity could not be determined for other populations/records (591 plants of *Banksia dallanneyi* (*sens. lat.*)), and as a precaution these records are assumed significant flora until their full identity is known.

The *Synaphea* sp. plant collection was sterile with incomplete remnants of old infructescence similar to both *Synaphea panhesya* (P1) and *Synaphea sparsiflora* (P2) known from the area. As the specimen was not able to be identified to species level has the potential to represent a one of these Priority species. As a precaution, these records of *Synaphea* sp. are assumed significant flora until the full identity is known.

The collected *Anigozanthos humilis* (*sens. lat.*) specimen included desiccated flowering material insufficient for identification to subspecies level. This species encompasses 3 subspecies; Badgingarra (S.D. Hopper 7114) (P2), *chrysanthus* (P4) and *humilis* (unthreatened), all of which occur within the desktop search extent. As a precaution, these survey's records of *A. humilis* (*sens. lat.*) are assumed significant flora until the full identity is known.


Unidentifiable specimens of *Conostephium* sp. and *Haemodorum* sp. were collected during the field survey. The desktop review identified conservation significant species *Conostephium magnum* (P4) and *Haemodorum loratum* (P3) within the desktop search extent. While *Conostephium* sp. and *Haemodorum* sp. could not be identified to species level, the specimen material available were deemed to not be representative of either species. Instead, plant material collected from these taxa corresponded to unthreatened species (*Conostephium pendulum*, *Conostephium preissii*, *Haemodorum paniculatum*, and *Haemodorum spicatum*).

A minor range extension was recorded within the study area for the common and widespread species *Desmocladus flexuosus*. The specimen represents the most northern collection of this species, being approximately 43 km NE from the nearest specimen within WA herbariums collection.



The survey also identified 3 introduced species (*\*Chamaecytisus palmensis*, *\*Rumex pulcher* subsp. *pulcher* and *\*Vellereophyton dealbatum*), none of which are a Declared Pest or Weed of National Significance. Notably, the records of *\*Rumex pulcher* subsp. *pulcher* represent a range extension for this species (133 km N of the nearest specimen within WA herbariums s collection) and the first known record within the Dandaragan Plateau subregion).

# Technical memorandum


**Table 1** Details significant species recorded during the field survey

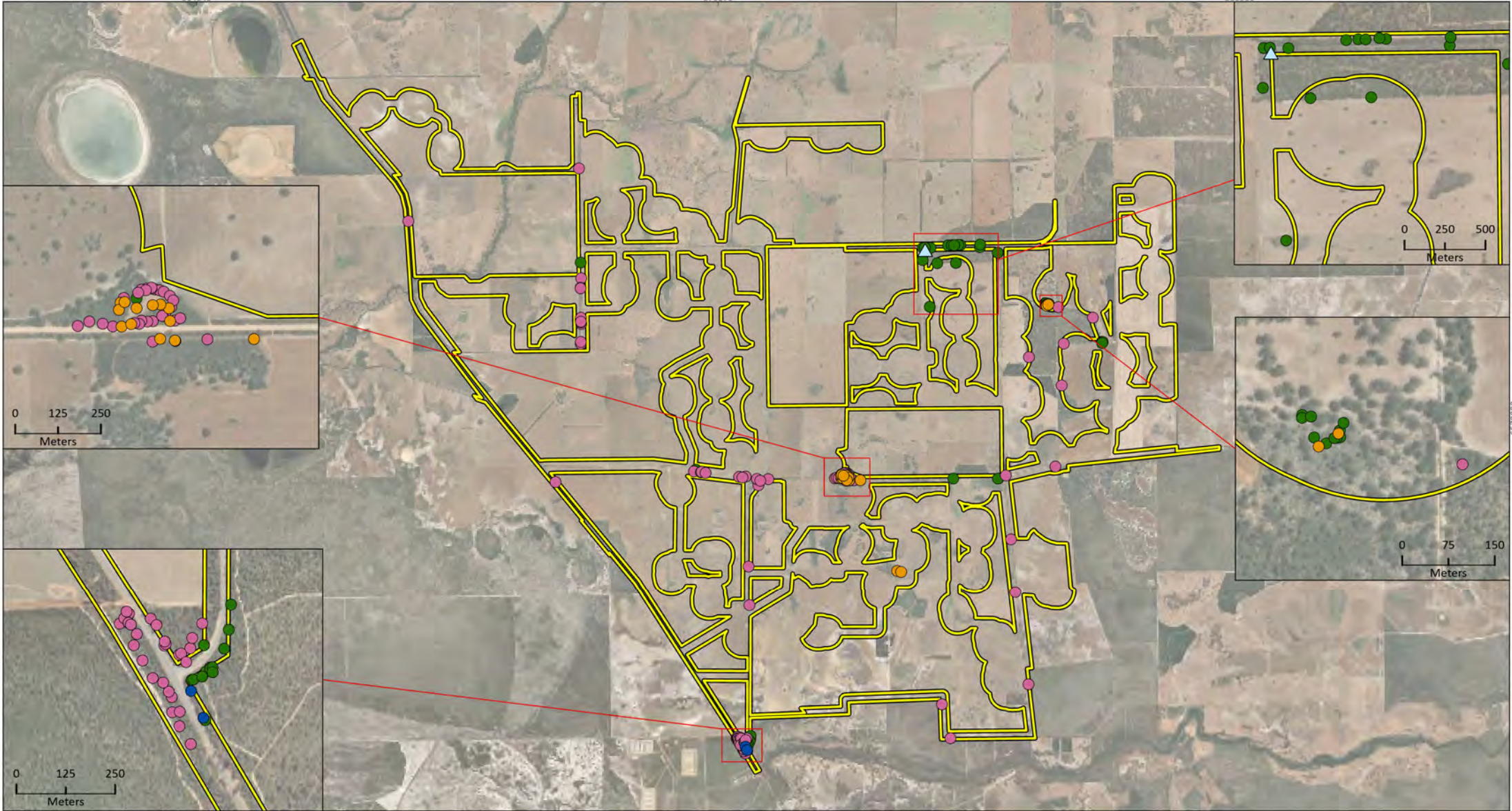
Species	Status	Distribution and ecology	Survey records	Photograph
<i>Banksia dallanneyi</i> subsp. <i>pollostata</i>	P3 (DBC list)	Occurs in the Avon Wheatbelt, Geraldton Sandplains, Jarrah Forest and Swan Coastal Plain bioregions (WA Herbarium 1998–). Habitat descriptions include <i>Banksia</i> and Eucalypt woodlands over mid-low heath, on pale sandy soils. Population sizes range from one to 1,000+ and observations as infrequent to common. (WA Herbarium 1998–).	A total of 2,074 plants within 10 new populations were recorded within the study area. Population sizes range from 1 to 1,450 plants. A total of 1,981 plants (95.5%) occur within the mapped boundaries of locally and regionally significant vegetation. Recorded within remanent vegetation on road verges, growing amongst <i>Banksia</i> , and <i>Corymbia calophylla</i> woodlands to low kwongan heathlands. Was observed to grow in habitats with deep leaf litter.	


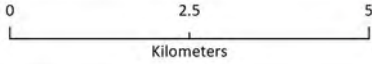
# Technical memorandum

Species	Status	Distribution and ecology	Survey records	Photograph
<i>Synaphea</i> sp.	Potential P1 or P2 species	N/A	<p>A total of 77 plants within 3 populations were recorded within the study area.</p> <p>A total of 38 plants (49.4%) occur within the mapped boundaries of the locally significant high value habitat.</p> <p>Recorded growing amongst <i>Corymbia calophylla</i>, <i>Banksia</i> spp., <i>Allocasuarina</i>, and <i>Xanthorrhoea preissii</i>.</p>	
<i>Anigozanthos humilis</i> (sens. lat.)	Potential P2 or P4 subspecies	<p>Occurs in the Avon Wheatbelt, Esperance Plains, Geraldton Sandplains, Jarrah Forest, Mallee, Swan Coastal Plain and Warren bioregions (WA Herbarium 1998–). Often growing amongst dwarf heath. Subspecies <i>Badgingarra</i> (S.D. Hopper 7114) tends occur on clay loam soils and subspecies <i>chrysanthus</i> tends occur on pale sandy soils.</p>	<p>A total of 2 plants within one population were recorded within the study area.</p> <p>Both plants occur within the mapped boundaries of the <i>Banksia</i> Woodlands of the Swan Coastal Plain TEC.</p> <p>Recorded growing amongst a <i>Banksia attenuata</i> woodland, over <i>Jacksonia sternbergiana</i> shrubland on the road verge.</p>	

## Technical memorandum


Species	Status	Distribution and ecology	Survey records	Photograph
<i>Banksia dallanneyi</i> (sens. lat.)	Potential P3 subspecies	N/A	<p>A total of 591 plants within 23 populations were recorded within the study area.</p> <p>A total of 420 plants (71.1%) occur within the mapped boundaries of locally and regionally significant vegetation.</p> <p>Recorded within remanent vegetation on road verges, growing amongst <i>Banksia</i>, and <i>Corymbia calophylla</i> woodlands to low kwongan heathlands. Was observed to grow in habitats with deep leaf litter.</p>	 <p>(WA Herbarium 1998-)</p>



Alinta Energy Marri Wind Farm Project		
Project No	1707	
Date	10/06/2025	
Map author	NR	
		
1:105,300 (at A4)		GDA 1994 MGA Zone 50

- Study area
- Reconnaissance survey**
- ▲ *Stylidium aceratum*, P3 (DBC list)
- Targeted survey**
- *Anigozanthos humilis*, Potential Priority species
- *Banksia dallanneyi*, Potential Priority species
- *Banksia dallanneyi* subsp. *pollostata*, P3 (DBC list)
- *Synaphea* sp., Potential Priority species

**Figure 3**  
**Significant flora recorded from the field surveys**



**PHOENIX**  
 ENVIRONMENTAL SCIENCES

All information within this map is current as of 10/06/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.

## Technical memorandum

### Vegetation

Vegetation assessed as either regionally or locally significant encompass a total of 526.27 ha (9.01%) of the study area (Table 2; Figure 4).

The *Banksia* Woodlands of the Swan Coastal Plain TEC is regionally significant and encompasses 243.97 ha of the study area. A majority of the TEC surveyed (180.03 ha) are existing records of the TEC that were visited and confirmed during either the targeted survey or the previous reconnaissance surveys. An additional 58.20 ha represent new records of the TEC not identified in the desktop review and first encountered during the reconnaissance or the following targeted surveys. The remaining 5.74 ha are pre-existing records of the TEC, assumed to be correct with level of high confidence, but were not visited during either the reconnaissance or following targeted surveys (Table 2).

None of the other TEC or Priority Ecological Communities identified in the Phoenix (2025) desktop review were deemed to occur in the study area following both the reconnaissance and targeted surveys. Presence of other conservation ecological communities were discounted by incompatible species composition and/or landform.

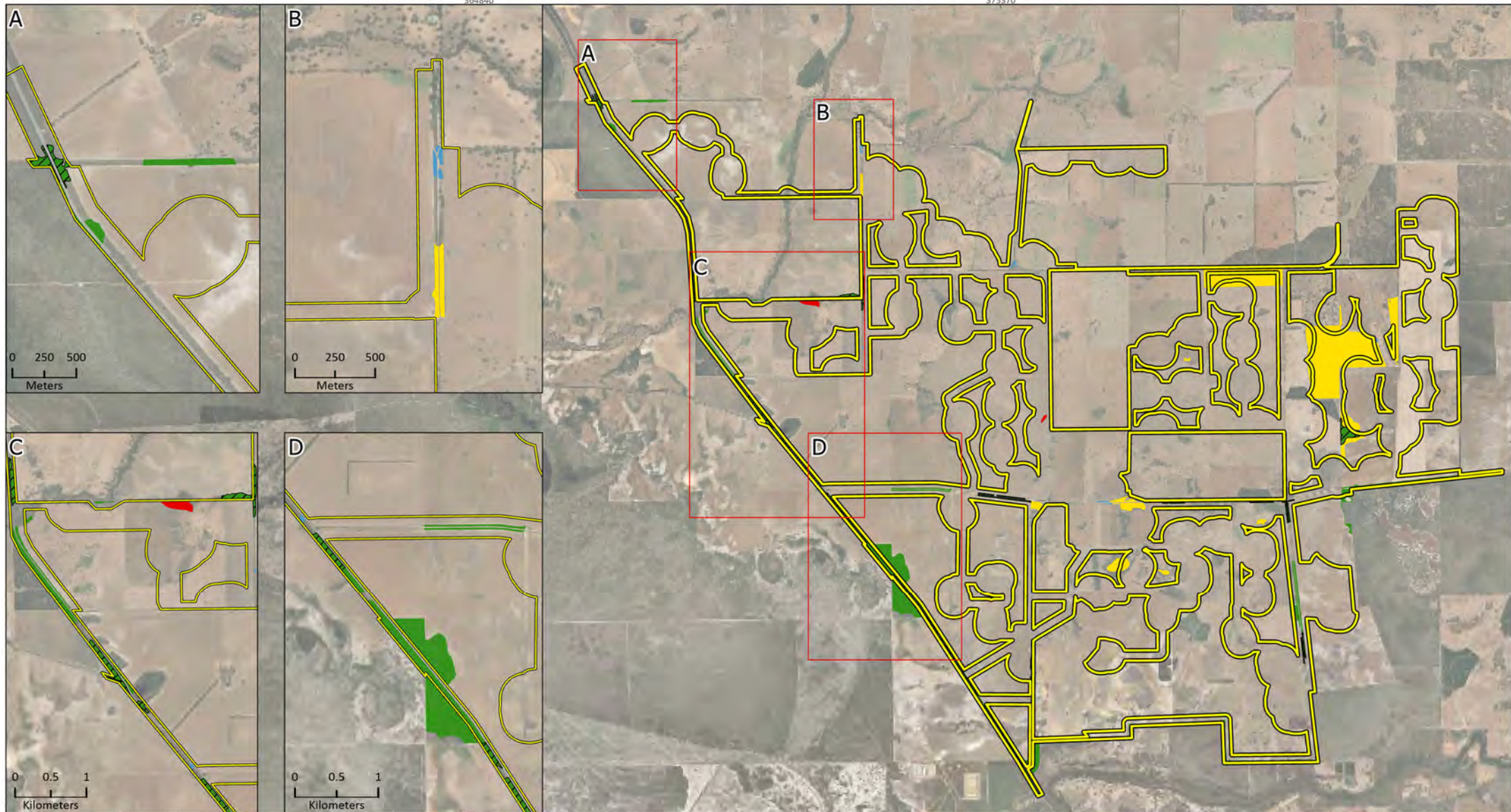
Locally significant vegetation within the study area encompasses 282.30 ha and consists of 2 types; i) vegetation of high value, and ii) vegetation analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC. High value habitat (including suspected high value habitat) encompasses 275.96 ha and was classified as locally significant vegetation for its capacity for high flora species diversity and potential as habitat for significant flora. Though of insufficient size and/or condition to be regarded TEC, vegetation analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC encompasses 6.34 ha within the study area and is also considered locally significant (Table 2).


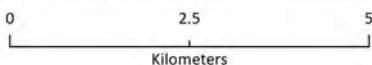
An additional 5.68 ha within 2 remnant patches currently recorded as the Endangered *Banksia* TEC within the DBCA (2024) database, were found not to represent the TEC. The instances were assessed and found to be a *Banksia hewardiana* shrubland and a *Corymbia calophylla* woodland rather than the *Banksia* TEC. These patches are not presented by this report as significant vegetation and correction of the DBCA database is recommended.






# Technical memorandum

**Table 2** Vegetation mapped within the study area

Vegetation value	Level of significance	Significance	Total area (ha)	% of study area	% of mapped area
<i>Banksia</i> Woodlands of the Swan Coastal Plain TEC	Regionally significant	Represents confirmed existing TEC records.	180.03	3.08%	33.84%
		Represents newly recorded instances of TEC.	58.20	1.00%	10.94%
		Represents pre-existing TEC record assumed correct with high confidence (not visited by surveys).	5.74	0.10%	1.08%
<b>Regionally significant vegetation totals</b>			<b>243.97</b>	<b>4.18%</b>	<b>45.86%</b>
High value habitat	Locally significant	Represents vegetation of high value as significant flora habitat and/or areas of higher species richness/diversity.	275.19	4.71%	51.73%
Suspected high value habitat		Represents potential vegetation of high value as significant flora habitat and/or areas of higher species richness/diversity.	0.76	0.01%	0.14%
Analogous to TEC		Represents vegetation analogous to <i>Banksia</i> Woodlands of the Swan Coastal Plain TEC but not meeting condition and patch size thresholds.	6.34	0.11%	1.19%
<b>Locally significant vegetation totals</b>			<b>282.30</b>	<b>4.83%</b>	<b>53.07%</b>
Pre-existing DBCA TEC proved incorrect	Report–Not significant DBCA–Regionally significant	Represents a confirmed error in DBCA database as the pre-existing TEC record confirmed to not be TEC.	5.68	0.10%	1.07%
<b>All mapped vegetation totals</b>			<b>531.91</b>	<b>9.11%</b>	<b>100%</b>

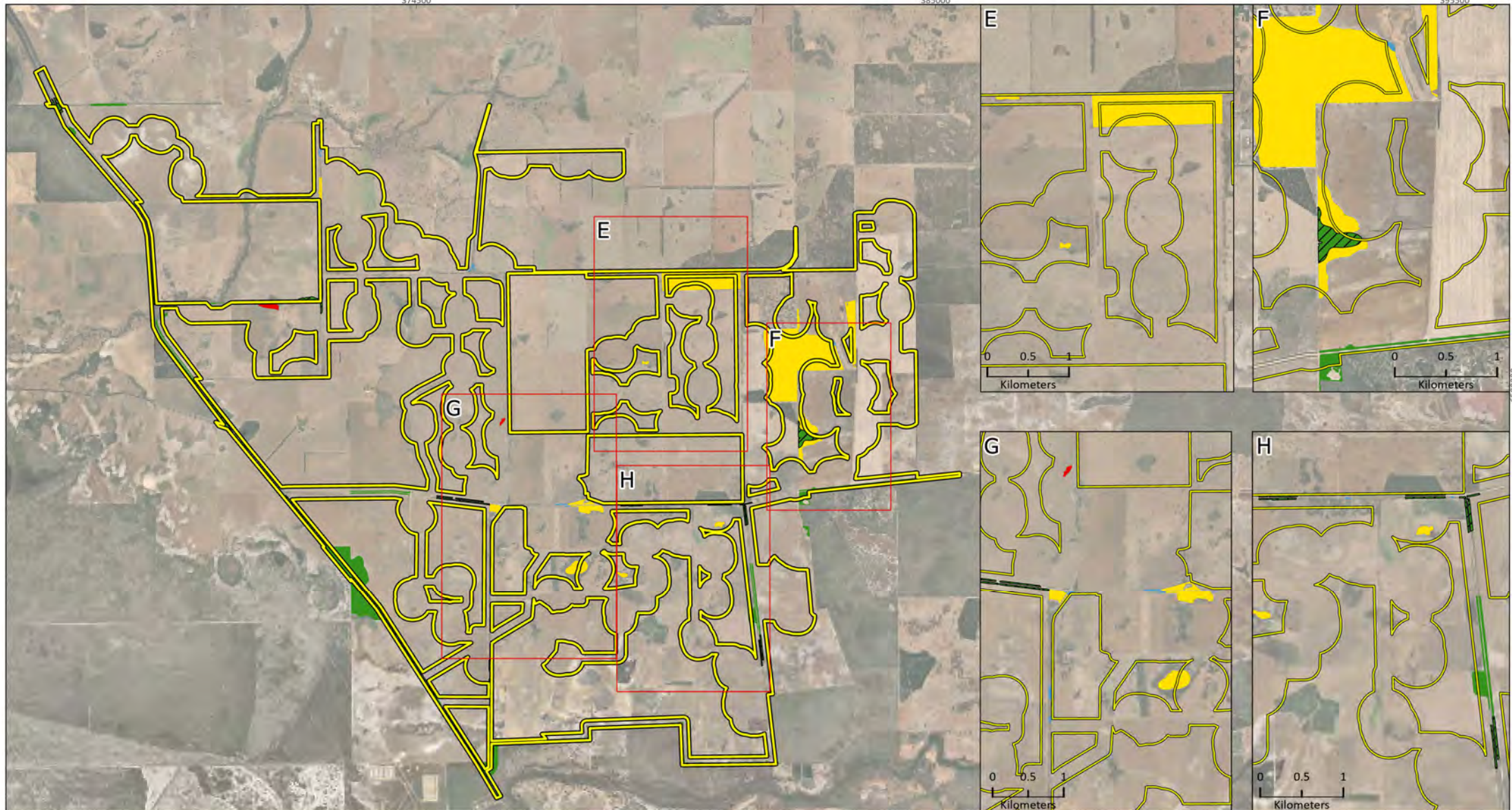


Alinta Energy Marri Wind Farm Project	
Project No	1707
Date	10/06/2025
Drawn by	JL
Map author	NR
	
	
1:105,300 (at A4) <span style="float: right;">GDA 1994 MGA Zone 50</span>	

-  Study area
- Significant vegetation**
-  Analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC
-  Preexisting *Banksia* Woodlands of the Swan Coastal Plain TEC
-  Error TEC record
-  Vegetation of high value

**Figure 4a**  
Significant vegetation recorded from the field surveys

All information within this map is current as of 10/06/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.



Alinta Energy  
Marri Wind Farm Project

Project No	1707
Date	10/06/2025
Drawn by	JL
Map author	NR

0 2.5 5  
Kilometers

1:105,300 (at A4) GDA 1994 MGA Zone 50

- Study area
- Significant vegetation**
- Analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC
- Preexisting *Banksia* Woodlands of the Swan Coastal Plain TEC
- New *Banksia* Woodlands of the Swan Coastal Plain TEC
- Error TEC record
- Vegetation of high value

**Figure 4b**  
Significant vegetation recorded from the field surveys

**PHOENIX**  
ENVIRONMENTAL SCIENCES

All information within this map is current as of 10/06/2025. This product is subject to COPYRIGHT and is property of Phoenix Environmental Sciences (Phoenix). While Phoenix has taken care to ensure the accuracy of this product, Phoenix make no representations or warranties about its accuracy, completeness or suitability for any particular purpose.

# Technical memorandum

## Limitations

The limitations of the flora and vegetation survey have been considered in Table 3 in accordance with EPA (2016).

**Table 3** Consideration of potential survey limitations

Limitations	Comments
Availability of contextual information at a regional and local scale	Not a limitation Desktop review in the Phoenix (2025) report provided a sufficient amount of contextual data at regional and local scales.
Competency/experience of the team carrying out the survey	Not a limitation The survey team field lead has 20+ years' experience in the Swan Coastal Plain bioregion.
Scope and completeness	Not a limitation The survey was in accordance with the scope provided by Aurecon. The scope of the survey was to undertake a targeted survey to identify the significant vegetation and flora within the study area.
Proportion of flora recorded and/or collected, any identification issues	Moderate limitation Three potential Priority taxa have been recorded within the study area, due to insufficient taxonomic characters, or the impracticality of collecting material from each potential Priority plant, they were not able to be identified to species/subspecies level. This is mitigated by the caveat that any collection unable to be identified and has the potential to represent a Priority species are assumed a significant species.
Access within the study area	Not a limitation Remnant vegetation within the study area was able to be accessed by either driving on existing tracks or walking on foot.
Timing, rainfall, season	Major limitation–(targeted searches for significant flora) The field survey was completed out of season for the South West and Interzone Botanical Province (EPA 2016). The majority of significant species identified within the desktop review were not known to flower during this survey timing Phoenix (2025). Additionally, annual species may not have been detectable/ present during the field survey. Not a limitation–(targeted searches for TEC and other significant vegetation) The out of season survey was not a limitation for TEC and other significant vegetation, as the key components of vegetation types are perennial species and can often be identified in their vegetative state.
Disturbance that may have affected the results of the survey	Not a limitation There were no signs of major disturbances within the study area which would have impacted the results of the survey.

# Technical memorandum

## Discussion

The targeted flora and vegetation survey and preceding reconnaissance survey successfully identified environmental values within the study area. Two confirmed Priority 3 species (*Banksia dallanneyi* subsp. *pollostata* and *Stylidium aceratum*) were newly recorded within the study area, in addition to 3 taxa precautionarily presumed significant (*Anigozanthos humilis* (sens. lat.), *Banksia dallanneyi* (sens. lat.) and *Synaphea* sp.). Vegetation was surveyed, finding and mapping both regionally significant vegetation (*Banksia* Woodlands of the Swan Coastal Plain TEC) and locally significant vegetation (as high value habitat, suspected high value habitat, and vegetation analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC).

### Flora

One plant of *Stylidium aceratum* P3 belonging to a new population was recorded during the Phoenix (2025) reconnaissance field survey. This species was not found again during the subsequent targeted survey. This is due to this species having an annual lifecycle and has only been collected during spring and therefore was likely not present/ detectable during the targeted field survey (during February). Undetected plants of *S. aceratum* would likely be restricted to areas of high value vegetation identified by the targeted and reconnaissance surveys.

A total of 10 new populations of the *Banksia dallanneyi* subsp. *pollostata* (P3) were recorded during the targeted field survey, increasing the known records of this species from 23 to 33, including the largest known population of this species containing 1,450 plants (WA Herbarium 1998–). However, it is likely that there are additional plants/ populations of the Priority subspecies occur within the study area that were not recorded due to:

- the impracticality of:
  - Collecting plant material from every plant encountered during the field survey and getting it identified at the WA Herbarium.
  - Attempting to identify every plant during the field (as both subspecies are morphologically similar and can be difficult to discern differences in the field).
- Both subspecies are known to co-occur, and therefore making it difficult to discern accurate plant counts of each subspecies within a single locality.
- A total of 591 plants *Banksia dallanneyi* recorded within the study area were not identified to subspecies level that have the potential to represent the Priority subspecies.
- The high likelihood that additional plants occur within the study area that were not encountered survey the field surveys.

Both the *Anigozanthos humilis* (sens. lat.) and *Synaphea* sp. taxa recorded during the targeted field survey, did not have enough plant material to be identified to species level, as it lacked quality fertile material. If the areas containing these potential Priority species is intended for clearing, additional survey/s during winter-spring (during the expected flowering period) may be required to determine which species these records represent.

Only one change can be applied to the Phoenix (2025) post-field survey likelihood of occurrence assessment, being *Banksia dallanneyi* subsp. *pollostata* (P3) changed from possible to occur to recorded. The targeted survey was not able to change the likelihood of occurrence rating for any other desktop species, as the survey was out of season. Out of season surveys drastically reduce the potential for observing annual species and fertile material (often required for identification). Therefore, the apparent absence of any additional desktop significant flora within the study area may be symptomatic that the flora are not present/ detectable during the field survey and not because they truly do not occur within the study area.

### Vegetation

A total of 526.27 ha (9.01% of the study area) of both regional and local significant vegetation was identified within the study area during the field surveys. Regionally significant vegetation is characterised as *Banksia* Woodlands of the Swan Coastal Plain TEC (EN EPBC Act; P3 DBCA list). Locally significant vegetation is characterised as high value habitat, suspected high value habitat, and vegetation analogous to *Banksia* Woodlands of the Swan Coastal Plain TEC.

## Technical memorandum

The *Banksia* Woodlands TEC is conservation significant due to its severely reduced Statewide extent, and as it is also known habitat to a wide variety of conservation significant flora TSSC (2016). The survey found additions and corrections to pre-existing DBCA records of the *Banksia* TEC within the study area. A total of 5.68 ha (0.10% of the study area) of DBCA mapped TEC did not match the characteristics of TEC presented by TSSC (2016). Newly recorded instances of TEC encompassed 58.20 ha (1.00% of the study area). These additions and corrections must be reported to the DBCA TEC database.

An additional 6.34 ha of vegetation analogous to the *Banksia* Woodlands of the Swan Coastal Plain TEC was also mapped and classified locally significant.

The 275.95 ha (4.72% of the study area) of high value habitat (inclusive of the suspected high value habitat) was mapped as locally significant. This significant vegetation category also contained the 2 largest patches of remnant vegetation within the study area. These larger patches of remnant vegetation are highly significant in the local area as they are in Excellent condition and are less vulnerable to threats associated with fragmentation. Additionally, vegetation classified of high value potentially support several significant flora species identified in the desktop review.

Unlike the targeted searches for significant flora, the significant vegetation mapping within the study area was not greatly affected by the survey timing. Vegetation types are typically characterised by perennial species, and which were both present and detectable during the field survey. However, additional locally significant vegetation types, such as habitat for significant flora and restricted vegetation types may occur within the study area that were not mapped during the Phoenix (2025) reconnaissance or current targeted surveys.

Dependent on the Project's proposed footprint Native Vegetation Clearing Permits (NVCP) may be sought as part of the Project's development. Phoenix acknowledges Aurecon seeks to avoid or minimise impacts to remnant vegetation within the constraints of the Project's development requirements. As such, if NVCPs are sought Phoenix recommends a tailored approach dependent upon environmental value of individual vegetation patches:

- Agricultural lands occupied by scattered remnant trees or small stands of trees were often devoid of remnant understorey. Such areas are deemed highly unlikely to be habitat for conservation significant flora species and do not warrant further survey (from a flora/veg perspective) further survey if NVCPs are sought.
- Vegetation outside of the mapped remnant patches that still clearly have understorey have a low likelihood of containing significant flora species. Partial clearing of such remnant patches is therefore unlikely to have an adverse impact on significant flora species. However, NVCPs sought within such areas may or may not require further targeted survey depending on scale and proportion of clearing within a patch.
- Vegetation mapped as locally significant (either as high value or as analogous to TEC) are best avoided where possible due to a higher likelihood of NVCP conditions of additional targeted flora survey. Though not gazetted as TEC or Priority Ecological Communities, these remnants represent likely habitat for significant flora that are surveyable within the seasons recommended by the Technical Guidance EPA (2016).
- Vegetation confirmed and mapped as regionally significant (TEC) are best avoided, likely requiring similar NVCP conditions as for identified locally significant vegetation. Successful application for NVCPs within TEC may also require assessment of proportional impacts upon the TEC in the local region.

Yours Sincerely,

Natasha Rogers, Botanist  
 natasha.rogers@phoenixenv.com.au  
 08 6323 5410  
 2/3 King Edward Road Osborne Park WA 6017

Dr David Leach, Senior Botanist  
 david.leach@phoenixenv.com.au  
 08 6323 5410  
 2/3 King Edward Road Osborne Park WA 6017

# Technical memorandum

## References

- DBCA. 2024. *Threatened and Priority Ecological Communities database*. Department of Biodiversity, Conservation and Attractions, Kensington, WA.
- DBCA. 2025. *WA Plant Census, Species and lower*. Department of Biodiversity Conservation and Attractions, Kensington, WA.
- EPA. 2016. *Technical Guidance: Flora and vegetation surveys for Environmental Impact Assessment*. Environmental Protection Authority, Perth, WA. Available at: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf)
- ESCAVI. 2003. *Australian Vegetation Attribute Manual: National Vegetation Information System (Version 6.0)*. Department of Environment and Heritage, Canberra.
- Phoenix. 2025. *Fatal flaws desktop assessment and reconnaissance survey for the Marri Wind Farm Project*. Phoenix Environmental Sciences, Osborne Park, WA. Prepared for Alinta Energy Pty Limited.
- TSSC. 2016. *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*. Department of the Environment and Energy, Canberra, ACT. Available at: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/131-conservation-advice.pdf>
- WA Herbarium. 1998-. *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. Available at: <http://florabase.dpaw.wa.gov.au/>