Control and Assessment of Feral Cat Activity at Rottnest Island, Western Australia.

A report to the Rottnest Island Authority – July 2003.

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Introduction

Officers of the Department of Conservation and Land Management (DCLM) visited Rottnest Island in November 2002 to conduct an assessment of feral cat activity, following a previous exercise in 2001 (Algar and Angus, 2002). The assessment coincided with the maintenance of firebreaks, prior to the 2002/3 summer.

The methods and findings of the assessment are reported here. Also reported is a summary of feral cat sighting records, compiled by Rottnest Island Authority (RIA) Rangers during 2002.

Method

Aims

The principal aims of the exercise were to search for evidence of feral cat activity on the island, determine the activity patterns of any animals present, and if possible capture and remove any individuals located. The exercise consisted of general searches for cat tracks on sandy or soft substrates across the island, concentrated searches for spoor in areas where cat activity was located or had been reported to island rangers, and trapping in areas where cat activity was confirmed during the study period.

General Searches

This exercise coincided with the annual maintenance of the island's extensive firebreak network. Ripping of firebreaks assisted in the detection of cat activity by removing vegetation and breaking compacted soil, such that the spoor of a range of vertebrate species could be reliably detected and differentiated.

A Suzuki 300cc ATV, driven at a speed of <15kmh^{-1}, and a 4WD utility, driven at a speed of <10kmh^{-1}, were used to inspect road and firebreak surfaces for cat spoor. A total of 30km of transect was inspected over the five days of assessment (Figure 1), most of which was inspected on more than one day. Nine, 16, 18, 21 and 16 km of transect was inspected for the five days respectively.

Foot Searches

Where cat activity was detected during general searches, the direction and pattern of movement reconstructed from intensive foot searches for spoor in the immediate vicinity.

Several areas, not accessible by motor vehicle, were also searched by foot (Figure 2). These included two locations at which cat activity had been reported to island rangers.

Trapping

Trap locations and configurations are indicated by Figures 3 and 4. Victor Soft-Catch N^{o} 3 ® leg-hold traps and wire mesh cage traps (450x450x900 mm) with baited hook trigger were employed with either scent- or food-based lures.

The scent-based lure was a blended mixture of domestic cat urine and faeces (Pongo), collected from litter at a cat refuge. The food-based lure was 5-10 kangaroo-meat sausages, with chicken fat and various minerals and plant extracts added as flavour enhancers.

Leg-hold traps were either placed in areas from which quokkas (*Setonix brachyurus*) are excluded by fencing (Plate 1) or surrounded by exclosures constructed on-site in 2001 (Plate 2).

Plate 1. Rehabilitation exclosure free of quokkas.

Scent-lure trap sets were constructed as blind sets, cleared from existing vegetation, generally a shrub of *Acanthocarpus preisii*. The trap channel was approximately 80cm x 15cm, with the traps buried at the open end of the channel. The lure was placed at the blind end of the channel, such that the only avenue of close examination was through the channel, via the set traps.

Plate 2. Quokka exclosure containing a single leg-hold trap set.

One leg-hold trap-set employed the food-based lure, suspended approximately 60cm above two buried traps. The trap was set in place on the evening of 18 November. The lure was removed daily at 0600-0630 to, prevent non-target capture, and replaced at 1700-1800. This trap was operated until the morning of the 22 November, a total of four nights.

A third leg-hold trap configuration utilised Pongo placed between two buried traps, set approximately 5cm apart. This trap set was placed at the location of a latrine used by a cat the previous night. The scat deposited was set aside and the traps buried in place. The scat was then placed between the two set traps and ‘counter-scented’ with the Pongo collected from domestic cats. The trap set was removed completely every morning at 0600-0630 and re-set at

1730-1800. This trap was operated between 19 and 22 November, a total of three nights.

Cage traps, baited with the food-lure were placed at various locations around the perimeter of the waste disposal site (Figure 4). Five traps were set in place on the evening of 19 November. Traps were serviced and closed at 0600-0700 and re-set in the evening at 1730-1800. These traps were operated until the morning of the 22 November a total of 15 trap-nights.

Results

Feral cat activity was reported to island rangers at three locations during the 12 months preceding this exercise (Brad Daw, pers. Comm.). These locations are indicated by Figure 5. Searches of these locations during the current exercise failed to detect the presence of feral cats.

Tracks of what appeared to be a single cat were noted on the mornings of the 18, 19 and 20 November. Figure 5 indicates that activity was confined to the refuse site proper and within a several hundred-metre radius. Activity to the east continued over firm ground, along the edge of Lake Herschel and could not be located on softer ground nearby (see Figure 2). Activity to the west continued over vegetated ground within a rehabilitation plot and could not be located on the cleared firebreaks nearby (see Figure 2).

One feral cat was captured at the counter-scented latrine site adjacent the refuse site entrance (Figure 5). This animal was a diluted-black and white female of a similar phenotype to those individuals captured during 2001 (Plate 3). She weighed 3.1kg with a head-body length of 47cm and carried no foetuses or placental scars. Her stomach contained a single house mouse (*Mus musculus*) and cooked chicken bones and meat. This individual was infected with the parasite *Taenia taeniaformis* and carried the adults in her stomach and intestine.

No evidence of cat activity was located during the two days of searching after the capture of this individual.

Three quokkas were captured in cage traps and released without injury. A ring-necked pheasant (*Phasianus colchicus*) and an Australian raven (*Corvus coronoides*) were captured in the same leg-hold trap (with scent-lure) on two consecutive days. Both animals received lacerations to the held limbs and were destroyed.

Plate 3. Feral cat captured during November 2002.

Discussion and Recommendations

The presence of just one feral cat was detected on Rottnest Island at the time of sampling. The coat phenotype suggests it is a close relative of the four individuals captured during 2001 and is not likely to be a recent introduction. As suggested by Algar and Angus (2002), the presence of other individuals can only be confirmed or denied by searches for activity over time.

Although feral cat activity has recently been located at a number of locations across the island, all animals confirmed to be present have been known to visit the refuse site at least periodically. This site is the major source of readily procured food for cats and represents the most efficient means maintaining adequate diet. Scavenging in and around inhabited parts of the island and the predation of native and introduced vertebrates represent less efficient means of gaining nutrition. Therefore monitoring of the refuse site should detect the presence of feral cats, regardless of whether or not they periodically use other parts of the island.

The present system of recording cat sightings should also be maintained. As sightings will inherently vary in reliability, they should be confirmed by intensive searches for spoor in the immediate vicinity of the sighting. For reasons stated above, if the sighting is distant from the refuse site, this area should also be searched for evidence of activity.

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References

Algar D. and Angus G.J. (2002) Assessment of feral cat abundance and control strategies on Rottnest Island. A report to the Rottnest Island Authority, February 2002. Department of Conservation and Land Management, Woodvale.