PLACER DOME AUSTRALIA PTY LTD

FAUNA ASSESSMENT

PROPOSED CLEARING AROUND THE NATAL MINE SITE

VERSION 1

MARCH 2006

REPORT NO: 2006/46

ATA Environmental
environmental scientists

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EXECUTIVE SUMMARY

ATA Environmental conducted a Level 1 fauna assessment of the proposed area to be cleared (232ha) around the Natal mine site approximately 30km north-west of Kalgoorlie. Although no trapping was conducted, ATA Environmental believe that sufficient information has been gathered to assess the potential impact of the proposed development on the terrestrial fauna, the impacted ecosystems and the significance of the site as a fauna habitat.

The proposed clearing of vegetation will result in a loss of the sedentary species and will force the more mobile species to move to adjacent areas. Based on the information reviewed in this desktop study and reconnaissance survey, and taking into account the quantity of similar habitat located in the vicinity of this site, this loss of individuals is not considered to be significant to the biodiversity of the region.

No species listed under the Commonwealth *Environment Protection Biodiversity and Conservation (EPBC) Act 1999* or the *Western Australian Wildlife Conservation Act 1950* are likely to be significantly impacted by the proposed clearing of this land.

The faunal assemblage that is currently present on this site, and which will be impacted on during clearing, is unlikely to differ from that found in similar habitat located elsewhere in the bioregion. On the basis of a Level 1 reconnaissance fauna survey and the desktop literature review, ATA Environmental concluded that this site did not contain habitat that has high ecological significance from a faunal perspective, was in low abundance in the bioregion or contained faunal assemblages that are ecologically significant. Therefore the proposed clearing is unlikely to cause a significant loss of an ecosystem of conservation significance or to significantly impact on an ecosystem of high conservation significance.

ATA Environmental can see no reason from a faunal perspective why the proposed clearing of this site should not proceed.

1. INTRODUCTION

1.1 Purpose and Scope

Placer Dome Australia Pty Ltd is proposing to clear an area of 232ha around its Natal mine site in the Goldfields approximately 30km north-west of Kalgoorlie (Figure 1).

The Natal site contains an active mine (Plate 1) that covers approximately 25% of the site. Large sections of land adjacent to the active mining area have been disturbed (Plates 2, 3 and 4). The site also contains a major haul road (Plate 5), exploration tracks, small clearings and filled drill holes and is dissected by a well used gravel road (Figure 2).

The site contains two broad habitat types:

- A Salmon Gum (*Eucalyptus salmonophloia*) woodland with a chenopod understorey on the flat; and
- A *Eucalyptus* woodland on the rocky slopes.

To support the proposed clearing application, ATA Environmental was commissioned by Placer Dome Australia Pty Ltd to undertake a Level 1 fauna assessment in accordance with the Environmental Protection Authority's (EPA) Position Statement No. 3: *Terrestrial Biological Surveys as an Element of Biodiversity Protection* for this site (EPA, 2002).

A Level 1 fauna assessment has two components:

a) A desktop study which includes a literature review and a search of the relevant databases; and
b) A reconnaissance survey to verify the desktop survey and to delineate fauna values present in the area.

Both aspects of a Level 1 fauna assessment have been completed for the proposed clearing and are reported herein.

1.2 Previous Fauna Investigations

The Biological Surveys Committee, which composed staff from the Western Australian Museum (WAM) and the Department of Conservation and Land Management (CALM) surveyed the vertebrate fauna in the Kurnalpi-Kalgoorlie study area between 1979-1981 (McKenzie *et al*., 1992). The Biological Surveys Committee report was part of a series resulting from fauna surveys undertaken in the Goldfields during the late 1970s and 1980s, which intended to describe the biota of the Goldfields bioregion. The vertebrate fauna in the Kurnalpi-Kalgoorlie study was undertaken during October 1979, August 1980 and February 1981 in two general areas; Black Flag and Kurnalpi. A total of eleven quadrats were surveyed in relatively homogeneous habitat that represented the major habitat types for the area.

In addition, the author of this report has in excess of 100 000 trap-nights of data on the small vertebrate fauna for the general area. The author's surveys have been undertaken in eleven of the major habitat types in the general vicinity of Ora Banda which are typical of the Goldfields. These surveys which commenced in 2000 are part of an ongoing fauna

investigation for the bioregion and have been undertaken multiple times in each season and on five occasions in January when the small vertebrate fauna are most active. This is one of the largest, long-term, systematic terrestrial fauna surveys undertaken in Australia. These data have been reported in numerous publications (Thompson and Thompson, 2002, 2005a,b; Thompson, *et al*. 2003a;b;c, 2005a,b). Data from these investigations underpin this Level 1 fauna assessment.

2. METHODOLOGY

2.1 Database Searches

A search of the WAM online database (*FaunaBase*) was undertaken to develop a list of potential birds, reptiles, mammals and amphibians in the study area. The search area was bounded by latitude 30^{o} 10' to 30^{o} 50'S, and longitude 120^{o} 45' to 121^{o} 45'E. This search included habitat that is not found on the Natal site (e.g. salt lake and samphire flats). The inclusion of habitats different to that around the mine site cannot be avoided in a search of *FaunaBase*, as this database search can only manage rectangular shaped search areas. The inclusion of these habitats means that the created species lists will include species that would generally not be expected to occur in the specific habitats in each of the areas proposed to be cleared. In addition, vagrants can be recorded almost anywhere and are always found in these lists. It is only possible to list the species at a site using a comprehensive survey, which is not required for a Level 1 fauna assessment.

Three separate searches of the Department of Conservation and Land Management's (CALM) Threatened and Priority Species database have been combined to identify species of conservation interest likely to be in the area. The combined search parameters were 30.82 to 32.60 ^{o}S, 121.17 to 121.43 ^{o}E; 30.72 to 32.36 ^{o}S, 121.41 to 121.74 ^{o}E; and 30.67 to 30.88 ^{o}S, 121.44 to 121.33 ^{o}E. A search of the Commonwealth Department of Environment and Heritage's *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* online database was also undertaken (search area latitude 30^{o} 10' to 30^{o} 50'S, and longitude 120^{o} 45' to 121^{o} 45'E).

Taxonomy and nomenclature for fauna species used in this report are mostly those used in *FaunaBase* which presumably follows Aplin and Smith (2001) for amphibians and reptiles, How *et al.* (2001) for mammals, and Johnstone and Storr (1998, 2004) for birds. Where data have been referred to in the appendices, ATA Environmental have presumed that the identification and nomenclature were correct at the time of printing these reports and has not verified any of these listed species with the WAM.

2.2 Site Reconnaissance

A site visit conducted by Dr Graham Thompson (Terrestrial Ecosystems) and Dr Scott Thompson (ATA Environmental) to examine the available fauna habitat for amphibians, reptiles, mammals and birds was undertaken on 10 January 2006. No fauna trapping was undertaken as part of this assessment. This reconnaissance survey was used to specifically look for evidence of the presence of, or suitable habitat for Malleefowl (*Leipoa ocellata*), Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Samphire Thornbill (*Acanthiza iredalei iredalei*), Chuditch (*Dasyurus geoffroii*), Red-Tailed Phascogale (*Phascogale calura*), Numbat (*Myrmecobius fasciatus*) and the Carpet Python (*Morelia spilota imbricata*). The weather during the survey period was fine and hot with a gentle breeze and no clouds.

2.3 Limitations

This assessment of the faunal assemblage and habitat suitability to support fauna is mostly based on the information contained in surveys undertaken by staff of the WAM and CALM (McKenzie *et al*., 1992) and the author's own extensive data sets. It should be noted that

the WAM and CALM survey results do not provide a comprehensive coverage of the terrestrial fauna for the main habitat types in the general area and *FaunaBase* is limited, however, the author's surveys have been comprehensive and provide a very good indication of the small terrestrial vertebrate fauna for most of the major habitat types in the Goldfields.

The EPA's Guidance Statement No. 56: *Guidance for Assessment of Environmental Factors: Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* suggested that fauna surveys may be limited by many variables. Limitations associated with each of these variables are assessed in Table 1 (EPA, 2004).

TABLE 1
FAUNA SURVEY LIMITATIONS AND CONSTRAINTS

Possible limitations	**Constraint (yes/no); significant, moderate or negligible**	**Comment**
Competency and experience of the consultant carrying out the survey	No	The author is familiar with terrestrial fauna in the Goldfields and Level 1 fauna assessments.
Scope	No	This report refers only to the faunal aspects of a Level 1 assessment. The vegetation aspect is dealt with elsewhere.
Proportion of fauna identified, recorded and/or collected	Not applicable	
Sources of information	No	This assessment is based on a comprehensive terrestrial fauna survey database collected by the author for the general area.
Proportion of the task achieved	No	All tasks completed.
Timing/weather/season/ cycle	No	Survey data used have been collected in a variety of seasons and over multiple years.
Disturbances which affected results of the survey	Not applicable	
Intensity of survey effort	No	The area was inspected and traversed on foot.
Completeness	No	The area was inspected and traversed on foot.
Resources	No	Adequate resources were available.
Remoteness and/or access problems	No	The area was inspected and traversed on foot.
Availability of contextual information on the region	No	WAM fauna database, CALM Threatened and Priority species lists, and a comprehensive terrestrial fauna survey database for the general area.

3. RESULTS

3.1 Natal Habitat Description

From a fauna perspective there are two broad habitat types:

- *Eucalyptus* woodland with an understorey of chenopods and other small shrubs (Plate 6); and
- *Eucalyptus* woodland with a scattered understorey of shrubs on small stony hills (Plates 2 and 7).

Only a small proportion of the habitat is in good condition.

A composite list of the mammal, frog, reptile and bird species caught or seen in the various systematically surveyed areas in habitats similar to that which could be found in the vicinity of the existing site is contained in Appendix 1. Each of the columns in Appendix 1 represents the results of a systematic survey for a different habitat type. With the addition of Malleefowl and the Carpet Python, the list of species in Appendix 1 represents the species that might be found in the general area of the Natal mine site. The author of this report has conducted long-term fauna surveys in the region and the faunal assemblage on the flat section of this site will be most similar to that at 'Rose' as shown in Appendix 1. Vegetation on the stony hills is reasonably sparse and the faunal assemblages in these areas are likely to be a component of the assemblage on the adjacent flat areas.

3.2 Significant Fauna Species Recorded or Predicted to Occur Within the Study Area Identified as Being of National or State Significance

The fauna species listed in Table 2 have special status in either State or Commonwealth government legislation or are on the CALM Priority species list. They were highlighted as being potentially present in the area after searching the CALM and Department of Environment and Heritage (DEH) database records for the region and matching those with the available faunal records for the area.

Included are six species listed under the *EPBC Act 1999* as either Endangered or Vulnerable, and three species listed as Migratory. Five of these species are listed as Schedule 1 species under the *Wildlife Conservation Act 1950*. In addition, there is one Schedule 4 species, four Priority 1 species, one Priority 3 species and four Priority 4 species that are also potentially found in the general area.

3.2.1 Species Potentially Occurring within the Study Area Identified as Being of National Environmental Significance under the *EPBC Act 1999*

It should be noted that according to some interpretations of the *EPBC Act 1999*, any member of the Accipitridae (Eagles, Kites, Hawks and Bustards), Anatidae (Ducks, Geese and Swans), Charadriidae (Plovers, Dotterels, Lapwings), Falconidae (Kestrels, Falcons, Hobbys), Muscicapidae (Flycatchers), Recurvirostridae (Avocets, Stilts), Scolopacidae (Sandpipers, Turnstones Snipes, Curlews) and Grus (Cranes) families are listed as Migratory Species. ATA Environmental understands that the DEH accept this as an ambiguity in the wording. These family groups are therefore not necessarily intended to be listed as Migratory Species and thereby afforded special protection under the *EPBC Act*

1999. A literal interpretation, however, could suggest they are listed species under the Act and therefore approval is required before disturbance occurs.

TABLE 2
CONSERVATION SIGNIFICANT FAUNA THAT COULD POSSIBLY OCCUR IN THE NATAL MINE SITE AND ARE LISTED WITH THE COMMONWEALTH OR STATE GOVERNMENTS

Species	Status under Wildlife Conservation Act Schedule / Priority	Status under Commonwealth EPBC Act	Potential to be found in the study site
Carnaby's Cockatoo (*Calyptorhynchus latirostris*)	Schedule 1	Endangered	Highly *unlikely* to be on this site.
Red-tailed Phascogale (*Phascogale calura*)	Schedule 1	Endangered	Highly *unlikely* to be on this site.
Chuditch (*Dasyurus geoffroii*)	Schedule 1	Vulnerable	Highly *unlikely* to be on this site.
Slender-billed Thornbill (*Acanthiza iredalei iredalei*)		Vulnerable	Highly *unlikely* to be on this site.
Malleefowl (*Leipoa ocellata*)	Schedule 1	Vulnerable	Highly *unlikely* to be on this site.
Numbat (*Myrmecobius fasciatus*)	Schedule 1	Vulnerable	Highly *unlikely* to be on this site.
Great Egret, White Egret (*Ardea alba*)		Migratory	Highly *unlikely* to be on this site.
Fork-tailed Swift (*Apus pacificus*)		Migratory	May *very occasionally* be seen in the general area.
Rainbow Bee-eater (*Merops ornatus*)		Migratory	Found in the area in low numbers.
Carpet Python (*Morelia spilota imbricata*)	Schedule 4		Highly *unlikely* to be on this site.
Branchinella denticulata	Priority 1		*Unlikely* to be seen on this site.
Jalmenus aridus	Priority 1		*Unlikely* to be seen on this site.
Ogyris subterrestris petrina	Priority 1		*Unlikely* to be seen on this site.
Shy Heathwren (*Hylacola cauta whitlocki*)	Priority 1		*Unlikely* to be seen on this site.
Western Rosella (*Platycercus icterotis xanthogenys*)	Priority 3		May *occasionally* to be seen in the general area.
Australian Bustard (*Ardeotis australis*)	Priority 4		May *occasionally* to be seen in the general area.
Crested Bellbird (*Oreoica gutturalis gutturalis*)	Priority 4		*Likely* to be seen in the general area, but *unlikely* to be effected by clearing.
White-browed Babbler (*Pomatostomus superciliosus ashbyi*)	Priority 4		*Likely* to be seen in the general area.
Hooded Plover (*Charadrius rubricollis*)	Priority 4		Highly *unlikely* to be seen on this site.

3.2.2 Species of Conservation Significance that are Listed as Potentially Being Found in the Study Area

The following is an assessment of the likelihood of each of the species listed in Table 2 being found on the study site. Other species listed in the EPBC search column in Appendix 1 came from the CALM's general Threatened and Priority Species list for the Goldfields region, but are highly unlikely to be seen on this site (e.g. Princess Parrot).

Carnaby's Cockatoo (*Calyptorhynchus latirostris)* - Listed as a Schedule 1 species under the *Wildlife Conservation Act 1950* and as Endangered under the *EPBC Act 1999*. This species inhabits the south-west of WA. Carnaby's Cockatoo is endemic to the forests, woodlands and wheatbelt of south-west Australia. They have been sighted from the lower Murchison, east to Nabawa, Wilroy, Waddi Forest, Nugadong, Manmanning, Durokoppin, Noogar, Lake Cronin, head of Oldfriled River and Cape Arid (Davies, 1966; Johnstone and Storr, 1998; Whitlock, 1937). Saunders (1980) reported Carnaby's Cockatoo at Coomallo Creek (breeding area) foraging mostly on native plants, with the only exception being *Erodium* sp.

Carnaby's Cockatoos were seen by How *et al*. (1988) in the *Allocasuarina* shrubland during their survey to the south-west of Kalgoorlie. During the reconnaissance survey particular attention was paid to potential foraging sites and breeding trees for Carnaby's Cockatoo. There were very few large, old trees on site that contained suitable hollows that could be used as breeding hollows by Carnaby's Cockatoo. As this species does not normally come this far north-east of their normal distribution in the south-west of the state, it is therefore highly unlikely that they would be seen in the area.

ATA Environmental's assessment is that the proposed clearing of this site is unlikely to have any significant impact on this species.

Red-tailed Phascogale (*Phascogale calura*) – Listed as a Schedule 1 species under the *Wildlife Conservation Act 1950* and as Endangered under the *EPBC Act 1999*. The Red-tailed Phascogale is a small (38-48g) marsupial that feeds on birds, small mammals as well as a range of invertebrates. This mostly nocturnal mammal shelters in Wandoo hollows, Grass trees and Sheoaks, often in association with dense vegetation (Kitchener, 1981; Strahan, 2000). It has not been caught in the general area and was not recorded in the search of *FaunaBase* for this area.

ATA Environmental's assessment is that it is unlikely that this species will be in the vicinity of the area proposed to be cleared.

Chuditch (*Dasyurus geoffroii*) – Listed as a Schedule 1 species under the *Wildlife Conservation Act 1950* and as Vulnerable under the *EPBC Act 1999*. This species is the largest carnivorous marsupial in Western Australia (WA). It is usually active from dusk to dawn. Formally known from over 70% of Australia, the Chuditch now has a patchy distribution throughout the Jarrah forest and mixed Karri/Marri/Jarrah forest of south-west WA and other isolated areas. Chuditch are solitary animals for most of their life and den in hollow logs and burrows and have also been recorded in tree hollows and cavities. Chuditch are opportunistic feeders, and forage primarily on the ground at night. Their diet can include other mammals, birds, lizards, bird and reptile eggs but the majority is a mixture of large invertebrates (spiders, scorpions and crickets for example).

How *et al*. (1988) reported Chuditch being found near the Norseman-Lake King Road and near Mount Holland. CALM records show that one specimen was recorded in 1974 in Kambalda East. It is therefore possible that this species is in the general region however there are no records of them in the eastern goldfields north of Kalgoorlie. The habitat on this site is not suitable for Chuditch. It is therefore highly unlikely that they would be found on this site.

As a consequence, ATA Environmental's assessment is that the proposed clearing of this site is unlikely to have any significant impact on this species.

Slender-billed Thornbill (*Acanthiza iredalei iredalei*) – Listed as a Vulnerable species under the *EPBC Act 1999*. This species has a preference for chenopod shrubland in close association with samphire flats. Johnstone and Storr's (2004) distribution maps for this species indicate that it is unlikely to occur in this area. The preferred habitat for this species is very different to that found on the site.

ATA Environmental's assessment is that the proposed clearing of this site is unlikely to have any significant impact on this species.

Malleefowl (*Leipoa ocellata*) - Listed as a Schedule 1 species under the *Wildlife Conservation Act 1950* and as Vulnerable under the *EPBC Act 1999*. Malleefowl are large, ground-dwelling birds that rarely fly unless alarmed. Historically, Malleefowl have been found in mallee regions of southern Australia from approximately the 26th parallel of latitude southwards. Recently the range has contracted due to fox predation and land clearance. However, Malleefowl are still found throughout these regions in fragmented patches. Malleefowl build distinctive nests that comprise a large mound of soil/rock covering a central core of leaf litter. These nest mounds range in diameter but can span more than five metres and may be up to one metre high. They are generally monogamous and, once breeding commences, they pair for life.

Eucalyptus woodland with a dense understorey of shrubs is the preferred habitat for Malleefowl in this area of the Goldfields. There was no habitat on the site suitable for Malleefowl. As a consequence, ATA Environmental's assessment is that the proposed clearing of this site is unlikely to have any significant impact on this species.

Numbat (*Myrmecobius fasciatus*) - Listed as a Schedule 1 species under the *Wildlife Conservation Act 1950* and as Vulnerable under the *EPBC Act 1999.* The Numbat was formally widespread across southern semi-arid and arid Australia. It is now only present at Dryandra and the Perup/Kingston area east of Manjimup; however, populations have been reintroduced by translocation to numerous other locations. A search of the CALM Threatened and Priority Species database indicated a single individual was noted to the south of Kalgoorlie in 1961 and there have been some recent unconfirmed sightings between Hyden and Norseman. Numbats have not been seen north of Kalgoorlie for many years.

ATA Environmental's assessment is that it is unlikely that the species will be in the vicinity of the area proposed to be cleared.

Great Egret, White Egret (*Ardea alba*) – Listed as a Migratory species under the *EPBC Act 1999*. This species is found in the Kimberley, Pilbara and south-west and along the southern coast to east of Esperance. It prefers shallow freshwater and salt water lakes and waterways, and the adjacent samphire flats, and is rarely seen in dry pastures.

It is unlikely that this species will be seen foraging away from the lakes and the associated samphire flats; therefore it is ATA Environmental's assessment that it is

unlikely that this species will be in the vicinity of the area proposed to be cleared.

Fork-tailed Swift (*Apus pacificus*) - Listed as a Migratory species under the *EPBC Act 1999*. The Fork-tailed Swift may be an occasional visitor to the area although it has not been recorded in previous surveys.

Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Rainbow Bee-eater (*Merops ornatus*) - Listed as a Migratory species under the *EPBC Act 1999* and wide-spread. This species was recorded in the area by McKenzie *et al*. (1992).

Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Carpet Python (*Morelia spilota imbricata*) - Listed as a Schedule 4 species under the *Wildlife Conservation Act 1950*. The Carpet Python is a large snake found across the south-west of WA, north to Geraldton and Yalgoo, and east to Kalgoorlie, Fraser Range and Eyre. It inhabits forest, heath or wetland areas and shelters in hollow logs or in branches of large trees. It feeds on a variety of vertebrates including small mammals and reptiles. It has been caught in the open woodland areas in the Goldfields. Carpet Python assemblages are generally found in low numbers and are dispersed across a relatively large area; except during the breeding season when aggregations have been recorded.

Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is ATA Environmental's assessment that the proposed clearing of this site is highly unlikely to have any significant impact on this species.

Branchinella denticulata – This Fairy Shrimp is listed as Vulnerable on the 2000 IUCN Red List of Species. This crustacean is known from Gidgi Lake north of Kalgoorlie. Given the area proposed to be cleared does not include a salt lake or samphire flats it is highly unlikely to occur in the vicinity of this site.

It is therefore ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Jalmenus aridus - This butterfly is listed as a Priority 1 species with CALM. Its caterpillars are green with some red and white lines along the body, and it has a black head and tail. This species is known to feed on the foliage of *Senna* sp. and *Acacia tetragonophylla*. CALM reported sightings of this species in the vicinity of Lake Douglas, near Kalgoorlie. *Jalmenus aridus* is possibly one of the rarest butterflies in the State, and of conservation significance. It is known from only a single colony, on a single Acacia tree. Subsequent searches having failed to reveal additional colonies.

It is therefore ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species as it is highly unlikely to be on the site.

Ogyris subterrestris petrina – This butterfly is listed as a Priority 1 species with CALM. This butterfly is associated with colonies of the ant *Camponotus terebrans*. Larvae hatching from eggs laid near ant nest entrances (often near the bases of various mallee eucalypts) are carried by the ants into their nest. Details of biology, and of any form of herbivory by the larvae, are unknown but it is likely that the larvae are myrmecophagous. These butterflies fly close to the ground, and have been observed flying over agricultural lands near presumed breeding colonies. It is known from the Lake Douglas area near Kalgoorlie (Field, 1999). It is highly unlikely to be on the study site.

It is therefore ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Shy Heathwren (*Hylacola cauta whitlocki*) – Listed as a Priority 4 species with CALM. This small ground wren is found in the semi-arid interior of WA, including much of the southern wheatbelt. Its habitat includes shrubland in the understorey of eucalypt woodland, often on sandy soils. Johnstone and Storr (2004) recorded it as locally moderately common or common, but generally scarce or uncommon and patchily distributed, and reported that Kalgoorlie was on the north-east boundary of its geographic distribution.

Given that the proposed land clearing represents a very small fraction of similar habitat in the area, it is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Western Rosella (*Platycercus icterotis xanthogenys*) – Listed as a Priority 4 species with CALM. This species was sighted by How *et al*. (1988) to the south-west of Kalgoorlie and a search of *FaunaBase* indicated that they have been recorded in the vicinity of Kalgoorlie.

Given that the proposed land clearing represents a very small fraction of similar habitat in the area, it is ATA Environmental's assessment that the clearing of this site is unlikely to have any significant impact on this species.

Australian Bustard (*Ardeotis australis*) – Listed as a Priority 4 species with CALM. Australian Bustards are tall birds that live in wooded grasslands (including spinifex), chenopod flats, low heathland and farmed areas. Although not reported in the survey by McKenzie *et al*. (1992), local environmental staff working in the mining operations have reported them in the area in recent years.

Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species.

Crested Bellbird (*Oreoica gutturalis gutturalis*) – Listed as a Priority 4 species with CALM. Johnstone and Storr (2004) reported the geographic distribution for the Crested Bellbird to include the greater part of Western Australia. Its preferred habitat is scrub and thickets (but not near edges). In the south-west of the state it is found mostly in wooded areas, including open Banksia scrub and heathland. Although this species was listed on the CALM Threatened and Priority Fauna Database, it has no record of the species in the area. It was, however, sighted in nine habitats during the

CALM regional survey (McKenzie, *et al*. 1992). It is therefore in the general area, but the habitat on this site would generally be unsuitable for this species.

It is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species because if it is in the area it will quickly move to adjacent areas, where there are many hectares of similar habitat.

White-browed Babbler (*Pomatostomus superciliosus ashbyi*) - Listed as a Priority 4 species with CALM. Johnstone and Storr (2004) reported the geographic distribution to include most of Western Australia south of the Tropic of Capricorn. It prefers arid and semi-arid areas, on the edges of thickets and scrub, including Mulga, Wattle and Acacia. Johnstone and Storr (2004) do not recognise any subspecies. Although this species was listed on the CALM Threatened and Priority Fauna Database, it has no record of this species in the area. It was, however, sighted in six habitats during the CALM regional survey (McKenzie, *et al*. 1992).

It is ATA Environmental's assessment that the proposed clearing of this site is unlikely to have any significant impact on this species because if it is in the area it would quickly move to adjacent areas.

Hooded Plover (*Charadrius rubricollis*) – Listed as a Priority 4 species with CALM. This species frequents the margins and shallows of salt lakes, and also along coastal beaches, where it forages for invertebrates. It is found along the southern coast and salt lakes north to Port Gregory, Three Springs, Mt Gibson, Lake Brown, Lake Barlee, Lake Cowan and Eyre. It is an uncommon to common resident on the southern sea beaches from Cape Naturaliste east to Eyre. It is probable that they breed in the samphire habitat along the boundary of some of the salt lakes in the bioregion.

The proposed clearing is not in habitat frequented by this species therefore it is ATA Environmental's assessment that the proposed land clearing is unlikely to have any significant impact on this species.

3.3 Biodiversity Value

The EPA's Position Statement No. 3: *Terrestrial Biological Surveys as an Element of Biodiversity Protection* indicated an ecological assessment of a site must consider its biodiversity value at the genetic, species and ecosystem levels; and its ecological functional value at the ecosystem level (EPA, 2002).

A large proportion of the area proposed for clearing is already degraded. Of the remaining area, the habitat contained within it is replicated many times over in the adjacent areas. This habitat type (e.g. Rose in Appendix 1) has been comprehensively surveyed nearby and there is nothing in the available data to suggest that the faunal assemblage at this site is likely to be unique, have particular conservation significance or contains fauna habitat that is limited in the area and is therefore significant.

It is therefore ATA Environmental's assessment that the proposed clearing of this land is unlikely to have any significant affect on species or ecosystems of conservation significance.

It is not possible to assess the biodiversity value at a genetic level based on the information available.

3.4 Ecological Functional Value at the Ecosystem Level

The site represents only a small fraction of the available similar habitat in this bioregion and although this site has been disturbed and is fragmented by mining pits, waste dumps and roads, much of the remaining habitat is in good condition. It therefore provides habitat for the normal range of vertebrate species found in similar habitats in the region. Although all undisturbed habitat has ecological value, there is nothing that is obviously special or significant about this site that would warrant special protection or stopping the proposed clearing from occurring.

3.5 Additional Fauna Surveys

Based on information contained in the EPA's Guidance Statement No. 56: *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (Table 3; EPA, 2004) it could be argued that a Level 2 fauna survey may be necessary for this site. Recent correspondence from the Minister for the Environment (pers. comm. 24 November 2005) indicated that where the WAM, CALM and the Terrestrial Section of the Department of the Environment (DoE) are familiar with the historical fauna surveys for the bioregion further vertebrate fauna surveys to assess likely impacts of a proposal were unnecessary given the substantial information that was already available. This site is similar to those that the author has extensively surveyed in recent years and the general area has been surveyed as part of the WAM and CALM surveys of the Goldfield region.

There is no doubt that a comprehensive survey of the site would provide a detailed list of the species for this particular area but it is unlikely to differ significantly from that provided in the 'Rose' column in Appendix 1. Based on the Minister's communication, the EPA and DoE routinely accepting this level of documentation for the terrestrial fauna and that there is no evidence to suggest that species of conservation significance will be significantly impacted by this development, ATA Environmental can see no justification for additional fauna survey work to be undertaken.

4. CONCLUSIONS

Of the possible species listed for the area under the *EPBC Act 1999* only the Rainbow Bee-eater possibly frequents the area proposed to be cleared. The site represents a very small fraction of similar habitat in the general area. Large sections have already been cleared and mined, and some of the remaining area has historically been degraded by mining and exploration over many years. Migratory birds have numerous alternative sites to forage and are not likely to be impacted on by the clearing of this site. ATA Environmental's assessment is that the proposed clearing of this site is unlikely to have any significant affect on this species.

The Carpet Python, Western Rosella and Australian Bustard are almost certainly in the general area. Of these species, the Western Rosella and the Bustard may very occasionally be seen around the site, but clearing this site is unlikely to significantly impact on these species as there are many square kilometres of similar habitat in the adjacent area.

There is no evidence to suggest that this site contains an ecosystem or ecosystem value that is of conservation significance from a faunal perspective or is significantly different to that in the adjacent areas, and therefore warrant some level of special protection.

ATA Environmental can see no reason from a faunal perspective why the proposed clearing of this site should not proceed.

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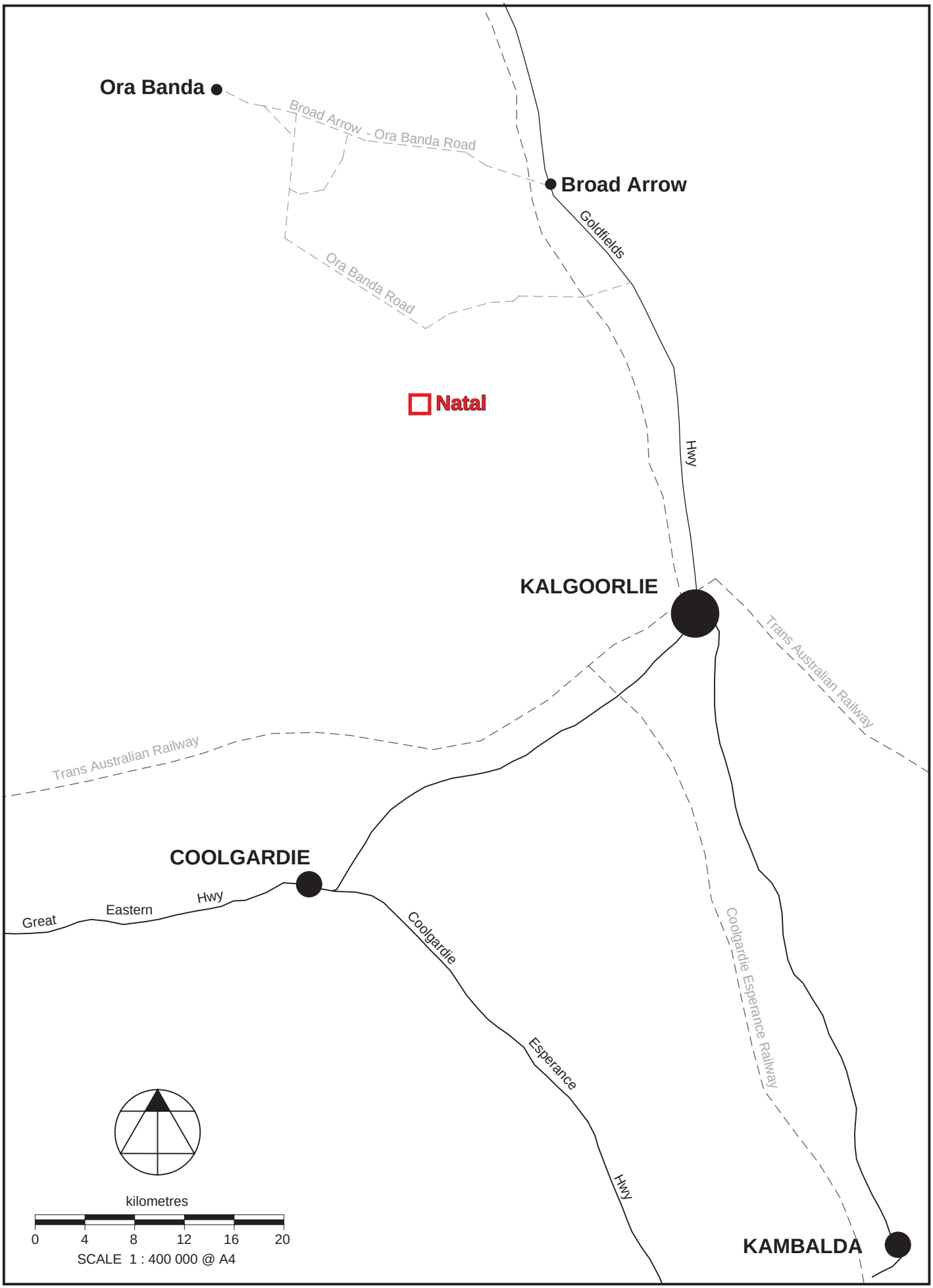
FIGURES



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DRAWN BY: TE 20-2-06

DATUM: Aprox. MGA

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FAUNA ASSESSMENT - PROPOSED CLEARING
AROUND THE NATAL MINE SITE

REGIONAL LOCATION

FIGURE 1

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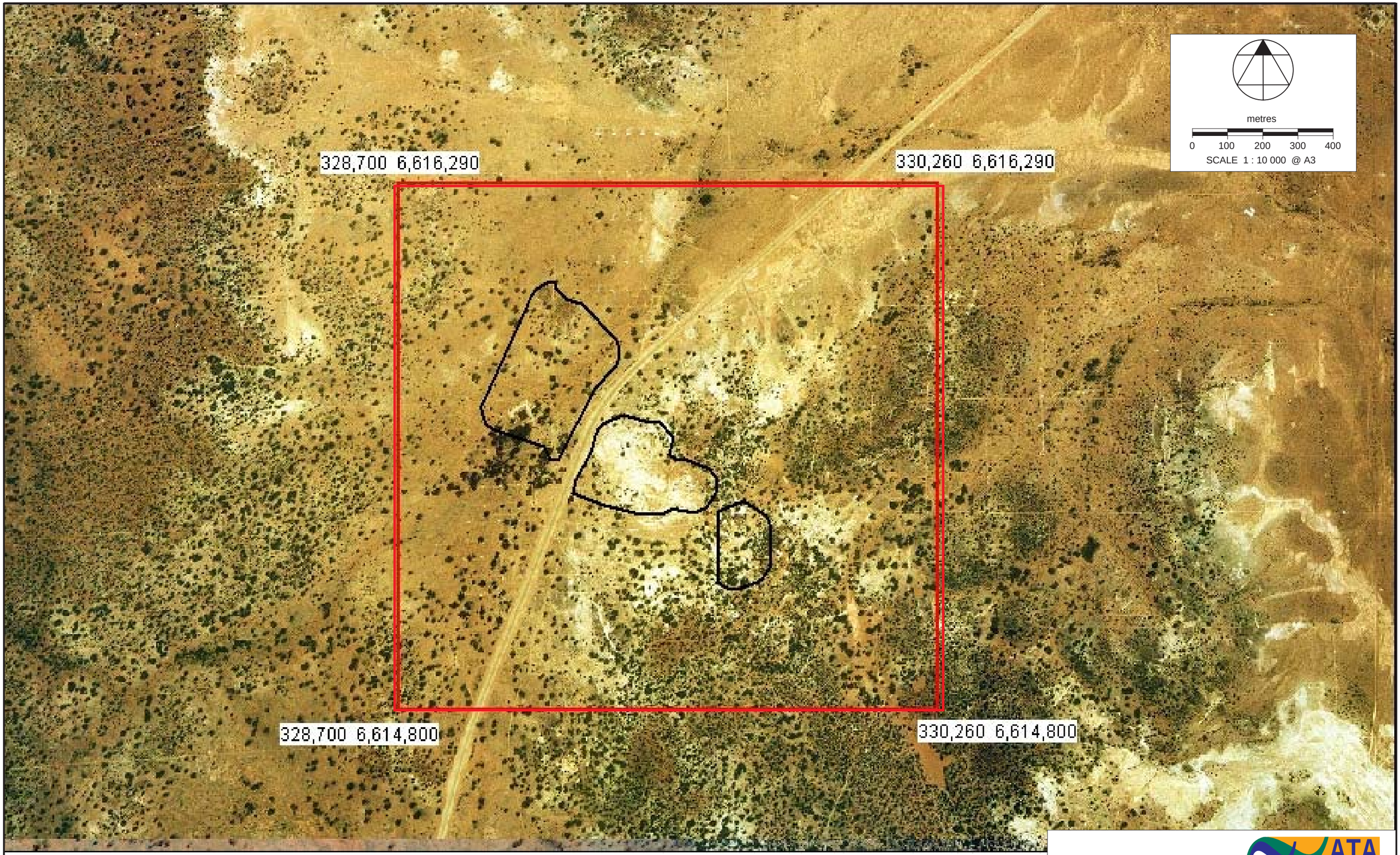
DRAWN BY: TE 20-2-06

DATUM: APPROXIMATELY MGA

PDA6-1/FAAS/26_46F2.dgn



SOURCE: Katina De Sousa, Placer Dome, 2006

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FAUNA ASSESSMENT- PROPOSED CLEARING AROUND THE NATAL MINE SITE

STUDY SITE

FIGURE 2

PLATES

Plate 1 Natal Site Showing a Section of the Mining Area

Plate 2 Natal Site Showing Part of the Area Disturbed by Mining Activity

Plate 3 Natal Site Showing Part of the Area Disturbed by Mining Activity

Plate 4 Natal Site Showing Part of the Area Disturbed by Mining Activity

Plate 5 Natal Site Showing Part of the Haul Road that Divides the Site

Plate 6 Natal Site Showing a Section of the Open *Eucalyptus* Woodland with an Understorey of Chenopods and other Small Shrubs

Plate 7 Natal Site Showing a Section of the Open *Eucalyptus* Woodland with an Understorey of Scattered Shrubs on Small Stony Hills

APPENDICES

APPENDIX 1

AMPHIBIANS, REPTILES, MAMMALS AND BIRDS CAUGHT IN SYSTEMATIC FAUNA SURVEYS UNDERTAKEN BY THE WESTERN AUSTRALIAN MUSEU M AND THE DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT (MCKENZIE, *ET AL*. 1992) AND THE AUTHOR OF THIS REPORT

Appendix 1

Amphibians, Reptiles, Mammals and Birds Caught in Systematic Fauna Surveys Undertaken by the Western Australian Museum and the Department of Conservation and Land Management (McKenzie, *et al*. 1992) and the Author of this Report

Note: Each column of data represents a different habitat type

Descriptions of the vegetation for each habitat surveyed are contained below.

X indicates a presences in the area, V = Vulnerable, E = Endangered, M = Migratory, TH = Threatened

Species marked in the EPBC search column came up in the search of *FaunaBase* and were recorded in the *EPBC Act* Database for the searched area or CALM's Threatened and Priority Species list for the Goldfields Region.

Family Genus species	**Common name**	**EPBC search**	**FaunaBase**	**Qpv**	**Qqs**	**Qas**	**As**	**Agb**	**Qqz**	**Qps**	**Ts**	**Tg**	**Crossroads**	**Davyhurst**	**Floodplains**	**Gimlet**	**Golden Arrow**	**Palace**	**Rose**	**Salmon Gums**	**Security**	**Spinifex**	**Wendy Gully**
BIRDS																							
CASUARIIDAE																							
Dromaius novaehollandiae	Emu				11	14						23											
MEGAPODIIDAE																							
Leipoa ocellata	Malleefowl	TH, V	X							X	X	X											
ANATIDAE																							
Anas gracilis	Grey Teal				10																		
ANHINGIDAE																							
Anhinga melanogaster novaehollandiae			X																				
ARDEIDAE																							
Ardea alba	Great Egret	M																					
Ardea ibis	Cattle Egret	M																					
Nycticorax nycticorax	Black-crowned Night Heron		X																				
Ixobrychus sinensis	Yellow Bittern		X																				
ACCIPITRIDAE																							
Elanus caeruleus	Black-shouldered Kite		X																				
Haliastur sphenurus	Whistling Kite							2															
Aquila audax	Wedge-tailed Eagle		X				2																
Haliaeetus leucogaster	White-bellied Sea-Eagle																						
Circus assimilis	Spotted Harrier								1														

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Circus approximans	Swamp Harrier																						
FALCONIDAE																							
Falco berigora	Brown Falcon		X		1			1	2	2	1												
Falco cenchroides	Australian Kestrel							1															
RALLIDAE																							
Rallina fasciata	Red-legged Crake																						
Fulica atra	Eurasian Coot		X																				
OTIDIDAE																							
Ardeotis australis	Australian Bustard																						
ALCEDINIDAE																							
Phaps chalcoptera	Common Bronzewing				4		3	1	2			1											
Ocyphaps lophotes	Crested Pigeon				2																		
PSITTACIDAE																							
Cacatua roseicapilla	Galah				10			24	1		1												
Nymphicus hollandicus	Cockatiel		X		15			1															
Glossopsitta porphyrocephala	Purple-crowned Lorikeet				3		6	7	7														
Polytelis alexandrae	Princess Parrot	TH	X																				
Platycercus zonarius semitorquatus	Twenty-eight Parrot		X		63	11	16	6	7			3											
Platycercus icterotis	Western Rosella		X																				
Platycercus varius	Mulga Parrot		X		1	7		16			4	4											
Melopsittacus undulatus	Budgerigar									4	2	4											
Cuculus pallidus	Pallid Cuckoo				4	1	1	1		2													
Chrysococcyx osculans	Black-eared Cuckoo		X						2														
Chrysococcyx basalis	Horsfield's Bronze Cuckoo		X		2	1	1	3	4	4	1	5											
STRIGIDAE																							
Ninox novaeseelandiae	Boobook Owl						1																
TYTONIDAE																							
Tyto alba	Barn Owl		X																				

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
PODARGIDAE																							
Podargus strigoides	Tawny Frogmouth					1		3															
AEGOTHELIDAE																							
Aegotheles cristatus	Australian Owlet-nightjar								1														
APODIDAE																							
Apus pacificus	Fork-tailed Swift	M																					
HALCYONIDAE																							
Dacelo novaeguineae	Laughing Kookaburra		X																				
Todiramphus pyrrhopygia	Red-backed Kingfisher						2																
Merops ornatus	Rainbow Bee-eater	M			19		10		6	6	12	6											
ATRICHORNITHIDAE																							
Daphoenositta chrysoptera	Varied Sittella		X		15					6													
Climacteris affinis superciliosa	White-browed Treecreeper								1														
Climacteris rufa	Rufous Treecreeper				4																		
MALURIDAE																							
Malurus lamberti	Variegated Fairy-wren							45			1	20											
Malurus leucopterus	White-winged Fairy-wren				10																		
Amytornis textilis	Thick-billed Grasswren		X																				
PARDALOTIDAE																							
Pardalotus striatus	Striated Pardalote		X		56		9	1	5		7												
ACANTHIZIDAE																							
Pyrrholaemus brunneus	Redthroat					2	1	14	6	2		7											
Smicrornis brevirostris	Weebill				155	12	77	15	137	42	55	40											
Acanthiza apicalis	Inland Thornbill		X				14	22	14	9	4	14											
Acanthiza robustirostris	Slaty-backed Thornbill							2															
Acanthiza uropygialis	Chestnut-rumped Thornbill		X		2	33	25	67	42	2	3	12											
Acanthiza iredalei iredalei	Samphire Thornbill	V																					
Acanthiza chrysorrhoa	Yellow-rumped Thornbill		X				4	47															

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Aphelocephala leucopsis	Southern Whiteface		X					18				2											
MELIPHAGIDAE																							
Lichmera indistincta	Brown Honeyeater						30	2				2											
Lichenostomus virescens	Singing Honeyeater					9	15	10			1												
Lichenostomus plumulus	Grey-fronted Honeyeater		X								2												
Lichenostomus ornatus	Yellow-plumed Honeyeater		X		30		8					1											
Lichenostomus leucotis	White-eared Honeyeater		X		3				7	2	1	1											
Melithreptus brevirostris	Brown-headed Honeyeater						5		17	9													
Phylidonyris nigra	White-cheeked Honeyeater								7														
Phylidonyris albifrons	White-fronted Honeyeater				11	17	19	4	15	6	15												
Manorina flavigula	Yellow-throated Miner		X		86	52	36		2	10-	1	1											
Acanthagenys rufogularis	Spiny-cheeked Honeyeater		X		10	20	14	21	13	13	12	22											
Anthochaera carunculata	Red Wattlebird				31																		
Epthianura albifrons	White-fronted Chat		X																				
Epthianura aurifrons	Orange Chat		X																				
PETROICIDAE																							
Microeca flavigaster	Lemon-breasted Flycatcher		X																				
Microeca fascinans	Jacky Winter				11	1	6		8														
Petroica goodenovii	Red-capped Robin		X		5	5	6	187	14		5	7											
Petroica cucullata	Hooded Robin		X		1																		
Poecilodryas superciliosa	White-browed Robin		X																				
Pomatostomus superciliosus	White-browed Babbler		X		5	1	28	23			3	18											
CINCLOSOMATIDAE																							
Cinclosoma castanotus	Chestnut Quail-thrush		X																				
PACHYCEPHALIDAE																							
Falcunculus frontatus	Crested Shrike-tit		X																				
Oreoica gutturalis	Crested Bellbird		X		5	5		6	5	1	2	2											
Pachycephala rufiventris	Rufous Whistler							7	10	1	5	8											

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Colluricincla harmonica	Grey Shrike-thrush		X		1		1	9	7			2											
DICRURIDAE																							
Rhipidura fuliginosa	Grey Fantail							1															
Rhipidura leucophrys	Willie Wagtail				1		2																
Grallina cyanoleuca	Magpie-lark				6			9															
CAMPEPHAGIDAE																							
Coracina novaehollandiae	Black-faced Cuckoo-shrike				13	6	9	5	2		1												
Coracina maxima	Ground Cuckoo-shrike				4																		
Lalage tricolor	White-winged Triller					2		1															
ARTAMIDAE																							
Artamus cinereus	Black-faced Woodswallow				1		7																
Artamus cyanopterus	Dusky Woodswallow				3			2															
CRACTICIDAE																							
Cracticus torquatus	Grey Butcherbird		X		3	5		2	7		1	1											
Cracticus nigrogularis	Pied Butcherbird				9		2	2	1	1													
Cracticus tibicen	Australian Magpie		X		30		4		14														
Strepera versicolor	Grey Currawong				7	2	7	1	2		1												
HIRUNDINIDAE																							
Hirundo neoxena	Welcome Swallow					4																	
Hirundo nigricans	Tree Martin				4																		
DICAEIDAE																							
Dicaeum hirundinaceum	Mistletoebird							2	4														
PASSERIDAE																							
Taeniopygia guttata	Zebra Finch							9															
MOTACILLIDAE																							
Anthus australis	Australian Pipit		X		1					2													
AMPHIBIANS																							
HYLIDAE																							

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Litoria moorei	Motorbike Frog		X																				
MYOBATRACHIDAE																							
Neobatrachus kunapalari	Kunapalari Frog		X																				
Neobatrachus sutor	Shoemaker Frog			8		1		1				1											
Neobatrachus wilsmorei	Wilsmore's Frog		X			1																	
Pseudophryne occidentalis	Western Toadlet		X	2																			
REPTILES																							
AGAMIDAE																							
Caimanops amphiboluroides			X						1		1										7		
Ctenophorus cristatus			X		3				4				1	3		5	1	10	4			1	
Ctenophorus femoralis																							
Ctenophorus fordi			X			4		1	4	5	4	1											
Ctenophorus isolepis citrinus			X																				
Ctenophorus reticulatus					5	3		7	8			4	6	4		11	18		18	3	29		3
Ctenophorus salinarum			X																				
Ctenophorus scutulatus			X			8			9					2		1	3	1			3		12
Moloch horridus			X			1			2	1	3	2		5									17
Pogona minor			X				1	1	2	4	1	2	21	11	2	3	14	3	2	2	14	13	23
Tympanocryptis cephala			X													7							1
GEKKONIDAE																							
Diplodactylus conspicillatus			X																				
Diplodactylus granariensis			X	1	2		4						29	74	1	71	13	62	68	18	8	77	76
Diplodactylus maini			X		3		5						9	9	1	60	6	39	69	345	1	9	1
Diplodactylus pulcher			X		2	1			2				80	84	12	21	78	87	100	8	123	53	46
Nephurus milii			X				2		5				2	16	10	18	22	22	10	31		11	28
Nephrurus vertebralis			X			1																	
Oedura reticulata			X		1									1					4				
Rhynchoedura ornata			X			1							41	5			23	20	106	3		4	9

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Strophurus assimilis			X											1		7	19	1		1		44	112
Strophurus elderi			X			3																	
Gehyra purpurascens			X										6	1		1	1	9	6	1		1	
Gehyra variegata			X		3	1	2	3	6		1		6	38	1	37	28	45	37	14	39	23	12
Heteronotia binoei			X	2	6	1	6	3		1			1	16		9	12	28	13	10	24	24	8
PYGOPODIDAE																							
Delma australis			X				1							4		3	2	9	2			8	5
Delma butleri			X										2									4	2
Delma fraseri													1									1	
Delma nasuta										4		1											
Lialis burtonis			X			2			1													5	3
Pygopus lepidopodus			X											2		1				3		2	1
Pygopus nigriceps			X																				
SCINCIDAE																							
Cryptoblepharus carnabyi			X																				
Cryptoblepharus plagiocephalus			X			4			1					10		12	1	5	7	3	3		
Ctenotus atlas			X			6			2	12	6							1			1	16	104
Ctenotus leonhardii			X					1															
Ctenotus pantherinus ocellifer			X																				
Ctenotus schomburgkii			X			1			6		1										2	2	
Ctenotus uber					7			2					27	29	13	48	5	3	6	44	46	25	
Cyclodomorphus melanops elongatus			X			1						1		1		2	6	2				24	
Egernia depressa			X					X	4					57		68	2	2	3		27	15	
Egernia formosa			X		1			1	3				1	8				1	14	4	8	1	
Egernia inornata			X	1	1	1			1									8	71	4	2		2
Egernia striata			X																	2	9		1
Eremiascincus richardsonii			X										2	5		4	4			6	6	3	1
Hemiergis initialis initialis			X											4		5				1		12	

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Hemiergis peronii peronii			X																				
Lerista muelleri			X		3	2	2		1					22		4	3	6	6	15		5	2
Lerista picturata			X		2		1						1	18		17	17	5	5	20		14	20
Menetia greyii			X				1						4	19		3	6	23	18	3	17	6	1
Morethia adelaidensis			X		1																		
Morethia butleri			X				2		1			1		14		1		6	17	7	4	4	
Tiliqua occipitalis			X									3		1			2				3	5	4
Tiliqua rugosa			X		2	3	7		5	2		2	1	3	1	1			1		2	2	1
VARANIDAE																							
Varanus caudolineatus			X			1		3	4				9	10		15	1		1	11	17	1	9
Varanus gouldii			X		2	1			1		1	1	2	10	1	9	9	3	7	8	1	5	
Varanus tristis			X											5		1				3		3	
TYPHLOPIDAE																							
Ramphotyphlops australis			X										7	8		14		7	2	7		14	6
Ramphotyphlops bicolor			X													1						1	1
Ramphotyphlops bituberculatus			X											2		2	2	2	1		1	1	
Ramphotyphlops hamatus			X										13	10		24	18	7	6	10	2	9	9
Ramphotyphlops waitii			X																				
BOIDAE																							
Morelia spilota imbricata	Carpet python		X																				
ELAPIDAE																							
Acanthophis pyrrhus	Desert death-adder		X																				
Brachyurophis fasciolata fasciolata			X																				
Brachyurophis semifasciata	Southern shovel-nosed snake		X											6		6	5	2		7	1	9	
Demansia psammophis psammophis	Yellow-faced whipsnake													1		4		1		1	1	1	3
Furina ornata	Moon snake		X																				
Neelaps bimaculatus	Black-naped snake		X																				
Parasuta gouldii	Gould's snake		X																				

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Parasuta monachus	Monk snake		X	1					1				2	9		4	3	11	3	7	4	2	6
Pseudechis australis	Mulga snake		X											2			1		1	1	1		
Pseudonaja modesta	Ringed brown snake		X		1				2		1			1			2		2			1	1
Pseudonaja nuchalis	Gwardar		X				X															1	
Simoselaps bertholdi	Jan's banded snake		X			1																	
Suta fasciata	Rosen's snake		X													3				2	1		
Suta gouldii				1																			
MAMMALS																							
TACHYGLOSSIDAE																							
Tachyglossus aculeatus	Echidna		X						1														
DASYURIDAE																							
Antechinomys laniger	Kultarr		X																	1			
Ningaui ridei	Wongai Ningaui		X						1	11				X			X		X	X		X	X
Ningaui yvonneae	Southern Ningaui		X											X			X		X	X		X	X
Pseudantechinus woolleyae	Woolley's Pseudantechinus		X												1								
Sminthopsis crassicaudata	Fat-tailed Dunnart		X	2	5	1	1	1	2	1		1	26		108	2	15	12	28	5	4	2	24
Sminthopsis dolichura	Little Long-tailed Dunnart		X	1	3	7	4	4	8	2	1	6	11	47	2	15	25	36	28	34	46	63	32
Sminthopsis gilberti	Gilbert`s Dunnart		X																				
Sminthopsis ooldea	Ooldea Dunnart		X																				
MYRMECOBIIDAE																							
Myrmecobius fasciatus	Numbat, Walpurti	TH	X																				
MACROPODIDAE																							
Macropus fuliginosus	Western Grey Kangaroo				2	8	6	1	7														
Macropus robustus	Common Wallaroo, Euro		X				2	4															
Macropus rufus	Red Kangaroo			1	15		8		3														
BURRAMYIDAE																							
Cercartetus concinnus	Western Pygmy-possum		X		8	2	1						17	37		62	32	20	22	15	8	23	16
VESPERTILIONIDAE																							

Family Genus species	Common name	EPBC search	FaunaBase	Qpv	Qqs	Qas	As	Agb	Qqz	Qps	Ts	Tg	Crossroads	Davyhurst	Floodplains	Gimlet	Golden Arrow	Palace	Rose	Salmon Gums	Security	Spinifex	Wendy Gully
Chalinolobus gouldii	Gould's Wattled Bat		X																				
Chalinolobus morio	Chocolate Wattled Bat		X	1	3				3														
Nyctophilus geoffroyi	Lesser Long-eared Bat		X	1	2				1														
Nyctophilus gouldi	Gould's Long-eared Bat			10	42				4														
Scotorepens balstoni	Inland Broad-nosed Bat		X	2	11																		
Vespadelus baverstocki	Inland Forest Bat		X																				
Vespadelus regulus	Southern Forest Bat		X	1	5																		
MOLOSSIDAE																							
Mormopterus planiceps	Southern Freetail-bat		X	11	8																		
Tadarida australis	White-striped Freetail-bat		X	5	17		1		6		2	3											
MURIDAE																							
Mus musculus	House Mouse	FERAL	X		13	1	4	8	11	8	4		18	19	31	25	2	24	22	6	10	26	13
Notomys mitchellii	Mitchell's Hopping-mouse								2	3	7			1									
Pseudomys albocinereus	Ash-grey Mouse		X																				
Pseudomys bolami	Bolam's Mouse		X	2		9							8	49	4	13	3	13	24	30	1	9	5
Pseudomys hermannsburgensis	Sandy Inland Mouse		X					1	2	6	2	2	2	9	2	5	3	4	14	9		8	5
LEPORIDAE																							
Oryctolagus cuniculus	Rabbit	FERAL	X																				
CANIDAE																							
Canis lupus	Dog	FERAL																					
Canis lupus dingo	Dingo		X																				
Vulpes vulpes	Red Fox	FERAL					1		1														
FELIDAE																							
Felis catus	Cat	FERAL	X																				

Vegetation for each of the habitat types surveyed and listed in Appendix 1.

Qpv - Eucalypt low woodland
Qqs - Eucalypt woodland
Qas - Acacia woodland
As - Low woodland
Agb - Tall shrubland
Qqz - Acacia low woodland
Qps - Eucalypt woodland
Ts - Breakaway and tall shrubs
Tg - Breakaway and tall shrubs

Crossroads - Chenopod/Broom Bush (*Eremophila scoparia*) shrubland with scattered Eucalypt trees (*Eucalyptus clellandii* and *E. salmonophloia*)
Davyhurst - *Eucalyptus clellandii* and *Allocasuarina eriochlamys* ssp. *eriochlamys* woodland over mixed woody shrubs
Floodplains - Sparse chenopod shrubland and is a common vegetation community in the area
Gimlet South - Acacia/*Allocasuarina* woodland over a mixed shrubland of perennial woody species
Golden Arrow - Open mixed shrubland with spinifex (*Triodia*) grass
Palace - Open *Eucalyptus* woodland over chenopod shrubs
Rose - Open *Eucalyptus* woodland over chenopod shrubland
Salmon Gums - Open *Eucalyptus salmonophloia* woodland over a shrub layer of chenopod species and broom-bush (*E. scoparia*)
Security - *Acacia aneura* woodland over poverty bush (*Eremophila* spp) and mixed shrubs
Spinifex - *Acacia* woodland over mixed shrubs and spinifex (*Triodia*) grass
Wendy Gully - Open *Eucalyptus* woodland over *Acacia* shrubs and spinifex (*Triodia*) grass