WORLD WILDLIFE FUND (AUSTRALIA)

FINAL REPORT

P-124 Search for Mainland Populations of the Shark Bay Mouse *Pseudomys praeconis*

January 1990

K.D. Morris: Department of Conservation and Land Management, W.A.

A. Sanders and G. Harold: Ninox Wildlife Consultants, W.A.

Between July-November 1989, a search for mainland populations of the Shark Bay Mouse *Pseudomys praeconis* was undertaken. A detailed account of this project is attached. In this, the objectives of the project, the methods used, results and recommendations are presented.

Summary of results:

1. One island and seven mainland sites in the Shark Bay area were systematically surveyed for the Shark Bay Mouse.

2. All major vegetation types were surveyed, with an emphasis on trapping in beach spinifex *Spinifex longifolius* associations.

3. No Shark Bay Mice were trapped and reasons for the decline of this species on the mainland are discussed. It is considered that the introduction of goats and sheep in the 1880s contributed significantly to the decline of the Shark Bay Mouse. Subsequent introductions of the fox and rabbit exacerbated this decline.

4. Several other vertebrate species were recorded during this survey, including six species of native mammal, one species of frog, 55 species of reptile and 79 species of bird. One of the mammals recorded, the Kultarr *Antechinomys laniger* represents a major range extension for this species. The declared rare frog *Arenophryne rotunda* was trapped in large numbers on the Edel land Peninsula.

Recommendations

1. Initiate further research programmes to establish the distribution and biological requirements of *P. praeconis* on Bernier Island.

2. Re-establish another population of *P. praeconis* in the Shark Bay area. The following areas were identified during this survey as potentially suitable for re-establishment.

   a) Heirrison Prong
   b) Coastal areas of Peron Peninsula (Eagle Bluff, Herald Bight)
   c) Faure Island coast.

   Control of introduced predators and domestic stock is essential if re-establishment is to be attempted. Areas considered for re-establishment should also be areas managed by, or proposed to be managed, by the Department of Conservation and Land Management. Sub-fossil remains of *P. praeconis* are also known from Dirk Hartog Island. Establishment of a population here should also be considered once the conservation status of the island has been confirmed.

3. The use of captive breed individuals should be considered for any re-establishment programme, unless the population of *P. praeconis* on Bernier Island is considered adequate in numbers to support this.

Publications

1. Morris K.D. (1990). Conservation of the Shark Bay Mouse In Research at Shark Bay : current status and future prospects. W.A. Museum Spec. Publ. (in press).

2. Morris, K.D. (1990). Shark Bay Mouse, *Pseudomys praeconis*. Daily News - endangered species article published 13 January, 1990.

Account of Expenditure:

a)	Salary	initial payment to consultant July 1989	$ 4 025.00	
		final payment to consultant January 1990	$ 7 475.00	
			TOTAL	$11 500.00
b)	Travel	vehicle running (4WD)	$ 3 600.00	
		barge hire	400.00	
			TOTAL	$ 4 000.00
c)	Equipment	pit traps/fencing	$ 770.00	
		maps	70.00	
		field equipment	160.00	
			TOTAL	$ 1 000.00
		TOTAL OF EXPENDITURE		$16 500.00
		TOTAL OF GRANT		$16 500.00
		BALANCE		NIL

SEARCH FOR THE SHARK BAY MOUSE *Pseudomys praeconis*

AT SHARK BAY ON THE WESTERN AUSTRALIAN MAINLAND

Prepared For:

World Wildlife Fund
and
Department of Conservation and Land Management

By: A. Sanders BSc and G. Harold

January 1990

CONTENTS

LIST OF FIGURES, PLATES AND ANNEXES

ACKNOWLEDGEMENTS

We wish to thank K.D. Morris of CALM for the opportunity to conduct this survey and for his assistance throughout the project. We are grateful to Ninox Wildlife Consulting for providing valuable advice and support. R. A. Shepherd of CALM helped with logistics and advise during the surveys, for this we are grateful. We acknowledge the assistance of T. Dufresne and A. Bennett during the Edel Land surveys. We thank D. Hoult for his co-operation during the Faure Island survey. The Fisheries Department of Western Australia provided transport to Bernier Island.

SUMMARY

This survey was undertaken for the Western Australian Department of Conservation and Land Management (CALM), using funds provided by the World Wildlife Fund (Australia). It describes a search for mainland populations of the rare and endangered Shark Bay Mouse *Pseudomys praeconis* in the Shark Bay region.

Most of the habitats surveyed on the mainland and Faure Island were potentially suitable for *P. praeconis* and many had minimal disturbance, but despite an extensive trapping programme, hand searching, spotlight traverses and headtorch transects during the survey, no *P. praeconis* were found.

The results of this survey suggest that *P. praeconis* is either extinct or in low numbers on the Shark Bay mainland and Faure Island. Many reasons could account for its apparent absence, these include: natural diminution of range; patchiness of distribution or contraction of range due to short-term unfavourable environmental conditions; habitat destruction; competition from the introduced House Mouse; predation by the Fox and Feral Cat; disease; changes in fire regime. If *P. praeconis* still survives on the mainland and Faure Island it is almost certainly in low numbers.

Recommendations are given with the view to identifying possible future survey sites and potentially suitable areas for re-introduction of the Shark Bay Mouse.

Other biological information was collected and vertebrates recorded during the trapping programme include: six native and eight introduced mammal species; one amphibian species; fifty-seven species and sub-species of reptile; and, seventy-nine bird species. Of these, two animals are rare and endangered, the frog *Arenophryne rotunda* and the Thick-billed Grasswren *Amytornis textilis textilis*. The presence of one species of reptile, *Varanus brevicauda*, and one mammal, the Kultarr *Antechinomys laniger* represent major range extensions. Three native mammals, the Ash-grey Mouse *Pseudomys albocinereus*, Sandy Inland Mouse *P. hermannsburgensis* and Pale Field-rat *Rattus tunneyi* and two reptiles, the gecko *Rhynchoedura ornata* and Skink Lizard *Ctenotus pantherinus pantherinus* represent minor range extensions.

PLATE 1 THE SHARK BAY MOUSE *Pseudomys praeconis*

PLATE 2 SHARK BAY MOUSE HABITAT (*Spinifex longifolius*)

1.0 INTRODUCTION

This report was undertaken for the Western Australian Department of Conservation and Land Management (CALM) using funds provided by the World Wildlife Fund (Australia). It describes a search for mainland populations of the rare and endangered Shark Bay Mouse *Pseudomys praeconis* (Plate 1) in the Shark Bay region.

In 1858, during a voyage of discovery, the English ship *Herald* under Captain Denham called in at a bay just north of the contemporary town of Monkey Mia. This bay was consequently named Herald Bight. With the landing party was Dr. F.M. Rayner who collected the first specimen of the rodent currently known as *Pseudomys praeconis* (Ride *et al.* 1962).

Since then very few specimens have been collected and all have come from Bernier Island, 90km north of the type locality. One skull was collected by Shortridge in 1906; single specimens in 1910, 1959 and 1969; and, a series of twelve specimens in 1975 (three of which were retained for scientific research).

The specimens collected in 1975 were trapped in Beach Spinifex *Spinifex longifolius* dominated associations (Robinson *et al.* 1976). More recent studies undertaken by CALM on Bernier Island have shown that scrubby heath associations, situated on the inland plateau area of the island, are also utilized by *P. praeconis*, but to a far lesser extent.

Surface cave deposits indicate that *P. praeconis* existed along the west coast from Cape Leeuwin to North West Cape (Archer and Baynes 1973; Kendrick and Porter 1974). Baynes (1984) has also noted *P. praeconis* remains at Wilgie Mia, in the upper Murchison region. These remains show that this animal was not restricted to near coastal habitats in its original distribution. Subtle climatic changes may account for its subsequent disappearance from the south-west of Western Australia (Robinson 1988).

The Shark Bay Mouse is now one of Australia's rarest mammals and is gazetted under Schedule 1 of the Wildlife Conservation Act 1950 (fauna which is likely to become extinct, or is rare). For this reason the discovery of populations on the mainland would enhance the long term conservation prospects of this species.

1.1 Study Objectives

The surveys commenced on 24 July 1989 and continued until 27 November 1989 with the objective being:

1. to search for populations of *Pseudomys praeconis* in the Shark Bay area:

   i) in liaison with CALM, determine the most appropriate trapping sites and techniques;

   ii) undertake a systematic trapping program at each of the selected sites, using techniques most suitable for trapping *P. praeconis*;

   iii) prepare a brief vegetation description of each site, and collect other biological information as appropriate;

   iv) if a population of *P. praeconis* was found, obtain preliminary biological data on the population (diet, breeding, habitat requirements and morphometrics);

   v) make recommendations on areas suitable for further surveys for *P. praeconis* and, should no mainland animals be located, identify areas for the possible re-establishment of a mainland population using animals recruited from Bernier Island.

2.0 METHODS

2.1 Bernier Island

Prior to the commencement of the main trapping programme the survey team was familiarized with the animal and its habitat on Bernier Island. The suitability of using 20 litre buckets with a drift fence for trapping *P. praeconis* was also tested and a captured animal was photographed in its natural habitat (Plate 1). Elliott traps had previously been shown to be efficient, but it was felt that results could be maximized by using several trapping techniques. These techniques would also improve results for other vertebrate groups. A comparison between pit-fence and Elliott trap techniques for native mammals during this survey is given in Annex 2.

The visit to Bernier Island was made on July 4-6, 1989 with K.D. Morris (CALM). Three traplines were set out, each consisting of two 20L buckets connected by a 9m flywire fence; 25 Elliott traps were also set. During the course of three nights three *P. praeconis* were trapped in the pit-fence traps and as a result a similar method was utilised on the mainland and Faure Island.

2.2 Trap Site Selection

Trapping sites were selected to cover as wide an area of the Shark Bay mainland as practicable in the time available. The following criteria were used to select trapping sites:

- similarity of habitat to Bernier Island;
- relative lack of disturbance; and,
- previous records of *P. praeconis*.

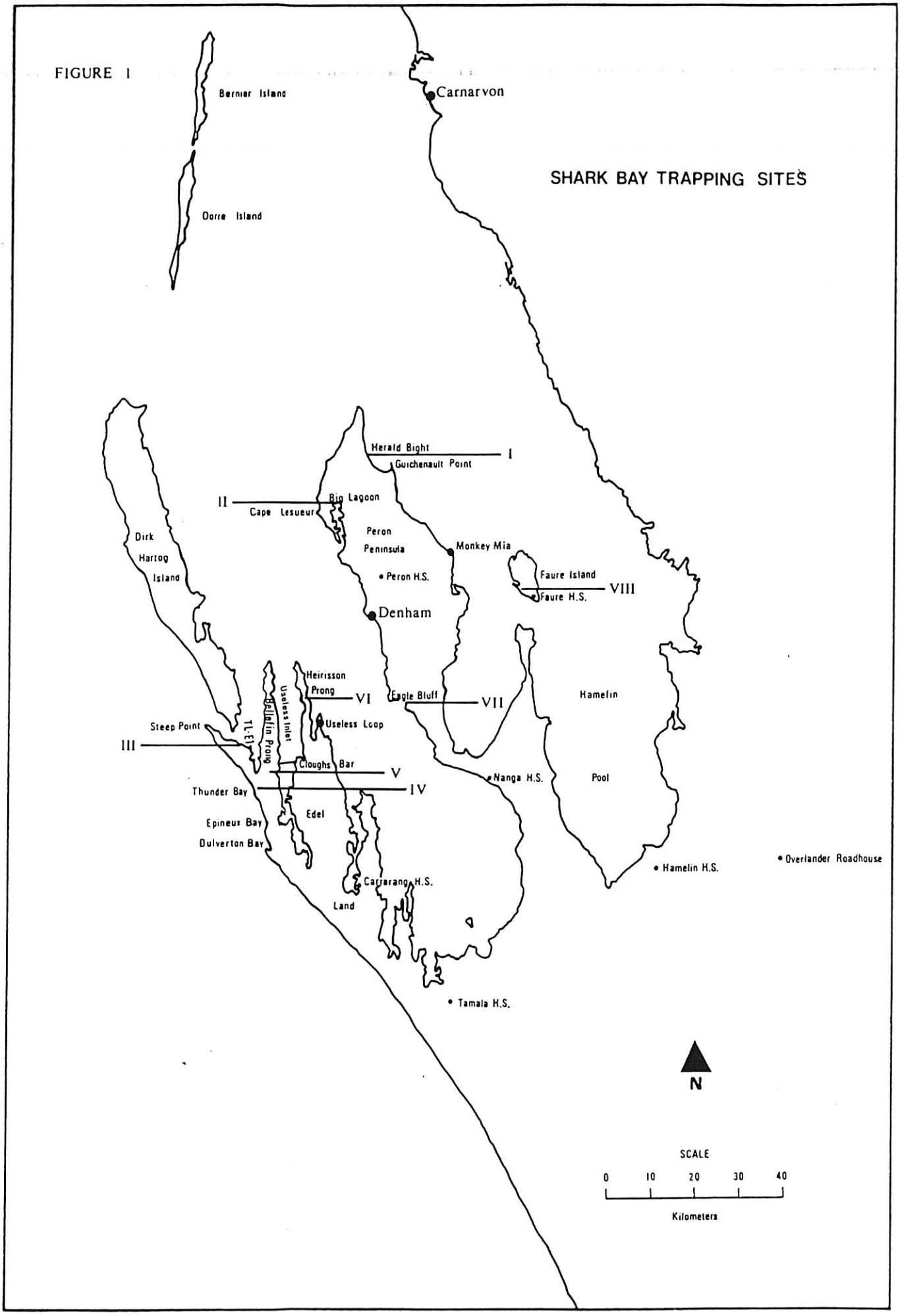
Faure Island was chosen as a trapping site because it fulfilled the first criteria, the beach habitat was relatively undisturbed and the island had never been surveyed for small mammals.

Past surveys on Bernier Island have shown that the present day preferred habitat of *P. praeconis* is *Spinifex longifolius* vegetated foredunes on white sand (Plate 2). Inland shrubby heaths are also utilized but to a far lesser extent (K.D. Morris pers. comm.). Consequently each trapping site contained one, if not both, of these preferred habitats. Various vegetation associations not represented on Bernier Island were surveyed on the mainland to cover the possibility of *P. praeconis* utilising those habitats.

Annex 1 provides information on traplines and includes trapping dates, location (coordinates), vegetation description and code (Muir 1977), followed by comments on disturbance levels. Figure 1 shows the location of trapping sites I-VIII.

A reconnaissance of Edel Land, Heirisson Prong and Peron Peninsula was carried out on July 7-10, 1989 to select eight future trapline sites, each to contain four traplines. Each site contained at least one trapline set in a *S. longifolius* association. Trapping sites are shown in Figure 1 and are described in Annex 1.

FIGURE 1


SHARK BAY TRAPPING SITES
Bernier Island
Dorre Island
Carnarvon
Herald Bight
Gutchenault Point
I
II
Cape Lesueur
Big Lagoon
Peron Peninsula
Peron H.S.
Monkey Mia
Dirk Hartog Island
Faure Island
Faure H.S.
VIII
Denham
Heirisson Prong
VI
Eagle Bluff
VII
Hamelin Pool
Useless Inlet
Bellidin Prong
Useless Loop
Steep Point
III
Cloughs Bar
V
Nanga H.S.
Thunder Bay
IV
Edel
Epineux Bay
Dulverton Bay
Carrarang H.S.
Land
Hamelin H.S.
Overlander Roadhouse
Tamala H.S.
N
SCALE
0 10 20 30 40
Kilometers

2.3 Trapping Methods

The trapping method used at each trapline site (I-VIII) consisted of four lines of ten 20L pitfall traps and a 50m drift fence. Pit dimensions were consistent with the larger pits tested by Friend *et al.* (1989). The buckets were 28cm in diameter as these had been shown to capture significantly more animals than the 16cm diameter pits used by most researchers. The buckets were connected and bisected across the top by a flywire drift fence (50m x 20cm). Each fence was embedded approximately 10cm in the sand. A series of 25 aluminium folding box-type Elliott traps were used in conjunction with each pitline. These were baited with a mixture of rolled oats, peanut butter, dried mixed fruit. Each trap remained set for five day/night periods. An opportunistic line of 10 Elliott traps was set at TL-E1 (Fig 1) on a *S. longifolius* sand ridge for three nights, thus giving a total of 5630 trap-nights.

All observations of mammals, birds, reptiles and amphibians were recorded. In addition, intensive hand searching for terrestrial vertebrates was carried out, plus vehicle spotlight traverses and foot transects using headtorches. Invertebrates trapped were lodged with the W.A. Museum.

Records classed as systematic include results from traplines only, all other records are treated as inventory.

2.4 Nomenclature and Taxonomy

Nomenclature and taxonomy are as follows:

Mammals (except *Sminthopsis*)	-	Strahan (1988 revised ed.)
Mammals (*Sminthopsis*)	-	Kitchener *et al.* (1984)
Birds	-	Blakers *et al.* (1984)
Reptiles & Amphibians	-	Storr and Harold (in press)

3.0 RESULTS AND DISCUSSION

3.1 *Pseudomys praeconis*

3.1.1 Results

A total of eleven *P. praeconis* were captured over three nights on Bernier Island. Three were captured in the pit-fence traps and eight in Elliott traps. All were in the *S. longifolius*

association. Most of the habitats surveyed on the mainland and Faure Island were potentially suitable for *P. praeconis* and many had minimal disturbance, but despite the extensive trapping programme, hand searching, spotlight traverses and headtorch transects during the survey no *P. praeconis* were found.

3.1.2 Discussion

The results of this survey suggest that *P. praeconis* is either extinct or in low numbers on the Shark Bay mainland and Faure Island. Many reasons could account for its apparent absence, these include: natural diminution of range; patchiness of distribution or contraction of range due to short-term unfavourable environmental conditions; habitat destruction; competition from the introduced House Mouse; predation by the Fox and Feral Cat; disease; changes in fire regime. If *P. praeconis* still survives on the mainland and Faure Island it is almost certainly in low numbers.

It has been established through fossil cave deposits that *P. praeconis* previously occurred on the coastal strip of the North-west Cape and south-western areas of Western Australia approximately 500 years ago (Watts and Aslin 1981). It is now only known from Bernier Island and Robinson (1988) suggests that subtle climatic changes may have accounted for its diminution of range. It is known that *P. praeconis* occurred at Herald Bight on Peron Peninsula 132 years ago and a natural range contraction may well explain its apparent absence from that area now.

It is felt by many researchers, however, that this process of faunal attrition was given added impetus by the pressures brought to bear by Europeans with their introduced animals. Domestic herbivores, particularly goats and sheep, and the Rabbit have caused extensive habitat degradation. Introduced carnivores have greatly increased predatory pressures on many native animals.

Since the advent of pastoralism in Australia, both habitats and the animals relying on them have been adversely affected. Burbidge and McKenzie (1989) state that three major factors are implicated in the modern decline of Australian mammals: diversion of environmental resources to humans and introduced animals; reduction in environmental productivity due to habitat alteration; and direct reduction of populations by introduced predators and by habitat fragmentation. There has been much documentation of animal species which have become either rare or

extinct on the mainland or which survive only on island refugia, *P. praeconis* being a single example among many. The area of Shark Bay encompassed by this study has not escaped this process having five pastoral stations operating at the present time. In discussing habitat degradation, Jennings (1985) noted statements by authorities that have associated pastoral management and the establishment of exotic mammal populations in Australia with the disappearance of many native mammals. Smith and Medlin (1982), in their paper concerning marsupial carnivores in South Australia prior to pastoral development, thought it seemed likely that the main reduction in mammal populations closely followed the arrival of hooved mammals. Over-stocking, which has been a hallmark of the Australian pastoral industry, has a number of effects on both vegetation and soils, and consequently also on animals. Among these are denudation and changes in floral composition due to selective grazing. In summing up the situation in arid Australia Ledgar (1987) wrote:

> 'A change in [floral] species composition has major consequences throughout the food chain. For example the loss of perennial grasses reduces the availability of seeds for birds, a change of density removes the protective canopy for small ground dwelling animals. The most common animals to have suffered are small ground mammals and seed eating birds of which up to 50% are no longer found in the arid zone'.

This may be relevant to *P. praeconis* although little is known of its diet in the wild. Most *Pseudomys* were thought to be predominantly seed eaters, as is *P. praeconis* when in captivity (Watts and Aslin 1981). There is now evidence to suggest that many *Pseudomys* are omnivorous with insects and arachnids forming part of their diet (K.D. Morris pers. comm.).

Other effects of over-stocking are the removal of the layer of annual grasses and daisies which protect the soil from erosion and consequent removal of seed stock. If this process is prolonged, the ground cover is removed or replaced by unpalatable shrubs and, eventually, death of the taller vegetation follows. Evidence of this type of habitat destruction can be seen throughout Shark Bay except for the area at the base of Peron Peninsula (Irwin Botanical District) and Edel Land south and south-west of Useless Inlet. These areas are unsuitable for grazing. Damage is particularly severe on parts of Carrarang and Tamala Stations. The vegetation of Faure Island is also badly degraded where in any given area approximately 75% of all *Acacia* shrubland is dead and negligible ground cover remains. The major

factors contributing to this habitat destruction on Faure Island are grazing by goats and subsequent widespread sandblasting of the vegetation. In detailing the loss of vegetation cover Beard (1976) thought that it is by this process that man-made deserts have been formed in the past in other continents and it may be seen at work in Western Australia today. Drought may also play a large part in thinning vegetation and Shark Bay, being subject to periodic droughts, is susceptible to this thinning process. When discussing drought Beard (1976) also indicated that it seems indisputable that pastoral use can accelerate and accentuate the process and also delay and prevent regeneration, so that the country becomes progressively denuded.

Another factor contributing to the decline and apparent disappearance of *P. praeconis* from the mainland could be attributed to competition from the House Mouse. This introduced rodent, however, was once present on Bernier Island but has not been recorded since 1906 (Ride *et al.* 1962) and appears to have had no long-term effect on the *P. praeconis* population. Although there has been no conclusive evidence to suggest that the House Mouse has caused significant range reductions or extinctions of any native species Watts and Aslin (1981) are of the opinion that:

> '...it is inconceivable that its presence has not had some effect on the native mice which were here before it. Its effect could be direct by aggressively forcing native species from particular areas, or competing with them for food; or it could be more subtle, such as by providing more food for predators, and thus increasing the numbers of animals such as foxes, cats and raptors, which may then turn to eating native species if House Mouse numbers should decline.'

Similarly the presence of the Rabbit in Shark Bay may have had a detrimental effect on *P. praeconis*. In fact the Rabbit, through competition, may have had a much more devastating effect on some native rodents than the House Mouse (Watts and Aslin 1981).

Predation by the Fox and the Feral Cat has been implicated in the diminution of range, reduction in numbers or extinction of many native mammals. Both these predators are present in the Shark Bay region, although the Fox has not reached Faure Island. Foxes often concentrate their foraging along shorelines where scavenging is highly productive (W.K. Youngson, J. Henry pers. obs.). Regular concentrations of Foxes and Feral Cats in this habitat are likely to be detrimental to any *P. praeconis* present.

When discussing the decline of *P. praeconis* it is interesting to note that the Ash-grey Mouse *Pseudomys albocinereus* still survives in the Shark Bay area where it is common (Annex 3). The reason why it survives and *P. praeconis* apparently does not is quite possibly related to burrow depth and structure. Robinson (1988) states that *P. praeconis* made tunnels and runways in heaps of seagrass. Watts and Aslin (1981) have observed that there are no records of burrows of this species being located, and it is possible that it lives in tunnels beneath the dense spinifex tussocks. Whereas *P. albocinereus* is reported to construct complex burrow systems extending up to 60cm in depth and for three to four metres horizontally. These burrow systems contain many chambers (Morris 1988; Ride *et al.* 1962). It is quite probable that the burrow system of *P. albocinereus* provides far better protection against fox predation than those of *P. praeconis*.

P. praeconis may have other unknown aspects of behaviour not shared by *P. albocinereus* which could also render it more vulnerable to introduced predators.

Subtle climatic change has been cited (Robinson 1988) as a possible reason for the contraction of range suffered by *P. praeconis* in the last 500 years. It is possible that this process is still continuing today.

Comparison of diet between the two species is inconclusive as a reason for their different survival success due to lack of data for *P. praeconis*. It may well be that *P. praeconis* faced severe dietary competition from the introduced herbivores whereas *P. albocinereus* did not. On Bernier Island, for instance, *Olearia* sp. is a significant component of foredune vegetation but is poorly represented in the equivalent coastal, mainland habitats. Robinson *et al.* (1976) specifically mention *Olearia* as a possible dietary component and it is conceivable that selective grazing by introduced herbivores on the fleshy leaves of this shrub, particularly during extended periods of drought, could have some bearing on the apparent disappearance of *P. praeconis* on the mainland. Ride *et al.* (1962), on examination of stomach contents of *P. praeconis*, found mostly plant material, especially the epidermis of an annual species of grass. These annual grasses are almost certainly grazed by introduced herbivores.

Watts and Aslin (1981) consider that eight species of native rodent have become extinct in southern Australia since European settlement. These rodents range in weight from 50 to 500 grams and all are thought to live a colonial or semi-colonial

existence. *P. praeconis* falls within this group, having a weight range of 30 to 50 grams and, as evidence suggests, a colonial existence. Watts and Aslin (1981) attribute the eight extinctions directly to vegetation changes caused by stock and rabbits and predation by introduced carnivores, particularly the fox. *P. praeconis* still survives on Bernier Island, although goats were present until 1984. Rabbits and introduced carnivores have never been present on the island and this strongly suggests that these animals are implicated in the apparent disappearance of *P. praeconis* from the mainland.

Disease ('marasmus' or wasting disease) has been implicated in the disappearance or decline of mammal populations in Australia during the late nineteenth century (How 1978). There is a possibility that this disease may have affected populations of *P. praeconis*.

Changes in fire regime, although implicated in mammal extinctions in other arid areas of Australia, may not be relevant to the disappearance of *P. praeconis* from the Shark Bay mainland. The Aboriginal population of the area before European settlement is thought to have been small, with their main food source being fish, shellfish and larger marine animals such as dugongs and turtles (State Planning Commission, Department of Conservation and Land Management 1988).

The apparent absence of *P. praeconis* on the mainland may be due to any of these factors or, more likely, a combination of them. Whatever the cause, it is, at this stage, purely conjectural in the face of minimal data.

3.1.3 Future Managment

To ensure the continued survival of *P. praeconis* in the event of its accidental extinction on Bernier Island it is vital that other populations are established elsewhere. Release on another suitable island is recommended in Burbidge and McKenzie (1989).

The recent proposal to erect a vermin-proof fence across Heirisson Prong, (north of Useless Loop) by Shark Bay Salt Joint Venture in conjunction with the people of Shark Bay, provides an ideal opportunity to re-establish a mainland population of *P. praeconis*. There are many areas of apparently suitable habitat on Heirisson Prong and the exclusion of the Rabbit, Fox, Feral Cat and stock would help to ensure the establishment of a successful colony.

Prior to any release programmes it would be desirable to establish the biological requirements of *P. praeconis*. This would include collecting information on population dynamics, breeding, diet and habitat requirements. This information would be of value in future release programmes, captive breeding programmes and management.

There are also many potentially suitable release sites for *P. praeconis* in the Shark Bay area, the prime localities being: the beach immediately to the south-east of Eagle Bluff (Plate 4); Faure Island coast; and the sand ridge at TL-1 (Site I, Fig. 1). It is stressed, however, that unless these areas are fenced to preclude stock and vermin, any release programmes would likely be doomed to failure. Although establishment of wild populations would be most desirable, captive populations of *P. praeconis* should also be established. This would enable further research to be carried out on the species and also provide animals for re-introduction to other areas or Bernier Island should the need arise in the future.

It is felt that further surveys of the Shark Bay region including Dirk Hartog Island could still confirm the presence of *P. praeconis*. Rodents are known to contract to small pockets within their range during periods of severe environmental conditions (Watts and Aslin 1981). *P. praeconis*, therefore may still be present in very low numbers in areas not surveyed during this study. Although not a prime habitat, a potential refuge (TL-20, Site V) was surveyed with negative results.

In consideration of the above a list of recommendations with the view to ensuring the future long-term survival of *P. praeconis*. follows.

3.1.4 Recommendations

In view of the results of this survey several recommendations are made with reference to the continued survival of *P. praeconis* in the Shark Bay area.

1. **Instigate further research programmes on Bernier Island to establish the biological requirements of *P. praeconis*.**

2. **Establish a captive breeding programme, supervised by the Department of Conservation and Land Management.**

3. Re-establish a wild population of *P. praeconis* in the Shark Bay area in one or more of the suitable locations described in Section 3.1.3.

4. Carry out further surveys on Dirk Hartog Island to search for *P. praeconis*.

3.2 Other Mammals

3.2.1 Results

Six native and eight introduced mammals were trapped or recorded. Results of systematic trapping and inventory records are summarised in the annotated species list (Annex 3). The systematic results are presented first with the trapline number followed by the number of individuals and their sex in brackets (all individuals are adult unless otherwise specified).

3.2.2 Discussion

Of the six native mammals recorded, three were rodents and three were marsupials. The three rodent species; Ash-grey Mouse *Pseudomys albocinereus*, Sandy Inland Mouse *P. hermannsburgensis* and Pale Field-rat *Rattus tunneyi* (Plate 3) represent minor range extensions. The most common native rodent trapped was the Ash-grey Mouse with 53 individuals recorded as opposed to four Sandy Inland Mice and one Pale Field-rat.

In a 1970 survey, A. Baynes and W.K. Youngson (W.A. Museum) collected specimens of the Ash-grey Mouse from Carrarang Homestead (Kitchener and Vicker 1981), then the most northern locality on the mainland. This recent survey has extended its range to include Edel Land west of Carrarang Homestead.

The Sandy Inland Mouse was trapped only on Heirisson Prong. Although within its known range (which includes Dirk Hartog Island), it has previously only been recorded on the Shark Bay mainland at Hamelin Station.

Nineteen Pale Field-rats were collected from Carrarang Peninsula and one from False Entrance Well in a survey conducted in 1970 (W.A. Museum records). According to distributional data in Watts and Aslin (1981) the Shark Bay population is apparently isolated; the nearest population being approximately 500km to the north on the islands off the Pilbara coast. It ranges across much of the

wetter areas of northern and eastern Australia where it is known to inhabit tall grasslands (Strahan 1988; Watts and Aslin 1981). The specimen recorded during this survey was trapped in tall, dense *S. longifolius* on a sand ridge (TL-E1 see Fig 1). It is apparently scarce, as other *S. longifolius* habitats were trapped but no Pale Field-rats were caught.

One adult Kultarr *Antechinomys laniger* was seen on Peron Peninsula during a spotlight traverse, 2.5km NNE of Nanga Homestead. According to distributional data in Strahan (1988) this individual represents a north-westerly range extension of approximately 250km.

The other two marsupial species, the Common Wallaroo *Macropus robustus* and the Common Dunnart *Sminthopsis dolichura* have previously been recorded from Shark Bay.

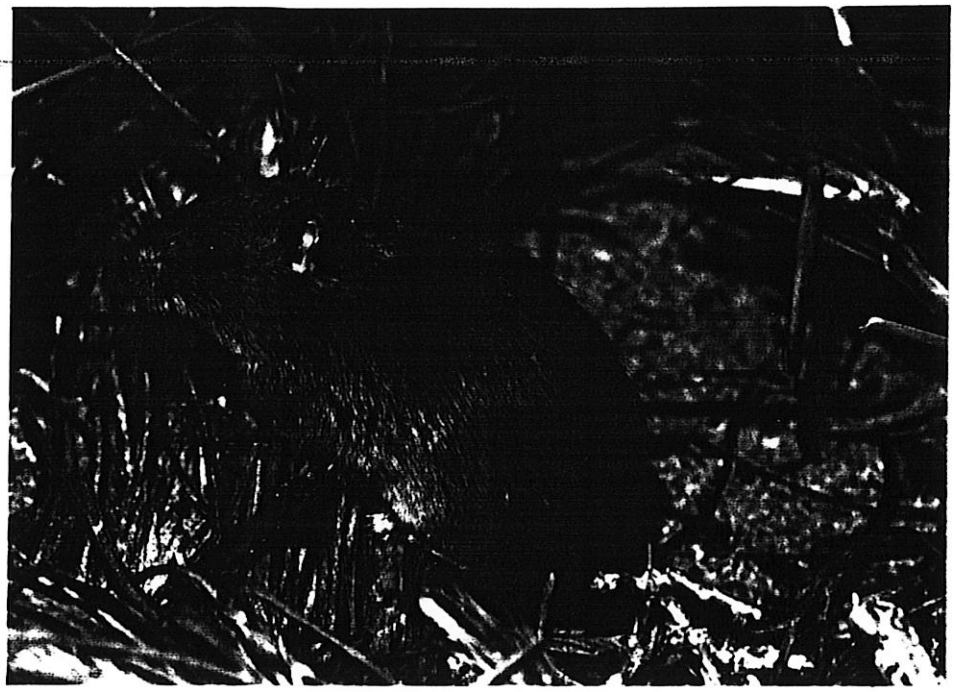


PLATE 3 PALE FIELD-RAT *Rattus tunneyi*

PLATE 4 POTENTIAL RELEASE SITE AT TL-28, SE OF EAGLE BLUFF, PERON PENINSULA

3.3 Amphibians & Reptiles

3.3.1 Results

One species of frog, the rare and endangered *Arenophryne rotunda* was recorded (Annexes 4, 5).

Fifty-five species and sub-species of reptile were recorded including: fourteen Geckos; five Legless Lizards; six Dragon Lizards; nineteen Skinks (one represented by two subspecies); two Monitor Lizards; two Blind Snakes; one Python and six Front-fanged Snakes (Annexes 4, 5).

3.3.2 Discussion

During the survey 340 frogs of the species *Arenophryne rotunda* were recorded (Annexes 4, 5). This animal is currently gazetted under Schedule 1 of the Wildlife Conservation Act 1950 (fauna which is likely to become extinct, or is rare). It was only recorded on Edel Land, and all traplines in which it was found were on deep white sand with soil moisture close to the surface. Highest numbers of frogs were active on the more humid, rather than wet nights. Seven individuals were recorded active during the early morning following a cloudy, humid night. Footprints were abundant over sand dunes and vehicle tracks on Edel Land west of Useless Inlet and north of Useless Loop. All age groups were recorded, from hatchlings to large adults.

During the course of this survey it became clear that this species is far more common than previous records suggest. Its known distribution ranges from Dirk Hartog Island in the north to Kalbarri National Park in the south and inland between those points for a distance of approximately 40km (Tyler *et al.* 1984). There have been reports of frogs, possibly *A. rotunda*, in the vicinity of Denham on Peron Peninsula, though as yet these remain unconfirmed. Reserved land within its known range includes Kalbarri National Park, Zuytdorp National Park, Cooloomia Nature Reserve and the Proposed Edel Land National Park. Consequently its future appears secure.

Shark Bay has one of the richest herpetofaunas in Western Australia due to its location on the convergence of the State's three main zoogeographic regions, the south-western, the northern and the Eremaean. The total of species and sub-species now stands at 116 (Storr and Harold, in press.)

All reptile species recorded are known from the Shark Bay region with the exception of the Monitor Lizard *Varanus brevicauda*. One specimen was collected in Triodia grassland at TL-25 (Site VII). Distributional data in Storr *et al.* (1983) shows it occurring a little to the east of Hamelin Pool, thus this new record represents a westward range extension of approximately 75km.

Two other species were recorded for the first time on Peron Peninsula. The Gecko *Rhynchoedura ornata*, previously only known locally from the Overlander Roadhouse, was recorded 32km SSE of Denham in low *Acacia* shrubland. The Skink Lizard *Ctenotus pantherinus pantherinus* was collected from TL-25 and TL-26 (Site VII) in *Triodia* grassland and *S. longifolius* respectively. Previously it was only known regionally from Hamelin Station.

The Shark Bay Area has been relatively well surveyed for reptile species with effort mainly concentrated on Edel Land and the south-east. Future work will undoubtedly extend distributional knowledge, especially on Peron Peninsula and the habitats between Carnarvon and the Overlander Roadhouse. It is doubtful though if many more regionally new species await discovery.

3.4 Birds

3.4.1 Results

Seventy-nine species of bird were recorded, consisting of 48 non-passerines and 31 passerines (Annex 6).

3.4.2 Discussion

All the seventy-nine species of bird recorded on this survey have been previously noted from the Shark Bay area and a number are of particular interest.

One bird of note is the Thick-billed Grasswren *Amytornis textilis textilis*. This bird is currently gazetted under Schedule 1 of the Wildlife Conservation Act 1950 (fauna which is likely to become extinct, or is rare). One individual was observed 20km north of Peron Homestead in *Acacia* shrubland adjacent to a claypan. Storr (in press) describes this bird as common in the far north of Peron Peninsula. It is, however, thought to be extremely restricted in its range; the only other known populations of the subspecies *textilis* are near Exmouth further north (Blakers *et al.* 1984) and Woodleigh Station (Storr 1985) to the east of

Hamelin Pool. Its range has contracted greatly in Western Australia and it is thought that degradation of habitat by grazing has been a major influence in its decline (Blakers *et al.* 1984). The proposal for Peron Station to become a National Park will hopefully save the Thick-billed Grasswren from further decline in the Shark Bay Region.

Also of interest was the presence of approximately 150 Great Knots at Herald Bight in late July. This is at variance with Storr (1985) who lists their status as a moderately common visitor (September-March) in ones, twos or small flocks. Their presence at Shark Bay in winter probably represents juvenile birds. Hayman *et al.* (1986) state that first-years apparently do not return to the breeding area, spending the northern summer in, particularly, the tropical parts of the non-breeding range.

An interesting observation was made at low tide during early September when a flock of 48 Australian Shelducks visited daily an area approximately 300 metres north of TL-19 (Site V). The ducks appeared to be drinking sea water from puddles on mudflats immediately adjacent to the beach at the base of a large sand blowout. Upon investigation it was found that the water was in fact fresh and flowing from the sand blowout in a thin layer over the salt water.

The Grey Fantails recorded on this survey represent the race *Rhipidura fuliginosa phasiana* (Blakers *et al.* 1984). This race is regarded as a full species by Storr (1985) who refers to it as the Mangrove Grey Fantail. All Grey Fantails recorded were observed in mangroves.

Seventeen bird species that were recorded at Shark Bay are included in the Japan/Australia and China/Australia Migratory Bird Agreements, these are marked in Annex 6.

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ANNEXES

ANNEX 1 DESCRIPTION OF TRAPLINES

SITE I
TL1-4 Survey dates: 25/7/89 - 30/7/89

TL-1

LOCATION: Northern Peron Peninsula
113° 31' 50"E 25° 37' 30"S
DESCRIPTION: Mid-dense *Acacia* shrubs (to 2m) on red sand
CODE: aSAc/S
COMMENTS: Heavily grazed; much soil disturbance; many weeds

TL-2

LOCATION: Northern Peron Peninsula
113° 31' 55"E 25° 37' 30"S
DESCRIPTION: Open, low *Acacia* shrubs (1.5-2.0m) over low mid-dense heath (0.5-1.0m) on yellow sand dune
CODE: aSAr.xSCc/S
COMMENTS: Moderately grazed; moderate soil disturbance; few weeds

TL-3

LOCATION: Northern Peron Peninsula
113° 32' 25"E 25° 37' 30"S
DESCRIPTION: Very sparse *Acacia* shrubs (1.5-2.0m) over open *Spinifex longifolius* on white sandy beach
CODE: aSAr.GLc/S
COMMENTS: Lightly grazed; few weeds

TL-4

LOCATION: Northern Peron Peninsula
113° 31' 40"E 25° 36' 30"S
DESCRIPTION: As per TL-3
CODE: As per TL-3
COMMENTS: As per TL-3

SITE II
TL5-8 Survey dates: 2/8/89 - 6/8/89

TL-5

LOCATION: Northern Peron Peninsula
113° 28' 00"E 25° 42' 00"S
DESCRIPTION: Sparse *Acacia* shrubs (1.5-2.0m) over mid-dense heath (0.5-1.0m)over mid-dense herbs on white sand
CODE: aSAi.xSCc.xJc/S
COMMENTS: Moderately grazed; moderate soil disturbance; few weeds

TL-6

LOCATION: Northern Peron Peninsula
113° 27' 30"E 25° 42' 30"S
DESCRIPTION: Dense *Acacia/Lamarchia* heath (1.0-1.5m) on red sand
CODE: xSBd/S
COMMENTS: Moderately grazed; moderate soil disturbance; few weeds

TL-7

LOCATION: Northern Peron Peninsula
113° 27' 00"E 25° 43' 00"S
DESCRIPTION: Sparse low shrubs (0.5-1.0m) with scattered clumps of *S. longifolius* on white sand
CODE: xSCi/S
COMMENTS: Lightly grazed; few weeds

TL-8

LOCATION: Northern Peron Peninsula
113° 25' 00"E 25° 43' 00"S
DESCRIPTION: Very sparse *Acacia* shrubs (1.5-2.0m) over sparse shrubs (0.5-1.0m) over very sparse *S. longifolius* clumps on yellowish-white sand
CODE: aSAr.xSCi.GLi/S
COMMENTS: Heavily grazed; much soil disturbance; many weeds

SITE III
TL9-12 Survey dates: 19/8/89 - 23/8/89

TL-9

LOCATION: Edel Land
113° 16' 00"E 26° 14' 30"S
DESCRIPTION: Mid-dense, low *Acacia* heath (0.5-1.0m) over low mid-dense heath (0.0-0.5m) over low mixed herbs and scattered clumps of *S. longifolius* on low white sand dunes
CODE: aSCc.xSDc.xJi/S
COMMENTS: Undisturbed; no weeds

TL-10

LOCATION: Edel Land
113° 15' 30"E 26° 11' 30"S
DESCRIPTION: Mid-dense low heath (0.5-1.0m) on coarse greyish-brown sand
CODE: xSCc/S
COMMENTS: Undisturbed; no weeds

TL-11

LOCATION: Edel Land
113° 13' 30"E 26° 10' 40"S
DESCRIPTION: Low dense heath (0.0-0.5m) on grey loamy sand
CODE: xSDd/LS
COMMENTS: Undisturbed; no weeds

TL-12

LOCATION: Edel Land
113° 11' 20"E 26° 09' 40"S
DESCRIPTION: Very sparse *Acacia* shrubs (0.5-1.0m) over mid-dense low heath, including some clumped *S. longifolius* (0.0-0.5m) over sparse low herbs on white sandy beach
CODE: aSCr.xSDc/S
COMMENTS: Located adjacent to campsite area, small amounts of rubbish and some vehicle tracks

SITE IV
TL13-16 Survey dates: 24/8/89 - 29/8/89

TL-13

LOCATION: Edel Land
113° 16' 30"E 26° 16' 00"S
DESCRIPTION: Very sparse *Acacia* shrubs (0.5-1.0m) over mid-dense low heath (0.0-0.5m) on grey loamy sand
CODE: aSCr.xSDc/LS
COMMENTS: Lightly grazed; no weeds

TL-14

LOCATION: Edel Land
113° 16' 45"E 26° 17' 30"S
DESCRIPTION: Mid-dense low heath (0.5-1.0m) over clumped *S. longifolius* on white sand dune
CODE: xSCc.GLc/S
COMMENTS: Lightly grazed; no weeds

TL-15

LOCATION: Edel Land
113° 16' 20"E 26° 18' 20"S
DESCRIPTION: Mid-dense *S. longifolius* on white sand blowout
CODE: GLc/S
COMMENTS: Lightly grazed; few weeds

TL-16

LOCATION: Edel Land
113° 18' 00"E 26° 19' 45"S
DESCRIPTION: Sparse low *Acacia* shrubs (0.5-1.0m) over dense low heath (0.0-0.5m) on grey sand in gully behind foredune
CODE: aSCi.SDd/S
COMMENTS: Lightly grazed; no weeds

SITE V
TL17-20 Survey dates: 9/9/89 - 14/9/89

TL-17

LOCATION: Edel Land
113° 19' 30"E 26° 17' 00"S
DESCRIPTION: Very sparse *Acacia* shrubs (1.0-1.5m) over dense low heath (0.0-0.5m) on grey loamy sand
CODE: aSBr.xSDd/LS
COMMENTS: Undisturbed; no weeeds

TL-18

LOCATION: Edel Land
113° 19' 00"E 26° 15' 45"S
DESCRIPTION: Dense tall *Acacia* thicket (2.0-3.0m) on grey sand
CODE: aSd/S
COMMENTS: Generally undisturbed; vehicle tracks nearby

TL-19

LOCATION: Edel Land
113° 19' 15"E 26° 14' 45"S
DESCRIPTION: Mid-dense *Acacia* shrubs (1.0-1.5m) over mid-dense low heath (0.5-1.0m) over mid-dense *S. longifolius* on grey sand
CODE: aSBc.xSCc.GLc/S
COMMENTS: Undisturbed; no weeds

TL-20

LOCATION: Edel Land
113° 18' 00"E 26° 14' 45"S
DESCRIPTION: Sparse *Acacia* shrubs (1.0-1.5m) over mid-dense tall sedges (>0.5m) over mid-dense shrubs (0.5-1.0m) including *S. longifolius* on pinkish-white sand
CODE: aSBi.VTc.xSCc/S
COMMENTS: Water table 0.5m below surface; undisturbed; no weeds

SITE VI
TL21-24 Survey dates: 15/09/89 - 20/09/89

TL-21

LOCATION: Edel Land
113° 22' 30"E 26° 03' 45"S
DESCRIPTION: Sparse *Acacia* shrubs (0.5-1.0m) over sparse low shrubs and *S. longifolius* (0.0-0.5m) on white sand dune
CODE: aSCi.xSDi/S
COMMENTS: Undisturbed; no weeds

TL-22

LOCATION: Edel Land
113° 22' 45"E 26° 03' 00"S
DESCRIPTION: Mid-dense low heath (0.0-0.5m) on pink loamy sand
CODE: xSDc./LS
COMMENTS: Undisturbed; no weeds

TL-23

LOCATION: Edel Land
113° 23' 00"E 26° 05' 30"S
DESCRIPTION: Very sparse *Acacia* shrubs (1.0-1.5m) over mid-dense low heath (0.0-0.5m) on grey sand
CODE: aSBr.xSDc/S
COMMENTS: Undisturbed; no weeds

TL-24

LOCATION Edel Land
113° 26' 15"E 26° 08' 45"S
DESCRIPTION: Sparse *Acacia* shrubs (1.5-2.0m) over mid-dense *Triodia* hummock grass on pinkish-brown loamy sand
CODE: aSAi.Hc/LS
COMMENTS: Undisturbed; no weeds

SITE VII
TL25-29 Survey dates: 15/11/89 - 19/11/89

TL-25

LOCATION: Central Peron Peninsula
113° 38' 15"E 26° 06' 00"S
DESCRIPTION: Very sparse *Acacia* shrubs (1.0-1.5m) over mid-dense *Triodia* hummock grass on pink loamy sand
CODE: aSBr.Hc/LS
COMMENTS: Moderately grazed; much soil disturbance; few weeds

TL-26

LOCATION: Central Peron Peninsula
113° 37' 00"E 26° 05' 30"S
DESCRIPTION: Very sparse *Acacia* shrubs (0.5-1.0m) over mid-dense clumped *S. longifolius* on pink loamy sand
CODE: aSCr.GLc/LS
COMMENTS: Heavily grazed; much soil disturbance; few weeds

TL-27

LOCATION: Central Peron Peninsula
113° 36' 45"E 26° 05' 30"S
DESCRIPTION: Mid-dense *S. longifolius* on white sandy beach
CODE: GLc/S
COMMENTS: Lightly grazed; few weeds

TL-28

LOCATION: Central Peron Peninsula
113° 35' 30"E 26° 05' 30"S
DESCRIPTION: Mid-dense *S. longifolius* on pinkish-white sand
CODE: GLc/S
COMMENTS: Moderately grazed; moderate soil disturbance; many weeds

SITE VIII
TL29-32 Survey dates: 22/11/89 - 27/11/89

TL-29

LOCATION: Faure Island
113° 54' 50"E 25° 53' 30"S
DESCRIPTION: Mid-dense *S. longifolius* on white sandy beach
CODE: GLc/S
COMMENTS: Moderately grazed; moderate soil disturbance; few weeds

TL-30

LOCATION: Faure Island
113° 54' 45"E 25° 53' 30"S
DESCRIPTION: Mid-dense *S. longifolius* on white sandy beach
CODE: GLc/S
COMMENTS: Moderately grazed; moderate soil disturbance; many weeds

TL-31

LOCATION: Faure Island
113° 54' 00"E 25° 53' 30"S
DESCRIPTION: Mid-dense *S. longifolius* on white sandy beach
CODE: GLc/S
COMMENTS: Lightly grazed; little soil disturbance; few weeds

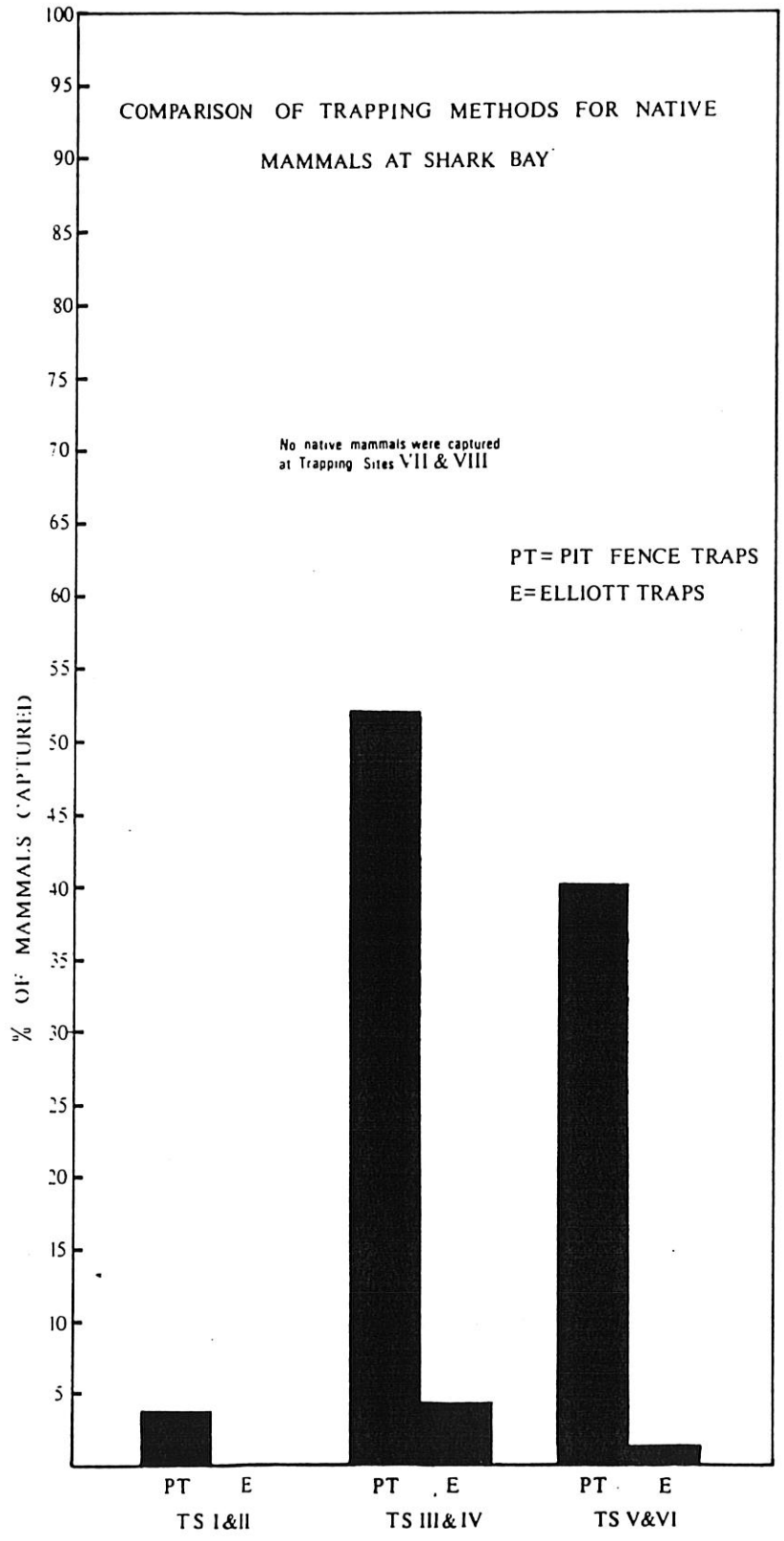
TL-32

LOCATION: Faure Island
113° 53' 00"E 25° 53' 00"S
DESCRIPTION: Mid-dense *S. longifolius* over sparse low shrubs (0.0-0.5m) over very sparse Samphire on pink sand
CODE: GLc.xSDi.Jr/S
COMMENTS: Heavily grazed; moderate soil disturbance; many weeds

TL-E1

LOCATION: Edel Land
113° 16' 00"E 26° 12' 30"S
DESCRIPTION: Very sparse mangroves (1.5-2.0m) over dense clumped *S. longifolius* on white sand ridge
CODE: SAr.GTd/S
COMMENTS: Undisturbed; no weeds

ANNEX 2


COMPARISON OF TRAPPING METHODS FOR NATIVE MAMMALS AT SHARK BAY
No native mammals were captured at Trapping Sites VII & VIII
PT= PIT FENCE TRAPS
E=ELLIOTT TRAPS
% OF MAMMALS CAPTURED
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
PT E
TS I&II
PT E
TS III&IV
PT E
TS V&VI

ANNEX 3 ANNOTATED LIST OF SYSTEMATIC AND INVENTORY - MAMMAL RESULTS

Systematic results are presented first with the trapline number followed by number of individuals and their sex in brakets. All individuals are adult unless specified otherwise.

DASYURIDAE

Sminthopsis dolichura Common Dunnart

2(1F) 6(1F) 9(1F, 1M) 10(2F) 11(1F, 3M) 14(1M) 16(1F) 18(1F) 23(3F)

Trapped in heath communities on Peron Peninsula and Edel Land. No specimens were trapped or seen on Faure Island.

One female had 6 pouch young at TL-6 in early August. Another female had 2 pouch young at TL-11 in late August.

One juvenile was seen during a spotlight traverse 8.5km NW of Nanga Homestead on the main bitumen road in low *Acacia* shrubland (0.5-1.5m).

Antechinomys laniger Kultarr

One adult was seen active during a spotlight traverse 2.5km NNE of Nanga Homestead on the main bitumen road in low *Acacia* shrubland (1.0-1.5m), adjacent to saltbush and samphire associated with a claypan.

MACROPODIDAE

Macropus robustus Common Wallaroo

Scarce on Peron Peninsula, 1AdM, 1AdF (Guichenault Point); 1Ad (1km W of TL-1); tracks and scats at traplines 1-4. All were seen in *Acacia* shrubland.

Uncommon on Edel Land 3Ad (Steep Point); 1Ad (5km SE of Steep Point); 1Ad (Thunder Bay); 1Ad (Dulverton Bay); 1Ad (1km N of TL-19); 1Ad (1km E of TL-23). All were seen either in or adjacent to rocky areas. In addition tracks and scats were noted at traplines 17 & 19.

MURIDAE

Pseudomys hermannsburgensis Sandy Inland Mouse

22(1M) 23(2M) 24(1M)

Trapped in heath communities on Heirisson Prong (Edel Land) and *Triodia* grassland south of Useless Loop.

P. albocinereus Ashy-grey Mouse

9(3F, 1FJ, 5MJ) 11(1MJ) 13(2FJ, 4M, 4MJ) 14(2M) 15(1MJ) 16(3F, 4M) 17(1F, 2M) 19(1F, 1FJ, 1M, 1MJ) 20(1F, 1FJ, 4M) 21(1MJ) 22(1FJ, 1MJ) 23(4F, 1M, 2MJ)

Common on Edel Land where 53 animals were trapped. Apparently absent or at least rare on Peron Peninsula. Occurred in all habitats with a low heath understorey on sand.

P. albocinereus - Cont.

Two pregnant females were trapped in late August at TL-9 and TL-16.

One adult was seen active in the early morning at TL-16 next to an Elliott trap containing another specimen of *P. albocinereus*.

Rattus tunneyi Pale Field-rat

One adult female was trapped at TL-E1 in dense *S. longifolius* on a sand ridge.

Mus musculus House Mouse

2(8) 5(1) 6(4) 8(6) 9(2) 10(1) 11(3) 12(8) 13(2) 14(7) 15(13) 16(2) 17(1) 18(4) 19(1) 20(1) 21(5) 22(1) 23(8) 24(1) 25(1) 26(1) 27(3) 28(9) 29(1) 30(5) 31(4) 32(1)

Widespread, common; a total of 104 animals trapped.

Occurred in all habitats at all sites, including Faure Island.

A pregnant female was trapped in early August at TL-8.

One adult was trapped at TL-E1.

LEPORIDAE

Oryctolagus cuniculus Rabbit

Widespread; common on Peron Peninsula, less common on Edel Land. Individuals, tracks and scats were observed on Peron Peninsula and Edel Land in all habitats. No traces of rabbits were seen on Faure Island.

CANIDAE

Vulpes vulpes Fox

Common. Two foxes were seen on Peron Peninsula; a juvenile male at TL-3 and an adult 3km east of TL-25. Scats and tracks were seen at traplines 1,2,3,4,5,6,7,8,19,22,25,27 & 28 and along most vehicle tracks in the area.

No traces of fox were seen on Faure Island.

FELIDAE

Felis catus Feral Cat

One adult feral cat was seen active during the day near TL-10 on Edel Land, plus another adult was seen on Heirisson Prong during the reconnaissance survey in early July.

Tracks were observed at TL-14 and also on Faure Island near TL-32 and on the east coast in tidal mudflats.

EQUIDAE

Equus caballus Horse

Two horses were seen near TL-25 and eleven on Faure Island, all were station stock animals.

BOVIDAE

Bos taurus Domestic Cattle

Four cows were seen on Peron Peninsula; two 4km E of TL-25 and two 2km N of Peron Homestead. Herds were present on Tamala Station in severely degraded habitats.

Capra hircus Goat

One hundred and eighty feral goats were seen on Edel Land; 168 near Thunder Bay and twelve at Crayfish Bay.

Small flocks of feral goats (5-25) were observed throughout northern Peron Peninsula.

Domestic goats were present on Faure Island.

Ovis aries Sheep

Sheep were present throughout Peron Peninsula, Faure Island and Edel Land east of Useless Inlet.

ANNEX 4

SYSTEMATIC AMPHIBIAN AND REPTILE RESULTS TRAPPING SITES I & II (TL1-8)

TRAPLINE NUMBERS		1	2	3	4	5	6	7	8
GEKKONIDAE	Geckos								
Diplodactylus alboguttatus		2					1		
D. strophurus		1					2		
AGAMIDAE	Dragon Lizards								
Ctenophorus m. maculatus						5			
C. reticulatus						3		1	
C. scutulatus		1							
Moloch horridus						1			
Pogona m. minor		1	1		1	1	4		1
SCINCIDAE	Skinks								
Ctenotus fallens					1				1
Lerista planiventralis decora			1			1		2	
Menetia greyii							1		2
Morethia lineoocellata								1	

N.B. No animals were captured in Trapline 3.

SYSTEMATIC AMPHIBIAN AND REPTILE RESULTS TRAPPING SITES III & IV (TL9-16)

TRAPLINE NUMBERS	9	10	11	12	13	14	15	16
LEPTODACTYLIDAE Frogs								
Arenophryne rotunda	2					60	143	47
GEKKONIDAE Geckos								
Diplodactylus ornatus							1	
D. spinigerus	1		2	1		6	5	6
Nephrurus levis occidentalis						1		
Phyllodactylus m. marmoratus							1	
Phyllurus milii						2		
PYGOPODIDAE Legless Lizards								
Pletholax gracilis edelensis					4			
AGAMIDAE Dragon Lizards								
Ctenophorus m. maculatus	6		4	4	5	4	11	9
Pogona m. minor			1	1	2		2	3
Tympanocryptis butleri	7	6		4		5	8	12
SCINCIDAE Skinks								
Ctenotus fallens		1	2	1	1			
C. lesueurii							1	1
C. youngsoni		1	1	2	1	3	3	
Lerista elegans		3		8	3	1	3	1
Menetia greyii					2		1	
Morethia lineoocellata	2	4	7	5	2		8	
ELAPIDAE Elapid Snakes								
Demansia psammophis reticulata								1

SYSTEMATIC AMPHIBIAN AND REPTILE RESULTS TRAPPING SITES V & VI (TL-17-24)

TRAPLINE NUMBERS	17	18	19	20	21	22	23	24
LEPTODACTYLIDAE Frogs								
Arenophryne rotunda		4		11	63			
GEKKONIDAE Geckos								
Crenadactylus ocellatus horni				1				1
Diplodactylus alboguttatus	4							
D. ornatus		2		1			1	
D. spinigerus	1	7	2	1	2	2	4	
Gehyra variegata			3	2				
Nephrurus levis occidentalis	1						1	
PYGOPODIDAE Legless Lizards								
Lialis burtonis			1	1		2		1
Pletholax gracilis edelensis	13		2	1		2		3
AGAMIDAE Dragon Lizards								
Ctenophorus m. maculatus	5	3	5	6	3	20		5
Pogona m. minor	1		1	5			8	2
Tympanocryptis butleri	3	3	2	7	14	1	1	
SCINCIDAE Skinks								
Cryptoblepharus carnabyi		1						
Ctenotus fallens				1	1			1
C. lesueurii						1		
Lerista elegans		6	2	1	5	1	2	1
L. lineopunctulata			1				1	
L. p. planiventralis		7			3	1	1	
L. varia								12
M. lineoocellata	3					4	2	9
Omolepida branchialis	1		1				1	
Tiliqua r. rugosa						1		
TYPHLOPIDAE Blind Snakes								
Ramphotyphlops australis			6					

SYSTEMATIC AMPHIBIAN AND REPTILE RESULTS TRAPPING SITES VII & VIII (TL25-32)

TRAPLINE NUMBERS	25	26	27	28	29	30	31	32
GEKKONIDAE Geckos								
Crenadactylus ocellatus horni				1				
Diplodactylus alboguttatus		5						
D. michaelseni		1						
D. ornatus		2						
D. strophurus		6				4		
Heteronotia binoei					2	4	7	3
Nephrurus levis occidentalis		4			1			1
PYGOPODIDAE Legless Lizards								
Pletholax gracilis edelensis	1							
AGAMIDAE Dragon Lizards								
Ctenophorus m. maculatus		1						
C. reticulatus			2				1	
Pogona m. minor		1						
SCINCIDAE Skinks								
Ctenotus fallens		1	2	3	1			1
C. p. pantherinus		4						
Lerista connivens						2		
L. elegans	3	1	2	5	11	20	12	11
L. lineopunctulata	2	1		1			1	
L. planiventralis decora		3		1				
L. varia		1	2	8		1	1	4
Menetia greyii			3			7		
M. surda	2							
Morethia lineoocellata	4				1	2		4
Omolepida branchialis	5		5					
VARANIDAE Monitors								
Varanus brevicauda	1							
TYPHLOPIDAE Blind Snakes								
Ramphotyphlops grypus			1					
ELAPIDAE Elapid Snakes								
Vermicella littoralis		1					1	1

ANNEX 5 INVENTORY AMPHIBIAN AND REPTILE RESULTS

Vegetation descriptions for all records at traplines are as per each trapline (see Annex 1) unless specified otherwise.

Abbreviations contained in this list are:
TL = Trapline; / = over; H.L. = headland; H.S. = homestead.

SPECIES	#	SITE DESCRIPTION
LEPTODACTYLIDAE Frogs		
Arenophryne rotunda	5	TL-14
	2	Thunder Bay-heath
GEKKONIDAE Geckos		
Crenadactylus ocellatus horni	1	TL-24
Diplodactylus alboguttatus	1	TL-1
	2	TL-22
D. ornatus	2	TL-19
	1	TL-22
	1	TL-24
	2	False Entrance Well-dense *Acacia*
	1	6km SSE Denham-*Acacia*
	1	36km SSE Denham-*Acacia/Triodia*
D. pulcher	1	Faure H.S.-*Acacia*
D. spinigerus	2	TL-9
	1	TL-14
	8	TL-19
	14	TL-22
	2	TL-24
D. squarrosus	1	0.5km NW Faure H.S.-degraded samphire
D. strophurus	1	TL-19
	1	3km SSE Denham-*Acacia*
	1	5km SSE "
	1	6km SSE "
	1	7km SSE "
	1	11km SSE "
	1	15km SSE "
	1	33km SSE "
	1	36km SSE "
	2	41km SSE "
	1	42km SSE "
	3	43km SSE "
	4	44km SSE "
	1	8km NW Nanga H.S.-*Acacia*
Gehyra variegata	1	TL-9
	9	TL-19
	4	Faure H.S.-*Acacia*
	1	Mt. Direction-heath

SPECIES	#	SITE DESCRIPTION
Heteronotia binoei	3	TL-5
	3	Faure Is H.S.-*Acacia*
	1	43km SSE Denham-*Acacia*
	3	Eagle Bluff Outcamp-ruins
	3	2km W Herald Bight-*Acacia*
Nephrurus levis occidentalis	2	22km SSE Denham-*Acacia*
	4	32km SSE "
	3	42km SSE "
	3	44km SSE "
	1	48km SSE "
	1	2km W TL-25-*Triodia*
Phyllurus milii	2	TL-22
Rhynchoedura ornata	1	37km SSE Denham-*Acacia*
PYGOPODIDAE Legless Lizards		
Aprasia haroldi	1	False Entrance Well-dense *Acacia*
	1	TL-19
Lialis burtonis	1	TL-16
	1	TL-20
	4	TL-22
	1	1km W TL-9-heath
	1	Thunder Bay "
	1	3km S Thunder Bay-heath
	1	4km NNW Useless Loop-*Acacia*/heath
	1	31km SSE Denham-*Triodia*
Pletholax gracilis edelensis	1	TL-19
Pygopus lepidopodus	2	TL-19
	1	TL-22
	1	1km NE False Entrance Well-*Acacia*
	1	5km NE False Entrance Well-heath
	1	1km N TL-16-*Acacia*/heath
	1	0.3km W TL-19 "
	1	3km W Useless Loop-*Acacia*
	1	5km NW Tamala H.S.-*Acacia*/heath
P. n. nigriceps	1	1km E Denham-*Acacia*
AGAMIDAE Dragon Lizards		
Ctenophorus m. maculatus	3	TL-1
	3	TL-9
	2	TL-10
	1	TL-13
	10	TL-15
	6	TL-16
	1	TL-17
	6	TL-18
	2	TL-19
	2	TL-20
	6	TL-22
	7	TL-24
	1	TL-26
	3	1km N TL-19-*Acacia*
	1	2km W TL-25-*Triodia*

SPECIES	#	SITE DESCRIPTION
C. m. maculatus - Cont.	3	1.5km E TL-12-heath
	3	Steep Pt-heath/limestone
	2	Epineux Bay-low shrubs
	25	2-6km SSE Thunder Bay-heath & *Acacia*
	1	15km S Useless Loop-heath
	4	2km E of TL-9-*Acacia*
C. reticulatus	1	TL-32
	1	2km W Herald Bight-*Acacia*
	1	Herald Bight-*Acacia*
	4	Steep Pt-heath/limestone
	3	3km SE Steep Pt-heath
	2	Zuytdorp Pt-limestone outcrop
	1	7km ENE Cape Lesueur-*Acacia*
C. scutulatus	1	10km SSE Denham-*Acacia*
Moloch horridus	1	8km SSE "
	2	10km SSE "
	1	35km SSE "
Pogona m. minor	1	TL-1
	2	TL-6
	1	TL-9
	1	TL-15
	1	TL-16
	1	TL-18
	1	TL-23
	1	TL-26
	1	7km ENE Cape Lesueur-*Acacia*
	1	3km N Peron H.S. "
	1	5.5km N Peron H.S. "
	1	9.5km N Peron H.S. "
	1	15km N Peron H.S. "
	1	0.5km E Denham-*Acacia*
	1	False Entrance Well-as TL-14
	1	4km SSE Thunder Bay-heath
	1	3km E TL-9-heath
	1	10km ENE Cape Lesueur-*Acacia*
	1	Eagle Bluff Outcamp-ruins
	1	10km SSE Denham-*Acacia*
	1	3km NNW Useless Loop-*Acacia*/heath
	1	12km ENE Cape Lesueur-*Acacia*
Tympanocryptis butleri	1	TL-9
	1	TL-12
	1	TL-14
	4	TL-16
	4	TL-18
	2	TL-19
	1	TL-20
	1	TL-22
	1	TL-23
	1	Steep Pt-heath
	5	False Entrance Well-dense *Acacia*
	8	2-6km SSE Thunder Bay-heath & *Acacia*
SCINCIDAE Skinks		
Cryptoblepharus carnabyi	1	TL-10
	1	TL-21
	1	TL-23

SPECIES	#	SITE DESCRIPTION
C. carnabyi - Cont.	4	3km NNW Useless Loop-limestone H.L.
	23	Steep Pt-Limestone H.L.
	2	3km SSE Steep Pt-Limestone H.L.
	2	2km N TL-19 "
Ctenotus fallens	1	TL-14
	1	TL-20
	1	TL-28
	1	TL-32
	2	2km W TL-25-*S. longifolius*
C. lesueurii	1	TL-19
	1	TL-21
Lerista elegans	1	TL-10
	1	TL-13
	1	TL-24
L. lineopunctulata	1	TL-1
	1	TL-18
	1	1km N TL-14-heath
	2	Eagle Bluff Outcamp-ruins
	1	Herald Bight-*Acacia*
	1	15km S Useless Loop-heath
L. muelleri	1	Guichenault Pt-*Acacia*
L. p. planiventralis	1	TL-16
	4	TL-18
	2	TL-19
	4	TL-21
	2	TL-22
	1	TL-23
	1	False Entrance Well-dense *Acacia*
L. praepedita	2	TL-13
	1	TL-24
L. uniduo	2	Guichenault Pt-*Acacia*
L. varia	1	Guichenault Pt "
	12	TL-24
Menetia greyii	5	False Entrance Well-ruins
Morethia lineoocellata	1	TL-10
	3	TL-11
	2	TL-13
	2	TL-17
	2	TL-21
	5	TL-22
	6	TL-23
	2	TL-24
	1	TL-25
	1	2km W TL-25-*S. longifolius*
	2	2km W Faure H.S.-*Acacia*
	3	2km E TL-12-heath
	1	Steep Pt-heath
	1	15km S Useless Loop-heath
Tiliqua occipitalis	1	0.5km E Denham-*Acacia*

SPECIES	#	SITE DESCRIPTION
T. r. rugosa	1	TL-21
	1	2km SW TL-25-limestone H.L.
	1	2km NE False Entrance Well-*Acacia*
	1	3km NE False Entrance Well-heath
	2	7km NE False Entrance Well-*Acacia*
	1	6km NW Carrarang H.S.-*Acacia*
	1	Useless Loop-*Acacia*
	1	4km NNW Useless Loop-*Acacia*/heath
	2	Eagle Bluff Outcamp-ruins
	1	3km NNE Tamala H.S.-degraded *Acacia*
VARANIDAE Monitors		
Varanus gouldii	4	Faure H.S.-*Acacia*
	1	1km NE TL-32-degraded *Acacia*
	1	15km SSE Denham-*Acacia*
TYPHLOPIDAE Blind Snakes		
Ramphotyphlops grypus	1	Denham-*Acacia*
BOIDAE Pythons		
Morelia s. stimsoni	1	3km NNW Useless Loop-limestone H.L
ELAPIDAE Elapid Snakes		
Demansia calodera	1	TL-28
D. psammophis reticulata	1	TL-16
	1	TL-20
	1	False Entrance Well-dense *Acacia*
Pseudechis australis	1	TL-27
Rhinoplocephalus monachus	1	41km SSE Denham-*Acacia*
Vermicella f. fasciolata	1	1km SE TL-25-degraded *Triodia*
	1	4km NW Useless Loop-*Acacia*/heath
V. littoralis	1	TL-3
	2	TL-24
	1	3km E TL-9-*Acacia*/heath

ANNEX 6 INVENTORY BIRD RESULTS

Vegetation descriptions for all records including a trapline number are as per that trapline (see Annex 1) unless specified otherwise. Site descriptions are not included for Raptors as they are wide-ranging and were observed flying over the habitats in most instances.

Abbreviations contained in this list are:
TL = Trapline; / = over; H.L. = headland; H.S. = homestead.

* = Birds included in the JAMBA and CAMBA migratory bird agreements

SPECIES	#	SITE DESCRIPTION
DROMAIIDAE		
Dromaius novaehollandiae		
Emu	1	nr TL-1
	1	nr TL-3
	1	nr TL-20
	1	Big Lagoon-*Acacia*
	2	W coast Cape Bellefin-mudflats
	1	Epineux Bay-sand dunes
PELECANIDAE		
Pelecanus conspicillatus		
Australian Pelican	4	nr TL-E1-sandbar
	2	Herald Bight-ocean
	2	Friday Is "
	1	Cape Lesueur-sandbar
	6	Faure Is north shore-mangroves
	4	Clough's Bar-ocean
	1	Big Lagoon "
	1	Faure H.S. "
	2	Guichenault Pt "
PHALACROCORACIDAE		
Phalacrocorax varius		
Pied Cormorant	6	nr TL-9-ocean
	2	nr TL-10 "
	1	nr TL-11 "
	300	nr TL-23-sandbar
	2	nr TL-32-ocean
	3000	Faure Is north shore-mangroves
	1	Guichenault Pt-mangroves
	11	2km N Useless Loop
	1	Faure Is east coast
	50	Clough's Bar
	35	Herald Bight
	400	Friday Is
	60	Cape Lesueur
ARDEIDAE		
Ardea novaehollandiae		
White-faced Heron	1	nr TL-8-mangroves
	3	nr TL-10 "
	1	nr TL-32-mudflats
	2	Guichenault Pt-mangroves
	1	Clough's Bar-mudflats

SPECIES	#	SITE DESCRIPTION
Egretta alba		
Great Egret*	1	nr TL-E1-mudflats
	1	Clough's Bar "
E. garzetta		
Little Egret	10	Guichenault Pt-mangroves
	2	Faure H.S.-mudflats
	1	Faure Is east coast-mangroves
E. sacra		
Eastern Reef Egret*	2	Eagle Bluff-reef
	1	Friday Is-rocks
	1	nr TL-8-reef
	2	nr TL-10 "
	2	2km W TL-25-mudflats
	2	Thunder Bay-reef
	1	3km S Thunder Bay-reef
ANATIDAE		
Tadorna tadornoides		
Australian Shelduck	1	Clough's Bar-mudflats
	48	nr TL-19 "
	1	Herald Bight-over ocean
Anas gibberfrons		
Grey Teal	2	1km S Useless Loop-mine pond
PANDIONIDAE		
Pandion haliaetus		
Osprey	1	Bellefin Prong
	2	Monkey Rock-nesting
	2	Guichenault Pt
	1	nr Friday Is
ACCIPITRIDAE		
Accipiter fasciatus		
Brown Goshawk	1	Faure H.S.
A. cirrhocephalus		
Collared Sparrowhawk	1	Herald Bight
Haliaeetus leucogaster		
White-bellied Sea-Eagle*	1	nr TL-19
	1	Guichenault Pt
Aquila audax		
Wedge-tailed Eagle	1	nr TL-9
	3	nr TL-15
	1	nr TL-25
	1	3km W TL-9
	2	Herald Bight
	1	Big Lagoon
	1	Epineux Bay
	1	Faure Is
FALCONIDAE		
Falco cenchroides		
Australian Kestrel	2	nr TL-3
	1	nr TL-10
	3	nr TL-11
	2	nr TL-12
	1	nr TL-13
	1	nr TL-15
	1	nr TL-19
	2	nr TL-27
	2	nr TL-28
	2	nr TL-32
	1	3km E TL-8
	1	Big Lagoon
	1	Dulverton Bay

SPECIES	#	SITE DESCRIPTION
Australian Kestrel - Cont.	1	5km W Herald Bight
	1	3km SSE Steep Pt
	2	Faure H.S.
HAEMATOPODIDAE		
Haematopus longirostris		
Pied Oystercatcher	7	TL-E1-sandbar
	5	nr TL-19-mudflats
	41	1km E TL-10-reef
	3	nr TL-32 "
	5	2km W TL-25-mudflats
	4	Herald Bight "
	4	Faure Is east coast-mudflats
	2	Clough's Bar-reef
	4	Friday Is-rocks
	6	Faure Is nr H.S.-reef
	2	Cape Lesueur-sandbar
H. fuliginosus		
Sooty Oystercatcher	1	TL-12-reef
CHARADRIIDAE		
Vanellus tricolor		
Banded Lapwing	34	nr TL-32-mudflats
	2	nr Faure H.S. "
	1	3km SE Eagle Bluff
	15	3km E TL-25-bare paddock
Pluvialis squatarola		
Grey Plover*	3	nr TL-E1-mudflats
	4	nr TL-10 "
	20	nr TL-19 "
	5	nr TL-32 "
	6	Clough's Bar "
	2	Herald Bight "
	2	2km W TL-25 "
	2	Cape Lesueur-sandbar
	1	Faure Is north coast-mangroves
P. dominica		
Lesser Golden Plover*	6	nr TL-32-mudflats
Charadrius leschenaultii		
Large Sand Plover*	2	nr TL-10-mudflats
	15	nr TL-19 "
	2	nr TL-32 "
	3	Faure Is east coast-mangroves
	12	2km W TL-25-mudflats
	2	Herald Bight "
C. ruficapillus		
Red-capped Plover	1	nr TL-5-dry samphire
	1	nr TL-10-mudflats
	1	nr TL-19 "
	1	nr TL-23 "
	12	2km W TL-25 "
	1	Faure Is nr H.S.-mudflats
	21	Herald Bight "
	1	Clough's Bar "
RECURVIROSTRIDAE		
Himantopus himantopus		
Black-winged Stilt	2	nr TL-10-wet samphire
	1	Clough's Bar-mudflats
SCOLOPACIDAE		
Arenaria interpres		
Ruddy Turnstone*	4	nr TL-32-reef
	5	2km W TL-25-mudflats
	1	Herald Bight "

SPECIES	#	SITE DESCRIPTION
Ruddy Turnstone - Cont.	50	Eagle Bluff-beach
	12	Friday Is-rocks
Numenius madagascariensis		
Eastern Curlew*	3	nr TL-32-mudflats
N. phaeopus		
Whimbrel*	1	Herald Bight-mudflats
	4	nr TL-10-reef
	2	Faure Is east coast-mudflats
Tringa brevipes		
Grey-tailed Tattler*	2	nr TL-10-reef
	2	nr TL-32 "
	1	Herald Bight-reef
T. hypoleucos		
Common Sandpiper*	1	nr TL-23-mangroves
	1	nr TL-32-rocks
	1	Faure Is east coast-mangroves
	1	Clough's Bar-rocks
T. nebularia		
Greenshank*	1	nr TL-10-wet samphire
	1	nr TL-19-mudflats
	1	nr TL-23-mangroves
	4	Clough's Bar-mudflats
	3	Guichenault Pt-mangroves
	6	Faure Is east coast "
	3	Herald Bight-mudflats
T. stagnatilis		
Marsh Sandpiper*	1	Faure Is east coast-mangroves
Limosa lapponica		
Bar-tailed Godwit*	20	nr TL-E1-mudflats
	196	nr TL-10 "
	8	nr TL-32 "
	70	Faure Is east coast-mudflats
	6	Faure Is north coast-mangroves
	37	nr Faure H.S.-sandbar
	11	Cape Lesueur "
	27	Herald Bight-mudflats
Calidris tenuirostris		
Great Knot*	3	nr TL-23-mudflats
	6	nr TL-32 "
	4	Faure Is east coast-mudflats
	150	Herald Bight "
C. ruficollis		
Red-necked Stint*	100	nr TL-19-mudflats
	24	2km W TL-25 "
	88	Faure Is east coast-mudflats
	6	Faure H.S. "
	600	Herald Bight "
C. ferruginea		
Curlew Sandpiper*	8	nr TL-32-mudflats
	12	Faure Is nr H.S.-mudflats
	4	Herald Bight "
LARIDAE		
Larus novaehollandiae		
Silver Gull	1	nr TL-E1-sandbar
	2	nr TL-9-beach
	2	nr TL-10 "
	6	nr TL-19 "
	30	nr TL-23 "
	1	TL-27 "
	3	nr TL-32 "
	5	Herald Bight-beach

SPECIES	#	SITE DESCRIPTION
Silver Gull - Cont.	4	Thunder Bay-reef
	9	Faure Is east coast-beach
	1	Monkey Rock-rocks
	3	2km W TL-25-mudflats
	6	3km S Thunder Bay-over coast
	7	Clough's Bar-mudflats
	100	Faure Is north coast
	100	Friday Is-breeding colony
	20	Big Lagoon-over coast
	6	Steep Pt-limestone H.L.
L. pacificus		
Pacific Gull	3	nr TL-10-beach
	3	nr TL-19 "
	4	nr TL-32 "
	2	Friday Is-rocks
	3	Clough's Bar "
Hydroprogne caspia		
Caspian Tern*	6	nr TL-E1-over coast
	2	nr TL-23 "
	1	nr TL-32 "
	1	Faure Is east coast-over coast
	1	Friday Is-over coast
	6	Clough's Bar "
	1	Herald Bight "
	2	Guichenault Pt "
	7	Cape Lesueur-sandbar
Sterna bergii		
Crested Tern	15	TL-E1-over coast
	50	Monkey Rock "
	23	nr TL-10 "
	14	Clough's Bar "
	60	Cape Lesueur "
	1	Faure H.S.-sandbar
	2	nr TL-19-coast
COLUMBIDAE		
Ocyphaps lophotes		
Crested Pigeon	2	TL-3
	2	5km W Herald Bight-*Acacia*
	2	Faure Is-*Acacia*
CACATUIDAE		
Cacatua roseicapilla		
Galah	4	TL-3
	6	TL-8
	3	Guichenault Pt-*Acacia*
PLATYCERCIDAE		
Neophema petrophila		
Rock Parrot	4	Friday Is-rocks
CUCULIDAE		
Cuculus pyrrhophanus		
Fan-tailed Cuckoo	1	TL-18
Chrysococcyx osculans		
Black-eared Cuckoo	1	2km W TL-25-mangroves
	1	Faure H.S.-*Acacia*
C. basalis		
Horsfield's Bronze-Cuckoo	1	TL-8
ALCEDINIDAE		
Halcyon sancta		
Sacred Kingfisher	1	nr TL-10-mangroves

SPECIES	#	SITE DESCRIPTION
HIRUNDINIDAE		
Cheramoeca leucosternum		
White-backed Swallow	1	4km NNW Useless Loop-*Acacia*/heath
	1	TL-24
	2	nr TL-32-samphire
	2	Epineux Bay-coast
Hirundo neoxena		
Welcome Swallow	1	TL-5
	7	nr TL-10-heath
	6	TL-11
	2	nr TL-12-beach
	4	TL-15
	2	TL-17
	8	nr TL-19-mudflats
	6	3km S Thunder Bay-cliffs
	12	2km W TL-25-cliffs
	4	Herald Bight-beach
	4	Steep Pt-cliffs
	1	3km SE Steep Pt-cliffs
	2	2km W Herald Bight-*Acacia*
	3	Thunder Bay-heath
	2	Eagle Bluff-cliffs
	13	Faure H.S. "
	12	Guichenault Pt "
	1	Faure Is north coast-mangroves
	1	Faure Is east coast-mudflats
Cecropis nigricans		
Tree Martin	2	nr TL-11-heath
	20	nr TL-19-*Acacia*
	12	Guichenault Pt-cliffs
	4	Faure H.S.-cliffs
	30	Herald Bight-beach
	300	Faure Is east coast-mudflats
MOTACILLIDAE		
Anthus novaeseelandiae		
Richard's Pipit	1	nr TL-7-claypan
	1	nr TL-8-*Acacia*
	1	nr TL-9-heath
	1	nr TL-15 *S. longifolius*
	1	nr TL-17-heath
	2	nr TL-19-*Acacia*
	1	nr TL-23-heath
	1	TL-25
	2	nr TL-32-beach
	4	2km W TL-25-cliffs
	3	Herald Bight-beach
	6	Faure H.S.-sand dunes
	7	2km NW Faure H.S.-claypan
	2	3km SE Steep Pt-cliffs
MUSCICAPIDAE		
Drymodes brunneopygia		
Southern Scrub-robin	1	nr TL-1-*Acacia*
	1	nr TL-6-dense shrubs
Colluricincla harmonica		
Grey Shrike-thrush	1	TL-18
	1	TL-22
Oreoica gutturalis		
Crested Bellbird	1	TL-1
	1	TL-18
	1	TL-22
	2	5km E Herald Bight-*Acacia*

SPECIES	#	SITE DESCRIPTION
Rhipidura fuliginosa		
Grey Fantail	10	Guichenault Pt-mangroves
	2	Faure Is east coast "
R. leucophrys		
Willie Wagtail	1	TL-1
	1	TL-3
	4	nr TL-10-mangroves
	1	nr TL-11-heath
	2	nr TL-19-mangroves
	2	TL-22
	1	Cape Lesueur-mangroves
	2	Guichenault Pt-*Acacia*
	1	Clough's Bar-mudflats
	2	2km W Herald Bight-*Acacia*
	1	2km W TL-25-mangroves
ORTHONYCHIDAE		
Psophodes occidentalis		
Chiming Wedgebill	1	TL-1
	1	TL-3
	1	TL-8
	1	TL-22
	1	TL-25
	1	nr TL-27
	3	5km W Herald Bight-*Acacia*
TIMALIIDAE		
Pomatostomus superciliosus		
White-browed Babbler	4	nr TL-19-dense *Acacia*
	2	5km W Herald Bight "
	5	8km NNW Useless Loop-*Acacia*/heath
SYLVIIDAE		
Cinclorhamphus mathewsi		
Rufous Songlark	1	2km E TL-25-*Acacia*
MALURIDAE		
Malurus lamberti		
Variegated Fairy-wren	5	TL-1
	2	TL-10
	2	TL-18
	2	nr TL-19-*Acacia*
	2	TL-22
	2	2km W Herald Bight-*Acacia*
	1	Guichenault Pt-*Acacia*
M. leucopterus		
White-winged Fairy-wren	2	TL-1
	1	TL-3
	2	TL-6
	2	TL-7
	3	nr TL-10-wet samphire
	2	Tl-13
	4	TL-15
	2	TL-17
	1	nr TL-21-*Acacia*
	1	nr TL-22 "
	1	nr TL-23-*Acacia*/heath
	1	TL-25
	11	TL-27
	6	Eagle Bluff-*Acacia*/heath
Amytornis t.textilis		
Thick-billed Grasswren	1	20km N Peron H.S.-*Acacia* nr claypan

SPECIES	#	SITE DESCRIPTION
ACANTHIZIDAE		
Sericornis frontalis		
White-browed Scrubwren	3	TL-1
	1	TL-6
	3	TL-16
	2	Guichenault Pt-*Acacia*
	1	2km W Herald Bight "
S. brunneus		
Redthroat	2	TL-1
	6	2km NW Faure H.S.-*Acacia*
S. fuliginosus		
Calamanthus	3	TL-1
	1	TL-10
	3	TL-13
	1	TL-15
	2	TL-17
	2	nr TL-19-*Acacia*
	1	TL-21
	1	TL-23
	1	TL-26
	1	TL-27
	2	8km NNW Useless Loop-*Acacia*/heath
	5	Thunder Bay-heath
	1	Eagle Bluff "
	1	2km N Useless Loop-*Acacia*
	1	Steep Pt-heath
	1	Cape Bellefin-*Acacia*
Gerygone fusca		
Western Gerygone	1	Guichenault Pt-*Acacia*
Acanthiza uropygialis		
Chestnut-rumped Thornbill	6	TL-1
	2	Guichenault Pt-*Acacia*
MELIPHAGIDAE		
Lichenostomus virescens		
Singing Honeyeater	4	TL-1
	1	TL-3
	1	TL-5
	1	TL-6
	3	TL-8
	7	TL-9
	3	TL-10
	2	TL-11
	2	TL-12
	2	TL-13
	6	TL-15
	2	TL-16
	2	TL-17
	6	TL-18
	9	TL-19
	1	TL-21
	2	TL-22
	3	TL-23
	1	TL-24
	2	TL-27
	6	Cape Bellefin-*Acacia*
	5	2km N Useless Loop "
	6	Thunder Bay-heath
	4	8km NNW Useless Loop-*Acacia*/heath
	2	Faure H.S.-*Acacia*
	4	5km W Herald Bight-*Acacia*
	1	2km W Herald Bight "

SPECIES	#	SITE DESCRIPTION
Certhionyx variegatus		
Pied Honeyeater	1	TL-22
	3	2km W Herald Bight-*Acacia*
	1	Guichenault Pt "
	1	8km NNW Useless Loop-*Acacia*/heath
	2	5km W Herald Bight-*Acacia*
	1	6km NNW Useless Loop-*Acacia*/heath
	1	2km W Herald Bight-*Acacia*
EPHTHIANURIDAE		
Ephthianura tricolor		
Crimson Chat	1	TL-22
	2	6km NNW Useless Loop-*Acacia*/heath
	2	8km NNW Useless Loop "
	50	1km N Faure H.S.-samphire
	1	25km N Peron Homestead-*Acacia*
E. albifrons		
White-fronted Chat	56	nr TL-32-mudflats
	2	1km W Herald Bight-*Acacia*
	6	25km N Peron H.S.-samphire
PARDALOTIDAE		
Pardalotus striatus		
Striated Pardalote	1	Faure H.S.-*Tamarisk*
ZOSTEROPIDAE		
Zosterops lutea		
Yellow White-eye	2	Guichenault Pt-mangroves
Z. lateralis		
Silvereye	2	TL-18
	12	TL-22
	1	Faure H.S.-*Acacia*
PLOCEIDAE		
Poephila guttata		
Zebra Finch	4	TL-8
	2	TL-17
	4	TL-22
	3	TL-27
	2	2km W Herald Bight-*Acacia*
	14	Faure H.S. "
	2	2km W TL-25-mangroves
ARTAMIDAE		
Artamus leucorhynchus		
White-breasted Woodswallow	1	TL-8
	4	Guichenault Pt-cliffs
	4	Faure Is east coast-mudflats
A. personatus		
Masked Woodswallow	2	TL-22
	2	6km NNW Useless Loop-*Acacia*/heath
	1	8km NNW Useless Loop "
A. cinereus		
Black-faced Woodswallow	1	25km N Peron H.S.-*Acacia*
A. minor		
Little Woodswallow	1	TL-7
	12	TL-8
	6	Guichenault Pt-cliffs
	2	Thunder Bay "
CRACTICIDAE		
Cracticus torquatus		
Grey Butcherbird	2	TL-10
	1	TL-12
	2	TL-18
	2	2km N Faure H.S.-*Acacia*

SPECIES	#	SITE DESCRIPTION
CORVIDAE		
Corvus bennetti		
Little Crow	2	TL-1
	4	TL-3
	1	TL-5
	9	TL-9
	11	TL-10
	2	TL-11
	4	TL-19
	1	TL-22
	2	5km W Herald Bight-*Acacia*
	1	2km W TL-25-mangroves
	50	1km N Peron H.S.-*Acacia*
	6	Guichenault Pt-mangroves
	2	Cape Lesueur "
	2	Herald Bight-*Acacia*
	1	Clough's Bar-nesting