



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10453/1
Permit type:	Area Permit
Applicant name:	Richard Read and Associates Pty Ltd and Highscore Pty Ltd
Application received:	14 December 2023
Application area:	2 hectares
Purpose of clearing:	Sand extraction
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 77/1267
Location (LGA area/s):	Shire of Yilgarn
Colloquial name:	Dulcie Project

1.2. Description of clearing activities

Richard Read and Associates Pty Ltd and Highscore Pty Ltd proposes to clear up to two hectares of native vegetation within a boundary of approximately two hectares, for the purpose of sand extraction. The project is located approximately 65 kilometres south-east of Southern Cross, within the Shire of Yilgarn.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	13 February 2024
Decision area:	2 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) on 14 December 2023. DEMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix E), supporting information provided by the applicant, including the results of a flora and vegetation and a fauna survey (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- 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 can be minimised and managed to be unlikely to 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; and
- commence construction no later than six months after undertaking clearing to reduce the risk of erosion.

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)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Through the supporting documentation (MBS, 2023), the proponent indicated that all efforts will be taken to minimise clearing and to progressively rehabilitate disturbed areas so that the biological diversity of the area is not significantly impacted. Management strategies to achieve this include:

- Use of existing roads, tracks and disturbed areas where practicable.
- Cleaning of machinery and equipment prior to entering site to minimise weed introduction and spread.
- Clearly delineating clearing areas with survey pegs and flagging tape.
- Stockpiling topsoil and vegetation and respreading at completion to assist revegetation by providing a local seed source.
- Establishment of a weed management programme if weeds occur.
- Establishing vegetation on bare surfaces on completion of mining activities.
- Progressive rehabilitation of completed surfaces to minimise active areas exposed.

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 the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimise, hygiene, and staged clearing management conditions as well as a rehabilitation and revegetation condition.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 12 January 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2017/007) over the area under application (DPLH, 2024). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group (Marlinyu Ghoorlie). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2024). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	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 surrounded by native vegetation, salt lakes, and land cleared for agriculture to the west. It is adjacent to Dunbar Road (GIS Database). As a consequence of many decades of mining, some sections of the project area highly degraded (Terrestrial Ecosystems, 2009).
Ecological linkage	The application area does not form part of a formal ecological linkage. However, aerial imagery shows the application area is located in an area that could be used as an ecological linkage in a north-south direction (GIS Database).
Conservation areas	The application area is not located within any known or mapped conservation areas. The closest record is Jilbadji nature reserve, located approximately 5.2 kilometres east of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association: 552: Shrublands; <i>Casuarina acutivalvus</i> & <i>calothamnus</i> (also <i>melaluca</i>) thicket on greenstone hills (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Botanica Consulting during June, 2012. The following vegetation associations were recorded within the application area (Botanica Consulting, 2012):</p> <ul style="list-style-type: none"> • Very open shrub mallee of <i>Eucalyptus leptopoda</i> over scrub of <i>Acacia yorkrakinensis</i> and low heath of <i>Thryptomene kochii</i> (1.2 hectares). • Cleared and regrowth on recently cleared areas (0.8 hectares).
Vegetation condition	<p>The vegetation survey (Botanica Consulting, 2012) and aerial imagery indicate the vegetation within the proposed clearing area is in Good to Degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.</p>
Climate and landform	The application area is located in a winter zone with wet winter and low summer rainfall and an annual average rainfall (Southern Cross Airfield) of 298.3 millimetres (BoM, 2024).
Soil description	The soil within the application area is mapped as soil unit AC1 (GIS Database). This soil unit is described as gently sloping to gently undulating plateau areas, or uplands, on granites, gneisses, and allied rocks, with long gentle slopes and, in places, abrupt erosional scarps, some granitic bosses, and tors; and irregularly traversed by narrow shallow valleys and flats: chief soils are yellow earthy sands and sandy yellow earths on depositional sites, and ironstone gravels on erosional sites where they are underlain by hardened mottled-zone material. Soil dominance varies locally (Northcote et al., 1960-68).
Land degradation risk	The sandy soils, flat relief and climatic conditions in the clearing permit application area are indicative of low erosion potential (MBS, 2023).
Waterbodies	The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared (GIS Databases).
Hydrogeography	The application area is located within the Westonia Groundwater Area, which is legislated by the RIWI Act 1914. The mapped groundwater salinity within the application area is of 14,000-35,000 milligrams per litre total dissolved solids, which is described as saline (GIS Database).
Flora	There were no Priority or Threatened flora species recorded within the application area (Botanica Consulting, 2012; GIS Database).
Ecological communities	The application area is within the buffer zone of the Priority 3 Parker Range vegetation complexes Ecological Community (MBS, 2023; GIS Database).
Fauna	There were no Priority or Threatened fauna species recorded in the survey area (Terrestrial Ecosystems, 2009). Additionally, there were no records of Priority or Threatened fauna within the application area (GIS Database).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands

IBRA Bioregion - Avon Wheatbelt	9,517,110	1,761,187	~19	174,981	~2
IBRA Subregion - Merredin	6,524,181	1,367,565	~21	126,805	~2
Local Government - Yilgarn	3,042,759	2,480,372	~82	757,286	~25
Beard vegetation associations - State					
Veg Assoc No. 552	33,908	31,669	~93	302	~1
Beard vegetation associations - Bioregion					
Veg Assoc No. 552	11,347	11,263	~99	N/A	N/A
Beard vegetation associations - subregion					
552	11,347	11,263	~99	N/A	N/A

Government of Western Australia (2019)

A.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Banksia shanklandiorum</i>	P4	Y	8.7 km	38	Y
<i>Boronia ternata</i> var. <i>promiscua</i>	P3	Y	8.3 km	8	Y
<i>Drummondita wilsonii</i>	P1	N	8.4 km	9	Y
<i>Grevillea lissopleura</i>	P1	N	2.3 km	7	N
<i>Hakea pendens</i>	P3	N	2 km	24	N
<i>Isopogon robustus</i>	T	N	6.7 km	6	N
<i>Notisia intonsa</i>	P3	N	6.2 km	26	N
<i>Verticordia multiflora</i> subsp. <i>solox</i>	P2	Y	9.5 km	31	N
<i>Verticordia stenopetala</i>	P3	Y	6.6 km	27	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority
(Botanica Consulting, 2012; GIS Database)

A.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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Lake Cronin snake	P3	N	7.3 km	17	N
Malleefowl	VU	N	7.6 km	29,530	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority
(Terrestrial Ecosystems, 2009; GIS Database)

A.5. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Plant assemblages of the Parker Range System	P3	N	0 km	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority
(GIS Database)

Appendix B. 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>There are nine conservation significant flora species occurring within 10 kilometres of the application area (see section A.3). For five of these species, the application area is unlikely to provide suitable habitat. For other two of these species (<i>Banksia shanklandiorum</i> and <i>Boronia ternata</i> var. <i>promiscua</i>) although the application area may represent suitable habitat, they were not recorded during the flora and vegetation survey conducted by Botanica Consulting (2012) which was conducted during their flowering period (Western Australian Herbarium, 1998-). The remaining two species (<i>Verticordia multiflora</i> subsp. <i>solox</i> and <i>Verticordia stenopetala</i>) are unlikely to occur within the application area due to the degraded nature of the vegetation of nearly half the application area.</p> <p>The application area is within the buffer zone of the Priority 3 Parker Range vegetation complexes Ecological Community, however, none of the vegetation communities that characterise this PEC were found in the application area or surrounding surveyed areas (MBS, 2023).</p> <p>Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p>	Not likely to be at variance	No
<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>In July 2009 a level 1 survey was undertaken by Terrestrial Ecosystems (2009) for the Dulcie project area to assess the condition of the fauna habitat and to search for active malleefowl mounds and other evidence of conservation significant species. The survey did not specifically cover the clearing permit application area, which extends two kilometres west of the surveyed area, but is sufficiently general in scope to provide guidance on fauna habitat likely to occur there (MBS, 2023). Available GIS Databases only showed records of two conservation significant fauna species located within 10 kilometres of the application area (see section A.4). The application area is unlikely to represent significant habitat for these species (Terrestrial Ecosystems, 2009) given the level of degradation present in over half of the application area. Additionally, Dulcie area found that the habitats identified in the area are abundant throughout the bioregion and are therefore unlikely to support a higher level of biodiversity than surrounding areas (MBS, 2023). The fauna survey conducted by Terrestrial Ecosystems (2009) found no active malleefowl mounds or malleefowl tracks but did find three inactive mounds. These data suggest that malleefowl occupied this area in the past but are no longer present (Terrestrial Ecosystems, 2009).</p>	Not likely to be at variance	No
<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 Threatened flora species (MBS, 2023; GIS Database).</p>	Not likely to be at variance	No
<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 is not located within any known or mapped Threatened Ecological Communities (MBS, 2023; GIS Database).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 application area falls within the Avon Wheatbelt Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Approximately 19 per cent of the pre-European vegetation still exists in the Avon Wheatbelt Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 552 (GIS Database). This vegetation association has not been extensively cleared as over 93 per cent of the pre-European extent of this vegetation association remains uncleared at the state level and 99 per cent at the bioregional and subregional level (Government of Western Australia, 2019). The location of the application area connects native vegetation in a north-south direction (GIS Database). However, the proposed clearing is unlikely to sever this link given the small scale of the clearing and the degraded condition of nearly half of the application area. Impacts of the proposed clearing may be minimised by rehabilitation requirements legislated under the <i>Mining Act 1978</i>.</p>	At variance	No
<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>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any known or mapped conservation areas (GIS Database).</p>	Not likely to be at variance	No
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 water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact vegetation growing in, or in association with, an environment associated with a watercourse or wetland (GIS Database).</p>	Not likely to be 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 soils mapped within the application have low susceptibility to erosion (MBS, 2023). However, the sandy nature of the soils in the application area could lead to wind erosion. Impacts to land degradation can be minimised by placing a staged clearing condition as a precautionary measure to avoid leaving cleared areas exposed for long periods of time.</p>	May be at variance	No
<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 permanent water courses, wetlands, or Public Drinking Water Source Areas are recorded within the application area, the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water (GIS Database).</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>Given no permanent water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding (GIS Database).</p>	Not likely to be at variance	No

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 and vegetation mapping



Figure 1. Existing clearing and revegetation in the application area (MBS, 2023).

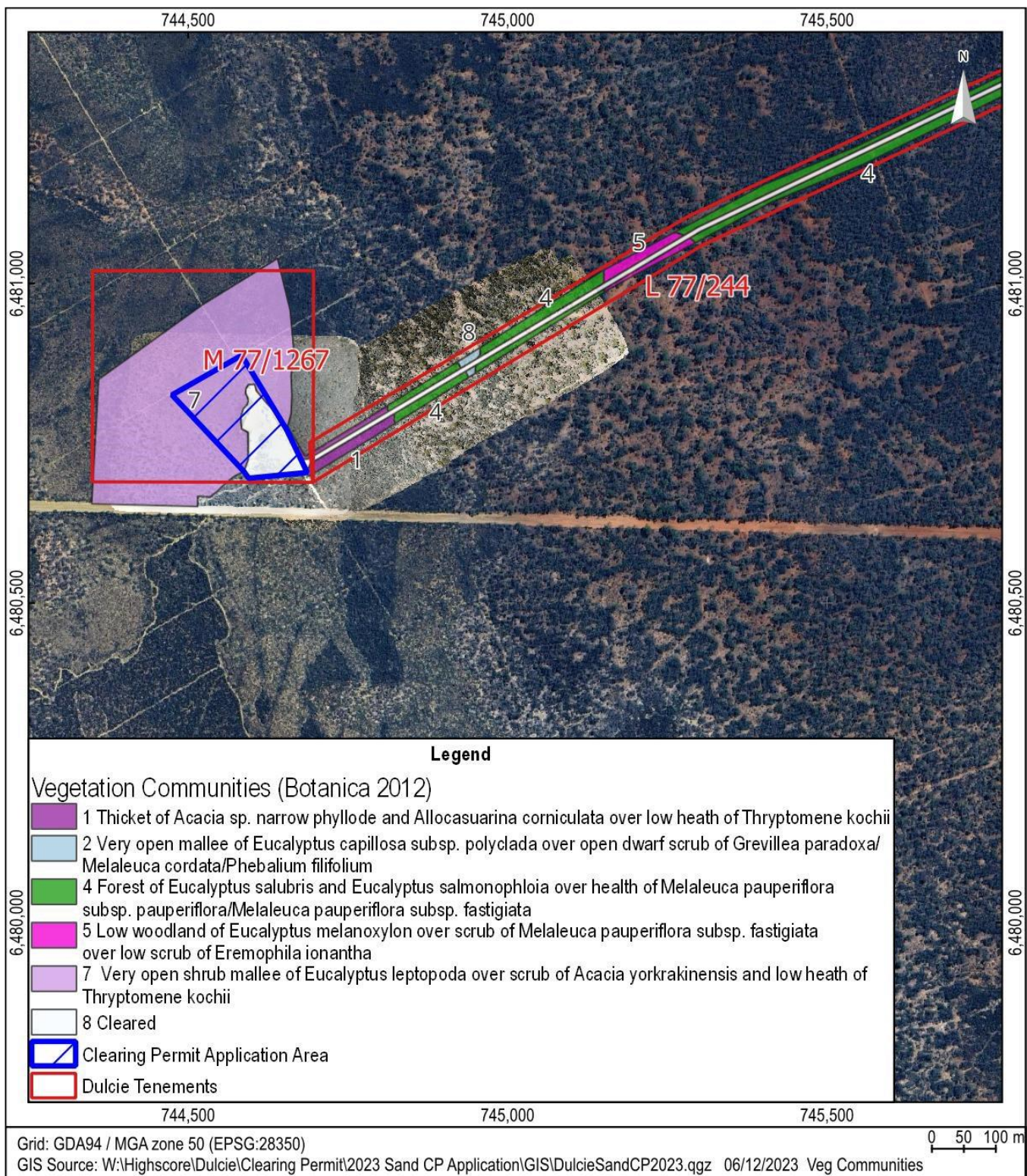


Figure 2. Mapping of vegetation communities in the survey area (Botanica Consulting, 2012).

Appendix E. Sources of information

E.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)

- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

E.2. References

- Botanica Consulting (2012) Level 1 Flora and Vegetation Survey (Tenements: P77/3602, M77/669 and E77/1937). Unpublished report prepared for Richard Read & Associates. July 2012.
- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Southern Cross Airfield Station. Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed 1 February 2024).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
- Department of Planning, Lands and Heritage (DPLH) (2024) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 6 February 2024).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- MBS Environmental (MBS) (2023) Dulcie Sand Extraction Clearing Permit (Area Permit) Application Supporting Documentation. Prepared for Dulcie Operations, December 2023.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils, Sheets 1 to 10, with explanatory data*. CSIRO and Melbourne University Press: Melbourne.
- Terrestrial Ecosystems (2009) Level 1 Fauna Risk Assessment for Southern Cross Goldfields Dulcie Project Area. Unpublished report prepared for Southern Cross Goldfields Ltd, November 2009.
- Western Australian Herbarium (1998-) *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 6 February 2024).

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)

GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI

Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD

Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS

Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P

Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that 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.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1

Priority One - Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2

Priority Two - Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3

Priority Three - Poorly-known species

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. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (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.