The Conservation of our Endangered Species in the South-West

FOX CONTROL IN FITZGERALD RIVER NATIONAL PARK

CALM ecologists, with financial support from the Australian National Parks and Wildlife Service's Endangered Species Unit, are about to implement a project designed to control the fox within the Fitzgerald River National Park (FRNP). The purpose of this research program is to protect rare and endangered fauna. This article provides some information about the project.

INTRODUCTION

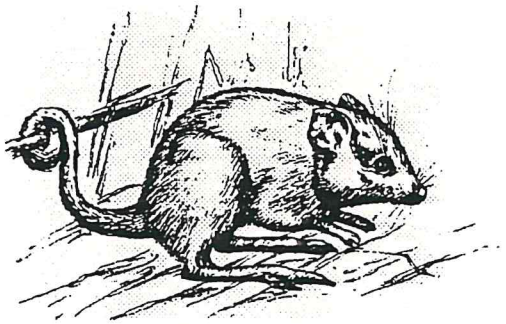
Since European settlement, Australia has lost more mammals (18 species) than the rest of the world combined. Worse still, the extinction risk is still high for many other species - twenty four are listed as rare and endangered.

Australian birds appear to have fared better, except for ground dwelling or ground nesting species. Some examples are the ground parrot, bristle birds and the mallee fowl; all three are found in the park and are judged to be endangered.

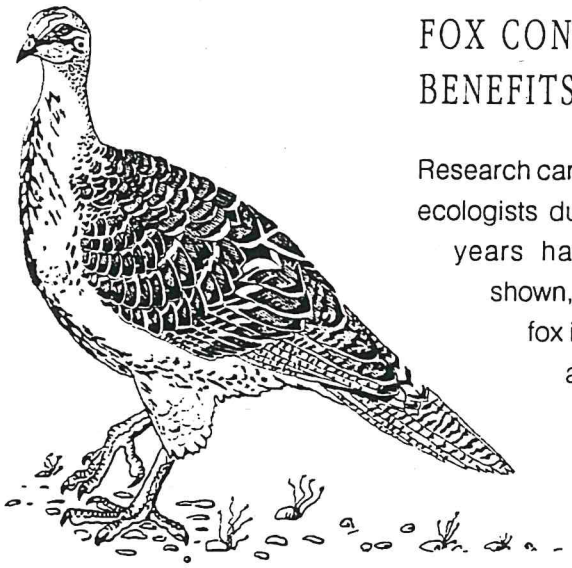
Ground Parrot

CAUSES

A question often asked is: why have so many Australian species fared so badly since settlement? This is not an easy question to answer because so much has happened to the country and the environment. It has been generally assumed that habitat loss has been the major cause; it is argued that too much land has been cleared or too many environmental changes have occurred, but it now seems likely that the effect of such disturbances have been overstated. It now seems certain that fox predation has played a major role, and that the fox still represents a serious threat to surviving species.



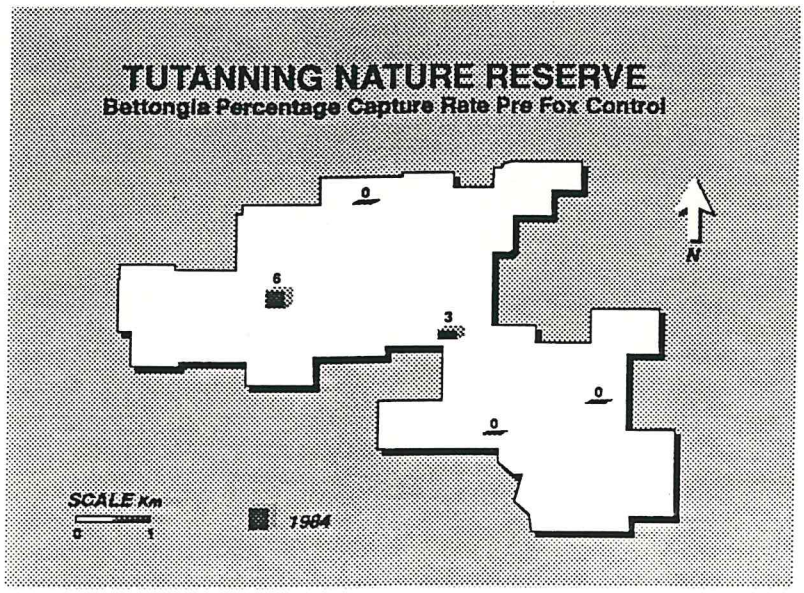
Brush-tailed rat kangaroo (Woylie)

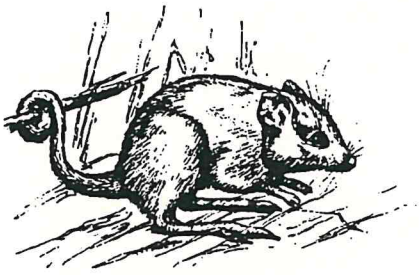


Mallee Fowl

FOX CONTROL: BENEFITS

Research carried out by CALM ecologists during the past 10 years have consistently shown, that wherever the fox is controlled, rare and endangered species become more numerous. A good example is the woylie or Brush-tailed rat kangaroo which was once very common and widespread, but now it survives only on a few Nature Reserves. (Indeed, it is thought to still exist within the Fitzgerald, but this needs to be confirmed.) In Tutanning Nature Reserve (near Pingelly) woylies were once very common, but none had been sighted for more than ten years. In 1984, before fox control, it required a lot of effort and a lot of time to trap a woylie, but after five years of fox control, it became a breeze as woylies are now abundant (see Figure 1).

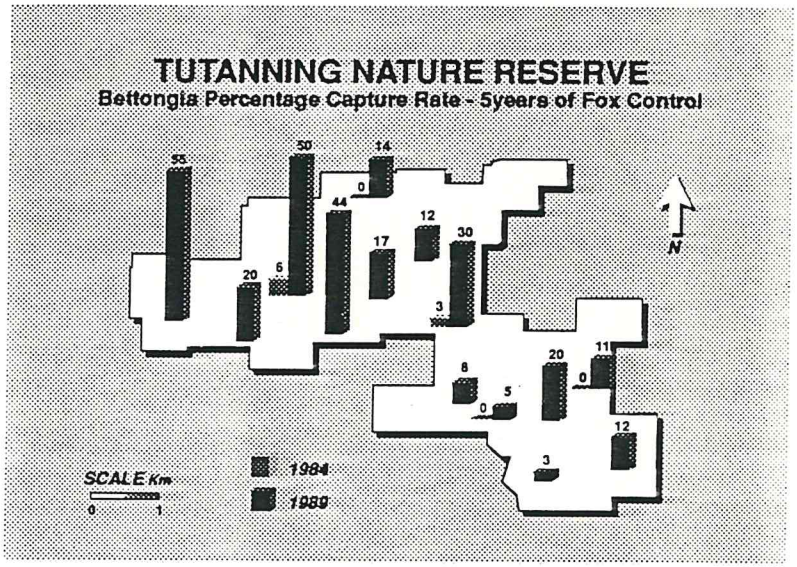


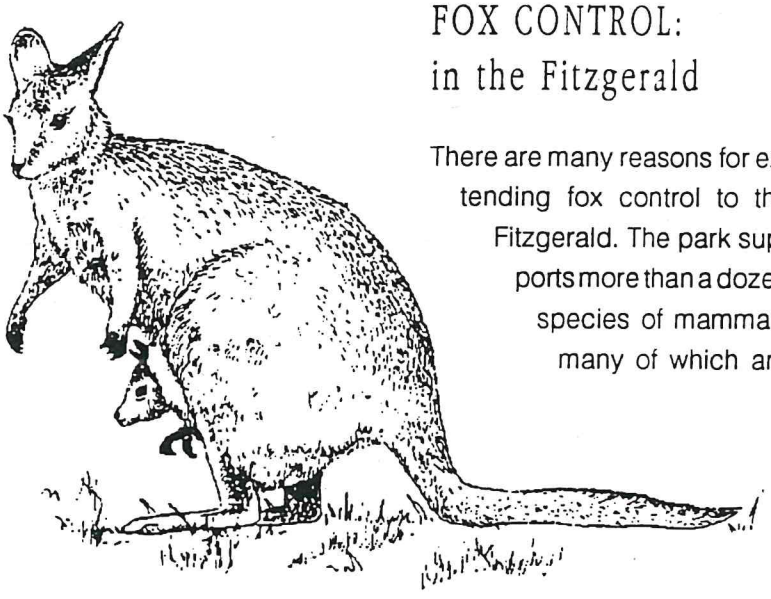


Brush-tailed rat kangaroo (Woylie)

Figure 1 a & b:
Fox Control on the Tutanning Nature Reserve - Woylies increased as a result.

CALM ecologists have carried out comparable experiments elsewhere, involving other species, with similar results. To date they have found that numbats, rock-wallabies, possums, and tammar wallabies are likewise affected by foxes. Like woylies, these species increase when the fox is controlled. CALM is now about to extend this research to the FRNP.





FOX CONTROL: in the Fitzgerald

There are many reasons for extending fox control to the Fitzgerald. The park supports more than a dozen species of mammals many of which are typically rare. The park has three species of birds that are likely to be vulnerable to predators - ground parrots, bristle birds, and mallee fowl.

In summary, the park is an area of great importance with regard to fauna conservation because so many species have managed to survive. Fox control will greatly enhance their future prospects.

Tammar Wallaby

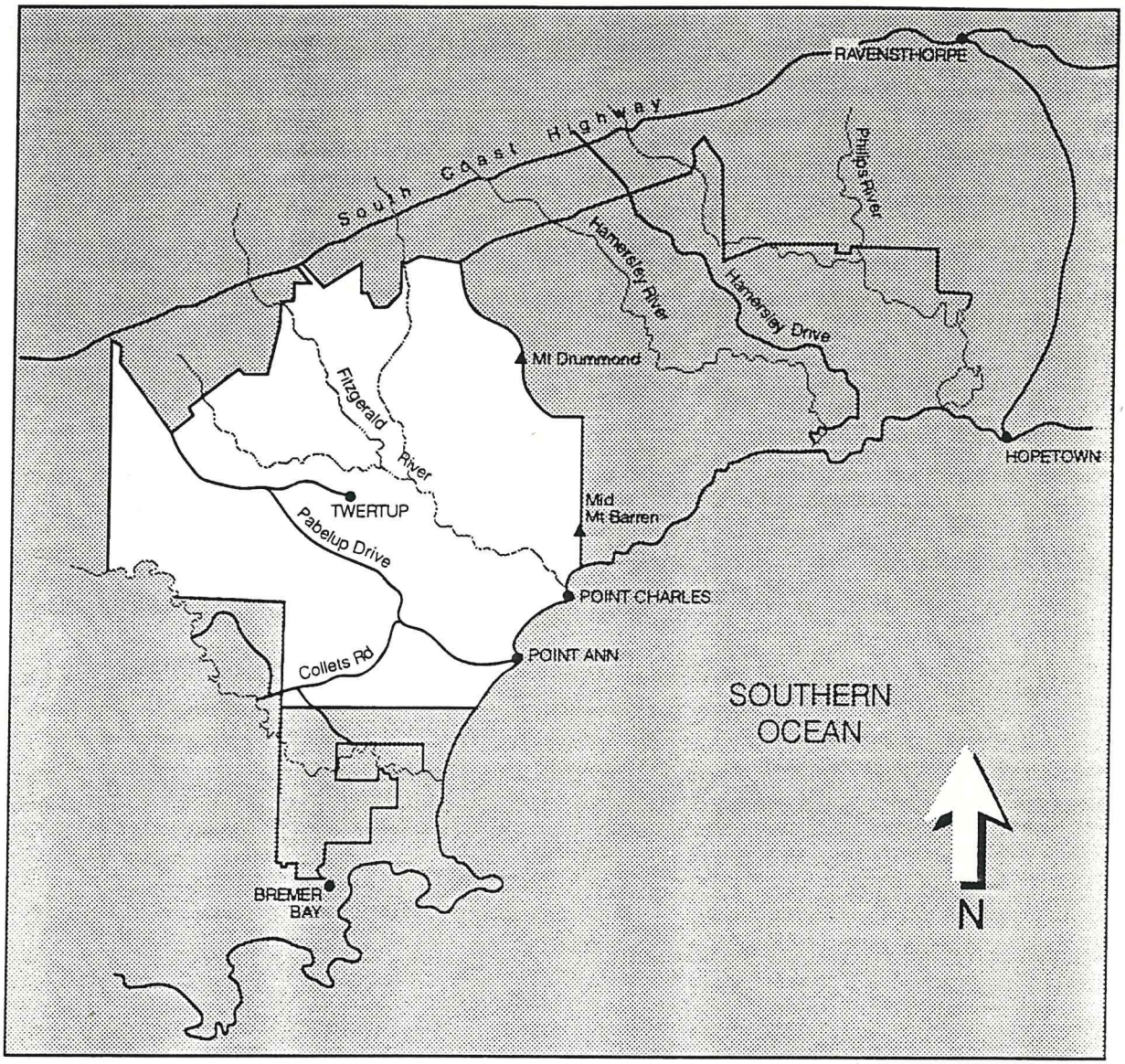


Figure 2: Area of Fox Control in the Fitzgerald River National Park

SOME QUESTIONS & ANSWERS ABOUT FOX CONTROL

1. What is the research designed to do?

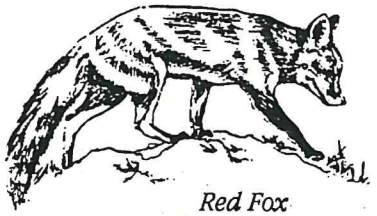
The research will identify, protect, and greatly extend our knowledge about the number of species threatened by foxes. The knowledge gained will be incorporated into fauna management plans for the FRNP and elsewhere.

2. How will it be done?

The park will be divided approximately into two equal parts: for the next 4-5 years, foxes will be controlled by baiting in the western half; in the eastern half of the park, foxes will not be controlled (see Fig.2).

3. How will the fox be controlled?

By the use of special fox baits containing 1080 poison dropped from an aircraft twice a year.

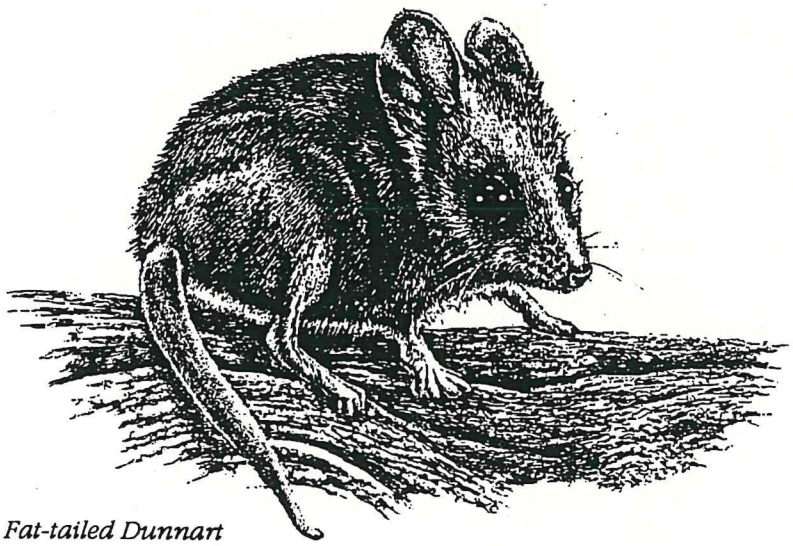


Red Fox

4.
How is it possible to control foxes without affecting the fauna?

More than 15 years of research by the Agriculture Protection Board (APB), the CSIRO and CALM has been directed towards this problem. APB scientists have shown that much of the fauna is naturally tolerant to 1080, while the fox is extremely susceptible to 1080. Our fauna has evolved tolerance to 1080, because some of our plant species (*Gastrolobium* sps.) manufacture 1080 naturally in order to deter grazing by native animals. The Fitzgerald has nine such species, and recent determinations, not surprisingly, have shown that Fitzgerald mammals have a high level of tolerance.

Pygmy Possum



Fat-tailed Dunnart

Armed with this knowledge, APB and CALM scientists have exploited this natural tolerance to 1080 in designing baits to control foxes. Meat baits are used because when dried, the meat becomes tough and stringy - indeed, too tough for native carnivores to chew. By making the baits large enough, an additional safety factor can be built in because, even if a small carnivorous animal were capable of eating a meat bait, to be at risk, it would have to eat an amount greater than its own body weight at one sitting!

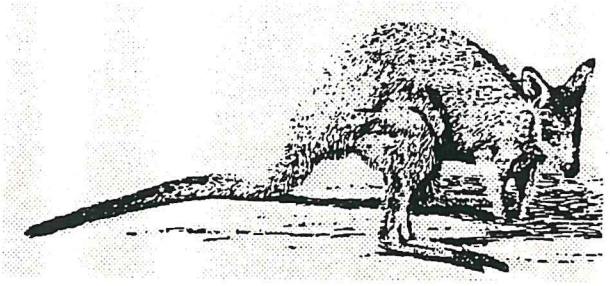
Finally, many native mammals within the Park are herbivorous; for obvious reasons, meat baits pose no threat to these plant eating species.

5.
How much 1080 will be used?

Research has shown that 6 baits per square kilometre reduces the fox population by 90 percent. Within 6 baits, the total amount of 1080 is infinitesimally small. To put it another way, CALM will be distributing an amount of 1080 weighing *less than 1/10th of an aspirin tablet* per square kilometre.

6.
Does 1080 persist in the environment?

Definitely not. Research done at Curtin University for CALM has shown that 1080 is rapidly degraded by soil microbes.



Western Brush Wallaby

There is no possibility that 1080 will persist, and therefore accumulate, in the environment.

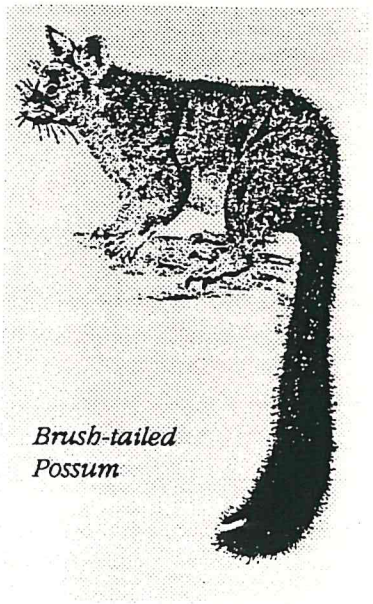
7. Does baiting pose a risk to the public or domestic animals?

There is no risk to the public or domestic stock.

However, if dogs or cats are allowed to roam or stray into the park, they will most certainly be at risk. It is essential that the public, and the farming community in particular, be aware of this possibility. Baits will be strictly laid within the park boundaries only.

8. How will we know if fox control has been successful?

Animal populations that are under attack by foxes will increase in the fox control area. CALM scientists have already collected data on the abundance of all the species in the park, and more data will be collected as this experiment proceeds. By comparing the abundance of each species in the fox control area with the area that is not subject to fox control, CALM will learn more about the impact of predation on native fauna.



Brush-tailed Possum

9. What are some of the benefits of fox control.

Species will increase which is a important conservation goal. It is possible that the very rare and endangered *Dibbler* may increase significantly; ground parrots, bristle birds and mallee fowl may become more common. CALM is confident that tammar wallabies, possums, bandicoots, brush wallabies and woylies will become more numerous. The response of the many smaller marsupial species and native rodents will be followed with great interest, because very little is known about the impact of predation on these species.

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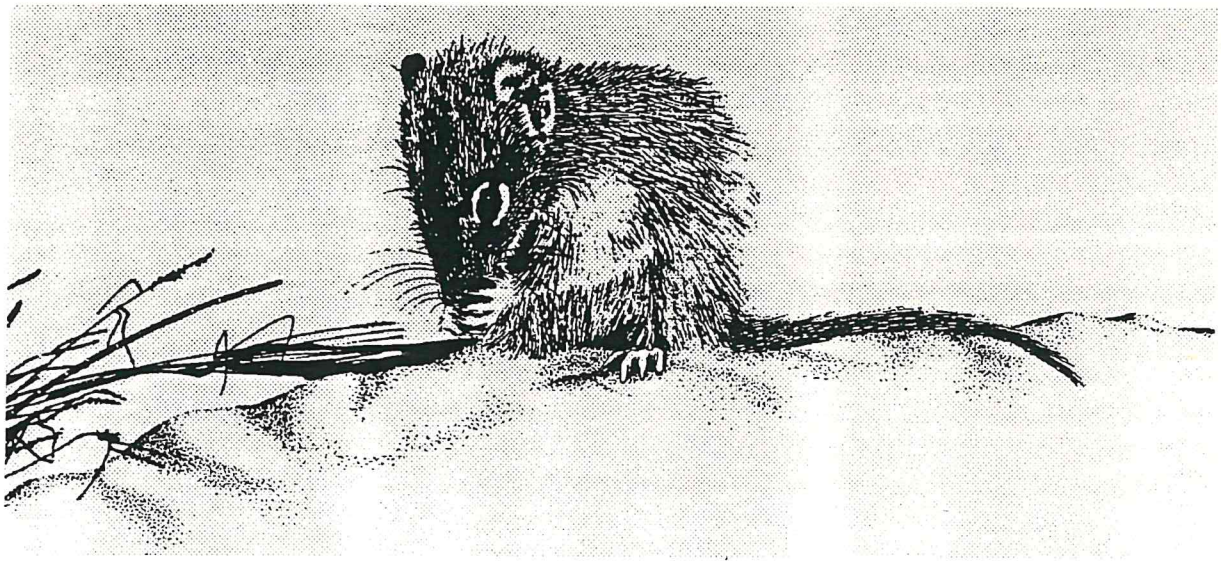
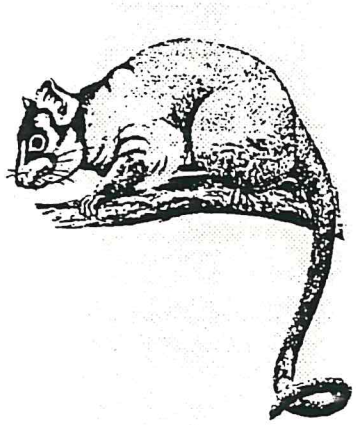


The Dibbler



Ring-tailed Possum

Eventually the larger species e.g. wallabies, possums, mallee fowl and so on will become more visible as they become more numerous. This will make the park a much more interesting place, not only for local people, but it will enhance the tourist appeal of the park as well. As these species are restored to their former abundance, ecologists will be able to study their ecology, and determine the effects of other factors affecting their abundance.

10.
The Future

CALM views baiting for foxes as a holding action, an action that is necessary to conserve endangered species. The ultimate solution to the fox problem is biological control. Research is already in progress and CALM scientists are participating in this important research.