



Feral Animal Control Program

**Bunbury-Harvey Regional Council
Stanley Road Waste Facility**

SEPTEMBER 2017



Prepared by
Shane Butcher
Animal Pest Management Services
Ph: (08) 97262537
Email : enquires@animalpest.com.au
Web : www.animalpest.com.au



DISCLAIMER

The information contained in this document is the Intellectual Property of Wildlife Services Pty Ltd for the Butcher Family Trust, trading as Animal Pest Management (APMS) and remains the property of the company in perpetuity. This document, or any part of it, cannot be reproduced, copied, used, disseminated or distributed to any person, electronically, verbally or otherwise, it is not to be directly sent to any other party apart from by Animal Pest Management Services without express written consent of the director of APMS.

Animal Pest Management Services assumes no liability for any loss resulting from errors, omission or misrepresentations made by others.

1 Introduction

Animal Pest Management Services (APMS) have conducted feral cat and fox control programs regularly since 2013 at the Stanley Road Waste Facility Management Site (SRWFMS).

This report outlines the program undertaken during September 2017, with results, findings and recommendations.

2 Program and Methodology

During previous programs the emphasis was on feral cat control due to the high numbers present throughout site. However, this program (along with the March 2017 program) had a strong emphasis on conducting a high level of control on foxes as well as feral cats. The impact that foxes have on native fauna is likely to be equal, if not greater than that of feral cats. In fact, foxes are regarded as a keystone species as they reduce biodiversity and impact on the survival rates of native animal through predation throughout large areas of entire ecosystems. Foxes are also considered a threat to 14 species of birds, 48 species of mammals, 12 species of reptiles and two (2) species of amphibians.

Significant research has demonstrated the effects of fox predation, as described below. Foxes are seen as a major pest species threatening the long-term survival of a range of native fauna (G. Saunders *et al* 1995). Foxes have been identified as a factor limiting the success of seven out of 10 mainland reintroductions of native fauna (Managing Vertebrate Pests; Foxes 1995). Foxes have had a significant impact across mainland Australia through predation on both native wildlife and introduced domestic animals (National Parks and Wildlife NSW 1999.). Predation by the fox is considered to be a major threat to the survival of native Australian fauna. Small ground dwelling mammals between 35 grams and 5.5kg and ground-nesting birds are at greatest risk (Burbidge and McKenzie, 1989 and National Parks and Wildlife NSW 1999).

We therefore implemented a trapping program tailored to target both foxes and feral cats simultaneously. This trapping program was undertaken between the 18th and 22nd of September (inclusive).

The feral cat and fox trapping control program was conducted for Bunbury-Harvey Regional Council in order to remove feral cats and foxes from the Stanley Road Waste Facility site as well as maintain low population levels of both pest species. Both feral cats and foxes are likely to have a detrimental impact on native fauna, especially any quenda (*Isodon obesulus*) that are present throughout site through predation. Because of this feral cats should be controlled continuously.

The primary objective of the control program was to reduce the negative impact on the native fauna population caused by foxes and feral cats through predation.

Feral cat control was carried out in the Stanley Road Waste site using only cage traps. These traps were strategically set in areas where recent feral cat activity was present, or where experience and history suggested that feral cat activity was likely to occur within the vicinity, or where recent sightings had been reported to.

The cage traps were set late each evening and checked early each morning. Once checked each morning, all cage traps were closed off with the bait/lure removed. This was to avoid capturing any non-target species during the heat of the day. Traps were also set in areas where they would reduce the chance of capturing a non-target species.

Any feral cats caught in traps were assessed for any domestication such as collar, microchip, tattoo or even domestic tendencies or behavioural traits. Cats which were deemed feral were to be removed from site and humanely euthanised in a safe location and disposed of by burial.

Fox control consisted of using rubber-jawed foot-hold traps set strategically in areas where recent fox activity was present, or where experience and history suggested that fox activity was likely to occur, or where recent sightings had been reported to.

Once the foot-hold traps were set, they remained set for the duration of the control program. The traps were checked early each morning. Traps were also set in areas or in certain ways where they would reduce the chance of capturing a non-target species.

3 Findings and Results

During the trapping program, a total of one (1) feral cat was caught. The details of the feral cat can be seen below in Table 2. The trapping program was undertaken over 4 consecutive nights.

In the Table 1 below, we have outlined the total captures of feral cats since 2013 during each trapping program.

Table 1. Details of the feral cats captured during each control program between 2013-2017.

PROGRAM DATE	NUMBER OF FERAL CATS CAUGHT
September 2017	1
March 2017	2
MAY / JUNE 2016	0
JULY 2015	0
JANUARY 2015	1
JULY 2014	6
DECEMBER 2013	1
JULY 2013	3
FEBRUARY 2013	13
TOTAL	25
AVERAGE	2.6

Graph 1. Demonstration of Number of Cats Caught in Every Trapping Program

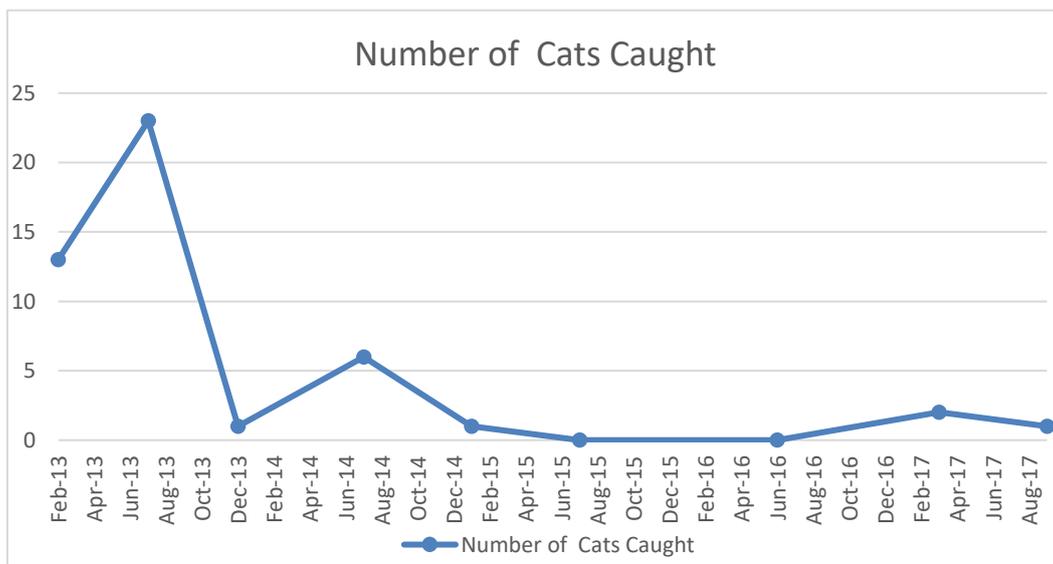


Table 2. Details of the feral cats captured during the control program.

Date captured	Sex	Weight	Colouration	Stomach contents	Comments
20 th September	Female	3.0kg	Black	Empty	Quite a healthy feral cat



Figure 1. Female feral cat caught at SRWFMS

During the trapping program, we also caught one (1) fox. The fox was an adult female. The details of this fox can be seen below in Table 3. The trapping program was undertaken over 4 consecutive nights.

Table 3. Fox Capture Details

DATE	LOCATION	SEX	WEIGHT	COMMENTS
20/09/17	SRWFMS	Female	4.4 kg	Estimated to be between 1-2 years' old



Figure 2. An adult female fox caught on the 20th September.

The fox activity seemed to have reduced since the previous control program (March) and after the removal of this one female fox, there was no evidence of any other fresh fox activity.

With the abundant resources of food and habitat, it is likely that neighbouring foxes are going to migrate into this area after the removal of this residential adult fox. Migration will probably occur quite quickly as the surrounding area has a high population of foxes due to lack of control or irregular control. Given that this control program was undertaken in September, and the peak dispersal period for sub-adult foxes is in December/January, it is highly likely that 'new' foxes will migrate towards the SRWFMS site in the near future.

With two (2) males foxes caught in the previous control program, we assumed that a female fox would likely have remained post that control program. This female caught in the September program may have been the remaining fox from the March program.

The capture of an adult female fox post breeding season is a good outcome in terms of reducing the level of recruitment of juvenile foxes.

3.1 Non-target Capture

No non-target animals were caught during the program either. This is probably attributed to the areas and way APMS set up the cages in order to reduce non-target captures.

In Previous programs, there have been non-target native animal captures during feral cat trapping programs. The non-target native species caught is listed below in Table 4.

Table 4. Number and Species of Non-Target Native Animals Caught in Cat Trapping Programs

PROGRAM DATE	NUMBER OF NON-TARGET ANIMALS CAUGHT	SPECIES OF NON-TARGET
SEPTEMBER 2017	1	CROW
MARCH 2017	0	
MAY / JUNE 2016	0	
JULY 2015	2	QUENDA
JANUARY 2015	0	
JULY 2014	0	
DECEMBER 2013	1	QUENDA

JULY 2013	3	QUENDA / BRUSHTAIL POSSUM
FEBRUARY 2013	2	QUENDA
TOTAL	9	
AVERAGE	1	

The main native species previously caught have been quenda (*Isoodon obesulus*). A brushtail possum (*Trichosurus vulpecula*) has also been caught within the Stanley Road waste site.

Although we conduct trapping programs to reduce capturing non-target species, it can be a good indication that native fauna is still present within site. Quenda and possums are highly susceptible to predation from both feral cats and foxes, therefore control of these predatory feral animals is a key to ensuring the survivorship of native fauna. The nil capture of both of these species in the last two trapping programs may indicate that there are now low population levels.

During this program a crow was caught in a fox trap (foot-hold trap). Unfortunately the crow was held in the trap for an extended period of time and the rubber jaws of the trap came loose. This meant that the rubber jaws then came off the trap, which is a poor outcome because it can lead to more severe injuries without the rubber cushioning. This outcome was detrimental and every effort should be made to ensure no non-targets are captured and that injuries are reduced through properly assembled traps in future control programs.

4 Discussion

The presence of foxes within Stanley Road Waste Facility site is a cause for concern, as significant research has demonstrated the effects of fox predation. This is described below in further detail. The capture of an adult female fox is a good result and trapping should be undertaken again in the near future.

Table 5 below illustrates the number of foxes caught during previous programs, however it should be noted that the most recent trapping program was the only one where foxes were heavily targeted.

Table 5. Number of Foxes Caught During Feral Cat Trapping Programs

PROGRAM DATE	NUMBER OF FOXES CAUGHT
SEPTEMBER 2017	1
MARCH 2017	2
MAY / JUNE 2016	0
JULY 2015	0
JANUARY 2015	1
JULY 2014	0
DECEMBER 2013	1
JULY 2013	0
FEBRUARY 2013	0
TOTAL	5

Foxes are seen as a major pest species threatening the long-term survival of a range of native fauna (G. Saunders *et al* 1995). Foxes have been identified as a factor limiting the success of seven out of 10 mainland reintroductions of native fauna (Managing Vertebrate Pests; Foxes 1995). Foxes have had a significant impact across mainland Australia through predation on both native wildlife and introduced domestic animals (National Parks and Wildlife NSW 1999.). Predation by the fox is considered to be a major threat to the survival of native Australian fauna. Small ground dwelling mammals between 35 grams and 5.5kg and ground-nesting birds are at greatest risk (Burbidge and McKenzie, 1989 and National Parks and Wildlife NSW 1999).

Based on foxes being present within site and the above facts about the detrimental impact foxes have upon native fauna in Australia, we recommend that foxes continue to be targeted specifically through trapping programs which should be conducted regularly.

Feral cats have threatened the survival of over 100 native fauna species within Australia. They have caused the extinction of some ground-dwelling birds and small to medium-sized mammals. They are a major cause of decline for many land-based endangered animals which include; the bilby, bandicoot (quenda), bettong and numbat. Many native animals are struggling to survive or unable to reproduce at a rate where population growth can occur so reducing the number of these native animals that are killed by feral cats will allow their populations to propagate (Australian Government, Department of the Environment).

Predation by feral cats is listed as a key threatening process under section 188 of Australia's national environment law, the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999). Feral cats also pose the potential risk for spreading diseases which are transmissible to humans, such as toxoplasmosis.

The capture of two feral cats on site is quite an effective result. This will lessen the impact that feral cats have on native fauna through predation, however control should be continued through regular trapping events in order to maintain low numbers and low impacts on the environment.

5 Recommendations

It is our recommendation that feral cat control programs continue around the Stanley Road Waste Facility site on a regular basis as part of a coordinated effort to reduce and manage the populations of feral cats around the Kemerton Industrial area. APMS already conducts feral cat control in nearby land for tenures such as Landcorp, Cristal Mining and Simcoa, therefore by including the waste facility site, we can incorporate a larger area where control is undertaken. This can increase the effectiveness and efficiency of future programs through coordination as a greater area will be targeted, more feral cat territories will be encompassed and a higher population of feral cats can be controlled. Ongoing and regular control will avoid a rise in the feral cat populations and reduce the likelihood of reinvasion from surrounding areas that do not conduct regular control. By conducting regular control programs we can also target any feral cats that have migrated into these areas from neighbouring "uncontrolled" sites, as it is likely that there are other feral cat populations in surrounding areas. Conducting regular control will assist in protecting any native vertebrate species on site as well, particularly quenda as they are highly susceptible to feral cat predation.

At the moment, the only legal form of feral cat control is through trapping using cage traps. It is highly recommended that feral animal control programs are conducted as a minimum twice annually and are coordinated with adjoining tenures. By coordinating the trapping programs, we can not only reduce the costs because it is more efficient to target multiple properties at the same time, but it will also increase the effectiveness of each program as we can target a greater area, thus likely to remove more feral cats, which will reduce the incursion level onto Stanley Road Waste site.

Control can coincide with peaks in activity levels based on feral cat ecology, in order to achieve a more long term reduction in feral cat numbers. APMS recommends that control through trapping should be undertaken again in September after the peak breeding cycle of May/June and if warranted through activity. Sightings or feral cat activity should continuously be reported to Bunbury-Harvey Regional Council Environmental team so that when control is undertaken, these areas can be targeted.

Any control programs for feral animals should be undertaken by experienced, licenced and professional operators, as the welfare of both target and possible non-target animals remains paramount to any control program. Any lapse in welfare outcomes by poorly conducted control programs is a negative result to any animal and should not be tolerated.

As APMS can conduct all facets of the trapping program which includes setting traps, checking traps, removing caught animals and euthanizing any feral cats, we can conduct the program effectively and efficiently with humaneness a key aspect of any control program we undertake.

We strongly recommend that targeted fox control is continued in the next trapping program. Targeting foxes through trapping can provide key data on the number of foxes caught and number of foxes remaining (if any) during each control program, whereas 1080 baiting does not provide that information as the baits taken are not a true indication of the fox population as a number. Through trapping we can do the capture-removal method of monitoring where a definite number of foxes have been removed, we can then determine the number of remaining foxes.

By trapping foxes we can also assess the individuals during autopsies, which we conduct on all foxes and feral cats we trap. Important information can come from these autopsies which can allow us to improve future control programs. Such information can be, the sex, weight, age and stomach contents of foxes trapped. If trapping programs are conducted regularly, we can also provide data of numbers caught (similar to that for feral cats as illustrated in above tables and graphs). This can be valuable as it is evidence of whether control is effective in reducing numbers or any differences in populations.

APMS also modifies our foot-hold traps (further from that from the manufacture), to improve animal welfare outcomes. We will ensure that in any future trapping programs, the traps used are of a high quality and assembled correctly so there should be no faults. We have recorded every fox caught in foot-hold traps, with information on any injuries incurred to the animal, the trap set up and design. This has allowed us to design our traps in such a manner where we have reduced the number of injuries incurred dramatically, as well as tweaking the trap set to reduce capturing non-target animals.

In 2017, APMS along with the Stanley Road Waste Facility and Bunbury-Harvey Regional Council scheduled trapping programs to be undertaken twice per year in March and September. This is a good outcome as all involved know the schedule and can plan works accordingly. This will fast-track any communications and reduce red tape. We recommend that a similar approach is undertaken for 2018, with two trapping programs undertaken throughout the year.

Trapping foxes must be undertaken by a licenced operator with a minimum accreditation of Certificate III in Vertebrate Pest Management (AHC31810). All APMS staff based in Bunbury have completed a Diploma of Pest Management qualification (AHC51310). This demonstrates our significant training, qualifications and experience in the field of vertebrate pest management and suitability to coordinate and implement control programs.

The use of 1080 fox baits can be used at the Stanley Road Waste Facility Site as there are some areas where the use of 1080 can be approved. This can be undertaken during any trapping program in order to reduce costs. Baiting would need to occur a minimum of three times yearly as the baits are only palatable to foxes for a certain period of time, generally 8-

12 weeks. After that time the baits would become superfluous and result in ineffective control.

6 References

Anderson, D.R., (2001). The need to get basics right in wildlife field studies. *Wildlife Society Bulletin* 29: 1294-1297.

Braysher, M. (1993). *Managing Vertebrate Pests: Principles and Strategies*. Bureau of Resource Sciences, Canberra.

Dexter, N and McLeod, S. (2008). Modelling landscape level fox control and creating ecological traps through baiting. *Proceedings of the 14th Vertebrate Pest Conference*. pp. 68

Edwards, G.P., Pople, A.R., Saalfeld, K. and Caley, P. (2004). Introduced mammals in Australian rangelands: future threats and the role of monitoring programmes in management strategies. *Austral Ecology* 29: 40-50.

G. Saunders, B. Coman, J. Kinnear and M. Braysher. Bureau of Resource Sciences 1995. *Managing Vertebrate Pests: Foxes*

Read, J. and Bowen, Z. (2001). Population dynamics, diet and aspects of the biology of cats and foxes in arid South Australia. *Wildlife Research* 28: 195-203.

<http://www.environment.gov.au/biodiversity/invasive-species/feral-animals-australia/feral-cats>