



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	6089/4
Permit type:	Purpose Permit
Applicant name:	Evolution Mining (Phoenix) Pty Ltd
Application received:	2 February 2024
Application area:	131.7 hectares
Purpose of clearing:	Mineral Production
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 16/16 Mining Lease 16/215 Mining Lease 16/444
Location (LGA area):	Shire of Coolgardie
Colloquial name:	Kintore Project

1.2. Description of clearing activities

Evolution Mining (Phoenix) Pty Ltd proposes to clear up to 131.7 hectares of native vegetation within a boundary of approximately 157.7 hectares, for the purpose of mining related infrastructure (Evolution Mining (Phoenix) Pty Ltd, 2024). The project is located approximately 24.5 kilometres south-southwest of Ora Banda, within the Shire of Coolgardie (GIS Database).

The application is to allow for the continued development of an open cut pit (Phoenix Gold Limited, 2014b).

Clearing permit CPS 6089/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 5 June 2014 and was valid from 28 June 2014 to 28 June 2019. The permit authorised the clearing of up to 131.7 hectares of native vegetation within a boundary of approximately 157.7 hectares, for the purpose of mineral production.

CPS 6089/2 was granted on 15 September 2016, amending the permit to change the name of the permit holder from Phoenix Gold Limited to Evolution Mining (Phoenix) Pty Ltd.

CPS 6809/3 was granted on 27 June 2019, amending the permit to extend the permit duration by five years.

On 2 February 2024, the Permit Holder applied to amend CPS 6809/3 to amend the permit duration by an additional five years.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	28 June 2024
Decision area:	131.7 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) on 2 February 2024. DEMIRS advertised the application for a public comment for a period of seven days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix C), supporting information provided by the applicant including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix A), 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 has not changed since the assessment for CPS 6089/3. After consideration of the available information, the Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environmental values. The Delegated Officer decided to grant the amended clearing permit with the existing permit conditions with the exception of the additional condition requiring the Permit Holder to undertake slow directional clearing and amending current flora condition requiring targeted surveys.

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 area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Evolution Mining (Phoenix) (2024) have outlined they maintain but not limited to, the following avoidance and mitigation measures:

- the mine layout has been planned to allow the minimal amount of clearing to occur by utilising existing disturbance and mine infrastructure positioned deliberately to reduce impacts on drainage channels;
- clearing will be conducted on an 'as required' basis;
- survey pickups will be carried out before and after clearing;
- as areas become available, Evolution Mining (Phoenix) will rehabilitate the area progressively and final rehabilitation will occur upon completion of mining;
- clearing will be undertaken progressively;
- internal vegetation clearing procedures will be maintained;
- areas to be cleared will be delineated with survey pegs and flagging tape before clearing is undertaken; and
- potential flow paths will be identified and clearing within these areas will be minimised or avoided where possible (Evolution Mining (Phoenix), 2024; Phoenix Gold Limited, 2014a).

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

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed from the Clearing Permit Decision Report CPS 6089/3.

No Threatened flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within or in close proximity to the application area (GIS Database), and none were found during the flora and vegetation survey (Botanica Consulting, 2014a; 2014b). A targeted survey was conducted across the entire application area in December of 2013 and January of 2014, one individual Priority 2 flora species, *Eremophila praecox*, was recorded within the application area (Botanica Consulting, 2014a). No additional flora surveys have been conducted in the last decade, therefore a review of the current data was completed. Three additional Priority flora species (*Austrostipa burgesiana* – Priority 1, *Eucalyptus educta* – Priority 2 and *Gompholobium cinereum* – Priority 3) have been recorded within 20 kilometres of the application area and are considered to possibly occur due to the presence of suitable habitat (GIS Database). Impacts to these Priority flora species may be managed by amending the current flora condition requiring targeted surveys for the four above mentioned flora species.

Fauna habitat was defined according to the six vegetation associations identified by a flora and vegetation assessment (Botanica Consulting, 2014b; Harewood, 2014). The habitat types within the application area are reportedly widespread and common throughout the region and are not considered to represent significant habitat for fauna, however, the application area may be used as part of a larger home range (Harewood, 2014). Potential impacts to conservation significant fauna as a result of the proposed clearing may be minimised by implementing a condition requiring the Permit Holder to undertake slow directional clearing to allow fauna to move into the adjacent native vegetation ahead of the clearing.

Soil types within the application area vary between shallow sands and brown calcareous clay, and topsoil is approximately 10 centimetres deep over Archaean rock (Phoenix Gold Limited, 2014b). Erosion may occur due to the removal of large vegetation, especially within drainage channels. Given the size of the proposed clearing (131.7 hectares), there is an increased risk of erosion if large areas are cleared and not utilised. Potential degradation as a result of the proposed clearing may be minimised by continued implementation of a staged clearing condition.

One minor drainage line transects the application area (GIS Database). Phoenix Gold Limited (2014b) has committed to avoiding clearing within drainage lines where possible, and will stabilise any disturbed drainage lines to minimise erosion. Further impacts

within non-perennial watercourses may be minimised by the continued implementation of a vegetation management condition, requiring the Permit Holder to avoid riparian vegetation where possible and maintain existing watercourses.

There are no conservation areas located within the area proposed to be cleared (GIS Database). The nearest conservation area is the former Credo pastoral lease, which is former leasehold proposed for conservation. It is located approximately 15.5 kilometres northwest of the application area (GIS Database). The proposed amendment is unlikely to have any impact on any conservation areas.

Based on the current environmental information, the amendment to extend the permit duration is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 6089/3 are considered adequate to manage the impacts of the clearing.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 20 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 are no native title claims over the area under application (DPLH, 2024). The mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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

Other relevant authorisations required for the proposed land use include:

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

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). The area is located within the Eastern Goldfield subregion of the Coolgardie Interim Biogeographic Regionalisation for Australia bioregion (GIS Database). The Eastern Goldfield subregion primary land uses include pasture land, nature reserves, mining, exploration activities and freehold (Botanica Consulting, 2014b).
Ecological linkage	The application area is not known to be an important ecological linkage (GIS Database).
Conservation areas	There are no conservation areas located within the area proposed to be cleared (GIS Database). The nearest conservation area is the former Credo pastoral lease, which is former leasehold proposed for conservation. It is located approximately 15.5 kilometres northwest of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <ul style="list-style-type: none"> 468: Medium woodland; salmon gum and goldfields blackbutt (GIS Database). <p>A flora and vegetation survey was conducted over the application area by Botanica Consulting during December of 2013 and January and August of 2014 (Botanica Consulting, 2014a; 2014b). The following six vegetation associations were recorded within the application area (Botanica Consulting, 2014b):</p> <ul style="list-style-type: none"> Low woodland of <i>Eucalyptus campaspe</i> and <i>E. salmonophloia</i> over low scrub of <i>Atriplex nummularia</i> subsp. <i>spatulata</i>, <i>Eremophila dempsteri</i> and dwarf scrub of <i>Atriplex vesicaria</i>; Open Low Woodland of <i>Eucalyptus clelandii</i>/ <i>E. griffithsii</i>/ <i>Casuarina pauper</i> over low scrub of <i>Dodonaea lobulata</i>/ <i>Scaevola spinescens</i>/ <i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i> and <i>Hakea kippistiana</i> and dwarf scrub of <i>Olearia muelleri</i> and <i>Ptilotus obovatus</i> on breakaway; Low Woodland of <i>Eucalyptus clelandii</i> over open low scrub of <i>Atriplex nummularia</i> subsp. <i>spatulata</i> and dwarf scrub of <i>Atriplex vesicaria</i>/ <i>Maireana pentatropis</i> and <i>Olearia muelleri</i>; Low Woodland of <i>Eucalyptus griffithsii</i> over low scrub of <i>Acacia</i> sp. narrow phyllode (B.R. Maslin 7831)/ <i>Dodonaea lobulata</i> and dwarf scrub of <i>Olearia muelleri</i> and <i>Ptilotus obovatus</i>; Low Woodland of <i>Eucalyptus salmonophloia</i> over open low scrub of <i>Atriplex nummularia</i> subsp. <i>spatulata</i> and dwarf scrub of <i>Tecticornia disarticulata</i>; and Low Woodland of <i>Eucalyptus griffithsii</i> over low scrub of <i>Acacia</i> sp. narrow phyllode (B.R. Maslin 7831)/ <i>Eremophila alternifolia</i> and low heath of <i>Sclerolaena diacantha</i>/ <i>Ptilotus obovatus</i> and <i>Atriplex vesicaria</i> in drainage line.
Vegetation condition	<p>The vegetation survey (Botanica Consulting, 2014b) indicates the vegetation within the proposed clearing area is in 'Good' (Keighery, 1994) condition, described as</p> <ul style="list-style-type: none"> 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. <p>Approximately 38.76 hectares of vegetation has been disturbed/cleared from historical mining operations, resulting in some vegetation in 'completely degraded' condition (GIS Database). The full Keighery (1994) condition rating scale is provided in Appendix B.</p>
Climate and landform	The climate of the Eastern Goldfields subregion is characterised as semi-arid (BoM, 2024). The area experiences an average rainfall of 246.6 millimetres (BoM, 2024).
Soil description and land degradation risk	<p>The soils within the application area are mapped as:</p> <ul style="list-style-type: none"> BB5 Atlas System (265g4): Rocky ranges and hills of greenstones-basic igneous rocks (DPIRD, 2024). <p>This region is comprised of undulating plains separated by low hills and greenstone ridges to the west, and horsts of Proterozoic granulite to the east (Phoenix Gold Limited, 2014b). Soil types within the application area vary between shallow sands and brown calcareous clay, and topsoil is approximately 10 centimetres deep over Archaean rock (Phoenix Gold Limited, 2014b).</p>
Waterbodies	The desktop assessment and aerial imagery indicated that there are no permanent surface water features within the application area, however, one minor drainage line transects the application area (GIS Database).
Hydrogeography	The application area is not mapped within a proclaimed public drinking water area (GIS Database). The area is mapped within the Goldfields Groundwater Area, proclaimed under the Rights in Water Irrigation (RIWI) Act (GIS Database).

Characteristic	Details
Flora	No threatened flora have been recorded within the application area (Botanica Consulting 2014a; 2014b; GIS Database). One priority flora was recorded within the application area (Botanica Consulting, 2014a) and three additional priority flora species have been recorded within 20 kilometres (GIS Database).
Ecological communities	The application area is not located within any known or mapped Threatened or Priority Ecological Community (TEC) (Botanica Consulting 2014a; 2014b; GIS Database).
Fauna	No conservation significant fauna have been recorded within the application area (Greg Harewood, 2014; GIS Database). Fourteen conservation significant fauna species have been recorded within 40 kilometres of the application area (GIS Database).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion Coolgardie	12,912,204.35	12,648,491.39	97.96	2,114,349.37	16.37
Beard vegetation associations - State					
Veg Assoc No. 468	592,022.32	583,902.76	98.63	135,197.44	22.84
Beard vegetation associations - Bioregion					
Veg Assoc No. 468	583,357.71	575,360.61	98.63	130,719.16	22.41

Government of Western Australia (2019)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix C.1), and biological survey information (Botanica Consulting 2014a; 2014b; Harewood 2013; 2014; Western Australian Herbarium, 1998-; GIS Database), impacts to the following conservation significant flora and fauna required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Austrostipa burgesiana</i>	1	Y	<20	1
<i>Eremophila praecox</i>	2	Y	0	37
<i>Eucalyptus educta</i>	2	Y	<11	46
<i>Gompholobium cinereum</i>	3	Y	<13	18

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

A.4. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
<i>Actitis hypoleucos</i>	common sandpiper	MI	<22	N
<i>Arenaria interpres</i>	ruddy turnstone	MI	<23	N
<i>Branchinella denticulata</i>	a fairy shrimp (Carnavon to Kalgoorlie)	P3	<37	N
<i>Calidris acuminata</i>	sharp-tailed sandpiper	MI	<20	N
<i>Calidris ferruginea</i>	curlew sandpiper	CR	<20	N
<i>Calidris ruficollis</i>	red-necked stint	MI	<20	N
<i>Charadrius veredus</i>	oriental plover	MI	<22	N
<i>Falco peregrinus</i>	peregrine falcon	OS	<23	Y

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
<i>Leipoa ocellata</i>	malleefowl	VU	<12	Y
<i>Oxyura australis</i>	blue-billed duck	P4	<23	N
<i>Plegadis falcinellus</i>	glossy ibis	MI	<22	N
<i>Thinornis rubricollis</i>	hooded plover, hooded dotterel	P4	<38	N
<i>Tringa glareola</i>	wood sandpiper	MI	<23	N
<i>Tringa nebularia</i>	common greenshank	MI	<20	N

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

Appendix A. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>A flora and vegetation assessment was conducted over part of the application area by Botanica Consulting (2014) on 20 December 2013 and 7 January 2014. Six vegetation associations comprising a total of 73 flora taxa from 20 families and 33 genera were identified, which paired with statistical tests for similarity was not considered to represent an area of high floristic diversity (Botanica Consulting, 2014b). A Level 1 desktop fauna survey, conducted by Harewood (2014), classified habitat types based on the vegetation associations identified by Botanica Consulting (2014b). Fauna habitat within the application area is advised to be widespread and common throughout the region (Harewood, 2014).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	No
<p><u>Principle (b):</u> "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."</p> <p><u>Assessment:</u></p> <p>The habitat types within the application area are reportedly widespread and common throughout the region and are not considered to represent significant habitat for fauna (Harewood, 2014).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	No
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Botanica Consulting, 2014a; 2014b; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	No
<p><u>Principle (d):</u> "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."</p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (Botanica Consulting, 2014a; 2014b; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> "Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</p> <p><u>Assessment:</u></p> <p>The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of</p>	<p>Not at variance</p> <p>(as per CPS 6089/3)</p>	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Australia, 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.		
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	<p>No</p>
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given a minor drainage line transects the application area, the proposed clearing is likely to impact on- or off-site hydrology and water quality. This may be managed through a flora management condition which requires riparian vegetation to be avoided where possible and waterflow to be maintained.</p>	<p>May be at variance</p> <p>(as per CPS 6089/3)</p>	<p>No</p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Erosion may occur due to the removal of large vegetation, especially within drainage channels. To minimise the risk of erosion, Evolution Mining (Phoenix) have made several clearing commitments, as follows:</p> <ul style="list-style-type: none"> • clearing within drainage channels and major vegetation will be minimised; • access tracks which intercept drainage channels will be elevated using waste rock; • culverts will be used to maintain water flow; and • drainage channels which are cleared for mine infrastructure will be stabilised by rock armour bunding (Phoenix Gold Limited, 2014b). <p>Given the size of the proposed clearing (131.7 hectares), there is an increased risk of erosion if large areas are cleared and not utilised. Potential degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.</p>	<p>May be at variance</p> <p>(as per CPS 6089/3)</p>	<p>No</p>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given a minor drainage line transects the application area, the proposed clearing may impact surface or groundwater water quality. Evolution Mining (Phoenix) has committed to avoiding clearing within drainage lines where possible and will stabilise any disturbed drainage lines to minimise erosion (Phoenix Gold Limited, 2014b). Further impacts within non-perennial watercourses may be minimised by the implementation of a water management condition.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	<p>No</p>
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>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 (GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6089/3)</p>	<p>No</p>

Appendix B. 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 C. Sources of information

C.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)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (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)

C.2. References

- Botanica Consulting (2014a) Kintore Project Target Survey. Report prepared by for Phoenix Gold Limited, August 2014.
- Botanica Consulting (2014b) Level 1 Flora and Vegetation Survey for the Kintore Project. Report prepared for Phoenix Gold Limited, January 2014.
- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Weather Station # 012038. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 8 April 2024).

- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024) Species Profile and Threats Database (SPRAT). Available from <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl> (Accessed 8 April 2024).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
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4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union

PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

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

T **Threatened species:**

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

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

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

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

CR **Critically endangered species**

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

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

EN **Endangered species**

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

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

VU **Vulnerable species**

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

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

Extinct Species:

EX **Extinct species**

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

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

EW **Extinct in the wild species**

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

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

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species;

cetaceans; species subject to international agreement; or species otherwise in need of special protection.

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

MI

Migratory species

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

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

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

CD

Species of special conservation interest (conservation dependent fauna)

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

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

OS

Other specially protected species

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

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

P

Priority species:

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

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

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

P1

Priority One - Poorly-known species

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

P2

Priority Two - Poorly-known species

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

P3

Priority Three - Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey

requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4

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

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

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

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

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.