Department of Energy, Mines, Industry Regulation and Safety

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	5947/3
Permit type:	Purpose Permit
Applicant name:	GMA Garnet Pty Ltd
Application received:	22 January 2024
Application area:	54.72 hectares
Purpose of clearing:	Mineral production
Method of clearing:	Mechanical removal
Tenure:	Mining Lease 70/968
Location (LGA area/s):	Shire of Northampton
Colloquial name:	Port Gregory Mine

1.2. Description of clearing activities

GMA Garnet Pty Ltd proposes to clear up to 54.72 hectares of native vegetation within a boundary of approximately 58.25 hectares, for the purpose of mineral production (GMA, 2024a). The total cumulative area of land cleared to date is 14.75 hectares and rehabilitation works have been conducted on approximately 13.1 hectares (Emerge Associates, 2023; GMA, 2024b). The project is located approximately 12 kilometres north of Port Gregory, within the Shire of Northampton (GIS Database).

Clearing permit CPS 5947/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 10 April 2014 and was valid from 3 May 2014 to 3 May 2024. The permit authorised the clearing of up to 30 hectares of native vegetation within a boundary of approximately 32 hectares, for the purpose of mineral production.

CPS 5947/2 was granted on 23 April 2015, amending the permit to increase the amount of clearing authorised to 54.72 hectares, and increase the permit boundary to 58.25 hectares.

On 22 January 2024, the Permit Holder applied to amend CPS 5947/2 to extend the permit duration to 3 May 2029. The area of clearing authorised and the permit boundaries remained unchanged.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	2 May 2024
Decision area:	54.72 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51KA(1) of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advertised the application for public comment for a period of 7 days, and no submissions were received.

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

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;
- the potential impacts to remnant vegetation association 371;
- the potential impacts to fauna habitat that forms a wildlife corridor; and
- potential land degradation in the form of wind erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- implementation of 10 metre buffer zone to minimise potential impacts to *Acacia rostellifera* scrub; and
- commence works no later than six months after undertaking clearing to reduce the risk of wind erosion.

The assessment has not changed since the assessment for CPS 5947/2. The Delegated Officer determined that the proposed extension of permit duration is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

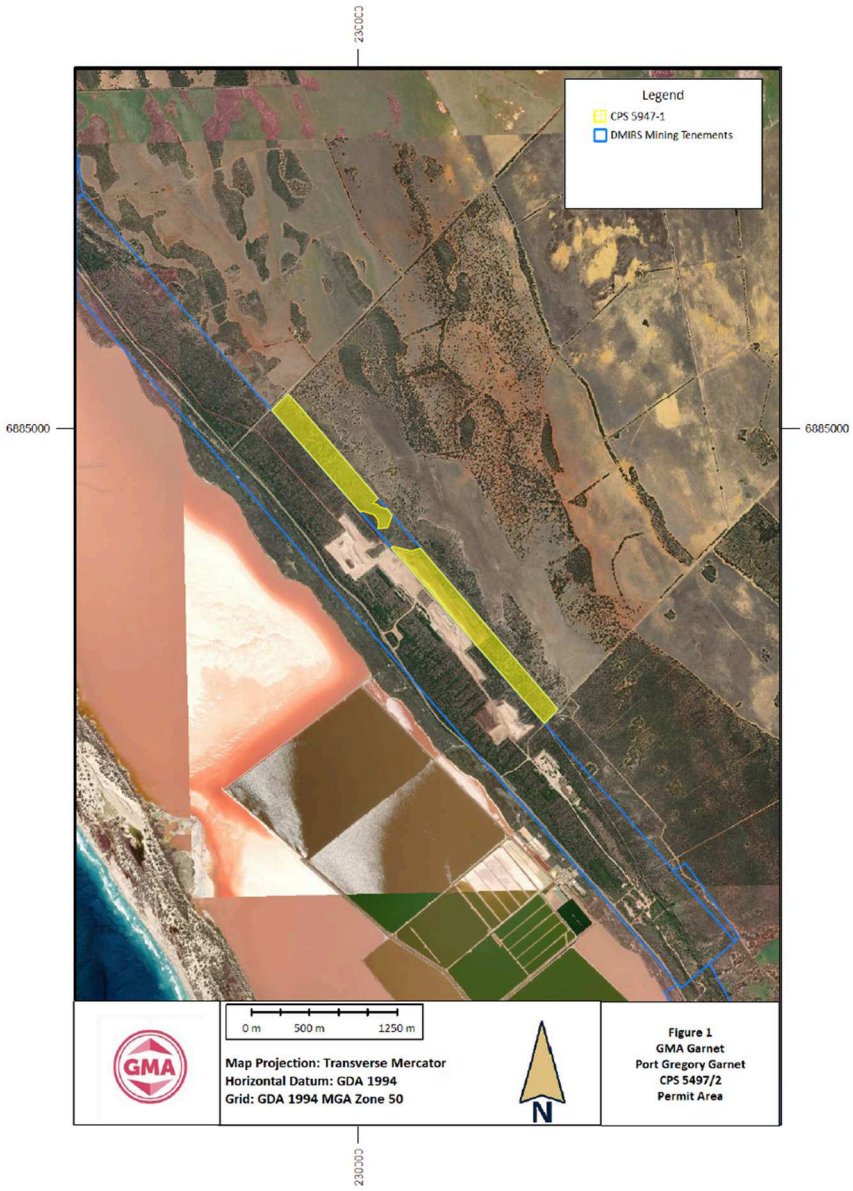

Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit (GMA, 2024b).

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)
- *Land Administration Act 1997* (WA)
- *Mining Act 1978* (WA)
- *Rights in Water and Irrigation Act 1914*

Relevant agreements (treaties) considered during the assessment include:
- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

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 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 from previous versions of the permit. The applicant provided the following control measures (GMA, 2024b):
- Clearing and Ground Disturbance Procedure;
- minimise clearing as part of planning;
- Rehabilitation Management Plan including progressively rehabilitate cleared areas, soil treatment, integration of topsoil and landform, direct seeding and long-term monitoring; and
- Weed Management Procedure.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 5947/2.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 23 February 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WCD2020/001) over the area under application (DPLH, 2024). This claim has been determined by the Federal Court on behalf of the claimant group, Yamatji Nation. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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

Other relevant authorisations required for the proposed land use include:
- A Programme of Work approved under the *Mining Act 1978*.
- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of a remnant patch of native vegetation in the intensive land use zone of Western Australia, adjacent to Hutt Lagoon Pink Lake and agricultural land (GIS Database). The predominant land use in the region is agriculture (91.4%), Crown land (2.2%), conservation and reserves (3%) (DoA, 2005).
Ecological linkage	The amendment area forms part of an important ecological linkage running north-west to south-east with Hutt Lagoon to the east and large areas of cleared farmland to the west (GHD, 2013b; GIS Database).
Conservation areas	There are two conservation areas within 10 kilometres of the amendment area: • Utcha Well Nature Reserve, approximately 6.1 kilometres northwest, and • DBCA Interested Freehold Land (11765343), approximately 10 kilometres southeast (GIS Database).
Vegetation description	The amendment area occurs within the Geraldton Hills subregion of Geraldton Sandplains (GES01) (GIS Database). The vegetation of the amendment 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 amendment area by GHD during August, 2013. The following vegetation associations were recorded within the amendment area (GHD, 2013a): • **mixed open heath on sandy limestone ridge** - high open shrubland of *Acacia rostellifera, Melaleuca cardiophylla, Grevillea argyrophylla*, over shrubland of *Olearia* sp. Kennedy Range, *Alyogyne huegelii*, over low shrubland of *Pimelea angustifolia, Diplopeltis petiolaris, Acanthocarpus preissii* over scattered grasses of **Avena barbata, Austrostipa* spp., over mixed herbs of **Lysimachia arvensis, Goodenia berardiana*, *Erodium* sp. with scattered climbers of **Cuscuta* sp., *Dioscorea hastifolia, Commicarpus australis*; • **low heath** - low open heath to low heath of *Melaleuca cardiophylla, Diplopeltis petiolaris, Bossiaea spinescens, Pimelea angustifolia, Opercularia vaginata*, over scattered grasses of **Avena barbata, Austrostipa* spp., over mixed herbs of **Sisymbrium irio, Roepera billardierei* with scattered climbers of *Dioscorea hastifolia*, with open rushes of *Desmocladus asper*; • **melaleuca thickets** - closed scrub of *Melaleuca cardiophylla* with mallee of *Eucalyptus* spp. over low shrubs of *Rhagodia latifolia, Lasiopetalum angustifolium* with scattered climbers of *Aphanopetalum clematideum, Dioscorea hastifolia*; and • **cleared/degraded** - cleared tracks and firebreaks, old pits with regrowth of *Acacia rostellifera*, pasture grasses and weeds. *denotes weed species. Mapping of vegetation types is provided in Appendix D.
Vegetation condition	Aerial imagery indicate the vegetation within the proposed clearing area is in Very Good to Completely Degraded (Keighery, 1994) condition (GIS Database). The full Keighery (1994) condition rating scale is provided in Appendix C. Mapping of vegetation condition is provided in Appendix D.
Climate and landform	The amendment area is mapped within elevations of 40-80 meters Australian Height Datum (AHD) (GIS Database). The climate for the Geraldton Sandplains bioregion is semi-arid, warm, and Mediterranean with an annual rainfall average of approximately 337.7 millimetres recorded at Kalbarri (BoM, 2024; CALM, 2002)
Soil description and land degradation risk	The landsystem is mapped as Tamala North 2 subsystem (231Ta_2) (GIS Database). This system is described as low hills with relict dunes and some limestone outcrop, and it forms a coastal band three to seven kilometres wide (DPIRD, 2024). The soil is described as brown, calcareous shallow sand with limestone (Emerge Associates, 2023; GIS Database). The amendment area is mapped to have high to extreme water, wind and phosphorus export land degradation risk factors (DPIRD, 2024).
Waterbodies and hydrogeography	The desktop assessment and aerial imagery indicated that there are no permanent waterbodies or major watercourses within the amendment area; however, numerous minor ephemeral drainage lines flowing towards Hutt Lagoon Pink Lake, which is approximately 0.58 kilometres from the amendment area (GIS Database). Hutt Lagoon System (WA035) is listed in the Directory of Nationally Important Wetlands in Australia (DCCEEW, 2024). The amendment area is located in the Kalbarri Sandplain hydrological zone described as undulating sandplain on silurian and devonian sediments of the Gascoyne Sub-Basin, some cretaceous sediments (DPIRD, 2024). Moderately dissected in places with laterite remnants (DPIRD, 2024). The amendment is within the Greenough River Catchment and the Gascoyne Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (GIS Database). There are no Public Drinking Water Source Areas within the amendment area or in the local surrounds (20 kilometres) and the mapped salinity is approximately 1000-3000 mg/L Total Dissolved Solids (TDS) which is described as brackish (BoM, 2024; GIS Database).

Flora	Two Priority flora species have been recorded within the amendment area (GHD, 2014). There are records of 6 Threatened flora and 29 Priority flora within 10 kilometres of the amendment area (GHD, 2013a; GIS Database).
Ecological communities	The nearest Priority Ecological Community (PEC) is Kalbarri ironstone community (Priority 1), located approximately 7.8 kilometres from the amendment area (GIS Database). There are no Threatened Ecological Communities within the amendment area or the local surrounds (20 kilometres) (GHD, 2013a; GIS Database).
Fauna	No Threatened or Priority fauna species have been recorded within the amendment area (GHD, 2013b; GIS Database). There are records of 33 conservation significant bird species within 10 kilometres of the amendment area (GIS Database).
Fauna habitat	Two broad habitat types were recorded within the amendment area (GHD, 2013b) • mixed scrub on sandy soils with limestone; and • low heath on limestone hill. The amendment area forms part of a habitat linkage, following the limestone escarpment present in the local and regional area (GHD, 2013b).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion - Geraldton Sandplains	3,136,037.83	1,404,424.32	44.78	568,255.10	18.12
IBRA Subregion - Geraldton Hills	1,964,262.65	901,446.88	45.89	355,757.17	18.11
Local Government - Shire of Northampton	1,258,428.76	930,228.68	73.92	230,957.58	18.35
Beard vegetation associations - State					
Veg Assoc No. 17	76,633.84	67,605.49	88.22	8,831.50	11.52
Veg Assoc No. 371	32,816.04	3,499.60	10.66	242.15	0.74
Beard vegetation associations - Bioregion					
Veg Assoc No. 17	54,078.08	45,159.85	83.51	6,067.99	11.22
Veg Assoc No. 371	32,807.53	3,499.10	10.67	242.15	0.74
Beard vegetation associations - subregion					
Veg Assoc No. 17	49,605.04	42,016.28	84.70	5,572.71	11.23
Veg Assoc No. 371	32,807.53	3,499.10	10.67	242.15	0.74

Government of Western Australia (2019)

A.3. Flora analysis table

The following table provides flora analysis of records within 10 kilometres of the amendment area and their likelihood of occurrence (GHD, 2013b). The review of conservation significant flora identified changes to Priority flora conservation listing (*Frankenia confusa* (P4)) and Threatened species locations that are no longer present within 10 kilometres include but are not limited to the following species: *Caladenia barbarella* (T), *Drummondita ericoides* (T), *Hypocalymma longifolium* (T) and *Isopogon uncinatus* (T) (Western Australian Herbarium, 1998-).

Taxon	EPBC Act Status	WC Act Status	DEC Status	Database Source	Project Area Within Known Range (10 km or less)	Project Area Within Known Habitat	*Likelihood of Occurrence in Project Area
Acacia latipes subsp. *licina*			P3	NM	Yes	Yes	Possible
Acacia pelophila			P1	NM	Yes	No	Unlikely
Anthocercis intricata			P3	NM	Yes	Yes	Possible
Blackallia nudiflora			P3	NM	Yes	Yes	Possible
Caladenia barbarella	En	T		EPBC	No	No	Unlikely
Caladenia bryceana subsp. *cracens*	Vu	T		EPBC	Yes	Yes	Possible
Caladenia elegans	En	T		EPBC	No	No	Unlikely
Caladenia hoffmanii	En	T		EPBC	Yes	Yes	Possible
Calytrix harvestiana			P2	NM	Yes	No	Unlikely
Calytrix pimeleoides			P3	NM	Yes	No	Unlikely
Drakaea concolor	Vu	T		EPBC, NM	Yes	Yes	Possible
Drummondita ericoides	En	T		EPBC	No	No	Unlikely
Eremophila microtheca			P4	NM	Yes	No	Unlikely
Eucalyptus cuprea	En	T		EPBC	No	No	Unlikely
Frankenia confusa			P2	NM	Yes	No	Unlikely
Gastrolobium propinquum			P3	NM	Yes	Yes	Possible
Grevillea triloba			P3	NM	Yes	Yes	Possible
Guichenotia quasicalva			P2	NM	Yes	No	Unlikely
Hemigenia pimelifolia			P2	NM	Yes	No	Unlikely
Hypocalymma longifolium	Vu	T		EPBC	Yes	No	Unlikely
Isopogon uncinatus	En	T		EPBC	No	No	Extremely Unlikely
Lasiopetalum oldfieldii subsp. *oldfieldii*			P3	NM	Yes	Yes	Possible
Liparophyllum congestiflorum			P4	NM	Yes	No	Unlikely
Prostanthera scutata			P2	NM	Yes	No	Unlikely
Pterostylis sinuata	En	T		EPBC	Yes	Yes	Possible
Ptilotus chortiphytus			P1	NM	Yes	No	Unlikely
Scaevola kallophylla			P4	NM	Yes	Yes	Possible
Scaevola oldfieldii			P3	NM	Yes	No	Unlikely
Teucrium sp. Hutt River (W.H. Butler 54)			P1	NM	Yes	No	Unlikely
Trithuria australis			P4	NM	Yes	No	Unlikely
Xanthoparmelia xanthomelanoides			P2	NM	Yes	No	Unlikely

Additionally, through a search of available databases, several species were identified as occurring within 10 kilometres of the amendment area (GHD, 2014; GIS Database).

Species name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify?
Corynotheca acanthoclada	P1	N	N	N?	<9	6	Y
Calectasia browneana	P2	N	N	N	<10	11	Y
Styphelia cernua	P2	N	N	N	<10	8	Y
Balladonia aervoides	P3	Possible	Possible	Possible	<4	16	Y
Melaleuca huttensis	P3	Y	Y	Y	0	17	Y
Diuris recurva	P4	N	N	N	<10	38	Y
Stachystemon nematophorus	P4	N	N	Y	<9	14	Y

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

A.4. Fauna analysis table

Desktop assessment of fauna records within 10 kilometres of the amendment area, excluding marine mammals (GIS Database).

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (km)
Curlew sandpiper (*Calidris ferruginea*)	CR	N	<3
Great knot (*Calidris tenuirostris*)	CR	N	<5
Carnaby's cockatoo (*Zanda latirostris*)	EN	N	<5
Lesser sand plover (*Charadrius mongolus*)	EN	N	<3
Red knot (*Calidris canutus*)	EN	N	<3
Greater sand plover (*Charadrius leschenaultii*)	VU	N	<3
Grey-tailed tattler (*Tringa brevipes*)	P4 & MI	N	<6
Bar-tailed godwit (*Limosa lapponica*)	MI	N	<5
Black-tailed godwit (*Limosa limosa*)	MI	N	<9
Caspian tern (*Hydroprogne caspia*)	MI	N	<3
Common greenshank (*Tringa nebularia*)	MI	N	<3
Common noddy (*Anous stolidus*)	MI	N	<5
Common sandpiper (*Actitis hypoleucos*)	MI	N	<3
Crested tern (*Thalasseus bergii*)	MI	N	<3
Fork-tailed swift (*Apus pacificus*)	MI	N	<5
Grey plover (*Pluvialis squatarola*)	MI	N	<3
Gull-billed tern (*Gelochelidon nilotica*)	MI	N	<4
Little curlew (*Numenius minutus*)	MI	N	<4
Long-toed stint (*Calidris subminuta*)	MI	N	<5
Marsh sandpiper (*Tringa stagnatilis*)	MI	N	<3
Osprey (*Pandion haliaetus*)	MI	N	<3
Pacific golden plover (*Pluvialis fulva*)	MI	N	<3
Pectoral sandpiper (*Calidris melanotos*)	MI	N	<5
Red-necked phalarope (*Phalaropus lobatus*)	MI	N	<5
Red-necked stint (*Calidris ruficollis*)	MI	N	<3
Ruddy turnstone (*Arenaria interpres*)	MI	N	<3
Ruff (*Philomachus pugnax*)	MI	N	<3
Sanderling (*Calidris alba*)	MI	N	<3
Sharp-tailed sandpiper (*Calidris acuminata*)	MI	N	<3
Terek sandpiper (*Xenus cinereus*)	MI	N	<5
Whimbrel (*Numenius phaeopus*)	MI	N	<3
Wood sandpiper (*Tringa glareola*)	MI	N	<3
Peregrine falcon (*Falco peregrinus*)	OS	N	<5

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

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: There have been no recent flora or vegetation surveys conducted over the amendment area since 2014 (GHD, 2014). There is one record of *Balladonia aervoides* (P3) recorded within 4 kilometres of the amendment area not previously recorded that has potential to occur (GIS Database), however it is unlikely to occur given records are mostly from Islands off the coast (Western Australian Herbarium, 1998-; GIS Database). Two records of Priority flora have been recorded within the amendment area: *Melaleuca huttensis* (P3) and *Anthocercis intricate* (P3) (GHD, 2014; Western Australian Herbarium, 1998-), however given large populations occur outside the amendment area, it is unlikely either of these species will be impacted by the proposed clearing (DPaW, 2015). A total of 12 introduced flora species were recorded within the amendment area (GHD, 2013a). None of the species are listed as Weeds of National Significance or declared pest plants in Western Australia under the *Biosecurity and Agriculture Management Act 2007*, however weeds have potential to out-compete native flora and reduce biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.	Not likely to be at variance as per CPS 5947/2	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: There have been no recent fauna surveys over the amendment area since 2013 (GHD, 2013a). The amendment area forms part of a north-west to south-east habitat linkage (GHD, 2013b). The area proposed to be cleared is not considered to fragment the existing linkage, however it does reduce the width of the wildlife corridor (GHD, 2013b). Numerous migratory bird species have been recorded within 10 kilometres of the amendment area at Hutt Lagoon, Utcha Well and along the coast (A.4; GIS Database), however, given these areas are geographically isolated, the proposed clearing is unlikely to impact the species utilising these areas. Carnaby's black cockatoo has been recorded in the local area, however an assessment of adjacent area (CPS 9707/2) that consisted of similar vegetation, identified there is no suitable roosting or foraging habitat present (GHD, 2020).	May be at variance as per CPS 5947/2	No
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: There are no records of Threatened flora within the amendment area and given previous disturbances and lack of suitable habitat, it is unlikely that any will occur (GHD, 2013a; GHD, 2014; GIS Database).	Not likely to be at variance as per CPS 5947/2	No
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared does not contain species that indicate a threatened ecological community (GHD, 2013a; GIS Database).	Not likely to be at variance as per CPS 5947/2	No
Environmental value: significant remnant vegetation and conservation areas		

Assessment against the clearing principles	Variance level	Is further consideration required?
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: Vegetation type '*Acacia rostellifera'* scrub was previously identified between the two polygons of the amendment area that is similar to Beard vegetation association 371 (GIS Database) which has approximately 10.6% of its pre-European extent remaining (Government of Western Australia, 2019). During previous assessment, the proponent advised a 10 metre buffer from this vegetation type will be maintained to minimise potential impacts (GHD, 2014) and an exclusion zone was established. Cleared areas have progressively undergone rehabilitation activities which is a requirement under the *Mining Act 1978*.	Not likely to be at variance as per CPS 5947/2	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area (GIS Database), the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance as per CPS 5947/2	No
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: Given no major water courses or wetlands are recorded within the amendment area (GIS Database), the proposed clearing is unlikely to impact vegetation growing in association with a watercourse or wetland. None of the vegetation types are described as having an association with a watercourse or wetland (GHD, 2013b).	Not likely to be at variance as per CPS 5947/2	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to wind erosion (DPIRD, 2024). Noting the location of the amendment area, the proposed clearing is likely to have an appreciable impact on land degradation. Erosion control measures have been identified by the proponent with progressive rehabilitation and re-contouring to ensure pre-mining landforms are reinstated (GMA, 2024b). Potential impacts associated with wind erosion can be minimised by the existing staged clearing condition to ensure only areas that are needed are cleared.	At variance as per CPS 5947/2	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given no permanent water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality (GIS Database). There are numerous minor ephemeral drainage lines flowing towards Hutt Lagoon Pink Lake, however none were recorded within the application area during field survey (GHD, 2013a). The porous nature of soils within the amendment area mean rainfall infiltrates rapidly directly through sand and limestone to groundwater (GMA, 2024b). Port Gregory Water Reserve pursuant to the CAWS Act, located 800 metres east of the amendment area was previously considered. This Public Drinking Water Source Area has since been removed as of 3 August 2016 (DWER, 2023).	Not likely to be at variance as per CPS 5947/2	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 (GHD, 2013b; GIS Database).	Not likely to be at variance as per CPS 5947/2	No

Appendix C. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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

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

Appendix D. Mapping of vegetation type and vegetation condition

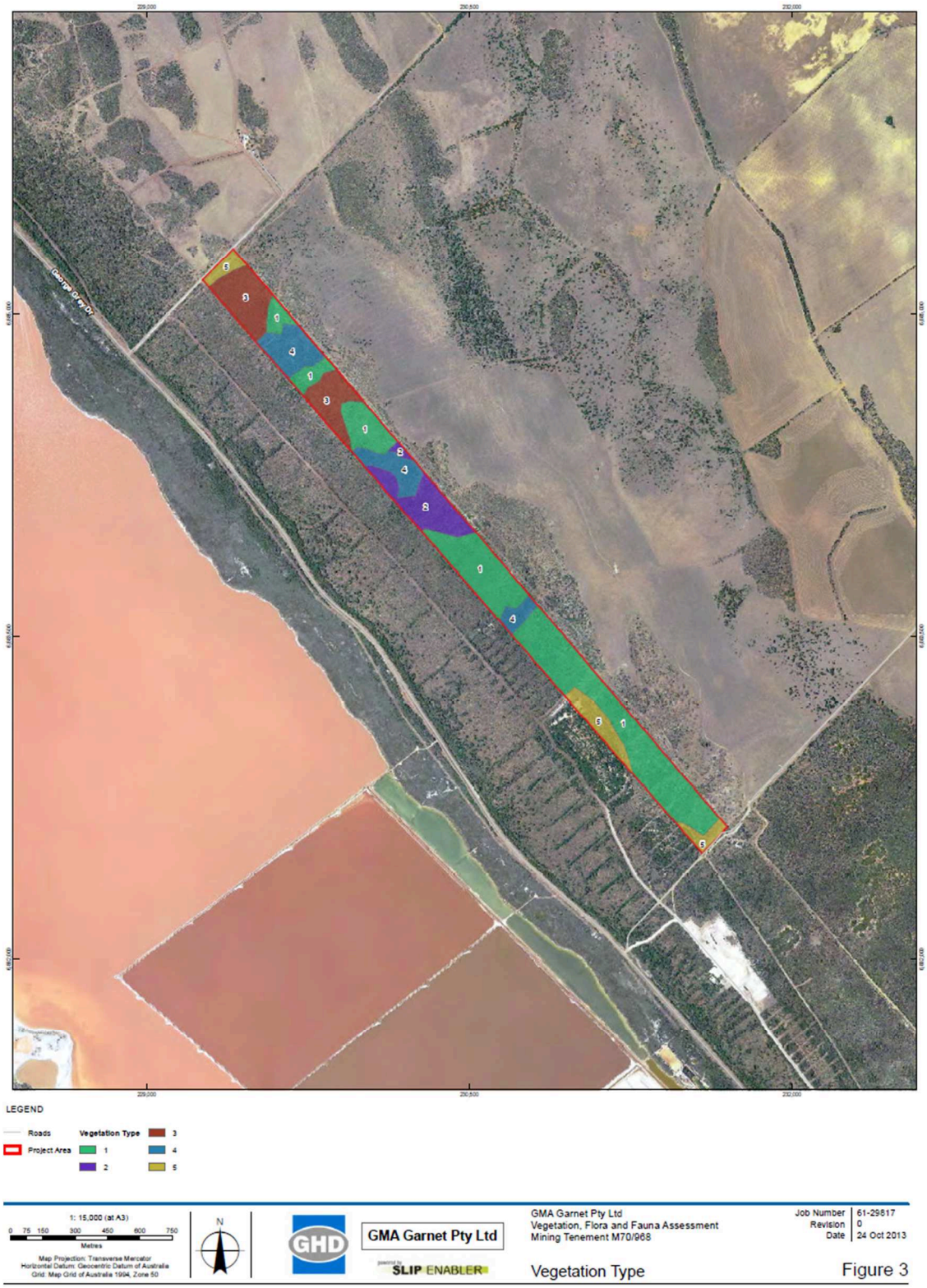

Figure 2. Map of vegetation types (GHD, 2013a).

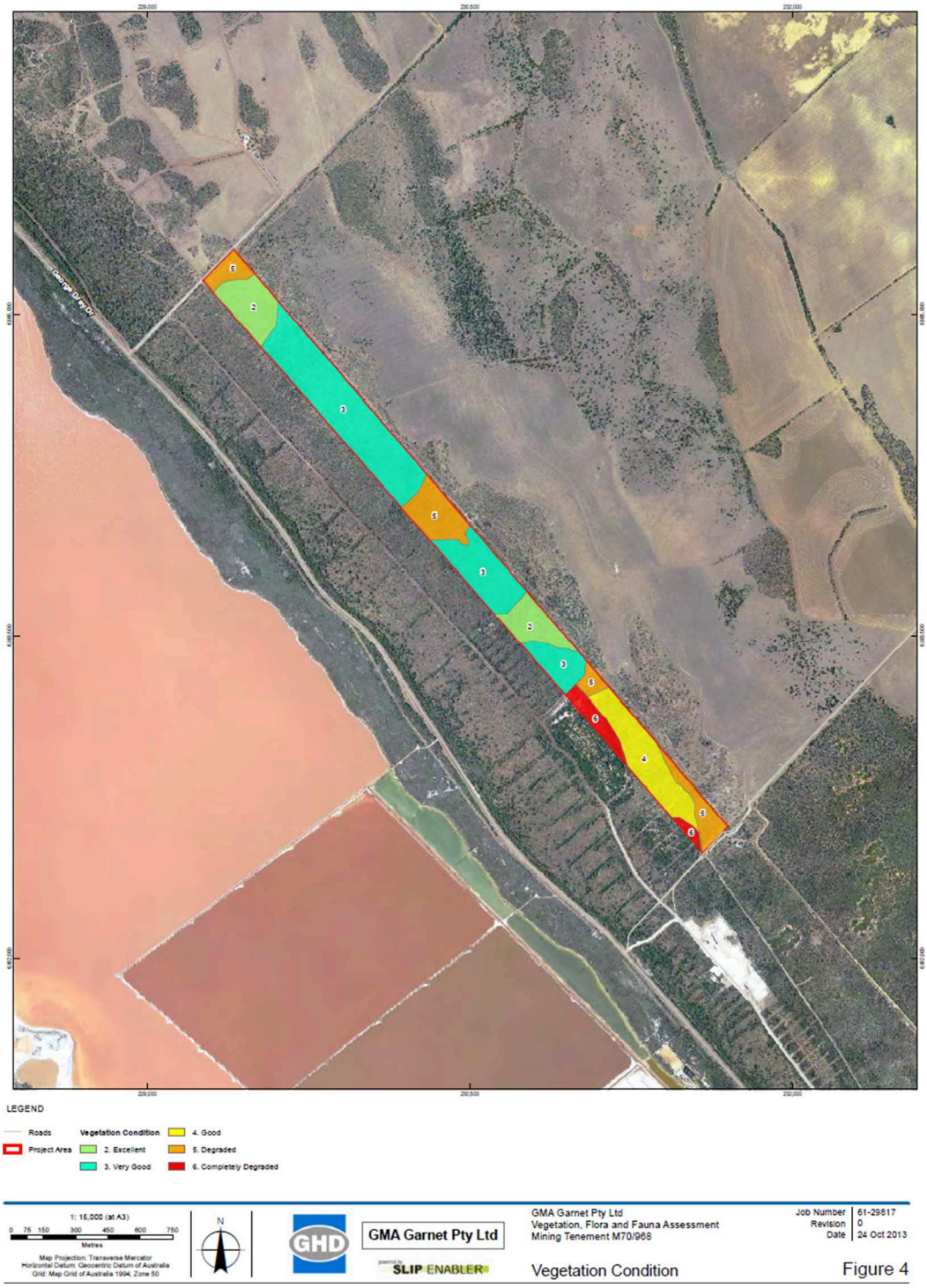

Figure 3. Map of vegetation condition (GHD, 2013a).

Appendix E. Sources of information

E.1.GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Contours (DPIRD-073)
- 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)
- Hydrological Zones of Western Australia (DPIRD-069)

- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

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Emerge Associates (2023) Rehabilitation Monitoring Lynton Mine, prepared for GMA Garnet Pty Ltd, November 2023.

Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

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GHD (2013a) GMA Port Gregory Mine Tenement M70/968 Vegetation, Flora and Fauna Assessment. Report Prepared by GHD for GMA Garnet Pty Ltd, October 2013.

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GHD (2013b) Lynton Mine Extension M70/968 Mining Proposal. Report Prepared by GHD for GMA Garnet Pty Ltd, December 2013.

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4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
BoM	Bureau of Meteorology, Australian Government
CAWS Act	*Country Areas Water Supply Act 1947,* Western Australia
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*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)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*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}:-

T **Threatened species:**

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

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

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

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

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

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

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

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

VU **Vulnerable species**

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

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

Extinct Species:

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

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

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

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

Specially protected species:

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

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

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

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

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

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

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

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

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

P **Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories

are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

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

P1 **Priority One - Poorly-known species**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

(j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.