



Feral Animal Control Program

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

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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 July/August 2018, 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, since March 2017 we 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 30th July and 3rd of August (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 two (2) feral cats were caught. The details of the feral cats 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
JULY / AUGUST 2018	2
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	29
AVERAGE	2.9

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

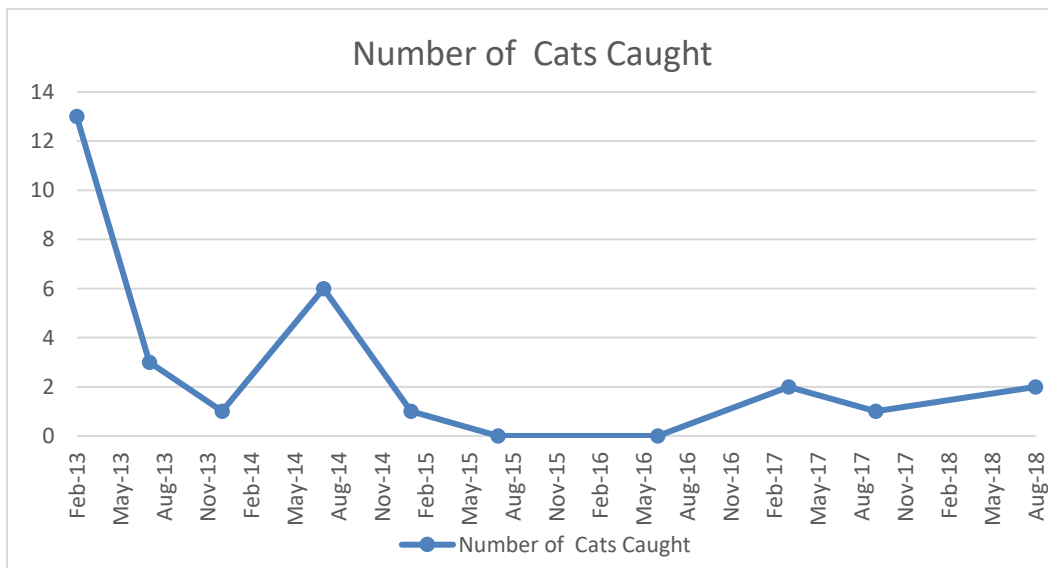


Table 2. Details of the feral cats captured during the control program.

Date captured	Sex	Weight	Colouration	Stomach contents	Comments
31 st July	Male	5.7 kg	Black	Empty	Quite a healthy feral cat
1 st August	Female	3.2 kg	Tabby	Empty	

During the trapping program, we also caught two (2) foxes. These consisted of one male fox and one female fox. The details of these foxes can be seen below in Table 3. The trapping program was undertaken over 4 consecutive nights.

Table 3. Fox Capture Details

Date captured	Sex	Weight	Stomach contents	Comments
1 st August	Male	4.5 kg	Empty	Estimated to be >10 months old.
2 nd August	Female	4.4 kg	Rubbish	Estimated to be >10 months old.

The fox activity seemed to have remained steady since the previous control program (September 2017) and after the removal of these two foxes, there was no evidence of any other fresh fox activity on the final day.

It is possible that these foxes were a breeding pair, as the program was undertaken during the peak breeding season for foxes and they were both of a sexually mature age.

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 these residential adult foxes. Migration will probably occur quite quickly as the surrounding area has a high population of foxes due to lack of control or irregular control.

The capture of an adult female fox during the 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
JULY/AUGUST 2018	0	
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	0.9	

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 three trapping programs may indicate that there are now low population levels.

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 two adult foxes, with one being female 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 since 2017, foxes were targeted more heavily through trapping as a result of their activity.

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

PROGRAM DATE	NUMBER OF FOXES CAUGHT
JULY/AUGUST 2018	2
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	7

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.

Through conducting regular control programs we 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 also 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 once 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 autumn after the breeding cycle of December/January, unless activity is noticed before then and control would be warranted prior to autumn 2019.

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 over time.

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.

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.

In the event of any rehabilitation efforts at Stanley Road Waste Facility Site through planting and seeding of native flora, we recommend that kangaroo management is taken into account. Kangaroos can have a detrimental impact on native revegetation efforts through the pulling and eating of plants. In order to minimise any damage and loss of plants and biodiversity from kangaroos, that a cull would be required. APMS can undertake this operation as all staff based in Bunbury are licensed professional shooters and have passed competency tests required by DBCA (Department of Biodiversity, Conservation and Attractions, formerly DPaW) for professional kangaroo shooters. Our staff have also undertaken the competency tests for professional shooting as part of the Standard Operating Procedure (SOP) for Macropod Shooter Accreditation which is administered by the ACT Parks and Conservation Service (ACT PCS). This is part of our requirements to perform works within the Australian Capital Territory (ACT) and ensures that our staffs' marksmanship is of the highest skill as "no other jurisdiction other than ACT test non-commercial kangaroo shooter" (ACT PCS).

All staff have also completed the National Accredited course AHCVPT203A Use firearms to humanely destroy animals. This demonstrates that as a company our staff are highly trained and experienced in the field of humane destruction of animals using firearms and ensures that humane death of target animals is a result from using firearms.

6 References

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