GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9840/1

File Number: DWERVT10750

Duration of Permit: From 24 July 2023 to 24 July 2028

PERMIT HOLDER

Shane David Ray and My Tien Ray

LAND ON WHICH CLEARING IS TO BE DONE

Lot 16 on Diagram 67754, Coonabidgee

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.15 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 24 July 2025.

2. 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.

3. Weed and dieback 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* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *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.

4. Wind erosion management

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

5. Planting – mitigation

(a) The permit holder must, within 12 months of the commencement of clearing authorised under this permit, within the area hatched red in Figure 2 of Schedule 1:
   (i) undertake deliberate *planting* of 19 Melaleuca sp. trees within the area hatched red in Figure 2, at ratio of 1:1 for each tree cleared;
   (ii) ensure only *local provenance* propagating material is used for *planting* activities;
   (iii) ensure *planting* is undertaken at an *optimal time*;
   (iv) undertake *weed* control and watering of seedlings, as required, for at least two years post *planting*.

(b) The permit holder must, within 24 months of *planting* the trees in accordance with condition 5(a)(i) of this permit:
   (i) plant additional trees to replace those that do not survive, that will result in a ratio of 1:1 for each tree cleared persisting within the area hatched red in Figure 2 of Schedule 1; and
   (ii) where additional planting of trees is undertaken in accordance with condition 5(b)(ii), the permit holder must repeat the activities required under conditions 5(a)(ii) -(iv) and 5(b)(i)-(ii) of this permit.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of the permit, a report providing evidence that 19 Melaleuca trees have survived within the area hatched red in Figure 2 of Schedule 1.

6. 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	(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 2020 (GDA2020), 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 2 (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 3; and (g) actions taken to minimise the wind erosion risk in accordance with condition 4.
2.	In relation to *planting* pursuant to condition 5	(a) the date(s) on which the *planting* was undertaken (b) the number of trees *planted* (c) a description of the planting activities undertaken pursuant to condition 5(a), including density of *planting*, and actions taken to implement watering and *weed* control; and (d) a description of any additional *planting* undertaken in accordance with 5(b)(ii), including dates of additional *planting*, number of additional trees *planted* and any remedial actions undertaken.

7. Reporting

(a) The permit holder must provide to the *CEO*, on or before 30 June of each calendar year, a written report containing:

(i) the records required to be kept under condition 6; and
(ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no clearing authorised under this permit has been undertaken, a written report confirming that no clearing under this permit has been undertaken, must be provided to the *CEO* on or before 30 June of each calendar year.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of the permit, a written report of records required under condition 6, where these records have not already been provided under condition 7(a).

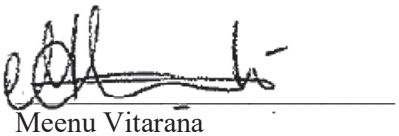
DEFINITIONS

In this permit, the terms in Table 2 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 *Environmental Protection Act 1986*.
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.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
fill	means material used to increase the ground level, or to fill a depression
local provenance	means native vegetation seeds and propagating material from natural sources within the same IBRA subregion of the area cleared.
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.
optimal time	means the period from May to June for undertaking planting and seeding.
planting/ed	means the re-establishment of vegetation by creating soil conditions and planting seedlings of the desired species.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; 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

30 June 2023

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

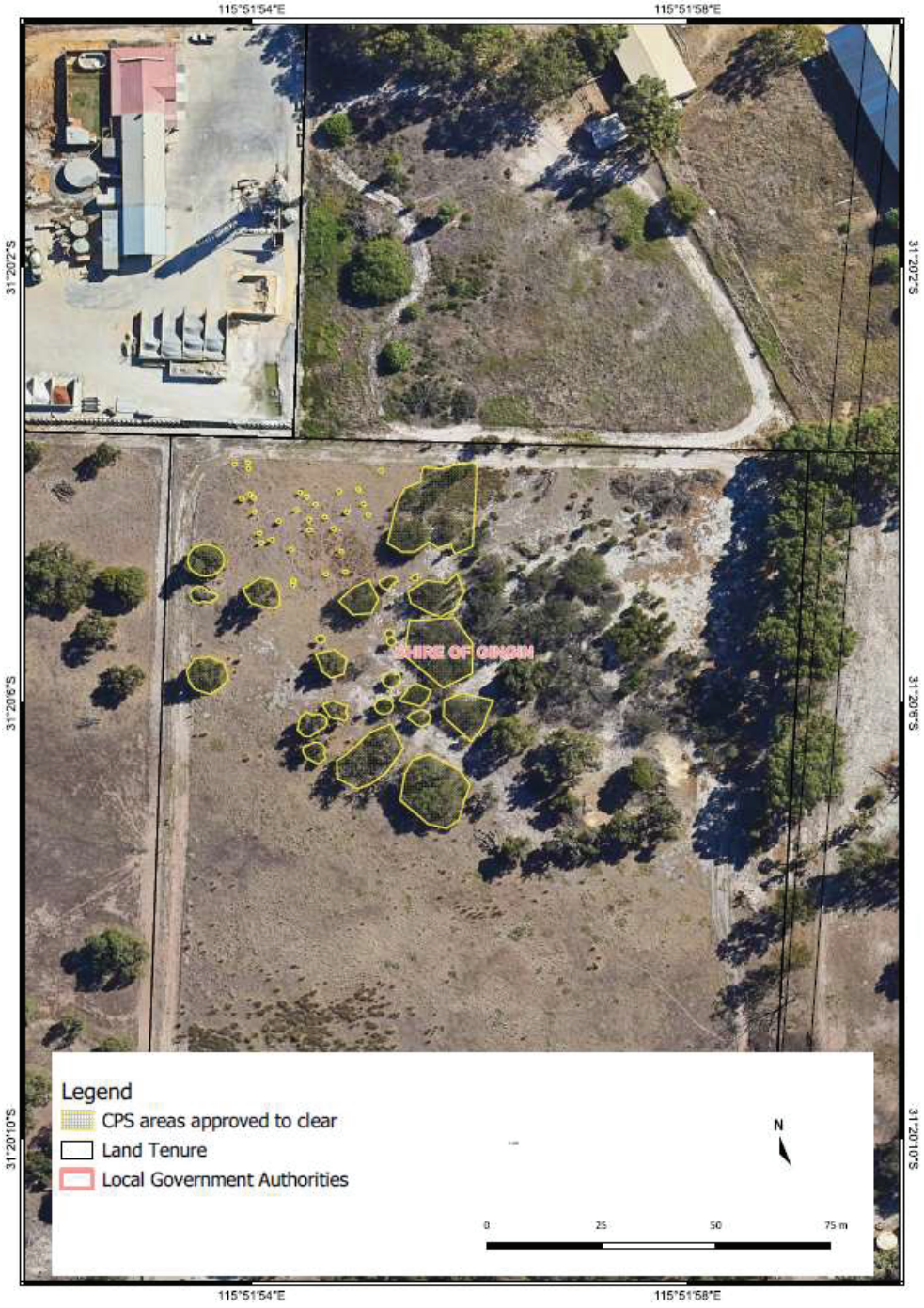


Figure 1: Map of the boundary of the area within which clearing may occur

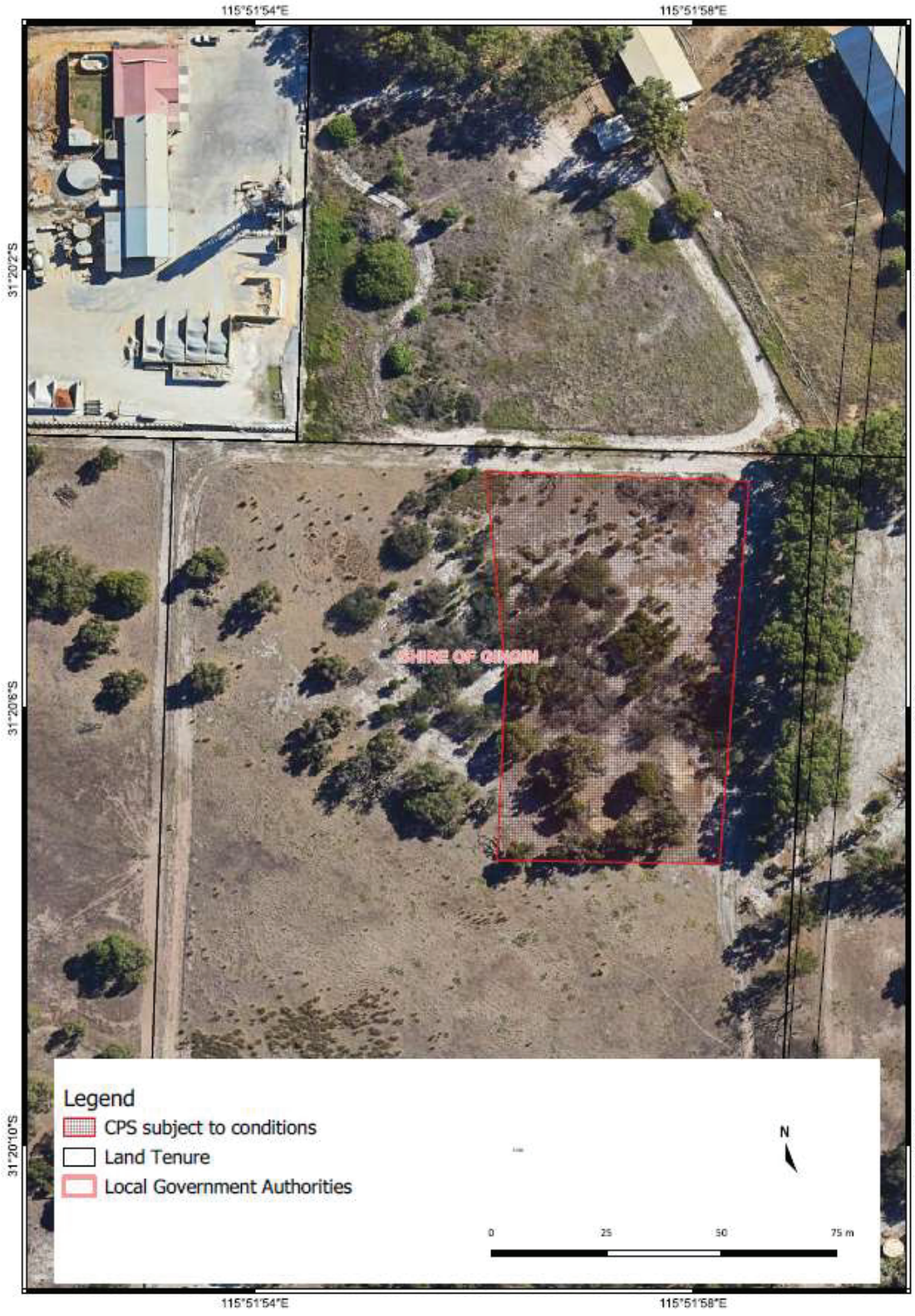


Figure 2: Map of the boundary of the area subject to condition 5

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9840/1
Permit type:	Area permit
Applicant name:	Shane David Ray and My Tien Ray
Application received:	1 August 2022
Application area:	0.15 hectares of native vegetation
Purpose of clearing:	Building/structure
Method of clearing:	Mechanical
Property:	Lot 16 on Diagram 67754
Location (LGA area/s):	Shire of Gingin
Localities (suburb/s):	Coonabidgee

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 proposed clearing is to facilitate the construction of a warehouse, hardstand and residence.

The application was revised during the validation process from 0.096 hectare to 0.15 hectare following clarification of the specific trees and sedges that were proposed to be cleared.

1.3. Decision on application

Decision:	Granted
Decision date:	30 June 2023
Decision area:	0.15 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 A), relevant datasets (see Appendix E), advice received from Department of Biodiversity, Conservation and Attractions, the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), 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:

- the removal of 0.15 hectares of possible conservation category wetland vegetation (refer section 3.2.3 for further details)
- 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 proposed clearing is unlikely to lead to appreciable land degradation or have long-term adverse impacts on environmental values and can be minimised and managed to be unlikely lead to an unacceptable risk to environmental values.

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
- only undertake clearing if construction is to occur within the following three months to minimise wind erosion impact; and
- undertake planting at a 1:1 ratio to mitigate impacts to wetland vegetation.

1.5. Site map

Figure 1 The areas crosshatched yellow indicate the areas 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 polluter pays principle
- 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)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that alternate options within the property had been considered which would be closer to the mapped watercourse and the mapped occurrence of a threatened ecological community. Preference was given to the current design as it provides a buffer to the creek and is more aligned with the industrial use of the property to the north. The application was revised in validation once the specific trees and sedges that were proposed to be cleared were confirmed.

After consideration of avoidance and mitigation measures, it was determined that further avoidance and/or mitigation measures were required to counterbalance the significant residual impacts to the conservation category wetland in the application area. Upon request from the department, Shane David Ray and My Tien Ray committed to planting 19 Melaleuca species trees within the area mapped as the conservation category wetland to mitigate the loss of 19 trees.

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 A) 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 B) identified that the impacts of the proposed clearing present a risk to adjacent remnant vegetation, and land and water 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 (flora and fauna) - Clearing Principles (a), (b) and (c)

Assessment

Fauna

Of the 20 conservation significant fauna species recorded within the local area, more than half have an association with water sources and others are either locally extinct or have habitat preferences not located within the application area (such as eucalyptus trees). The species below have some habitat preferences aligned with the values of the application area and are further discussed.

The Swan Coastal Plain shield-backed trapdoor spider is known from 275 records, two of which are in the local area. The species is little known with limited information on the habitat preference of the species, but it has been noted that 'Burrows of this species usually occur in *Banksia* woodland and heathland on sandy soils and are adorned with

a typical 'moustache-like' arrangement of twig-lines (Rix, et al 2018). In the absence of this habitat type within the application area, it is considered the application area does not provide habitat for the species.

Isoodon fusciventer (southwestern brown bandicoot, quenda) has habitat preferences for dense understorey such as around swamps or in banksia and jarrah woodlands. A quenda will usually have several daytime nesting sites within their home range. The application area intersects a mapped wetland which may provide some habitat for this species however it is not likely that the application area itself would provide habitat in its absence of dense understory.

Flora

According to available databases, the following three species have been recorded within similar mapped soil and vegetation types as that of the application area:

- *Stylidium longitubum* (Priority 4 species) – this species is known from 47 records and is described as occurring within sandy clay, clay, and seasonal wetlands. However, records of this species are normally associated with a dense understory which indicates the application area is not likely to provide habitat for the species.
- *Dillwynia dillwynioides* (Priority 3 species) – there are three records of this species within the local area, however two of these are from 1932. A more recent record within the local area is from a more complex vegetation structure. Considering the lack of vegetation structure and the amount of disturbance within the application area, it is considered unlikely that the species is present within it.
- *Rumex drummondii* (Priority 4 species) is known from two records within the local area with only one of the records being recent (2013) which was recorded within intact vegetation. The general habitat description for the species is winter-wet disturbed areas. It is considered that part of the application area may provide habitat for this species.

Priority 3 species are poorly known species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Priority 4 species are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Conclusion

Noting the low potential for the flora and fauna species listed above to occur within the application area, the conservation status of those species and the extent of the proposed clearing, the proposed clearing is not considered to impact on conservation significant flora species.

Conditions

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

- Avoidance and mitigation
- Weed and dieback management
- Mitigation in the form of planting within the area mapped as a conservation category wetland is conditioned as a part of a permit to clear to increase habitat values for local fauna.

3.2.2. Significant remnant vegetation - Clearing Principles (e)

Assessment

The application area is within the Swan Coastal Plain IBRA region and is within the mapped Yanga vegetation complex which retains 16 per cent of its pre-European extent and the local area retains approximately 27.9 per cent of its pre-European extent.

The National Objectives and Targets for Biodiversity Conservation include a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001), noting this, the proposed clearing is not aligned with this objective, however the vegetation is not representative of the mapped complex.

It is noted under section 3.2.1 and 3.2.2, that the proposed clearing of 0.15 hectares is not considered to have a significant residual impact on conservation significant flora, fauna, and biological values.

The application area is located approximately 1.9 kilometres north of a mapped conceptual ecological linkage (Moore River & Gingin Brook). Noting the distance of the linkage to the application area it is considered that the proposed clearing will not impact the linkage values of the conceptual linkage or any other local linkages.

Considering the above and noting the extent of the proposed clearing, the application area is unlikely to be significant as a remnant of native vegetation in an area that has been extensively cleared.

Conclusion
The proposed clearing of 0.15 hectares of native vegetation is not considered significant as a remnant of native vegetation in an area that has been extensively cleared.

Conditions

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

- Mitigation in the form of planting within the area mapped as a conservation category wetland at a ratio of 1:1 is conditioned as a part of a permit to clear to increase habitat values for local fauna and to mitigate impacts to wetland vegetation.

3.2.3. Land and water resources - Clearing Principles (f), (g), (i), (j)

Assessment
The application area intersects a mapped conservation category wetland (partially) and a multiple use wetland, and contains mostly melaleuca species which are growing in association with the mapped wetland. Given the degraded nature of the application area and the historical impacts, advice was sought from Department of Biodiversity, Conservation and Attractions (DBCA).

The advice provided by DBCA acknowledged the current state of the vegetation as degraded and that based on the preliminary evaluation criteria in accordance with the criteria within 'A methodology for the evaluation of wetlands on the Swan Coastal Plain, Western Australia', it appears the values of sumpland wetland UFI-11226 (the mapped conservation category wetland) may not align to conservation category (DBCA, 2022).

The advice also noted that the proposed development should consider potential changes to the hydrological function and processes of the wetland, in the context of the wetland existing within a basin landform. The impacts to the remainder of the wetland within the neighbouring property in the west should also be considered. The Melaleuca trees and the sedge species shown within the photographs provided are typical wetland vegetation and may compliment and support the ecological values of the vegetated waterway in the southern portion of Lot 16 Bell Road (DBCA, 2022). The applicant has committed planting Melaleuca sp. to the east of the application area, which will improve the function of the adjacent wetland vegetation.

Majority of the proposed clearing is within the mapped multiple use wetland. The general description for these wetlands is that they have few remaining important attributes and functions. The area of intersection between the proposed clearing and the mapped conservation category wetland includes two large trees, and two smaller trees so is not considered likely to have a significant impact on the wetland. This is also in consideration of the neighbouring vegetation values and historical disturbances (Appendix D)

The mapped soil types have a high risk of wind erosion and waterlogging. The proposed clearing is not likely to contribute to increased waterlogging given the area is within a mapped wetland. The proposed clearing may contribute to increased risk of wind erosion if left exposed.

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

- Wind erosion management condition
- Mitigation in the form of planting within the area mapped as a conservation category wetland is conditioned as a part of the permit to improve the function of the adjacent wetland vegetation

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include development approval under the *Planning and Development Act 2005* (issued by the Shire of Gingin).

The Shire of Gingin advised DWER that local government approvals are required. The Shire did not have any objections to the proposed clearing.

The applicant advised that the Shire of Gingin granted in principle planning approval for the proposed development (Ray, 2023).

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a part of a small isolated of native vegetation in the intensive land use zone of Western Australia. It is adjacent to semi-rural or industrial properties on all sides which are cleared to some extent. Spatial indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 27.9 per cent of the original native vegetation cover.
Ecological linkage	There are no mapped ecological linkages intersected or otherwise by the application area. The closest mapped linkage is approximately 1.9 kilometres south of the application and is a conceptual linkage related to Gingin Brook and Moore River.
Conservation areas	The closest conservation area to the application area is the Yeal Nature Reserve which is located more than six kilometres south of the application area.
Vegetation description	Photographs provided by the applicant indicate the vegetation within the proposed clearing area consists of Melaleuca trees in varying condition with an understory of mixed grasses. Representative photos are available in Appendix D. This is somewhat consistent with the mapped vegetation type(s): • Yanga complex which is described as Predominantly a closed scrub of Melaleuca species and low open forest of *Casuarina obesa* (Swamp Sheoak) on the flats subject to inundation. On drier sites the vegetation reflects the adjacent vegetation complexes of Bassendean and Coonambidgee. The mapped vegetation type retains approximately 16 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs provided by the applicant indicate the vegetation within the proposed clearing area is in degraded (Keighery, 1994) condition, described as Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.
Climate and landform	The mapped topographic contours within the application area indicate the application area is within a largely flat landscape. The annual average rainfall for the area is 620 millimetres (BOM, 2022)
Soil description	The soil is mapped as Dandaragan, Phase 15 which is described as Dark brown humic medium to coarse sands to sandy loams overlying gleyed mottled coarse sandy clays between 70-140 cm.
Land degradation risk	The mapped soil type has a high risk of wind erosion, water logging and subsurface acidification risk with low risk of other forms of land degradation.
Waterbodies	The desktop assessment and aerial imagery indicated that the application area intersects a multiple use wetland and a conservation category wetland.
Hydrogeography	The application area is within the Gingin Groundwater area proclaimed under the *RIWI Act 1914*
Flora	According to available databases, 20 conservation significant flora species have been recorded within the local area. The closest is approximately 3.7 kilometres from the application area. Three species recorded within the local area have been recorded within similar soil and vegetation type as the application area.

Characteristic	Details
Ecological communities	Two types of ecological communities are mapped as occurring within the local area. • Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region • Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. (1994)) There are over 500 mapped occurrences of Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region within the local area with the closest occurrence approximately 100 meters south of the application area.
Fauna	According to available databases, 22 species of conservation significant fauna have been recorded within the local area. The closest record and most commonly occurring species is Carnaby's cockatoo. This species has been recorded within 275 meters of the application area.

A.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*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex					
Yanga complex**	26,176.45	4,268.78	16.31	522.52	2.00
Local area					
10km radius			27.9	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Flora analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1) and 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 (local areal)	Are surveys adequate to identify? [Y, N, N/A]
Anigozanthos humilis subsp. Badgingarra (S.D. Hopper 7114)	P2	N	N	Y	8	2	N/A
Banksia kippistiana var. *paenepeccata*	P3	N	N	N	8	1	N/A
Blennospora doliiformis	P4	Y	Y	N	7.9	2	N/A
Caladenia speciosa	4	N	N	N	7.2	1	N/A
Cyanicula ixioides subsp. *ixioides*	4	N	N	N	3.7	1	N/A

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 (local areal)	Are surveys adequate to identify? [Y, N, N/A]
Dampiera tephrea	3	N	N	N	3.8	2	N/A
Dillwynia dillwynioides	3	Y	Y	Y	3.6	3	N
Grevillea evanescens	1	N	N	N	8	3	N/A
Grevillea saccata	4	N	N	N	9.5	1	N/A
Hibbertia miniata	4	N	N	N	9.7	1	N/A
Isotropis cuneifolia subsp. *glabra*	3	N	Y	Y	3.9	7	N/A
Lasiopetalum venustum	3	N	N	N	9.7	1	N/A
Leucopogon squarrosus subsp. *trigynus*	2	N	N	N	7.5	7	N/A
Ptychosema pusillum	T	N	N	N	7.5	1	N/A
Rumex drummondii	4		Y	Y	3.1	2	N
Schoenus natans	4	N	N	N	8.1	1	N
Stylidium longitubum	4	Y	Y	Y	7.1	2	N
Tetratheca hirsuta subsp. *boonanarring*	2	N	N	N	8.3	3	N
Thelymitra stellata	T	N	N	Y	9.6	1	N
Verticordia lindleyi subsp. *lindleyi*	4	Y	Y	N	3.8	6	N

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

A.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Actitis hypoleucos (Common Sandpiper)	MI	N	N	8.4	1	N/A
Bettongia lesueur graii (boodie)	EX	N	N	5	1	N/A
*Calidris acuminata (*Sharp-tailed sandpiper)	MI	N	N	8.9	1	N/A
Calidris ferruginea (Curlew Sandpiper)	CR	N	N	8.9	1	N/A
Calidris ruficollis (Red-necked stint)	MI	N	N	5.5	1	N/A
Calyptorhynchus banksii naso (forest red-tailed black cockatoo)	VU	N	N	4.6	1	N/A
Calyptorhynchus latirostris (Carnaby's cockatoo)	EN	N	N	0.2	169	N/A
Dasyurus geoffroii (chuditch)	VU	N	N	3.7	2	N/A
Galaxiella munda (mud minnow)	VU	N	N	6	1	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Idiosoma sigillatum (Swan Coastal Plain shield-backed trapdoor spider)	P3	Y	Y	3.6	2	N
Isoodon fusciventer (southwestern brown bandicoot)	P4	Y	Y	5	1	N
Macrotis lagotis (Bilby)	VU	N	N	3	4	N/A
Neelaps calonotos (black-striped snake)	P3	N	N	3.8	2	N/A
Notamacropus irma (western brush wallaby)	P4	N	N	3	8	N/A
Oxyura australis (Blue-billed duck)	P4	N	N	3.2	4	N/A
Phascogale tapoatafa wambenger (South-western brush-tailed phascogale)	CD	N	N	9.7	2	N/A
Pseudocheirus occidentalis (western ringtail possum)	CR	N	N	5	1	N/A
Pseudomys shortridgei (heath mouse)	VU	N	N	5	1	N/A
Thinornis rubricollis (hooded plover)	P4	N	N	3.7	1	N/A
Tringa glareola (Wood sandpiper)	MI	N	N	8.4	2	N/A
Tringa nebularia (Common greenshank)	MI	N	N	5.5	3	N/A
Westralunio carteri (Carter's freshwater mussel)	VU	N	N	3.2	16	N/A

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

A.5. Land degradation risk table

Risk categories	***Dandaragan, Phase 15***
Wind erosion	>70% of map unit has a high to extreme wind erosion risk
Water erosion	3-10% of map unit has a high to extreme water erosion risk
Salinity	<3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	3-10% of the map unit has a moderate to high flood risk
Water logging	>70% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared does not contain locally or regionally significant flora, fauna, habitats, assemblages of plants.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"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."* Assessment: The area proposed to be cleared does not contain habitat for conservation significant fauna.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (d): *"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."* Assessment: The area proposed to be cleared does not contain species that can indicate a threatened ecological community.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type and the native vegetation in the local area is inconsistent 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.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (h): *"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."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any nearby conservation areas.	Not likely to be at variance	No
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given a wetland is recorded as intersecting the application area and a minor watercourse is within proximity, the proposed clearing may impact on- or off-site hydrology and water quality.	At variance	Yes *Refer to Section 3.2.3, above.*
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to wind erosion, water logging and subsurface acidification risk with low risk of other forms of land degradation.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (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."* Assessment: Given a wetland is recorded as intersecting the application area, the proposed clearing may impact surface or ground water quality.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: 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. Given a wetland is recorded as intersecting the application area, the proposed clearing may contribute to waterlogging.	May be at variance	Yes *Refer to Section 3.2.3, above.*

Appendix C. Vegetation condition rating scale

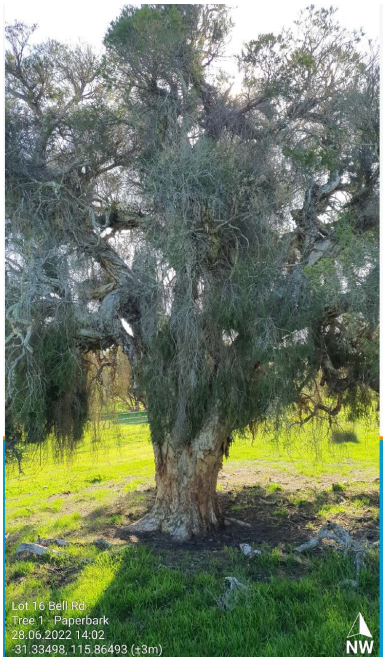
Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree 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 Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Photographs of the vegetation



Figures 2 and 3: Photographs of trees within the applciation area (Ray, S and M, 2022)

Figures 3 and 4: Photographs of trees within the applciation area (Ray, S and M, 2022)

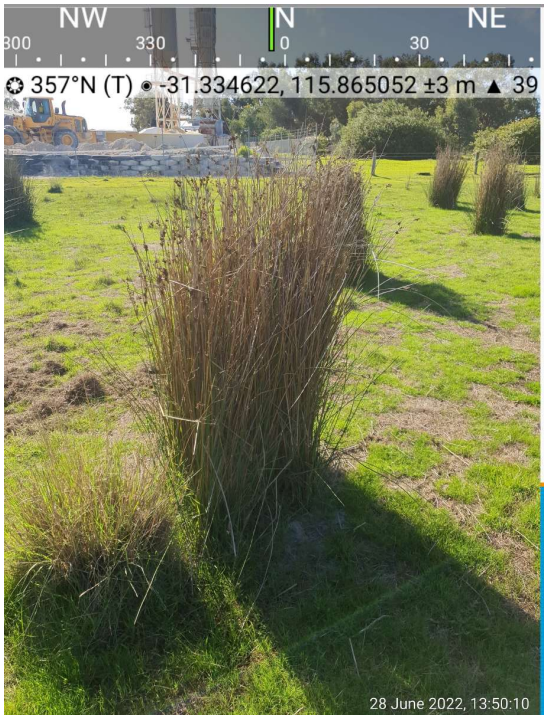


Figure 5: Photographs of vegetation within the applciation area (Ray, S and M, 2022)

Figure 6: Photographs of vegetation within the applciation area (Ray, S and M, 2022)

Figure 7: Aerial imagery from 1981 (Landgate, 2022)

Figure 8: Aerial imagery from 2000 (Landgate, 2022)

Figure 9: Aerial imagery from 2010 (Landgate, 2022)

Appendix E. Sources of information

E.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)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- 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)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- 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
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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