



Clearing Permit Decision Report

Application details and outcomes

1.1. Permit application details

Permit number:	4991/3
Permit type:	Purpose Permit
Applicant name:	Hamersley Iron Pty Ltd
Application received:	1 February 2023
Application area:	12 hectares
Purpose of clearing:	Mineral Exploration, Hydrogeological Drilling, Access Tracks and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	<i>Iron Ore (Hamersley Range) Agreement Act 1963</i> , Mineral Lease 4SA (AML 70/4)
Location (LGA area/s):	Shire of Ashburton
Colloquial name:	Mt Wall West Project

1.2. Description of clearing activities

Hamersley Iron Pty Ltd proposes to clear up to 12 hectares of native vegetation within a broader boundary of approximately 166.2 hectares for the purpose of undertaking mineral exploration, hydrogeological drilling, access tracks and associated activities. The project is located approximately 115 kilometres west of Tom Price within the Shire of Ashburton.

The application is to allow for ongoing access to this area as there is potential further work to be undertaken (Rio Tinto, 2022). The most recent annual clearing report states that 1.58 hectares has been cleared, with 0.44 hectares rehabilitated as of 31 December 2021 (Rio Tinto, 2022). Spatial data recently provided by Rio Tinto (2023a) however states that a total of 2.06 hectares has been cleared under the permit, of which 0.46 hectares has been rehabilitated.

Clearing permit CPS 4991/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 28 June 2012 and was valid from to 21 July 2012 to 31 May 2022. The permit authorised the clearing of up to 5.2 hectares of native vegetation within a boundary of approximately 110 hectares, for the purpose of mineral exploration and access tracks.

CPS 4991/2 was granted on 8 December 2016, amending the permit to change the authorised purpose of clearing to mineral exploration, hydrogeological drilling, access tracks and associated activities, increase the amount of clearing authorised to 12 hectares, increase the permit boundary to approximately 166 hectares, change the annual reporting dates, and extend the permit duration to 31 December 2027.

On 1 February 2023, the Permit Holder applied to amend CPS 4991/2 to extend the period in which clearing is authorised to 31 December 2026 and extend the permit duration to 31 December 2032. The amount of clearing authorised and permit boundary remain the same.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	28 July 2023
Decision area:	12 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 1 February 2023. DMIRS advertised the application for a 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 B), relevant datasets (Appendix F), supporting information provided by the applicant including the results of a flora and vegetation survey, fauna habitat assessment survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 0), relevant planning instruments and any other matters considered relevant to the assessment (Section 0). The Delegated Officer also took into consideration the purpose of the clearing to facilitate exploration activities.

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;
- impacts to conservation significant flora;

- the loss of native vegetation that may provide foraging or dispersal habitat for conservation significant fauna; and
- impacts to riparian vegetation.

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 conditions currently imposed on clearing permit CPS 4991/2 are considered adequate to manage the impacts of clearing:

- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- retain cleared vegetation and topsoil and respread this on areas already cleared to undertake revegetation and rehabilitation.

The following standard conditions were not imposed on clearing permit CPS 4991/2, however will be imposed on this version:

- avoid, minimise to reduce the impacts and extent of clearing; and
- vegetation management condition to minimise the clearing to riparian vegetation where practicable and to maintain surface water flows and/or reinstate water flow downstream into existing natural drainage lines.

The assessment has not significantly changed since the assessment for CPS 4991/2, except in the case of principle (a) and principle (f). A 2016 biological survey was considered during this assessment which was not incorporated into the assessment for CPS 4991/2. Due to the updated environmental information, a reassessment of the clearing principles revealed there will be impacts to riparian vegetation, and may be impacts to priority flora.

The Delegated Officer determined that the proposed duration extension of five years is not likely to lead to an unacceptable risk to environmental values. Given the biological information provided is from 2016, if further amendments are sought for this permit, new survey information will be required at the point of submission.

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)*
- *Iron Ore (Hamersley Range) Agreement Act 1963*

Relevant agreements (treatys) 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 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

Detailed assessment of application

Avoidance and mitigation measures

Rio Tinto (2023b) has stated that the proposed clearing will be planned and undertaken to require as minimal clearing as possible, such as utilising existing tracks. In addition, they have also stated that areas of environmental significance will be avoided (Rio Tinto, 2023b).

Assessment of impacts on environmental values

A review of current environmental information reveals that the assessment against the clearing principles has not changed significantly from the clearing permit decision report CPS 4991/2, with the exception of principles (a) and (f). Principle (a) is now may be at variance and principle (f) is now at variance.

Compared to the previous versions of the permit, updated environmental information was considered during this assessment, in the form of a flora and vegetation survey, and fauna habitat assessment and fauna species likelihood (Rio Tinto, 2016). This newer information required further discussion.

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

Assessment

FLORA

A flora and vegetation survey was conducted over the application area and areas adjacent by Rio Tinto over three site visits during March 2015, April 2015, and April 2016. This survey recorded four priority flora species:

- *Indigofera rivularis* (P3, formerly named *Indigofera* sp. Bungaroo Creek)
- *Ptilotus mollis* (P4)
- *Sida* sp. Barlee Range (P4)
- *Triodia pisolitica* (P3, formerly named *Triodia* sp. Robe River)

All four species are restricted to one or two bioregions, however their ranges within those regions are wide ranging with 43 to 64 known locations from the Western Australian Herbarium (1998-).

Rio Tinto (2016) maintains their own flora database, with *Indigofera rivularis* recorded at 2,131 locations, *Ptilotus mollis* recorded at 226 locations, *Sida* sp. Barlee Range recorded at 1,594 locations, and *Triodia pisolitica* recorded at 3,443 locations. These numbers may not accurately reflect Rio Tinto's current flora database given they were provided in 2016 and individuals outside the application area may have been cleared, thus there is a potential for there to be more or less population locations in 2023 (Rio Tinto, 2023a).

Below states the total number of individuals recorded within the application area during the 2015-2016 site visits, with a calculated maximum impact to Rio Tinto's total individuals recorded across locations (Rio Tinto, 2016).

Species	Total individuals recorded within application area	Total individuals within Rio Tinto database	Maximum impact to species if all individuals were cleared (%)
<i>Indigofera rivularis</i>	185	17,211	1.07
<i>Ptilotus mollis</i>	201	4,559	4.41
<i>Sida</i> sp. Barlee Range	252	10,832	2.33
<i>Triodia pisolitica</i>	5,333	238,760	2.23

Based on the above percentages, the maximum impact to the recorded species would be below 5% (Rio Tinto, 2016). In addition, no priority flora have been cleared within the permit area to date (Rio Tinto, 2023a).

Given that the proposed clearing is for up to 12 hectares within a boundary of approximately 166.2 hectares, it is unlikely that the maximum impact to these species will occur and would be much lower. Additional information from Rio Tinto (2023a) states that within their internal database they currently have:

Species	Uncleared total individuals within Rio Tinto database
<i>Indigofera rivularis</i>	29,539
<i>Ptilotus mollis</i>	6,570
<i>Sida</i> sp. Barlee Range	12,242
<i>Triodia pisolitica</i>	318,016

Thus the maximum impact to the recorded species is likely to be lower than the impact calculated from 2016 records (Rio Tinto, 2016). In addition, there are numerous recorded locations within the local area (50 kilometres) of these species within the Western Australian Herbarium (1998-), with the exception of *Sida* sp. Barlee Range, which has one location recorded (GIS Database).

There is a potential that individuals of these species will be lost through the proposed clearing, however, the overall impact is relatively low at a regional and local scale and unlikely to alter the conservation status of any of them.

FAUNA

Five board fauna habitats were identified within the application area from a field assessments undertaken in March 2015, April 2015, and April 2016 (Rio Tinto, 2016; Table 1). These habitats were identified and mapped based on common landforms and vegetation types know within the application area (Rio Tinto, 2016; Table 1).

None of the fauna habitats were considered to be restricted to the application area or likely to provide significant habitat for any conservation significant fauna species (Rio Tinto, 2016).

No evidence of conservation significant fauna species were recorded opportunistically during the site visits (Rio Tinto, 2016). The likelihood of a number of conservation significant fauna species was determined following the site visits by reviewing available habitats and suitability for these species. Six species have the 'potential' to occur within the habitats available in the application area, these species are:

- northern quoll (*Dasyurus hallucatus*, EN)
- ghost bat (*Macroderma gigas*, VU)
- Pilbara leaf-nosed bat (*Rhinonictis aurantia* (Pilbara), VU)

- western pebble-mound mouse, ngadji (*Pseudomys chapmani*, P4)
- Pilbara olive python (*Liasis olivaceus barroni*, VU)
- peregrine falcon (*Falco peregrinus*, OS)

The above species are not considered reliant upon the habitats mapped within the application area, however they may provide some foraging or dispersal habitat to these species (Rio Tinto, 2016). The overall impact from clearing up to 12 hectares of native vegetation is unlikely to cause a significant loss to available habitats given the surrounding area remains largely uncleared (Rio Tinto, 2016; GIS Database).

Conclusion

Due to the general low impact of the proposed clearing (12 hectares for exploration), and the existing requirement to revegetate and rehabilitate cleared areas, the above impacts will not require specific flora or fauna management conditions.

There may be impacts to individual priority flora from the proposed clearing. Given the extent and records maintained by Rio Tinto (2013a), the loss of individuals within the application area is unlikely to significantly impact the conservation status of these species. The individuals potentially lost through clearing may be reinstated through rehabilitation efforts currently required under the existing permit which will be maintained for CPS 4991/3.

As no evidence of conservation significant fauna species considered potentially occurring were identified from the 2015 and 2016 field assessments, no fauna management condition is recommended. While the field assessments are dated, none of the habitats were identified as critical for any of the potentially occurring conservation significant fauna species. The small loss of widespread fauna habitat for foraging or dispersal may be regained through rehabilitation efforts currently required under the existing permit which will be maintained for CPS 4991/3.

Conditions

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

- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- retain cleared vegetation and topsoil and respread this on areas already cleared to undertake revegetation and rehabilitation.

Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 10 February 2023 by the Department of 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 (WC2001/005) over the area under application (DPLH, 2023). This claim has been by the Federal Court on behalf of the claimant group. 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 several registered Aboriginal Sites of Significance within the application area (DPLH, 2023). 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. Additional information provided by applicant

Information requested	Provided information
<p>The following information was requested from Rio Tinto:</p> <ul style="list-style-type: none"> - Spatial data of clearing and rehabilitation done under the permit - Were the priority flora numbers provided within the 2016 survey report for Rio Tinto's internal flora database inclusive of individuals that have been cleared under other authorisations - Whether any of the priority flora recorded within the application area have been cleared - Current total numbers of uncleared individuals within Rio Tinto's internal flora database for the priority flora recorded within the application area 	<p>Rio Tinto (2023a) provided the following additional information:</p> <ul style="list-style-type: none"> - Polygon shapefiles of the clearing and rehabilitation done under the permit, confirming the reported amounts - It was unable to be confirmed whether the numbers for priority flora provided in the 2016 survey report included records of individuals that had been cleared under other authorisations - It was confirmed that no priority flora species have been cleared to date - Numbers for all individual records of the four priority flora species within Rio Tinto's flora database were provided

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. The application area is located approximately 115 kilometres west of Tom Price within the Shire of Ashburton, in the Pilbara bioregion (GIS Database).</p> <p>The application area represents only a small area of the extensive <i>Iron Ore (Hamersley Range) Agreement Act 1963</i> stage agreement mineral lease (GIS Database). The state agreement mineral lease spans across Hamersley Range and the surrounds (GIS Database). Over 99% of the native vegetation within a 50 kilometre radius of the application area remains uncleared (GIS Database).</p>
Conservation areas and ecological linkage	<p>The application area is not located within any known conservation areas (GIS Database). The nearest conservation area is Barlee Range Nature Reserve located approximately 75 kilometres southwest of the application area (GIS Database). The application area is unlikely to represent a significant ecological linkage as the majority of the surrounding native vegetation remains uncleared (GIS Database).</p>
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association: 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Rio Tinto over three site visits during March 2015, April 2015, and April 2016. The following vegetation types were recorded within the application area (Rio Tinto, 2016):</p> <hr/> <p style="text-align: center;">Hills and slopes</p> <hr/> <p>S1 Scattered low trees of <i>Eucalyptus leucophloia</i> over open shrubland of <i>Acacia pruinocarpa</i> and <i>Petalostylis labicheoides</i> over hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i>.</p> <hr/> <p>S2 Scattered low trees of <i>Eucalyptus leucophloia</i> over scattered shrubs of <i>Acacia pruinocarpa</i> over open hummock grassland of <i>Triodia wiseana</i> on slopes.</p> <hr/> <p>S3 Open shrubland of <i>Acacia pruinocarpa</i> over open hummock grassland of <i>Triodia wiseana</i> on slopes.</p> <hr/> <p>S4 Scattered low trees of <i>Eucalyptus leucophloia</i> over open shrubland of <i>Acacia arida</i> over open hummock grassland of <i>Triodia wiseana</i> on lower slopes and spurs.</p> <hr/> <p>S5 Low open woodland of <i>Acacia aptaneura</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i> on mid slopes.</p> <hr/> <p>S6 Tall shrubland of <i>Acacia aptaneura</i> and <i>Acacia xiphophylla</i> over very open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i>.</p> <hr/> <p style="text-align: center;">Rocky margins and cliff faces</p> <hr/> <p>R1 Low open woodland of <i>Corymbia ferriticola</i> and <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over scattered shrubs of <i>Acacia pruinocarpa</i> and <i>Astrotricha hamptonii</i> over open hummock</p>

Characteristic	Details				
	<p>grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i> and <i>Eriachne mucronata</i>.</p> <hr/> <p style="text-align: center;">Drainage lines</p> <hr/> <p>D1 Low open woodland of <i>Acacia aptaneura</i> over tall shrubland of <i>Acacia citrinoviridis</i> and <i>Gossypium robinsonii</i> over shrubland of <i>Stylobasium spathulatum</i>, <i>Petalostylis labicheoides</i>, and <i>Indigofera rivularis</i> over low open shrubland of <i>Senna artemisioides</i> subsp. <i>oligophylla</i> over very open hummock grassland of <i>Triodia wiseana</i> over very open tussock grassland of <i>Themeda triandra</i>.</p> <hr/> <p>D2 Low open woodland of <i>Eucalyptus leucophloia</i> over open shrubland of <i>Petalostylis labicheoides</i>, <i>Acacia pruinocarpa</i>, <i>Stylobasium spathulatum</i>, <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i>.</p> <hr/>				
Vegetation condition	<p>The condition of the vegetation within the application area was described as being in 'excellent' condition (Keighery, 1994), derived from a vegetation survey conducted by Rio Tinto (2016). This rating is described as:</p> <ul style="list-style-type: none"> - Excellent: vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. <p>One introduced (weed) flora species was recorded within the application area: <i>Cenchrus ciliaris</i> (buffelgrass) (Rio Tinto, 2016).</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p>				
Climate and landform	<p>The climate of the Hamersley subregion is semi-desert tropical, with the nearest weather station recording an average rainfall of approximately 320.9 millimetres per year (BoM, 2023; CALM, 2002). The application area is mapped at elevations of 350-550 metres AHD (GIS Database). The areas proposed to clear are mapped along one side of a peak, across the trough, to the side of another peak in a north-south direction (GIS Database).</p>				
Soil description	<p>The soils and landforms within the application area are mapped as (DPIRD, 2023; Van Vreeswyk et al., 2004; GIS Database):</p> <hr/> <p style="text-align: center;">285Ne Newman system</p> <hr/> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;">Landform</td> <td>Rugged jaspilite plateaux, ridges, and mountains supporting hard spinifex grasslands.</td> </tr> </table> <hr/> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;">WA Soil Group</td> <td> Stony soil (75%) Red shallow loam (20%) Red shallow sand (3%) No suitable group (2%) </td> </tr> </table> <hr/>	Landform	Rugged jaspilite plateaux, ridges, and mountains supporting hard spinifex grasslands.	WA Soil Group	Stony soil (75%) Red shallow loam (20%) Red shallow sand (3%) No suitable group (2%)
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WA Soil Group	Stony soil (75%) Red shallow loam (20%) Red shallow sand (3%) No suitable group (2%)				
Land degradation risk	<p>The application area is mapped within the Newman land system (GIS Database). This land system is described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004).</p> <p>This land system is generally not susceptible to soil erosion (Van Vreeswyk et al., 2004). Drainage lines within this land system may have erosional surfaces and the removal of vegetation cover may have the potential to lead to water erosion (DPIRD, 2023). The soils mapped within the application area are considered to have low acidification risk and slight to nil surface salinity (DPIRD, 2023).</p>				
Waterbodies and hydrogeography	<p>The desktop assessment indicates that one ephemeral drainage line intersects the application area (GIS Database). Based on aerial imagery there are likely to be depressions along the slopes of the landforms within the application area where water naturally flows to before joining mapped drainage lines (GIS Database).</p> <p>The application area is not mapped within any legislated Country Areas Water Supply area or Public Drinking Water Source Area (GIS Database). The application area is located within the Pilbara Surface Water Area and Pilbara Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (GIS Database). The mapped groundwater salinity is within 500-1,000 total dissolved solids milligrams per litre, which is described as marginal water quality (GIS Database).</p>				

Characteristic	Details
Flora	<p>A database search identified 19 flora species of conservation significance that have previously been recorded within 50 kilometres of the application area (GIS Database).</p> <p>Rio Tinto (2016) also conducted a flora and vegetation survey over the application area, and recorded four conservation significant flora species. These four species were captured during the database search (GIS Database). The results of the database search (GIS Database) and flora survey (Rio Tinto, 2016) can be found in Appendix B.3 below.</p>
Ecological communities	<p>The application area is not mapped within any threatened or priority ecological communities (GIS Database). The nearest ecological community is '<i>Triodia pisoliticola</i> (previously <i>Triodia</i> sp. Robe River) assemblages of mesas of the west Pilbara' priority 3 ecological community, located approximately 12.34 kilometres northeast of the application area (GIS Database).</p> <p>While <i>Triodia pisoliticola</i> is present within the application area, the landforms present are not analogous to where the PEC has been mapped (GIS Database). The application area is unlikely to be considered part of the PEC (GIS Database).</p>
Fauna	<p>A database search identified 13 fauna species of conservation significance that have previously been recorded within a 50 kilometre radius of the application area (GIS Database; Appendix B.4).</p> <p>Rio Tinto (2016) undertook a fauna habitat assessment with opportunistic fauna sightings, focusing on conservation significant fauna species and supporting evidence (i.e. scats). No evidence of conservation significant fauna was recorded, however there were six species determined to be potentially occurring within the application area, which is further discussed in Section 0 (Rio Tinto, 2016).</p>

B.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 - Pilbara	17,808,657	17,731,764	~99	1,801,714	10.12
Beard vegetation associations - State					
82	2,565,901	2,553,206	~99	295,377	11.51
Beard vegetation associations - Pilbara Bioregion					
82	2,563,583	2,550,888	~99	295,377	11.52

Government of Western Australia (2019)

B.3. Flora analysis table

A database search returned the following conservation significant flora species with records within a 50 kilometre radius of the application area (GIS Database).

Species name	Conservation status	Distance of closest record to application area (km)	Number of known locations from Florabase**
<i>Acacia bromilowiana</i>	4	36.8	29
<i>Cyanthillium gracile</i>	3	34	13
<i>Dicladanthera glabra</i>	2	30.1	19
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	4	38.5	46
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	3	17	22
<i>Grevillea saxicola</i>	3	49	38
<i>Indigofera rivularis</i>	3	7.4	61
<i>Oxalissp.</i> Pilbaras	2	49.2	12
<i>Ptilotus mollis</i>	4	13.8	43
<i>Ptilotus subspinescens</i>	3	49.2	18
<i>Rhynchosia bungarensis</i>	4	17.6	87
<i>Sida</i> sp. Barlee Range	4	49.1	58

<i>Sida</i> sp. Hamersley Range	3	7.4	18
<i>Solanum</i> sp. W Hamersley Range	1	30.4	3
<i>Terminalia supranitifolia</i>	3	30.7	53
<i>Triodia basitricha</i>	3	49.2	34
<i>Triodia pisolitica</i>	3	4.3	64
<i>Triodia</i> sp. Silvergrass	1	35.1	19
<i>Vittadinia</i> sp. Coondewanna Flats	3	45.6	26

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

The following species were recorded by Rio Tinto (2016) within the application area. The number of individual plants recorded within the application area, from different locations are compared to the total number of individual plants within Rio Tinto's database, from different locations (Rio Tinto, 2016).

Species name	Conservation status	Individuals recorded within application area	Recorded locations within application area	Individuals within Rio Tinto database	Recorded locations within Rio Tinto database	Number of known locations from Florabase**
<i>Indigofera rivularis</i>	3	185	20	17,211	2,131	61
<i>Ptilotus mollis</i>	4	201	6	4,559	226	43
<i>Sida</i> sp. Barlee Range	4	252	17	10,832	1,594	58
<i>Triodia pisolitica</i>	3	5,333	46	238,760	3,443	64

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

B.4. Fauna analysis table

A database search returned the following conservation significant fauna species with records within a 50 kilometre radius of the application area (GIS Database). One fish species was removed as there are no waterbodies within the application area that would provide potential habitat (GIS Database).

Species name	Common name	WA status	EPBC status	Distance of closest record to application area (km)	Number of known records (total)
BIRDS					
<i>Actitis hypoleucos</i>	common sandpiper	MI	MI	47.7	1
<i>Apus pacificus</i>	fork-tailed swift	MI	MI	49	1
<i>Charadrius veredus</i>	oriental plover	MI	MI	37.3	1
<i>Falco hypoleucos</i>	grey falcon	VU		46.9	1
<i>Falco peregrinus</i>	peregrine falcon	OS		14	7
MAMMALS					
<i>Dasyurus hallucatus</i>	northern quoll	EN	EN	34.3	15
<i>Macroderma gigas</i>	ghost bat	VU	VU	24.7	4
<i>Pseudomys chapmani</i>	western pebble-mound mouse, ngadji	P4		31.2	4
<i>Rhinonictis aurantia</i> (Pilbara)	Pilbara leaf-nosed bat	VU	VU	23.5	133
<i>Sminthopsis longicaudata</i>	long-tailed dunnart	P4		44.7	2
REPTILES					
<i>Anilius ganei</i>	Gane's blind snake (Pilbara)	P1		12.3	2
<i>Liasis olivaceus barroni</i>	Pilbara olive python	VU	VU	30.8	5
<i>Notoscincus butleri</i>	lined soil-crevice skink (Dampier)	P4		32.8	18

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

Appendix C. 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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains regionally significant flora.</p>	<p>May be at variance <i>changed from CPS 4991/2</i></p>	<p>Yes <i>Refer to Section 3.2.1, above.</i></p>
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u> A fauna habitat assessment was undertaken over a number of site visits, where fauna was opportunistically recorded, however no evidence of conservation significant fauna species were recorded (Rio Tinto, 2016). The application area may provide foraging or dispersal habitat for a number of conservation significant fauna species (Rio Tinto, 2016).</p>	<p>Not likely to be at variance <i>as per CPS 4991/2</i></p>	<p>Yes <i>Refer to Section 3.2.1, above.</i></p>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area and surrounds did not record any species of Threatened flora (Rio Tinto, 2011; 2016).</p> <p>None of the vegetation types recorded within the application area are known habitat for any species of Threatened flora, and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora (Rio Tinto, 2011; 2016).</p>	<p>Not likely to be at variance <i>as per CPS 4991/2</i></p>	<p>No</p>
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u> There are no known federally or state listed Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database). The nearest TEC is ‘Themeda grasslands on cracking clays (Hamersley Station, Pilbara)’, categorised as vulnerable under the BC Act.</p> <p>Flora and vegetation surveys of the application area and surrounds did not identify any vegetation representative of a TEC (Rio Tinto, 2011; 2016).</p>	<p>Not likely to be at variance <i>as per CPS 4991/2</i></p>	<p>No</p>
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The application area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation association 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	<p>Not at variance <i>as per CPS 4991/2</i></p>	<p>No</p>
<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> The application area is not located within any known conservation area (GIS Database). The nearest known conservation area is Barlee Range Nature Reserve located approximately 75 kilometres southwest of the application area (GIS</p>	<p>Not at variance <i>as per CPS 4991/2</i></p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
Database). At this distance it is considered unlikely that the proposed clearing will impact on the environmental values of any conservation area.		
Environmental value: land and water resources		
<p>Principle (f): <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> Two of the vegetation types mapped within the application represent vegetation that is growing in or in association with a watercourse (Rio Tinto, 2016):</p> <hr/> <p style="text-align: center;">Drainage lines</p> <hr/> <p>D1 Low open woodland of <i>Acacia aptaneura</i> over tall shrubland of <i>Acacia citrinoviridis</i> and <i>Gossypium robinsonii</i> over shrubland of <i>Stylobasium spathulatum</i>, <i>Petalostylis labicheoides</i>, and <i>Indigofera rivularis</i> over low open shrubland of <i>Senna artemisioides</i> subsp. <i>oligophylla</i> over very open hummock grassland of <i>Triodia wiseana</i> over very open tussock grassland of <i>Themeda triandra</i>.</p> <hr/> <p>D2 Low open woodland of <i>Eucalyptus leucophloia</i> over open shrubland of <i>Petalostylis labicheoides</i>, <i>Acacia pruinocarpa</i>, <i>Stylobasium spathulatum</i>, <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i>.</p> <hr/> <p>These drainage lines flow after significant rainfall events (Rio Tinto, 2016). While these drainage lines are not considered significant watercourses, the vegetation influences or is influenced by these drainage lines (Rio Tinto, 2016).</p> <p>To minimise impacts to riparian vegetation a vegetation management condition is recommended. This condition will require the permit holder to avoid clearing riparian vegetation where practicable and to existing surface flow is maintained, or reinstated downstream into existing natural drainage lines.</p>	At variance <i>changed from CPS 4991/2</i>	No
<p>Principle (g): <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> The application area is mapped within the Newman land system (GIS Database). This land system is described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004).</p> <p>This land system is generally not susceptible to soil erosion (Van Vreeswyk et al., 2004). Drainage lines within this land system may have erosional surfaces and the removal of vegetation cover may have the potential to lead to water erosion (DPIRD, 2023). The soils mapped within the application area are considered to have low acidification risk and slight to nil surface salinity (DPIRD, 2023).</p> <p>Given the relatively small amount of clearing (12 hectares) and the temporary nature of the proposed clearing (exploration activities) it is unlikely to cause significant land degradation.</p>	Not likely to be at variance <i>as per CPS 4991/2</i>	No
<p>Principle (i): <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> The desktop assessment indicates that one ephemeral drainage line intersects the application area (GIS Database). Based on aerial imagery there are likely to be depressions along the slopes of the landforms within the application area where water naturally flows to before joining mapped drainage lines (GIS Database).</p> <p>The application area is not mapped within any legislated Country Areas Water Supply area or Public Drinking Water Source Area (GIS Database). The application area is located within the Pilbara Surface Water Area and Pilbara Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (GIS Database).</p> <p>Given the relatively low amount of clearing (12 hectares) for exploration activities, the removal of native vegetation is unlikely to have a significant impact on surface or underground water. The vegetation management condition will also assist in mitigating any potential impacts to surface water by minimising clearing riparian vegetation where practicable.</p>	Not likely to be at variance <i>as per CPS 4991/2</i>	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><u>Assessment:</u> The desktop assessment indicates that one ephemeral drainage line intersects the application area (GIS Database). Based on aerial imagery there are likely to be depressions along the slopes of the landforms within the application area where water naturally flows to before joining mapped drainage lines (GIS Database).</p> <p>Local flooding occurs seasonally in the Pilbara as a result of cyclonic and sporadic thunderstorm activity (Rio Tinto, 2011). Given the low impact, non-contiguous nature of the proposed clearing, it is unlikely to cause or exacerbate the incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>as per CPS 4991/2</p>	No

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. Biological survey information excerpts

Table 1: Fauna habitats and descriptions mapped within the application area from multiple field assessments. These habitats were identified and mapped based on common landforms and vegetation types know within the application area (Rio Tinto, 2016).

Fauna habitat	Description	Extent within study area (ha)	Extent within study area (%)
Rocky slopes	Rocky slopes consisted of scattered low trees of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over open shrubland of <i>Acacia pruinocarpa</i> open hummock grassland of <i>Triodia wiseana</i> . This unit was recorded from red brown skeletal loams with ironstone boulders, rocks, and outcropping. This unit was recorded from the slopes of the range.	141.32	85.03
Rocky breakaways and cliffs	Rocky breakaways and cliffs consisted of low open woodland of <i>Corymbia ferriticola</i> and <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over scattered shrubs of <i>Acacia pruinocarpa</i> and <i>Astrotricha hamptonii</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisoliticola</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i> and <i>Eriachne mucronata</i> . This unit was recorded from red brown skeletal loams with pebbles, rocks, and mass	8.83	5.31

	exposed ironstone outcropping and cliff faces. This unit was recorded from above cliffs, and on vertical cliff faces. A significant microhabitat consisting of rocky overhangs and small caves was inclusive of this broad fauna habitat.		
Mulga and snakewood on slopes	Mulga and snakewood on slopes consisted of low open woodland to tall shrubland of <i>Acacia aptaneura</i> and <i>Acacia xiphophylla</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisolitica</i> . This unit was recorded from red brown skeletal loams with ironstone rock cover and outcropping. This unit was recorded from mid slopes.	4.19	2.52
Mulga and snakewood on alluvial plains	Mulga and snakewood on alluvial plains consisted of low open woodland of <i>Acacia aptaneura</i> over tall shrubland of <i>Acacia aptaneura</i> , <i>Acacia citrinoviridis</i> , <i>Acacia xiphophylla</i> , and <i>Gossypium robinsonii</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisolitica</i> over very open tussock grassland of <i>Themeda triandra</i> . This unit was recorded from red brown loams with rocks and pebbles and exposed ironstone bedrock. This unit was recorded from low hills, lower slopes, and drainage lines.	1.88	1.13
Drainage lines - minor	Drainage lines - minor consisted of low open woodland of <i>Eucalyptus leucophloia</i> over open shrubland of <i>Petalostylis labicheoides</i> , <i>Acacia pruinocarpa</i> , <i>Stylobasium spathulatum</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pisolitica</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i> . This unit was recorded from red brown loams with ironstone rocks and pebbles. This unit was recorded from drainage lines.	9.98	6.00
TOTAL		166.2	100

Appendix F. Sources of information

F.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Bush Forever (Regional Scheme) (DPLH-022)
- 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)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- 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)

F.2. References

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- Rio Tinto (2011) *Flora and Vegetation Survey for Proposed Exploration Drilling at Mt Wall West Tenement*. Prepared by Rio Tinto, September 2012.
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- Rio Tinto (2022) *Native Vegetation Clearing Permits – 2021 Annual Reports, Summary*. Prepared by Rio Tinto, June 2022.
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- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) *An inventory and condition survey of the Pilbara Region, Western Australia*. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (1998-) *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 28 March-4 April 2023).

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)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DAWE)
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:

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.