

Family	Species	Status
Violaceae	<i>Hybanthus aurantiacus</i>	
Zygophyllaceae	<i>Tribulus astrocarpus</i>	
Zygophyllaceae	<i>Tribulus macrocarpus</i>	
Zygophyllaceae	<i>Tribulus suberosus</i>	

Appendix 6: Conservation listed flora recorded during survey

Species	Status	Population size	Easting (mE)	Northing (mN)
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	P3	<1.0%	601530	7512573
<i>Goodenia nuda</i>	P4	<1.0%	601658	7515341
<i>Goodenia nuda</i>	P4	0.01%	602083	7515504
<i>Goodenia nuda</i>	P4	0.01%	601616	7513231
<i>Goodenia nuda</i>	P4	<1.0%	602944	7509452
<i>Goodenia nuda</i>	P4	<1.0%	601915	7511177

Appendix 7: Introduced (weed) species recorded during survey

Species	Population size	Easting (mE)	Northing (mN)
<i>*Bidens bipinnata</i>	<1.0%	601658	7515341
<i>*Bidens bipinnata</i>	0.02%	602083	7515504
<i>*Bidens bipinnata</i>	<1.0%	601872	7514046
<i>*Bidens bipinnata</i>	0.50%	602012	7514930
<i>*Bidens bipinnata</i>	2.00%	602031	7513379
<i>*Bidens bipinnata</i>	2.00%	601616	7513231
<i>*Bidens bipinnata</i>	2.00%	601530	7512573
<i>*Bidens bipinnata</i>	0.02%	602499	7512513
<i>*Bidens bipinnata</i>	0.01%	602781	7509654
<i>*Bidens bipinnata</i>	0.02%	602659	7509992
<i>*Bidens bipinnata</i>	<1.0%	602068	7510240
<i>*Bidens bipinnata</i>	1.00%	601522	7510985
<i>*Bidens bipinnata</i>	<1.0%	601915	7511177
<i>*Bidens bipinnata</i>	0.05%	599938	7511294
<i>*Bidens bipinnata</i>	2.00%	595333	7507542
<i>*Bidens bipinnata</i>	0.10%	597920	7510089
<i>*Bidens bipinnata</i>	<1.0%	596183	7508457
<i>*Bidens bipinnata</i>	0.02%	595630	7507859
<i>*Bidens bipinnata</i>	<1.0%	595874	7508128
<i>*Bidens bipinnata</i>	<1.0%	594910	7507085
<i>*Cenchrus ciliaris</i>	5.00%	599938	7511294
<i>*Cenchrus ciliaris</i>	80.00%	595333	7507542
<i>*Cenchrus ciliaris</i>	5.00%	595874	7508128
<i>*Cenchrus ciliaris</i>	2.00%	594910	7507085
<i>*Cenchrus ciliaris</i>	5 ind.	602288	7510083
<i>*Cenchrus setiger</i>	80.00%	599938	7511294
<i>*Cenchrus setiger</i>	5.00%	595333	7507542
<i>*Cenchrus setiger</i>	<1.0%	596183	7508457
<i>*Cenchrus setiger</i>	5.00%	595874	7508128
<i>*Cenchrus setiger</i>	200 ind.	602288	7510083
<i>*Cenchrus setiger</i>	200 ind.	601240	7511829
<i>*Chloris virgata</i>	0.02%	599938	7511294
<i>*Chloris virgata</i>	-	602083	7511604
<i>*Citrullus lanatus</i>	<1.0%	601530	7512573

<i>*Datura leichhardtii</i>	0.01%	599938	7511294
<i>*Echinochloa colona</i>	0.25%	599938	7511294
<i>*Echinochloa colona</i>	<1.0%	595333	7507542
<i>*Flaveria trinervia</i>	0.01%	602012	7514930
<i>*Malvastrum americanum</i>	0.10%	602012	7514930
<i>*Malvastrum americanum</i>	0.25%	601616	7513231
<i>*Malvastrum americanum</i>	<1.0%	602944	7509452
<i>*Malvastrum americanum</i>	0.25%	601522	7510985
<i>*Malvastrum americanum</i>	0.10%	599938	7511294
<i>*Malvastrum americanum</i>	1.00%	595333	7507542
<i>*Malvastrum americanum</i>	<1.0%	595874	7508128
<i>*Portulaca pilosa</i>	<1.0%	601530	7512573
<i>*Portulaca pilosa</i>	<1.0%	594910	7507085
<i>*Rumex vesicarius</i>	-	595900	7508071
<i>*Setaria verticillata</i>	<1.0%	602944	7509452
<i>*Sonchus oleraceus</i>	0.01%	599938	7511294
<i>*Vachellia farnesiana</i>	0.05%	599938	7511294
<i>*Vachellia farnesiana</i>	1.00%	595333	7507542
<i>*Vachellia farnesiana</i>	<1.0%	595874	7508128
<i>*Vachellia farnesiana</i>	0.50%	594910	7507085
<i>*Vachellia farnesiana</i>	2 ind.	601897	7515309
<i>*Vachellia farnesiana</i>	20 ind.	602288	7510083
<i>*Vachellia farnesiana</i>	3 ind.	601687	7510899
<i>*Vachellia farnesiana</i>	6 ind.	599889	7511192

Appendix 8: Framework for conservation significance ranking of flora and fauna species

Legislative Framework for Conservation Significant Flora and Fauna under the *Wildlife Conservation Act 1950*

All native flora in Western Australia is protected under the state *Wildlife Conservation Act 1950*. Protected flora which are deemed to be at risk of extinction, rare, or otherwise in need of special protection are listed as “Rare Flora” and published in the *Wildlife Conservation (Rare Flora) Notice 2017*. Specific written approval by the Minister for the Environment is required to take or harm species listed in Schedule 1 or 2 of the *Wildlife Conservation (Rare Flora) Notice 2017*. Flora species which may be rare or threatened in Western Australia but which have not been adequately surveyed for are included in a supplementary conservation list called the Priority Flora List.

In addition to state legislation, some Western Australian native plant species are protected under federal law, namely the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In the Pilbara, a single species; *Thryptomene wittweri* is currently listed as “Vulnerable” under the EPBC Act. Proposals that are considered likely to have a significant impact on EPBC Act listed threatened flora are required to be referred to the Federal Minister of Environment for approval.

The following *Conservation codes for Western Australian flora and fauna* (DBCA 2017b) are referenced throughout the report.



Department of
Parks and Wildlife



CONSERVATION CODES

For Western Australian Flora and Fauna

Specially protected fauna or flora¹ are species² which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such.

Categories of specially protected fauna and flora are:

T Threatened species

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

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

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

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

CR Critically endangered species

Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN Endangered species

Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU Vulnerable species

Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX Presumed extinct species

Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA Migratory birds protected under an international agreement

Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD Conservation dependent fauna

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS Other specially protected fauna

Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P Priority species

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

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

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

1 Priority 1: Poorly-known species

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

2 Priority 2: Poorly-known species

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

3 Priority 3: Poorly-known species

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

4 Priority 4: Rare, Near Threatened and other species in need of monitoring

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

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

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

¹The definition of flora includes algae, fungi and lichens

²Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

Legislative Framework for Conservation Significant Flora and Fauna under the *Environment Protection and Biodiversity Conservation Act 1999*

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) affords protection to species, populations and ecological communities threatened at a national level or to species listed as migratory under various international agreements (e.g. CAMBA, JAMBA RoKAMBA, Bonn Convention). Threatened flora and fauna may be listed under Section 178 of the EPBC Act in any one of the following categories:

- Extinct
- Extinct in the wild
- Critically endangered
- Endangered
- Vulnerable
- Conservation dependent

Under the EPBC Act, a proposal which is likely to have a significant impact on threatened species, populations or ecological communities or migratory species must be referred to the Commonwealth Minister for the Environment. A significant impact is determined through application of Significant Impact Criteria (Department of the Environment 2013).

Appendix 9: Government and Rio Tinto internal operational controls for environmental management

Operational Controls for Environmental Management

The manner in which the clearing of native vegetation is regulated, undertaken and rehabilitated is under various Government and internal RTIO operational controls. These operational controls are discussed below.

State Agreement Act Terms and Conditions

The Nammuldi mine, for example, operates under the Iron Ore (Hamersley Range) Agreement Act 1963. This mine is regulated by the DoMIRS and is subject to assessment of new proposals by DoMIRS and to the Annual Environmental Report ("AER") inspection system. The AER inspections are carried out by DoMIRS Environmental Inspectors.

Environmental Protection Authority Guidance Statements

Biological survey methodology for NVCP supporting applications require consideration of key 'land' factors of flora, vegetation and terrestrial fauna in its assessment. Relevant technical guides include:

- *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016c);
- *Technical Guidance – Sampling methods for terrestrial vertebrate fauna* (EPA 2016e); and
- *Technical Guidance – Terrestrial fauna surveys* (EPA 2016d).

RTIO Operational Controls

RTIO is part of the Rio Tinto group of companies and is obliged through its integrated Health Safety Environment and Quality Management System (HSEQ), to comply with five global environmental standards. RTIO has developed and implemented numerous management plans and work practices to control environmental issues relating to mining and exploration. A number of these work practices are of direct relevance in managing and controlling land clearing activities, and include:

- Approvals Permit Guidelines and Procedure;
- HSEQ Ground Disturbance, Re-entering a Rehabilitated Area and Track maintenance Standard Work Practice;
- HSEQ Iron Ore (WA) – Equipment Hygiene Inspection Work Practice;
- HSEQ Operational Control Procedure 6: Drilling; and
- HSEQ Closure, Rehabilitation and Monitoring Standard Work Practice.