SHORT RANGE ENDEMIC FAUNA

DESKTOP AND RISK ASSESSMENT

OF THE

MARDA GOLD PROJECT

FOR

SOUTHERN CROSS GOLD PTY LTD

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1. GLOSSARY

Term or Acronym	Definition
DEC	Department of Environment and Conservation
EPA	Environmental Protection Agency
focus area	An area within the Marda project area that has yet to be surveyed for SRE's. Includes sections of the King Brown and Golden Orb haul roads, airstrip access road and the airpstrip.
Golden Orb area	An area that contains the King Brown gold pit and associated infrastructure
King Brown area	An area that contains the Golden Orb gold pit and associated infrastructure
Marda Central area	An area that contains the Marda gold pits and associated infrastructure
Marda Gold project	The development and operation of all pits, processing units and transport
Marda project area	An area that incorporates all planned infrastructure and mining operations
SRE	Short Range Endemic
WAM	Western Australian Museum

2. INTRODUCTION

2.1. BACKGROUND

Southern Cross Gold Pty Ltd (SXG) intends to develop a gold mining and processing project near Southern Cross, Western Australia (Figure 1). The project involves construction of four mining pits (King Brown, Golden Orb, Marda) and associated bunds, four topsoil dumps, two waste dumps, a tailings dam, a magazine, a mill, a camp site with access road to the north of Marda, an air strip, a tailing storage facility and two haul roads. For the purposes of this report, these combined areas will be referred to as the Marda project area (Figure 2).

SXG aims to begin mining and processing ore the Marda project area in the last quarter of 2013.

Baseline Short Range Endemic (SRE) fauna surveys have been undertaken across the majority of the Marda project area (Figure 3). A detailed, one season Level 2 SRE fauna survey has been undertaken across the Marda Central area (Figure 3).

SXG has completed a gap analysis of its environmental surveys for the project area. As a result, several areas have been identified as remaining unsurveyed for SRE fauna. These areas include the proposed airfield and sections of haul road near Golden Orb and King Brown (Figure 3). For the purposes of this report, these areas will be referred to as the focus area.

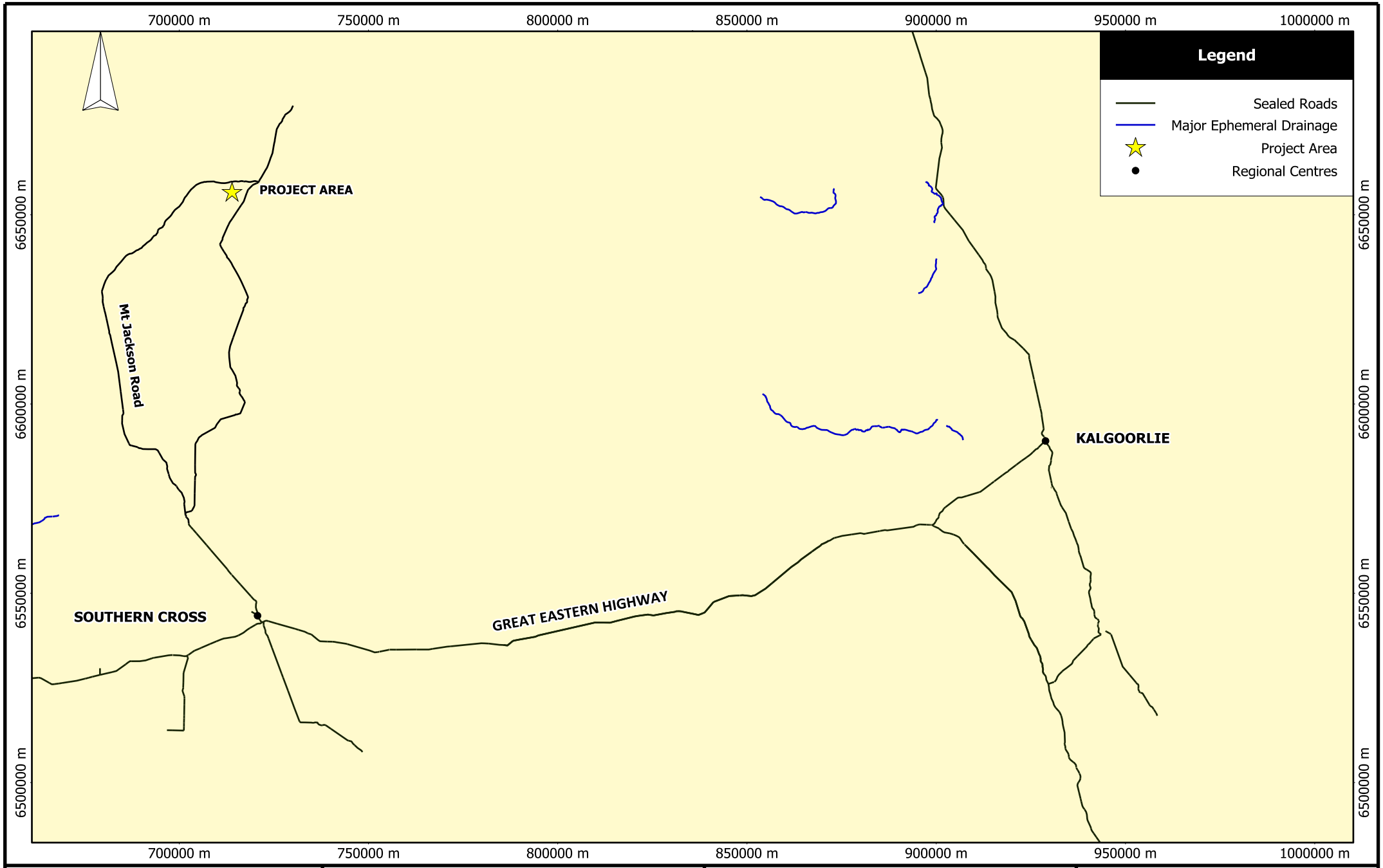
SXG has engaged Rapallo to undertake an SRE desktop assessment for the focus area, following guidelines produced by the Environmental Protection Agency (EPA).

2.2. PROJECT AIMS

The aims of the desktop assessment are:

- undertake a regional review of SRE collections;
- collate data on environmental variables associated with regional collections of SRE's;
- determine the likelihood that habitats of the focus area support SRE species; and,
- determine the likelihood of SRE's occurring on the focus area.

Figure 1: Location Plan



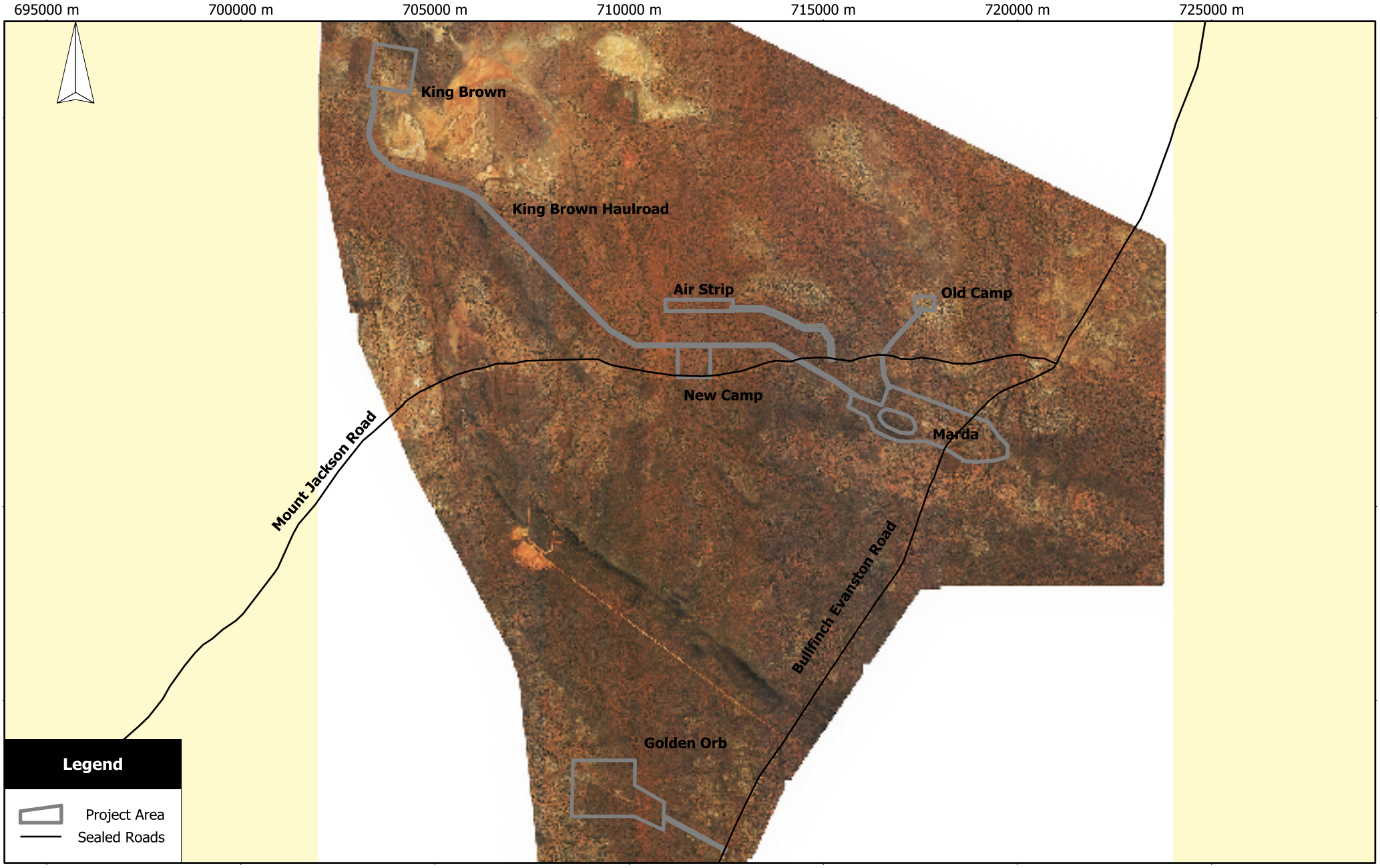
Rapallo

Scale: 1:1,125,000
Datum MGA94 (50)
0 50 km

SXG Location Plan

Southern Cross Goldfields Ltd

Figure 1



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Scale: 1:130,000
Datum MGA94 (50)
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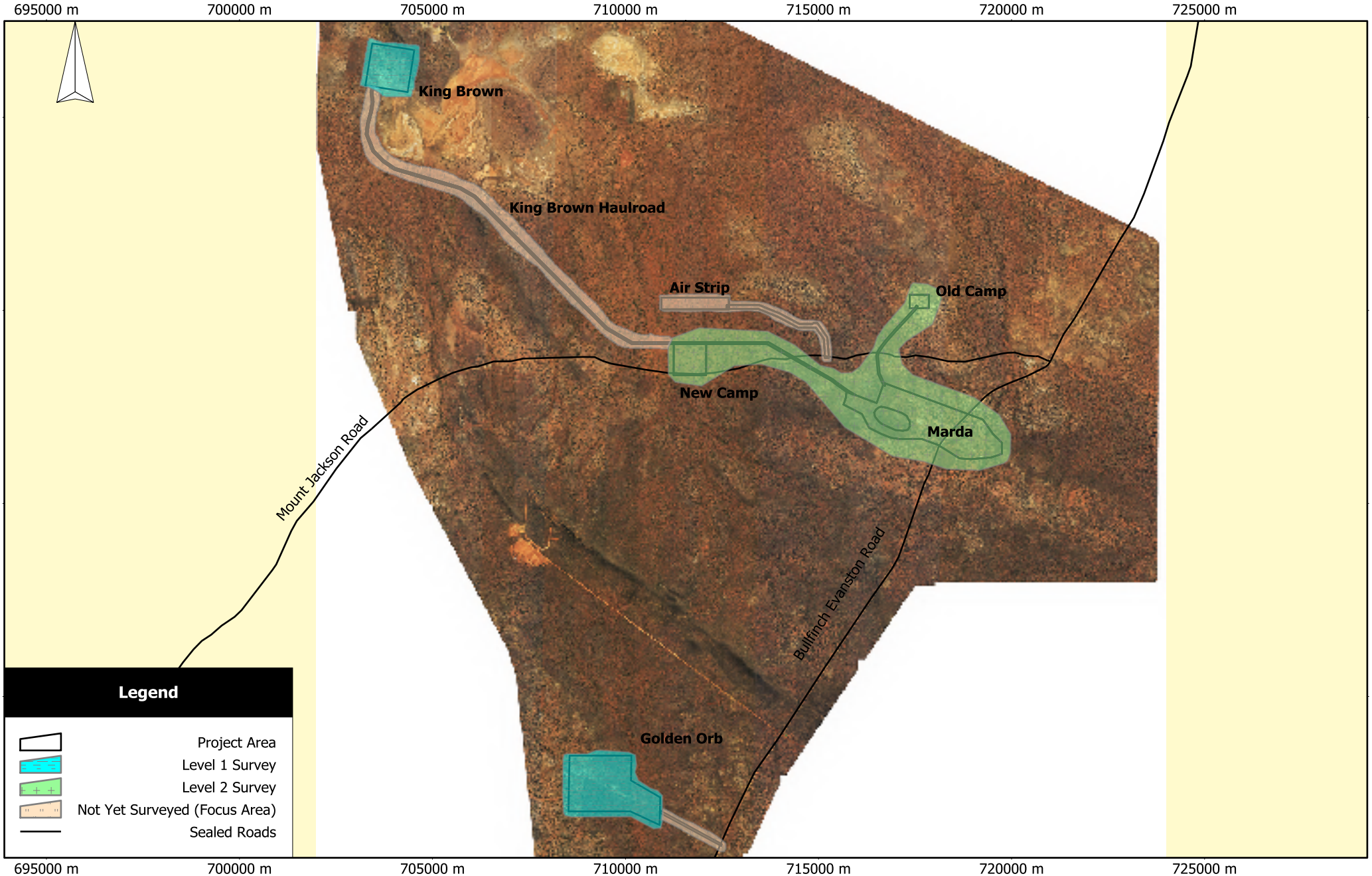
Marda Project Area

Southern Cross Goldfields (SXG)

Figure 2



Rapallo

Scale: 1:130,000
Datum MGA94 (50)
0 5 km

Marda Project Area

Southern Cross Goldfields (SXG)

Figure 3

3. BACKGROUND INFORMATION

3.1. ENVIRONMENTAL PROTECTION AGENCY GUIDANCE

The Western Australian Environmental Protection Authority (EPA) has produced a series of position statements and guidance statements to aid in assessing the environmental impacts of developments in Western Australia. The EPA's expectations in regards to SRE fauna are outlined in *Guidance Statement No. 20: Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia* (EPA 2009).

Guidance Statement Number 20 lists the following expectations to be met, as far as is practicable, in regards to proposed project and SRE fauna:

- ensure the protection of key habitats for SRE species;
- maintain the distribution, abundance of SRE taxa; and
- ensure that the conservation status of SRE taxa is not changed as a result of the proposed project.

Meeting these objectives can be difficult to demonstrate primarily due to the absence of data on the majority of SRE species as well as the lack of contextual information on species ecology and distribution.

Guidance Statement Number 20 recognises this key limitation and has recommended that an assessment can proceed on the basis of a risk assessment. However, the risk assessment can only proceed once/if:

- project timelines preclude the undertaking of further fauna surveys;
- reasonable effort has been expended in assessing the likelihood of the occurrence of SREs and appropriate survey effort and/or database searches have been made;
- further surveys are unlikely to generate high levels of success or increase the understanding potential impacts on species involved.

If these criteria are met, a risk assessment, identifying the risk of a species occurring within the habitats of an impact area, can proceed in which the following criteria are considered:

- the relationship between habitat and taxon distribution; and,
- local distribution of that habit based on available thematic layers; eg. geology, soils, vegetation, drainage.

3.2. PREVIOUS SURVEYS

The following surveys, undertaken across the Marda project area, have incorporated an element of SRE assessment:

- Terrestrial Ecosystems 2011a, Level 1 Fauna Risk Assessment for Southern Cross Goldfields Marda Project Area;
- Terrestrial Ecosystems 2011b, Level 1 Fauna Risk Assessment for Southern Cross Goldfields King Brown Project Area; and, Rapallo 2011; and.
- Level 2 Short Range Endemic Survey of the Marda Tenement and Level 1 Short Range Endemic Surveys of the Golden Orb and King Brown Tenements; Rapallo 2012.

Terrestrial Ecosystems (2011a, 2011b) used habitat data and regional SRE records to determine that there was a low risk of SRE's occurring on the project area, as it was defined in 2011.

The results of Rapallo (2012) are discussed in section 4.2.1.

3.2.1. SUMMARY OF RAPALLO 2012

A comprehensive, single season level 2 SRE survey was undertaken across the Marda Central area in September 2011. The survey included the deployment of 10 pitfall trap sites, litter sampling, raking and foraging.

Three-hundred and twenty-two (322) specimens belonging to invertebrate groups prone to short range endemism were recorded during the survey. These were:

- seven (7) mygalomorph spiders;
- two (2) scorpions;
- 239 pseudoscorpions;
- 19 millipedes;
- six (6) slaters; and,
- 48 molloscs.

Specimens were sent to experts for identification. Table 1 summarises the results of identifications.

Table 1: Summary of Rapallo 2012 Survey Results

Family	Species	SRE Status
MYGALOMORPH (TRAPDOOR) SPIDERS		
Nemesiidae	*Aname* sp. 'MYG243'	**Potential SRE**: New species.
Nemesiidae	*Aname* sp. (juv) (?'MYG243')	**Potential SRE**: Immature specimen of potentially 'MYG243', potentially different species; adult male needed to confirm taxonomy.

Family	Species	SRE Status
Nemesiidae	*Aname tepperi*	Widespread in WA and into SA, Not a SRE
PSEUDOSCORPIONS		
Chernetidae	*Nesidiochernes* sp.	Widespread in southern Australia, Not a SRE
Chernetidae	*Sundochernes* sp. 'PSE027'	New species, Unlikely to be a SRE
Chernetidae	*Chernetidae* sp. (juv)	Immature specimens; not identified to species level, SRE status indeterminate.
Chernetidae	*Nesidochernes sp.*	Female and immature specimens; not identified to species level, SRE status indeterminate
Chthoniidae	*Austrochthonius* sp.	Abundant in samples, Not a SRE
Garypidae	*Synsphyronus* sp. 'PSE026'	Found in leaf litter; Unlikely to be a SRE
	Synshphyronus sp. (juv)	Immature specimens; not identified to species level, SRE status indeterminate.
Garypinidae	*Solinus* sp. (juv)	Genus is widespread, Not a SRE
Olpiidae	*Beierolpium* sp. '8/4 lge'	**Potential SRE**: Systematic status of genus not fully assessed.
Olphiidae	*Beierolpium* sp. (juv.)	Immature specimens; not identified to species level, SRE status indeterminate.
Olpiidae	*Indolpium* sp.	Represented in other regions of WA, Unlikely to be a SRE
SCORPIONS		
Buthidae	*Lychas jonesae*	Widespread in arid Australia, Not a SRE
MILLIPEDES		
Paradoxosomatidae	*Antichiropus* sp. 'Mt Gibson 1'	Larger distribution than most *Antichiropus* species, Not a SRE
Paradoxosomatidae	*Parodoxisomatidae sp.*	Immature specimen; not identified to species level, SRE status indeterminate.
Synxenidae	*Phryssonotus novaehollaniae* (Silvestri, 1923)	Widespread species, Not a SRE
ISOPODS (SLATERS)		
Armadillidae	*Buddelundia* sp. 39	Collected at three other distant locations in southern WA, Not a SRE
LAND SNAILS		
Bulimulidae	*Bothriembryon* sp.	**Potential SRE**: Immature specimen, additional collection recommended.
Punctidae	*Westralaoma aprica* Iredale, 1939	Widespread across the northern wheat belt and western goldfields - Not a SRE
Punctidae	*Westralaoma aprica* Iredale, 1939	Widespread across the northern wheat belt and western goldfields - Not a SRE
Pupillidae	*Gastrocopta bannertonensis*	Widespread in southern Australia, Not a SRE

Family	Species	SRE Status
	(Gabriel, 1930)	
Pupillidae	*Gastrocopta* sp. (juv)	Immature specimen; not identified to species level, unlikely to be SRE.
Pupillidae	*Pupoides myoporinae* (Tate, 1880)	Widespread in southern Australia, Not a SRE

3.3. GAP ANALSYIS

Since baseline SRE investigations have begun on the project area, infrastructure and mine site plans have altered. SXG has undertaken a gap analysis of its SRE survey requirements and has identified several areas that have yet to be surveyed for SRE's. The details of these areas are provided in Table 2.

Table 2: Results of SRE Survey Gap Analysis

Area	Description of Infrastructure	Area within Focus Area (Hectares)
King Brown Haul Road	Haul road designed to link the Golden Orb pit with public access roads	82
Golden Orb Haul Road	Haul road designed to link the King Brown pit with public access roads	9.6
Airstrip Access Road	Purpose built access road designed to link the airstrip with the projects accommodation village	32.8
Airstrip	Airstrip	52.1

4. METHODOLOGY

4.1. SPECIES LIST

The primary focus of the SRE assessment was species that were collected during the Marda Level 2 SRE Survey (Rapallo 2012). Only species that were considered potential SRE's were assessed for the project.

The secondary focus of the SRE assessment was regional data sources which were used to develop a list of SRE candidates that could potentially occur on the focus area (see 4.2). Only invertebrates that were considered highly likely to be SREs (or equivalent category rating) were assessed.

4.2. LITERATURE AND DATABASE REVIEW

The list of SRE's that could potentially occur within the focus area based on the results of the Marda SRE surveys was complemented with records collated from the Western Australian Museum invertebrate databases and from regional reports.

The reports utilised to compile SRE's that have been recorded regionally are shown in Table 3. A list of all invertebrates recorded during the desktop assessment is presented in Appendix 1.

Table 3: Literature reviewed for the SRE desktop assessment

Report Title	Distance from Project Area	Level of Survey
Biota Environmental Sciences (2009) Targeted Survey for Short-Range Endemic Invertebrates at Mt Jackson	~ 10 kilometres	Comprehensive
M.J. & A.R. Bamford Consulting Ecologists (2009) Fauna Surveys of the Mt Jackson Range, Western Australia, 2000-2008	~ 10 kilometres	Desktop review
Bennolongia Environmental Consultants (2012) Ularring Hematite Project Short Range Endemic Invertebrate Surveys	~ 70 kilometres	Comprehensive
Ninox (2009) A fauna survey of the Carina Prospect – Yilgarn Iron Or Project	~ 30 kilometres	Comprehensive

4.3. LIKELIHOOD OF OCCURRENCE - INPUT DATA

Once the list of species was generated, the likelihood that the specie would occur within the focus area was assessed.

The likelihood of occurrence was determined by comparing a series of environmental variables associated with each regional SRE record to the focus areas. The variables that were used have been identified as being important factors in driving SRE species distributions (EPA 2009, Harvey 2002). The following variables were compared:

- vegetation association from were each specimen was collected;

- dominant geology;
- soil type; and;
- landfrom.

Table 4 outlines the parameters used to define the likelihood of occurrence.

Table 4: Parameters used to determine likelihood of a species occurring within the focus area

Likelihood	
Rating	**Parameters**
Certain	Species has been collected within the focus area
High	All important environmental variables associated with the species distribution are present within the focus area. Note that in some cases, only one or two variables will be considered important i.e. geology and soil for *Antichiropus* millipedes
Medium	Some important variables associated with the species distribution are present within the focus however the absence of other variables are likely to reduce the likelihood of occurrence
Low	No important environmental variables associated with the species distribution are located found within the focus area.
Negligible	The is no chance that the species will be collected on the habitats of the focus area

5. RESULTS

5.1. REGIONAL SRE RECORDS

Two hundred and twenty-one (221) invertebrate records from the region were collated from WAM database records and from regional reports. Of the 221 records, 15 species have been characterised as highly likely to be SRE's. These species are presented in Table 5.

Table 5: Putative SRE's that have been recorded within the region

Species	Type	Source	Number	Collection Notes
Antichiropus sp. Nov. 'Mt Jackson'	Millipede	Bamford (2009)	8	
Antichiropus`ML1`	Millipede	WAM Database	3	Marvel Loch, St Barbara Operation, Burbidge area, site 9
Antichiropus `Mt Jackson 2?`	Millipede	WAM Database	3	Mt Jackson, 66.4 km NW. of Koolyanobbing5 km NE of Golden Orb, 8 km S of Marda
Atelomastix sp.	Millipede	Bamford (2009)	6	
Aganippe affin. C*astellum*	Mygalomorph	Biota (2009)	8	
Aname`MYG008`	Mygalomorph	WAM Database	1	Marvel Loch, St Barbara Operation, Cornishman area, site 3
Synothele`new sp. 92`	Mygalomorph	WAM Database	1	Marvel Loch, St Barbara Operation, Cornishman area, site 5
Bothriembryon Paracelsus	Snail	WAM Database	5	
Bothriembryon sedgwicki	Snail	WAM Database	4	
Bothriembryon sp.	Snail	WAM Database	54	
Bothriembryon sp.	Snail	Biota (2009)	14	

Species	Type	Source	Number	Collection Notes
Bothriembryon sp. nov. 'Holleton'	Snail	WAM Database	3	
Bothriembryon sp. nov. 'Mt Jackson'	Snail	WAM Database	4	
Bothriembryon sp. nov. 'Rothsay'	Snail	WAM Database	3	
Pleuroxia affin. *elfina*	Snail	Ecologia	3	near Windarling

These species were added to the SRE list generated from previous Marda SRE.

The complete list of invertebrates recorded from the region, with notes on the associated habitat variables used to define the likelihood of occurrence within the focus area, are presented in Appendix 1.

5.2. FOCUS AREA VEGETATION AND HABITATS

Broadly, the vegetation of the focus area are considered to fit within Coolgardie Botanical District of the South-western Interzone between the South West and the Eremaean Botanical Provinces (Beard 1981). At a slitghly finer scale, it is situated within the Jackson 141 vegetation type, as described by Beard (1981). This broad vegetation association is considered highly connective and widespread throughout the region with over 644 693 ha found within Western Australia (Shepherd, Beeston, & Hopkins 2002). The Jackson 141 vegetation type covers areas directly adjacent to BIF ranges in the region, habitats that support a high number of putative SRE species. The vegetation type varies in its expression depending on geological, landform and soil variables.

Based on vegetation mapping, the habitats of the focus area do not contain BIF or BIF related vegetation associations (Rapallo 2012). They are dominated by woodlands and shrublands, the majority of which grow on sheet-wash floodplains and gently rolling hills (Table 6). These habitats are connective and widespread at a regional scale.

Two habitats are considered more restricted; hillcrests supporting *Allocasurina* woodlands on orange clays and drainage depressions supporting *Acacia* woodlands and *Maireana* shrublands. Both habitats could potentially support SRE species and are common at a regional level.

5.3. COMPARISON ON FOCUS AREA HABITATS TO MARDA SRE RESULTS

Five of the eleven vegetation associations found within the focus area are also found in areas of that were surveyed by the single season Level 2 SRE survey (Rapallo 2012, 2013). Six of the eleven vegetation associations found within the focus area are found in areas that were surveyed by litter sampling and hand foraging during the Level 1 SRE Survey (Rapallo 2012, 2013).

Vegetation community 7 (dissected by the Golden Orb haul road) and vegetation community 9 (dissected by the King Brown haul road, Golden Orb haul road and the Airstrip), have not been surveyed during any SRE surveys undertaken across the Marda project area (Table 6).

Vegetation community 7 was recorded only once during the Level 2 Vegetation survey of the Marda project area (Rapallo 2013). It is defined in Table 6. Based on vegetation mapping extrapolation, the proposed Golden Orb Haul Road will disturb 1.1 hectares of the 5.6 hectare patch. This habitat type is expected to be relatively common throughout the region despite only being represented on the Marda project area by this small patch.

Vegetation community 9 was recorded four times during the Level 2 Vegetation survey of the Marda project area (Rapallo 2013). All four sites were within the focus area. It is defined in Table 6. The vegetation community is not considered to be highly connective but is considered to be relatively common throughout the region.

Of the four putative SRE species collected during Marda SRE surveys, two species have been collected from vegetation associations that are also found within the focus area; *Beierolpium* sp. '8/4 lge' and *Bothriembryon* sp.

Beierolpium sp. '8/4 lge' was collected from vegetation association 1, which is intersected the Goldern Orb haul road, King Brown haul road and found within the airstrip. It was also collected from vegetation associations 11 and 19, both of which are not found within the focus area. All three vegetation associations are found extensively outside the focus area.

A the land mollusc specimen from genus *Bothriembryon* was collected within vegetation community 1, which is intersected by the Goldern Orb haul road, King Brown haul road and the airstrip. The vegetation association is found extensively outside the focus area.

Table 6: Vegetation communities of the focus area

Veg Code	Focus Area Component	Description	Landform, Soil, Geology	Relictual?	Connectivity
1	Airstrip haul road, King Brown Haul Road	*Eucalyptus corrugata or Casuarina pauper l*ow open woodland over *Acacia ramulosa var. ramulosa, Acacia sp. narrow phyllode* (B.R. Maslin 7831) tall open shrubland over *Ptilotus obovatus* low open shrubland.	Flat floodplain with orange brown clays.	No	Habitats widespread and connective at local and regional level
2	Air strip, Golden Orb Haul Road, King Brown Haul road	*Eucalyptus spp.* open woodland over *Atriplex nummularia, Eremophila scoparia* open shrubland over *Maireana trichoptera, Maireana georgei, Ptilotus obovatus* low open shrubland and *Austrostipa trichophylla* open tussock grassland.	Flat floodplain with orange brown clays.	No	Habitats widespread and connective at local and regional level
3	King Brown Haul road	*Casuarina pauper* low woodland over *Eremophila oldfieldii subsp. angustifolia* tall open shrubland over *Ptilotus obovatus, Olearia muellerii* low open shrubland.	Ridges to lower slopes with orange-brown sandy clay to clay.	No	Habitats widespread and connective at local and regional level
4	Airstrip haul road, Golden Orb Haul Road, King Brown Haul road	*Eucalyptus spp.* open woodland over *Atriplex nummularia, Eremophila scoparia, Senna artemisioides subsp. filifolia* shrubland over *Olearia muelleri, Atriplex nana* low open shrubland.	Sheetwash floodplain with red-brown clay and clay-loam.	No	Habitats widespread at regional level though some isolation of habitat type at local level
5	Air strip, Golden Orb Haul Road, King Brown Haul road	*Eucalyptus spp. or Casuarina pauper or C. obesa* low woodland over *Eremophila oppositifolia subsp. angustifolia, Atriplex nana, Eremophila scoparia* tall shrubland over *Atriplex nana, Ptilotus obovatus, Olearia muelleri l*ow shrubland over *Aristida contorta* tussock grassland.	Gently undulating to flat plain with orange-brown sandy clay, clay loam or clay.	No	Habitats widespread at local and regional level

Veg Code	Focus Area Component	Description	Landform, Soil, Geology	Relictual?	Connectivity
6	Air strip, Airstrip Haul Road	*Melaleuca atroviridis, Acacia ramulosa subsp. ramulosa* tall shrubland over *Leucopogon sp. Clyde Hill* (M.A. Burgman 1207), *Hibbertia eatoniae* low shrubland.	Hillslopes with orange brown sandy clay loam to clay.	No	Habitats widespread at local and regional level
7	Golden Orb Haul Road	*Allocasuarina acutivalvis subsp. prinsepiana* low open woodland over *Acacia quadrimarginea, Scaevola spinescens, Eremophila clarkei o*pen shrubland over *Olearia humilis* low open shrubland.	Hill crest with orange-brown clay.	No	Hill crest habitats are common throughout region but are not necessarily highly connective
8	King Brown Haul Road	*Eucalyptus kochii subsp. amaryssia* open woodland over *Acacia ramulosa var. ramulosa* tall shrubland over *Eremophila granitica, Atriplex nummularia* shrubland.	Sheet-wash plain to residual rises in sheet-wash plain with red-brown clay-loam.	No	Habitats widespread at local and regional level
9	Air strip, Golden Orb Haul Road, King Brown Haul Road	*Acacia effusifolia* low open woodland over *Maireana pyrimidata* low sparse shrubland.	Drainage depression in sheet-wash plain with red-brown clay.	No	Habitat common throughout region but not connective
10	Air strip, Golden Orb Haul Road, King Brown Haul Road	*Eucalyptus spp.* low open woodland over *Acacia sp. narrow phyllode* (B.R. Maslin 7831) tall open shrubland.	Rise/slope, sheet-wash plain or drainage depression with red-brown clay loams.	No	Habitat common throughout region but not connective
17	King Brown Haul Road	*Eucalyptus ewartiana low open woodland over Acacia sp. narrow phyllode (*B.R. Maslin 7831) sparse shrubland over *Ptilotus obovatus* sparse low shrubland.	Hillslope with orange-brown clay loam.	No	Habitats widespread at local and regional level

5.4. COMPARISON OF FOCUS AREA HABITATS AND VEGETATION TO REGIONAL SRE HABITATS

The majority of regional SRE records come from habitats either directly on, or adjacent to, isolated large rocky ranges. The geology of these rocky rages varies though BIF ranges were the most common (Chin and Smith, 1987). Other rocky formations from which SRE have been collected includes limestone ridges and greenstone breakaways (Chin and Smith, 1987). At a broad level, the majority of records are also mapped to Jackson vegetation types (Beard 1981).

The rocky ranges of the region, and the areas directly adjacent to them, support a series of unique vegetation associations (Rapallo 2013). Superficially, these vegetation associations can appear similar to the more common assocaitions of the region, with several dominant species being present throughout varying associations. At a finer scale they do vary in species composition which is usually the result of factors such as hydrology, landform, soil type, aspect and geology. These are also often linked to the development of SRE species.

Data on soil, aspect, geology and fine level plant species composition is lacking for the majority of the regional SRE records.

The habitats of the focus area do not contain large, isolated rocky ranges (Chin and Smith, 1987) capable of supporting unique vegetation communities. They alter between gently sloping hills to sheet wash floodplains occasionally dissected by drainage channels with defined banks. While the local area around the focus area does contain minor rocky hills, including BIF breakaways, these habitats are not intersected by the focus area.

5.5. ASSESSMENT OF LIKELIHOOD

Table 7 summarises the assessment of likelihood that SRE species recorded regionally, and on the Marda project area, will be found within the focus area. A more detailed explanation behind each assessment is presented in Appendix 1.

Table 7: Likelihood that SRE species are found within the focus area

Species	Type	Likelihood of Occurrence	Notes on Assessment
Antichiropus sp. Nov. 'Mt Jackson'	Millipede	Low to Medium	While there is no suitable habitat within the focus area, the focus area is very close to the collection points for this species
Antichiropus`ML1`	Millipede	Low to Medium	While there is no suitable habitat within the focus area, the focus area is very close to the collection points for this species

Species	Type	Likelihood of Occurrence	Notes on Assessment
Antichiropus`Mt Jackson 2?`	Millipede	Low to Medium	While there is no suitable habitat within the focus area, the focus area is very close to the collection points for this species
Atelomastix sp.	Millipede	Low	Lack of suitable habitat for this species
Aganippe affin. *castellum*	Mygalomorph	Low to Medium	Lack of regional data to make assessment but unlikely to be present based on habitat suitability alone
Aname`MYG008`	Mygalomorph	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.
Aname sp. 'MYG243'	Mygalomorph	Low	Collected within the Marda Central area but from a remnant BIF outcrop. Habitat not present within focus area
Synothele`new sp. 92`	Mygalomorph	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.
Beierolpium sp. '8/4 lge'	Pseudoscorpion	High	Species collected form several habitats including habitat types found within the focus area
Bothriembryon paracelsus	Snail	None	Species is considered to be extinct
Bothriembryon sedgwicki	Snail	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.
Bothriembryon sp.	Snail	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.

Species	Type	Likelihood of Occurrence	Notes on Assessment
Bothriembryon sp.	Snail	Medium to High	Species collected within the Marda Central area. Habitats matching those where it was collected are found within the focus area
Bothriembryon sp.	Snail	Low to Medium	While there is no suitable habitat within the focus area, the focus area is very close to the collection points for this species
Bothriembryon sp. nov. 'Holleton'	Snail	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.
Bothriembryon sp. nov. 'Mt Jackson'	Snail	Low to Medium	Lack of regional data to make assessment but unlikely to be present based on habitat suitability alone
Bothriembryon sp. nov. 'Rothsay'	Snail	Low	Lack of regional data available to make accurate assessment. Based on broad level veg and geology mapping, likelihood is characterised as Low.
Pleuroxia affin. *elfina*	Snail	Low	Recorded in variable habitats but main collection points are some distance from the focus area

6. DISCUSSION

6.1. ANALYSIS OF FOCUS AREA HABITATS AND MARDA CENTRAL HABITATS

The majority of the habitats in the focus area are considered highly unlikely to support SRE species. They have high connectivity and support vegetation communities that are common regionally.

There is some potential that two habitats found within the focus area could support SRE's; hillcrests supporting *Allocasurina* woodlands on orange clays and drainage depressions supporting *Acacia* woodlands and *Maireana* shrublands.

While both habitats are considered to have low connectivity, which can drive the development of short range endemism (Harvey 2002), they are not considered to be relictual nor are they uncommon at a regional level. In areas where these two habitat types are intersected by the focus area, they continue to be expressed adjacent to potential impact areas. The development of infrastructure over these habitats is unlikely to result in a significant impact on potential SRE species.

6.2. COMPARISON OF FOCUS AREA HABITATS TO MARDA SRE RECORDS

Of the four putative SRE species recorded during Marda SRE surveys, two could potentially occur within the focus area based on the habitats they were collected from.

Beierolpium sp. '8/4 lge' was collected from a several habitats during SRE surveys across the project area. It has also been collected 10 kilometres to the south west of the Marda project area from habitats that differ to those found within the focus area.

The presence of *Beierolpium* sp. '8/4 lge' within the focus area cannot be discounted. However, based on the variety of habitats it has been collected from in the region, the proposed project is unlikely to have a significant impact on this species.

The single specimen of *Bothriembryon* sp was collected live at the Marda Central area though could not be identified past genus level. The distributionally closest species, *Bothriembryon sedgwicki*, was described from the Nangeenan area to the south-west of the focus area and is an SRE. Based on specimens in the collections of the WA Museum, it may possibly exist at Marvel Loch; Lake Johnston and north of Coolgardie. The genus *Bothriembryon* contains many SRE species.

The specimen of *Bothriembryon* sp was collected adjacent to a creek line in the Marda Central area. The collection site currently falls outside the proposed impact areas of the proposed Marda Gold project. The habitat and associated vegetation community is found throughout the region and occurs outside the focus area (Beard 1981, Tillie 2006). It is difficult to determine whether the single collection for this species represents the habitat preference of the species. If it does, development activities within the focus area are unlikely to have a significant impact on the species.

6.3. LIKELIHOOD OF REGIONAL SRE'S OCCURRING IN THE FOCUS AREA

Comparison of regional SRE records to the habitats of the focus area proved difficult owing to the lack of detailed habitat data accompanying each record. Broadly speaking, the majority of regional SRE records were found in association with BIF, Limestone or Greenstone rocky ranges and breakaways. Such habitat types do not occur within the focus area. In general, the likelihood of regional SRE species occurring within the focus area was characterised as Low or Low to Medium.

The focus area is located close to a known SRE habitat type, the Mount Jackson Range. This BIF range hosts several putative SRE species including Millipedes and Mygalomorph spiders. The presence of these species within the focus area, given the small distance to their collection point, cannot be discounted. However, the habitats recorded on the focus area are much more connective and common throughout the region then the habitats associated with the Mount Jackson Range.

If any of the Mount Jackson clade of SRE species is found within the focus area, they are unlikely to be significantly impacted by development activities. This is due to the fact that the habitats of the focus area are more widespread than those of the Mount Jackson Range.

7. CONCLUSION

The habitats of the focus area are considered to be suitable for two putative SRE species collected during SRE investigations across the Marda project area. The habitats from which these two species were collected are common regionally. Both species are unlikely to be significantly impact by development activities within the focus area.

The majority of habitats within the focus area are considered unlikely to support SRE species. They are connective and common throughout the region. Two habitats are considered to be more restricted. Despite this, these habitats are still expressed outside the focus area and only a small area will be impacted by activities within the focus area. The proposed project is unlikely to significantly impact habitats considered suitable for SRE's.

The lack of highly detailed habitat data associated with regional records of SREs makes an accurate assessment of likelihood of occurrence within the focus area difficult to determine. However, the majority of the habitat types found within the focus area have been surveyed for SREs during other surveys undertaken across the Marda project area. Apart from *Beierolpium* sp. '8/4 lge', no regionally recorded SRE species were collected during these surveys. Most regional SRE records are associated with rocky ranges, a habitat type not found within the focus area. The habitat types found within the focus area that haven't been surveyed (during previous SRE surveys across the Marda project area) do not match those from which regional SRE's were collected. Despite the proximity of the Mount Jackson Range, where several SRE species have been collected, habitat analysis suggests that SRE species recorded regionally are unlikely to occur within the focus area.

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9. APPENDICES

Appendix 1: Regional SRE Records

High Liklihood of being an SRE															
Species	**Type**	**Consultant**	**Latidude**	**Longitude**	**Notes**	**Habitat**	**Beard Veg Unit**	**Geology**	**Connectivity**	**Regional Coverage**	**Soil**	**Landform**	**Aspect**	**Assessment of contraints**	**Final assessment of liklihood**
Antichiropus sp. Nov. 'Mt Jackson'	Millipede	Bamford					Jackson 141, 435 and 520	NA	Low	NA	NA	Range	South West		LOW - MEDIUM
Antichiropus`ML1`	Millipede	WAM Database	31°33`33"S	119°34`06"E	Marvel Loch, St Barbara Operation, Burbidge area, site 9	leaf litter	Highclere 1068 and Moorine Rock 511	NA	Low	Low	NA	Range/ Outcrop	South West		LOW - MEDIUM
Antichiropus`Mt Jackson 1? (female)`	Millipede	WAM Database	30°14`34.01"S	119°11`52.69"E	Mt Jackson, 71.1 km NW. of Koolyanobbing8 km SW of Marda, 5 km N of	leaf litter	Jackson 141	BIF	Low	Low	NA	Slope of Range	South West		LOW - MEDIUM
Antichiropus`Mt Jackson 2`	Millipede	WAM Database	30°16`10"S	119°14`09"E	Mt Jackson, 106.5 km N. of Southern Cross5 km NE of Golden Orb, 8 km S of	soil and leaf litter	Jackson 141	BIF	Low	Low	NA	Slope of Range	South West		LOW - MEDIUM
Antichiropus`sp. ML1? (female)`	Millipede	WAM Database	31°33`33"S	119°34`08"E	Marvel Loch, St Barbara Operation, Burbidge area, site 9	leaf litter	Jackson 142	NA	Low	Low	NA	Range/ Outcrop	South West		LOW
Atelomastix sp.	Millipede	Bamford					Jackson 141, Highclere 1068 and Moorine Rock 511	NA	Low	Low	NA	NA	South West	Missing exact locality data	LOW - MEDIUM
Aganippe affin. *castellum*	Mygalomorph	Biota	30°12'57"S	119°09'15"E		*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone	Jackson 141	BIF	Low	Low	NA	Range	South West		LOW
Aname`MYG008`	Mygalomorph	WAM Database	31°20`43"S	119°25`18"E	Marvel Loch, St Barbara Operation, Cornishman area, site 3		Highclere 1068 and Moorine Rock 511	NA	Low	Low	NA	Range/ Outcrop	NA		LOW
Synothele`new sp. 92`	Mygalomorph	WAM Database	31°21`48"S	119°28`45"E	Marvel Loch, St Barbara Operation, Cornishman area, site 5		Highclere 1068 and Moorine Rock 511	NA	Low	Low	NA	Range/ Outcrop	NA		LOW
Bothriembryon paracelsus	Snail	WAM Database			5			NA	Low		NA	NA	NA	Missing exact locality data	NONE
Bothriembryon sedgwicki	Snail	WAM Database			4			NA	Low		NA	NA	NA	Missing exact locality data	LOW
Bothriembryon sp.	Snail	WAM Database			54			NA	Low		NA	NA	NA	Missing exact locality data	LOW
Bothriembryon sp.	Snail	Rapallo	30°12`10.91"S	119°16`40.24"E	MS02	Landform: Creekline. Vegetation: Acacia and Santalum with occasional emergent mallee EucalyptsOutcrops: N. Soil: Orange-red Clay-loam with riverine sand. Leaf litter collected from: Acacia acuminata	Jackson 141	Orange sands	High	High	Orange Clay Loam	Creekline	NA		MEDIUM - HIGH
Bothriembryon sp.	Snail	Biota	30°12'55"S	119°09'11"E		woodland surrounding banded ironstone ranges, and banded ironstone ranges	Jackson 141	BIF	Low	Low	NA	Slope of Range	South West		LOW - MEDIUM
Bothriembryon sp. nov. 'Holleton'	Snail	WAM Database			3				Low		NA	NA	NA	Missing exact locality data	LOW
Bothriembryon sp. nov. 'Mt Jackson'	Snail	WAM Database			4		Jackson 141		Low		NA	NA	South West	Missing exact locality data	LOW - MEDIUM
Bothriembryon sp. nov. 'Rothsay'	Snail	WAM Database			3				Low		NA	NA	NA	Missing exact locality data	LOW

High Liklihood of being an SRE															
Species	**Type**	**Consultant**	**Latidude**	**Longitude**	**Notes**	**Habitat**	**Beard Veg Unit**	**Geology**	**Connectivity**	**Regional Coverage**	**Soil**	**Landform**	**Aspect**	**Assessment of contraints**	**Final assessment of liklihood**
Pleuroxia affin. *elfina*	Snail	Ecologia	near Windarling		three specimens	Mallee			Low		NA	NA	NA	locaility data	LOW
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°17`07.00"S	119°10`50.50"E	GOF03	Landform: Plain - gentle slope. Vegetation: Heavily disturbed and largely cleared Casuarina pauper woodland with occasional emergent Eucalypt, over Acacia, Eremophila, Grevillea.Outcrops: N. Soil: Orange Loamy clay. Leaf litter collected from: Casuarina pauper	Jackson 141		High	High	Orange Clay Loam	Hill	NA		HIGH
Aname sp. "MYG243"	Mygal	Rapallo	30°11'53"S	119°15'15"E	MS05	Landform: North-facing slope opposite south-facing slope receiving lots of water runoff: isolated hill. Vegetation: Scattered eucalypts over Acacia and Allocasuarina acutivalvis over Thysanotus, PhylothecaOutcrops: BIF. Soil: Orange-brown Shallow clay loam over weathered BIF rock. Leaf litter collected from: Acacia sp.	Jackson 141	BIF	Low	Low	Orange-brown shallow clay loam	Hill	North		LOW

Moderately Likely to be an SRE							
Species	**Type**	**Consultant**	**Latitude**	**Longitude**	**Notes**	**SRE Status**	**Habitat**
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Acanthodillo sp. B5	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Aganippe sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Aganippe sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Aganippe sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Aganippe sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Aganippe sp. B3	Mygal	Bennelongia	29°58'57"S	119°59'39"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with north and south facing gentle slopes. Between the hills is some *Eucalyptus, moving to dense cover of Acacia and Allocasuarina on the south facing slope*
Aganippe sp. B3	Mygal	Bennelongia	29°58'57"S	119°59'39"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with north and south facing gentle slopes. Between the hills is some *Eucalyptus, moving to dense cover of Acacia and Allocasuarina on the south facing slope*
Aganippe sp. B3	Mygal	Bennelongia	29°58'57"S	119°59'39"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with north and south facing gentle slopes. Between the hills is some *Eucalyptus, moving to dense cover of Acacia and Allocasuarina on the south facing slope*
Aganippe sp. B3	Mygal	Bennelongia	29°58'57"S	119°59'39"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with north and south facing gentle slopes. Between the hills is some *Eucalyptus, moving to dense cover of Acacia and Allocasuarina on the south facing slope*
Aganippe sp. B3	Mygal	Bennelongia	29°57'23"S	119°59'01"E	Low woodland on rocky undulati	possibly SRE	A gently sloping plain supporting an *Allocasuarina* woodland over Triodia hummock grassland that abuts a small tributary that is dominated by Eucalyptus and Acacia
Aganippe sp. B6	Mygal	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Aname sp. "Double Clay Door"	Mygal	Biota	30°13'52"S	119°10'06"E		possible SRE	loams around base of large *Eucalyptus* on flats at base of Mt Jackson
Aname sp. "Double Clay Door"	Mygal	Biota	30°13'60"S	119°10'26"E		possible SRE	loams around base of large *Eucalyptus* on flats at base of Mt Jackson
Aname sp. "Double Clay Door"	Mygal	Biota	30°13'60"S	119°10'26"E		possible SRE	loams around base of large *Eucalyptus* on flats at base of Mt Jackson
Aname sp. "Double Clay Door"	Mygal	Biota	30°15'00"S	119°12'45"E		possible SRE	loams around base of large *Eucalyptus* on flats at base of Mt Jackson
Aname sp. "Hooded Burrow"	Mygal	Biota	30°12'56"S	119°09'15"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°12'57"S	119°09'15"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°12'57"S	119°09'19"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'47"S	119°10'08"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'32"S	119°09'45"E		possible SRE	open clay and loam substrates with few rocks

Moderately Likely to be an SRE							
Species	**Type**	**Consultant**	**Latidude**	**Longitude**	**Notes**	**SRE Status**	**Habitat**
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'32"S	119°09'46"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'30"S	119°09'41"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'19"S	119°09'49"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'20"S	119°09'49"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'21"S	119°09'49"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'49"S	119°10'08"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'59"S	119°10'26"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'59"S	119°10'26"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°14'23"S	119°11'57"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°14'44"S	119°10'42"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'44"S	119°10'43"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "Hooded Burrow"	Mygal	Biota	30°13'31"S	119°09'42"E		possible SRE	open clay and loam substrates with few rocks
Aname sp. "MYG243"	Mygal	Rapallo	30°11'53"S	119°15'15"E	MS05	potential SRE	Landform: North-facing slope opposite south-facing slope receiving lots of water runoff: isolated hill. Vegetation: Scattered eucalypts over Acacia and Allocasuarina acutivalvis over Thysanotus, PhylothecaOutcrops: BIF. Soil: Orange-brown Shallow clay loam over weathered BIF rock. Leaf litter collected from: Acacia sp.
Aname sp. "Volcano Burrow"	Mygal	Biota	30°13'60"S	119°10'28"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Volcano Burrow"	Mygal	Biota	30°14'23"S	119°11'57"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Volcano Burrow"	Mygal	Biota	30°14'23"S	119°11'57"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°13'59"S	119°10'26"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'34"S	119°11'37"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'33"S	119°11'38"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'33"S	119°11'39"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'36"S	119°11'36"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'36"S	119°11'36"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'34"S	119°11'37"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'23"S	119°11'57"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'23"S	119°11'50"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'59"S	119°12'46"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°14'58"S	119°12'46"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. "Y-shaped Burrow"	Mygal	Biota	30°16'14"S	119°14'13"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. (juv) "MYG243"	Mygal	Rapallo	30°13'07"S	119°15'46"E	MS10	potential SRE	Landform: South-facing scree slope with outcropping and shallow caves: Rocks very porous. Vegetation: Not described: see photosOutcrops: BIF. Soil: Red-brown and dark blue Weathered BIF scree slope with very shallow soil. Leaf litter collected from: Eucalyptus sp.
Aname sp. 1	Mygal	Biota	30°13'20"S	119°09'51"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Aname sp. 2	Mygal	Biota	30°13'51"S	119°10'06"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Antichiropus sp.	Millipede	Biota	n/a		37 individuals	Potential SRE	
Antichiropus sp. Nov. 'Mt Jackson2'	Millipede	Biota	30°16'06"S	119°14'09"E		Potential SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Beierolpium 8/3 sp. B02	Pseudoscorp	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°16`52.47"	119°10`21.97"	GOF01	indeterminate	Landform: Low weathered rocky ridge. Vegetation: Low shrubland with emergent Eucalypts over Melaleuca, Allocasuarina acutivalvis, Santalum spicatum, Acacia, Exocarpus over Calytrix, Atriplex, Dodenea over lychens. Outcrops: Quartz. Soil: Pale orange-yellow Weathered quartz and granitoids. Leaf litter collected from: Melaleuca
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°17`11.83"	119°10`14.05"	GOF04	indeterminate	Landform: Hill slope. Vegetation: Casuarina pauper woodland with emergent Eucalypts over Acacia, Eremophila, Atriplex, PtilotusOutcrops: N. Soil: Orange Clay with lateritic ironstone cover. Leaf litter collected from: Casuarina pauper
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°06`55.21"	119°06`46.68"	KBF01	indeterminate	Landform: Plain. Vegetation: Open Casuarina pauper and Eucalyp woodland over Exocarpus, Eremophila, Acacia over chenopodsOutcrops: N. Soil: Pale orange Rocky clay with calcrete, ironstone, quartz. Leaf litter collected from: Eucalyptus
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°06`53.98"	119°06`42.62"	KBF03	indeterminate	Landform: Plain at base of hill. Vegetation: Scattered emergent Eucalypts and Casuarina pauper over thicket of Acacia acuminata and Acacia tetragonophilla over Senna, Eremophila, PtilotusOutcrops: N. Soil: Red-brown Stony loamy clay (quartz, ironstone). Leaf litter collected from: Acacia acuminata

Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°12`32.94"	119°15`24.47"	MF01	indeterminate	Landform: Plain. Vegetation: Tall open Eucalypt woodland over Eremophila over Atriplex, Ptilotus, small EremophilaOutcrops: N. Soil: Red-brown Loam with stony surface (ironstone). Leaf litter collected from: Eucalyptus sp.
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°11`45.4"S	119°16`19.24"	MF04	indeterminate	Landform: Plain. Vegetation: Open Eucalypt woodland over Atriplex, Ptilotus, Maireana, Eremophila, ScopariaOutcrops: N. Soil: Red-brown Clay with stony surface (quartz/chert). Leaf litter collected from: Eucalyptus sp.
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°11`36.97"	119°15`37.14"	MF05	indeterminate	Landform: Plain. Vegetation: Open Eucalypt woodland over Exocarpus, Eremophila, Acacia, AtriplexOutcrops: N. Soil: Orang-brown Clay with stony surface (ironstone and chert). Leaf litter collected from: Eucalyptus sp.
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°11`53.22"	119°15`15.19"	MS05	indeterminate	Landform: North-facing slope opposite south-facing slope receiving lots of water runoff: isolated hill. Vegetation: Scattered eucalypts over Acacia and Allocasuarina acutivalvis over Thysanotus, PhylothecaOutcrops: BIF. Soil: Orange-brown Shallow clay loam over weathered BIF rock. Leaf litter collected from: Acacia sp.
Beierolpium sp. (juv)	Pseudoscorp	Rapallo	30°12`31.11"	119°15`19.49"	MS09	indeterminate	Landform: Floodplain. Vegetation: Tall open Eucalypt woodland over Eremophila over Atriplex, Ptilotus, small EremophilaOutcrops: N. Soil: Red-brown Loam with stony surface. Leaf litter collected from: Eucalyptus sp.
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°17`07.00"	119°10`50.50"	GOF03	potential SRE	Landform: Plain - gentle slope. Vegetation: Heavily disturbed and largely cleared Casuarina pauper woodland with occasional emergent Eucalypt, over Acacia, Eremophila, Grevillea.Outcrops: N. Soil: Orange Loamy clay. Leaf litter collected from: Casuarina pauper
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°17`11.83"	119°10`14.05"	GOF07	potential SRE	Landform: Plain. Vegetation: Open Eucalypt woodland over Eremophila, Acacia, Santalum acuminatum over Chenopods, Ptilotus, DodeneaOutcrops: N. Soil: Orange Loamy clay. Leaf litter collected from: Eucalypt (flaky barked)
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°13`05.35"	119°15`54.82"	MF02	potential SRE	Landform: Small rocky BIF hill. Vegetation: Not described: see photosOutcrops: BIF. Soil: Orange-brown Stony clay. Leaf litter collected from: Eucalyptus sp.
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°11`53.54"	119°14`33.85"	MF06	potential SRE	Landform: BIF Hill. Vegetation: Banksia arborea and Casuarina pauper over Acacia, Allocasuarina acutivalvis, Casuarina over Acacia, Grevillea, Eremophila, Dodenea and PtilotusOutcrops: BIF. Soil: Orange and blue Rocky BIF. Leaf litter collected from: Banksia arborea
Beierolpium sp. '8/4 lge'	Pseudoscorp	Rapallo	30°12`21.73"	119°16`40.30"	MF11	potential SRE	Landform: Creekline. Vegetation: Tall (20 m) Eucalypts over Exocarpus, Acacia acuminata, Santalum spicatum over Eremophila over PtilotusOutcrops: N. Soil: Orange Loamy clay with some gravel. Leaf litter collected from: Eucalyptus sp.
Buddelundia sp. B10	isopod	Bennelongia	30°01'34"S	120°00'26"E	Low woodland on rocky undulati	possibly SRE	Rocky ridge with a steep, south-facing overhanging cliff. A swathe of swathe of vegetation is present between the cliff and another small ridge. It includes Acacia's, Ptilotus and a patch of Eucalyptus
Buddelundia sp. B10	isopod	Bennelongia	30°01'34"S	120°00'26"E	Low woodland on rocky undulati	possibly SRE	Rocky ridge with a steep, south-facing overhanging cliff. A swathe of swathe of vegetation is present between the cliff and another small ridge. It includes Acacia's, Ptilotus and a patch of Eucalyptus
Buddelundia sp. B10	isopod	Bennelongia	30°01'34"S	120°00'26"E	Low woodland on rocky undulati	possibly SRE	Rocky ridge with a steep, south-facing overhanging cliff. A swathe of swathe of vegetation is present between the cliff and another small ridge. It includes Acacia's, Ptilotus and a patch of Eucalyptus
Buddelundia sp. B19	isopod	Bennelongia	29°48'32"S	119°55'00"E	Low woodland on rocky undulati	possibly SRE	A rocky hill and a minor tributary next to flat plains. The hill has an *Acacia* woodland, but moves into open *Eucalyptus* woodland on the tributary and flat plains
Buddelundia sp. B19	isopod	Bennelongia	29°48'32"S	119°55'00"E	Low woodland on rocky undulati	possibly SRE	A rocky hill and a minor tributary next to flat plains. The hill has an *Acacia* woodland, but moves into open *Eucalyptus* woodland on the tributary and flat plains
Buddelundia sp. B19	isopod	Bennelongia	29°48'32"S	119°55'00"E	Low woodland on rocky undulati	possibly SRE	A rocky hill and a minor tributary next to flat plains. The hill has an *Acacia* woodland, but moves into open *Eucalyptus* woodland on the tributary and flat plains
Cethegus ?fugax	Mygal	Biota	30°14'21"S	119°11'55"E		possible SRE	common in woodlands
Cethegus ?fugax	Mygal	Biota	30°15'04"S	119°12'40"E		possible SRE	common in woodlands
Cethegus ?fugax	Mygal	Biota	30°14'59"S	119°12'45"E		possible SRE	common in woodlands
Cethegus ?fugax	Mygal	Biota	30°14'60"S	119°12'45"E		possible SRE	common in woodlands
Cethegus ?fugax	Mygal	Biota	30°15'03"S	119°12'42"E		possible SRE	common in woodlands
Cethegus ?fugax	Mygal	Biota	30°16'30"S	119°14'09"E		possible SRE	common in woodlands
Buddelundia sp. B14	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Buddelundia sp. B14	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area

Moderately Likely to be an SRE							
Species	Type	Consultant	Latitude	Longitude	Notes	SRE Status	Habitat
Buddelundia sp. B14	isopod	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae n.gen	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°17'22"S	119°11'16"E	GOF08	indeterminate	Landform: Floodplain. Vegetation: Very open Callitris and Eucalypt woodland over Acacia and EremophilaOutcrops: N. Soil: Orange Shallow loamy clay. Leaf litter collected from: Callitris
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°06'58"S	119°07'19"E	KBF05	indeterminate	Landform: Hilltop. Vegetation: Emergent Casuarina pauper over Acacia sp. over smaller Eremophila, Dodenea over smaller Acias, everlastings and daisiesOutcrops: N. Soil: Orange Loamy clay with rocky cover. Leaf litter collected from: Acacia sp.
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°11'45"S	119°14'28"E	MF07	indeterminate	Landform: Hill top. Vegetation: Shrubland with emergent Eucalypts and Casuarina pauper over Allocasuarania acutivalvis, Eremophila, Melaleuca, Dodenea, Acacia, over Lobelia, Ptilotus, small Acacias and HibbertiaOutcrops: BIF. Soil: Orange Very hard rocky clay. Leaf litter collected from: Eucalyptus sp.
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°12'22"S	119°16'40"E	MF11	indeterminate	Landform: Creekline. Vegetation: Tall (20 m) Eucalypts over Exocarpus, Acacia acuminata, Santalum spicatum over Eremophila over PtilotusOutcrops: N. Soil: Orange Loamy clay with some gravel. Leaf litter collected from: Eucalyptus sp.
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°12'22"S	119°16'40"E	MS01	indeterminate	Landform: Floodplain. Vegetation: Open tall Eucalypt woodland over scattered Acacia, Senna and Persoonia shrubland over chenopods, grasses and herbs.Outcrops: N. Soil: Orange-brown Clay loam with top layer of ironstone pisoliths. Leaf litter collected from: Eucalyptus sp.
Chernetidae sp. (juv)	Pseudoscorp	Rapallo	30°13'07"S	119°15'47"E	MS10	indeterminate	Landform: South-facing scree slope with outcropping and shallow caves: Rocks very porous. Vegetation: Not described: see photosOutcrops: BIF. Soil: Red-brown and dark blue Weathered BIF scree slope with very shallow soil. Leaf litter collected from: Eucalyptus sp.
Conothele sp. B4	Mygal	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Eucyrtops sp. "Single Clay Door"	Mygal	Biota	30°13'31"S	119°09'42"E		possible SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Indolpium sp. B5	Pseudoscorp	Bennelongia	29°49'09"S	119°56'17"E	Medium woodland on sand plair	possibly SRE	Flat floodplain habitat that dissects the ironstone ridges that run along the project area. Eucalyptus woodland sits atop *Sclerolaena* saltbush, abutting patches of Acacia woodland. A few small recently wet bog holes are present
Isometroides sp. B1	Scorpion	Bennelongia	29°49'09"S	119°56'17"E	Medium woodland on sand plair	possibly SRE	Flat floodplain habitat that dissects the ironstone ridges that run along the project area. Eucalyptus woodland sits atop *Sclerolaena* saltbush, abutting patches of Acacia woodland. A few small recently wet bog holes are present
Isometroides sp. B2	Scorpion	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Karaops sp. B2	Mygal	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Kwonkan sp.	Mygal	Bamford					
Mecistocephalus sp. B03	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	moderately likely to be an SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area

Moderately Likely to be an SRE							
Species	Type	Consultant	Latitude	Longitude	Notes	SRE Status	Habitat
Mecistocephalus sp. B04	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	possibly SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Mecistocephalus sp. B04	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	possibly SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Nesidochernes sp.	Pseudoscorp	Rapallo	30°06'41"S	119°06'39"E	KBF04	indeterminate	Landform: Plain at base of hill. Vegetation: Casuarina pauper woodland bordering on Acacia acuminata shrubland over Chenopods and PtilotusOutcrops: N. Soil: Orange-brown Rocky loamy clay. Leaf litter collected from: Casuarina pauper
Nesidochernes sp. (juv)	Pseudoscorp	Rapallo	30°06'55"S	119°06'47"E	KBF01	indeterminate	Landform: Plain. Vegetation: Open Casuarina pauper and Eucalyp woodland over Exocarpus, Eremophila, Acacia over chenopodsOutcrops: N. Soil: Pale orange Rocky clay with calcrete, ironstone, quartz. Leaf litter collected from: Eucalyptus
Nesidochernes sp. (juv)	Pseudoscorp	Rapallo	30°07'04"S	119°07'03"E	KBF07	indeterminate	Landform: Creekline. Vegetation: Tall Eucalyps and Casuarina pauper over Exocarpus, Acacia, Eremophila, Senna over Atriplex, Halosarcia, Rhagodia and PtilotusOutcrops: N. Soil: Orange-brown Sandy clay. Leaf litter collected from: Exocarpus
Orphnaeus nr. *brevilabiatus*	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	possibly SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Orphnaeus nr. *brevilabiatus*	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	possibly SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Orphnaeus nr. *brevilabiatus*	Centipede	Bennelongia	29°49'09"S	119°56'17"E	Low woodland on rocky undulati	possibly SRE	Tributary flanked by rocky outcrops. *Acacia* and *Allocasuarina* dominate the tributary with gorves of *Eucalyptus* dotting the area
Paraodoxisomatidae sp.	Millipede	Rapallo	30°11`53.22"	119°15`15.19"	MS05	potential SRE	Landform: North-facing slope opposite south-facing slope receiving lots of water runoff: isolated hill. Vegetation: Scattered eucalypts over Acacia and Allocasuarina acutivalvis over Thysanotus, PhylothecaOutcrops: BIF. Soil: Orange-brown Shallow clay loam over weathered BIF rock. Leaf litter collected from: Acacia sp.
Selenocosmia stirlingi	Mygal	Bamford					
Sinumelon kalgum	Snail	WAM Database			10	Medium-level potential for SRE.	
Sinumelon kalgum	Snail	Ecologia (2001)	Mt Jackson J2 deposit			restrictied distribution	Gully/Cliff Face, Salmon Gum Woodland, and Mallee
Sinumelon vagente	Snail	WAM Database			1	Medium-level potential for SRE.	
Siphonotidae sp. B1	Millipede	Bennelongia	29°51'56"S	119°58'35"E	Low woodland on rocky undulati	possibly SRE	Minor tributary flanked by rocky hills with south and north facing gentle slope and a dense cover of *Casuarina* , *Allocasuarina* , *Acacia* species and *Eucalyptus*
Siphonotidae sp. B1	Millipede	Bennelongia	29°51'56"S	119°58'35"E	Low woodland on rocky undulati	possibly SRE	Minor tributary flanked by rocky hills with south and north facing gentle slope and a dense cover of *Casuarina* , *Allocasuarina* , *Acacia* species and *Eucalyptus*
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope
Synothele sp. B3	Mygal	Bennelongia	30°00'48"S	119°59'47"E	Low woodland on rocky undulati	possibly SRE	Rocky hills with south facing gentle slope and small gully between them Some Eucalyptus are preasend in the gully whilst Acacia and Allocasuarina dominate the hillslope

Synsphyronus sp. (juv)	Pseudoscorp	Rapallo	30°13'07"S	119°15'47"E	KBF01	indeterminate	Landform: Plain. Vegetation: Open Casuarina pauper and Eucalyp woodland over Exocarpus, Eremophila, Acacia over chenopodsOutcrops: N. Soil: Pale orange Rocky clay with calcrete, ironstone, quartz. Leaf litter collected from: Eucalyptus
Synsphyronus sp. (juv)	Pseudoscorp	Rapallo	30°06'55"S	119°06'47"E	MS10	indeterminate	Landform: South-facing scree slope with outcropping and shallow caves: Rocks very porous. Vegetation: Not described: see photosOutcrops: BIF. Soil: Red-brown and dark blue Weathered BIF scree slope with very shallow soil. Leaf litter collected from: Eucalyptus sp.
Teyl sp. 'MYG021'	Mygal	Ninox 2009				potential SRE	
Urodacus sp. B4	Scorpion	Bennelongia	29°48'32"S	119°55'00"E	Low woodland on rocky undulati	moderately likely to be an SRE	A rocky hill and a minor tributary next to flat plains. The hill has an *Acacia* woodland, but moves into open *Eucalyptus* woodland on the tributary and flat plains

Low Likelihood of being an SRE							
Species	**Type**	**Consultant**	**Latidude**	**Longitude**	**Notes**	**SRE Status**	**Habitat**
Bothriembryon sp. nov. 'Coolgardie'	Snail	WAM Database			1	Likely to be widespread.	
Gaius ?villosus	Mygal	Bamford	30°13'42"S	119°10'08"E		probably not an SRE	
Gaius ?villosus	Mygal	Bamford	30°14'22"S	119°11'19"E		probably not an SRE	
Gaius ?villosus	Mygal	Biota	30°12'56"S	119°09'14"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°12'57"S	119°09'14"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°12'57"S	119°09'14"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'32"S	119°09'46"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'19"S	119°09'48"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'32"S	119°09'46"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'23"S	119°11'57"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'47"S	119°10'07"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'59"S	119°10'26"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'59"S	119°10'26"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'59"S	119°10'26"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°13'58"S	119°10'26"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'35"S	119°11'36"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'35"S	119°11'36"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'23"S	119°11'57"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'23"S	119°11'57"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'23"S	119°11'57"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'33"S	119°11'37"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°14'58"S	119°12'45"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°16'15"S	119°14'13"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Gaius ?villosus	Mygal	Biota	30°16'11"S	119°14'10"E		probably not an SRE	*Acacia* sp. Mt Jackson (B.Ryan 176) shrubland on banded ironstone
Succinea sp.	Snail	WAM Database			5	Low-level potential for SRE.	

Disclaimer

This document has been prepared based on assumptions as reported throughout and upon information and data supplied by others.

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