



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7139/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: *Iron Ore (Mount Goldsworthy) Agreement Act 1964*, Mineral Lease 281SA (AML 70/281);
Exploration Licence 47/13
Exploration Licence 47/14
Exploration Licence 47/15
Exploration Licence 47/17
Exploration Licence 47/1429
Exploration Licence 47/1431
Exploration Licence 47/1874
Exploration Licence 47/1875
Exploration Licence 47/2500
Prospecting Licence 47/1421
Prospecting Licence 47/1611

Local Government Area: Shire of Ashburton and East Pilbara
Colloquial name: Central Pilbara West Exploration Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1,000		Mechanical Removal	Rehabilitation, geotechnical investigations, access tracks, mineral exploration, hydrogeological drilling, water bores and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 18 August 2016

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. These four Beard vegetation associations are located within the application area (GIS Database):

- 18:** Low woodland; mulga (*Acacia aneura*);
- 29:** Sparse low woodland; mulga, discontinuous in scattered groups;
- 82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and
- 567:** Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii*.

There have been 30 flora and vegetation surveys undertaken over the application area and surrounding Areas, and based on those surveys the following 20 broad floristic communities with 48 vegetation associations have been identified within the application area (BHP Billiton, 2016; Onshore Environmental, 2014):

Acacia High Shrubland

FP AbApr Tp AcoSau - High Shrubland of *Acacia bivenosa* and *Acacia pruinocarpa* over Open Hummock Grassland of *Triodia pungens* and Very Open Hummock Grassland of *Aristida contorta* and *Sporobolus australasicus* on brown loam on stony dolerite floodplains and outwash zones; and

MA AtpApyAse Ec TmbTtCpr - High Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia pyrifolia* var. *pyrifolia* and *Acacia sericophylla* with Scattered Trees of *Eucalyptus camaldulensis* subsp. *refulgens* over Open Tussock Grassland of *Themeda* sp. Mt Barricade (M.E. Trudgen 2471), *Themeda triandra* and *Cymbopogon procerus* on brown loam and gravels on major drainage channels.

Acacia Low Open Forest

FP AaApaApt TtCfEb - Low Open Forest of *Acacia aptaneura*, *Acacia paraneura* and *Acacia pteraneura* over Open Tussock Grassland of *Themeda triandra*, *Chrysopogon fallax* and *Eriachne benthamii* on red brown clay loam on plains;

FP AaCa Mv Tm - Low Open Forest of *Acacia aptaneura* and *Corymbia aspera* over Low Open Shrubland of *Maireana villosa* over Open Hummock Grassland of *Triodia melvillei* on red brown cracking clays and alluvial loams on floodplains;

MA AaAciApr CcTtCf EvEc - Low Open Forest of *Acacia aptaneura*, *Acacia citrinoviridis* and *Acacia pruinocarpa* over Open Tussock Grassland of *Cenchrus ciliaris*, *Themeda triandra* and *Chrysopogon fallax* with Open Woodland of *Eucalyptus victrix* and *Eucalyptus camaldulensis* subsp. *refulgens* on brown loamy sand on major drainage lines with broad and deeply incised drainage channels;

SP AaApr TmTwTp TtCfAin - Low Open Forest of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Hummock Grassland of *Triodia melvillei*, *Triodia wiseana* and *Triodia pungens* over Tussock Grassland of *Themeda triandra*, *Chrysopogon fallax* and *Aristida inaequiglumis* on red brown loam on plains; and

SP AcaAa AobDamCf - Low Open Forest of *Acacia catenulata* subsp. *occidentalis* and *Acacia aptaneura* over Very Open Tussock Grassland of *Aristida obscura*, *Digitaria ammophila* and *Chrysopogon fallax* on red brown clay loam on stony lower plains.

Acacia Low Open Woodland

FP AaAcaApa ElaSIPo AcoEdAj - Low Open Woodland of *Acacia aptaneura*, *Acacia catenulata* subsp. *occidentalis* and *Acacia paraneura* over Low Open Shrubland of *Eremophila lanceolata*, *Solanum lasiophyllum* and *Ptilotus obovatus* over Very Open Tussock Grassland of *Aristida contorta*, *Eragrostis dielsii* and *Aristida jerichoensis* var. *subspinulifera* on red brown clay loam on hardpan intergrove plains.

Acacia Low Woodland

FP AaEv Mf EaEbAco - Low Woodland of *Acacia aptaneura* and *Eucalyptus victrix* with Scattered Shrubs of *Muehlenbeckia florulenta* over Open Tussock Grassland of *Eulalia aurea*, *Eriachne benthamii* and *Aristida contorta* on orange brown clay loam on alluvial plains;

FP Ev Aa EaEbTt - Woodland of *Eucalyptus victrix* over Low Woodland of *Acacia aptaneura* over Open Tussock Grassland of *Eulalia aurea*, *Eriachne benthamii* and *Themeda triandra* on orange clay loam on alluvial plains;

GG AaAcaEl DpaEtEj TpTw - Low Woodland of *Acacia aptaneura*, *Acacia catenulata* subsp. *occidentalis* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Dodonaea pachyneura*, *Eremophila tietkensii* and *Eremophila jucunda* subsp. *pulcherrima* over Open Hummock Grassland of *Triodia pungens* and *Triodia wiseana* on red brown loam on breakaway slopes, cliff lines and minor gorges;

HS AaApr EjAmmCco TwTp - Low Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Shrubland of *Eremophila jucunda* subsp. *pulcherrima*, *Acacia marramamba* and *Codonocarpus cotinifolius* over Open Hummock Grassland of *Triodia wiseana* and *Triodia pungens* on red brown loam on hill slopes; and

SP Aa EfrSgl TtAco - Low Woodland of *Acacia aptaneura* over High Shrubland of *Eremophila fraseri* and *Senna glutinosa* subsp. *x luerssenii* over Very Open Tussock Grassland of *Themeda triandra* and *Aristida contorta* on red brown clay loam on stony dolerite drainage plains.

Acacia Open Forest

FP AaEv EaEb Mf - Open Forest of *Acacia aptaneura* and *Eucalyptus victrix* over Open Tussock Grassland of *Eulalia aurea* and *Eriachne benthamii* with Open Shrubland of *Muehlenbeckia florulenta* on red brown clay loam on alluvial plains.

Acacia Open Scrub

MI AtpPIAmo TpTs ChEl - Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia monticola* over Open Hummock Grassland of *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* on red brown sandy loam on minor drainage lines.

Acacia Shrubland

MI AbAdAma Tp TtPmEa - Shrubland of *Acacia bivenosa*, *Acacia dictyophleba* and *Acacia maitlandii* over Open Hummock Grassland of *Triodia pungens* over Open Tussock Grassland of *Themeda triandra*, *Paraneurachne muelleri* and *Eulalia aurea* on brown sandy loam on minor drainage lines.

Callitris Low Open Forest

GG CcoCfeEl EmuTmbCa - Low Open Forest of *Callitris columellaris*, *Corymbia ferritcola* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Tussock Grassland of *Eriachne mucronata*, *Themeda* sp. Mt Barricade (M.E. Trudgen 2471) and *Cymbopogon ambiguus* and Very Open Hummock Grassland of *Triodia pungens* on orange brown loam on upper gorges.

Corymbia Low Woodland

GG CfeEIFb AhDvmAha CaEmuTmb - Low Woodland of *Corymbia ferritcola*, *Eucalyptus leucophloia* subsp. *leucophloia* and *Ficus brachypoda* over Open Shrubland of *Acacia hamersleyensis*, *Dodonaea viscosa* subsp. *mucronata* and *Astrotricha hamptonii* over Open Tussock Grassland of *Cymbopogon ambiguus*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade on red brown loam along cliff lines and gorges.

Enneapogon Tussock Grassland

HS EliCa EfrAte ImDau - Tussock Grassland of *Enneapogon lindleyanus* and *Cymbopogon ambiguus* with Shrubland of *Eremophila fraseri* and *Acacia tetragonophylla* over Low Shrubland of *Indigofera monophylla* and *Dipteracanthus australasicus* on brown sandy clay loam on mudstone outcrops and boulders on lower slopes of The Governor Range.

Eriachne Tussock Grassland

FP EbEaTt Ev Mf - Tussock Grassland of *Eriachne benthamii*, *Eulalia aurea* and *Themeda triandra* with Woodland of *Eucalyptus victrix* over Open Shrubland of *Muehlenbeckia florulenta* on orange brown loamy clay on alluvial plains; and

MI Eb VfAteAa PhCmPg - Tussock Grassland of *Eriachne benthamii* with Shrubland of *Vachellia farnesiana*, *Acacia tetragonophylla* and *Acacia aptaneura* over Low Open Herbland of *Pimelea holroydii*, *Centipeda minima* and *Ptilotus gomphrenoides* on red silty loam on basalt parent rock along small drainage lines.

Eucalyptus Low Open Forest

MA EcEvEx ApyAtpGr TtEaCpr - Low Open Forest of *Eucalyptus camaldulensis* subsp. *refulgens*, *Eucalyptus victrix* and *Eucalyptus xerothermica* over High Shrubland of *Acacia pyrifolia* var. *pyrifolia*, *Acacia tumida* var. *pilbarensis* and *Gossypium robinsonii* over Open Tussock Grassland of *Themeda triandra*, *Eulalia aurea* and *Cymbopogon procerus* on red brown clay loam on major drainage lines.

Eulalia Tussock Grassland

FP EaEbTt EvAa Mf - Tussock Grassland of *Eulalia aurea*, *Eriachne benthamii* and *Themeda triandra* with Woodland of *Eucalyptus victrix* and *Acacia aptaneura* over Open Shrubland of *Muehlenbeckia florulenta* on red brown clay loam on alluvial plains.

Petalostylis Shrubland

MI PIAtpAmo ChEl TwTp - Shrubland of *Petalostylis labicheoides*, *Acacia tumida* var. *pilbarensis* and *Acacia monticola* with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Hummock Grassland of *Triodia wiseana* and *Triodia pungens* on red brown loam on minor drainage lines.

Themeda Closed Tussock Grassland

FP Ths Ca PoSau - Closed Tussock Grassland of *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) with Low Open Woodland of *Corymbia aspera* over Low Open Shrubland of *Ptilotus obovatus* and *Salsola australis* on orange light clay on level flood plains.

Themeda Open Tussock Grassland

ME TtAinCa ChEl AmoPIAlu - Open Tussock Grassland of *Themeda triandra*, *Aristida inaequiglumis* and *Cymbopogon ambiguus* with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia monticola*, *Petalostylis labicheoides* and *Androcalva luteiflora* on red brown alluvium on minor and medium drainage lines.

Themeda Tussock Grassland

FP TtEa ExAa AprAtpElo - Tussock Grassland of *Themeda triandra* and *Eulalia aurea* with Low Woodland of *Eucalyptus xerothermica* and *Acacia aptaneura* over Open Shrubland of *Acacia pruinocarpa*, *Acacia tumida* var. *pilbarensis* and *Eremophila longifolia* on red brown clay loam on unincised drainage lines and floodplains; and

GG TtEmuTmb ElChCfe AtpGrPI - Tussock Grassland of *Themeda triandra*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Corymbia ferritcola* over High Shrubland of *Acacia tumida* var. *pilbarensis*, *Gossypium robinsonii* and *Petalostylis labicheoides* on red brown sandy loam in narrowly incised rocky drainage lines.

Triodia Closed Hummock Grassland

HC TpTw El NhrOs - Closed Hummock Grassland of *Triodia pungens* and *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* over Scattered Shrubs of *Newcastelia* sp. Hamersley Range (S. van Leeuwen 4264) and *Olearia stuartii* on brown silty loam on high sloping hill crest of Mount Robinson.

Triodia Hummock Grassland

HS TsTwTp ElCh AhiAad - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxo* on red brown sandy loam on hill slopes;

CP TwTa Es AbPIApy - Hummock Grassland of *Triodia wiseana* and *Triodia angusta* with Open Mallee of *Eucalyptus socialis* subsp. *eucentrica* and Open Shrubland of *Acacia bivenosa*, *Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* on light brown clay loam on calcrete plains and rises;

FS Ts CdHc AanAiGw - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of *Corymbia deserticola* subsp. *deserticola* and *Hakea chordophylla* over Open Shrubland of *Acacia ancistrocarpa*, *Acacia inaequilatera* and *Grevillea wickhamii* subsp. *hispidula* on red brown sandy loam on

footslopes and stony plains;

FS TsTpTw EI AbApaAan - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia pungens* and *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Acacia bivenosa*, *Acacia pachyacra* and *Acacia ancistrocarpa* on red brown loam on footslopes and low undulating hills;

HC Tw Ah EkEgCh - Hummock Grassland of *Triodia wiseana* with Shrubland of *Acacia hamersleyensis* and Open Mallee of *Eucalyptus kingsmillii* subsp. *kingsmillii*, *Eucalyptus gamophylla* and *Corymbia hamersleyana* (mallee form) on red brown loam and silty loam on hill crests;

HC Tw AiAb IrSao - Hummock Grassland of *Triodia wiseana* with High Open Shrubland of *Acacia inaequilatera* and *Acacia bivenosa* over Low Open Shrubland of *Indigofera rugosa* and *Senna artemisioides* subsp. *oligophylla* on red silty loam on dolerite hill crests;

HC TwTbrTp EICh AmaGwAb - Hummock Grassland of *Triodia wiseana*, *Triodia brizoides* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over High Open Shrubland of *Acacia maitlandii*, *Grevillea wickhamii* subsp. *hispidula* and *Acacia bivenosa* on red brown sandy loam on hill crests and upper hill slopes;

HC TwTsTp EICh Ah - Hummock Grassland of *Triodia wiseana*, *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Open Shrubland of *Acacia hamersleyensis* on red brown clay loam on hill crests and upper hill slopes;

HS Tbr EI Er - Hummock Grassland of *Triodia brizoides* with Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Mallee of *Eucalyptus repullulans* on gently inclined low breakaway hill slope;

HS Tp Ama Tt - Hummock Grassland of *Triodia pungens* with Shrubland of *Acacia maitlandii* over Very Open Tussock Grassland of *Themeda triandra* on brown loam on low basalt hills;

HS TwTbrTs EIExCh PcaPasAhi - Hummock Grassland of *Triodia wiseana*, *Triodia brizoides* and *Triodia* sp. Shovelanna Hill with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Eucalyptus xerothermica* and *Corymbia hamersleyana* over Low Open Shrubland of *Ptilotus calostachyus*, *Ptilotus astrolasius* and *Acacia hilliana* on brown loam on eroded outcropping upper slopes and crests;

HS TwTpTbr EI Ep - Hummock Grassland of *Triodia wiseana*, *Triodia pungens* and *Triodia brizoides* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Mallee of *Eucalyptus pilbarensis* on red brown loam on steep hill slopes;

HS TwTpTs EI AprAaAan - Hummock Grassland of *Triodia wiseana*, *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia pruinocarpa*, *Acacia aptaneura* and *Acacia ancistrocarpa* on red brown loam on plains and low hills;

ME TpTI ExAciCh PIAPyGr - Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamersleyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains;

SP TpTb Eg PIAbAan - Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Mallee of *Eucalyptus gamophylla* and Shrubland of *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* on red brown loamy sand on stony plains and footslopes; and

SP TsTwTp EgEt AbApaApr - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Very Open Mallee of *Eucalyptus gamophylla* and *Eucalyptus trivalva* over Open Shrubland of *Acacia bivenosa*, *Acacia pachyacra* and *Acacia pruinocarpa* on red brown sandy loam and clay loam on stony plains.

***Triodia* Open Hummock Grassland**

HS Tp AaApr EfrAmmSgl - Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Eremophila fraseri*, *Acacia marramamba* and *Senna glutinosa* subsp. *x luerssenii* on red brown loam on hills;

HS Tp EI SggGwEII - Hummock Grassland of *Triodia pungens* with Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* and Scattered Shrubs of *Senna glutinosa* subsp. *glutinosa*, *Grevillea wickhamii* subsp. *hispidula* and *Eremophila latrobei* subsp. *latrobei* on skeletal orange brown loam on stony hill slopes; and

SP TpTm AaExAca ApaEffAad - Hummock Grassland of *Triodia pungens* and *Triodia melvillei* with Low Open Woodland of *Acacia aptaneura*, *Eucalyptus xerothermica* and *Acacia catenulata* subsp. *occidentalis* and Open Shrubland of *Acacia pachyacra*, *Eremophila forrestii* subsp. *forrestii* and *Acacia adsurgens* on red brown clay loam or silty loam on stony plains and floodplains.

Clearing Description

Central Pilbara West Exploration Project.

BHP Billiton Iron Ore Pty Ltd proposes to clear up to 1,000 hectares of native vegetation within a total boundary of approximately 97,680 hectares, for the purposes of rehabilitation, geotechnical investigations, mineral exploration, hydrogeological drilling and associated activities. The project is located between Port Hedland and Newman, through the Shires of Ashburton and East Pilbara.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

To:

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The objective of this application is to consolidate 5 existing clearing permits held by BHP Billiton Iron Ore Pty Ltd. Existing live permits are to be surrendered and future clearing is to be conducted under CPS 7139/1. Based on reported annual clearing for existing live permits within the application area, a total of 390.68 hectares of native vegetation has been cleared out of a possible 1,027.35 hectares approved to be cleared. While this does not take into consideration areas cleared under Part IV approvals, the current application to clear up to 1,000 hectares within a clearing permit boundary of 97,680 hectares will result in an increase in the amount of native vegetation proposed to be cleared by approximately 363.33 hectares, and an increase in the clearing permit boundary by approximately 60,965 hectares. The increased area to be cleared and clearing permit boundary is to incorporate required clearing within tenure (underlying Miscellaneous and Prospecting Licences) that will be rolled into the State Agreement Mineral Lease ML 281SA.

An assessment against the 10 clearing Principles has been conducted for the existing 5 clearing permits to be consolidated into CPS 7139/1.

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia bioregion (IBRA). The Hamersley subregion can be described as Mulga low woodlands over bunch grasses on fine textured soils in valley floors and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

There have been 30 flora and vegetation surveys that intersect the application area, although four Level 2 flora and vegetation surveys undertaken between 2011 and 2014 and one consolidation vegetation mapping survey are the most relevant to the application area (BHP Billiton, 2016). The surveys identified 48 vegetation associations within the application area, with large amounts of areas mapped in an 'excellent' condition, and the major disturbances within the application area were as a result of domestic herbivores, weed infestations, and operational or disused mining areas (BHP Billiton, 2016).

The flora surveys did not identify any Threatened Flora species within the application area, however 26 Priority Flora were identified within the application area; 3 Priority 1 species, 3 Priority 2 species, 15 Priority 3 Species and 5 Priority 4 species (BHP Billiton, 2016). While the impact of the proposed clearing of 1,000 hectares within a boundary of 97,680 hectares of native vegetation is unlikely to impact the conservation significance of these species, BHP Billiton (2016) have committed to avoid Priority Flora where practicable. Potential impacts to Priority Flora can be minimised by the implementation of a flora management condition.

The application area is situated within the buffer of the Priority Ecological Community (PEC) Coolibah-lignum flats: *Eucalyptus victrix* over *Muehlenbeckia florulenta* (GIS Database). There are two sub-types of this PEC:

- Coolibah (*Eucalyptus victrix*) woodland over Lignum (*Muehlenbeckia florulenta*) over Swamp Wandiree (*Eriachne benthamii*) (Priority 1); and
- Coolibah (*Eucalyptus victrix*) and Mulga (*Acacia aneura*) woodland over Lignum (*Muehlenbeckia florulenta*) and tussock grasses on clay plains (Priority 3) (BHP Billiton, 2016).

The proponent has excluded this PEC from the application area with a 50 metre buffer. The proposed clearing of native vegetation is unlikely to impact the values of the PEC (BHP Billiton, 2016).

There were 11 fauna habitat types recorded within the application area (BHP Billiton, 2016). Most of the faunal habitats within the application area are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to those found in similar habitat located elsewhere in the region, with the exception of Gorge/Gully and Major Drainage Line habitats (GIS Database). The proposed clearing of 1,000 hectares of native vegetation within a 97,680 hectare boundary is unlikely to have a significant impact on faunal diversity in a regional and local context.

There are 19 weed species recorded within the application area (BHP Billiton, 2016). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BHP Billiton (2016)
CALM (2002)

GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European vegetation
- Threatened Ecological Sites Buffered

(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 indigenous to Western Australia.

Comments Proposal is not likely to be at variance to this Principle

There has been numerous fauna surveys previously conducted over the application area. Biologic (2014) undertook a consolidation of fauna habitat mapping across BHP Billiton Iron Ore's tenure. Based on the results of these surveys the following 11 broad fauna habitats have been identified within the application area:

- Calcrete Plain;
- Gilgai Plain;
- Hardpan Plain;
- Sand Plain;
- Stony Plain;
- Drainage Area/Floodplain;
- Major Drainage Line;
- Minor Drainage Line;
- Mulga Woodland;
- Crest/Slope; and
- Gorge/Gully.

Excluding the Gorge/Gully and Major Drainage Line habitats, all these habitats are considered to be common and well represented within the region (BHP Billiton, 2016). The Gorge/Gully habitat is significant as it contains important habitat features that provide shelter and denning sites for conservation significant fauna; however this habitat type only represents a very small portion of the application area and the proponent has identified historical disturbance within this faunal habitat type. Clearing within the Gorge/Gully habitat will only occur for the purpose of rehabilitation (BHP Billiton, 2016). The Major Drainage Line habitat contains breeding and foraging sites for a number of bird species and significant tree hollows that may be used by avian fauna species for roosting and nesting. This habitat is also important for dispersal of mammal and reptile species in the local area. Potential impacts to this habitat type may be minimised by the implementation of a vegetation management condition. No additional impacts to these habitats are likely to be significantly above those already authorised to clear.

Fauna surveys in the area have recorded a total of 10 species of conservation significance within the application area (BHP Billiton, 2016). Based on habitats within the application area and surrounding records, a further three avian species of conservation significance could potentially be found within the application area (BHP Billiton, 2016).

The Northern Quoll (*Dasyurus hallucatus* - Endangered) has been recorded at several locations within the application area (BHP Billiton, 2016). Northern Quoll are both arboreal and terrestrial, inhabiting ironstone ridges, scree slopes of sandstone or ironstone and granite boulders and outcrops. Northern Quoll also inhabits drainage lines and riverine habitats where it utilises tree hollows as den sites. While the habitats within the application area are utilised by the Northern Quoll (specifically the Major Drainage Line), the proposed clearing is linear and narrow, intersecting only small sections of favourable habitat, which is also present in the local and regional area (BHP Billiton, 2016). Potential impacts on the Northern Quoll will be managed under a Management Plan which has been developed conservation significant species within the area. Potential impacts to the Northern Quoll may be minimised by the implementation of a restricted clearing condition, an environmental management plan condition and vegetation management condition.

The Ghost Bat (*Macroderma gigas* - Vulnerable) occurs in a wide variety of habitats, and requires an undisturbed cave, deep fissure or disused mine shaft in which to roost. There have been six caves utilised by the Ghost Bat identified within the application area which have disturbance within 50 metres of the cave (BHP Billiton, 2016). Clearing within 50 metres of the cave will only be for rehabilitation purposes. All other suitable caves within the area have been excluded from the application area with a 50 metre buffer (BHP Billiton, 2016). Potential impacts to the Ghost Bat may be minimised by the implementation of a restricted clearing condition

The Pilbara Leaf-nosed Bat (*Rhinonictis aurantius* - Vulnerable) has been recorded adjacent to the application area and is likely to forage within the application area and surrounding region (BHP Billiton, 2016). All suitable caves for the Pilbara Leaf-nosed Bat have been excluded from the application area (BHP Billiton, 2016).

The Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni* – Vulnerable) has been recorded adjacent to the Gorge/Gully habitat and in one of the Major Drainage Line habitats of the application area. This species is likely to forage within the Drainage Line habitat but is most likely to den in the Gorge/Gully habitat (BHP Billiton, 2016). Potential impacts to the Python may be minimised by the implementation of a restricted clearing condition, an environmental management plan condition and vegetation management condition.

The Short-tailed Mouse (*Leggadina lakedownensis* – Priority 4) has been recorded within two locations within the application area; within the Crest/Slope and Gilgai habitat types. These habitats are widespread within the local and regional area (BHP Billiton, 2016). The mouse is likely to use the application area as foraging habitat, and the proposed clearing of 1,000 hectares within a 97,680 hectare boundary is not likely to impact the conservation significance of this species.

The Western Pebble-mound Mouse (*Pseudomys chapmani*) (Priority 4) has been recorded from multiple locations within the application area. The preferred habitat for this species is the Crest/Slope habitat where there are large undisturbed areas of this habitat adjacent to the application area (BHP Billiton, 2016; GIS Database). Active mounds will be avoided where practicable (BHP Billiton, 2016).

The Pilbara Barking Gecko (*Underwoodisaurus seorsus* – Priority 2) has been recorded in several locations within the application area, particularly the Crest/Slope habitat types close to Gorge/Gully habitat, and the Major Drainage Line habitat (BHP Billiton, 2016). The preferred habitat for this species is the Gorge/Gully habitat which has been largely excluded from the application area, except areas where rehabilitation is to occur (BHP Billiton, 2016). Potential impacts to the Gecko may be minimised by the implementation of a restricted clearing condition, and vegetation management condition.

There was four avian species of conservation significance identified within the application area:

- Fork-tailed Swift (*Apus pacificus* – Migratory);
- Rainbow Bee-eater (*Merops ornatus* – Migratory);
- Grey Falcon (*Falco hypoleucos* – Schedule 3); and
- Peregrine Falcon (*Falco peregrine* – Schedule 7).

These species are highly mobile and widespread in the Pilbara and are likely to use the application area for foraging. (BHP Billiton, 2016). The proposed clearing of native vegetation is not likely to impact the conservation significance of these species.

The proposed clearing of 1,000 hectares of native vegetation within a total boundary of 97,680 hectares is unlikely to have an impact on the local fauna population. This application will replace five existing clearing permits in the vicinity. As the proposed clearing amount is not above the total of the existing clearing permits, it is not likely to have a greater impact on fauna than what has been previously approved.

Based on the above, the proposed clearing is not likely to be at variance to this Principle

Methodology BHP Billiton (2016)

GIS Database:
- Imagery

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

Comments **Proposal is not likely to be at variance to this Principle**

According to available databases, there are no known records of Threatened Flora within the application area (GIS Database). A search of the Department of Parks and Wildlife's Threatened and Priority Flora databases identified no Threatened Flora species within the application area (DPaW, 2016).

There have been numerous flora and vegetation surveys undertaken over the application area and surrounding area and no Threatened Flora species have been recorded within the application area (BHP Billiton, 2016; Onshore Environmental, 2014)

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP Billiton (2016)
DPaW (2016)

GIS Database:
- Threatened and Priority Flora List

(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.

Comments **Proposal is not likely to be at variance to this Principle**

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 85 kilometres east of the application area (GIS Database).

No TECs were recorded during the vegetation survey (BHP Billiton, 2016).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP Billiton (2016)

GIS Database:

(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.

Comments Proposal is not at variance to this Principle

The application area falls within the Pilbara IBRA (GIS Database). The vegetation within the application area is recorded as Beard vegetation associations 18, 29, 82 and 567.

The above Beard vegetation associations retain approximately 99% or above of their pre-European extent at both the state and bioregion level (Government of Western Australia, 2014). The areas proposed to be cleared are not a significant remnant of native vegetation.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Government of Western Australia (2014)

GIS Database:

- IBRA WA (regions - subregions)
- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the application area (GIS Database). However, there are a multitude of minor non-perennial watercourses that cross through the application area which would only intermittently flow after major rainfall events (BHP Billiton, 2016).

Several flora and vegetation surveys have been undertaken that cover the majority of the application area and some of the surrounding area (BHP Billiton, 2016). Within the application area, 12 are described as being associated with watercourses:

MA AtpApyAse Ec TmbTtCpr - High Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia pyrifolia* var. *pyrifolia* and *Acacia sericophylla* with Scattered Trees of *Eucalyptus camaldulensis* subsp. *refulgens* over Open Tussock Grassland of *Themeda* sp. Mt Barricade (M.E. Trudgen 2471), *Themeda triandra* and *Cymbopogon procerus* on brown loam and gravels on major drainage channels;

MA AaAciApr CcTtCf EvEc - Low Open Forest of *Acacia aptaneura*, *Acacia citrinoviridis* and *Acacia pruinocarpa* over Open Tussock Grassland of *Cenchrus ciliaris*, *Themeda triandra* and *Chrysopogon fallax* with Open Woodland of *Eucalyptus victrix* and *Eucalyptus camaldulensis* subsp. *refulgens* on brown loamy sand on major drainage lines with broad and deeply incised drainage channels;

MI AtpPIAmo TpTs ChEl - Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia monticola* over Open Hummock Grassland of *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* on red brown sandy loam on minor drainage lines;

MI AbAdAma Tp TtPmEa - Shrubland of *Acacia bivenosa*, *Acacia dictyophleba* and *Acacia maitlandii* over Open Hummock Grassland of *Triodia pungens* over Open Tussock Grassland of *Themeda triandra*, *Paraneurachne muelleri* and *Eulalia aurea* on brown sandy loam on minor drainage lines;

MI Eb VfAteAa PhCmPg - Tussock Grassland of *Eriachne benthamii* with Shrubland of *Vachellia farnesiana*, *Acacia tetragonophylla* and *Acacia aptaneura* over Low Open Herbland of *Pimelea holroydii*, *Centipeda minima* and *Ptilotus gomphrenoides* on red silty loam on basalt parent rock along small drainage lines;

MA EcEvEx ApyAtpGr TtEaCpr - Low Open Forest of *Eucalyptus camaldulensis* subsp. *refulgens*, *Eucalyptus victrix* and *Eucalyptus xerothermica* over High Shrubland of *Acacia pyrifolia* var. *pyrifolia*, *Acacia tumida* var. *pilbarensis* and *Gossypium robinsonii* over Open Tussock Grassland of *Themeda triandra*, *Eulalia aurea* and *Cymbopogon procerus* on red brown clay loam on major drainage lines;

MI PIAtpAmo ChEl TwTp - Shrubland of *Petalostylis labicheoides*, *Acacia tumida* var. *pilbarensis* and *Acacia monticola* with Low Open Woodland of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Hummock Grassland of *Triodia wiseana* and *Triodia pungens* on red brown loam on minor drainage lines;

ME TtAinCa ChEl AmoPIAlu - Open Tussock Grassland of *Themeda triandra*, *Aristida inaequiglumis* and *Cymbopogon ambiguus* with Low Open Woodland of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia monticola*, *Petalostylis labicheoides* and *Androcalva luteiflora* on red brown alluvium on minor and medium drainage lines;

FP TtEa ExAa AprAtpElo - Tussock Grassland of *Themeda triandra* and *Eulalia aurea* with Low Woodland of *Eucalyptus xerothermica* and *Acacia aptaneura* over Open Shrubland of *Acacia pruinoarpa*, *Acacia tumida* var. *pilbarensis* and *Eremophila longifolia* on red brown clay loam on unincised drainage lines and floodplains;

GG TtEmuTmb ElChCfe AtpGrPI - Tussock Grassland of *Themeda triandra*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Corymbia ferriticola* over High Shrubland of *Acacia tumida* var. *pilbarensis*, *Gossypium robinsonii* and *Petalostylis labicheoides* on red brown sandy loam in narrowly incised rocky drainage lines;

ME TpTI ExAciCh PIAPyGr - Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamersleyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains; and

SP TpTm AaExAca ApaEffAad - Hummock Grassland of *Triodia pungens* and *Triodia melvillei* with Low Open Woodland of *Acacia aptaneura*, *Eucalyptus xerothermica* and *Acacia catenulata* subsp. *occidentalis* and Open Shrubland of *Acacia pachyacra*, *Eremophila forrestii* subsp. *forrestii* and *Acacia adsurgens* on red brown clay loam or silty loam on stony plains and floodplains.

The vegetation associations within the application area are common locally and regionally (BHP Billiton, 2016; GIS Database). Given the non-contiguous nature of the proposed clearing and the large permit boundary (97,680 hectares), it is considered unlikely that the proposed clearing will significantly impact upon any vegetation growing in association with non-perennial watercourses. Provided disturbance to riparian habitats is avoided or minimised where possible, and strict weed hygiene procedures are followed, the proposed works are not expected to substantially impact this vegetation association. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

Based on the above, the proposed clearing is at variance to this Principle.

Methodology BHP Billiton (2016)

GIS Database:
- Hydrography, linear

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

Comments Proposal may be at variance to this Principle

The application area is mapped as occurring on the Boolgeeda, Elimunna, Jamindie, Newman, Platform, Pindering, Rocklea, Spearhole and Wannamunna land systems (GIS Database).

The majority of the land systems are generally not susceptible to erosion, except for the Elimunna and Jamindie land systems (van Vreeswyk et al., 2004). These land systems have drainage tracts that are moderately susceptible to erosion (van Vreeswyk et al., 2004). Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a watercourse management condition and a staged clearing condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology van Vreeswyk et al. (2004)

GIS Database:
- Rangeland Land System Mapping

(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.

Comments Proposal is not likely to be at variance to this Principle

The application area is not located within any conservation area (GIS Database). The nearest conservation area is Karijini National Park, adjacent to the western boundary of the application area (GIS Database). The area surrounding Karijini National Park is largely uncleared, so the proposed clearing is not likely to disrupt any ecological linkages to the National Park (GIS Database). The close proximity of the application area to Karijini National Park means the exploration activities pose the risk of spreading weed species into the National Park. Potential impacts to the National Park may be minimised by the implementation of a weed management condition.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- DPaW Tenure

(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.

Comments Proposal is not likely to be at variance to this Principle

The application area is not located within a Public Drinking Water Source Area (GIS Database). The application area is located within the proclaimed Pilbara groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water

Several watercourses intersect the application area (GIS Database). The Coondewanna Flats and Lake Robinson have been excluded from the application area with a 50 metre buffer by the proponent (BHP Billiton, 2016). Any clearing proposed within the applied clearing area is likely to occur along the existing rail network where impact has already occurred. If clearing of riparian vegetation is required there may be some localised short term sedimentation during the clearing process however, this is not likely to be an ongoing issue. Potential impacts to surface water quality as a result of the proposed clearing may be minimised by the implementation of a watercourse management condition.

The application area has a groundwater salinity that is marginal (500 – 1000 milligrams/Litre Total Dissolved solids) (GIS Database). The proposed clearing of 1,000 hectares of native vegetation (at various locations) within an application area of approximately 97,680 hectares that has extensive amounts of vegetation remaining, is unlikely to result in any significant impacts to groundwater quality.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP Billiton (2016)

GIS Database:

- Groundwater Salinity, Satewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

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

Comments Proposal is not likely to be at variance to this Principle

Massive surface water runoff and localised flooding occurs following intense rainfall events in the Pilbara (BHP Billiton, 2016). However, given that the proposed clearing of 1,000 hectares of native vegetation is to be undertaken at various locations within an application area of approximately 97,680 hectares, stretching across two catchments (Ashburton and Fortescue Catchments), the proposed clearing is not likely to increase the potential for flooding (GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP Billiton (2016)

GIS Database:

- Hydrographic Catchments – Catchments

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There is one native title claim over the application area (WC2011/006) (DAA, 2016). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are several Sites of Aboriginal Significance located in the area applied to clear (DAA, 2016). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

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

The clearing permit application was advertised on 18 July 2016 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received..

Methodology DAA (2016)

4. References

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- van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P (2004) Technical Bulletin – An Inventory and Condition Survey of the Pilbara, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , 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:

{DPaW (2015) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.

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. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

- EN Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA Migratory birds protected under an international agreement**
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 the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and 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.