DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
SCIENCE AND INFORMATION DIVISION

FERAL CAT CONTROL: GENERAL RESEARCH PROPOSAL

Background notes: Wanjarri Meeting 10th August 1993
Prepared by N.D. Burrows

1. BACKGROUND

The domestic or feral cat (*Felis catus*) is generally thought to have descended either from the African wild cat (*Felis silvestris lybica*) or the Egyptian cat (*Felis caffra*). It was originally domesticated in Egypt about 2,000 B.C. and was highly regarded by Egyptian society, often given god-like status.

The cat family (Felidae) are the most efficient carnivores of all land mammals. The felids are indigenous to all regions of the world except Australasia and most islands, but the domestic (feral) cat is now widespread throughout these areas.

No one knows exactly when or how cats arrived in Australia, but there is historical (explorers diaries) and oral evidence (from Aborigines) which suggests that they have been around for a long time and certainly pre-date European settlement of the arid zone. The first European explorers into the arid zone in the late 1800s (such as geologist Winnecke and prospector Carnegie) observed feral cats. There are theories that feral cats originated from early (1600s) shipwrecks off the W.A. coast, or were introduced by the Macassans who traded with the northern Aborigines.

Feral cats have successfully adapted to a wide variety of habitats, from inhospitable deserts to sub-antarctic islands. They are formidable predators and incredibly robust, hunting and surviving on whatever is available including insects, reptiles, birds and native mammals. They do not need to drink, obtaining sufficient moisture from their prey, so thrive in the dry, open country of W.A.'s semi-arid and arid zones.

While there has been little research, there is a growing body of evidence that Australia's native fauna have been severely diminished by the feral cat. For example, researchers believe that the feral cat population in the Northern Territory exceeds 100,000, which each year kills about 36.5 million small native animals.

Australia's arid zone fauna has been hardest hit by recent extinctions and declines. About 30% of all arid zone mammals are now extinct and about 90% of medium size mammals are either extinct or are in serious decline. Research by arid zone scientists has demonstrated that feral cats are capable of decimating populations of medium size mammals and are probably the major cause of extinctions.

There is no doubt that feral cats represent a serious threat to our native fauna.

Research has also demonstrated that in the arid zone, control measures which are effective against foxes and dingoes (e.g., 1080 dry meat baiting) are ineffective against feral cats, which prefer to hunt live game. In fact, in a trial in the Gibson Desert, cat density increased 4 fold when foxes and dingoes were controlled by 1080 baiting.

Currently, there are no suitable methods for controlling feral cats over a large area.

2. GENERAL RESEARCH PROPOSAL

The following outlines the proposed research into feral cat control. Before commencing any research, detailed Research Plan Proposals will need to be prepared and approved by CALM's Science and Information Division.

Funding will largely determine how much of the following proposal can be achieved.

2.1 Aim

Cats can be classified according to their degree of "ferality" or dependence on humans;

i) Dependent, non feral - these are pet or house cats, which although "fed", still hunt.

ii) Semi dependent, semi feral - these are strays, farm cats, rubbish tip cats, alley cats, etc.

iii) Independent feral - true feral cats which have no reliance whatever on human contact.

The best means of controlling the impact of cats on native fauna will depend on the degree of "ferality" of the cat (as classified above) and on their habitat.

The proposed research aims to develop suitable control measures for semi-feral and feral arid zone cats.

2.2 Strategy

To achieve the above aim, it is proposed that CALM's overall feral cat control research will advance on a number of fronts and in collaboration with other agencies. The intention is that this research will be carried out in several areas across the State and will be funded from a number of sources.

Following a survey to determine its suitability, it is intended that the north-eastern goldfields would be one of several foci for research.

Briefly, the overall research strategy is:

i) To study the demography and general biology of semi-arid and arid zone and feral cats.

This will involve developing reliable techniques for estimating feral cat populations, ageing individuals, safe trapping animals, radio tracking individuals to determine activity patterns and home ranges, habitat preferences, general breeding biology, fate and dispersal of young and seasonal diet habits from gut content and scat analysis.

ii) To develop and evaluate trapping and baiting control techniques.

Effective traps, lures, bait attractants and bait presentations will need to be developed. The uptake of a range of baits and attractants will be evaluated in the field and seasonally. A more detailed proposal has been prepared and circulated.

iii) To study the interactions of foxes and cats.

The interactions between foxes and cats will be examined by setting up an experiment to monitor changes in the density of cats following fox control by conventional 1080 baiting.

iv) To investigate the biological control of feral cats

This is a longer term research prospect. Initially, blood samples will be taken from arid zone feral cats to screen for endemic viruses. Depending on the outcome of this, there exists the potential to introduce to arid zone feral cat populations a cocktail of infectious diseases which are common in urban cat populations and for which vaccines exist.

Research proposed for the Wanjarri Nature Reserve and surrounding pastoral leases and for which corporate sponsorship is sought would focus on:

i) Developing appropriate trapping and baiting control techniques for both semi-feral and feral cats (point ii) above). Part of this research would involve a study of the demography and biology of semi-feral and feral cats in the region. Blood samples would also be taken from trapped cats for viral assay. Data on the impact of semi-feral cats (originating from townships and settlements) on native fauna is needed. There is also a need to determine the extent to which semi-feral cats emanating from townships are a source of truly feral cats throughout the region.

ii) Investigating the interactions between foxes and feral cats, both of which are threats to wildlife. There is some evidence that eradication of foxes and dingoes results in a dramatic increase in the feral cat population. This needs to be substantiated to truly evaluate the merits of fox control for nature conservation reasons.

Initially, the plan is to survey Wanjarri Nature Reserve and surrounding pastoral leases and mining communities to determine

feral cat densities. Clearly, to study feral cats requires a sufficient density of cats to work with.

3. OUTCOMES

We anticipate that this research will produce:

- A cat specific bait which can be efficiently dispensed over a large area and which is highly effective in reducing cat densities.

- Guide-lines for applying the baits e.g., when, where, how many, how often.

- Techniques for determining cat density (a cat density index).

- Quantitative information on the spatial and temporal density of cats, their activity, and their diet habits.

- Guide-lines for managing the semi-feral cat problem in and around townships.

- Information on diseases endemic in semi-feral and feral cats in the region

4. ASSOCIATED STAFF

Although the details of who will do what have yet to be worked out, the research proposed for the Wanjarri area would involve staff from CALM's Goldfields Region (Kalgoorlie), Science and Information Division, and neighbouring mining companies.

5. COST ESTIMATE

It will cost about $45,000 annum^{-1} for 2 years to implement the Wanjarri based research described above. Annual contributions would be made up of:

CALM contribution;

Salaries	
Level 6 scientist (20% of time)	$10,000
Level 4 technical officer (20% of time)	$8,000
Materials	$6,000
Administrative overheads	$3,000
TOTAL	$27,000

Corporate sponsorship sought

Vehicle running	$9,000
Travel expenses	$6,000
Aerial baiting	$3,000
TOTAL	$18,000

6. POTENTIAL BENEFITS TO CORPORATE SPONSORS

Findings from this research will provide valuable data and information for improving the environmental management of the arid zone, including nature reserves administered by CALM and pastoral leases and communities managed by mining companies. Corporate involvement in this project will demonstrate care and concern for the environment of the north-eastern goldfields region. There is also considerable potential for corporate sponsors to receive positive publicity and acknowledgement through various media including;

Scientific articles, conferences etc.
Magazine articles such as Landscope and mining magazines
Newspaper, radio and television coverage

Neil Burrows
Senior Research Scientist
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Acknowledgement

Some of the information presented in this document was obtained from:

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