Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8716/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Fortescue Metals Group Ltd**

1.3. Property details

Property:
Miscellaneous Licence 45/456
Miscellaneous Licence 45/458
Miscellaneous Licence 45/460
Miscellaneous Licence 45/462
Miscellaneous Licence 45/468
Miscellaneous Licence 45/471
Miscellaneous Licence 45/472
Miscellaneous Licence 45/474
Miscellaneous Licence 45/475
Miscellaneous Licence 47/848
Miscellaneous Licence 47/859

Local Government Area: Shire of Ashburton; Shire of East Pilbara; and Town of Port Hedland
Colloquial name: Pilbara Transmission Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
114		Mechanical Removal	Power Infrastructure and Associated Activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 December 2019

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation of the application area is broadly mapped as the following Beard vegetation associations:
11: Medium woodland; coolabah (*Eucalyptus microtheca*);
29: Sparse low woodland; mulga, discontinuous in scattered groups;
82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;
93: Hummock grasslands, shrub steppe; kanji over soft spinifex;
173: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia wiseana* on basalt;
175: Short bunch grassland - savanna/grass plain (Pilbara);
562: Mosaic: Low woodland; mulga in valleys / Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana*;
589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex;
619: Medium woodland; river gum (*Eucalyptus camaldulensis*);
626: Hummock grasslands, shrub-steppe; kanji over soft spinifex & *Triodia brizioides*; and
647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex (GIS Database).

Several flora and vegetation survey have been conducted over the application area (FMG, 2019). Ecoscape (2018) has undertaken a literature review of 27 flora and vegetation surveys where priority was assigned to the most recent assessment with the highest level of survey (i.e. Detailed/Level 2 assessment in preference over Level 1 assessment). The following vegetation associations were recorded within the application area (FMG, 2019):

- 1: Open Woodland of *Eucalyptus victrix, Eucalyptus camaldulensis* with pockets of *Acacia coriacea* subsp*. pendens* over *Grevillea wickhamii subsp. aprica, Petalostylis labicheoides* and *Acacia tumida* over *Triodia longiceps, Chrysopogon fallax,Themeda triandra* and *Aristida* spp.
- 8: Closed Scrub to Tall Shrubland of *Acacia pruinocarpa, Acacia tumida, Acacia ancistrocarpa, Acacia maitlandii, Acacia kempeana, Acacia tetragonophylla* with occasional *Eucalyptus gamophylla* and *Corymbia deserticola* over *Triodia epactia, Themeda triandra* and *Aristida* species.
- 9: Closed Scrub to Shrubland of *Acacia ancistrocarpa*, *Acacia maitlandii*, *Acacia kempeana*, *Acacia monticola* with occasional *Eucalyptus gamophylla* and *Corymbia deserticola* over Senna, *Triodia basedowii* and *Aristida* species.

- 10: Low Open Woodland of *Acacia xiphophylla, Acacia victoriae, Acacia aneura* var. *aneura* over *Acacia tetragonophylla, Ptilotus obovatus, Senna* species and mixed species of *Maireana and Sclerolaena.*
- 16: Hummock Grassland of *Triodia basedowii* with pockets of *Triodia epactia* and *Triodia lanigera* with emergent patches of *Eucalyptus leucophloia, Corymbia deserticola* over *Acacia ancistrocarpa, Acacia hilliana, Acacia acradenia, Acacia pyrifolia, Hakea lorea* subsp. *lorea* over *Goodenia stobbsiana* and mixed *Senna* species.
- 17: Hummock Grassland of *Triodia basedowii* with pockets of *Triodia epactia* and *Triodia lanigera* with emergent patches of *Eucalyptus leucophloia, Corymbia deserticola* over *Acacia ancistrocarpa, Acacia pyrifolia, Hakea lorea* subsp. *lorea* over *Goodenia stobbsiana* and mixed *Senna* and *Ptilotus* species.
- AaAtAc: *Acacia aptaneura, Acacia pteraneura* and *Acacia pruinocarpa* low woodland, over *Acacia tetragonophylla, Senna artemisioides* subsp. *oligophylla* and *Vachellia farnesiana* mid sparse shrubland, over *Aristida contorta* and *Enneapogon polyphyllus* open tussock grassland and *Triodia epactia* sparse hummock grassland.
- AaAtAl: *Acacia* aff. *aneura, Acacia pteraneura* and *Acacia aptaneura* tall open shrubland, over *Acacia tetragonophylla* and *Acacia victoriae* sparse shrubland, over *Aristida latifolia, Cenchrus ciliaris* and *Cenchrus setiger* sparse tussock grassland.
- AaImTe: *Acacia aneura* and *Acacia pruinocarpa* tall shrubland, over *Acacia ancistrocarpa* and *Eremophila longifolia* mid sparse shrubland, over *Indigofera monophylla* and *Sida sp. Verrucose glands (F.H. Mollemans 2423)* low sparse shrubland, over *Cenchrus ciliaris* tussock grassland.
- AancS1: *Acacia ancistrocarpa* and *Acacia bivenosa* Open Shrubland over *Ptilotus exaltatus* var. *exaltatus, Senna glutinosa* subsp. *luersseni, Acacia victoriae, Ptilotus clementii Low Open Shrubland over a Hummock Grassland of Triodia lanigera.*
- AaTb: *Acacia ancistrocarpa, Acacia bivenosa* and *Acacia pyrifolia* var. *pyrifolia* tall shrubland over *Triodia basedowii* and *Triodia longiceps* low sparse hummock grassland.
- AaVfTH2: *Acacia aneura* shrubland, over mid *Vachellia farnesiana* sparse shrubland, over *Chrysopogon fallax* and *Themeda* sp. *Hamersley Station* (M.E. Trudgen 11431) tussock grassland.
- Ac1: *Eucalyptus victrix, Melaleuca argentea* low woodland to low open woodland.
- Ac1/Ac5: *Euclayptus victrix, Melaleuca argentea* and *Eucalyptus camaldulensis* low woodland to low open woodland over *Acacia trachycarpa* high shrubland over *Triodia epactia* mid-dense hummock grassland and *Cenchrus ciliaris* very open tussock grassland.
- Ac4: *Eucalyptus victrix* scattered low trees to low open woodland over *Melaleuca glomerata* high shrubland to open scrub over *Triodia epactia*, tussock grasses and patches of sedges.
- Ac8: *Eucalyptus victrix* scattered low trees over *Acacia trachycarpa* open scrub over *Triodia epactia* middense hummock grassland or *Cenchrus ciliaris* open to closed tussock grassland.
- Ac9: *Corymbia* spp. scattered low trees over *Acacia trachycarpa* open scrub over *Triodia lanigera* middense hummock grassland and *Cenchrus ciliaris* tussock grassland.
- Ac12: *Corymbia hamersleyana* scattered low trees over *Acacia tumida* high shrubland over *Triodia lanigera, T. epactia* mid-dense hummock grassland.
- Ac17: *Acacia tumida, A. colei* open scrub over mixed tussock grassland.
- Ac20: *Acacia ampliceps* open scrub over *A. trachycarpa* shrubland over **Cenchrus ciliaris, Diplachne fusca* closed tussock grassland.
- Ac22: *Corymbia* spp. low open woodland over *Acacia acradenia, A. ancistrocarpa* open scrub over *Triodia epactia* open hummock grassland and *Chrysopogon fallax, Themeda triandra* tussock grassland.
- Ac28: *Acacia bivenosa* open heath over *Triodia lanigera* hummock grassland.
- Ac29: *Acacia farnesiana, A.* sclerosperma scattered tall shrubs over **Cenchrus ciliaris, Chrysopogon fallax* closed tussock grassland.
- Ac31: *Acacia bivenosa* shrubland to open heath over *Triodia longiceps* mid-dense hummock grassland.
- Ah1/Aps1: *Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana* hummock grassland to mid-dense hummock grassland.
- Ah2/Aps3: *Acacia orthocarpa* high/open shrubland to open scrub/high shrubland over *Triodia lanigera / Triodia wiseana* mid-dense hummock grassland.
- Ah4: *Acacia ancistrocarpa, A. inaequilatera* scattered tall shrubs over *Triodia brizoides* mid-dense hummock grassland.
- AiSaoTw: *Acacia inaequilatera, Acacia ancistrocarpa* and *Acacia bivenosa* tall sparse shrubland, over *Senna artemisioides* subsp. *oligophylla x helmsii* mid sparse shrubland, over *Triodia wiseana* and *Triodia epactia* open hummock grassland.
- AiTb: *Acacia inaequilatera, Acacia acradenia* and *Grevillea wickhamii* sparse shrubland, over *Triodia basedowii* and *Triodia wiseana* hummock grassland.
- AmaiS3: *Acacia maitlandii* and *Hakea lorea* ssp. *lorea* Tall Open Shrubland over *Acacia inaequilatera* and *Acacia bivenosa* Open Shrubland over a Tussock Grassland dominated by *Triodia lanigera.*
- AorS2: Acacia orthocarpa Open Heath to Tall Open Scrub over a Hummock to Closed Hummock Grassland of *Triodia lanigera, Triodia epatica Triodia angusta* and *Triodia wiseana.*
- AoTb: *Acacia orthocarpa* open mid shrubland over *Indigofera monophylla* sparse low shrubland over *Triodia basedowii* open hummock grassland.
- ApDpTe: *Acacia aff. aneura* and *Acacia pteraneura* and *Acacia pruinocarpa* low woodland, over *Dodonaea petiolaris, Grevillea berryana* and *Eremophila forrestii subsp. forrestii* mid sparse shrubland, over *Enneapogon polyphyllus* and *Aristida contorta* sparse tussock grassland and *Triodia epactia* open hummock grassland.
- ApDpTp: *Acacia pruinocarpa* low open woodland over *Dodonaea petiolaris, Eremophila latrobei* subsp. *glabra* and *Eremophila forrestii* mid sparse shrubland over *Triodia pungens* low open hummock grassland.
- Aps1: *Acacia orthocarpa* high open shrubland to open scrub over *Triodia epactia* mid-dense hummock grassland.
- Aps1/Aps2: *Acacia orthocarpa* high/high open shrubland to open scrub over *Triodia epactia / Triodia lanigera* middense hummock grassland.
- Aps1/Aps3: *Acacia orthocarpa* high/high open shrubland to open scrub over *Triodia epactia / Triodia wiseana* middense hummock grassland.

- Aps2/Aps3: *Acacia orthocarpa* high/high open shrubland to open scrub / high shrubland over *Triodia lanigera / Triodia wiseana* mid-dense hummock grassland.
- Aps2/Aps8: *Acacia orthocarpa/Acacia maitlandii* high shrubland/open shrubland to open scrub over *Triodia lanigera* mid-dense hummock grassland.
- Aps3: *Acacia orthocarpa* high open shrubland to high shrubland over *Triodia wiseana* mid-dense hummock grassland.
- Aps8: *Acacia maitlandii* open scrub over *Triodia lanigera* mid-dense hummock grassland.
- Apt1: *Triodia epactia, T. secunda* mid-dense hummock grassland.
- Apt10: *Acacia stellaticeps* scattered shrubs to low shrubland over *Triodia epactia* dense hummock grassland.
- Apt12: *Acacia inaequilatera* scattered tall shrubs over *Triodia lanigera* mid-dense hummock grassland.
- Apt12/Aps8: *Acacia inaequilatera* scattered tall shrubs/ *Acacia maitlandii* open scrub over *Triodia lanigera* mid-dense hummock grassland.
- Apt13: *Acacia ancistrocarpa* open shrubland to open heath over *Triodia lanigera* hummock grassland.
- Apt13/Ah2: *Acacia ancistrocarpa/Acacia bivenosa* open shrubland to open heath over *Triodia wiseana / Triodia lanigera* mid- dense hummock grassland.
- Apt2/Apt7: *Acacia* spp.*, Pluchea ferdinandi-muelleri* scattered shrubs over *Triodia longiceps*/*Triodia secunda* mid-dense hummock grassland.
- Apt5: *Triodia angusta* mid-dense hummock grassland.
- Apt6: *Acacia stellaticeps, Pluchea ferdinandi-muelleri* low open shrubland over *Triodia lanigera* mid-dense hummock grassland.
- Apt7: *Acacia* spp., *Pluchea ferdinandi-muelleri* scattered shrubs over *Triodia longiceps* mid-dense hummock grassland.
- ApTp: *Acacia pyrifolia* var. *pyrifolia* and *Acacia sericophylla* tall sparse shrubland over *Triodia pungens* low sparse hummock grassland.
- Ar1/Ar2/Ar3/Ar4: *Ficus brachypoda, Flueggea virosa* subsp. *melanthesoides, Terminalia canescens, Clerodendrum* spp. scattered shrubs and *Acacia tumida* high shrubland to open scrub over *Triodia epactia* hummock grassland, *Tripogon loliiformis* dwarf open grassland and *Bulbostylis burbidgeae* sedgeland.
- Ar5: *Acacia inaequilatera* scattered tall shrubs over *Gossypium australe* (Whim Creek form) open shrubland over *Triodia epactia* hummock grassland.
- AsTI: *Acacia stellaticeps* sparse low shrubland over *Triodia longiceps* hummock grassland *over Bulbostylis barbata* isolated sedges.
- AxAvAI: *Hakea lorea* subsp. *lorea Acacia tetragonophylla* and *Acacia xiphophylla* tall sparse shrubland, over *Acacia victoriae* mid sparse shrubland, over *Aristida latifolia* and *Chrysopogon fallax* sparse tussock grassland, and *Triodia epactia* sparse tussock grassland.
- AxEx: *Acacia xiphophylla, Acacia synchronicia* and *Acacia victoriae* tall open shrubland, over *Eragrostis xerophila, Eragrostis leptocarpa* and *Cenchrus ciliaris* sparse tussock grassland.
- AxSahTw: *Acacia xiphophylla* tall open shrubland, over *Senna artemisioides* subsp. *helmsii* mid sparse shrubland, over *Cymbopogon ambiguus* sparse tussock grassland and *Triodia epactia* sparse hummock grassland.
- Cc20: *Corymbia* spp. scattered low trees over *Acacia coriacea* subsp*. pendens, A. ancistrocarpa, A. tenuissima* tall open shrubland over *Triodia epactia* mid-dense hummock grassland and open tussock grasses.
- Ch15: *Acacia bivenosa* scattered shrubs over *Triodia longiceps* mid-dense hummock grassland.
- Ch17: *Acacia aneura, A. adsurgens, G. wickhamii, Senna glutinosa* subsp. *glutinosa, S. glutinosa* subsp. x *luerssenii* scattered shrubs over *Triodia aff. basedowii* mid-dense hummock grassland.
- Ch17/Ch20: *Acacia aneura, A. adsurgens, G. wickhamii, Senna glutinosa* subsp*. glutinosa, S. glutinosa* subsp. x *luerssenii* scattered shrubs over *Triodia aff. basedowii* mid-dense hummock grassland.
- Ch18: *Eucalyptus leucophloia, Hakea* spp. scattered low trees over *Acacia atkinsiana, Grevillea wickhamii* scattered tall shrubs over *Triodia epactia* mid-dense hummock grassland.
- ChAbTw: *Corymbia hamersleyana* low isolated trees over *Acacia bivenosa, Acacia inaequilatera* and *Senna glutinosa* subsp*. glutinosa* mid to tall sparse to isolated shrubland over *Triodia wiseana, Triodia basedowii* and *Triodia pungens* low hummock grassland.
- ChAcTe: *Corymbia hamersleyana* low isolated trees, over *Acacia aneura, Acacia coriacea* subsp. *pendens* and *Acacia synchronicia* tall sparse shrubland, over *Triodia epactia* sparse hummock grassland.
- ChAiTw4: *Corymbia hamersleyana* and/ or *E. leucophloia* subsp*. leucophloia* low open woodland over *Acacia inaequilatera* and/ or *A. bivenosa* mid sparse shrubland over *Triodia wiseana* low open hummock grassland.
- ChGpITe: *Eucalyptus leucophloia* subsp*. leucophloia* and *Corymbia hamersleyana* low isolated trees, over *Acacia atkinsiana, Grevillea pyramidalis* subsp. *leucadendron and Acacia elachantha* tall sparse shrubland, over *Triodia epactia* hummock grassland.
- EcApCa: *Eucalyptus camaldulensis* and *Melaleuca argentea* low woodland over *Acacia pyrifolia* tall sparse shrubland over *Tephrosia rosea* and *Corchorus crozophorifolius* mid sparse shrubland over *Cymbopogon ambiguus* open tussock grassland.
- EgAaTe3: *Eucalyptus gamophylla* and *Eucalyptus leucophloia* subsp. *leucophloia* low sparse woodland, over *Acacia atkinsiana* and *Senna glutinosa* subsp. *glutnosa* mid sparse shrubland, over *Keraudrenia nephrosperma* and *Acacia spondylophylla* low sparse shrubland.
- EIIAiTw: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low sparse woodland over *Acacia inaequilatera* tall sparse shrubland over *Acacia bivenosa* and *Senna glutinosa* subsp. *glutinosa* mid sparse shrubland over *Ptilotus calostachyus* low sparse shrubland.
- EIIAmTe: *Eucalyptus leucophloia* subsp*. leucophloia* low open woodland, over *Acacia monticola, Acacia spondylophylla* and *Acacia bivenosa* mid sparse shrubland, over *Triodia epactia* open hummock grassland.
- EIIGwTw1: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low sparse woodland over *Grevillea wickhamii* tall sparse shrubland over *Acacia monticola* mid sparse shrubland over *Corchorus lasiocarpus* low sparse shrubland over *Triodia wiseana* open hummock grassland.
- EoApAI: *Eriachne obtusa, Astrebla pectinata* and *Aristida latifolia* open tussock grassland.

- EvAcpCv: *Eucalyptus victrix, Eucalyptus camaldulensis* subsp. *obtuse* and *Melaleuca glomerata* mid woodland, over *Acacia coriacea* subsp. *pendens* and *Acacia trachycarpa tall sparse shrubland, over Cyperus vaginatus open sedgeland.*
- EvAppTt: *Eucalyptus victrix* mid woodland, over *Acacia pyrifolia var. pyrifolia, Acacia maitlandii* and *Acacia tumida var. pilbarensis* mid sparse shrubland, over *Triodia epactia* sparse hummock grassland and *Themeda triandra* sparse tussock grassland.
- EvMlTp: *Eucalyptus victrix* and *Acacia coriacea* subsp. *pendens* low to mid open woodland over *Melaleuca linophylla, Acacia pyrifolia* var. *pyrifolia* and *Acacia trachycarpa* tall open shrubland over *Triodia pungens* and *Triodia wiseana* low sparse hummock grassland.
- Fc4: *Eucalyptus victrix* open woodland over *Acacia coriacea* subsp. *pendens, A. aneura, Atalaya hemiglauca* low woodland over *Cenchrus ciliaris* tussock grassland.
- Fc4/Cc18: *Eucalyptus victrix* open woodland over *Acacia coriacea* subsp. *pendens, A. aneura, Atalaya hemiglauca* low woodland over *Cenchrus ciliaris* tussock grassland.
- Fc5/Fc6/Cc18: *Acacia coriacea* subsp. *pendens* low woodland over *Hakea lorea* subsp. *lorea, Acacia tetragonophylla, A. pyrifolia, Atalaya hemiglauca* tall open shrubland over *Cenchrus ciliaris* closed tussock grassland.
- Fx1: *Acacia xiphophylla* open scrub over *Cassia sturtii* shrubland to low open heath over *Eragrostis xerophila* open tussock grassland.
- Fx10: *Acacia synchronicia* tall open shrubland over *Aristida latifolia* open tussock grassland and *Ptilotus gomphrenoides* var. *gomphrenoides, Chloris pectinata* open annual herbland / grassland.
- Fx11/Fx12: Mixed Herbland, Annual Grassland and *Eragrostis setifolia* closed tussock grassland.
- GwTp: *Grevillea wickhamii* sparse tall shrubland over *Triodia pungens* open hummock grassland and isolated *Eragrostis cumingii* tussock grasses *Cyperus squarrosus* sedges and *Stemodia viscosa* herbs.
- ImTp: *Indigofera monophylla* and *Solanum phlomoides sparse* open shrubland over *Triodia pungens* and *Triodia basedowii* sparse hummock grassland with *Mollugo molluginea* and *Bonamia linearis* isolated herbs.
- M1: Open Woodland of *Eucalyptus victrix, Eucalyptus camaldulensis var. obtusa* with pockets of *Acacia coriacea subsp. pendens* over *Grevillea wickhamii subsp. aprica, Petalostylis labicheoides, Acacia tumida* over *Triodia longiceps, Chrysopogon fallax, Themeda triandra* and *Aristida* spp.
- M17: Hummock Grassland of *Triodia basedowii* with pockets of *Triodia epactia* and *Triodia lanigera* with emergent patches of *Eucalyptus leucophloia, Corymbia deserticola* over *Acacia ancistrocarpa, Acacia pyrifolia, Hakea lorea* subsp. *lorea* over *Goodenia stobbsiana* and mixed *Senna* and *Ptilotus* species.
- M9: Closed Scrub to Shrubland of *Acacia ancistrocarpa, Acacia maitlandii, Acacia kempeana, Acacia monticola* with occasional *Eucalyptus gamophylla* and *Corymbia deserticola* over *Senna* species, *Triodia basedowii* and *Aristida* species.
- TanHG1: *Triodia angusta* Hummock to Mid Dense Hummock Grassland.
- TeAs: *Triodia epactia / Acacia stellaticeps* Hummock Grassland.
- TepTloHG1: *Triodia epactia* and *Triodia longiceps* Open Hummock to Closed Hummock Grassland.
- TlAs: *Triodia lanigera/ Acacia stellaticeps* Hummock Grassland.
- Tp: *Triodia pungens* open hummock grassland.
- TsAs: *Triodia secunda / Acacia stellaticeps* Hummock Grassland.

Clearing Description

Pilbara Transmission Project.
Fortescue Metals Group Ltd proposes to clear up to 114 hectares of native vegetation within a boundary of approximately 1,674 hectares, for the purpose of power infrastructure and associated activities. The project is located approximately 300 metres south of Port Hedland at its closest point, 58 kilometres north of Tom Price at its closest point, and 96 kilometres west of Marble Bar at its closest point, within the Shires of Ashburton, Shire of East Pilbara and Town of Port Hedland.

Vegetation Condition

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

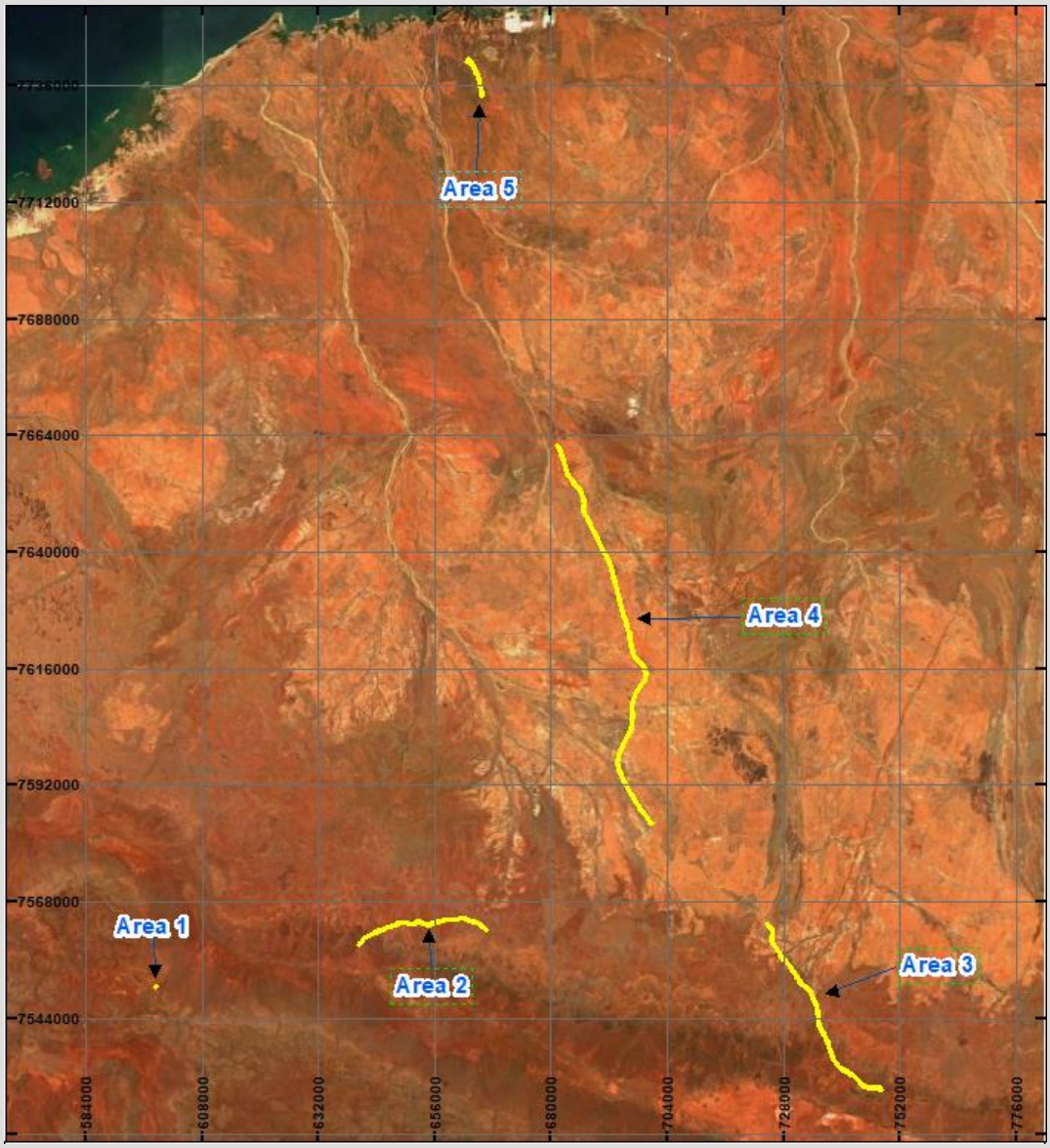
To

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

The vegetation condition was derived from several vegetation surveys amalgamated by Ecoscape (2018).

The proposed clearing is made up of five separate areas visible below:



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 areas are located within the Chichester, Fortescue and Roebourne subregions of the Pilbara Interim Biogeographic Regionalisation for Australia bioregion (IBRA) (GIS Database). At a broad scale, vegetation of the Chichester subregion is comprised of undulating Archaean granite and basalt plains including significant areas of basaltic ranges. Plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002). The Fortescue subregion is comprised of River gum woodlands fringing the drainage lines, and it is the northern limit of Mulga (*Acacia aneura*). An extensive calcrete aquifer (originating within a palaeo-drainage valley) feeds numerous permanent springs in the central Fortescue, supporting large permanent wetlands with extensive stands of river gum and cadjeput *Melaleuca* woodlands (CALM, 2002). The Roebourne subregion is comprised of coastal and sub-coastal plains with grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or A. *pyrifolia* and A. *inaequilatera*. Uplands are dominated by Triodia hummock grasslands and drainage lines support *Eucalyptus victrix* or *Corymbia Hamersleyana* woodlands (CALM, 2002).

The vegetation within the application area is considered to be in a 'completely degraded' to 'excellent' condition (FMG, 2019). Approximately 24% of the disturbance envelope is 'completely degraded' due to clearing associated with railway infrastructure and associated activities, access tracks, weeds and grazing (FMG, 2019; GIS Database). Native vegetation adjacent to the application area is in a similar condition to that of the application area (FMG, 2019).

No Threatened flora have been identified within the application area (FMG, 2019; GIS Database). The nearest Threatened Flora species '*Pityrodia* sp. Marble Bar' is located approximately 20 kilometres east of Area 4 (FMG, 2019; GIS Database). Four Priority flora species were identified during the during the regional flora surveys, however only *Goodenia nuda* (Priority 4) was recorded within the disturbance envelope (FMG, 2019). *Goodenia nuda* has been recorded twenty one times within the greater survey area, with twenty plants found

approximately 17 kilometres north of the Cloudbreak termination point and one approximately 1.4 kilometres south of the Kanyiri substation (FMG, 2019). FMG (2019) have advised that the design and placement of the Pilbara Transmission Project (PTP) infrastructure (pole locations, access tracks and substations) has been utilised to have minimal impact to any known Priority flora species within the application areas. As a result, just one of the twenty one recorded *Goodenia nuda* will be impacted by the proposed clearing. FMG (2019) have advised that the species is intersected by the PTPs Pole Infrastructure Corridor which will only be cleared when required (i.e. where vegetation is greater than 5 m in height or poses a fire risk from the powerline) and can be avoided through selective pruning within this section of Pole Infrastructure Corridor.

No Threatened Ecological Communities (TEC's) are known to occur within the application area (GIS Database). No TECs were identified during flora and vegetation surveys (FMG, 2019). Several Priority Ecological Communities (PEC's) surround the clearing permit application areas (GIS Database), although field investigations discounted the occurrence of any PEC's within the application areas (FMG, 2019).

A small portion of the south eastern component of Area 3 intersects the buffer of the Fortescue Marsh (Marsh Land System) PEC, however does not intercept the boundary. The Fortescue Marsh PEC is classified as a Priority 1 PEC that is situated south of Fortescue's Cloudbreak Mine Site. The PEC is located approximately 5 km south west of area three at its closest point and it is considered unlikely to be impacted by the proposed clearing.

A total of ten introduced flora species have been recorded from within the application area (FMG, 2019). 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.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (FMG, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology

CALM (2002)
FMG (2019)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened Fauna

(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 may be at variance to this Principle

A terrestrial fauna desktop assessment was completed by Spectrum Ecology in October 2018. The assessment included data from five database searches, nine Level 2, seven Level 1 and 22 targeted / monitoring fauna assessments (Spectrum Ecology, 2018).

The following eleven fauna habitats have been recorded within the application area (Spectrum Ecology, 2018):

- Granite outcrops: Granite substrate with sandy soil in between rocks. Vegetation is sparse and includes some low shrubs (*Acacia orthocarpa, A. ancistrocarpa, A. inaequilatera)* over low spinifex hummock grassland (*Triodia lanigera* and *T. epactia)*.
- Loamy/Stony Plain with mixed shrubland: Hard/loamy compact substrate with or without a large amount of pebbles. Vegetation includes mixed shrubs such as *Acacia tumida, Grevillea wickhamii* or *Indigofera monophyla.*
- Major River: Sandy or gravelly substrate with fringing large Eucalypt or *Melaleuca* trees.
- Minor Creekline: Sandy or gravelly substrate with rocky areas. Vegetation includes shrubland of *Acacia tumida, A. trachycarpa*, *Grevillea wickhamii* over Buffel Grass (*Cenchrus ciliaris*) and *Triodia epactia, T. lanigera* and *T. pungens* hummock grassland. Scattered trees of *Eucalyptus victrix* and *Corymbia hamersleyana* can intercept the shrubland.
- Minor Drainage Line: Sandy, loamy or clay substrate with or without a rocky mantle. Vegetation includes mixed shrubland of *Acacia xiphophylla, A. pyrifolia, Grevillea wickhamii* over lower shrubs *Senna artemisoides* and grasses *Cymbopogon ambiguus* or spinifex *Triodia sp.*
- Mulga Woodland: Hard clays substrate with or without a rocky pebble matrix. Vegetation includes *Acacia aneura, Acacia xiphophylla* and other shrubs such as *Acacia pruinocarpa, A. tetragonophylla, A. tenuissima,* mixed soft grasses or *Triodia epactia* can also occur.

- Sandy/loamy Plain with spinifex grassland: Hummock grassland with patches of low to moderate shrubs such as *Acacia stellaticeps, A. inaequilatera, A. maitlandii,* or *A. pyrifolia.*
- Sandy/Loamy Plains with mixed Shrubland: Sandy to loam soft substrate which supports a mix of *Acacia* shrubs (*Acacia bivenosa, A. ancistrocarpa, A. trachycarpa, A. orthocarpa, A. tumida, A. coriacea,* and *A. colei)* over mixed *Triodia (T. angusta, T. epactia, T. longiceps,* or *T. pungens)* grassland.
- Spinifex covered Hills: Rocky substrate with sparse loamy clay soils. Vegetation is typically open and is dominated by spinifex hummock grassland (*Triodia wiseana, T. basedowii, T. epactia and T. longiceps).* Shrubs are scattered and consist of *Grevillea wickhamii, Hakea lorea, Acacia inaequilatera, A. pyrifolia, A. ancistocarpa.* Trees are very sparse and include scattered *Eucalyptus leucophloia* and *Corymbia deserticola.*
- Stony Plains and Low Rises with Hummock Grassland: Loamy, clay soils with a continuous rocky mantle. Vegetation includes dense *Triodia* hummock grassland with scattered mixed shrubs *Acacia bivenosa, A. inaequilatera, A. tumida* and *Grevillea wickhamii.* Some areas of flat plains support *Corymbia hamersleyana* open woodland with scattered *Eucalyptus leucophloia* trees.

Excluding the Minor Creekline and Major River habitats, all these habitats are considered to be common and well represented within the region. The Minor Creekline and Major River habitats may contain 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. These habitats are also important for dispersal of mammal and reptile species in the local area. Potential impacts to these habitat types may be minimised by the implementation of a vegetation management condition. Many parts of these habitats have been degraded by existing activities and invasion of weeds (FMG, 2019).

Four conservation significant species have previously been recorded within the application areas, these being:

- Northern Quoll *(Dasyurus hallucatus* – Endangered);
- Greater Bilby (*Macrotis lagotis* – Vulnerable);
- Grey Falcon (*Falco hypoleucos* – Vulnerable); and
- Brush-tailed Mulgara (*Dasycerus blythi* – Priority 4).

Northern Quoll habitat within the application areas is comprised of Granite outcrops, River, Creekline and Drainage Lines. Within the application area, 7.3 hectares of suitable habitat has been mapped for the Northern Quoll of which 6.75 hectares is assessed as low suitability habitat, 0.5 hectares assessed as moderate suitability habitat and 0.06 hectares assessed as high suitability habitat (FMG, 2019). Clearing will generally avoid habitat for Northern Quolls, as typically rocky outcrop or watercourse habitat is unsuitable for pole/tower installations (FMG, 2019). Exceptions to this include minor clearing or pruning that is required to ensure vegetation clearance to powerlines are maintained for safety purposes (FMG, 2019).

Greater Bilby habitat within the application area is comprised of Sandy/Loamy Plains with Spinifex Grassland, Sandy/Loamy Plains with Mixed Shrubland, Major River, Minor Drainage and Minor Creekline (FMG, 2019). Within the application area, 34.72 hectares has been assessed as suitable habitat for the Greater Bilby. Within the 34.72 hectares; 30.7 hectares has been assessed as low suitability habitat, 0.58 hectares assessed as moderate suitability habitat and 3.44 hectares assessed as high suitability habitat. Given the large majority of habitat utilised by the Greater Bilby is assessed as low suitability habitat (approximately 88% of the total mapped area within the application area)(FMG, 2019) and the ability of the species to disperse and forage across a variety of habitats, it is considered unlikely that the proposed clearing will have a significant impact on fauna habitat for the Greater Bilby.

The Grey Falcon has been recorded on multiple occasions in the local region (Spectrum Ecology, 2018). The DBCA Threatened Fauna Database indicates 16 records within 20 km of the application areas (WA Herbarium, 1998-). This species is likely to utilise the application areas for foraging on an infrequent basis. Breeding sites may be present, however, these are typically built in artificial infrastructure such as repeater towers and development of powerline infrastructure may increase the availability of nesting sites (Spectrum Ecology, 2018).

The Brush-tailed Mulgara has been recorded from several locations across the application areas (Spectrum Ecology, 2018). Several populations were monitored along the Hamersley Rail Spur and the Main Line Rail during Fortescue's fauna monitoring program between 2012 and 2015 (Spectrum Ecology, 2018). The species was recorded to be a permanent resident along the two rail lines and it can be relatively abundant in suitable patches of the Sandy/loamy Plains with Spinifex Grassland habitat type.

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

Methodology

FMG (2019)
WA Herbarium (1998-)
Spectrum Ecology (2018)

GIS Database:
- Imagery
- Pre-European Vegetation
- Threatened Fauna

(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

There are no known records of Threatened flora within the application areas (GIS Database). Flora surveys of the application areas did not record any species of Threatened flora (FMG, 2019).

The vegetation associations within the application areas are common and widespread within the region (FMG, 2019; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

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

Methodology

FMG (2019)

GIS Database:
- Pre-European Vegetation
- Threatened and Priority 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.

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application areas (GIS Database).

Flora and vegetation surveys of the application areas did not identify any TECs (FMG, 2019).

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

Methodology

FMG (2019)

GIS Database:
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(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 areas fall 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). The application areas are broadly mapped as Beard vegetation associations 11: Medium woodland; coolabah (*Eucalyptus microtheca*); 29: Sparse low woodland; mulga, discontinuous in scattered groups; 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; 93: Hummock grasslands, shrub steppe; kanji over soft spinifex; 173: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia wiseana* on basalt; 175: Short bunch grassland - savanna/grass plain (Pilbara); 562: Mosaic: Low woodland; mulga in valleys / Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana*; 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex; 619: Medium woodland; river gum (*Eucalyptus camaldulensis*); 626: Hummock grasslands, shrub-steppe; kanji over soft spinifex & *Triodia brizioides*; and 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex (GIS Database).

Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level, except for Beard Vegetation Association 647 which retains approximately 97% at both the state and bioregional level (Government of Western Australia, 2019).

Therefore, the application areas do not represent a significant remnant of native vegetation in an area that has been extensively cleared.

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

Methodology

Government of Western Australia (2019)

GIS Database:
- IBRA Australia
- 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 several major ephemeral watercourses and minor named creeks that traverse through the application areas, with numerous riparian vegetation types mapped in association with these watercourses (FMG, 2019; GIS Database). These riparian vegetation types are widespread in the region, however due to the linear nature of the proposed clearing it may impact the flow of the drainage lines during heavy rainfall (GIS Database). The clearing of riparian vegetation has the potential to cause localised erosion and degrade faunal habitats. However, given the proposed clearing is spread over a large area, it is not anticipated that it will have a significant impact on minor drainage lines within the application areas. Provided disturbance to riparian habitats is avoided or minimised where possible, and weed hygiene procedures are followed, the proposed works are not expected to substantially impact these vegetation units. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management and staged clearing condition.

The application area (Area 3) intersects the Fortescue Marsh PEC which is an ecologically important wetland (GIS Database). The application area only intersects the buffer of the PEC and it is considered unlikely that the proposed clearing will impact on the values of the Fortescue Marsh PEC.

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

Methodology

FMG (2019)

GIS Database:
- Hydrography, Lakes
- 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 areas are mapped as occurring on the Bonney, Boolaloo, Boolgeeda, Brockman, Calcrete, Capricorn, Coolibah, Granitic, Hooley, Jamindle, Jurrawarrin, Macroy, Mallina, Mckay, Newman, Oakover, River, Robe, Rocklea, Talga, Uaroo, Urandy, White Springs and Wona land systems (FMG, 2019; GIS Database).

The majority of the land systems are generally not susceptible to erosion, except for the Jamindie, Mallina and River land systems (Van Vreeswyk et al., 2004). These land systems have a moderate to high risk of erosion, in particular the River land system (Van Vreeswyk et al., 2004). Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology

FMG (2019)
Van Vreeswyk et al. (2004)

GIS Database:
- Landsystem Rangelands
- Soils, Statewide

(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 areas intersect several areas managed by the Department of Biodiversity, Conservation and Attractions (DBCA), however, whilst DBCA is recognised as the manager, these lands are not vested under any Act that is administered by DBCA (FMG, 2019; GIS Database). These lands comprise of Crown land and Freehold land which DBCA has been acknowledged by the Department of Lands as the responsible agency.

There are no conservation areas in the vicinity of the application areas (GIS Database). The nearest conservation area is an ANCA Wetland located six kilometres south of Area 2, and Karijini National Park, located approximately eight kilometres south of Area 1 (GIS Database). The proposed clearing is unlikely to impact on the environmental values of these conservation area.

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

Methodology

FMG (2019)

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

There are no Public Drinking Water Source Areas within or in close proximity to the application areas (GIS Database).

There are no permanent surface water features within the application areas (FMG, 2019; GIS Database). Surface water is only present following significant rainfall events (FMG, 2019). The proposed clearing is unlikely to have a significant impact on surface water quality during these sporadic rainfall events.

The proposed clearing is considered unlikely to cause deterioration in the quality of underground water due to the purpose of clearing being for a linear powerline infrastructure, with no mining taking place.

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

Methodology

FMG (2019)

GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

(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 (FMG, 2019). However, given that the proposed clearing of 114 hectares of native vegetation is to be undertaken at various locations across five application areas of approximately 1,674 hectares, stretching across seven 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

FMG (2019)

GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, linear

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 11 November 2019 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There are five native title claims over the areas under application (DPLH, 2019). These claims have been registered with the National Native Title Tribunal / determined by the Federal Court on behalf of the claimant groups. 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 46 registered Aboriginal Sites of Significance within the application area (DPLH, 2019). 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.

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.

Methodology

DPLH (2019)

4. References

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

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Ecoscape (2018) Pilbara Transmission Project Flora and Vegetation Desktop Assessment. Report prepared for Fortescue Metals Group Ltd by Ecoscape, November 2018.
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Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Spectrum Ecology (2018) Pilbara Transmission Project Terrestrial Fauna Desktop Assessment. Report prepared for Fortescue Metals Group Ltd by Spectrum Ecology, October 2018.
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. https://florabase.dpaw.wa.gov.au/ (Accessed 10 December 2019).

5. Glossary

Acronyms:

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)
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DoEE	Department of the Environment and Energy, Australian Government
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)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DoEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DoEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

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

T **Threatened species:**

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

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

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

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

CR **Critically endangered species**

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

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

EN **Endangered species**

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

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

VU **Vulnerable species**

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

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

Extinct Species:

EX **Extinct species**

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

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

EW **Extinct in the wild species**

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

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

Specially protected species:

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

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

MI **Migratory species**

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

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

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

CD **Species of special conservation interest (conservation dependent fauna)**

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

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

OS **Other specially protected species**

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

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

P **Priority species:**

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

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

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

P1 **Priority One - Poorly-known species**

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

P2 **Priority Two - Poorly-known species**

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

P3 **Priority Three - Poorly-known species**

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

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring**

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