GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9189/1
Permit Holder:	Gumala Enterprises Pty Ltd
Duration of Permit:	From 26 June 2021 to 26 June 2026

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

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear native vegetation for the purpose of construction of eco tents and staff accommodation

2. Land on which clearing is to be done

Lot 300 on Deposited Plan 72977, Karijini

3. Clearing authorised

The permit holder must not clear more than 0.188 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

PART II – MANAGEMENT CONDITIONS

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

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

(a) avoid the clearing of native vegetation

(b) minimise the amount of native vegetation to be cleared; and

(c) reduce the impact of clearing on any environmental value.

5. Weed management

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

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

(b) ensure that no known weed-affected soil, mulch, fill, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

6. Directional clearing

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

7. Wind erosion management

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

PART III - RECORD KEEPING AND REPORTING

8. Records that must be kept

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the direction that clearing was undertaken; (e) the size of the area cleared (in hectares); (f) the date clearing activities ceased; (g) the date that construction of eco tents and accommodation building commenced; (h) actions taken to avoid, minimise, and reduce the impacts and extent of clearing

No.	Relevant matter	Specifications
		in accordance with condition 5; and (i) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 6.

9. Reporting

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

DEFINITIONS

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

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *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.
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)
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the *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

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

3 June 2021

Schedule 1

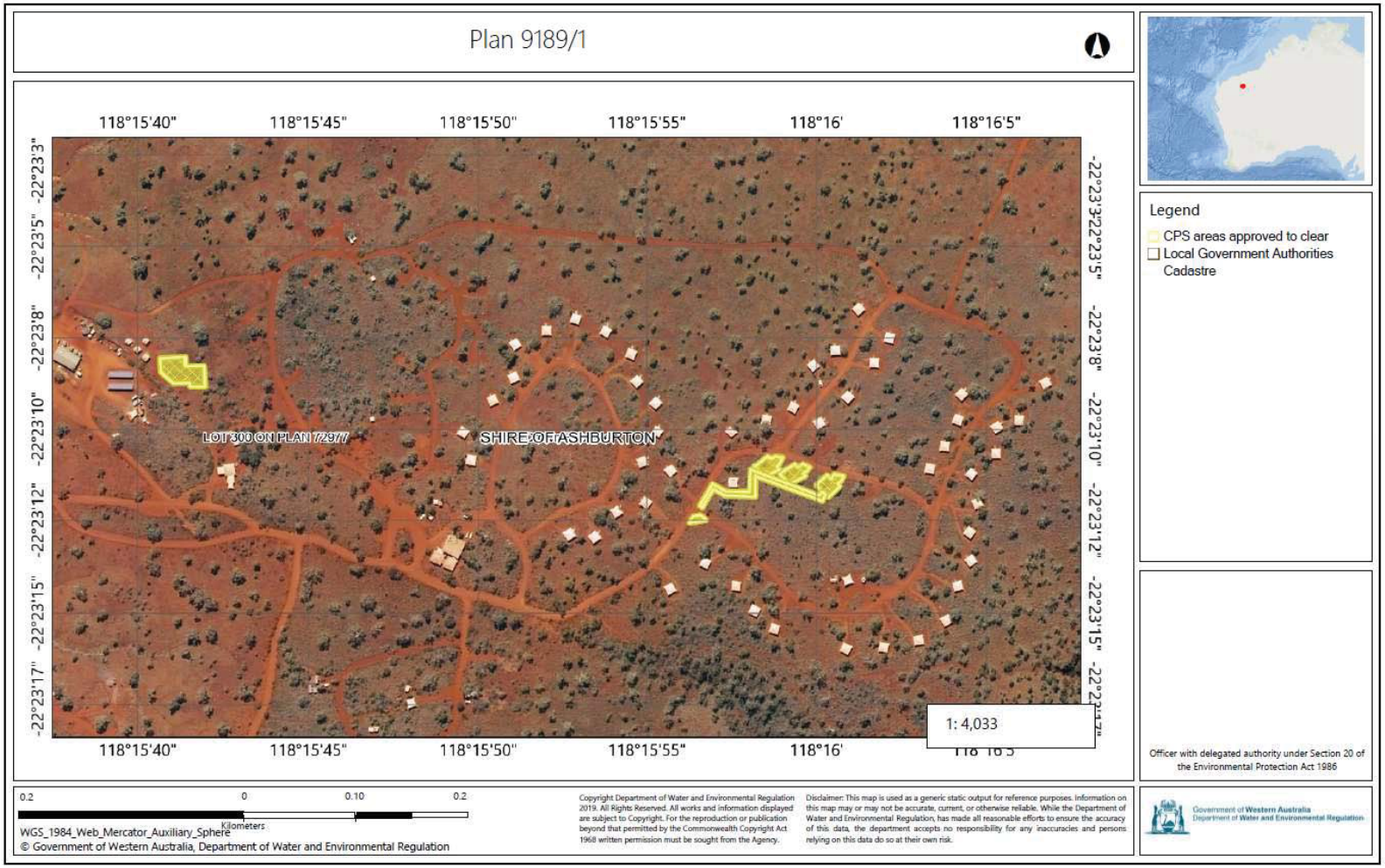

Figure 1.1: Map of the boundary of the areas (A and B) within which clearing may occur

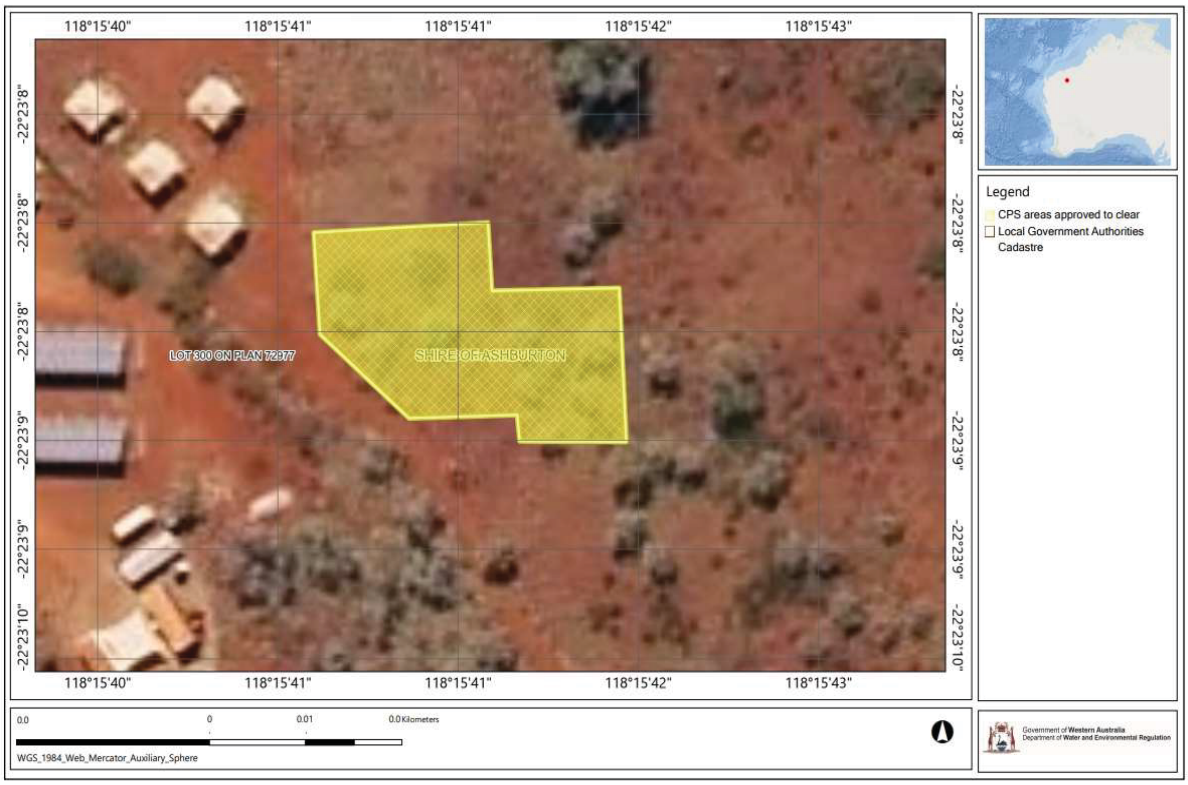

Figure 1.2. Map of the boundary of area A within which clearing may occur

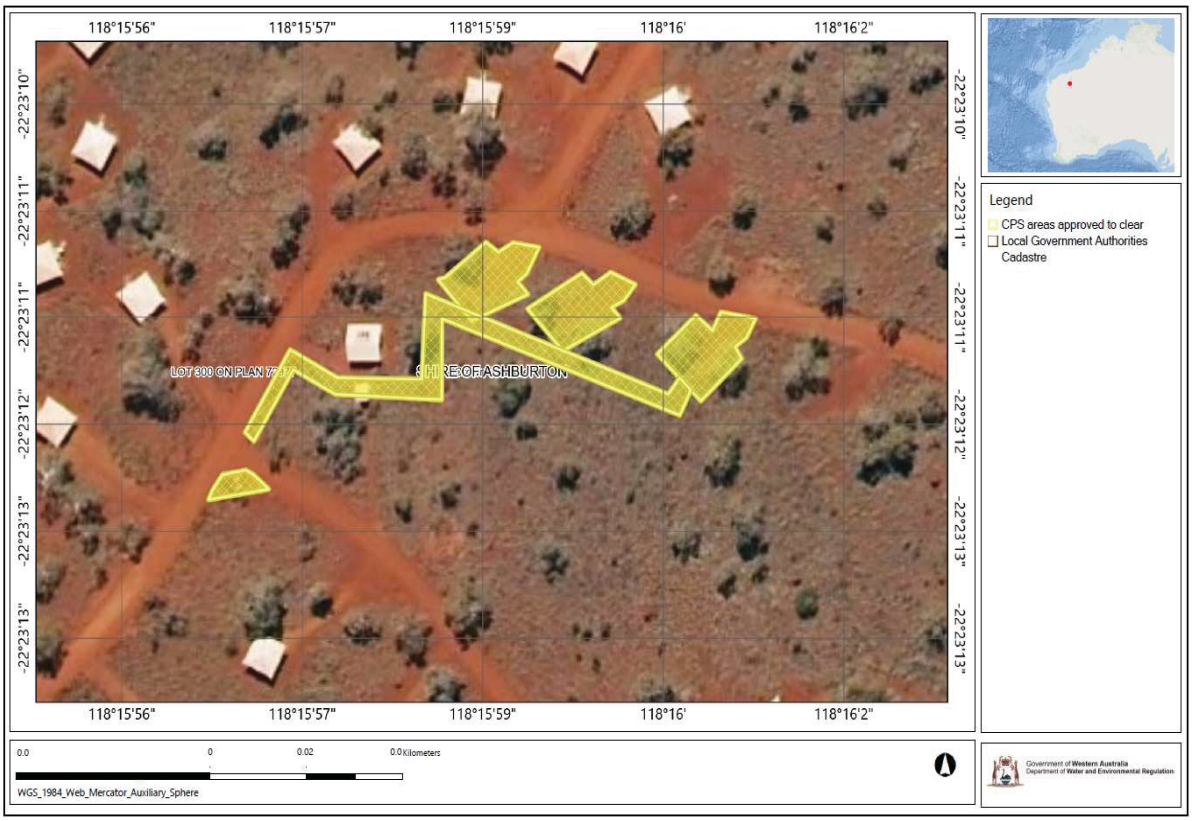

Figure 1.3. Map of the boundary of area B within which clearing may occur

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 9189/1
Permit type:	Area permit
Applicant name:	Gumala Enterprises Pty Ltd
Application received:	19 January 2021
Application area:	0.188 hectares
Purpose of clearing:	Construction of staff accommodation and eco tents
Method of clearing:	Mechanical
Property:	Lot 300 on Deposited Plan 72977
Location (LGA area/s):	Shire of Ashburton
Localities (suburb/s):	Karijini

1.2. Description of clearing activities

The application is to clear native vegetation in two separate areas, totalling 0.188 hectares, for the purpose of constructing eco tents and staff accommodation within Lot 300 on Deposited Plan 72977, in the Karijini National Park. The site is managed by Gumala Enterprises Pty Ltd by the virtue of lease agreement under *Conservation and Land Management Act 1984* (CALM Act) Lease 2142/100. The area to be cleared is surrounded by native vegetation and existing tents and structures. The area was selected to minimise clearing and retain mature trees within the area.

1.3. Decision on application

Decision:	Granted
Decision date:	3 June 2021
Decision area:	0.188 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 14 days and no submissions were received.

In undertaking the assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the site characteristics (see Appendix A), the Clearing Principles set out in Schedule 5 of the EP Act (Appendix B), advice from the Department of Biodiversity Conservation and Attraction (DBCA) and the Shire of Ashburton in relation to the proposed clearing, relevant datasets (See Appendix E), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3 and 4).

In particular, the Delegated Officer has determined that

- The application area may provide habitats to conservation significant flora. However, the likelihood of conservation significant flora occurring within the application area is low. Given the extent of clearing area and the context of the local area, should conservation significant flora be present within the application area, the proposed clearing is not likely to have a significant impact upon these species.
- While the application area may provide suitable habitat for conservation significant fauna, including *Dasyurus hallucatus* (Northern quoll), it is unlikely to comprise significant habitat within the context of the local area.
- Wind erosion may potentially lead to land degradation in the area. However, given the extent of clearing that is surrounded by native vegetation, the clearing is not likely to cause significant land degradation.
- Clearing could introduce and spread weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values. The likelihood of weed introduction and spread could be reduced by applying weed management measures.
- Measures committed to by the applicant to avoid and minimise the impacts and extent clearing will reduce the likelihood of land degradation and the introduction and spread of weeds occurring.

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 nor have long-term adverse impacts on adjacent native vegetation and its habitat values. The applicant, in consultation with DBCA, has suitably demonstrated commitment to avoidance and minimisation measures (see Section 4).

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
- staged clearing to minimise wind erosion and commence the construction of the eco tents and accommodation buildings within three months of clearing.
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity

1.5. Site maps

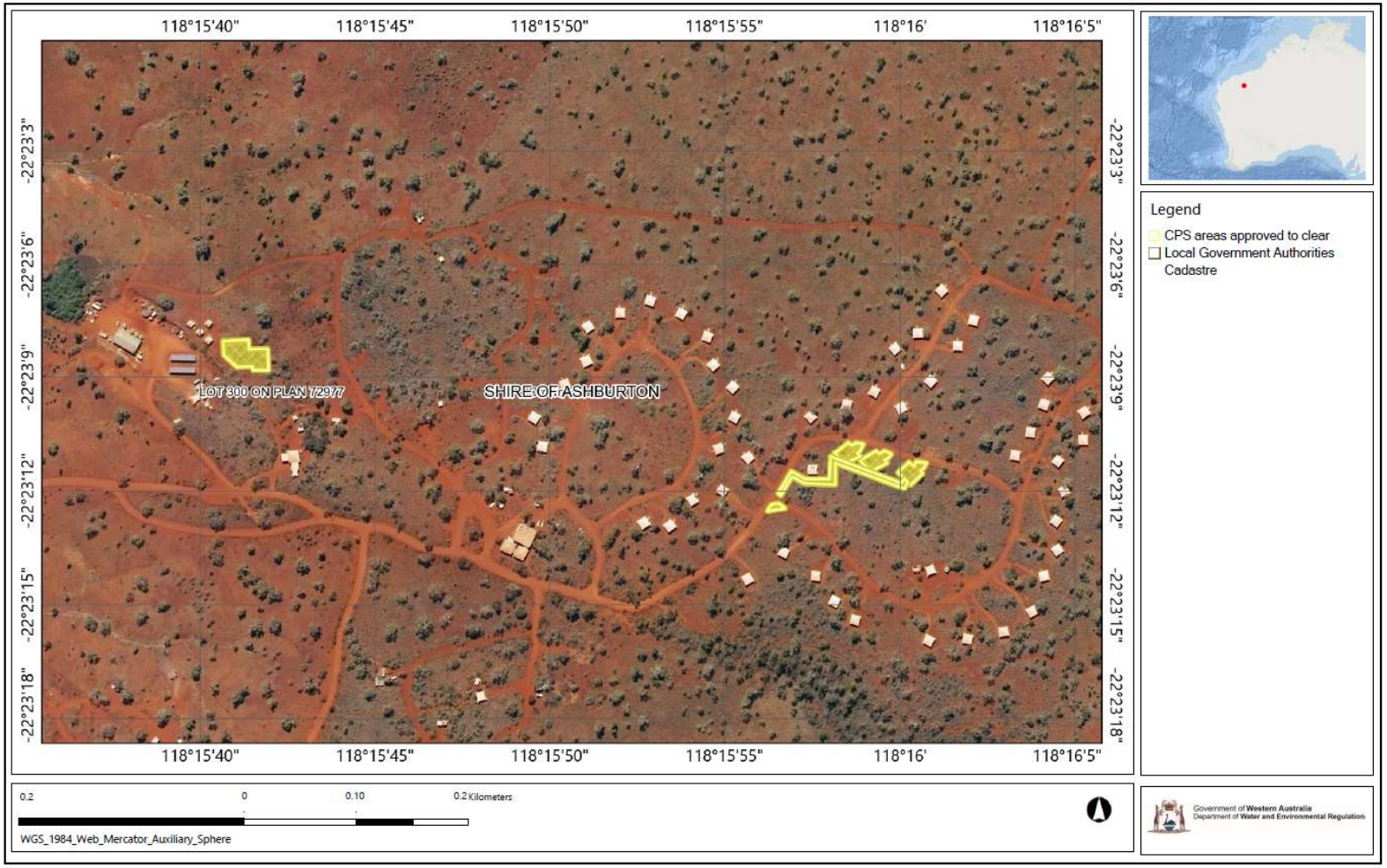

Figure 1.1 Map of the application area consisting of two separate areas.

The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

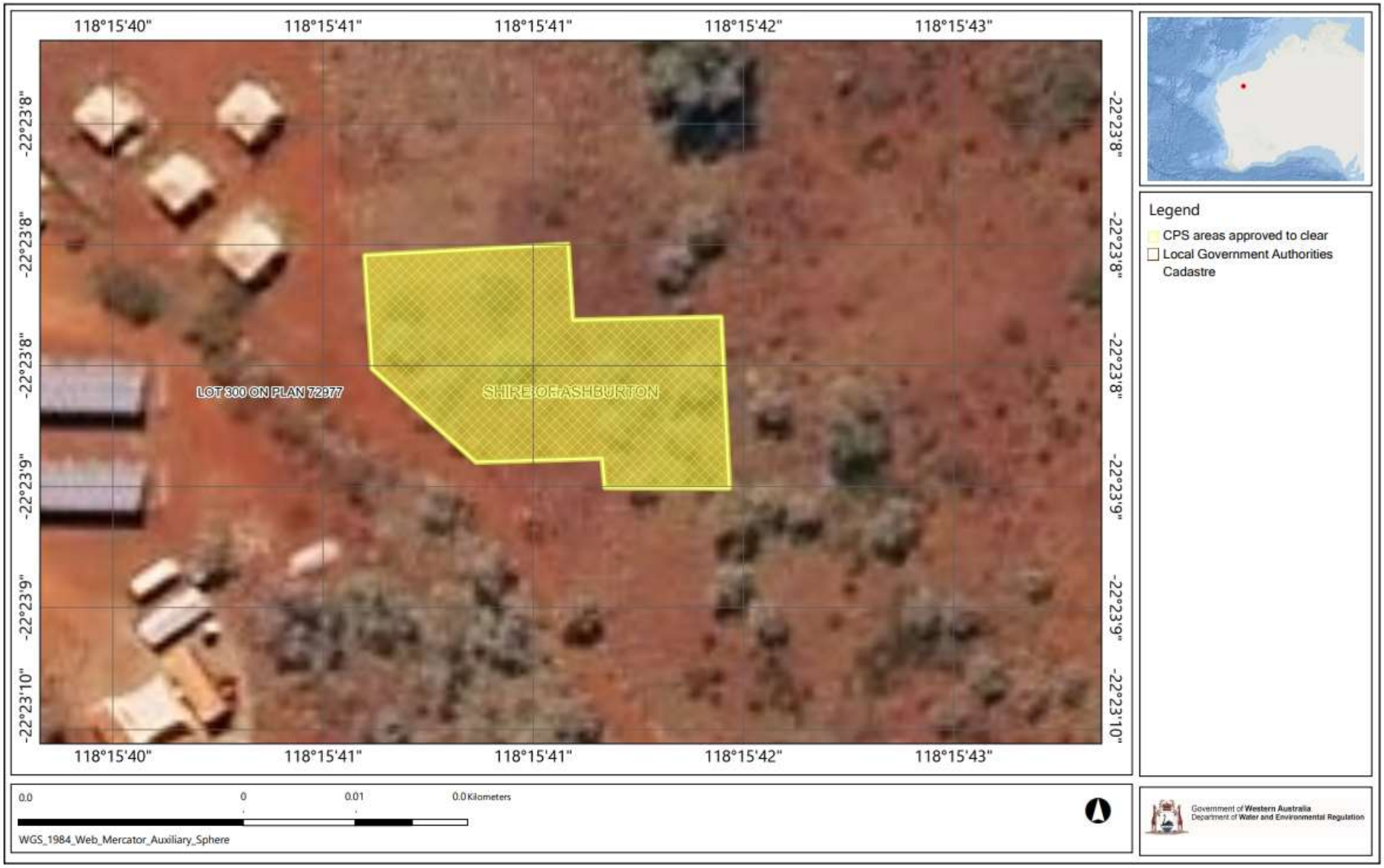

Figure 1.2 Map of the application area A.

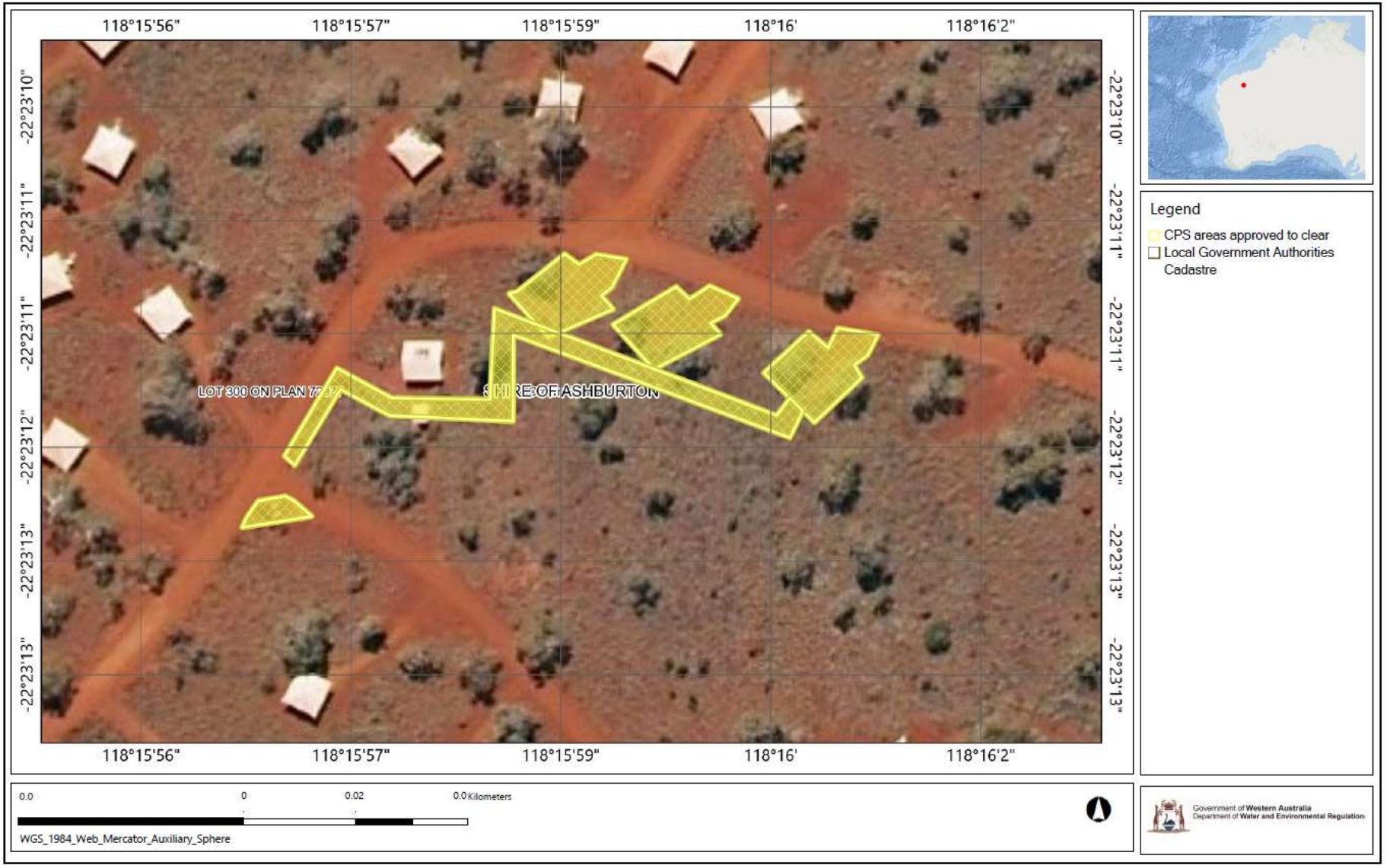

Figure 1.3 Map of application area

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
- 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)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (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 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised in regard to consideration of avoidance and mitigation measures:

- Clearing area was assessed to minimise clearing.
- Major trees will be retained.
- Clearing will be minimised in accordance with the requirements of DBCA's Disturbance Approval System (DAS).

The Delegated Officer was satisfied that the applicant has made a reasonable effort and commitment 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, in accordance with section 51O of the EP Act, the Delegated Officer has examined the site characteristics (see Appendix A) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix B.

The assessment against the clearing principles (see Appendix B) identified that the clearing principles may pose a risk to the environmental values of biological values (flora and fauna), conservation areas, and land and water resources. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below in Section 3.2.1. and 3.2.2. respectively. Where the assessment found that the clearing presents a risk to environmental values, conditions aimed at controlling and or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

3.2.1. Environmental values: biological values (flora and fauna) – Clearing Principles (a) and (b)

Assessments:

The area proposed to be cleared does not contain locally significant flora, fauna, habitats, or assemblages of plants. Fifteen priority flora were recorded within a 50 km radius, ten of which were found with either habitat or soil types similar to that of the application area. In the absence of surveys, the presence of these flora within the application area cannot be discounted. Most of the known priority flora are, however, distanced from the application area. The likelihood of finding these flora within the application area is considered to be low.

The nearest recorded priority flora is *Eremophila magnifica* subsp*. velutina,* located approximately 3 km from the application area, on the other side of the Joffree Gorge. The photographs of vegetation provided by the applicant does not indicate the presence of *E. magnifica* subsp*. velutina* or the other significant flora within the local area. Moreover, given the relatively small extent of the proposed clearing in the context of the local area, which contains over 99 per cent of its pre-European vegetation, the proposed clearing area is not considered to contain significant habitat for these species.

The area proposed to be cleared does not contain significant foraging, roosting or breeding habitat for conservation significant fauna. However, 22 conservation significant fauna including 6 migratory birds were recorded within the local area (50 km radius). The migratory birds are associated with waterbodies, and potentially forage near to the gorges of Hamersley. Whilst these birds may visit the gorges on an occasional basis, these birds are unlikely to use the shrubland habitat surrounding the application area, which is distanced from the gorges.

The most common fauna recorded in the local extent were *Pseudomys chapmani* (Western pebble-mound mouse; Priority 4; 127 records, last recorded in 2016) and *Dasyurus hallucatus* (Northern quoll, Vulnerable, 64 records, last recorded in 2018). Given that several northern quoll and the Western pebble-mound mouse were recorded within the local extent, and that the vegetation type in the application area could be suitable to support these species, it is considered possible that the vegetation within the application area may provide habitats to these species. However, with a home range of up to 6.7 hectares for *P. chapmani* and 64.2 hectare for *D. hallucatus*; these species are transient and potentially only visit the area on occasional basis. In the Pilbara region, the majority of recent records of northern quoll also have come from the Rocklea, Macroy and Robe land systems. It is therefore unlikely for this species to use the shrublands surrounding the application area. Given the abundance of potential habitats for northern quoll and the pebble mound mouse in the local area, including vegetation immediately surrounding the application area, the proposed clearing is not considered to be locally significant for the survival of these species, should they present within the application area.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not considered significant in relation to this environmental value. However, there is a potential for fauna to be present at the time of clearing.

Conditions: To address the above impacts, a condition requiring clearing to be conducted in a slow, progressive manner from south to north to allow fauna to move out of the clearing area into adjacent remnant vegetation.

3.2.2. Environmental value: significant remnant vegetation and conservation areas – Clearing Principle (h)

Assessment: The application area is a part of the Karijini Eco Retreat Resort within a conservation area (Karijini National Park). The clearing may have an impact to the conservation area. However, given the relatively small extent of the clearing area within the local context, the slight reduction of vegetation as a result of the proposed clearing is not likely to have significant impact on the environmental values of the conservation area. Moreover, DBCA, as the representatives for the Karijini Eco Retreat lease under the CALM Act and *Biodiversity Conservation Act 2016* (BC Act), reviewed the proposal to be consistent with the purpose of lease and DBCA's policy, taking into account steps that would minimise disturbance in accordance to the DBCA's Disturbance Approval Systems.

Noting the connectivity of the proposed clearing area with the surrounding vegetation, the spread of weed due to clearing may also impact this environmental value. The potential impact will be minimised with appropriate weed management practices.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not considered to significantly impact on this environmental value. However, the risk of weed introduction to the surrounding vegetation remains.

Conditions: To address the above impact, when undertaking any clearing authorised under this permit, the permit holder must take measures to minimise the risk of the introduction and spread of *weeds*.

3.2.3. Environmental values: land and water resources – Clearing Principle (g)

Assessment: The mountainous and steep scree slopes of the Newman land system within the Pilbara region are susceptible to water erosion. The clearing area within the Karijini National Park, however, is situated on a level plateau with gentle slopes where water erosion is less likely. Noting the relatively small extent of clearing area, the condition of surrounding vegetation which contains over 99 percent of its pre-European extent, the proposed clearing area is not likely to have an appreciable impact on land degradation from water erosion.

The gravelly and shallow sandy nature of the soils in the mapped land system makes it susceptible to wind erosion. However, given the abundance of vegetation surrounding the relatively small extent of proposed clearing area, the risk of wind erosion resulting from the proposed clearing is considered to be low.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not going to lead to appreciable land degradation. However, to minimise any risk of wind erosion, a management condition will be included on the permit.

Conditions: To address the impacts, the permit holder must commence building tents and structures no later than three months after undertaking the authorised clearing activities to reduce the potential for wind erosion.

3.3. Relevant planning instruments and other matters

The DBCA, as the department representative of the Karijini Eco Retreat lease under the CALM Act and BC Act, advised DWER that DBCA had reviewed the proposal to build eco tents and staff accommodation for which the proposed clearing is required. DBCA did not have objections to the proposal.

The Shire of Ashburton advised DWER that local government approvals are not required prior to clearing, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The Shire did not have any objections to the proposed clearing.

Several 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 part of an expansive tract of native vegetation. The 68.1 hectares of leased premises within Reserve Number 30082, Karijini National Park, is located in the extensive land use zone of Western Australia. It is surrounded by native vegetation, buildings and structures including tent accommodations, plants and equipment within the Karijini National Park. It is adjacent to the Joffre Gorge within the Karijini National Park. The proposed clearing area is a small part of a large intact area of native vegetation within the Karijini National Park. Spatial data indicates the local area (50 kilometres radius from the centre of the area proposed to be cleared) retains approximately 99.5 per cent of the original native vegetation cover.
Ecological linkage	The application area does not represent an ecological linkage.
Conservation areas	The application area is within the *Conservation and Land Management Act 1984* (CALM Act) Lease 2142/100 in the Karijini National Park. Although it is within a conservation area, the purpose of clearing is consistent with the Lease Agreement and DBCA conditions of the lease.
Vegetation description	The clearing area is situated within the Pilbara Bioregion, specifically in Hammersley sub-region. The vegetation is classified as the Hamersley System-82 vegetation complex. Photographs supplied by the applicant indicates the vegetation within the proposed clearing area consists of *Eucalyptus leucophloia* with understorey *Triodia pungens, Grevillea wickhamii* and *Acacia adsurgens*. Representative photos are available in Appendix D. This is consistent with the IBRA mapped vegetation complex of Hammersley System-82 which is described as Hummock grassland with scattered bloodwoods and snappy gum *(Triodia spp., Corymbia dichromophloia, Eucalyptus leucophloia).* The current extent of Hammersley System-82 vegetation complex is approximately 99.9 per cent of its original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in very good condition (Trudgen, 1991). The full Trudgen (1991) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.
Climate and landform	The clearing area is within the Pilbara Bioregion, which exhibits a characteristically arid or semi-arid climate. Rainfall averages between about 250 and 400 mm a year, mostly occurs during the summer months of December to March. Temperatures range between 13°C minima in the winters and over 40°C maxima in the summer months (Van Vreeswyk et. al., 2014). Majority of the clearing area is mapped within the Newman Soil Landscape System, bordering with the Egerton System within the Pilbara Province of the Western Region of WA land systems. Geologically, the Pilbara province is dominated by granite terrain of the Pilbara Block in the north, the rugged sedimentary Hamersley Basin in the south, and the sedimentary rocks overlain by eoilian sands to the east. The landscape of the Newman System is described as “Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grassland”, whilst the Egerton System is described as “ Dissected hardpan plains with sparse mulga shrublands or shrubby hard spinifex grassland” (Van Vreeswyk et.al., 2014).
Soil description	Soils in the Newman land system generally consist of stony soils, red shallow loams and some red shallow sands (Van Vreeswyk et.al., 2014).

Characteristic	Details
	Soil in the Egerton Land System of the hardpan plain in the vicinity of the clearing area is typically red-brown hardpan shallow loams and red shallow loams.
Land degradation risk	The land of the Newman Land system has erosional surfaces on the plateaux, mountains and the steep scree slopes. The clearing area within the Karijini National Park, however, is situated on a level plateau. Noting the intact vegetation surrounding the application area, the clearing area is not susceptible to water erosion or flood. The gravelly and shallow sands nature of the soils in the area may be susceptible to wind erosion. The application area is not within an area mapped with land degradation risks from phosphorus export. With ground water salinity ranging between 500 to 1000 mg/L TDS, land degradation due to salinity is low.
Waterbodies	The proposed clearing will not intercept any surface water or water courses. The nearest water course is Joffre Gorge, about 300 m to the east of the eastern part of the application area. The closest important wetlands of WA are the Karijini Gorges (Hammersley range) including the Joffree Gorge, situated within the Karijini National Park; and the Fortescue Marshes located approximately 27 km north of the proposed clearing area. However, these water courses and wetlands are separated from the proposed clearing area by parklands.
Hydrogeography	The proposed clearing area occurs within a proclaimed ground water area under RIWI Act (the Pilbara ground groundwater). Ground water salinity in the region ranges between 500 to 1000 mg/L TDS.
Flora	There is no record of priority flora within the proposed clearing area. Within the local extent (50 km radius) 15 priority flora are recorded, five of which were recorded within the Karijini National Park. Priority flora recorded nearest to the application area is *Eremophila magnifica* subsp*. velutina.* The application area shared soil characteristic (loamy), vegetation type and / or landform with the localities where at least four of the priority flora.
Ecological communities	The application area is not within any threatened / priority ecological community (TEC/PEC). The nearest TEC / PEC and their locations are as follows: • Freshwater claypans of the Fortescue Valley (Priority 1), approximately 30 km to the north east of the application area • Coolibah Lignum Flats (Priority 1), approximately 28 km south – west of the application area • Brockman Iron Cracking Clay Communities of the Hamersley Range (priority 1); approximately 31 km to the west of application area • Four plant assemblages of the Wona Land System (Priority 1) and associated buffer; approximately 42 km north east of application area. These TEC/PEC are separated from the proposed clearing area by the vast vegetation within the Karijini National Park. They are also situated on landforms and vegetation complexes that are different from that of the proposed area.
Fauna	Within the 50 km radius from the clearing area, 22 conservation significant fauna were recorded, including 6 migratory birds. The most common fauna in the local context were *Pseudomys chapmani* (Western pebble-mound mouse; Priority 4; 127 records, last recorded in 2016) and *Dasyurus hallucatus* (Northern quoll, Vulnerable, 64 records, last recorded in 2018). The northern quoll was the priority fauna recorded nearest to the clearing area. In the Pilbara region, northern quoll, however, tends to prefer the Rocklea, Macroy and Robe land systems (Biota Environmental Services, 2008).

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*					
Pilbara	17,808,657	17,731,764	99.57	1,801.714	10.12
Vegetation Complex					
Beard: Hammersley	4,443,228	4,418,329	99.44	739,960	16.65
Vegetation Complex Within IBRA Bioregion					
Hammersley (82)	2,169,996	2,157,842	99.44	295,377	13.61
Local area					
50 km radius	785,535.17	784,003.68	99.80	-	-

*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), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area (50 km radius)	Are surveys adequate to identify? [Y, N, N/A]
Acacia bromilowiana	P 4	Y	Y	Y	24.5	6	N/A
Acacia daweana	P 4	Y	Y	Y	46	10	N/A
Acacia effusa	P 3	Y	Y	Y	46	11	N/A
Barbula ehrenbergii	P 1	N	N	Y	33	1	N/A
Calotis squamigera	P 1	N	N	Y	33	1	N/A
Dampiera anonyma	P 3	Y	Y	Y	15	55	N/A
Dicladanthera glabra	P 2	N	Y	Y	10	3	N/A
Eremophila magnifica subsp. *velutina*	P 3	Y	Y	Y	2.9	4	N/A
Euphorbia australis var. glabra	P 3	N	Y	Y	28.5	1	N/A
Fimbristylis sieberiana	P 3	N	N	N	33	1	N/A
Glycine falcata	P 3	N	N	N	30.4	2	N/A
Indigofera gilesii	P 3	N	N	Y	20.7	3	N/A
Indigofera ixocarpa	P 2	N	Y	Y	40	9	N/A
Lepidium catapycnon	P 4	N	N	Y	8.5	25	N/A
Scaevola sp. Hamersley Range basalts (S. van Leeuwen 3675)	P 2	N	N	N	41	3	N/A

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

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 recordsin local area (50 km radius)	Are surveys adequate to identify? [Y, N, N/A]

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)	Most recent record	Number of known records (local - 50 km radius)	Are surveys adequate to identify? [Y, N, N/A]
Amytornis striatus striatus (Striated grasswren)	P4	N	N	20	1982	1	N/A
Anilios ganei (Gane's blind snake (Pilbara)	P1	N	N	33	2011	3	N/A
Apus pacificus (Fork Tailed swift)	MI	N	N	24	2012	5	N/A
Ctenotus uber johnstonei (Spotted ctenotus)	P2	N	N	47	2012	6	N/A
Dasyurus hallucatus (Northern quoll)	EN	N	Y	0.4	2018	65	N/A
Falco hypoleucos (Grey Falocon)	VU	N	N	22	2012	2	N/A
Falco peregrinus (Peregrine Falcon)	OS	N	N	18	2012	14	N/A
Gelochelidon nilotica (Gull-billed tern)	MI	N	N	33	2004	2	N/A
Hydroprogne caspia (Caspian tern)	MI	N	N	35	2007	1	N/A
Leggadina lakedownensis Northern short-tailed mouse	P4	N	N	34	2014	19	N/A
Leiopotherapon aheneus (Fortescue grunter)	P4	N	N	22	2013	15	N/A
Liasis olivaceus barroni Pilbara olive phyton	VU	N	Y	14	2018	22	N/A
Macroderma gigas (Ghost bat)	VU	N	N	11.5	2019	9	N/A
Macrotis lagotis (Bilby, dalgyte)	VU	N	Y	31	2001	6	N/A
Notomys longicaudatus (Long tailed hopping mouse)	EX	N	N	31	0	1	N/A
Notoscincus butleri (Lined soil-crevice skink)	P4	N	N	40	1995	1	N/A
Pandion cristatus (Eastern Osprey)	MI	N	N	32	1981	1	N/A
Plegadis falcinellus	MI	N	N	34	2004	2	N/A
Pseudomys chapmani (Western pebble-mound mouse)	P4	N	Y	3.7	2016	128	N/A
Rhinonicteris aurantia (Pilbara) (Pilbara leaf-nosed bat)	VU	N	N	20	2019	17	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Most recent record	Number of known records (local - 50 km radius)	Are surveys adequate to identify? [Y, N, N/A]
Sternula albifrons (Little tern)	MI	N	N	18.5	1978	2	N/A
Underwoodisaurus seorsus (Pilbara barking gecko)	P2	N	N	5	2014	7	N/A

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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Coolibah Lignum Flats	Priority 1	N	N	N	28 (south)	4	NA
Freshwater claypans of the Fortescue Valley	Priority 1	N	N	N	30 (North)	2	NA
Brockman Iron Cracking Clay Communities of the Hamersley Range	Priority 1	N	N	N	31 (West)	101	NA
Four plant assemblages of the Wona Land System (Priority 1) and associated buffer	Priority 1	N	N	N	42	3	NA
Themeda grasslands on cracking clays	Vulnerable	N	N	N	45	50	N/A

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

Appendix B. Assessment against the clearing principles

Appendix B. 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 significant flora, fauna, habitats, or assemblages of plants. However, the application area shared soil characteristic (loamy), vegetation type and / or landform with the localities where at least four of the priority flora. The area proposed to be cleared does not contain species that resemble a TEC/PEC located within the local area.	May be at variance	Yes
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:	May be at variance	Yes

Appendix B. Assessment against the clearing principles	Variance level	Is further consideration required?
The area proposed to be cleared does not contain significant foraging, roosting, or breeding habitat for conservation significant fauna. However, priority and threatened faunas were recorded within the local area (50 km radius), 6 of which are migratory birds. The proposed clearing area and its vicinity may provide habitats for these fauna as they move through the landscape.		
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: No threatened flora have been recorded within the local extent of 50 km radius from the clearing site.	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 proposed clearing area does not contain species that resemble a TEC within the local area. The TECs are also situated on landforms and vegetation complexes that are different from that of the proposed area.	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 proposed clearing area is within the Hamersley Vegetation Complex of the Pilbara bioregion which retains 99.57% of its pre-European extent. Vegetation within the local extent also has good cover, retaining 99.80% of its pre-European extent. The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	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: The area to be cleared is within a conservation area (Karijini National Park), consequently the clearing may have an impact to the conservation area.	May be at variance	Yes
Environmental value: land and water resources		
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: The proposed clearing area is not associated with a watercourse or wetland. Given the extent of the application area and the distance to the nearest watercourse and wetland, the proposed clearing is unlikely to impact an environment associated with a watercourse or wetland.	Not likely to be 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:	May be at variance	Yes

Appendix B. Assessment against the clearing principles	Variance level	Is further consideration required?
The mountainous and steep scree slopes of the mapped soils (Newman land system) are susceptible to water erosion. The gravelly and shallow sands nature of the soils in the mapped land system makes it susceptible to wind erosion.		
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: The proposed clearing will not intercept any surface water, watercourses or groundwater. The nearest water course is Joffre Gorge, about 300 m to the east of the nearest application area. Noting the relatively small extent and location of application area on a flat plateau, and the conditions of the surrounding vegetation, the proposed clearing are is not likely to have an appreciable impact on surface and ground water.	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: 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.	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 Trudgen, M.E. (1991)

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

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

Condition	Description
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation, i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Photographs of the vegetation

Figure 2 A and B. Vegetation on the proposed clearing area (Gumala Enterprises Pty Ltd, 2021)

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)
- 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)
- 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 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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