ANTINA (CENTRAL ROCK-RAT) INTERIM RECOVERY PLAN (WA)

CAPE RANGE MAMMAL SURVEY 1997 - 1998 INTERIM AND FINAL REPORT

INCORPORATES ENDANGERED SPECIES PROGRAM - PROJECT 563 and 6030

CAPE RANGE MAMMAL SURVEY 1997 - 1998
INTERIM REPORT - OCTOBER 1997

Andrew A. Burbidge, October 1997

Background

The Cape Range peninsula, often referred to as North West Cape, is an area of considerable biogeographic interest, particularly because of its renowned troglobitic and stygofauna (Humphreys 1993). Cape Range, which forms the backbone of the peninsula, is composed largely of limestones of varying age. Cape Range National Park currently covers a relatively small part of the range plus areas of the western coastal plain and coast, although proposals to extend the park to include much of the range, originally made in 1972, are under active consideration.

The most recent review of the mammals of the Cape Range peninsula (Baynes and Jones 1993), was based almost entirely on surficial subfossil deposits from caves, as there were few modern specimens in collections. In their review Baynes and Jones commented on the relatively high abundance of remains of *Zyzomys pedunculatus*, the Antina or Central Rock-rat, and recommended that a survey aimed at locating this species should be given a high priority.

The Antina is listed as 'fauna which is likely to become extinct or is rare' under the Western Australian Wildlife Conservation Act. The Commonwealth Endangered Species Protection Act lists the species as 'Endangered'. The Rodent Action Plan (Lee 1995) also lists it as 'Endangered' but states that under the criteria of Mace and Lande (1991) it is "Critical, possibly extinct" (p. 31). In 1995, the Scientific Ranking Panel for Western Australia's threatened flora and fauna allocated the species to the new IUCN category 'Critically Endangered' (IUCN 1994) using methods prescribed in CALM Policy Statement No. 50.

Antina have never been collected alive in Western Australia. When CALM's Interim Recovery Plan (IRP) for the Antina in Western Australia (Burbidge 1997) was written, no live specimen had been collected since 1960. However, in 1996, a small number of live animals were trapped in the MacDonnell Range, near Alice Springs, Northern Territory.

The Antina IRP prescribed as its major action a mammal survey of Cape Range National Park. This interim report covers trapping carried out in October 1997. A second trapping session is proposed for April-May 1998.

Survey design and methods

A reconnaissance and pitfall trap installation field trip was conducted in May 1997. Personnel involved were Andrew Burbidge, Keith Morris, Phil Fuller and Brent Johnson (CALM SID, Woodvale), Peter Kendrick (CALM Pilbara Region) and John Angas (CALM volunteer). They were assisted by Les Harris (CALM Exmouth District). During this trip Sample Sites were selected and pitfall traps installed. The installation of pit traps in this rocky area required the use of a portable rock drill and explosives.

Twelve sample sites were chosen. At each, two lines of six pit traps were installed. Pitfall traps used were composed of 125 mm outside diameter plastic drainage pipe and were 60 cm deep.

The first field survey was carried out from 4 to 15 October 1997. Personnel were Andrew Burbidge, Brent Johnson, Peter Speldewinde and Tania Butler (CALM SID Woodvale), Peter Kendrick (CALM Pilbara Region) and Tom Hammond (CALM volunteer).

As well as opening the pit trap lines and installing flywire drift fences, medium Elliott traps and wire-mesh Sheffield cage traps were set. About 50 Elliott traps were set at each sample site as well as about 5 Sheffield traps. Most Sheffield traps were set at 200 m intervals along vehicle access tracks. Elliott and Sheffield traps were baited with a universal bait of peanut paste, rolled oats and sardines. Pitfall traps were not baited. Each sample site was trapped for five nights.

Sample Site coordinates and descriptions will be detailed in the final report. Because of access restrictions many of the Sample Sites were outside the National Park and within Exmouth Station. Trapping there was carried out with permission of the owners, J & L Lefroy.

A second survey will be conducted in May 1998.

Results

Mammals trapped in each sample site during October 1997 are shown in Table 1. The list includes eight species: five species of dasyurid marsupials, one species of native rodent and two species of introduced rodent.

As well as the small mammals shown in Table 1, we recorded two additional native species and two species of introduced mammals. The natives were *Tachyglossus aculeatus*, the Echidna, whose diggings were commonly and widely recorded, and *Macropus robustus*, the Euro, which was sighted commonly throughout the Range. Feral Goats were common and widespread in all areas examined, while Sheep are grazed on Exmouth Gulf Station, which includes parts of the range and much of the eastern coastal plain.

Foxes (*Vulpes vulpes*) were common in the area (Kendrick 1993), but are now subject to control via baiting, under CALM's 'Western Shield' fauna conservation program, which also controls dingoes (*Canis lupus dingo*). Rabbits (*Oryctolagus cuniculus* are present in low numbers at a few localities on the peninsula (Kendrick 1993) but were not recorded in the Range by us.

Voucher specimens of mammals trapped were collected and will be deposited in the Western Australian Museum. Voucher specimens of reptiles captured in traps were also collected and a list will be provided in the final report. The reptiles of the area have been listed by Kendrick (1993).

Discussion

No Antina were recorded.

The occurrence of the Black Rat, *Rattus rattus*, in the Range is of concern, as it may out-compete and displace larger native rodents such as Antina. Experimental data on competition between Black Rats and native rodents (or predation by Black Rats on native rodents) are scarce; however, it is known that *Rattus rattus* has displaced the Mootit (or Southern Bush Rat) *R. fuscipes* and a *Pseudomys* (probably *P. occidentalis*) on Woody Island near Esperance. Additionally, circumstantial evidence suggests that it has largely displaced the Djini (or Pale Field Rat) *R. tunneyi* in coastal areas of the Mid West and Pilbara.

We recorded all native ground mammal species known to be extant on Cape Range peninsula (Baynes and Jones 1993, Kendrick 1993), except the Red Kangaroo *Macropus rufus* (seen on the eastern coastal plain), Black-flanked Rock-wallaby *Petrogale lateralis lateralis* (occurs in south western parts of the Range) and Tarrkawarra (or Spinifex Hopping Mouse) *Notomy alexis*, which would not be expected to occur on rocky areas.

No Critical Weight Range (CWR) mammals (Burbidge and McKenzie 1989) were recorded in Cape Range except the Echidna, which has not followed the same pattern of decline as other CWR species. Baynes and Jones (1993) found the following CWR species in surficial cave deposits: Mulgara *Dasycercus cristicauda*, Chuditch *Dasyurus geoffroii*, Northern Quoll *D. hallucatus*, Red-tailed Phascogale *Phascogale calura*, Golden Bandicoot *Isoodon auratus*, Western Barred Bandicoot *Perameles* cf. *bougainville*, Bilby *Macrotis lagotis*, Boodie *Bettongia lesueur*, Common Brushtail Possum *Trichosurus vulpecula*, Koorrawal (Golden-backed Tree-rat) *Mesembriomys macrurus*, Yoontoo (Short-tailed Hopping-mouse) *Notomys amplus*, Koolawa (Long-tailed Hopping-mouse) *N. longicaudatus*, Moolpoo (Western Chestnut Mouse) *Pseudomys nanus* and Djini (Pale Field-rat) *Rattus tunneyi*. Of these. *D. hallucatus* and *T. vulpecula* remain in small areas of the Pilbara mainland and their survival in Cape Range is a possibility. *D. cristicauda* and *Macrotis lagotis* also survive in the Pilbara, but are mainly inhabitants of loamy and sandy, rather than rocky, surfaces. *Rattus tunneyi* survives on sandy surfaces in Shark Bay. It should be noted that some of the mammal remains in caves would have accumulated from owl deposits and species recorded from caves may not have inhabited the Range itself, but have come from the coastal plains and lowlands to the south.

The Northern Quoll has been reported recently from Sandalwood Peninsula, at the southern edge of Exmouth Gulf. There are unsubstantiated recent reports of Bilbies to the south of Cape Range.

Several small mammals, with body weights outside the CWR, have been recorded from cave deposits. Those that might possibly survive in Cape Range are: Long-tailed Dunnart *Sminthopsis longicaudata*, Ngadji (Pilbara Pebble-mound Mouse) *Pseudomys chapmani* and Wildjin (Desert Mouse) *P. desertor*. Informants told us during this visit that pebble mounds exist in Cape Range but are very uncommon. A pebble mound location was recently provided by an environmental consultant and this will be checked out during the autumn 1998 visit.

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Table 1. Mammals trapped at Cape Range, October 1997.

Species	Sample Site												
	CR1	CR2	CR3	CR4	CR5	CR6	CR7	CR8	CR9	CR10	CR11	CR12	cage[1]
Dasykaluta rosamondae, Little Red Antechinus	X		X				X		X				
Pseudantechinus macdonnellensis, Fat-tailed Antechinus		X			X						X	X	
Planigale maculata, Common Planigale	X	X	X		X		X						
Ningaui timealeyi, Pilbara Ningaui	X	X		X	X		X	X	X			X	
Sminthopsis macroura, Stripe-faced Dunnart						X							
Pseudomys hermannsburgensis , Mingkiri	X		X						X	X			
Mus domesticus, House Mouse				X							X	X	
Rattus rattus, Black Rat			X[2]										X[3]

1. Sheffield cage traps laid along vehicle tracks
2. Elliott trap line at AMG 920402, cf. Sample Site CR3
3. Sheffield cage trap on Charles Knife Road