



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10201/1
Permit Holder:	Dodd and Dodd Group Pty Ltd
Duration of Permit:	From 5 October 2023 to 5 October 2028

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of development of a waste decommissioning facility and associated access road.

2. Land on which clearing is to be done

Lot 550 on Deposited Plan 414367, Talandji

3. Clearing authorised

The permit holder must not clear more than 7.0 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

PART II – MANAGEMENT CONDITIONS

4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

5. Weed management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

6. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner from west to east to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

7. Wind erosion management

The permit holder must commence earthworks and construction activities no later than three (3) months after undertaking the authorised clearing activities to reduce the potential for wind erosion.

PART III – RECORD KEEPING AND REPORTING

8. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ol style="list-style-type: none">(a) the species composition, structure, and density of the cleared area;(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;(c) the date that the area was cleared;(d) the size of the area cleared (in hectares);(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4; and(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with condition 5;(g) actions taken in accordance with condition 6; and(h) actions taken to manage and mitigate impacts to reduce the potential for wind erosion in accordance with condition 7.

9. Reporting

The permit holder must provide to the *CEO* the records required under condition 8 of this permit when requested by the *CEO*.


DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Meenu Vitarana

Manager

NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

11 September 2023

Schedule 1

The boundary of the area authorised to be cleared is shown in the map below.

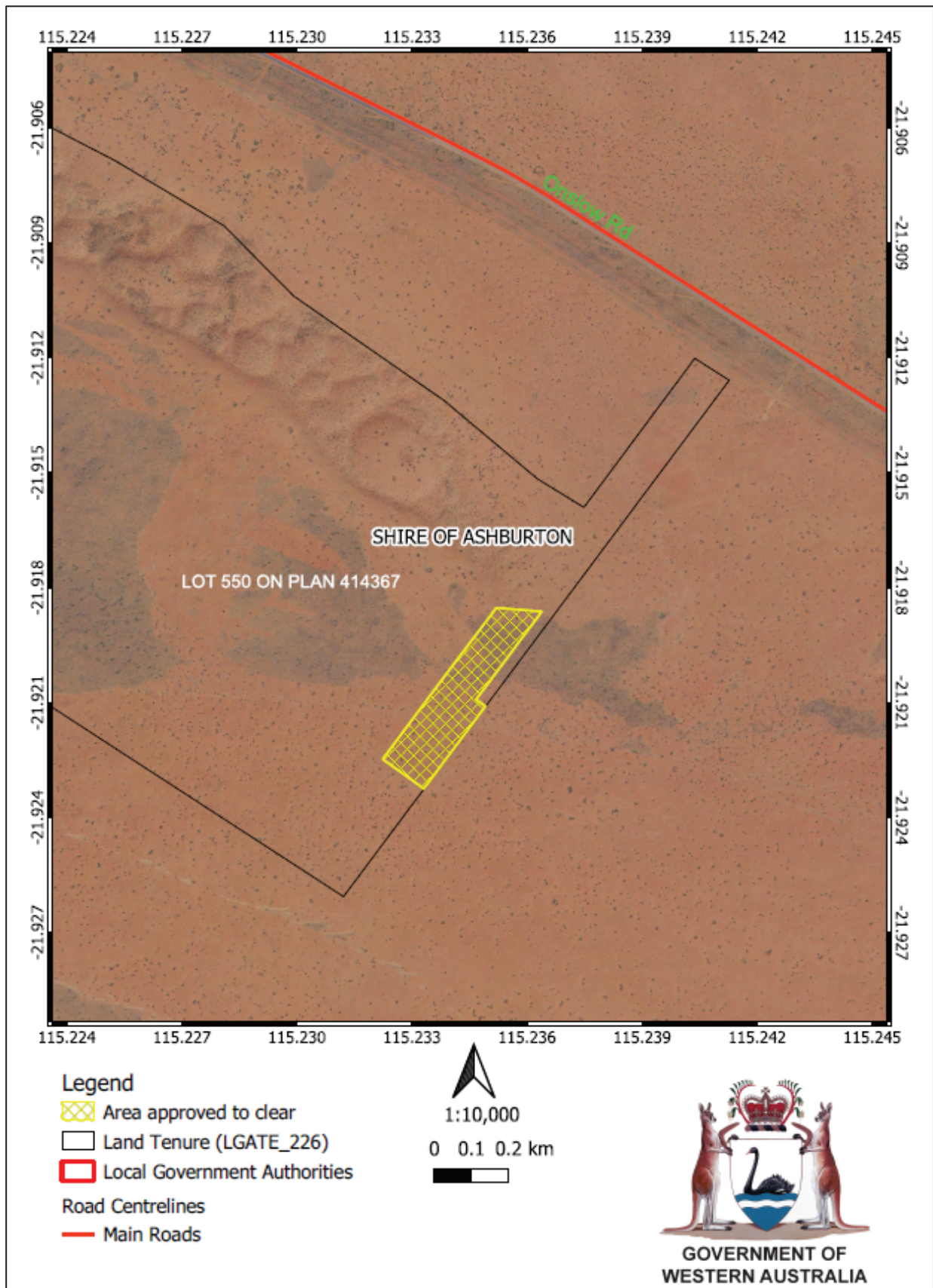


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10201/1
Permit type:	Purpose permit
Applicant name:	Dodd and Dodd Group Pty Ltd
Application received:	18 May 2023
Application area:	7.0 hectares of native vegetation
Purpose of clearing:	Development of a waste decommissioning facility and associated access road
Method of clearing:	Mechanical
Property:	Lot 550 on Deposited Plan 414367
Location (LGA area/s):	Shire of Ashburton
Localities (suburb/s):	Talandji

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The application is to clear for the purpose of developing the Onslow Decommissioning Project. The proposed clearing area is adjacent to the Pilbara Regional Waste Management Facility, located approximately 36 kilometres south of the town of Onslow (JBS&G, 2023a).

The decommissioning project may involve (JBS&G, 2023a):

- A nominal four hectares of land for the decommissioning facility (scrap metal cleaning and salvaging to support offshore infrastructure decommissioning works);
- No more than three hectares for an access road.

The proposed clearing area was chosen due to its proximity to offshore decommissioning works using the Port of Ashburton and transport connection to the applicant's other scrap metal processing facility in Karratha (JBS&G, 2023a).

1.3. Decision on application

Decision:	Granted
Decision date:	11 September 2023
Decision area:	7.0 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the findings of a flora survey (see Appendix E), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- impacts on fauna individuals present at the application area during the time of the clearing;
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values, and
- potential land degradation in the form of wind erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the impacts of the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values through permit conditioning. The applicant has suitably demonstrated avoidance and minimisation measures.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- Avoid, minimise to reduce the impacts and extent of clearing.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds.
- Undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- Activities for which clearing is authorised to commence within three months of clearing.

1.5. Site map

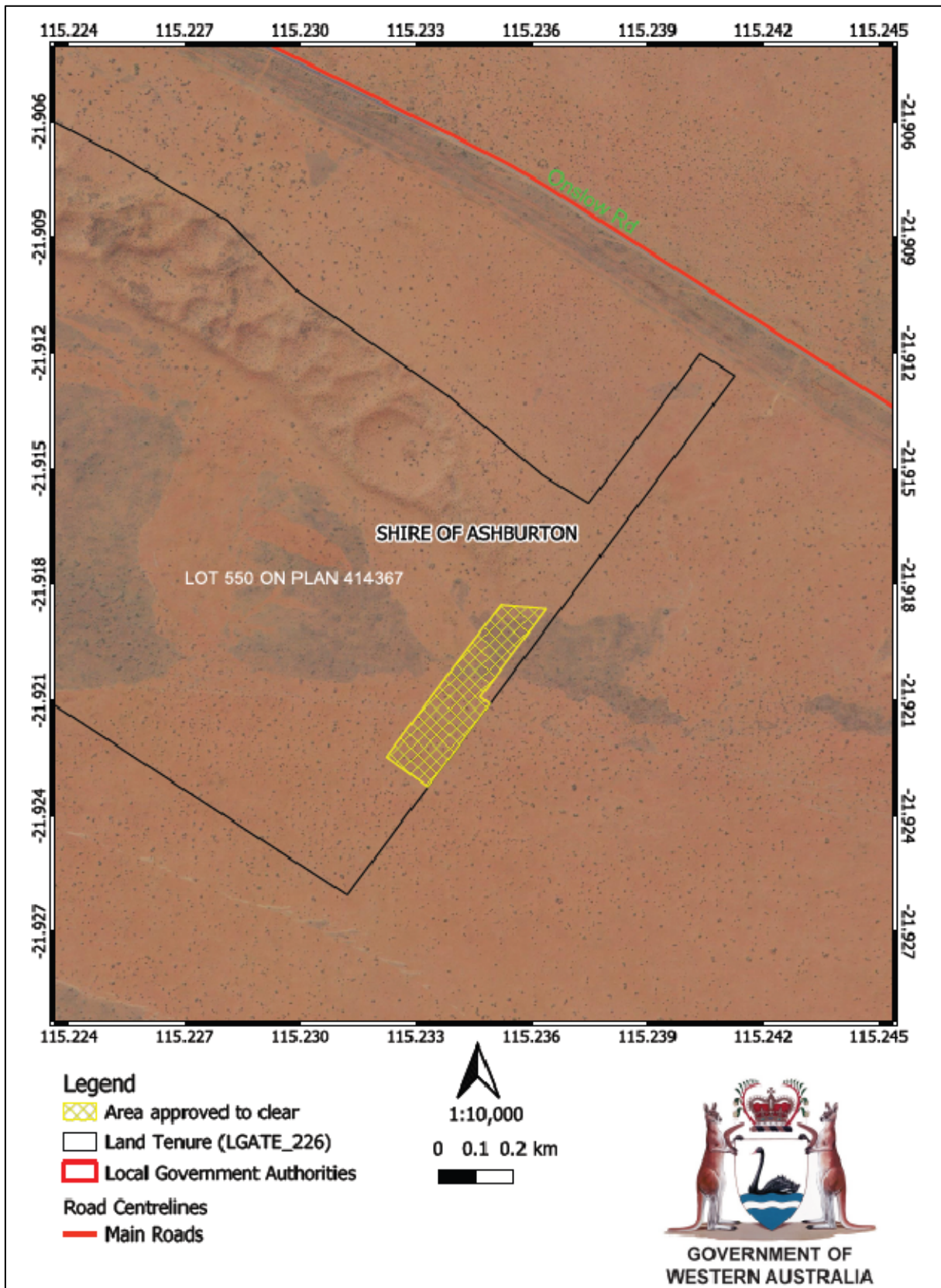


Figure 1 Map of the application area

The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Supporting information was submitted by the applicant, indicating that the decommissioning project footprint for the decommissioning facility (excluding the access road) has been refined over time from six hectares to the proposed four hectares (JBS&G, 2023a). The applicant also proposed following mitigation measures to manage and minimize potential impacts from the proposed clearing:

- Appropriate weed management practices will assist in minimising the spread of this weed into adjacent native vegetation because of clearing;
- Undertake slow progressive directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity;
- A 10,000 litre water cart will be utilised to stabilise soils;
- Construction works will be undertaken within three months of the date of clearing.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values (fauna, flora and biodiversity), conservation areas, and land resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna and biodiversity) - Clearing Principles (a) and (b)

Assessment

The desktop assessment identified that there are 49 conservation significant fauna species recorded in the local area, including 39 bird species, six mammal species, five reptile species and one fish species. Of which, 37 of these species are migratory bird species or shorebird species associated with coastal habitats not represented within the application area and an additional eight species are species only found in marine or aquatic environments.

Supporting information identified one fauna habitat type within the application area, a Mosaic of hummock grassland and shrubland on plain, which is described as dominated by *Acacia* and *Grevillea* species on varying sandy to clay-

loam and gravelly substrates. Vegetation consists of scattered areas of mixed shrub cover ranging from 1 to 3 metres over mixed smaller shrubs and hummock grasses and areas dominated by patches of immature and mature *Triodia* grasses (JBS&G, 2023a).

Based on the suitability of habitat, distance to closest mapped records and number of known records in the local area, four conservation significant fauna species could possibly occur within the application area (See B.4 for fauna analysis table).

Grey falcon and Peregrine falcon

The grey falcon (*Falco hypoleucos*) (Vulnerable) occurs in arid and semi-arid inland Australia and is associated with timbered lowland plains such as tussock grassland, open woodland, and particularly *Acacia* shrublands that are crossed by tree-lined watercourses (TSSC, 2020). The grey falcon roosts and nests in the tallest trees along watercourses, particularly river red gum (*Eucalyptus camaldulensis*) and coolibah (*Eucalyptus coolabah*) (TSSC, 2020). Considering there are no watercourses within the application area footprint and the distance from the closest record (more than five kilometres away), the proposed clearing area may not be a preferable foraging habitat for this species.

The peregrine falcon (*Falco peregrinus*) (Other Specially Protected Fauna) is found Australia-wide and occurs in a range of habitats including woodlands, grasslands and coastal cliffs, usually near watercourses (DAWE, 2020). Preferred roosting and breeding habitat for the peregrine falcon includes granite outcrops and coastal cliffs, but in the absence of these habitats, the species has been known to utilise the nests of other bird species or tree hollows for breeding (Marchant et al., 1993). It is considered that the habitat present within the application area may also provide suitable transient foraging habitat for this species as individuals migrate through the landscape. However, noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on special niche habitats, the peregrine falcon is likely to be transient in the application area and it is unlikely that the application area represents significant habitat for the species, noting the availability of extensive suitable foraging habitat within the surrounding local area.

Western pebble-mound mouse and Northern short-tailed mouse

Western pebble-mound mouse (*Pseudomys chapmani*) (Priority 4) is a native rodent and only found in Western Australia. This species' known distribution was reported to be restricted to the non-coastal, central and eastern part of the Pilbara region (Start, 1996). There are 12 records of this species mapped in the local area (50-km radius), with the closest record approximately 21 kilometres from the application area. This species may occur in the area (within the proposed clearing area) where suitable stony or gravelly substrates providing suitable pebbles are present.

Northern short-tailed mouse (*Leggadina lakedownensis*) (Priority 4) is a nocturnal rodent species and has been recorded across northern Australia, from Cape York to the Pilbara. In Western Australia, this species is known to occur on sandy soils and cracking clays (DBCA, 2023). There are 58 records of this species mapped in the local area, with the closest record approximately 23 kilometres from the application area. The sandy soil within the proposed clearing area may provide suitable habitat for this species.

A terrestrial fauna survey of a larger footprint of 435 hectares which encompassed the application area was undertaken in 2017 (to support CPS 8395/1 - 70.66 hectares), which is adjacent to the current application area) and did not observe these priority fauna species (Phoenix, 2017). The advice from the Department of Biodiversity Conservation and Attractions (DBCA) regarding impacts to the short-tailed mouse and the western pebble-mound mouse for CPS 8395/1 stated that "given the lack of field recorded observations, the scale of the clearing and the fact that the Study Area does not occur at the range limits of either of these species, the proposed clearing does not appear likely to cause a significant impact on either species at the species level" but "could impact on the short-tailed mouse at the individual or family group level" (DBCA, 2019).

Noting the DBCA advice and the extent of the current application area, the proposed clearing is unlikely to have significant impacts on the habitat of these two rodent species. However, the clearing may have direct impact on fauna individuals if they are utilising the application area at the time of clearing.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to have an impact on significant habitat for conservation significant fauna species, however, may result in impacts on fauna individuals if they are present within the application area during the time of the clearing.

For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna individuals can be managed by slow directional clearing to allow fauna to move into adjacent vegetation.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity.

3.2.2. Biological values (flora and biodiversity) - Clearing Principles (a) and (c)

Assessment

No threatened flora species are mapped within the local area (GIS database).

Given the mapped soil, vegetation types and suitable habitat, the following priority flora species may occur within the application area (see Appendix B.3 for the flora analysis table):

- *Abutilon* sp. *Onslow* (F. Smith s.n. 10/9/61) (Priority 3)
- *Abutilon* sp. *Pritzelianum* (S. van Leeuwen 5095) (Priority 3)
- *Triumfetta echinata* (Priority 3)

Abutilon Pritzelianum and *Triumfetta echinata* were recorded approximately two kilometres away from the application area (Phoenix, 2017), while *A. Onslow* is mapped approximately 1.6 kilometres from the proposed clearing area. *A. Onslow* and *Triumfetta echinata* have the same soil, vegetation and habitat types similar to what is present in the application area. Noting the suitable habitat in the proposed clearing area and the proximity of records, the application area is considered to provide suitable habitat for these species.

On advise from DWER, the applicant undertook a flora survey of the application area targeting these three flora species in August 2023 . No threatened or priority flora species were recorded within the proposed clearing area (Emerge Associates, 2023). The targeted flora survey information excerpt is presented in Appendix E.

Based on the results of the additional targeted flora survey, the application area is not considered to provided significant habitat for any conservation significant flora species.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to result in impacts on threatened or priority flora.

Conditions

No management conditions required.

3.2.3. Conservation areas - Clearing Principle (h)

Assessment

According to available databases, the closest conservation area to the application area is the Cane River Conservation Park, which is located approximately 26 kilometres southeast of the application area.

The application area borders an unallocated Crown Land. This Crown Land is the former Mt Minnie pastoral lease and has been proposed for future addition to the Cane River Conservation Park.

One introduced flora species *Cenchrus ciliaris* (buffel grass) was recorded in one location across the large area encompassing the application area (Phoenix, 2017). DBCA has advised that “this species is rated as a rapidly invasive species with high ecological impact in the Pilbara region, and therefore it is critical that clearing and associated disturbance activities do not spread or increase the occurrence of this weed” (DBCA, 2019).

Given the above, there is a potential that the proposed clearing will increase the risk of spreading weeds into surrounding vegetation proposed for future conservation, which may therefore impact on the environmental values of what will be the larger Cane River Conservation Park.

Conclusion

Based on the above assessment, the proposed clearing will result in increasing risk of spreading weeds into adjacent vegetation which has been proposed as an addition of the Cane River Conservation Park.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- implement weed control measures to minimise the risk of the introduction and spread of weeds into adjacent remnant vegetation.

3.2.4. Land resources - Clearing Principle (g)

Assessment

The soils within the application area have been mapped at a regional scale as the Giralia Land System (comprises approximately 35 per cent of the application area) and Uaroo Land System (comprises approximately 65 per cent of the application area):

- The Giralia System is described as sandy plains with linear dunes and broad sandy swales supporting hummock grasslands of hard and soft spinifex with scattered acacia shrubs; and
- The Uaroo System is described as broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs.

The mapped sandy soils outlined above are highly permeable, and therefore the proposed clearing is not likely to result in water erosion or waterlogging, particularly noting the absence of wetlands or watercourses within the application area.

The mapped soils are however prone to wind erosion. Noting the extent of clearing proposed, there is the potential for wind erosion to cause land degradation should the surface soils within the application area be exposed post clearing for an extended duration. Given the above, the proposed clearing may result in appreciable land degradation by way of wind erosion.

To manage the generation of excessive dust as a result of wind erosion during clearing activities, the applicant has advised that a 10,000-litre water cart will be utilised to stabilise soils (JBS&G, 2023a). It is considered that wind erosion may be further minimised by the utilisation of cleared areas within an appropriate period following clearing activities. Therefore, to minimise the risk of wind erosion, the applicant will be required to undertake construction works over the cleared areas within three months of the date of clearing, which will prevent the prolonged exposure of bare sandy soils.

Conclusion

Based on the above assessment, the proposed clearing will result in appreciable land degradation by way of wind erosion.

Conditions

To address the above impact, a condition has been imposed which requires activities for which clearing is authorised to commence within three months of clearing.

3.3. Relevant planning instruments and other matters

The Shire of Ashburton advised DWER that the Shire has no objections with the proposed clearing (Shire of Ashburton, 2023). Department of Planning, Lands and Heritage also raised no objections to the application and advised that the site's local planning scheme (currently as "conservation, recreation and nature landscape") will be addressed during the Shire of Ashburton's current review of its local planning scheme (DPLH, 2023).

The applicant confirmed that no rezoning of the land is required as the Shire of Ashburton has confirmed to include the applicant's proposed activities in the variety of land uses allowed within the Lot 550 (JBS&G, 2023b). The proposed development has received Development Approval from the Shire of Ashburton (JBS&G, 2023c).

The applicant has also applied to DWER for an *Environmental Protection Act 1986* works approval (reference number W6828/2023/1) for the proposed development. The Waste Industries - Regulatory Services branch confirmed that the works approval will likely be granted (DWER, 2023b). The North West Region - DWER informed that there is an existing groundwater license registered on the site to the Shire of Ashburton (GWL 202785) for the take of 20,000 kilolitres per year (expires in May 2029). If the applicant needs to use additional groundwater or surface water for construction or any other purposes, they will need to apply for a 5C licence to take water and a 26D licence to construct any new water supply bores (DWER, 2023a).

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of further information provided	Consideration of information
Targeted flora survey report	This information is presented in Section 3.2.2 of the Report
Development Approval from the Shire of Ashburton	This information is presented in Section 3.3 of the Report

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is adjacent to an established regional waste management facility in its northern corner and remnant vegetation in other sides. The proposed clearing area is part of a large area of vegetation.</p> <p>Aerial imagery indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains more than 99 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area is not within any mapped linkages and is unlikely to be part of any local ecological linkage.
Conservation areas	<p>The application area is not mapped within a conservation area. The closest conservation area is the Can River Conservation Park which is located approximately 26 kilometres southeast of the application area.</p> <p>The application area is adjacent to an unallocated Crown Land (former leasehold proposed for conservation) – ID 549</p>
Vegetation description	<p>Supporting information (JBS&G, 2023a) indicates the vegetation within the proposed clearing area consists of:</p> <ul style="list-style-type: none"> • Hummock grassland 1: <i>Triodia basedowii</i> grassland (with isolated <i>Corymbia hamersleyana</i> and/or <i>C. zygothylla mallee</i>), • Hummock Grassland 2: isolated low <i>Acacia sp. sterile</i>, <i>A. coriacea</i> and <i>Corymbia hamersleyana</i> trees over isolated mid <i>Acacia ancistrocarpa</i>, <i>A. bivenosa</i> and <i>A. trachycarpa</i> shrubs over mid <i>Triodia ?glabra</i> hummock grassland. <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> • Beard 98, which is Hummock grassland with scattered shrubs or mallee <i>Triodia spp.</i>, <i>Acacia spp.</i>, <i>Grevillea spp.</i>, <i>Eucalyptus spp.</i> (Shepherd et al, 2001). <p><i>The mapped vegetation type retain approximately 100 per cent of the original extent (Government of Western Australia, 2019).</i></p>
Vegetation condition	<p>Supporting information (JBS&G, 2023a) indicates the vegetation within the proposed clearing area is in excellent (Trudgen, 1991) condition, described as:</p> <ul style="list-style-type: none"> • Excellent: Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. <p>The full Trudgen (1991) condition rating scale is provided in 0.</p>
Climate and landform	<p>Climate: Mean maximum temperature is 32.1 degrees Celsius.</p> <p>Mean minimum temperature is 19.2 degrees Celsius.</p>

Characteristic	Details
	<p>Rainfall: Mean annual rainfall is 306.2 millimetres. (BOM, 2023)</p> <p>Landform: two types of landform (DPIRD, 2022)</p> <ul style="list-style-type: none"> Giralia system (203Gi): Depositional surfaces - sandy plains formed by sheet flood and wind action; - broad non-saline plains with thin sand cover and linear dunes trending north and south, no organised drainage but through flow areas receiving more concentrated sheet flow than adjacent plains; calcrete plains and minor calcreted drainage zones, dune relief up to 30 m. Uaroo system (202Ua): Depositional surfaces; level sandy plains up to 10 km or more in extent with little organised through drainage; pebbly surfaced plains and plains with calcrete at shallow depth; broad, mostly unchanneled, tracts receiving more concentrated sheet flow, minor low stony hills and rises. Relief mostly less than 10 m but isolated hills up to 30 m.
Soil description	<p>Two soil types have been mapped within the application area:</p> <ul style="list-style-type: none"> Giralia system (203Gi): Sandy plains with linear dunes and broad sandy swales supporting hummock grasslands of hard and soft spinifex with scattered acacia shrubs. Uaroo system (202Ua): Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs. <p>(DPIRD, 2022).</p>
Land degradation risk	<p>The soil types within the application area are mapped as having a low risk of soil erosion and salinity. The soil within the Uaroo system has moderate risk of acidification, while the soil within Giralia system has low risk (DPIRD, 2021). However, sandy soils in the application area are vulnerable to wind erosion.</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that no wetlands or waterbodies transecting the application area. The closest waterbody is a non-perennial lake located approximately 5.6 kilometres southwest of the proposed clearing area.</p>
Hydrogeography	<p>The application area falls within the Pilbara Surface Water Area and Pilbara Groundwater Area, as proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act).</p> <p>Groundwater salinity within the application area is mapped as 3000 to 7000 milligrams per litre total dissolved solids.</p>
Flora	<p>There are eight priority flora species and no threatened flora species mapped within the local area. None of these are recorded within the application area. The closest recorded priority species is <i>Abutilon sp. Onslow</i> (F. Smith s.n. 10/9/61), located approximately 1.6 kilometres from the application area.</p> <p>There are two species found on the same soil type and vegetation type as the application area.</p>
Ecological communities	<p>There is one priority ecological community, Tanpool Land System, recorded within the local area, approximately 39 kilometres east of the application area.</p>
Fauna	<p>The desktop assessment identified that a total of 49 conservation significant fauna species have been recorded within the local area (excluding the ocean), including 14 threatened fauna species, four priority fauna species, and 31 specially protected fauna species.</p>

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Carnarvon	8,382,890.35	8,360,801.46	99.74	1,020,434.08	12.17
Vegetation complex					
Beard vegetation association 98	221,820.23	221,812.78	100.00	55,548.81	25.04

*Government of Western Australia (2019)

B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify? [Y, N, N/A]
<i>Abutilon</i> sp. <i>Onslow</i>	P3	Y	Y	Y	1.6	6	Y
<i>Abutilon</i> sp. <i>Pritzelianum</i>	P3				28.1	1	Y
<i>Triumfetta echinata</i>	P3	Y	Y	Y	10.4	6	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant fauna required further consideration.

B.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Most recent record in local area	Are surveys adequate to identify? [Y, N, N/A]
<i>Falco hypoleucos</i> (Grey falcon)	VU	Y	40.4	2	2017	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	20.9	5	2017	N/A
<i>Leggadina lakedownensis</i> (Northern short-tailed mouse)	P4	Y	23.3	58	2016	N/A
<i>Pseudomys chapmani</i> (Western pebble-mound mouse)	P4	Y	21.1	12	2005	N/A

VU: vulnerable, OS: Other Specially Protected, P: priority

B.5. Land degradation risk table

Risk categories	<i>Giralia system (203Gi)</i>	<i>Uaroo system (202Ua)</i>
Acidification	100% of the map unit has low risk	77% of the map unit has moderate risk, 23% of the map unit has low risk
Salinity	100% of the map unit has slight to nil risk	100% of the map unit has slight to nil risk
Soil erosion	No erosion	1 % of the map unit has slight risk, 99% of the map unit has nil risk

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The proposed clearing is not likely to have a significant impact on conservation significant flora, fauna and ecological communities.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1 and 3.2.2, above.</i>
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain suitable habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain species that can indicate a threatened ecological community. No threatened priority ecological communities are mapped within 30 kilometres of the application area.</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped vegetation type is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>The application area is located adjacent to an unallocated Crown Land, which was formerly a pastoral station (ex Mt Minnie pastoral lease). This land is proposed to be added to the Cane River Conservation Park. Given this, the proposed clearing may have an impact on the environmental values of adjacent areas proposed for conservation.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given no watercourses or wetlands are recorded within five kilometres of the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are susceptible to wind erosion. Noting the extent of the application area, the proposed clearing is likely to have an appreciable impact on land degradation.</p>	May be at variance	Yes <i>Refer to Section 3.2.4, above.</i>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given no watercourses are recorded within five kilometres of the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>Given no watercourses are recorded within five kilometres of the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, 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 present including very aggressive species.
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 E. Biological survey information excerpts

Extracted from Emerge Associates (2023).

TARGETED FLORA SURVEY – PART LOT 550 ON DEPOSITED PLAN 414367, TALANDJI

1 BACKGROUND

Dodd and Dodd Pty Ltd are proposing to clear native vegetation within a 7 hectare (ha) portion of Lot 550 on Deposited Plan 414367 in Talandji (herein referred to as the 'site'), as shown in Figure 1.

A waste decommissioning facility and associated access road are proposed to be developed within the site. Dodd and Dodd Pty Ltd have submitted a clearing permit application to the Department of Water and Environmental Regulation (DWER) (ref. CPS 10201/1). DWER have issued a draft clearing permit which requests a pre-clearance targeted flora survey to identify possible occurrences of following priority flora species:

- *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) (Priority 3)¹
- *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (Priority 3)
- *Triumfetta echinata* (Priority 3).

2 SCOPE OF WORK

Emerge were engaged by Dodd and Dodd Pty Ltd to undertake a targeted flora survey to meet the request from DWER and in accordance with the Environmental Protection Authority (EPA) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact* (EPA 2016).

As part of this scope of work, the following tasks were undertaken:

- A desktop review of relevant previous flora surveys and information on threatened and priority flora species which may occur in the site, with focus on the three species listed by DWER.

- A field survey to search for threatened and priority flora.
- Documentation of the desktop review, methods, results, discussion and conclusions.

3 METHODS

3.1 Field survey

A botanist² from Emerge visited the site on 31 August 2023 to conduct the field survey.

During the survey the site was traversed on foot and the vegetation was searched for the three priority flora species listed in **Section 1**. Other threatened and priority flora species were also searched for whilst traversing the site.

Photographs were taken throughout the field visit to show particular site conditions. A track log was recorded using a hand-held GPS unit.

4 RESULTS

No threatened or priority flora species were recorded and none are considered likely to occur. The track log is shown in **Figure 2**.

5 DISCUSSION

The three priority flora species specified by DWER, *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61), *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) and *Triumfetta echinata* are not considered to occur as the site was surveyed comprehensively during the current survey and they were not recorded.

Abutilon sp. Pritzelianum (S. van Leeuwen 5095) and *Triumfetta echinata* were recorded in September 2017 approximately 1-3 kilometers (km) north-west of the site (three and one individuals, respectively) (Phoenix Environmental Sciences 2017). However, a subsequent survey in February and March 2018 could not re-confirm the presence of *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) and the one *Triumfetta echinata* individual was dead (Phoenix Environmental Sciences 2018). Suitable habitat for *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) occurs within the site but it has not been recorded in the site or surrounds during previous surveys (Phoenix Environmental Sciences 2017, 2018).

Abutilon sp. Onslow (F. Smith s.n. 10/9/61), *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) and *Triumfetta echinata* are all perennials and so would be visible throughout the year. They are also known to flower in August, so would have been identifiable during the survey, if present. No plants which may have represented these species were recorded within the site during the survey. Therefore, since these species (and other threatened and priority flora species) have not been recorded in the site during the two previous surveys (Phoenix Environmental Sciences 2017, 2018) and the current survey, they are not considered to occur.

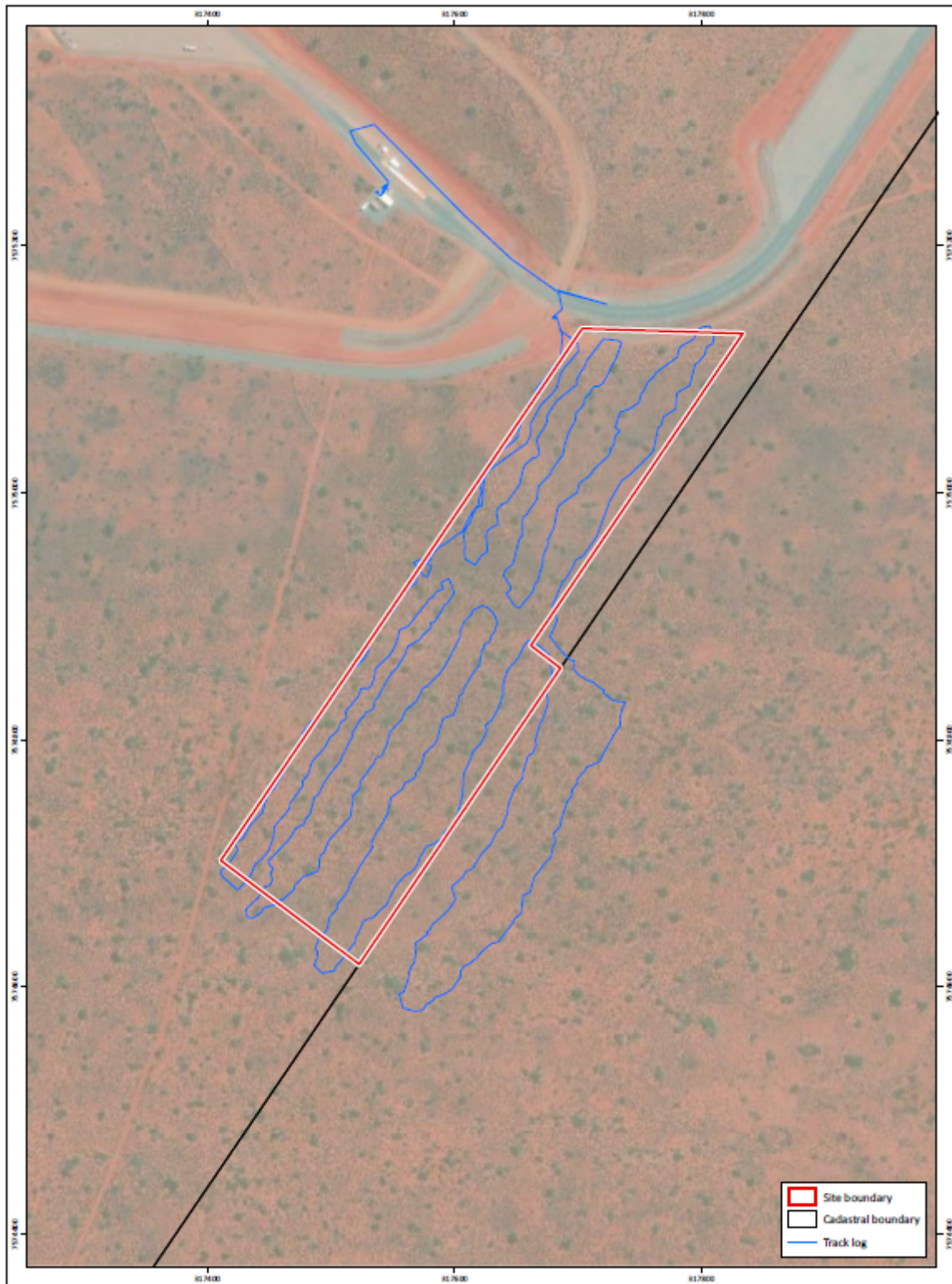


Figure 2: Survey Track Log

Project: Targeted Flora Survey
 Part Lot 550 on DP 414367, Talandji
Client: Dodd and Dodd Group Pty Ltd

Plan Number: EP23-078(D1)-R02
Drawn: GAR
Date: 04/05/2023
Checked: RAW
Approved: TAA
Date: 04/05/2023



Scale: 1:4,000@A4
 GDA 1994 MGA Zone 50



Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- DBCA – Lands of Interest (DBCA-012)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities

F.2. References

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