

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number: 9065/2

Permit type: Purpose Permit

Applicant name: GMA Garnet Pty Ltd

Application received: 23 November 2023

Application area: 102.09 hectares

Purpose of clearing: Mineral production and associated activities

Method of clearing: Mechanical Removal

Tenure: General Purpose Lease 70/171

Mining Lease 70/856

Location (LGA area/s): Shire of Northampton

Colloquial name: Hose Mine

1.2. Description of clearing activities

GMA Garnet Pty Ltd proposes to clear up to 102.09 hectares of native vegetation within a boundary of approximately 115.589 hectares, for the purpose of mineral production and associated activities. The project is located approximately 83 kilometres northwest of Geraldton, within the Shire of Northampton.

The application is to allow for improved line of sight on an access track and to facilitate installation of a future haul road (GMA, 2023a).

Clearing permit CPS 9065/1 was granted by the Department of Mines, Industry Regulation and Safety (now the Department of Energy, Mines, Industry Regulation and Safety) on 19 November 2020 and was valid from 12 December 2020 to 11 December 2025. The permit authorised the clearing of up to 100 hectares of native vegetation within a boundary of approximately 113.49 hectares, for the purpose of mineral production and associated activities.

On 23 November 2023, the Permit Holder applied to amend CPS 9065/1 to increase the permit boundary by 2.099 hectares and to increase the amount authorised to clear by 2.09 hectares to improve line of sight on an access track and facilitate installation of a future haul road.

1.3. Decision on application and key considerations

Decision: Grant

Decision date: 9 May 2024

Decision area: 102.09 hectares of native vegetation

1.4. Reasons for decision

This clearing permit amendment application was submitted, accepted and determined in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advertised the application for a public comment for a period of 21 days, and one submission was received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix B), relevant datasets (Appendix E, the clearing principles set out in Schedule 5 of the EP Act (Appendix C), 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;
- 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;
- · staged clearing to minimise wind erosion.

The assessment has not changed since the assessment for CPS 9065/1. The Delegated Officer determined that the proposed increase to permit boundary and additional clearing of 2.09 hectares is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

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



Figure 1. Map of the application area. The yellow cross-hatched area indicates the previous permit area (CPS 9065/1) and the blue cross-hatched area indicates the additional area included as part of this application (CPS 9065/2).

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 510 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)
- 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)
- Technical guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance Terrestrial Fauna Surveys for Environmental Impact Assessment (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The proponent has provided supporting documentation for the clearing permit application (GMA, 2020), which states that the proponent is committed to identifying environmental risks and impacts and minimising them using their risk management framework. Using this matrix, they have identified the following risks and mitigation measures to manage them:

- windblown dust causing impacts to the health and condition of conservation significant native vegetation managed by water cart dust suppression and ceasing works when dust suppression controls fail to mitigate dust emissions; and
- the spread of weeds managed by treating weed infested topsoil stockpiles and ensuring machinery is cleaned prior to entering rehabilitation areas.

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

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (flora and 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.

A review of current environmental information (Appendix B and C) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 9065/1.

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

<u>Assessment</u>

A total of 34 conservation significant flora species were recorded within 20 kilometres of the amendment application area with two species having potentially suitable habitat within the application area (GIS Database). Within five kilometres of the application area are records of the threatened flora species *Caladenia bryceana* subsp. *cracens* and *Caladenia elegans*, on similarly mapped soil and vegetation types (Western Australian Herbarium, 1998-, GIS Database). However field surveys by Earth Stewardship (2020) and the Department of Biodiversity, Conservation and Attractions in the application area have not identified either of the species and have determined that there is no suitable habitat for the species within the application area (DBCA, 2020; Earth Stewardship, 2020). Therefore, clearing of the application area is not likely to impact on these species' current extent.

Within the local area (20 kilometre radius) 38 conservation significant fauna species were detected, of which six species have potential to occur within the application area (GIS Database). Other records not considered included 29 migratory shore bird species and the humpback whale (*Megaptera novaeangliae*), which were excluded due to lack of suitable habitat within the application area (GIS Database). Historical records for *Neopasiphae simplicior* (a short-tongued bee) and *Notamacropus eugenii derbianus* (tammar wallaby) were also not included for further assessment due to the age of the records, which are outside the species current distribution (ALA, 2024, DAWE, 2008, GIS Database).

Falco peregrinus (peregrine falcon) and Apus pacificus (fork-tailed swift) are likely to pass through the application area as part of a larger home range, however, the degraded vegetation is not likely to represent significant foraging or roosting habitat (GMA, 2020). Pandion haliaetus (osprey) is unlikely to rely on the application area as this species is piscivorous and the vegetation within the amendment areas does not contain foraging habitat and is also not likely to form significant roosting habitat for this species due to its degradation (GMA, 2020). There are no roosts recorded for the Zanda latirostris (Carnaby's black-cockatoo) within 20 kilometres of the application area (GIS Database). However, the survey area falls within the non-breeding range of Carnaby's black-cockatoo but there is no foraging habitat within the survey area, therefore they are unlikely to occur in or utilise this area (GMA Garnet, 2023b; GIS Database). Synemon gratiosa (graceful sun-moth) distribution extends from north of the Murchison River near Kalbarri, in the north, to Binningup, in the south. The majority of their confirmed habitat occurs in the Swan Region (15.3 km² – 82%), with less in coastal parts of the Midwest Region (3.0 km² – 16%) (DEC, 2012). Despite their distribution extending through the application area, they are unlikely to occur, as the larvae of the graceful sun-moth feed only on the two mat-rushes Lomandra hermaphrodita and Lomandra maritima, both of which are not found within the application area (Earth Stewardship, 2020). Idiosoma arenaceum (Geraldton Sandplain shield-backed trapdoor spider) has been recorded in the local area from similar habitat to the broader application area (GIS Database). This species has a moderately widespread distribution within the Geraldton Sandplains and far northern Wheatbelt bioregions with a range of over 250 kilometres. The

proposed clearing within this previously degraded and heavily disturbed area is unlikely to impact significant habitat for the species (Rix et al., 2018; GIS Database).

There were 29 species of weeds were recorded during the field survey of the application area (Earth Stewardship, 2020). *Echium plantagineum* (Paterson's Curse) was recorded within the application area and is listed as a Declared Pest according to the *Biosecurity and Agriculture Management Act 2007*. Weeds have the potential to out compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the introduction of weeds may be minimised by the implementation of a weed management condition.

Conclusion

Based on the above assessment, the proposed clearing will not result in significant impacts to conservation significant flora, fauna, or their habitats.

Conditions

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

• Ensuring no weed-affected soil, mulch or fill is brought into the areas to be cleared, clean earth moving machinery and limit their movement only to areas to be cleared, to minimise the risk of the introduction and spread of weeds.

3.2.2. Significant remnant vegetation - Clearing Principle (e)

<u>Assessment</u>

The application area falls within the Geraldton Sandplains Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 44% of the pre-European vegetation still exists in the IBRA Geraldton Sandplains Bioregion (Government of Western Australia, 2019), which gives it a conservation status of 'Depleted' according to the Department of Natural Resources and Environment (2002). The local area (20 kilometres radius) has been extensively cleared for agricultural purposes (GIS Database).

The application area is broadly mapped as Beard vegetation associations 17: shrublands; Acacia rostellifera thicket; and 371: low forest; Acacia rostellifera (GIS Database). Approximately 83-88% of the pre-European extent of vegetation association 17 remains uncleared at the state, bioregional and subregional level (Government of Western Australia, 2019). Approximately 10% of the pre-European extent of vegetation association 371 remains uncleared at both the state, bioregional and subregional level (Government of Western Australia, 2019). This gives vegetation association 371 a conservation status of 'Vulnerable' according to the Department of Natural Resources and Environment (2002). A vegetation and flora survey conducted by Earth Stewardship (2020) mapped the vegetation of the application area at a much finer scale than the Beard vegetation mapping. The vegetation of the amendment areas was mapped as VT1: Completely cleared tracks and mining infrastructure, VT2: Completely cleared paddocks dominated by pasture grasses and weeds with scattered native plants, including Acacia rostellifera, Commicarpus australis, Alyogyne hakeifolia. VT3: Areas of Acacia rostellifera (typically over weeds) along nonmaintained edges of mine pits, roads, infrastructure, VT4: Strip of Eucalyptus utilis (Coastal Moort), planted as wind shelter belt, along the Hose mine access road, VT5: Dense shrublands of Acacia rostellifera over Alyogyne hakeifolia over Rhagodia spp., Tetragonia implexicoma, Pimelea microcephala over mixed weed species on topsoil mounds and an area of regrowth. Surveys conducted by DBCA (2020) and Earth Stewardship (2020) have confirmed that vegetation types within the application area are not representative of vegetation association 371 due to the lack of the correct community structure and high level of degradation from current and historical impacts. Therefore, the proposed clearing will not reduce the extent of Beard vegetation association 371.

Conclusion

Further clearing of the remnant may contribute to the continued decline in the condition of the remnant, however the proposed clearing will not have any substantial impacts on the remaining extents of pre-European vegetation as it was determined that the vegetation in the area was highly degraded and not representative of Beard vegetation association 371 (Earth Stewardship, 2020; DBCA, 2020)

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 16 January 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. One submission was received in relation to this application.

There is one native title claim over the area under application (DPLH, 2024). This claim has been determined by the Federal Court on behalf of the claimant group. 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*.

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. Details of public submissions	
Summary of comments	Consideration of comment
Concerns about dust, noise and lights	We acknowledge the concerns raised however this is outside the scope of this assessment, and where relevant, can be addressed under the <i>Mining Act 1978</i> .
Impacts to surface water flows	Impacts to surface water are addressed in clearing principles (f) and (i) (see Appendix C)
Impacts to Utcha Well Nature Reserve	Impacts to Utcha Well Nature Reserve are addressed in clearing principle (e) (see Appendix C)
Concerns about increased incidence and intensity of flooding	Impacts to flooding are addressed in clearing principle (j) (see Appendix C)

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a 102-hectare isolated patch of degraded native vegetation in the intensive land use zone of Western Australia. It is surrounded by sand dunes and is adjacent to farm steads and the Hutt Lagoon System which is an environmentally sensitive area (GIS Database). Vegetation in the vicinity of the Hose Mining Operations area consists of areas of cleared paddocks, trees planted as shelter-belts, locations where regrowth has occurred as part of natural recovery and/or rehabilitation efforts, and small areas of native vegetation (Earth Stewardship, 2020).
Ecological linkage	The proposed clearing does not represent a significant remnant of native vegetation in an area that has been extensively cleared and is unlikely to provide an ecological linkage to surrounding areas (GIS Database).
Conservation areas	There are no conservation areas within the vicinity of the application area (GIS Database). The closest mapped conservation area is the Utcha Well Nature Reserve which is located approximately 150 metres northwest of the original application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation associations: 17: Shrublands; Acacia rostellifera thicket; and 371: Low forest; Acacia rostellifera (GIS Database).
	A flora and vegetation survey was conducted over the application area by Earth Stewardship on 20 August, 2020. The following vegetation associations were recorded within the application area (Earth Stewardship, 2020):
	VT1 – Cleared Tracks and Infrastructure Completely cleared tracks and mining infrastructure. May contain some scattered native plants, but generally dominated by weedy species.
	VT2 – Paddocks Completely cleared paddocks with scattered native plants, including Acacia rostellifera, Commicarpus australis, Alyogyne hakeifolia. Dominated by pasture grasses and weeds.
	VT3 – Regrowth Areas of <i>Acacia rostellifera</i> (typically over weeds) along non-maintained edges of mine pits, roads, infrastructure. Also includes recently installed topsoil stockpiles. Where taller and denser, regrowth occurs in thin strips of vegetation, particularly along the edges of the original mine, and ore loading area.
	VT4 – Artificial Planting Strip of Eucalyptus utilis (Coastal Moort), planted as wind shelter belt, along the Hose mine access road. Regrowth Acacia rostellifera and weed species are also present.
	VT5 – Acacia rostellifera Dense Shrublands Dense shrublands of Acacia rostellifera over Alyogyne hakeifolia over Rhagodia spp., Tetragonia implexicoma, Pimelea microcephala over mixed weed species on topsoil mounds and an area of regrowth.
	VT6 – Acacia rostellifera Open Shrublands on Limestone

Characteristic	Details
	Open Shrubland of Acacia rostellifera over Grevillea argyrophylla with scattered Diplolaena grandiflora, Androcalva gaudichaudii, Scaevola tomentosa, Enchylaena tomentosa over mixed weed species on lower limestone footslopes.
	VT7 – Acacia rostellifera Tall Shrubland Tall Shrubland to Open Woodland of Acacia rostellifera over Templetonia retusa, Commicarpus australis, Rhagodia spp., Alyxia buxifolia, Enchylaena tomentosa over mixed weed species.
	The amendment area only contains vegetation associations VT1, VT2, VT3, VT4 and VT5.
Vegetation condition	 The vegetation survey (Earth Stewardship, 2020) and aerial imagery indicate the vegetation within the proposed clearing area is in degraded to completely degraded condition, with a small amount of area, considered to be in good (Keighery, 1994) condition, described as: 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. 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 D.
Climate and landform	The application area is located within an area with wet winters and low summer rainfall, with an average annual rainfall (Lynton station) of approximately 403.6 millimetres (BoM, 2024). Undulating rises and swales associated with coastal parabolic dunes (Northcote et al., 1960-68).
Soil description	The soil is mapped as 231Ta_1, Tamala North 1 Subsystem (GIS Database). This soil unit is described as, consisting of brown and grey calcareous deep sand with undulating rises and swales associated with coastal parabolic dunes, featuring some limestone outcrop (DPIRD, 2024).
Land degradation risk	The application area falls within the Tamala North land system (GIS Database). High risk of wind erosion being a hazard in the proposed area to be cleared because of the loose sandy nature of the soil. In exposed locations on upper slopes and crests of dunes, areas of disturbed and unprotected soil have potential to create mobile dune fields because of strong prevailing winds (DPIRD 2020). There is a low risk of salinity, eutrophication, water erosion, waterlogging and flooding causing land degradation (DPIRD, 2020)
Waterbodies	The desktop assessment and aerial imagery indicated that no wetlands or watercourses transect the area proposed to be cleared (GIS Database). The Hutt Lagoon System is 350 metres southwest of the application area and is an Environmentally Sensitive Area categorised under the "Directory of Important Wetlands in Australia" (GIS Database). Several minor non-perennial watercourses also lie outside the application area (GIS Database).
Hydrogeography	The application area is located within the Gascoyne Groundwater Area which is legislated by the <i>RIWI Act 1914</i> (GIS Database). The mapped groundwater salinity of the application area is 1,000–3,000 milligrams per litre total dissolved solids which is described as brackish (GIS Database).
Flora	No Threatened or Priority flora were recorded within the application area during a reconnaissance survey (Earth Stewardship, 2020). A desktop assessment of available databases identified 34 different conservation significant flora species recorded within 20 kilometres of the application area (GIS Database). To note of these is <i>Caladenia elegans</i> and <i>Caladenia bryceana</i> subsp. <i>cracens</i> which have records within 700 metres and 5 kilometres of the application area respectively, within a vegetation association mapped within the application area (GIS Database).
Ecological communities	There are no mapped Priority or Threatened Ecological Communities located within the application area (GIS Database). The closest Priority Ecological Community (PEC) to the application area is the Kalbarri ironstone community, located approximately 10.5 kilometres east of the application area (GIS Database).
Fauna	No conservation significant fauna were identified during the basic fauna survey or desktop assessment within the application area (Earth Stewardship, 2020; GIS Database). Within the regional area (20km) there are records of 38 conservation significant fauna species. Of these the
CPS 9065/2	Page 6

Characteristic	Details
	large majority were migratory shore birds (GIS Database). 6 species have been considered possible to occur within the area (GIS Database).

B.2. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information (Earth Stewardship, 2020), 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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Caladenia bryceana subsp. cracens	EN	N	Υ	Y	5	10	Υ
Caladenia elegans	CR	N	Υ	N	0.7	15	Υ

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

B.3. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information (Earth Stewardship, 2020), impacts to the following conservation significant fauna required further consideration.

Species name	Conservatio n status	Suitable habitat features? [Y/N/Unknown]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify?
Apus pacificus (fork-tailed swift)	М	N	8.3	424	Υ
Falco peregrinus (peregrine falcon)	os	N	9.6	1,786	Υ
Idiosoma arenaceum (Geraldton Sandplain shield-backed trapdoor spider)	P3	Unknown	15.1	37	N
Pandion haliaetus (osprey)	М	N	5.4	4,412	Υ
Synemon gratiosa (graceful sun-moth)	P4	N	10.9	841	Υ
Zanda latirostris (Carnaby's cockatoo)	EN	N	9.6	21,172	Υ

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

Appendix C. Assessment against the clearing principles Variance level Assessment against the clearing principles Is further consideration required? Environmental value: biological values Principle (a): "Native vegetation should not be cleared if it comprises a high level of Not likely to be biodiversity. at variance Refer to Section Assessment: The original application area and the amendment area do not contain 3.2.1, above. (as per CPS conservation significant flora, fauna or ecological communities and is unlikely to 9065/2) contain a high level of biodiversity (Earth Stewardship, 2020; GIS Database). 34 conservation significant flora species were recorded within the local area (20 kilometres), however they are unlikely to occur within the application area due to the lack of suitable habitat (Earth Stewardship, 2020; GIS Database). Within the local area, 38 conservation significant fauna species were detected, of which six species were deem as having potential to occur within the application area (GIS database).

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: No fauna surveys have been conducted within the application area and no fauna habitats were mapped during the vegetation field survey, however the najority of the application area is non-native pasture with fragmented areas of highly degraded Acacia woodlands regrowth (Earth Stewardship, 2020). Due to the application area being almost completely degraded, it is unlikely that it contains the pastic structure to create any significant habitat for conservation significant fauna Earth Stewardship, 2020). Principle (c): "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora." Assessment: The area proposed to be cleared is unlikely to contain Threatened flora or habitats that support Threatened flora. No records of Threatened flora within the application area however there are seven species within the local area (20 kilometres) Earth Stewardship, GIS Database). 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: There are no known Threatened Ecological Communities (TECs) within or in close proximity to the area proposed to be cleared (GIS Database). The regetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas	Not likely to be at variance (as per CPS 9065/2) Not likely to be at variance (as per CPS 9065/2) Not likely to be at variance (as per CPS 9065/2) Not likely to be at variance	Yes Refer to Section 3.2.1, above. No
no fauna habitats were mapped during the vegetation field survey, however the majority of the application area is non-native pasture with fragmented areas of highly degraded Acacia woodlands regrowth (Earth Stewardship, 2020). Due to the application area being almost completely degraded, it is unlikely that it contains the pastic structure to create any significant habitat for conservation significant fauna Earth Stewardship, 2020). Principle (c): "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora." Assessment: The area proposed to be cleared is unlikely to contain Threatened flora for habitats that support Threatened flora. No records of Threatened flora within the application area however there are seven species within the local area (20 kilometres) Earth Stewardship, GIS Database). 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: There are no known Threatened Ecological Communities (TECs) within the inclose proximity to the area proposed to be cleared (GIS Database). The pregetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas	Not likely to be at variance (as per CPS 9065/2) Not likely to be at variance (as per CPS 9065/2) Not likely to be at variance	3.2.1, above.
Assessment: The area proposed to be cleared is unlikely to contain Threatened flora or habitats that support Threatened flora. No records of Threatened flora within the application area however there are seven species within the local area (20 kilometres) Earth Stewardship, GIS Database). 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: There are no known Threatened Ecological Communities (TECs) within or in close proximity to the area proposed to be cleared (GIS Database). The regetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas	at variance (as per CPS 9065/2) Not likely to be at variance (as per CPS 9065/2) Not likely to be	
or habitats that support Threatened flora. No records of Threatened flora within the application area however there are seven species within the local area (20 kilometres) Earth Stewardship, GIS Database). 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: There are no known Threatened Ecological Communities (TECs) within or in close proximity to the area proposed to be cleared (GIS Database). The regetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas Principle (e): "Native vegetation should not be cleared if it is significant as a remnant	Not likely to be at variance (as per CPS 9065/2) Not likely to be	No
Assessment: There are no known Threatened Ecological Communities (TECs) within or in close proximity to the area proposed to be cleared (GIS Database). The regetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas Principle (e): "Native vegetation should not be cleared if it is significant as a remnant	at variance (as per CPS 9065/2) Not likely to be	No
or in close proximity to the area proposed to be cleared (GIS Database). The regetation types mapped within the application area are not representative of any TECs (Earth Stewardship, 2020). Environmental value: significant remnant vegetation and conservation areas Principle (e): "Native vegetation should not be cleared if it is significant as a remnant	9065/2) Not likely to be	
Principle (e): "Native vegetation should not be cleared if it is significant as a remnant		
Assessment: The application area is broadly mapped as Beard vegetation associations 17 and 371 (GIS Database). Vegetation association 17 has over 83 percent remaining at the bioregional and state level, whilst vegetation association 371 has been extensively cleared with only 10 percent remaining at bioregional and state level (Government of Western Australia, 2019). The broader application area is completely degraded due to historic farming and agriculture (Earth Stewardship, 2020;	at variance (as per CPS 9065/2)	Yes Refer to Section 3.2.2, above.
Principle (h): "Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area." Assessment: There are no conservation areas within the application area (GIS Database). The nearest DBCA managed land is the Utcha Well Nature Reserve which is located approximately 150 metres northwest of the original application area and is a purther 2 kilometres away from the amendment area (GIS Database). Dust from the	Not likely to be at variance (as per CPS 9065/2)	No
oroposed clearing may cover and impact the vegetation in the reserve, however nitigation measures for this under the mining proposal address this (GMA, 2020). Utcha Well Nature Reserve is separated from the application area by George Grey Drive and is unlikely to be impacted by the proposed clearing.		
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."	Not likely to be at variance	No
Assessment: There are no permanent watercourses or wetlands within the area proposed to clear (GMA, 2020; GIS Database). Minor non-perennial watercourses and drainage lines are seen adjacent to the application area (GIS Database), however the field survey did not record any (GMA, 2020). The Hutt Lagoon System is 350 netres to the southwest of the application area and is listed under the Directory of important Wetlands in Australia (GIS Database). Due to the minimal remnant regetation in the application area, it is unlikely that issues caused by the proposed clearing will impact the Hutt Lagoon System.	(as per CPS 9065/2)	
Principle (g): "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation." Assessment: The application area falls within the western portion of the Port Gregory soil-landscape zone which is summarised as coastal dunes, calcerous in places, with andulating sandplain on limestone (DPIRD, 2020). The soil is mapped as being in the	May be at variance (as per CPS 9065/2)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Tamala North System (231Ta_2) which is described as low hills with relict dunes and some limestone outcrop, that forms a coastal band three to seven kilometres wide (DPIRD, 2024). There is a risk of wind erosion from the proposed clearing due to the loose sandy nature of the soils, as when cleared these soils have the potential to mobilise under strong prevailing winds which can impact surrounding remnant vegetation (DPIRD, 2020) Water erosion can occur in the proposed area due to slope but the risk of water erosion causing land degradation is low (DPIRD, 2020). Potential impacts from erosion will be managed by a staged clearing condition.		
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."	Not likely to be at variance	No
Assessment: There are no permanent watercourses, wetlands or Public Drinking Water Source Areas recorded within the application area (GIS Database). There are multiple non-perennial drainage lines flowing west towards the application area however none are recorded within the area (GMA, 2020; GIS Database). It is unlikely that surface water flows will be impacted by the proposed clearing or cause deterioration in the quality of surface or underground water.	(as per CPS 9065/2)	
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."	Not likely to be at variance	No
Assessment: There are no permanent watercourses or wetlands within the application area (GIS Database). Whilst the topography of the area includes a downward slope towards the Hutt Lagoon System due to the porous soil type it is expected most of the surface water will rapidly infiltrate the soil (GMA, 2020; GIS Database). Due to this and the low average annual rainfall in the region, the removal of remnant vegetation is not expected to cause or exacerbate the incidence or intensity of flooding (DPIRD, 2020; GIS Database).	(as per CPS 9065/2)	

Appendix D. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from 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 E. Sources of information

E.1.GIS databases

- 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)
- Directory of Important Wetlands in Australia Western Australia (DBCA-045)
- 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
- 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 Mapping Best Available (DPIRD-027)
- Soil Landscape Mapping Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Black Cockatoo WTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo Feeding Areas Buffered
- 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)

E.2. References

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- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website Climate Data Online, Lynton Station. Bureau of Meteorology. https://reg.bom.gov.au/climate/data/ (Accessed 9 April 2024).
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- Department of Environment and Conservation (DEC) (2012) Conservation of the graceful sun-moth (Synemon gratiosa) Survey results from the Swan, South West and southern Midwest regions 2010-2012. Available from: https://library.dbca.wa.gov.au/
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 https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f (Accessed 9 April 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
- Earth Stewardship (2020) GMA Garnet Pty Ltd: Hose Mining Operations Vegetation Survey. Prepared for GMA Garnet Pty Ltd, September 2020.
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https://www.epa.wa.gov.au/sites/default/files/Policies and Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf

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GMA Garnet Pty Ltd (GMA) (2023a) Clearing permit application form, CPS 9065/2, received 23 November 2023.

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Glossary

Acronyms:

BC Act Biodiversity Conservation Act 2016, 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

Department of Environment Regulation, Western Australia (now DWER) **DER**

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)

Department of Parks and Wildlife, Western Australia (now DBCA) **DPaW**

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)

Department of Water and Environmental Regulation, Western Australia **DWFR**

EP Act Environmental Protection Act 1986, Western Australia **EPA** Environmental Protection Authority, Western Australia

EPBC Act Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)

GIS Geographical Information System ha Hectare (10,000 square metres)

Interim Biogeographic Regionalisation for Australia **IBRA**

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 Rights in Water and Irrigation Act 1914, 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 }:-

т 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 <u>Priority species:</u>

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.