

# Threatened Monitor Lizard and Bat Survey of the Finniss River

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Project Manager:	Dane Trembath
Author(s):	Dane Trembath
Approved by:	Ray Hall
	AU
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EcOz Pty Ltd. ABN: 81 143 989 039 Winlow House, 3rd Floor 75 Woods Street DARWIN NT 0800 GPO Box 381, Darwin NT 0800

Telephone: +61 8 8981 1100 Facsimile: +61 8 8981 1102 Email: ecoz@ecoz.com.au Internet: www.ecoz.com.au





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# Acknowledgements

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# 1 Introduction

# 1.1 Background

A previous series of surveys in 2014 confirmed that the Upper Finniss River and East Branch of the Finniss River are inhabited by Merten's Water Monitor (*Varanus mertensi*) (EcOz 2014a;b). Additionally there was also some evidence that the Bare-rumped Sheath-tailed Bat (*Saccolaimus saccolaimus*) may be present at one site on the Upper Finniss River (EcOz 2014).

As part of plans to rehabilitate the site, Hydrobiology (2013b) recommended "a detailed survey of all culturally significant aquatic reptiles species downstream of the former Rum Jungle Mine to gain an understanding of species abundance and secondly to determine distribution in relation to the former Rum Jungle Mine be conducted". This study was commissioned to follow this recommendation.

## 1.2 Scope

The objective of this report is to discuss the findings of surveys targeting aquatic monitors and a threatened bat in the riparian zone of the Finniss River in the vicinity of the Rum Jungle Mine. This assessment is a component of an on-going monitoring program to assess biological impairment in the riparian zone associated with the Rum Jungle Mine.



# 2 Methods

## 2.1 Survey Design

#### 2.1.1 Site layout

The survey was conducted within the vicinity of eight historical water sampling sites downstream and upstream of the former Rum Jungle Mine site (Figure 1).

#### 2.1.2 Aquatic monitors

#### Active searching

Survey sites were actively searched during the day when goannas were the most active. This involved:

- Actively searching on foot at each site during both seasons.
- Surveying by boat during the dry season along each bank of the entire stretch of each site and consisted of visual searches for basking monitors (Figure 2) as described in Doody et al. (2006).
- Recording tracks where they could be confidently attributed to species.

#### Camera traps

Two motion-activated camera traps (Keep Guard KG-690) were installed at each of the eight survey sites for seven weeks. Cameras were set up in areas where fauna were considered likely to occur, for example pointing at banks used by Merten's Water Monitor as basking platforms.

#### 2.1.3 Microbats

Bat species were surveyed using two high-frequency Anabat bat detectors, which were set to record overnight for three nights at G204, where *Saccolaimus sp.* Was recorded in previous a survey (EcOz 2014)) Recorded bat calls were sent to bat expert, Kyle Armstrong (Specialised Zoological) for identification (Appendix B).

#### 2.1.4 Opportunistic observations

Opportunistic observations were made whilst in the study area. Aquatic monitors were recorded in an 'incidentals' list. All other vertebrate fauna identified at each of the eight sites was recorded.

#### Nomenclature

Nomenclature and classification of fauna species refers to the Classification of Wildlife of the NT – January 2011 (DLRM).

#### Survey limitations

- The results of these surveys are only a snapshot in time, and do not allow for temporal variations or species migrations.
- Environmental factors affect capture rates (Read & Moseby 2001). Planning logistics for fauna surveys such as this around specific environmental conditions is very difficult particularly with the compromise between access (during the dry season) and times when species are more active (e.g. during the build-up/wet season).











Figure 2. Basking Merten's Water Monitors (Varanus mertensi)) observed during the survey.



# 3 Results

### 3.1 Aquatic Monitors

One species of monitor lizard was present at all sites along the Finniss River, with 37 Merten's Water Monitors, *Varanus mertensi,*-Vulnerable (TPWC) - records (Table 1, Figure 3). One Mitchells Water Monitor, *Varanus mitchelli,* -Vulnerable (TPWC) - was recorded on a camera trap at site FRUSMB (Figure 4). Merten's Water Monitors were more frequently recorded during the early dry than late wet season (

Table 2). More Merten's Water Monitor (*Varanus mertensi*) were recorded in the 2015 season than the 2014.

## 3.2 Micro Bats

The song meters recorded four bat species that could be positively identified (Appendix A); however there is data to suggest that eight species may be present (Appendix B). In contrast to last year's findings, there was no unambiguous evidence of the presence of the Bare-rumped Sheath-tailed Bat *Saccolaimus saccolaimus*. One feeding buzz from a species of Saccolaimus was observed, but it had the characteristics of *S. flaviventris*, suggesting that this is the species present (Appendix B)

### 3.3 Incidental observations

The field surveys undertaken along the Finniss River recorded 640 native terrestrial vertebrate species, comprising 2 amphibian, 83 bird, 11 mammal and 19 reptiles species (Appendix A). Of these the Partridge Pigeon (*Geophaps smithil*) is listed as Vulnerable under the *Territory Parks & Wildlife Act* (TPWC) and the *Environment Protection and Biodiversity Act* (EPBC);

#### Partridge Pigeon

One pair of adult Partridge Pigeons (*Geophaps smithii*) was observed on a dirt track to the northwest of the existing Rum Jungle Mine (Figure 3).



Site	Late Wet	Early Dry	Camera Trap	Total
1 FC@LB	0	0	1	1
2 EB@LB	2	0	0	2
3 FRUSMB	0	2	0	2
4 FRDSMB	0	14	0	14
5 EBUSFR	1	3	0	4
6 GS0097	0	4	1	6
7 EBDSRB	1	3	2	6
8 GS327	0	0	1	1
Totals	4	26	5	37

#### Table 1. Merten's Water Monitors (Varanus mertensi) observations during the 2015 surveys.

#### Table 2. Mertens Water Monitors (Varanus mertensi) observations in the 2014 and 2015 Surveys.

Site	2014	2015
1 FC@LB	1	1
2 EB@LB	1	2
3 FRUSMB	6	3
4 FRDSMB	4	14
5 EBUSFR	0	4
6 GS0097	Not sampled	6
7 EBDSRB	Not sampled	6
8 GS327	Not sampled	1
Totals	12	37





Figure 3. Threatened species observed during the 2104 and 2015 surveys.

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Figure 4. Camera trap photos of Mertens Water Monitor (*Varanus mertensi*) (Top) and Mitchell's Water Monitor (*Varanus mitchelli*) (Bottom) from the 2015 surveys.



# 4 Discussion

# 4.1 Threatened Species

EcOz (2014a) highlighted nineteen threatened species that were considered to potentially occur within the survey area. Of these; the Merten's Water Monitor (*Varanus mertensi*), Mitchell's Water Monitor (*Varanus mitchelli*) and Partridge Pigeon (*Geophaps smithi*) were recorded during the surveys. It is possible that other threatened species may occur in the area but were not detected at this time.

#### Merten's Water Monitor (Varanus mertensi)

The Merten's Water Monitor is listed as Vulnerable in the Northern Territory due to population declines associated with the introduced Cane Toad (*Rhinella marina*) (Doody et al. 2006; 2009; Griffiths & McKay 2007). Despite Cane Toads being recorded at most sites, Merten's Water Monitor was recorded at all sites and also during earlier surveys (Ecoz 2014a; EcOz 2014b; Ecological 2014). This is quite interesting as multiyear studies from the Daly River and Manton Dam have document significant declines in this species (Doody et al. 2006; 2009; Griffiths & McKay 2007), almost to the point of localised extinction. If the Finniss River Merten's Water Monitor population is not affected by Cane Toad, or recovering from an earlier decline, this would in itself make this population very important in the region as it may represent a key source population.

During the 2015 survey Merten's Water Monitors were detected at every site suggesting that current water and habitat quality are suitable for this species throughout the Finniss River and East Branch. The majority were recorded at FRDSMB, which was the largest stretch of habitat surveyed. Interestingly despite large numbers detected at FRDSMB during the early dry season, none were seen their in the late wet or detected by the camera traps. This is possibly related to the placement of the camera traps at this site, as they were further up the bank than at other sites due to the danger posed by adult Saltwater Crocodiles (*Crocodylus porosus*) which were detected during earlier surveys (EcOz 2014b). In addition during the late wet season we were unable to launch boat based surveys, which appear to be the best way to detect this species at that site.

The 2014 surveys did not record Merten's Water Monitors during the dry season in the East Branch, leading to the suggestion that it retreats to other water sources. As this species forages along the edge of water bodies for aquatic prey (i.e. freshwater crabs, prawns & fish) (Christian 2004), it may retreat to other water sources during the dry season. The 2015 surveys, with greater survey effort in the East Branch, found this species is present throughout the East Branch as adults were observed at all sites which at the time had pooled water. In addition with greater survey effort and the use of camera traps, we were able to triple the total numbers seen in 2015.

The use of camera traps for fauna surveys have grown exponentially in the last couple of years (Welbourne et al. 2013), and a standard is currently in draft form from the Northern Territory Government (Gillespie et al. 2014). As camera traps have been used successfully on this survey and others (Ariefiandy et al. 2013; Bennett & Clements 2014) to detect monitors, they provide a very cost effective way to monitor this species. Any future monitoring programs should incorporate a larger camera trap array that could be run for the entire dry season. This method would be suitable for continual monitoring during the proposed rehabilitation works.

#### Mitchells Water Monitor (Varanus mitchelli)

The Mitchells Water Monitor is listed as Vulnerable in the Northern Territory due to population declines associated with the introduced Cane Toad (*Rhinella marina*) (Doody et al. 2006; 2009). Despite Cane Toads being recorded at most sites, this species was recorded at FRUSMB on a camera trap and is known to be present at the downstream Finniss River sites (FR1 & FR2) (EcOz 2014b).



Interestingly despite five searches of the Finniss River area (EcOz 2014a; b), both upstream and downstream of the Rum Jungle Mine, only one individual has been seen. This species is reported to be particularly alert and wary, easily evading observations by either escaping into the water (Schultz & Doody 2004) or climbing available trees (Shine 1986), thus it may be more common in the study sites than currently known. However it is also possible that Cane Toad densities, especially newly metamorphosed juveniles may be higher at these sites, which in turn can lead to a severe decline in this species (Doody et al. 2009) or that this species may be affected by mine site drainage.

This species may be more frequently detected if numerous camera traps were deployed specifically targeting this species preferred tree basking spots (Schultz & Doody 2004) during the dry season. This would help determine if the Finniss River is home to an important population of this species as was found with the Mertens Water Monitors.

#### Partridge Pigeon (Geophaps smithii)

The Partridge Pigeon is listed as Vulnerable nationally and in the Northern Territory having undergone a drastic decline, disappearing from at least half the pre-European distribution (Fraser et al 2003). The population also appears to have declined within the current distribution (Franklin 1999). The mechanisms of decline of these species are poorly understood, but are probably associated with widespread changes to the savannah understorey due to altered fire regimes and the impacts of pastoralism (Fraser 2001).

Partridge Pigeon feed, roost and nest on the ground and generally only fly when disturbed. They occur in lowland Eucalyptus forests and woodlands, primarily dominated by *E. tetrodonta* and *E. miniata* (Garnett et al. 2011). According to research by Fraser (2001) Partridge Pigeon favour a structurally patchy savannah understorey, at a relatively intricate scale. In all seasons, Partridge Pigeons prefer to feed in areas that have an open ground layer (e.g. following fire). However, these birds are more likely to nest at sites where there is high vegetation cover, and these vegetated areas were also often used as roost sites and when retreating from disturbance.

Partridge Pigeon also require the seeds of certain perennial grasses and some sedges that are available early in the wet season when seed is otherwise scarce, particular the perennial grass species *Alloteropsis semialata* and *Chrysopogon fallax* (Golden beard grass) which set seed set seed very early in the wet may be crucial for partridge pigeon survival at this time (Fraser 2001).

Fraser (2001) found home ranges varied seasonally between 8 - 31 hectares, and therefore concluded that creating structural heterogeneity at this scale through fire management that ensures small-scale patchy fires may benefit this species.

The incidental sighting of a pair of Partridge Pigeons during these surveys follows a sighting at a nearby location during a recent (2014) fauna survey of the Rum Jungle mine-site (Ecological 2015). There are five records of Partridge Pigeon within 10 km of the mine-site in the NT Fauna Atlas (Figure 5); however, the most recent is from 1996, with one from 1944 and three from 1913. The specific habitat requirements of Partridge Pigeon may be met in the area of the sightings on the Rum Jungle lease where factors such as varied topography, an abundance of access tracks, presence of water and deliberate early burning create a patchy fire history. Such habitat may be uncommon in the broader region of the Rum Jungle mine-site where the introduced Gamba Grass is very common and results in frequent large scale high intensity fires and where there is a significant amount of pastoral activity.

In order to conserve this population of a nationally threatened species on the Rum Jungle lease the extent of the population should be determined and a management plan developed that includes fire and weed management as well as considers the potential impacts of the proposed rehabilitation regime such as dust, noise.



Figure 5. Partridge Pigeon (Geophaps smithii) records from within 10 km of the rum Jungle Mine.





# 4.2 Bat Survey

The 2014 surveys reported that it was likely that the Finniss River downstream of the Rum Jungle Mine may be inhabited by the *EPBC* listed Bare Rumped Sheath-tailed Bat (*Saccolaimus saccolaimus*) as an incomplete call sequence was recorded at G204 (EcOz 2014). As *Saccolaimus sp.* are hard to identify due to overlap call characteristics (Specialised Zoological), a follow up survey was undertaken and confirmed there is no unambiguous evidence of this species at G204, as better call sequences have determined that the Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*) is present. Fauna surveys of the existing Rum Jungle Mine site have also confirmed that the Yellow-bellied Sheath-tailed Bat is present (Ecological 2014).

## 4.3 Faunal Diversity

As expected the riparian sections of the Finniss River and its tributaries are home to an array of terrestrial vertebrate fauna. Fauna surveys within the area have turned up similar number numbers of terrestrial vertebrate species, which supports there is no relationship between possible mine site drainage and the distribution of terrestrial vertebrates downstream of the mine;

- 113 species Area 55 Oxide Project (Coffee 2009)
- 126 species Rum Jungle Mine site (Ecological 2014)
- 123 species Upstream and Downstream of Rum Jungle Mine site (EcOz 2014)
- 115 species; current study

The survey data does add to a good baseline for ongoing monitoring of terrestrial vertebrates if needed. However the apparent instability in detectability of terrestrial vertebrate populations (Woinarksi *et al.* 2004), especially on this smaller scale makes it difficult to determine impacts from the mine.

## 4.4 Summary and Recommendations

The Finniss River is home to populations of terrestrial vertebrates including threatened species. In particular the Water Monitors and Partridge Pigeons that are present on the existing mines site and in the case of the Water Monitors, present downstream of the mine. As the populations of these species could be considered "important populations", they will need to be considered during any rehabilitation plans; therefore DEM should consider the following recommendations;

- That DME monitor the Merten's and Mitchell's Water Monitors during the rehabilitation works.
  - This can possibly be done by the use of camera traps at all sites and throughout the year.
- That DME refer the Partridge Pigeon (*Geophaps smithii*) record to the Department of Environment as required under the *EPBC Act*.
- That DME conduct a targeted survey for Partridge Pigeons on the site as additional information may be required by the Department of Environment to assess the possible impact to this species.



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# Appendix A – Fauna records recorded during the 2015 field surveys of the Finniss River.

Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
BIRD										
ACANTHIZIDAE										
Gerygone chloronota	Green-backed Gerygone				Х					
Smicrornis brevirostris	Weebill								Х	
ACCIPITRIDAE										
Accipiter fasciatus	Brown Goshawk	Х					Х	Х	Х	
Haliastur indus	Brahminy Kite				Х					
Haliastur sphenurus	Whistling Kite			Х			Х			
Milvus migrans	Black Kite							Х		
ALCEDINIDAE										
Ceyx azureus	Azure Kingfisher	Х				Х	Х	Х		
ANHINGIDAE										
Anhinga novaehollandiae	Australasian Darter						Х			
ARDEIDAE										
Ardea intermedia	Intermediate Egret						Х			
Ardea pacifica	White-necked Heron				Х		Х			
Ardea sumatrana	Great-billed Heron					Х				
Egretta novaehollandiae	White-faced Heron					Х	Х	Х		
Egretta sacra	Eastern Reef Egret						Х			
Ixobrychus dubius	Australian Little Bittern					Х				
Ixobrychus flavicollis	Black Bittern						Х	Х	Х	
Nycticorax caledonicus	Nankeen Night Heron						Х	Х		
ARTAMIDAE										
Artamus cinereus	Black-faced Woodswallow						Х			
Artamus leucorynchus	White-breasted Woodswallow	Х								



Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
Artamus minor	Little Woodswallow	Х								
BURHINIDAE										
Burhinus grallarius	Bush Stone-curlew	Х								
CACATUIDAE										
Cacatua galerita	Sulphur-crested Cockatoo	Х	Х	Х	Х	Х	Х		Х	
Cacatua sanguinea	Little Corella						Х			
Calyptorhynchus banksii	Red-tailed Black-cockatoo						Х	Х	Х	
CAMPEPHAGIDAE										
Coracina papuensis	White-bellied Cuckoo-shrike					Х	Х		Х	
Lalage leucomela	Varied Triller		Х			Х	Х	Х	Х	
Lalage sueurii	White-winged Triller			Х						
CICONIIDAE										
Ephippiorhynchus asiaticus	Black-necked Stork						Х			
CISTICOLIDAE										
Cisticola exilis	Golden-headed Cisticola	Х				Х		Х		
COLUMBIDAE										
Chalcophaps indica	Emerald Dove			Х	Х					
Geopelia cuneata	Diamond Dove	Х	Х							
Geopelia humeralis	Bar-shouldered Dove	Х	Х	Х	Х	Х	Х	Х	Х	
Geopelia striata	Peaceful Dove	Х	Х				Х	Х		
Geophaps smithii	Partridge Pigeon									Х
Phaps chalcoptera	Common Bronzewing									Х
CORVIDAE										
Corvus orru	Torresian Crow	Х	Х			Х				
CUCULIDAE										
Cacomantis variolosus	Brush Cuckoo							Х		
Centropus phasianinus	Pheasant Coucal		Х							
DICRURIDAE										
Dicrurus bracteatus	Spangled Drongo	Х	Х	Х	Х	Х	Х	Х	Х	



Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
ESTRILDIDAE										
Lonchura castaneothorax	Chestnut-breasted Mannikin	Х							Х	
Neochmia phaeton	Crimson Finch	Х	Х				Х	Х	Х	
Poephila acuticauda	Long-tailed Finch	Х	Х							
Taeniopygia bichenovii	Double-barred Finch	Х	Х			Х	Х			
EUROSTOPDIDAE										
Eurostopodus argus	Spotted Nightjar				Х					
HALCYONIDAE										
Dacelo leachii	Blue-winged Kookaburra		Х	Х	Х	Х	Х			
Todiramphus sanctus						Х	Х			
MALURIDAE										
Malurus melanocephalus	Red-backed Fairy-wren	Х	Х							
MEGAPODIIDAE										
Megapodius reinwardt	Orange-footed Scrubfowl				Х	Х	Х	Х	Х	
MELIPHAGIDAE										
Conopophila albogularis	Rufous-banded Honeyeater								Х	
Conopophila rufogularis	Rufous-throated Honeyeater		Х							
Lichenostomus unicolor	White-gaped Honeyeater	Х			Х	Х	Х	Х		
Lichmera indistincta	Brown Honeyeater	Х				Х	Х	Х	Х	
Melithreptus albogularis	White-throated Honeyeater	Х	Х		Х	Х	Х	Х	Х	
Myzomela obscura	Dusky Honeyeater					Х		Х	Х	
Philemon argenticeps	Silver-crowned Friarbird					Х	Х	Х		
Philemon citreogularis	Little Friarbird							Х		
Ramsayornis fasciatus	Bar-breasted Honeyeater						Х	Х		
MEROPIDAE										
Merops ornatus	Rainbow Bee-eater	Х		Х	Х	Х	Х	Х	Х	
MONARCHIDAE										
Myiagra alecto	Shining Flycatcher	Х	Х	Х	Х	Х	Х	Х	Х	
Myiagra cyanoleuca	Satin Flycatcher			Х	Х	Х	Х			



Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
Myiagra inquieta	Restless Flycatcher								Х	
Myiagra rubecula	Leaden Flycatcher	Х				Х	Х	Х	Х	
NECTARINIIDAE										
Dicaeum hirundinaceum	Mistletoebird					Х				
ORIOLIDAE										
Oriolus flavocinctus	Yellow Oriole	Х			Х			Х		
PACHYCEPHALIDAE										
Colluricincla harmonica	Grey Shrike-thrush				Х					
Pachycephala rufiventris	Rufous Whistler	Х	Х				Х		Х	
Pachycephala simplex	Grey Whistler				Х					
PARDALOTIDAE										
Pardalotus striatus	Striated Pardalote	Х				Х	Х			
PETROICIDAE										
Microeca flavigaster	Lemon-bellied Flycatcher	Х	Х				Х	Х	Х	
PHALACROCORACIDAE										
Phalacrocorax varius	Pied Cormorant	Х	Х						Х	
PHASIANIDAE										
Coturnix ypsilophora	Brown Quail	Х					Х			
PITTIDAE										
Pitta iris	Rainbow Pitta				Х			Х		
POMATOSTOMIDAE										
Pomatostomus temporalis	Grey-crowned Babbler	Х								
PSITTACIDAE										
Aprosmictus erythropterus	Red-winged Parrot	Х	Х			Х			Х	
Psitteuteles versicolor	Varied Lorikeet		Х			Х	Х	Х	Х	
Trichoglossus haematodus	Rainbow Lorikeet						Х	Х	Х	
PTILONORHYNCHIDAE										
Ptilonorhynchus nuchalis	Great Bowerbird	Х	Х		Х				Х	
RHIPIDURIDAE										



Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
Rhipidura dryas	Arafura Fantail				Х					
Rhipidura leucophrys	Willie Wagtail	Х					Х	Х		
Rhipidura rufiventris	Northern Fantail	Х	Х	Х	Х	Х	Х	Х	Х	
STRIGIDAE										
Ninox connivens	Barking Owl			Х						
THRESKIORNITHIDAE										
Plegadis falcinellus	Glossy Ibis	Х								
Threskiornis molucca	Australian White Ibis	Х	Х	Х		Х	Х	Х	Х	
Threskiornis spinicollis	Straw-necked Ibis	Х								
FROG										
BUFONIDAE										
Rhinella marina	Cane Toad	Х					Х	Х		
HYLIDAE										
Litoria wotjulumensis	Wotjulum Frog							Х		
MAMMAL										
BOVIDAE										
Bubalus bubalis	Swamp Buffalo						Х		Х	
CANIDAE										
Canis lupus	Dingo							Х		
EMBALLONURIDAE										
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat									х
FELIDAE	Bat									X
Felis catus	Cat	Х	Х							
HIPPOSIDERIDAE										
Rhinonicteris aurantia	Orange Leaf-nosed bat									Х
MACROPODIDAE										
Macropus agilis	Agile Wallaby	Х	Х		Х	Х	Х	Х	Х	
MOLOSSIDAE										
Chaerephon jobensis	Northern Free-tailed Bat									Х



Scientific Name	Common Name	FC@LB	EB@LB	FRUSMB	FRDSMB	EBUSFR	GS0097	EBDSRB	GS327	Inc
MURIDAE										
Hydromys chrysogaster	Water-rat		Х	Х	Х	Х	Х		Х	
Melomys burtoni	Grassland Melomys	Х			Х	Х		Х		
SUIDAE										
Sus scrofa	Pig	Х	Х				Х	Х	Х	
VESPERTILIONIDAE										
Vespadelus finlaysoni	Finlayson's Cave Bat									Х
REPTILE										
AGAMIDAE										
Diporiphora bilineata	Two-Lined Dragon		Х							
Lophognathus gilberti	Gilbert's Dragon	Х	Х	Х	Х	Х	Х	Х	Х	
CHELUIDAE										
Emydura tanybaraga	Northern Yellow-faced Turtle						Х			
COLUBRIDAE										
Tropidonophis mairii	Keelback								Х	
CROCODYLIDAE										
Crocodylus johnstoni	Freshwater Crocodile							Х		
SCINCIDAE										
Carlia gracilis	Slender Rainbow Skink	Х	Х	Х	Х	Х	Х	Х	Х	
Cryptoblepharus cygnatus	Swanson's Snake-eyed Skink	Х	Х							
Ctenotus essingtonii	Port Essington Ctenotus	Х	Х		Х	Х	Х	Х	Х	
Ctenotus inornatus	Plain Ctenotus		Х					Х		
Tiliqua scincoides	Common Blue-Tongued Lizard									Х
VARANIDAE										
Varanus mertensi	Mertens' Water Monitor	Х	Х	Х	Х	Х	Х	Х	Х	Х
Varanus mitchelli	Mitchell's Water Monitor			Х						
Grand Total		47	35	18	29	37	53	45	38	8



# Appendix B Bat Call Identification from Finniss River, Northern Territory.