Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9656/1
Permit type:	Area Permit
Applicant name:	L & G Granite Pty Ltd
Application received:	11 March 2022
Application area:	4.58 hectares
Purpose of clearing:	Quarry Operations
Method of clearing:	Mechanical Clearing
Tenure:	Mining Lease 70/1300
Location (LGA area/s):	Shire of Dowerin
Colloquial name:	Manmanning Quarry

1.2. Description of clearing activities

L & G Granite Pty Ltd proposes to clear up to 4.58 hectares of native vegetation within a boundary of approximately 4.58 hectares, for the purpose of continuing quarrying operations. The project is located approximately 26 kilometres north north-east of Dowerin, within the Shire of Dowerin.

A previous clearing permit (CPS 6092/1) was active from 5 July 2014 to 5 July 2019. CPS 6092/1 was granted over the quarry operation area within M 70/1300 and had exclusion zones over the south-western corner and two small areas along the southern boundary.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	25 August 2022
Decision area:	4.58 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 Mines, Industry Regulation and Safety (DMIRS) on 11 March 2022. DMIRS 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), photos of the current vegetation (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
- impacts to conservation significant fauna.

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 managed by appropriate conditions and is not likely 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; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.

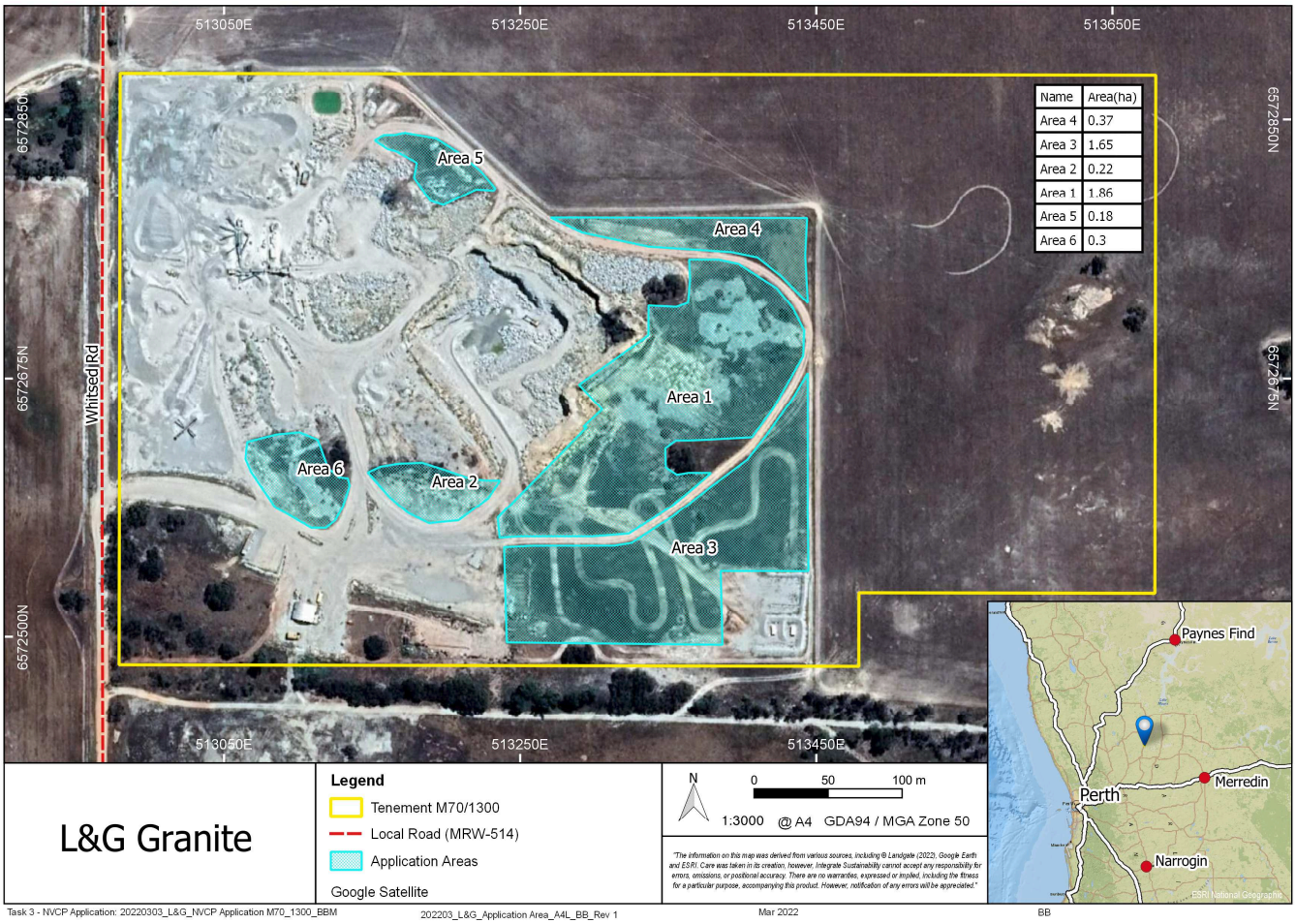

Figure 1: Map of the application area.

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; and
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment includes:

- *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 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

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. Figure 1 indicates that all potential remnant vegetation, as well as the areas identified under an exclusion condition on expired permit CPS 6092/1, have been retained and were not included in the application area.

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 potential risk to biological values (fauna). 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) - Clearing Principle (b)

Assessment

The application area has been identified as potentially being accessed by the following conservation significant species (as listed under the BC Act):

- *Zanda latirostris* (Carnaby's cockatoo) – Endangered
- *Falco peregrinus* (peregrine falcon) – Other specially protected fauna

A Carnaby's cockatoo confirmed breeding site is located approximately 14.6 kilometres north of the application area (GIS Database). As the application area falls within the known distribution range of the Carnaby's cockatoo, it was considered possible that suitable foraging habitat may be present. Foraging habitat that occurs within 12 kilometres of confirmed breeding sites is considered important in supporting the breeding effort (DCCEEW, 2022). Given the application area is 14.6 kilometres from the nearest confirmed breeding site, the degraded nature of the vegetation and the lack of Carnaby's cockatoo preferred foraging flora species, the application area is unlikely to provide significant, if any, foraging habitat (DEC, 2011; GIS Database). Based on the mapped beard vegetation type within the application area, aerial imagery and supporting photographs (Appendix D), the application area is unlikely to contain any suitable black cockatoo habitat trees (GIS Database). Therefore, impacts to breeding habitat for the Carnaby's cockatoo are considered unlikely.

A review of available aerial imagery and site photos (Appendix D) indicate that the application area does not contain any cliff faces or large, dead trees with hollows suitable as nesting sites for the peregrine falcon. Therefore, the application area is unlikely to contain significant habitat for breeding (Birdlife, 2022; GIS Database). However, the area proposed to be cleared may be accessed by transient, non-breeding individuals. Given the large distribution of the peregrine falcon across Australia, the application area is not likely to contain significant habitat crucial to the conservation of the species (Birdlife, 2022).

Conclusion
Based on the above assessment, the proposed clearing is unlikely to result in negative impacts to conservation significant fauna.

Conditions
No fauna management conditions required.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 29 March 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are no active native title claims over the area under application (DPLH, 2022). 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, 2022). 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 application area is located approximately 25 kilometres north of Dowerin. The Manmanning Quarry project site was previously cleared for farming around 1920 (L & G Granite, 2022). Around 1976, approximately 16 hectares was acquired by the Western Australia Government Railway for a quarry reserve (L & G Granite, 2022). The quarry reserve was utilised for two years, then remained idle until L & G Granite Pty Ltd acquired the lease in 2011 (L & G Granite, 2022). A portion of Mining Lease 70/1300 is outside of the fenced quarry area and is still utilised for wheat cropping and sheep grazing (L & G Granite, 2022). The area proposed to be cleared is part of a highly disturbed area which is likely to be mainly weed and crop species with some isolated native trees (Appendix D). It is located in the highly-cleared, intensive land use zone of Western Australia and is surrounded by predominantly wheat crops and some isolated patches of remnant vegetation. There is some remnant vegetation in the south-western corner and in two small patches along the southern boundary of the mining lease. These areas were not included within the application area.
Ecological linkage	The application area is within the Avon Wheatbelt IBRA region (GIS Database). The region has been largely cleared for agricultural purposes and remnant vegetation is highly fragmented across the landscape. There is a small area of less-degraded remnant vegetation at the south-western corner and two small portions of the southern boundary of the quarry site, which may provide a linkage to remnant vegetation on adjacent properties. This remnant vegetation was part of an exclusion condition under CPS 6092/1. The application area for CPS 9656/1 does not include this remnant vegetation.
Conservation areas	The nearest conservation area is the Moonijin Nature Reserve located approximately 7 kilometres north of the application area. The Manmanning Nature Reserve is located approximately 9 kilometres north west of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: 1024: Shrublands; mallee & casuarina thicket (GIS Database). No flora or vegetation surveys were submitted with the application.
Vegetation condition	The site photos provided by the applicant (Appendix D) indicate the vegetation within the proposed clearing area is in degraded to completed degraded (Keighery, 1994) condition, described as: • 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. • Completed 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. The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.
Climate and landform	The application area is mapped with an elevation of 340 metres AHD. The annual average rainfall is 400 millimetres (GIS Database).
Soil description	The soil is mapped as soil unit Kwolyin, Kwelkan 1 Phase which is described as gently undulating to undulating rises, chief soils are brown sandy earth, shallow loamy duplex, deep loamy duplex, deep and shallow sand, flora species including York gum, Jam, Melaleuca spp., Acacia spp., Tammer spp., Salmon gum., and Quandong (GIS Database).
Land degradation risk	The application area has been mapped as: • less than three percent of the map unit having a high to extreme water erosion risk • less than three percent of the map unit having a high to extreme phosphorous export risk • between 10 to 30 percent of the map unit having a high to extreme wind erosion risk, and • between 30 to 50 percent of the map unit having a moderate to high salinity risk or is presently saline (GIS Database).
Waterbodies	The desktop assessment and aerial imagery indicated that there are no permanent or ephemeral natural waterbodies or watercourses transecting the area proposed to be cleared (GIS Database).

Characteristic	Details
Hydrogeography	The application area is not within any Public Drinking Water Source Area (PDWSA). The mapped groundwater salinity is 14,000 to 35,000 milligrams per litre which is considered highly saline (GIS Database).
Flora	There are records of three threatened flora species and seven priority flora species within 10 kilometres of the application area (GIS Database).
Ecological communities	There are 19 Threatened Ecological Community (TEC) records within five kilometres of the application area, with the closest occurring approximately 2 kilometres away. All the records are for Wheatbelt Woodlands which are listed as 'critically endangered' under the EPBC Act and a Priority 3 under the BC Act (GIS Database).
Fauna	There are 14 records of eight fauna species of conservation significance within 20 kilometres and a confirmed Carnaby's cockatoo breeding site approximately 14 kilometres north of 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	18.51	174,981	2.42
IBRA Subregion - Merredin	6,524,181	1,367,565	20.96	126,805	2.54
Local Government – Shire of Dowerin	186,268	13,770	7.39	1,761	1.02
Beard vegetation associations - State					
1024	742,951	87,192	11.74	8,763	1.20
Beard vegetation associations - Bioregion					
1024	738,927	84,607	11.45	6,623	0.91
Beard vegetation associations - subregion					
1024	670,961	77,423	11.54	5,057	0.77

Government of Western Australia (2019)

A.3. Flora analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1) impacts to the following conservation significant flora required further consideration (Western Australia Herbarium, 1998-).

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Acacia cochlocarpa subsp. Velutinosa	T	N	Y	<20	N/A
Acacia deflexa	P3	N	Y	<20	N/A
Acacia sp. Manmanning (B.R. Maslin 7711)	P1	N	Y	<20	N/A
Caladenia drakeoides	T	N	N	<20	N/A
Conostylis wonganensis	T	N	Y	<20	N/A
Cryptandra dielsii	P3	N	Y	<20	N/A
Daviesia euphorbioides	T	N	N	<20	N/A
Eucalyptus recta	T	N	N	<20	N/A
Grevillea dryandroides subsp. hirsuta	T	N	Y	<20	N/A
Grevillea rosieri	P2	N	Y	<20	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Phebalium drummondii	P3	N	N	<20	N/A
Styphelia caudata	P3	N	Y	<20	N/A
Verticordia venusta	P3	N	Y	<20	N/A

A.4. Fauna analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1) impacts to the following conservation significant fauna required further consideration (Avon Catchment Council, 2007; Birdlife, 2022; CALM, 1999; DEC, 2012a; DEC, 2012b; IUCN, 2022a; IUCN, 2022b).

Species name	Conservation status (WA)	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)
Aganippe castellum (tree-stem trapdoor spider)	P4	N	N	16.7
Calyptorhynchus latirostris (Carnaby's black cockatoo)	EN	Y	N	14.6
Egernia stokesii badia (western spiny-tailed skink)	VU	N	N	17.2
Falco peregrinus (peregrine falcon)	OS	Y	N	11.2
Idiosoma nigrum (shield-backed trapdoor spider)	EN	N	N	8.7
Isoodon obesulus fusciventer (quenda)	P5	N	N	17.1
Parartemia contracta (brine shrimp)	P1	N	N	10.5
Pseudomys occidentalis (western mouse)	P4	N	N	20
Teyl sp (BY Main 1953/2683, 1984/13) (Minnivale trapdoor spider)	CR	N	N	16.2

A.5. Ecological community analysis table

Community 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 (within 5km)	Are surveys adequate to identify? [Y, N, N/A]
Wheatbelt Woodlands	EN	N	N	Y	2	19	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, OS: other specially protected fauna

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: Given the history of disturbance from agricultural and quarry activities and the degraded condition of the vegetation, the area proposed to be cleared is unlikely to contain significant flora, fauna, habitats or assemblages of plants.	Not likely to be at variance	No
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: Given the high mobility of the peregrine falcon, and the distance to the nearest record, the area proposed to be cleared has been identified as potentially being accessed by the conservation significant peregrine falcon. A Carnaby's black cockatoo breeding site was confirmed nearby, therefore it is possible the application area may contain suitable foraging habitat and potential impacts require further consideration.	May 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: Given the condition of the vegetation and no previous records, the area proposed to be cleared is unlikely to contain suitable habitat for flora species listed under the BC Act.	Not likely to be at variance	No
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 is not mapped as a Threatened Ecological Community (TEC), however there are many records of Wheatbelt Woodlands TECs fragmented across the local area. Due to the degraded nature of the vegetation and the size of the application area, it is unlikely to contain species indicative of a TEC.	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 in the local area is below the national objectives and targets for biodiversity conservation in Australia. However, given the degraded condition of the vegetation to be cleared due to quarry operations and weed/crop species, it is considered unlikely to be part of a significant ecological linkage in the local area. Within the tenement boundary for M 70/1300, areas in the south western corner and along the southern boundary were identified as potential ecological linkages and were not authorised to be cleared under previous permit 6092/1. These areas have been retained and were not included in the application area for clearing permit 9656/1. Therefore, the potential impact on remnant vegetation has been minimised.	Not likely to be at variance	No
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 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 no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.	Not at variance	No
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 moderately susceptible to wind erosion, and has a moderate to high salinity risk. Given the relatively small extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No
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 no water courses are recorded within the application area, the proposed clearing is not likely to impact surface water quality. Groundwater in the area is already mapped as highly saline and given the extent of the application area, the proposed clearing is not likely to have an appreciable impact on groundwater quality.	Not likely to be at variance	No
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: There are no water courses or waterbodies within the application area and the risk of flooding in the area is relatively low (GIS Database). Therefore, the proposed clearing is unlikely to increase the incidence or intensity of flooding.	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

Figure 2: Photograph of vegetation located at Area 1 as identified on Figure 1, provided by the Applicant.

Figure 3: Photograph of vegetation located at Area 2 as identified on Figure 1, provided by the Applicant.

Figure 4: Photograph of vegetation located at Area 3 as identified on Figure 1, provided by the Applicant. Applicant has advised the mature trees visible in the background are outside of the application area.

Figure 5: Photograph of vegetation located at Area 4 as identified on Figure 1, provided by the Applicant.

Figure 6: Photograph of vegetation located at Area 5 as identified on Figure 1, provided by the Applicant.

Figure 7: Photograph of vegetation located at Area 6 as identified on Figure 1, provided by the Applicant.

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)
- Bush Forever (Regional Scheme) (DPLH-022)
- Cadastre (LGATE-218)
- Clearing Regulations – Schedule One Areas (DWER-057)
- 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)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- 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 (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- Black Cockatoo WTBC Breeding
- Black Cockatoo FRTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Feeing Areas Buffered
- Black Cockatoo Baudins Distribution
- Black Cockatoo Forest Red Tail Distribution
- Black Cockatoo Carnabys Distribution
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)
- Western Ringtail Possum Habitat Suitability (DBCA-049)

E.2.References

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Avon Catchment Council (2007b) *Tree-stem Trapdoor Spider (*Aganippe castellum*) Conservation Plan 2008-2013.* Avon Catchment Council, Department of Environment and Conservation (DEC), Western Australia.

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Department of Conservation and Land Management (CALM) (1999) *Minnivale Trapdoor Spider Interim Recovery Plan 1998-2000*, Western Australia.

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International Union for Conservation of Nature and Natural Resources (IUCN) (2022a) *Parartemia contracta*. Available from: https://www.iucnredlist.org/species/16187/5507091 (Accessed 4 August 2022).

International Union for Conservation of Nature and Natural Resources (IUCN) (2022b) Western Mouse *Pseudomys occidentalis*. Available from: https://www.iucnredlist.org/species/18553/22398121 (Accessed 4 August 2022).

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L & G Granite Pty Ltd (L & G Granite) (2022) Manmanning Quarry application for clearing permit within Mining Lease M70/1300. L and G Granite Pty Ltd, March 2022.

Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed multiple dates July 2022).

4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community
WA	Western Australia

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.