



Tropicana Gold Project
Threatened Species and Communities
Management Strategy

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Author	360 Environment / B Bastow	Last Approved By	B Bastow
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1 OVERVIEW

The Threatened Species and Communities Management Strategy (TS&CMS) contained within this document provides the framework for managing threatened species and communities located within the Tropicana Gold Project (the Project) disturbance area. The TS&CMS forms part of the Project's Integrated Management System (referred to as ONE MS) that ensures the effective management of all health, safety, environment, community and operational issues associated with the Project.

ONE MS (including the TS&CMS) establishes the framework and standards that must be achieved for all activities associated with the Project. It includes the development and management of policies, management strategies, procedures and reporting requirements (Figure 1). The ONE MS is designed to align with the principle of ISO14001 – Plan, Do, Check, Act.

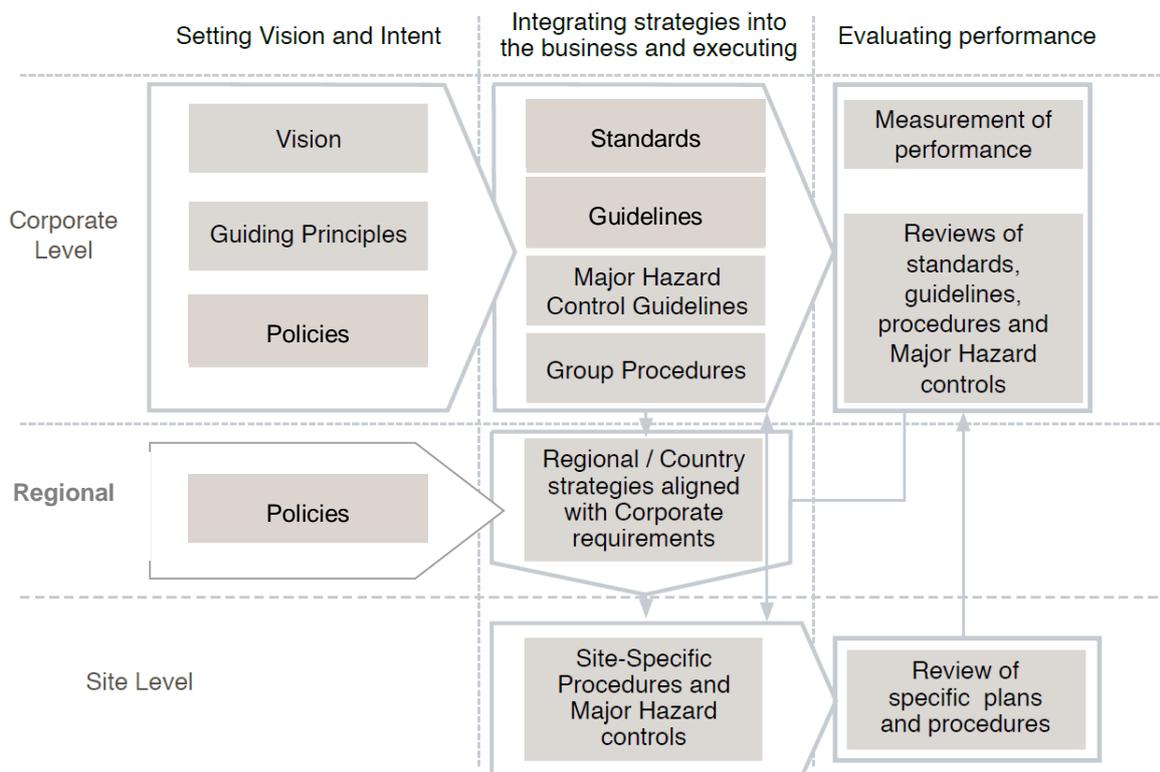


Figure 1 Tropicana Gold Project Management System Framework 'ONE'

As part of the development of the ONE MS, Tropicana Gold Mine (TGM) has established two key registers, the site legal and other obligation register (managed via CMO Compliance Database) and aspects / impacts register that documents the environmental potential impacts associated with operation. To ensure compliance and a consolidated approach to aspect/impact/hazard/risk management the site has identified 25 key environmental factors. These form the basis around which the environmental component of the ONE MS has been developed, including documentation, training and audits and inspections. The TGM environmental management strategies, of which the TS&CMS is one, identify how these environmental factors will be managed

This document has been compiled (September 2009) and revised (March 2014) with the assistance of 360 Environmental.

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2 PURPOSE

The purpose of this document is to identify the threatened species and communities that may be impacted by the Project and to establish mitigation and management measures to minimise potential impacts. Many of the potential threats posed to threatened species and communities by the Project are relevant to the design, construction, commissioning and operational phases of the Project (e.g. vehicle movement [road kill and off-ride driving]), therefore this strategy has not been divided into these phases but rather, presents life of mine management for threatened species and communities. In this document 'threatened' refers to:

- species or communities that are specifically protected under State or Federal legislation (the *State Wildlife Conservation Act 1950* or the *Federal Environment Protection and Biodiversity Conservation Act 1999* respectively);
- species or communities recognised under the Department of Parks and Wildlife (DPaW, previously the Department of Environment and Conservation) Priority Ranking; and,
- other species that are new to science, previously undescribed, at the periphery of their known distribution, have limited distribution within the Project's disturbance area or have been identified as a range extension during surveys commissioned for the Project.

Specifically, this strategy:

- identifies and describes threatened flora and fauna species that have been confirmed to occur within the Project footprint or surrounding area;
- identifies and describes threatened fauna species that have suitable habitat in the Project footprint or its surrounds, but have not been confirmed as present to date;
- identifies threatened vegetation communities that occur within the Project footprint or in its surrounds;
- identifies the risks associated with the construction and operation of the Project to the threatened species and communities; and
- proposes mitigation and management techniques to minimise the impact of the Project on threatened species and communities.

This strategy aligns with the following standards contained in the AngloGold Ashanti Australia Integrated Management System:

- Biodiversity Standard; and
- Land Management Standard.

3 SCOPE AND REVIEW PROTOCOLS

This TS&CMS is applicable to all activities (current and future changes) associated with the Project and associated activities that occur on the tenements under the management of the Tropicana General Manager such as Exploration activities occurring within the Mining Lease.

It is the intension that all future proposal or significant changes to the Project are implemented in accordance with the requirements of this strategy.

This strategy does not however cover regional exploration activities (occurring outside TGM managed land) which are managed via the ISO14001 certified AngloGold Ashanti Australia Exploration Integrated Management System.

This document will be audited annually as required by the Compliance Assessment Plan (CAP) and will undergo a management review tri-annually.

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Threatened Species and Communities Management Strategy

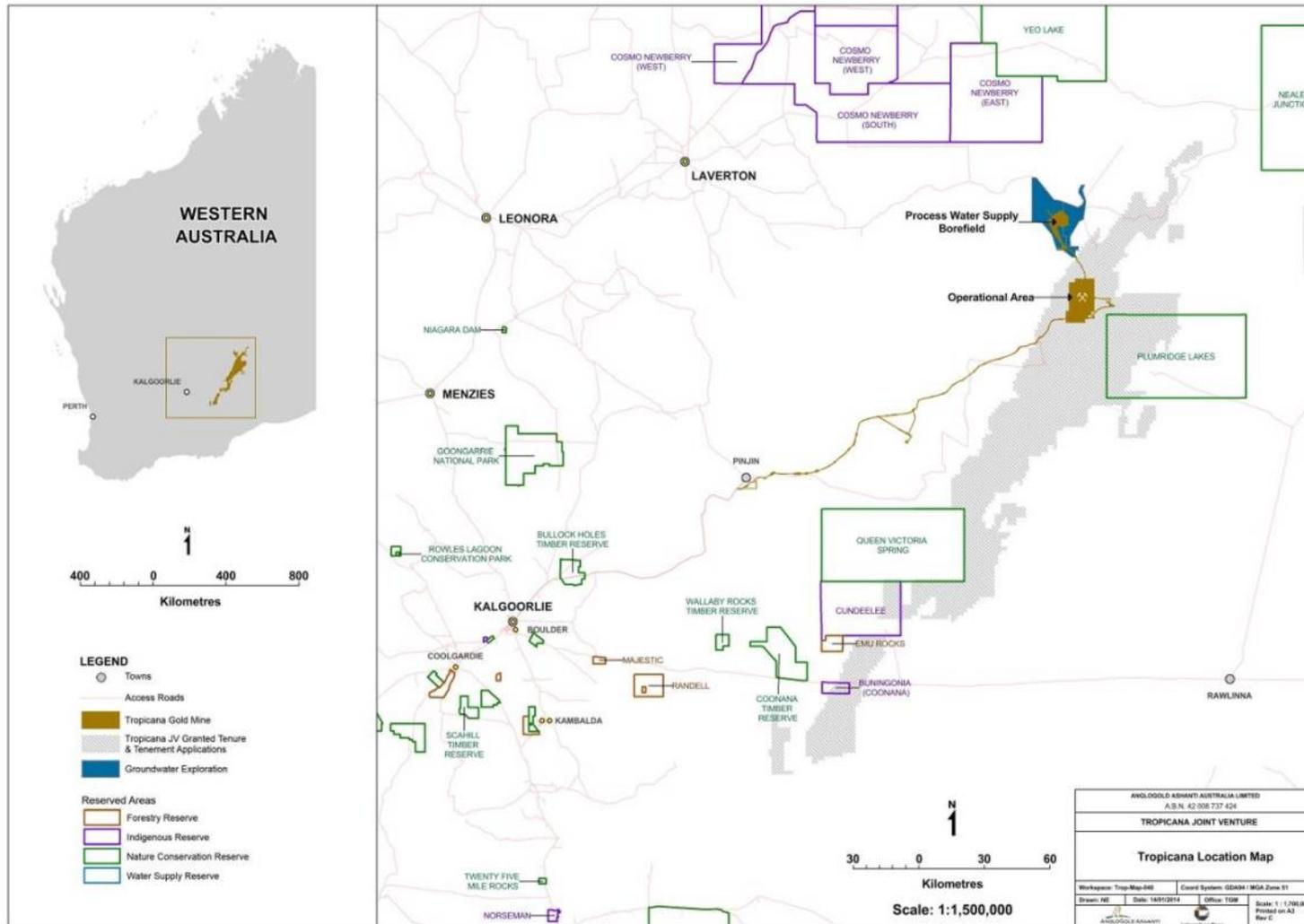


Figure 2 Tropicana Gold Project - General Locations

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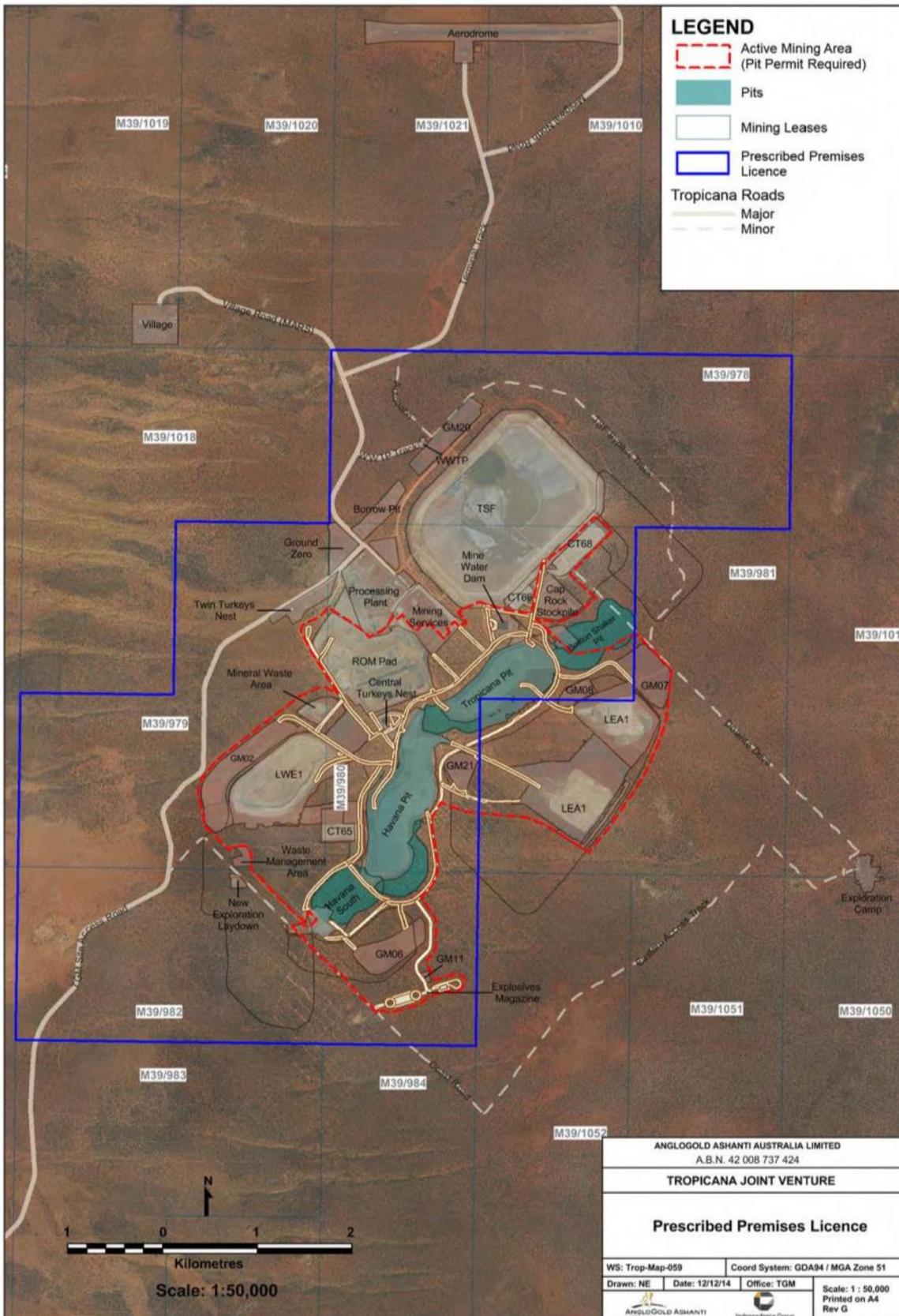


Figure 3 Tropicana Resource Footprint – Operational Area (Oct, 2014)

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4 BACKGROUND

The Joint Venture (TJV) has commissioned flora, vegetation, fauna and fauna habitat surveys and desktop assessments covering all proposed disturbance areas of the Project in order to establish the presence and distribution of threatened species and communities, and likely impacts. A list of the surveys completed to date is provided in Table 1.

In addition, consultation has been undertaken with members of the DPaw Science Division, the Western Australia Museum and other relevant experts and institutions to confirm the adequacy of the investigations. All threatened species and communities (as defined broadly above) deemed to potentially occur in the Project footprint, are discussed within this management strategy.

Table 1 Biological Surveys for Conservation Significant Flora, Vegetation, Fauna and Fauna Habitat

Title of the Report	Consultant	Date of Report	Survey Target
Threatened Species			
Threatened Species Assessment for the Tropicana Gold Project Area	MBS Environmental	September 2009	Consolidation of survey data from multiple surveys and consultants, and analysis of potential impacts.
Flora and Vegetation			
Minigwal Borefields (PWS) Level 1 Flora & Vegetation Survey	Botanica Consulting.	November 2014	Vegetation and flora of the Minigwal Borefield update.
Minigwal Trough and Pipeline Corridor Flora and Vegetation Survey	Botanica Consulting.	September 2009	Vegetation and flora of the Minigwal borefield.
A Molecular Assessment of the Identity of regenerating Mallees on the Tropicana Mine Access road, in relation to DRF <i>Eucalyptus articulata</i>	BGPA Science	November 2009	<i>Eucalyptus articulata</i> assessment of the Tropicana mine access road.
Tropicana Project - Proposed Operational Area Threatened Flora Survey	<i>ecologia</i> Environment	July 2009	Flora survey of the Project Area.
Flora and Vegetation Survey of Proposed Pinjin Infrastructure Corridor	Mattiske Consulting	July 2009	Flora survey of the Pinjin Infrastructure Corridor.
Assessment of the Flora and Vegetation of the Proposed Tropicana Project.	<i>ecologia</i> Environment	July 2009	Baseline flora and vegetation survey of Tropicana study area.
Tropicana-Transline Infrastructure Corridor: Flora and Vegetation Survey.	<i>ecologia</i> Environment	July 2009	Level 1 flora and vegetation survey of the Cable Haul Road.
Terrestrial Vertebrate Fauna			
Minigwal Trough Borefield (PWS) and Pipeline Fauna Survey	Kingfisher Environmental Consulting	November 2014	Level 1 Fauna survey PWS borefield.
Second round Sandhill Dunnart surveys of the proposed operational area and infrastructure corridor	GHD	February 2010	Supplementary Sandhill Dunnart Survey.
Assessment of habitat availability for the Sandhill Dunnart. <i>Sminthopsis psammophila</i> in Western Australia.	Churchill	December 2009	Assessment of habitat availability for the Sandhill Dunnart.
A Level One Survey of Vertebrate Fauna for the proposed Tropicana - Pinjin Infrastructure Corridor.	Ninox Wildlife Consulting	June 2009	Fauna Survey of the Infrastructure Corridor (level 1).
Tropicana-Transline Infrastructure Corridor Level 1 Fauna Survey.	<i>ecologia</i> Environment	July 2009	Fauna Survey of the Cable Infrastructure Corridor

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Title of the Report	Consultant	Date of Report	Survey Target
Malleefowl and Mulgara Survey TGP Operational Area	URS	June 2009	Fauna Survey of the Operational Area
Sandhill Dunnart Survey of the Proposed Operational Area, Access Road and Public Bypass.	Gaikhorst and Lambert	July 2009	Sandhill Dunnart assessment of the Project Area, Pinjin Infrastructure Corridor and Public Bypass.
Marsupial Mole Survey: Proposed Pinjin Infrastructure Corridor, TGP	URS	July 2009	Fauna Survey of the Pinjin Access Road.
Tropicana Gold Project Operational Area Vertebrate Fauna Assessment.	<i>ecologia</i> Environment	July 2009	Vertebrate fauna of the Operational Area (level 2 survey).
Tropicana Gold Project Minigwal Trough Water Supply Area and Pipeline Corridor.	<i>ecologia</i> Environment	July 2009	Fauna Survey of the Water Supply Area.
Survey of the underground signs of marsupial mole in the WA Great Victoria Desert.	Benshemesh and Schulz	July 2008	Marsupial mole activity within the Great Victoria Desert.
Terrestrial Invertebrates			
TGP Short Range Endemic Invertebrate Survey	<i>ecologia</i> Environment	July 2009	Short Range Endemic survey of the Operational Area
TGP Operational Area SRE - Targeted Mygalomorph Survey and Genetics Addenda	<i>ecologia</i> Environment	July 2009	Targeted Mygalomorph Survey and Genetics
Subterranean Fauna			
TGP Troglifauna Survey Phases 6 and 7	<i>ecologia</i> Environment	March 2010	Troglifauna of the Project Footprint
TGP Stygofauna Survey Operational Area	<i>ecologia</i> Environment	July 2009	Stygofauna of the Operational Area
Minigwal Trough Water supply area pipeline corridor	<i>Subterranean Ecology</i>	June 2009	Stygofauna desktop and pilot study of the water supply area
TGP Operational Area Troglifauna	<i>ecologia</i> Environment	July 2009	Troglifauna of the Project Footprint

5 LEGAL REQUIREMENTS AND OTHER CONSIDERATIONS

There are several acts, regulations and other requirements that should be considered in the protection of environmental assets such as threatened fauna, flora and communities. The most significant documents are summarised below.

5.1 LEGISLATION

Wildlife Conservation Act 1950 (WA)

The *Wildlife Conservation Act 1950 (WC Act)* was developed to provide for the conservation and protection of wildlife in Western Australia. Under Section 14 of the Act, all native fauna and flora within Western Australia are protected. However, the Minister may, via a notice published in the Government Gazette, declare a list of taxa that are in need of special protection. The current listing was gazetted on 5 August 2008 (Government of Western Australia 2008).

Under the WC Act flora listed as Declared Rare Flora (DRF) are afforded specific protection as threatened species. The WC Act allows for the special protection of rare and threatened native fauna species. Currently in Western Australia, rare or threatened fauna species are defined under the WC Act according to the following schedules:

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- Schedule 1: A native species that is rare or likely to become extinct, is declared to be fauna that is in need of special protection;
- Schedule 2: A native species that is presumed to be extinct, is declared to be fauna that is in need of special protection;
- Schedule 3: Birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is in need of special protection; and,
- Schedule 4: A native species that is in need of special protection, otherwise than for the reasons specified in Schedules 1, 2 and 3.

Ecological communities in Western Australia are also ranked by DPaW and can be listed as 'Threatened Ecological Communities' once they have been defined by the Western Australian Threatened Ecological Communities Scientific Advisory Committee and are then endorsed by the Minister for Environment. Threatened Ecological Communities are listed under four categories; Presumed Totally Destroyed, Critically Endangered, Endangered or Vulnerable (Department of Environment and Conservation 2008d). Environmental Protection and Biodiversity Conservation Act 1950 (Commonwealth).

At the Federal level, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is relevant to the Project because the Act:

- protects the environment, particularly matters of 'national environmental significance' (NES) which include threatened species, such as the Southern Marsupial Mole and Crested-tailed Mulgara, and Threatened ecological communities; and,
- ensures Australia's environmental compliance with international treaties that Australia is party to e.g. Japan and Australia Migratory Bird Agreement, China and Australia Migratory Bird Agreement and Republic of Korea and Australia Migratory Bird Agreement.

5.2 OTHER REQUIREMENTS AND CONSIDERATIONS

Department of Parks and Wildlife Priority List

If a species does not meet the criteria for listing as Threatened Fauna or Declared Rare Flora under the WC Act (e.g. due to lack of information) and is poorly known and/or conservation dependent, it may be classified as a Priority Species at the discretion of the DPaW. Priority Fauna are placed into one of five categories and Priority Flora are placed into one of four categories (see Appendices 1 and 2). The DPaW also recognises Priority Ecological Communities (PECs) for which there is insufficient knowledge to warrant Threatened Ecological Community status, but for which there is some conservation concern. Priority species are not provided any extra legislative protection over other native species in Western Australia. The listing of a species or a community as a Priority indicates that activities that may impact them are in need of special consideration.

International Union for Conservation of Nature – Red List of Threatened Species

The International Union for Conservation of Nature Red List of Threatened Species provides taxonomic, conservation status and distributional information for taxa that have been globally evaluated using the Red List Categories and Criteria (<http://www.iucnredlist.org/> Accessed 21/03/2014). This system is designed to determine the relative risk of extinction. The main purpose of the Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The Red List also includes information on taxa that are categorised as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened

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thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. are Near Threatened).

EPA Position Statement 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection

The Environmental Protection Authority (EPA) regards biological diversity as a key environmental factor and has an objective to ensure that biodiversity is protected. Position Statement 3 discusses the principles which the EPA will use when assessing proposals which may impact on biodiversity values.

International Council on Mining and Metals Sustainable Development Principle

The International Council on Mining & Metals (ICMM) is an industry group that addresses key priorities and emerging issues within the sector. The ICMM has implemented 10 principles to measure their performance relating to sustainable development in the mining and minerals. Of importance:

Principle 7: Contribute to conservation of biodiversity and integrated approaches to land use planning:

- respect legally designated protected areas;
- disseminate scientific data on and promote practices and experiences in biodiversity assessment and management; and,
- support the development and implementation of scientifically sound, inclusive and transparent procedures for integrated approaches to land use planning, biodiversity, conservation and mining.

Other Considerations

Other species that are new to science, or previously undescribed, or at the periphery of their known distribution, or have been identified as a range extension during the Joint Venture's surveys have been taken into consideration.

Consultation with the DPaw Science Division, the Western Australian Museum and other experts was also undertaken to confirm that all relevant species were considered in the surveys and in this TS&CMP.

6 REGIONAL SETTLING

The main disturbance area of the Project is the Operational Area, located within the Great Victoria Desert, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA version 7). IBRA divides the Australian continent into 89 bioregions and 419 sub-regions for assessing the status of native ecosystems, their protection in the national reserve system and for use in the monitoring and evaluation framework in the Australian Government's current Natural Resource Management initiatives (Department of the Environment 2014).

The regional setting of the Project is:

- the Operational Area and the Minigwal Trough Water Supply Area are located in the southwest corner of the Great Victoria Desert (GVD) IBRA bioregion;
- the Pinjin Infrastructure Corridor spans the Murchison and GVD bioregions; and,
- the Cable Haul Infrastructure Corridor spans the Nullarbor and GVD bioregions.

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7 FLORA OF CONSERVATION CONCERN

A number of threatened flora species protected under State and Federal legislation, or otherwise of conservation concern to the Joint Venture have the potential to occur in and around the disturbance areas of the Project. Searches of the DPaW Declared Rare and Priority Flora Database, the Western Australia Herbarium database, the EPBC Protected Matters database, various reference books and consultation with experts were undertaken to identify species of conservation concern potentially occurring in and around the Project footprint. A number of taxa identified in the original PER have changed status or are no longer listed. A summary of these changes is provided in Table 2

Several field surveys were carried out across the Project footprint; these surveys ranged from Level 1 and Level 2 surveys (EPA 2004a) to targeted surveys for threatened species (Table 1). A summary of the current flora species of conservation concern to the Project including the results of surveys undertaken by specialist consultants is provided in Table 3. This list is accurate at the time of writing, however further survey and taxonomic work may alter the list in the future.

Table 2 Changes in conservation status

Species	Previous Status	Current Status
<i>Conospermum toddii</i>	DRF/EN	P4
<i>Calandrinia porifera</i>	P3	Delisted
<i>Baeckea</i> sp. Great Victoria Desert (A.S. Weston 14813)	P2	Delisted
<i>Dicrastylis nicholasii</i>	P2	Delisted
<i>Diocirea ternata</i>	P3	Delisted
<i>Micromyrtus stenocalyx</i>	P3	Delisted
<i>Daviesia purpurascens</i>	P4	Delisted
<i>Lepidobolus deserti</i>	P4	Delisted
<i>Microcorys macredieana</i>	P3	Delisted
<i>Baeckea</i> sp. Sandstone	P1	P3
<i>Dicrastylis cundeeleensis</i>	P3	P4
<i>Grevillea secunda</i>	P2	P4
<i>Lechenaultia divaricata</i>	Unlisted	P1
<i>Olearia arida</i>	P2	P4
<i>Hibbertia crispula</i>	Unlisted	P2, VU
<i>Caesia talingka</i> (<i>Caesia talinyka</i> ms)	Unlisted	P2

(DRF = Declared Rare Flora, EN = Endangered, VU = Vulnerable, P=Priority) (Conservation definitions Appendix 1, Detailed Species Definitions Appendix 3).

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Table 3 Threatened Flora Potentially Occurring In and Around the Project Footprint

(DRF = Declared Rare Flora, EN = Endangered, VU = Vulnerable, P=Priority) (Conservation definitions Appendix 1, Detailed Species Definitions Appendix 3).

Species	Recorded:				Listed Under:			Preferred Substrate
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
<i>Acacia eremophila</i> numerous nerved variant	✓	-	-	-	P3	-	-	Sandy soils and flats.
<i>Acacia eremophila</i> var. <i>variabilis</i>	✓	-	-	-	P3	-	-	Sandy or sandy loam.
<i>Baeckea</i> sp. Sandstone	✓	-	-	-	P3	-	-	Orange sand and flats.
<i>Caesia talingka</i>	✓	-	✓	-	P2	-	-	Unknown.
<i>Comesperma viscidulum</i>	-	✓	✓	-	P4	-	-	Sandstone breakaway, red gritty sand, dune crest, swale, and rocky slopes.
<i>Conospermum toddii</i>	✓	✓	-	-	P4	-	-	Crests of sand dunes and in interdunal swales between the sand dunes.
<i>Dampiera eriantha</i>	✓	-	✓	-	P1	-	-	Unknown.
<i>Dicrastylis cundeeleensis</i>	-	✓	✓	✓	P4	-	-	Yellow sand, red or reddish-yellow sand. <i>D. cundeeleensis</i> is often found on sandplains.
<i>Eremophila perglandulosa</i>	-	-	-	-	P1	-	-	Sandy soils and flats.
<i>Eucalyptus articulata</i>	-	-	-	-	DRF	VU	-	Red sand, sandy loam, arkose rubble. <i>E. articulata</i> is likely to be found on sand dunes.
<i>Eucalyptus pimpiniana</i>	-	✓	✓	-	P3	-	-	Red sand, sand dunes and plains.
<i>Grevillea secunda</i>	✓	✓	✓	-	P4	-	-	Yellow or red sand, sand dunes and sand plains.

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Species	Recorded:				Listed Under:			Preferred Substrate
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
<i>Hibbertia crispula</i>	-	✓	-	-	P2	VU	-	Unknown.
<i>Isotropis canescens</i>	-	-	✓	-	P2	-	-	Yellow clayey sand and sandplains.
<i>Labichea deserticola</i>	-	-	-	-	P1	-	-	Sandstone ridges.
<i>Lechenaultia divaricata</i>					P1	-	-	Dry red sand on flats.
<i>Malleostemon</i> sp. Officer Basin	✓	-	✓	-	P2	-	-	Yellow sand and dune slopes.
<i>Melaleuca nanophylla</i>	-	-	-	-	P3	-	-	Often found on ridges.
<i>Micromyrtus serrulata</i>	-	✓	-	-	P3	-	-	Brownish sandy and clayey soils over granite.
<i>Minuria ?tridens</i>	✓+	-	-	-	P1	-	-	Unknown, during surveys it was observed on roadsides.
<i>Olearia arida</i>	✓	✓	✓	✓	P4	-	-	Red or yellow sand and undulating low rises.
<i>Physopsis chrysotricha</i>	-	-	✓	-	P2	-	-	Red sand over calcrete.
<i>Thryptomene eremaea</i>	-	✓	-	-	P2	-	-	Red or yellow sand and sandplains.
<i>Thryptomene wittweri</i>	-	-	-	-	DRF	VU	-	Skeletal red stony soils. <i>T. wittweri</i> occurs on breakaways and stony creek beds.
<i>Thysanotus baueri</i>	-	-	-	-	P1	-	-	Calcareous loam, sand, and clay.
<i>Trachymene pyrophila</i>	-	-	-	-	P2	-	-	Yellow or orange sand. <i>T. pyrophila</i> is often found on sandplains; germinating after fire or other disturbances.

+ - requires flowering specimens to confirm identification.

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8 FAUNA OF CONSERVATION CONCERN

Desktop searches of available literature, the DPaW Threatened and Priority Species Database, the EPBC Protected Matters Database and consultation with various experts identified 28 current conservation significant fauna species potentially present in and around the Project disturbance area (including some species presumed to be extinct in the local area). Table 1 summarises the desktop searches and the field surveys undertaken to date with regards to vertebrate fauna protected under State or Federal legislation, or otherwise considered to be of conservation interest to the Joint Venture. Field surveys recorded evidence of six of these species in the Project footprint (Table 5). This total does not include a species of Stick-nest Rat (*Leporillus* sp. – presumed locally extinct) which formerly occurred in the area, based on the presence of old, abandoned nests in breakaways.

This list is accurate at the time of writing, however, further survey and taxonomic work may alter the list in the future (e.g. the taxonomy and range of *Dasyercus* sp. is currently uncertain). A number of species identified in the original PER have changed status or are no longer listed. A summary of these changes is provided in Table 4

The breeding season for the conservation significant fauna species has been identified to assist in minimising the potential disruption and disturbance to these species from the construction and operation of the Project (Table 6). Where possible, activities that are potentially detrimental to a species breeding should be scheduled to avoid critical breeding periods and/or preferred habitat.

Table 4 Changes in conservation status

Species	Previous Status	Current Status
Grey Falcon - <i>Falco hypoleucos</i>	P4	S1
Night Parrot - <i>Pezoporus occidentalis</i>	VU	EN
Slender-billed Thornbill (western) - <i>Acanthiza iredalei iredalei</i>	S1/VU	Delisted
Woma Python - <i>Aspidites ramsayi</i>	P1	S4
*South-Western Carpet Python – <i>Morelia spilota imbricata</i>	S4	S4

*only recently identified as potentially occurring

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Table 5 Threatened Fauna Potentially Occurring In and Around the Project Footprint

Species	Recorded:			Listed Under:			Habitat Notes:	
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status		IUCN Status
Mammals								
Bilby - <i>Macrotis lagotis</i>	-	-	-	-	S1	VU	VU	Extant populations occupy three major vegetation types; open tussock grassland on uplands and hills, Mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas.
Central Long-eared Bat - <i>Nyctophilus</i> sp. (previously <i>N. timoriensis</i>)	-	-	-	-	P4	-	-	Often found in heavy Eucalypt woodlands and tall woodlands of the Coolgardie IBRA region with a tall shrub understorey of <i>Melaleuca lanceolata</i> , <i>M. pauperiflora</i> , <i>M. quadrifaria</i> , and <i>Eremophila</i> sp., <i>N. timoriensis</i> is less common in open woodlands.
*Chuditch - <i>Dasyurus geoffroyii</i>	-	-	-	-	S1	VU	NT	Inhabit most kinds of wooded habitat within its current range including Eucalypt forest (especially Jarrah, <i>Eucalyptus marginata</i>), dry woodland and Mallee shrublands.
Greater Stick-nest Rat - <i>Leporillus conditor</i> (locally extinct)	✓	-	-	-	S1	VU	VU	Inhabits perennial shrublands, especially of succulent and semi-succulent plant species.
Mulgara - Crested-tailed <i>Dasyercus cristicauda</i>	-	-	-	-	S1	VU	LC	The main vegetation in inhabited areas, specifically <i>Triodia basedowii</i> , provides refuge from the heat and cover for the entrance to their burrows. Mulgara live in burrows which they dig on the flats between low sand-dunes or on the lower edges of dunes. <i>D. cristicauda</i> is assumed extinct in WA.
Mulgara - Brush-tailed <i>Dasyercus blythi</i>	-	-	-	-	P4	-	LC	As above. This is the more likely Mulgara to be present in the Project footprint – <i>D. cristicauda</i> is assumed extinct in WA.
*Numbat - Walpurti <i>Myrmecobius fasciatus</i>	-	-	-	-	S1	VU	EN	The remaining populations of the Numbat are found in Eucalypt forests and woodlands dominated by <i>E. marginata</i> , <i>E. calophylla</i> and <i>E. wandoo</i> . Numbats nest in hollow logs or in burrows.

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Species	Recorded:				Listed Under:			Habitat Notes:
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
Sandhill Dunnart - <i>Sminthopsis psammophila</i>	-	-	-	-	S1	EN	EN	Sandhill Dunnarts prefer sandy soils, typically low parallel sand dune habitat with a diverse understorey and a ground cover of Spinifex (<i>Triodia</i>). Spinifex size is variable in preferred habitat; dunnarts show a preference for large hummocks approximately 40 cm high and 70 - 100 cm diameter as nest sites. Other vegetation in preferred habitats varies but is most commonly Mallee or Marble Gum (<i>Eucalyptus gongylocarpa</i>), often with <i>Callitris verrucosa</i> and a complex shrub understorey.
¹ Southern Marsupial Mole - <i>Notoryctes typhlops</i>	✓	-	✓	✓	S1	EN	DD	SMM inhabits Spinifex dominated sand dune and sand plain country. The sand in these regions tends to be loose and free of gravels. The SMM appears to have a preference for substrate with compactness at the level of <10 drops per 150 mm to a depth of at least 450 mm when measured using a penetrometer.
Birds								
² Australian Bustard - <i>Ardeotis australis</i>	✓	✓	✓	✓	P4	-	LC	Australian Bustards are found in tussock grassland, <i>Triodia</i> hummock grassland, grassy woodland, low shrublands. They will also use denser vegetation when recent burning has temporarily opened up these areas.
Crested Bellbird - <i>Oreoica gutturalis</i>	-	✓	-	-	P4	-	LC	The species occurs from semi-arid coastlines to the arid Australia interior.
Grey Falcon - <i>Falco hypoleucos</i>	-	-	-	-	S1	-	VU	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. They also occur near wetlands where the surface water attracts the prey.
Major Mitchell's Cockatoo - <i>Cacatua leadbeateri</i>	-	-	-	-	S4	-	LC	Inhabits a wide variety of semi-arid and arid inland habitats, provided there is fresh surface water and large hollow trees for nesting. It has been recorded in forest, woodland and shrubland, including Mulga, Mallee, <i>Acacia</i> , and <i>Callitris</i> associations.

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Species	Recorded:				Listed Under:			Habitat Notes:
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
³ Malleefowl - <i>Leipoa ocellata</i>	✓	✓	✓	✓	S1	VU	VU	Found principally in semi- arid to arid shrublands, low woodlands dominated by mallee and associated habitats such as Broombush (<i>Melaleuca uncinata</i>). In the GVD, Malleefowl appear to prefer the smaller desert-mulga <i>Acacia minyura</i> . Studies have shown that the birds use vegetation adjacent sand plain areas for foraging where food resources are more common. The birds also occur in denser Mallee (<i>E. socialis</i> , <i>E. oxymitra</i> , and <i>E. gammophylla</i>). Typically, these Mallee areas have an understorey of <i>Triodia basedowii</i> or other <i>Triodia</i> species, and shrub thickets on the ridges where <i>Acacia ligulata</i> and other seed bearing shrubs are often common.
Naretha Blue Bonnet - <i>Northiella haematogaster narethae</i>	-	-	-	-	S4	-	LC	Usually found in or within sight of Casuarina and Acacia woodland, and usually near shrubland. They are often found far from water. The Naretha Blue Bonnet moves seasonally with the rains.
Night Parrot - <i>Pezoporus occidentalis</i>	-	-	-	-	S1	EN	EN	Most records for this species come from hummock grasslands with Spinifex (<i>Triodia</i> spp.) or from areas dominated by samphire. They have also been reported in low chenopod shrub lands with Saltbush and Bluebush, and from areas of Mitchell Grass (<i>Astrelba</i> spp.) with scattered Chenopods. Many records have come from waterholes, and interestingly, almost all reports from areas of <i>Triodia</i> have noted the presence of water nearby.
Peregrine Falcon - <i>Falco peregrinus</i>	✓	-	-	-	S4	-	LC	The species prefers habitat with rocky ledges, cliffs, watercourses, open woodland or margins with cleared land.
Striated Grass wren - <i>Amytornis striatus striatus</i>	-	-	-	-	P4	-	-	This subspecies of Striated Grasswren inhabits Spinifex on sandhills and rocky hillslopes and may occur in the survey area. The species' presence is strongly correlated with vegetation communities that support hummock grassland (<i>Triodia</i> sp.).
Thick-billed Grass-wren (western sp) - <i>Amytornis textilis textilis</i>	-	-	-	-	P4	-	-	The Thick-billed Grasswren was found in areas of 'thick bush' or 'thickets', dense Saltbush, in 'marlock' or low Mallee scrub and in 'large clumps of bushes which had extremely dense masses of foliage.

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Species	Recorded:				Listed Under:			Habitat Notes:
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
Princess Parrot Alexandra's Parrot - <i>Polytelis alexandrae</i>	-	-	-	-	S1	VU	NT	The Princess Parrot usually occupies swales between sand dunes and is occasionally seen on slopes and crests of dunes. This habitat consists mostly of shrubs such as <i>Eremophila</i> , <i>Grevillea</i> , and <i>Hakea</i> and scattered trees. Some records are from riverine forest, woodland and shrubland. Breeding takes place in hollows in large Eucalypts, particularly River Red Gums <i>E. camaldulensis</i> , and also in Desert Oaks <i>Allocasuarina decaisneana</i> .
Cattle Egret <i>Ardea ibis</i>	-	-	-	-	-	MI	LC	Stock paddocks, pastures, croplands, garbage tips, wetlands, tidal mudflats and drains.
Common Greenshank - <i>Tringa nebularia</i>	-	✓	-	-	-	MI	LC	The Common Greenshank is typical of well-watered regions; casual or vagrant on west-coast islands and in the arid east.
Fork-tailed Swift - <i>Apus pacificus</i>	✓	-	-	-	-	MI	LC	Aerial: over open country, from semi-deserts to coasts, islands; sometimes over forests, cities.
Great Egret, White Egret - <i>Ardea alba</i>	-	-	-	-	-	MI	-	Shallows of rivers, estuaries, tidal mudflats, freshwater wetlands, sewage ponds, irrigation areas, larger dams etc.
Oriental Plover, Oriental Dotterel - <i>Charadrius veredus</i>	-	-	-	-	-	MI	LC	Open plains, bare, rolling country, often far from water, ploughed land; muddy or sandy wastes near inland swamps or tidal mudflats; bare claypans; margins of coastal marshes; grassy airfields, sportsfields, lawns.
Rainbow Bee-eater - <i>Merops ornatus</i>	✓	✓	-	-	-	MI	LC	Open woodlands with sandy, loamy soils; sandridges, sandpits, riverbanks, road-cuttings, beaches, dunes, cliffs, mangroves, rainforest, woodlands.
Wood Sandpiper - <i>Tringa</i>	-	✓	-	-	-	MI	LC	The Wood Sandpiper is typical of well-watered regions, particularly coastal

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Species	Recorded:				Listed Under:			Habitat Notes:
	Operational Area	Pinjin Corridor	Cable Haul Corridor	Water Supply Area	WA Status	Federal Status	IUCN Status	
<i>glareola</i>								plains and plains about lower courses of larger rivers.
Reptiles								
South-Western Carpet Python – <i>Morelia spilota imbricata</i>	-	-	-	-	S4	-	-	Habitat is varied and includes dense forests, sparse woodlands, and in vegetated rocky areas.
Great Desert Skink - <i>Liopholis kintorei</i> (<i>Egernia kintorei</i>)	-	-	-	-	S1	VU	VU	The species generally occurs on red sand plains and sand ridges and they generally prefer spinifex (<i>Triodia</i> species and <i>Plectrachne</i> species), grassland sand plains and some adjacent dune field swales. Regenerating vegetation appears to be a critical habitat requirement. Skinks appear to prefer a mosaic landscape of different aged vegetation and inhabit sites that have been burnt in the previous 3-15 years. Preferred habitat has at least 50% bare ground.
Southern Desert <i>Lerista</i> - <i>Lerista puncticauda</i>	-	-	-	-	P2	-	-	The Southern Desert <i>Lerista</i> prefers arid shrub-lands; sandridges vegetated with Marble Gums and <i>Triodia basedowii</i> .
Woma Python - <i>Aspidites ramsayi</i>	✓	-	-	-	S4	-	EN	The Woma Python is generally found in sandy arid habitats including desert sand hills and dunes as well in a variety of other subtropical, temperate, arid and semi-arid regions. Generally Woma Pythons are strongly associated with red desert and Spinifex.

*Due to specific habitat requirements it is unlikely these species occur in the Project footprint.

1 Some evidence of mole activity was also found in the flat red plains that occur across much of the Minigwal Water Supply Area and the Cable Haul Infrastructure Corridor Survey Area.

2 Tracks were found in an area of long unburnt Eucalypt woodland with a Spinifex understorey.

3 Inactive nesting mounds were located in dense Mulga woodland in the Minigwal Water Supply Area and along the proposed Cable Haul Infrastructure Corridor Road.

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Table 6 Calendar of the Breeding/Nesting Season of Fauna Species Potentially Occurring in the Project Footprint

Species	Species Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bilby	<i>Macrotis lagotis</i>	Throughout the year – rain dependent											
Central Long-eared Bat	<i>Nyctophilus sp.</i>	Unknown											
Chuditch	<i>Dasyurus geoffroyii</i>												
Greater Stick-nest Rat	<i>Leporillus conditor</i>												
Mulgara – Crested-tailed	<i>Dasycercus cristicauda</i>												
Mulgara - Brush-tailed	<i>Dasycercus blythi</i>												
Numbat, Walpurti	<i>Myrmecobius fasciatus</i>												
Sandhill Dunnart	<i>Sminthopsis psammophila</i>												
Southern Marsupial Mole	<i>Notoryctes typhlops</i>	Unknown											
Australian Bustard	<i>Ardeotis australis</i>												
Common Greenshank	<i>Tringa nebularia</i>	Breeds abroad											
Crested Bellbird	<i>Oreoica gutturalis</i>												
Grey Falcon	<i>Falco hypoleucos</i>												
Major Mitchell's Cockatoo	<i>Cacatua leadbeateri</i>												
Malleefowl	<i>Leipoa ocellata</i>												
Naretha Blue Bonnet	<i>Northiella haematogaster narethae</i>												

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Species	Species Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Night Parrot	<i>Pezoporus occidentalis</i>							And after rain					
Peregrine Falcon	<i>Falco peregrinus</i>												
Striated Grass wren	<i>Amytornis striatus striatus</i>												
Princess Parrot, Alexandra's Parrot	<i>Polytelis alexandrae</i>									And after rain			
Cattle Egret	<i>Ardea ibis</i>												
Fork-tailed Swift	<i>Apus pacificus</i>	Breeds abroad											
Great Egret, White Egret	<i>Ardea pacificus</i>	Unknown											
Oriental Plover, Oriental Dotterel	<i>Charadrius veredus</i>	Breeds abroad											
Wood Sandpiper	<i>Tringa glareola</i>	Breeds abroad											
Rainbow Bee-eater	<i>Merops ornatus</i>												
Great Desert Skink	<i>Liopholis kintorei</i>												
Southern Desert Lerista	<i>Lerista puncticauda</i>	Unknown											
Woma Python	<i>Aspidites ramsayi</i>												
South-Western Carpet Python	<i>Morelia spilota imbricata</i>												
	Normal Breeding times												
	Peak times outside of normal												
	Breeds abroad												
	Unknown												
	No breeding activity expected												

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9 PUTATIVE SHORT RANGE ENDEMIC

Some invertebrates, known broadly as Short Range Endemic species, are particularly sensitive to habitat alteration and are an increasingly important consideration as part of the Environmental Impact Assessment process. Short Range Endemics have been broadly defined as species with a natural range of less than 10,000 km² (Harvey 2002), and many species have a natural range that is considerably less, sometimes from a single locality (New and Sands 2002).

Surveys conducted in the Operational Area revealed 17 morphologically defined species considered to be putative Short Range Endemic species. Of the 17 species of conservation interest, one (*Kwonkan* sp. 2) has only been located within the proposed operational footprint. Up until recently, the operational footprint of the waste material landform was also expected to disturb the only known sampling location of *Aganippe* sp. 4. The Joint Venture has re-designed the footprint of one of the waste landforms and the sampling location of *Aganippe* sp. 4 is now approximately 800 m from the waste landform footprint. None of the species are currently listed (under State or Federal legislation, or under the DPaW Priority scheme) as protected species and their conservation significance results from the fact that all are new to science and/ or belong to genera composed predominantly of Short Range Endemic species.

10 SUBTERRANEAN FAUNA

Western Australian Stygofauna and Troglifauna exhibit high levels of endemism and many of these species appear to have restricted ranges, making them particularly important in the Environmental Impact Assessment process (EPA 2003). There is a significant lack of information on Stygofauna and Troglifauna within the GVD, and prior to the Joint Venture's activities there were no known data for the area surrounding the project.

No Stygofauna have been recorded in the surveys during any of the survey undertaken during the Project baseline survey process.

The survey conducted both inside and outside the proposed Operational Area recorded three Troglitic species:

- Isopod (slater);
- Diplura (dipluran); and,
- Chilopoda (centipede).

The Isopod has been located both within and outside of the footprint. Currently, the dipluran and centipede have only been located inside the disturbance footprint. Further work has been undertaken to demonstrate that the presumed habitat of the dipluran and centipede occur more widely.

11 ECOLOGICAL COMMUNITIES

Extensive surveys have been undertaken (Table 1) to determine the presence of Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs) in the Project footprint. Despite extensive and detailed survey and vegetation mapping, no TECs have been identified.

The importance of a community referred to as the 'Yellow sandplain communities of the Great Victorian Desert' has been noted since 1994 (Pearson 1994). The community contains a diverse array of flora and fauna including the Sandhill Dunnart. The community is characterised by highly diverse mammalian and reptile fauna and distinctive plant communities (Barton and Cowan 2001). The DPaW has nominated the 'Yellow sandplain communities of the Great Victorian Desert' as a Priority 3 (ii) ecological community. At the present time, no definitive description of the boundary of this community has been

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determined by DPaW. The Operational Area is clearly outside the PEC, however the Joint Venture considers that the peripheral areas of the PEC may be intersected by the both Infrastructure Corridors, thus management of the proposed corridors to minimise impacts on flora, vegetation and fauna values will be important in maintaining biodiversity values of the PEC.

12 RISK ASSESSMENT

A risk assessment process has been undertaken for the proposed Project, prior to commencing the formal environmental assessment process. The risk assessment process will be ongoing through the life of the Project, and has been based on principles and methodology outlined in HB 203:2006 – Environmental Risk Management – Principles and Processes and AS/NZS 4360:2004 – Risk Management. The primary aim has been to identify potential environmental consequences (specific to the item being considered, in this case threatened flora and fauna; Table 7) to all activities, the likelihood of occurrence (Table 8) and to assign an appropriate response to reduce environmental risk.

Table 7 Consequence Table for Assessing Impacts on Threatened Species or Communities

Consequence	Example
Insignificant	<ul style="list-style-type: none"> The Joint Venture considers that there is no 'insignificant' impact to a threatened species precisely because they are threatened.
Minor	<ul style="list-style-type: none"> Temporary alteration to behavior of individuals of a conservation significant species e.g. short term avoidance of a component of pre-disturbance range.
	<ul style="list-style-type: none"> Temporary alteration to population dynamics (resolved within one breeding cycle) e.g. reduction in recruitment for one breeding season.
	<ul style="list-style-type: none"> Temporary reduction of connectivity or habitat values for threatened species e.g. connectivity is restored (with or without human intervention) within one breeding cycle of the species of interest.
Moderate	<ul style="list-style-type: none"> Short term loss of a small number (<5%) of individuals of a threatened species.
	<ul style="list-style-type: none"> Alteration to population dynamics of a threatened species that is resolved during the operational phase of the Project (with or without human intervention).
	<ul style="list-style-type: none"> Permanent loss of <5% of suitable habitat (relative to the area of suitable habitat pre-disturbance).
Major	<ul style="list-style-type: none"> Loss of <25% of individuals of a threatened species in the area.
	<ul style="list-style-type: none"> Long term alteration to population dynamics e.g. population dynamics do not return to pre-disturbance levels until the closure phase of the Project.
	<ul style="list-style-type: none"> Long term loss of habitat e.g. habitat remains unviable until the closure phase of the Project.
	<ul style="list-style-type: none"> Permanent loss of <25% of suitable habitat (relative to the area of suitable habitat pre-disturbance).
Catastrophic	<ul style="list-style-type: none"> Loss of a local population of a threatened species from the region.
	<ul style="list-style-type: none"> Extinction of a threatened species.
	<ul style="list-style-type: none"> Permanent loss of >25% of suitable habitat (relative to the area of suitable habitat pre-disturbance).

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Table 8 Risk Assessment Table

			Likelihood				
			A	B	C	D	E
			Almost certain (occurs in all circumstances/ planned event)	Likely (50 % chance of occurrence)	Possible (25 % chance of occurrence)	Unlikely (5 % chance of occurrence)	Rare (only occurs in exceptional circumstances)
Consequence	5	Catastrophic	E	E	E	E	H
	4	Major	E	E	E	H	M
	3	Moderate	E	H	H	M	M
	2	Minor	H	H	M	L	L
	1	Insignificant	H	M	L	L	L

E: Extreme risk – immediate action and formal documentation required
H: High risk – management attention and formal documentation required
M: Medium risk – environmental management documents will specify responsibility and actions
L: Low risk – manage by routine procedures/instructions

The following section addresses the risks to threatened species and communities identified by the risk assessment process.

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13 THREATS AND MITIGATIONS

CLEARING/EARTHWORKS	
Background	The construction and operation of the Project will require the clearing of up to 3,940 ha. The most significant threat this poses is the loss of critical habitat as many of the species of conservation significance have specific habitat requirements.
Potential Impacts	
Potential impacts resulting from the clearing of native vegetation and development of infrastructure for the Project are:	<ul style="list-style-type: none"> • The loss of individual conservation significant flora and fauna species. • The loss of Short Range Endemic species i.e. <i>Kwonkan</i> sp. 2 • The loss of conservation significant vegetation communities. • The loss and degradation of habitats essential to the survival of conservation significant fauna species. • The direct removal of habitat of dependent subterranean species from the ore extraction process. • Fragmentation of populations of conservation significant flora and fauna species. • Access roads may alter local surface water flows. • Changed fire regimes. • Introduction of Invasive flora. • Generation of dust. • Salinisation of soil or vegetation death from saline water use. • Fauna entrapment in open trenches.
Management Strategy	
The following management measures will be implemented by the Joint Venture to prevent or mitigate impacts of land and habitat disturbance on conservation significant species and communities:	<ul style="list-style-type: none"> • Disturbance to native vegetation will be minimised where possible and all areas requiring clearing will be clearly delineated. • Known locations of DRF within 50 m of the disturbance area will be visibly demarcated. • All infrastructure (including the access roads) has/will be designed and located to avoid impacts on all known populations of Declared Rare Flora.

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CLEARING/EARTHWORKS

	<ul style="list-style-type: none"> Infrastructure areas have/will be designed and located to avoid known locations of Priority flora where reasonably practical.
	<ul style="list-style-type: none"> Surface water dispersion systems will be incorporated into road corridors to prevent interference with surface flow critical for vegetation survival.
	<ul style="list-style-type: none"> The overall layout of the Operational Area has been designed to minimise impacts to surface water flow.
	<ul style="list-style-type: none"> Surface water dispersion systems will be incorporated into the design of the Operational Area to minimise impacts to surface water flow.
	<ul style="list-style-type: none"> The location of infrastructure (e.g. alignment of Mine Access Road) will minimise the fragmentation of habitat (e.g. by avoiding bisecting areas of continuous habitat of threatened species)
	<ul style="list-style-type: none"> Develop and implement appropriate fire protocols to reduce the risk of fire and to ensure fire is effectively managed.
	<ul style="list-style-type: none"> Establish appropriate fire breaks adjacent to high fire risk areas.
	<ul style="list-style-type: none"> Confining clearing impacts strictly to the minimum area practical for the establishment of the mine and associated infrastructure.
	<ul style="list-style-type: none"> Conducting further surveys for troglobitic fauna prior to any pit extensions or amendments.
	<ul style="list-style-type: none"> Disturbance to critical habitats will be avoided where practicable in sand dune systems suitable for Marsupial Moles, Sandhill Dunnarts, Mulgara.
	<ul style="list-style-type: none"> Disturbance to possible Malleefowl and Sandhill Dunnart habitats will be minimised where practicable such as Areas of Spinifex which have been unburnt for between eight and 38 years, and have the potential to provide habitat for Sandhill Dunnarts and Mulgara.
	<ul style="list-style-type: none"> Known locations of critical threatened fauna habitat such as Malleefowl mounds, Bustard nests and dune systems with evidence of Marsupial Mole activity will be avoided where practicable.
	<ul style="list-style-type: none"> Known locations of Priority Ecological Communities (PEC) will be avoided where practicable.
	<ul style="list-style-type: none"> The removal of large mature "habitat" trees, particularly Marble Gum (<i>Eucalyptus gongylocarpa</i>), with hollows providing nesting sites for rare parrots will be avoided where reasonably practicable.
	<ul style="list-style-type: none"> Areas no longer required will be rehabilitated as soon as is practicable. Rehabilitation will include placing cleared vegetation and logs within the area to provide fauna refuge.
	<ul style="list-style-type: none"> Following rehabilitation, areas will be monitored and treated for invasive flora invasion, if necessary.
	<ul style="list-style-type: none"> Information on current listings (State or Federal legislation, or DPaW Priority ranking) will be kept up to date.

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CLEARING/EARTHWORKS

	<ul style="list-style-type: none"> Site inductions will include information about conservation significant flora, vegetation, fauna and habitat to ensure personnel are aware of the potential impacts associated with activities on these species. 	
	<ul style="list-style-type: none"> Trapped fauna within open trenches should be cleared and recorded by a suitably trained fauna-clearing person no later than three hours after sunrise. The clearing and recording shall be repeated before sunset. 	
	<ul style="list-style-type: none"> Open trench lengths shall not exceed a length capable of being inspected and cleared by the fauna-clearing person. 	
	<ul style="list-style-type: none"> Fauna refuges and/or egress ramps should be placed in the trench at intervals not exceeding 50 m 	
	<ul style="list-style-type: none"> A report on fauna management should be produced including; details of all fauna inspections; the number of fauna cleared from trenches; fauna interactions; fauna mortalities and all actions taken. 	
	Performance Indicator	Target
Performance Indicators	<ul style="list-style-type: none"> State, Federal or Priority listed fauna species or communities. 	<ul style="list-style-type: none"> No adverse impacts to State, Federal or Priority listed fauna species or communities outside the approved area.
	<ul style="list-style-type: none"> Declared Rare Flora and Priority plant taxa. 	<ul style="list-style-type: none"> No DRF will be removed by the Project. Development of ex situ seed banking for DRF and Priority plant taxa. DRF and Priority plant taxa to be reintroduced with DPaW approval in the event of a decline in population.
	<ul style="list-style-type: none"> Species 	<ul style="list-style-type: none"> No species extinctions directly attributable to the Project.

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Threatened Species and Communities Management Strategy

EMISSIONS TO AIR/LAND/WATER

Background	<p>The construction and operation of the Project will require activities such as the use and production of materials that may generate or release potentially hazardous emissions to the environment which may, in turn, impact upon a threatened species. These include:</p> <ul style="list-style-type: none"> • Putrescible waste (e.g. vegetable scraps) and associated disposal facility. • Inert waste (e.g. solid waste that will not break down) and associated disposal facility. • Accidental release of saline water. • Workshops, hydrocarbon storage areas and other dangerous goods (e.g. - cyanide). • Tailings and associated tailings storage facility. • Waste landforms. • Dust.
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Potential Impacts – Environmentally Hazardous Substances

<p>The inappropriate disposal or accidental spill/release of waste hydrocarbons and other environmentally hazardous substances can cause contamination of substrate, groundwater or surface water potentially leading to:</p>	<ul style="list-style-type: none"> • Implementation of the Construction and Environmental Management Strategy (CEMS) and the Operational Environmental Management Strategy (OEMS). • Loss of critical fauna habitat. • Loss of threatened flora substrate. • Poisoning of threatened fauna. • Contamination of surface water and groundwater.
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Management Strategy

<p>Disturbance to the habitat of threatened species by the disposal or accidental spill of waste hydrocarbons and other environmentally hazardous substances can be prevented by:</p>	<ul style="list-style-type: none"> • Avoiding critical habitat in the placement of storage, re-fuelling, handling and disposal facilities. • In accordance with CEMS and OEMS, all pipelines with will either be buried or bunded, have leak detection systems and automatic cut-off systems • The pipeline corridor to the Minigwal Borefield will be designed to avoid areas where threatened or conservation significant species and habitats have been recorded. • Preventing contamination of troglobitic habitats by hydrocarbon / chemical spills as per site procedures. • Appropriate licenses for the transport, handling, storage and disposal of hazardous materials including any Dangerous Goods Licensing. • Ensuring appropriate containment, bunding and storage facilities are present and meet the specifications of Australian Standard 1940. • Establishing and implementing hydrocarbon storage, handling and use procedures and process.
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EMISSIONS TO AIR/LAND/WATER	
	<ul style="list-style-type: none"> Ensure all re-fuelling bays at bulk storage facilities have appropriate spill containment.
	<ul style="list-style-type: none"> Establishing and implementing Emergency Response Procedures (ERP) for hydrocarbon spills, including strategies for environmentally sensitive areas.
	<ul style="list-style-type: none"> Relevant staff to be trained in the use of spill kits and emergency response.
Potential Impacts – General Waste	
The generation of waste poses potential impacts to conservation significant species such as:	<ul style="list-style-type: none"> Habitat modification.
	<ul style="list-style-type: none"> Contamination of surface water and groundwater.
	<ul style="list-style-type: none"> Localised pollution.
	<ul style="list-style-type: none"> Smothering of threatened flora.
	<ul style="list-style-type: none"> Spread and/or proliferation of invasive flora.
	<ul style="list-style-type: none"> Alien substances providing a poison or ingestion risk to native species.
	<ul style="list-style-type: none"> Attraction of fauna species to food scraps provides an increased risk of native animals becoming pests, and an increased road kill risk as native fauna travels to and from domestic waste dump.
	<ul style="list-style-type: none"> Fire.
Management Strategy	
The risks posed by domestic waste will be minimised through:	<ul style="list-style-type: none"> Implementation of strict domestic waste management practices, including disposal of domestic waste in a licensed facility.
	<ul style="list-style-type: none"> All domestic waste skips and bins shall have lids and be closed at all times to reduce the likelihood of fauna being attracted to the area.
	<ul style="list-style-type: none"> Waste stations will be labelled for the appropriate segregation of waste.
	<ul style="list-style-type: none"> All putrescible and inert wastes shall be disposed of in a licensed landfill facility and covered.

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EMISSIONS TO AIR/LAND/WATER	
Potential Impacts – Tailings	
<p>The use of cyanide in gold extraction may result in the presence of this pollutant in the tailings and water. Inappropriately managed tailings storage facilities (i.e. wall breach) may result in the release of cyanide to surface and groundwater potentially:</p>	<ul style="list-style-type: none"> Seepage of processing water through the base of the facility resulting in contaminating land and groundwater. This presents a significant risk to subterranean fauna.
	<ul style="list-style-type: none"> Fauna death as a result of drinking water containing cyanide.
	<ul style="list-style-type: none"> Entrapment in the tailings.
Management Strategy	
<p>The risk of impacts associated with the tailings and tailings storage facility can be managed by:</p>	<ul style="list-style-type: none"> Design infrastructure such as the tailings storage facility to ensure containment of any potentially contaminated runoff, to prevent uncontrolled discharge of tailings into the environment.
	<ul style="list-style-type: none"> Limit Weak Acid Dissociable Cyanide to less than 50mg/L in water sitting on the tailings storage facility.
	<ul style="list-style-type: none"> Compliance with the International Cyanide Management Code.
	<ul style="list-style-type: none"> Restricting animal access to the facility (netting / fencing).
	<ul style="list-style-type: none"> Implementation of the Tailings Storage Facility Management Strategy.
	<ul style="list-style-type: none"> Tailings storage facility will be designed and constructed to limit the potential release of seepage water through the installation of a basin liner, seepage recovery system and by recovering water at the plant prior to the releasing of the tailings into the tailings storage facility
<ul style="list-style-type: none"> By recovering water off the top of the tailings storage facility as quickly as possible and reusing it. 	
Potential Impacts – Dust	
<p>There is the potential for increased dust creation from earthworks for the road and mine, general mining operations and erosion of exposed surfaces. Potential impacts of dust on conservation significant species include:</p>	<ul style="list-style-type: none"> Coverage of foliage reducing photosynthesis and transpiration, resulting in reduced productivity and increased plant death, particularly relevant in areas adjacent to tracks.
	<ul style="list-style-type: none"> Alteration of habitat negatively impacting on conservation significant flora and fauna species.
	<ul style="list-style-type: none"> Salinisation for dust suppression measures.

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EMISSIONS TO AIR/LAND/WATER

Management Strategy

<p>The increased vehicle movements and construction and mining operations have the potential to increase dust in Project areas. Dust mitigation will include:</p>	<ul style="list-style-type: none"> Implementing CEMS and OEMS.
	<ul style="list-style-type: none"> Minimising disturbance area to what is absolutely necessary by limiting clearing and progressively rehabilitating to limit windblown dust generation.
	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Limiting road speeds near dust sensitive vegetation and ensure road speeds are managed to on other road to reduce dust generation and safety issues
	<ul style="list-style-type: none"> Implementing dust suppression techniques.
	<ul style="list-style-type: none"> Internal roads in the Operational Area shall be watered at a rate that reduces dust generation to acceptable levels as required. This rate will be dependent upon climatic conditions at the time.
	<ul style="list-style-type: none"> Minimise total surface disturbance at any one time to reduce areas potentially producing windblown dust. Land clearing and topsoil stripping will not be undertaken during weather conditions likely to generate excessive dust.

Potential Impacts – Noise / Vibration

<p>Excessive noise emissions and vibration associated with the construction and operation of the Project can potentially lead to:</p>	<ul style="list-style-type: none"> Interference with fauna behaviour and movement.
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Management Strategy

	<ul style="list-style-type: none"> All activities to be conducted in compliance with the <i>Environmental Protection (Noise) Regulations 1997</i>.
	<ul style="list-style-type: none"> Implementation of the CEMS and OEMS.
	<ul style="list-style-type: none"> Activities shall be managed according to weather conditions and proximity to noise and blasting sensitive areas.

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EMISSIONS TO AIR/LAND/WATER		
	Performance Indicator	Target
Performance Indicator	Environmentally Hazardous Substances	
	<ul style="list-style-type: none"> Environmentally hazardous substances. 	<ul style="list-style-type: none"> No unauthorised discharge.
	<ul style="list-style-type: none"> Prescribed premises and Controlled waste. 	<ul style="list-style-type: none"> Compliance with all statutory requirements.
	<ul style="list-style-type: none"> Spills and releases. 	<ul style="list-style-type: none"> Minor spills/releases reported via Project reporting system within 48 hr and cleaned up.
		<ul style="list-style-type: none"> Major spills/releases or externally reportable incident reported via Project reporting system and authorities within 24 hrs.
		<ul style="list-style-type: none"> No spills/releases that require emergency response.
	General Waste	
	<ul style="list-style-type: none"> Prescribed premises and Controlled waste. 	<ul style="list-style-type: none"> Compliance with all statutory requirements.
	Tailings	
	<ul style="list-style-type: none"> Tailings. 	<ul style="list-style-type: none"> No uncontrolled releases of tailings outside the containment areas.
	<ul style="list-style-type: none"> Cyanide. 	<ul style="list-style-type: none"> Compliance with International Cyanide Management Code.
	<ul style="list-style-type: none"> State, Federal or Priority listed fauna. 	<ul style="list-style-type: none"> No State, Federal or Priority listed species lost due to tailing issues.
	Dust	
<ul style="list-style-type: none"> State, Federal or Priority listed species and communities 	<ul style="list-style-type: none"> No adverse impacts to State, Federal or Priority listed species or communities outside the approved areas. 	
<ul style="list-style-type: none"> State, Federal or Priority listed species habitats. 	<ul style="list-style-type: none"> No adverse impacts to State, Federal or Priority listed species habitats outside the approved areas. 	

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WATER SOURCES / STORAGE		
Background	Access to water can increase the size of invasive and native fauna populations and increase the risk of animal vehicle interaction in water storage areas.	
Potential Impacts		
Water stored in the form of dams, borrow pits or the tailings storage facility during the operation of the mine provides an additional and atypical water source to the region potentially leading to:	<ul style="list-style-type: none"> • Drowning of threatened fauna. 	
	<ul style="list-style-type: none"> • Attraction and habituation of threatened and invasive fauna. 	
	<ul style="list-style-type: none"> • Alteration of fauna behaviour. 	
	<ul style="list-style-type: none"> • Attraction of predators and herbivores increasing predation and herbivory on threatened flora and fauna. 	
	<ul style="list-style-type: none"> • Borrow pits used for access road creation can become areas of water storage if not well managed. The Project may use borrow pits for water storage, in this event the borrow pits will be fenced appropriately. 	
Management Strategy		
	<ul style="list-style-type: none"> • Restrict access to water storage areas either by fencing or installing some other suitable barrier where required. 	
	<ul style="list-style-type: none"> • Fauna egress ramps and/ or nets will be incorporated into permanent water storage sites, where appropriate (e.g. lined dams). 	
	<ul style="list-style-type: none"> • Fauna deterrent methods will be utilised. 	
	Performance Indicator	Target
Performance Indicators	<ul style="list-style-type: none"> • Fauna 	<ul style="list-style-type: none"> • No animal habituation of artificial water sources. • No animals trapped/caught in fence, water storage facility or tailings.

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EROSION / SEDIMENTATION		
Background	Poorly managed surface water flows can result in the release of sediment, loss of topsoil / growth medium and the erosion of the natural environment. All of these activities have the potential to adversely affect threatened species and communities.	
Potential Impacts		
Activities associated with the construction and operation of the Project may lead to the modification of sediment transport, erosion and deposition patterns. Potential impacts associated include:	<ul style="list-style-type: none"> • Detrimental changes to downstream water quality. 	
	<ul style="list-style-type: none"> • Loss of threatened flora, fauna or fauna habitat. 	
Management Strategy		
	<ul style="list-style-type: none"> • Implementation of the Construction and Environmental Management Strategy (CEMS) and the Operational Environmental Management Strategy (OEMS). 	
	<ul style="list-style-type: none"> • Disturbance area to be minimised. 	
	<ul style="list-style-type: none"> • Erosion and sediment control structures to be installed and routinely inspected. 	
	<ul style="list-style-type: none"> • Stormwater diversion drains will be installed within the Operational Area. 	
	<ul style="list-style-type: none"> • Diversion system installed across the Operational Area will separate clean and potentially dirty stormwater 	
	<ul style="list-style-type: none"> • Dust control measures will be adopted. 	
	<ul style="list-style-type: none"> • Vehicle movement will be restricted to operational area except where undertaking exploration activities. 	
	Performance Indicator	Target
Performance Indicators	<ul style="list-style-type: none"> • State, Federal or Priority listed species or communities. 	<ul style="list-style-type: none"> • No adverse impacts to State, Federal or Priority listed species or communities outside the approved area.
	<ul style="list-style-type: none"> • Water quality. 	<ul style="list-style-type: none"> • No adverse impacts of State, Federal or Priority listed species' habitats outside the approved area. • No detrimental changes to downstream surface water quality.

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ALTERATION TO TERRESTRIAL ECOSYSTEMS	
Background	Improved access to the region has the potential to increase the number of people using the area for recreational purpose which in turn can increase the risk of anthropogenic fires, litter, off-track driving, invasive flora spread or introduction and the increase occurrence of invasive fauna. There is also the potential that Joint Venture activities could increase the risk of fire in the region
Potential Impacts – Changed Fire Regimes	
Potential impacts on conservation significant species resulting from accidental fire comprise:	<ul style="list-style-type: none"> • Immediate deaths of conservation significant flora and fauna individuals and populations.
	<ul style="list-style-type: none"> • Loss of critical habitat such as Spinifex for fauna species reliant on long unburnt vegetation, or mosaic/patch style burning for example: <ul style="list-style-type: none"> ○ Mulgara maintain a semi-permanent home within Spinifex, the burning of the Spinifex, whether by natural or man-made fire, poses a threat to Mulgara. ○ The Sandhill Dunnart is Spinifex dependent; fire potentially reduces the variability of Spinifex age at a local scale, thus the availability and suitability of habitat for the Sandhill Dunnart. ○ The Great Desert Skink is dependent on regeneration vegetation therefore changed fire regimes is the species' most significant threat.
	<ul style="list-style-type: none"> • Loss of breeding habitat.
	<ul style="list-style-type: none"> • Increased proliferation of invasive flora.
	<ul style="list-style-type: none"> • Altered vegetation structure.
	<ul style="list-style-type: none"> • Altered habitat unable to provide conditions for conservation significant flora species to recolonise.
Management Strategy	
	<ul style="list-style-type: none"> • Develop and implement appropriate fire protocols to reduce the risk of fire and to ensure fire is effectively managed.
	<ul style="list-style-type: none"> • Ensure the Project has an appropriate emergency response plan and equipment.
	<ul style="list-style-type: none"> • Ensure that the Project compile with <i>Bush Fire Act</i> requirements and fire bans.
	<ul style="list-style-type: none"> • Provide ongoing education and training regarding appropriate management and behaviour.
	<ul style="list-style-type: none"> • Correct storage and isolation of flammable liquids.
	<ul style="list-style-type: none"> • Establish appropriate fire breaks adjacent to high fire risk areas.

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ALTERATION TO TERRESTRIAL ECOSYSTEMS

- Implementation of safe smoking practices and appropriate disposal of cigarette butts.
- Work with DPaW to reduce the risk of fires in the region.

Potential Impacts – Invasive Flora

The introduction of machinery, earthworks and disturbance in the area, increased traffic flows, water availability and increased population has the potential to introduce invasive flora into the area. The introduction of invasive flora to an area has the potential to impact threatened species by:

- Interfering with natural function.
- Displacing threatened flora species.
- Out-competing threatened species for resources.
- Degradation of critical habitats for conservation significant flora and fauna species.
- Inhibiting regeneration of threatened flora.
- Changing fire characteristics resulting in altered habitats for conservation significant flora and fauna species.
- Reduced success of rehabilitation.

Management Strategy

Mitigation measures are required to control and prevent the spread of invasive flora previously recorded within the Project footprint and to minimise the potential for the introduction of any additional invasive flora. The risk of introducing invasive flora will be minimised through the implementation of the following management measures:

- Invasive flora management procedures to be developed and implemented to identify areas of risk, permitted access and inspections to be undertaken.
- Implementation of the Construction and Environmental Management Strategy (CEMS) and the Operational Environmental Management Strategy (OEMS).
- Strict vehicle hygiene practice will be adopted by staff and contractors, with all machinery, vehicles and plant to be free of soil and vegetative matter upon arrival to Joint Venture controlled areas.
- Strict vehicle hygiene practice will be adopted by staff and contractors, with all machinery, vehicles and plant to be free of soil and vegetative matter when moving between weed infested and un-infested areas (most relevant on the Infrastructure Corridors as there is little weed presence at the Operational Area).
- Work in known invasive flora infested areas will be undertaken separately to work in pristine areas. This relates mainly to work in the Pinjin area. Any vehicles moving between the Pinjin area and other areas during clearing and construction will be thoroughly cleaned of soil and vegetation matter.
- Develop a process to limit the risk of soil/ invasive flora transfer by clearing equipment.
- Induction programs to promote awareness of invasive flora management measures that are to be used at the Joint Venture.
- Provide specific training in invasive flora identification and eradication measures to relevant Joint Venture personnel and contractors.

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	<ul style="list-style-type: none"> Undertake regular Project footprint inspections to record new observations of invasive flora infestations or changes in invasive flora distribution especially near known populations of DRF. An invasive flora tracking system will be implemented for recording invasive flora populations or high risk areas.
	<ul style="list-style-type: none"> Any soil / fill brought to site will be certified free of propagules of invasive flora.
	<ul style="list-style-type: none"> Gravel and borrow material will be sourced locally, therefore free of phytophthora and invasive flora.
	<ul style="list-style-type: none"> Domestic waste to be disposed of in the correct manner to prevent seed invasion from food waste products.
	<ul style="list-style-type: none"> Specific control measures and treatment programs for invasive flora that have been recorded on the Joint Venture tenements will be developed in consultation with DPaW, where appropriate.
	<ul style="list-style-type: none"> Invasive flora control to be implemented in rehabilitation works.
	<ul style="list-style-type: none"> Clean seeds will be used to rehabilitation.
	<ul style="list-style-type: none"> Seed will be harvested locally to reduce the risk of new invasive flora introduction.
Potential Impacts – Invasive Fauna	
Invasive fauna such as the European Fox (<i>Vulpes vulpes</i>), Wild Dog (<i>Canis lupus</i>) and Feral Cat (<i>Felis catus</i>) potentially pose a threat to all threatened species in the Project footprint. The construction and operation of the Project may provide additional resources (food or water) for invasive species if inappropriately managed. The attraction of invasive fauna to the area may impact conservation significant fauna and flora by:	<ul style="list-style-type: none"> Competing with threatened species.
	<ul style="list-style-type: none"> Direct predation on threatened species. The Sandhill Dunnart, Mulgara, Malleefowl, the SMM and the Woma Python are highly susceptible to predation. Remains of the SMM have been recorded in the scats of Feral Cats, Wild Dogs and European Foxes.
	<ul style="list-style-type: none"> Habitat degradation including compression of dunes and trampling and habitat alteration from Camels (<i>Camelus dromedarius</i>) or Goats (<i>Capra hircus</i>). This may adversely affect the habitat of threatened fauna or their local movement and dispersal. Compaction of substrate from Camels may adversely affect the availability of invertebrate prey. As the majority of the species of interest are insectivorous this may impact on food availability.
	<ul style="list-style-type: none"> Herbivorous grazing or trampling of conservation significant flora species.
	<ul style="list-style-type: none"> Grazing of rehabilitated areas thus degrading habitat.

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ALTERATION TO TERRESTRIAL ECOSYSTEMS

Management Strategy

The risk of introducing animal species to Project Areas will be mitigated in the following ways:

- No pets will be allowed in Project areas.
- Putrescible wastes will be disposed of in accordance with legal obligations.
- Access to water by animal will be managed.
- Project stormwater management to minimise the unplanned ponding of water.
- Maintenance of taps and other water infrastructure to prevent leaks.
- All personnel will be discouraged from feeding fauna.
- Support and implement Pest Management Strategies informed by a risk management approach.
- Pest Management Strategies that aim to reduce impacts rather than reduce numbers of individuals will be developed (in consultation with appropriate organisations such as DPaW).
- Support regional studies into invasive fauna populations across the Joint Venture with the aim of improving pest management.

Potential Impacts - Traffic

The construction and operation of the Project and access road will increase traffic flows in the areas. Increased vehicle movements along the access road, especially of large vehicles may result in the following impacts on conservation significant species:

- Mortality of individual fauna through direct collisions with vehicles.
- Injury of individual fauna through direct collisions with vehicles.
- Erosion and compaction of substrate from unauthorised off-road driving potentially altering the ability of animals and pollinators to move through the landscape.
- Hazardous spills resulting in land contamination (e.g. following an accident).
- Fire.
- Generation of dust.

Management Strategy

Strategies to reduce the risk of vehicles on threatened species include:

- Implement and enforce an appropriate speed limit on all roads taking into account risks associated with threatened fauna.
- Infrastructure Corridors (including access roads) will be designed to avoid bisecting critical habitats.

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	<ul style="list-style-type: none"> Signs indicating the likely presence of threatened fauna in areas of preferred habitat will be erected along roadsides to increase driver awareness of the risk to fauna. Borrow pits will be located a suitable distance from the road to limit potential interaction between animals and vehicles. Any fauna killed on roads encouraged to be reported to environmental personnel for recording. Implement and enforce a no off-road driving policy for operational staff and contractors (Exploration activities and Emergency response personnel will be exempt). 				
Potential Impacts – Increase Use of Region Nature Reserves					
Less than 10 % of the WA GVD is protected in formal reserves. The existing reserve system includes the Queen Victoria Spring Nature Reserve, the Plumridge Lakes Nature Reserve and the Neale Junction Nature Reserve. The increased use of these nature reserves poses the following risks to conservation significant species and communities:	<ul style="list-style-type: none"> Degradation of environmental values. Increased erosion from off- track driving. Increased incidence of fire. Introduction/spread of invasive flora and fauna. Inappropriate disposal of waste. 				
Management Strategy					
	<ul style="list-style-type: none"> Discourage unauthorised use of the private Mine Access Road. Restrict vehicle movement by staff with private vehicles on site to minimise impact to nearby Nature Reserves and wider region. Consider providing an alternate transport arrangement for local (i.e. Kalgoorlie and surrounds) staff/contractors to access the site, rather than driving private vehicles. Consider educational initiatives throughout the region to promote environmentally friendly behaviour by visitors (e.g. signage). Undertake specific environmental surveys to describe region and identify high value environmental assets (e.g. conservation significant species) that may be at risk or require mitigation/offset. 				
	<table border="1"> <thead> <tr> <th>Performance Indicator</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Performance Indicator	Target		
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Performance Indicators	Fire	
	<ul style="list-style-type: none"> State, Federal or Priority listed species or communities. 	<ul style="list-style-type: none"> No adverse impacts of State, Federal or Priority listed species or communities. No adverse impacts of State, Federal or Priority listed species habitats. No regional impacts.
	Invasive Flora	
	<ul style="list-style-type: none"> Invasive flora. 	<ul style="list-style-type: none"> No invasive flora introduced as a result of the Project. No spread of invasive flora from an existing location.
	Invasive Fauna	
<ul style="list-style-type: none"> Invasive fauna. 	<ul style="list-style-type: none"> No invasive fauna introduced to the area as a result of the Project. No spread of invasive fauna. 	
<ul style="list-style-type: none"> State, Federal or Priority listed species or communities. 	<ul style="list-style-type: none"> No adverse impacts on State, Federal or Priority listed species or communities. 	

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14 TRAINING AND AWARENESS

To ensure the effective implementation of this and other strategies associated with the Project, a site specific induction has been developed and includes general information on the threatened and priority flora, fauna and communities known to occur within the Project area. All employees and contractors permanently based onsite are required to complete the sites general induction.

To complement the site induction, the Project incorporates Threatened Species and Community awareness topics will be periodically roll-out across the operation, the topics will comprised of toolbox information and posters that are distributed across site to ensure ongoing awareness of the management measures associated with this strategy.

15 REHABILITATION AND SEED BANKING

Over the life of the Project the TJV will work with regional seed collectors to obtain viable seed for known priority and DRF species within and adjacent to the Project area. These resources will be shared with DPaW and used to return these species to the post mining landscape.

Priority and DRF seed collections will be undertaken with in accordance with the WA Wildlife Conservation Act and regulations and DPaW requirements. Seed collected will be lodged with DPaW through the Threatened Flora Seed Centre (housed at the WA herbarium). Where practical plant material, photographs and location data will be lodged with the seeds to enable confirmation of ID and expand the States knowledge of the collected species.

16 DATA MANAGEMENT AND INCIDENT REPORTING

The TJV will at least annually provided DPaW with threatened systems and community data in the form of location information, photographs (where appropriate), herbarium samples and survey reports. This information will be provided to both the Regional Office and directly with the Threatened Species and Community Branch.

Should the TJV (or its contractors) encounter threatened fauna species efforts will be made to collect DNA samples from live specimens and to preserve and lodge specimens of deceased animal encountered. This material will be provided to the WA Museum as soon as practical after collection.

In accordance with the sites Incident reporting procedure, non-compliance with this strategy will be treated as an incident and will be reported via the site incident reporting system (InControl). Incidents that directly involve priority or threatened fauna species will be reported to DPaW within 24hrs of reporting to the sites Environmental team, these reports will be lodged via fauna@dpaw.wa.gov.au as required.

17 MEASUREMENTS AND MONITORING

The implementation and effectiveness of this strategy will be audited as specified in the TGM Audits and Inspection schedule. A copy of the audit findings will be provided to DMP, DPaW and the OEPA following completion.

Established performance indicators and targets set out in Section 13 (above) will be assessed bi-annually and reported to DPAW and DMP via a TS&CMS Performance Report.

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19 APPENDICES

Appendix 1: Flora Conservation Codes

Appendix 2: Fauna Conservation Codes

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Appendix 1: Flora Conservation Codes

Protected Under:	Category	Description
EPBC Act	Extinct	There is no reasonable doubt that the last member of the species has died.
	Extinct in the Wild	A native species: <ul style="list-style-type: none"> is known only to survive in cultivation or as a naturalised population well outside its past range; and, has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
	Critically Endangered	A native species facing an extremely high risk of extinction in the wild in the immediate future.
	Endangered	A native species: <ul style="list-style-type: none"> is not critically endangered; and is facing a very high risk of extinction in the wild in the near future.
	Vulnerable	A native species: <ul style="list-style-type: none"> is not critically endangered or endangered; and is facing a high risk of extinction in the wild in the medium-term future.
	Conservation Dependent	The species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered.
Wildlife Conservation Act	Declared Rare Flora	A native species which has been adequately searched for, and is deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and has been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
DPaW Priority	Priority 1	A native species which is known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g., road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g., from disease, grazing by invasive fauna, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
	Priority 2	A native species which is known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
	Priority 3	A native species which is known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
	Priority 4	A native species which is considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

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Appendix 2: Fauna Conservation Codes

Protected/ Recognised Under:	Category	Description
EPBC Act	Extinct	There is no reasonable doubt that the last member of the species has died.
	Extinct in the Wild	A native species: <ul style="list-style-type: none"> • is known only to survive in captivity or as a naturalised population well outside its past range; and, • has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
	Critically Endangered	A native species facing an extremely high risk of extinction in the wild in the immediate future.
	Endangered	A native species: <ul style="list-style-type: none"> • is not critically endangered; and • is facing a very high risk of extinction in the wild in the near future.
	Vulnerable	A native species: <ul style="list-style-type: none"> • is not critically endangered or endangered; and • is facing a high risk of extinction in the wild in the medium-term future.
	Conservation Dependent	The species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered.
	Marine	Marine species including some birds.
	Migratory	The entire population, or any geographically separate part of the population of any species or lower taxon of wild animal, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries.
WC Act	Schedule 1	A native species that is rare or likely to become extinct, is declared to be fauna that is in need of special protection.
	Schedule 2	A native species that is presumed to be extinct, is declared to be fauna that is in need of special protection.
	Schedule 3	Birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is in need of special protection.
	Schedule 4	A native species that is in need of special protection, otherwise than for the reasons specified in Schedules 1, 2 and 3.

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Protected/ Recognised Under:	Category	Description
DPaW Priority	Priority 1	A native species that is known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
	Priority 2	A native species that is known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g., national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
	Priority 3	A native species that is known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
	Priority 4	A native species that is considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
	Priority 5	A native species that is not considered threatened but is subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

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