GILBERT'S POTOROO RECOVERY TEAM

ANNUAL REPORT

1996

by Jackie Courtenay and Kelly Gillen

for

The Gilbert's Potoroo Recovery Team

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1. INTRODUCTION

1.1. Background

This report addresses actions specified in the Interim Recovery Plan for Gilbert's Potoroo (*Potorous tridactylus gilbertii)* which were carried out in 1996. The Interim Management Guidelines are currently under revision.

Recovery Team meetings were held on 1 April, 2 July, 27 September and 9 December 1996.

1.2. Recovery Team

Recovery Team membership at the end of 1996 was:

Andrew Burbidge	CALM, WATSCU
Jackie Courtenay	Consultant Biologist, ECU Applied Science
Alan Danks	CALM, Two Peoples Bay Nature Reserve
Kelly Gillen (Chair)	CALM, South Coast Region
Bruce Male	ANCA Endangered Species Unit
Elizabeth Sinclair	UWA Zoology Department
Dr. Vic Smith	Representing local conservation groups
Tony Start	CALM, Science and Information Division

2. PROGRESS WITH IMPLEMENTATION OF THE INTERIM RECOVERY PLAN

2.1. Fire

The Two Peoples Bay Nature Reserve Management Plan was released by the Minister for the Environment in April. This plan includes a fire management section which sets out the objectives and strategies for fire management of the reserve. Two fire regimes, fire exclusion and fuel reduction provide the basis for fire management, with fuel reduction focusing on strategic low fuel zones.

Extensive slashing has been undertaken around the captive colony and is replacing prescribed burning of buffers strips in some areas of the reserve. The progressive implementation of this plan will address the habitat and protection requirements of the wild population on Mt Gairdner.

2.2. Dieback Disease

A considerable area of Mt Gairdner has now been remapped to define Phytophthora presence/absence (Map 1). This work is conducted in advance of Potoroo trapping and survey to ensure minimal risk to unaffected vegetation.

This work will progress during summer/Autumn 1997 to complete the Mt Gairdner area.

2.3. Feral Predator

Regular baiting of the reserve has continued using eggs innoculated with 1080. In addition, aerial baiting with 4.5 mg 1080 dried meat baits under the fox baiting initiative 'Western Shield' is being conducted four times per year. This baiting is also being conducted on surrounding lands so that foxes over a broad area are targeted. Monitoring of tracks for fox sign suggests very low numbers in the reserve.

2.4. Captive Breeding Colony

At the beginning of 1996 the colony consisted of 7 individuals, 3 adult females and two adult males who were original founders, and two subadult males who had been brought into the colony as pouch young with their mothers. These two males are now adult. Two of the females were carrying small pouch young, and these two (females) and another male young have been raised to independence in the colony during the past year. In April an additional female with a female pouch young was added to the colony.

Currently there are 12 individuals in the colony, 4 adult males, 4 adult females, 2 subadult/adult females and a subadult male. One of the adult females is carrying a pouch young and three other females are currently housed with males and it is hoped that they will also have pouch young in the near future.

Only one of the founder females has not bred since being brought into the colony in December 1994. Examination of teeth and eyes by a vet from the WA Department of Agriculture confirmed that she is an old animal and may therefore be reproductively senescent.

A detailed Captive Management Plan to guide the management of the colony for the next five years was prepared in September. The captive colony has now grown to the extent that new cages will be required in the near future as all cages are housing at least one and often two animals and there are no spare cages for isolation of sick or injured animals should they be required.

2.5. Other populations have been searched for at Normans Inlet, Mertens Gully and Mt Manypeaks (Mt Manypeaks Nature Reserve), and Mermaid Point (Waychinicup National Park) using primarily hair tubes and arches, although trapping was carried out at Normans Inlet without success. A single hair that was apparently from Gilbert's Potoroo was recovered from a gully near the top of Mt Manypeaks.

More intensive hair tubing (using 68 arches and 5 tubes) was carried out in the area without further recoveries. Hair tubing will be repeated in this area when it is dry enough to obtain access.

Trapping was repeated at North Firebreak, South Firebreak, Upper Robinsons, Hakea and Hill 700.

A new population was discovered in Firebreak Valley which added four individuals to the known wild population.

The use of Pistachio nut oil in the bait appears to have increased trap success rates with Potoroos being regularly captured at the new site on the first night of trapping. A known female Potoroo was also trapped along the main Firebreak valley road during trapping undertaken for a student project.

2.6. Home Range and use of Habitats

One individual male was radiotracked for two weeks. He had been trapped at the North Firebreak site but his movements were concentrated mostly in an area south of this site. A new trapping line (East Firebreak) was established to recapture him in this area, and four new individuals were caught, as well as another male previously known from the Upper Robinsons site (Map 2).

All six individuals were fitted with spool packages, several more than once, as they were retrapped over several weeks. The analysis of the 14 spools was carried out as an Honours project by Sarah Vetten from Edith Cowan University which was submitted for examination on 6 December 1996. The results of this study indicate that the animals are using a range of habitats, but are preferring the open sedge fields for foraging. They appear to be using open vegetation more than would be expected from its representation in the environment, which differs from the microhabitat use observed in *P. tridactylus*.

2.7. Husbandry of the Colony

Monitoring and hygiene practices in the colony have been modified and improved. Animals are now captured and examined once very two weeks and their weight and health condition checked. Young animals are fully measured at each capture to build up a picture of normal growth patterns. Vaginal swabs have been taken from some adult females and it is proposed that a more detailed study should be undertaken to determine the length of the oestrus cycle. Breeding in April and May confirmed that this species exhibits embryonic diapause but the length of pouch life and/or the gestation period for young appears to be shorter than that observed in *P. tridactylus*. This observation is being followed up by observations of the pouch life of the current pouch young, gestation of any diapause young (if present) and length of pregnancy of females currently housed with males.

Blood samples taken from the captive males indicated a high PCV of 43% and also revealed the presence of a blood parasite in all individuals which prescence in the wild population has not yet been checked.

A husbandry manual is in preparation.

2.8. Genetic/Taxonomic Studies

Genetic studies conducted by Elizabeth Sinclair and Mike Westerman have indicated that Gilbert's Potoroo is genetically distinct from both *P. tridactylus* and *P. longipes*. The results of this study have been submitted for publication. Preliminary work on the interelationships of wild individuals also suggested that the population had retained a high level of genetic diversity.

Cranial specimens (including the type specimen) of Gilbert's Potoroo were examined at the British Museum (Natural History) and at the Australian Museum in Sydney, along with specimens of *P. tridactylus*. These studies revealed some marked differences in cranial morphology between the two species and further specimens are being examined at the West Australian Museum and at various palaeontological collections in Canberra.

Examination of a specimen from Two Peoples Bay (a radiocollared individual that was killed by a cat) revealed the same cranial features observed in the type specimen.

3. HUMAN RESOURCES

Dr Courtenay, Research Consultant has been working in the reserve and with the captive colony since April. There has been considerable volunteer and District support to this programme as well as assistance from Edith Cowan University students. It is apparant that with the growing colony additional resources will soon be required on a regular basis.

4. SUMMARY

Considerable progress has been made during 1996. Further survey and tracking has increased our knowledge of the wild population and shows some indication of habitat preferences.

The captive colony is steadily growing and regular monitoring has been introduced to ensure animal health is maintained.

Breeding in April and May confirmed that *P. gilbertii* exhibits embryonic diapause. The gestation period appears to be shorter than that observed for *P. tridactylus*.

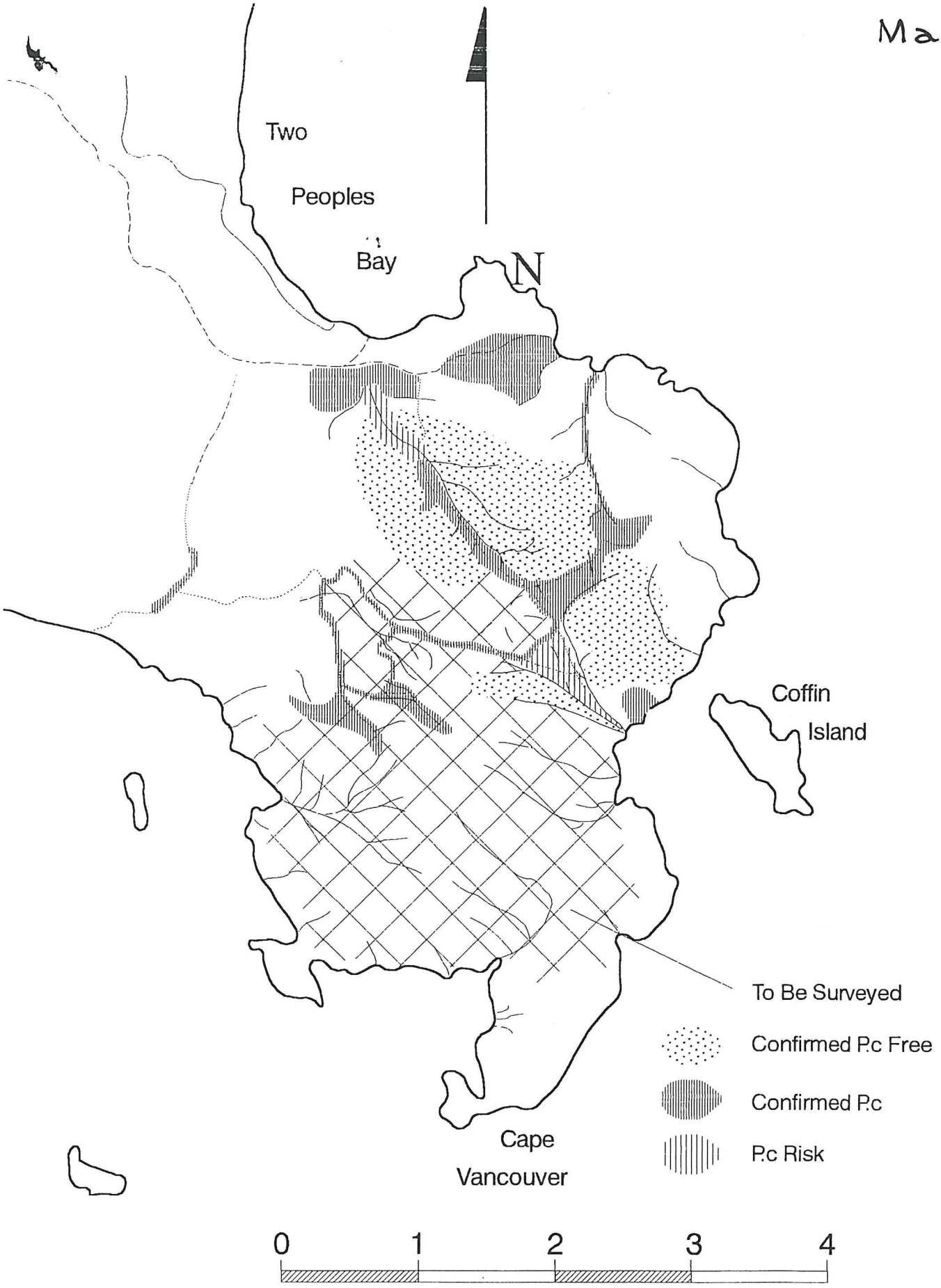
Twelve animals are now in the colony with a new pouchyoung expected soon.

Genetic studies have confirmed the species status of *P. gilbertii*.

A captive management plan has been prepared and this is now being incorporated into a draft Interim Recovery Plan. A husbandry manual is also in preparation.

At this time *P. gilbertii* is still only known from the Mt Gardner area of Two Peoples Bay Nature Reserve.

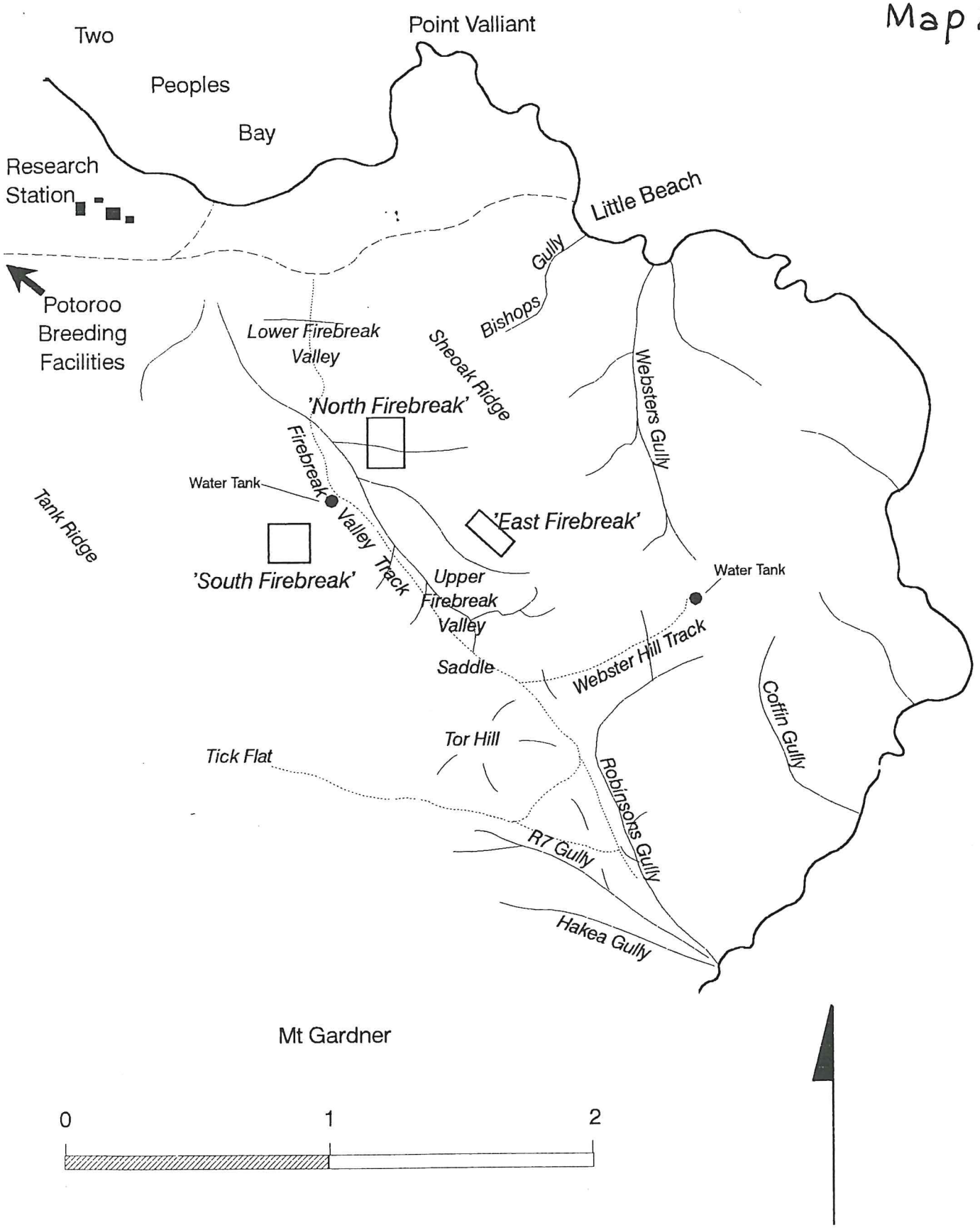
Map 1



Mt Gardner Dieback Reassessment : Interim Level 2 Map. / Aug 1996

MCDIEMAP:PRS AD LW 4/8/96

Map 2



Potoroo Trap Lines in Fire Break Valley

MGFBVPRS LW AD 22/8/96