Project Plan SP 2003-005

Development of effective broad-scale aerial baiting strategies for the control of feral cats

Animal Science

Project Core Team

Supervising Scientist	Dave Algar
Data Custodian	
Site Custodian	

Project status as of Nov. 30, 2018, 9:15 a.m.

Approved and active

Document endorsements and approvals as of Nov. 30, 2018, 9:15 a.m.

Project Team	granted
Program Leader	granted
Directorate	granted
Biometrician	required
Herbarium Curator	not required
Animal Ethics Committee	not required

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Biodiversity and Conservation Science Program

Animal Science

Departmental Service

Service 6: Conserving Habitats, Species and Communities

Project Staff

Role	Person	Time allocation (FTE)
Supervising Scientist	Dave Algar	0.5
Technical Officer	Neil Hamilton	0.5

Related Science Projects

SPP 1996/014

Proposed period of the project

None – None

Relevance and Outcomes

Background

Control of feral cats is recognised as one of the most important conservation issues in Australia today. The impact of feral cats on native fauna is acknowledged by Commonwealth legislation, as outlined in Schedule 3 of the Endangered Species Protection Act 1992. The national 'Threat Abatement Plan for Predation by Feral Cats' (Anon. 1999) lists 38 species on Schedule 1 of the above Act for which there is a known or inferred threat from feral cat populations. That is, 38 endangered species have been identified as potentially benefiting from effective feral cat control, as part of their management/recovery programs. Predation by feral cats (Felis catus) has been identified as one of the major obstacles to the reconstruction of the fauna, particularly small to medium-sized mammals, in the arid and semi-arid zones of Australia (Dickman 1996; Anon. 1999). Anecdotal evidence has indicated that predation by feral cats, either acting singly or in concert with other factors, has resulted in the local extinction of a number of species on islands and mainland Australia. Many of these species are now restricted to several offshore islands, others have undergone dramatic contractions in their former mainland range. Due to small population sizes and restricted geographic ranges these species are vulnerable to total extinction. Predation by feral cats also affects the continued survival of many native species persisting at low population levels (Dickman 1996; Smith and Quin 1996) and has prevented the successful re-introduction of species to parts of their former range (Gibson et al. 1994; Christensen and Burrows 1994). Broad-scale baiting offers the best option to control feral cats in strategic areas and is seen as the method most likely to produce an effective operational method for cat control (Anon. 1999). Development of an effective baiting technique for the control of the feral cat is cited as a high priority by the national Threat Abatement Plan for Predation by Feral Cats (Anon. 1999). The Department of Conservation and Land Management has designed and developed a bait medium that is attractive to feral cats and effective in controlling them on a localised scale. The baits are manufactured at the Department's Bait Factory at Harvey. This bait medium has been employed as an integral part of successful island cat eradication programs off the Western Australian coast (Algar and Burbidge 2000; Algar et al. in press) and was used as the sole tool of eradication on Faure Island (Algar et al. in prep.). The program, in progress, described in this SPP is aimed at developing optimal broad-scale control programs for feral cats.

Aims

There are a number of key factors that need to be researched if an effective broad-scale aerial baiting strategy for feral cats is to be developed. These research areas need to be examined in chronological order if the control strategy is to be optimised. The research areas are listed below: -

1. to examine bait uptake in relation to the time of year to enable baiting programs to be conducted when bait uptake is at its peak and therefore maximise efficiency;
2. to examine baiting intensity (number of baits laid/km2) in relation to baiting efficiency to optimise control;
3. to examine baiting frequency (number of times/year or yearly intervals) required to provide sustained effective control.
4. In addition to optimising the various parameters of baiting programs, it will be necessary to research two further factors: -
5. to assess the potential impact of baiting programs on non-target species populations and devise methods to reduce the potential risk where possible;
6. to provide scientific validation of the Track Density Index (TDI) as a reliable estimate of relative cat abundance. The technique initially is required to provide an objective assessment of baiting frequency.

These research areas are discussed in detail in the following sections.

Expected outcome

The step-wise approach to developing an optimal broad-scale cat predation control strategy for wildlife recovery outlined above is being pursued to provide for effective and cost-efficient wildlife recovery. The focus is on optimising cat predation control through aerial baiting and providing a comprehensive evaluation of any impact on non-target species populations. The program is structured to enable analysis of the cost-benefit of various baiting regimes on both feral cats and non-target species and provide information essential to gaining registration of the cat bait. Once registration is achieved the baiting protocols developed will be able to be implemented across the arid and semi-arid interior of Australia and perhaps elsewhere in the world.

Knowledge transfer

This research program extends predator control and wildlife re-introductions to the semi-arid and arid zones. Once registration of the cat bait has been achieved, operational campaigns can be conducted by the Department to control feral cats in strategic areas under the umbrella program ‘Western Shield’. Results of this program will also be of considerable value to other States and Territories involved in feral cat control and re-introduction projects.

Tasks and Milestones

Date
Comments
31/12/2002
Optimising timing of baiting
31/12/2004
Baiting intensity trials
31/12/2005
Non-target uptake assessment
31/12/2005
Census techniques
31/12/2005
Toxic baiting and baiting frequency

References

Algar, D. and Burbidge, A.A. (2000). Isle of cats: the scourging of Hermite Island. Landscope 15(3), 18-22.

Algar, D., Burbidge, A.A. and Angus, G.J. (in press). Cat Eradication on the Montebello Islands. IUCN Species Survival Commission, Invasive Species Specialist Group. Eradication of Island Invasive – Practical Actions and Results Achieved (ed. D. Veitch)

Algar, D., Angus, G.J., Brazell, R.I., Gilbert, C. and Withnell, G.B. (in prep.). Farewell Felines of Faure. To be submitted to Wildlife Research.

Anon. (1999). Threat Abatement Plan for Predation by Feral Cats. Environment Australia, Biodiversity Group, Commonwealth of Australia.

Christensen, P.E.S. and Burrows, N.D. (1994). Project Desert Dreaming: the reintroduction of mammals to the Gibson Desert. Pp. 199-208 in Reintroduction Biology of Australian and New Zealand Fauna ed by M. Serena. Surrey Beatty and Sons, Chipping Norton.

Dickman, C.R. (1996). Overview of the impact of Feral Cats on Australian Native Fauna. Report to Australian Nature Conservation Agency.

Gibson, D.F., Johnson, K.A., Langford, D.G., Cole, J.R., Clarke, D.E. and Willowra Community, (1994). The Rufous Hare-wallaby Lagorchestes hirsutus: a history of experimental reintroduction in the Tanami Desert, Northern Territory. Pp. 171-76 in Reintroduction Biology of Australian and New Zealand Fauna ed by M. Serena. Surrey Beatty and Sons, Chipping Norton.

Smith, A.P. and Quin, D.G., (1996). Patterns and causes of extinction and decline in Australian conilurine rodents. Biological Conservation 77, 243-67.

Study design

Methodology

Biometrician's Endorsement

required

Data management

No. specimens

N/A

Herbarium Curator's Endorsement

not required

Animal Ethics Committee's Endorsement

not required

Data management

The data will be archived on databases at Science Division, Woodvale. The database for baiting frequency will be transferred to Operations staff responsible for overseeing cat control operations in Western Shield.

Budget

Consolidated Funds

Source	Year 1	Year 2	Year 3
FTE Scientist			
FTE Technical			
Equipment			

Source	Year 1	Year 2	Year 3
Vehicle Travel Other Total			

External Funds

Source	Year 1	Year 2	Year 3
Salaries, Wages, OVertime Overheads Equipment Vehicle Travel Other Total			