NOSES ON LEGS:

detector dogs helping with feral cat contol

by Michael Johnston, Mark Holdsworth, Sue Robinson and Dave Algar

More than just man's best friend, dogs are helping in the fight against feral cats on Dirk Hartog Island National Park to enable the island to be restored to its former glory and repopulated with its original wildlife.

Ever loyal and keen to please, dogs are proving extremely helpful in verifying the absence of cats on Dirk Hartog Island National Park. Six dogs, including 'Clay', a wiry-coated terrier, completed a six-week survey searching for signs of cat activity on Dirk Hartog Island as one of the techniques used to validate eradication success. Similar to detection dogs used by quarantine services at airports, the dogs used in this project adopt a seated 'focused response' posture when they locate their intended quarry, in this case cat scats or fresh scent. Clay also barks loudly to tell her handler about her find and to hurry up with the reward – a game with a favourite tug toy amid enthusiastic praise from her handler.

AMBITIOUS PROGRAM

The *Dirk Hartog Island Ecological Restoration Project* seeks to reduce the impact of invasive species on the 620-square-kilometre island in preparation for the re-introduction of at least 10 mammal species that were formerly present (see also 'Turning back time on Dirk Hartog Island', *LANDSCOPE*, Spring 2014). These have become locally extinct on the island during the past four centuries since Dirk Hartog landed on the island in 1616. Like so many other extinctions across Australia, feral cats have been one of the main culprits.

Dirk Hartog Island is the largest landmass from which the eradication of feral cats has been attempted worldwide. Until recently, feral cats were widespread over the island with dietary analysis indicating that they were consumers of a range of terrestrial and marine species, such as turtle hatchlings. A number of techniques are being used to monitor and then remove these introduced predators from the island. Given the size of the island, a 13-kilometre-long floppy-top and electric barrier fence was erected in 2014 across the island to restrict the movement of cats and create two management areas.

In May 2014, aerial baiting using *Eradicat*® baits, specifically developed in WA by Parks and Wildlife to target feral cats, was used as the primary control technique to reduce the cat population in the roughly 220-square-kilometre southern management zone. Targeted trapping followed in areas where cats were detected. Monitoring of individual cats, fitted with radio-collars, indicated that the baiting program was very effective, with 14 of 15 radio-collared cats poisoned.

The monitoring program consists of systematic searches along tracks, beaches and at bird roosts for cat signs such as footprints and scats. A number of automated cameras were also installed before baiting and continues to be used to monitor for any remaining cats island-wide. Results so far suggest that the initial stage of the program has dramatically decreased the population, with only seven un-collared cats detected and trapped in the five months following baiting.

Previous page
Main Dirk Hartog Island National Park.
Photo – Susan Pederson/Parks and Wildlife
Inset bottom left Clay searching down a hole.
Photo – Mark Holdsworth
Inset bottom right A feral cat sighted on Dirk Hartog Island.
Photo – Neil Hamilton/Parks and Wildlife

Above Clay detects some old cat scats.
Photo – Mark Holdsworth

"Dirk Hartog Island is the largest landmass from which the eradication of feral cats has been attempted worldwide."

FOLLOWING THE SCENT

Detector dogs are increasingly being used to assist with conservation monitoring work (see also 'Tackling toads', *LANDSCOPE*, Winter 2014). Their acute sense of smell provides an excellent means in detecting their target, in this case cats, and acts as a quality control on other monitoring methods. An experienced team of dogs and handlers was contracted to conduct the Dirk Hartog Island survey. Some had previously been involved with similar programs on Tasman Island off Tasmania and Macquarie Island in the sub-Antarctic.

The dogs were deployed to search areas furthest away from the track alignments and camera plots. These areas could harbour cats that had

Top The location of cat scats are recorded using GPS devices.
Photo – Michael Johnston/Parks and Wildlife

Above Mala is one of the species to be returned to the island.
Photo – Janine Guenther

Above right Western end of the barrier fence.

Right Sue Robinson, Michael Johnston and Bax recording a find.
Photos – Michael Johnston/Parks and Wildlife

avoided detection by cameras and track observations. Data from GPS collars previously fitted to some feral cats had provided information on their home range and behaviour on the island. The survey transects for the dog team were arranged to intersect with the smallest known home range area at least once.

The dog team's first week on Dirk Hartog Island was dedicated to establishing a work routine, and learning about their new habitat. The sight and smell of new species, such as sand goannas and ghost crabs, were among the barrage of new distractions that were rapidly learned and subsequently ignored before the task of finding cat scats began for the next five weeks.

The first survey was undertaken during winter 2015 to minimise the chances that poison baits, dropped 12 months earlier, would be found by the dogs. Nonetheless, dogs were always muzzled when outside of their pens, unless they were busy playing tug with their handler, in case they come across an old bait. Surveys were conducted through the cool morning hours between 5am and 11am to avoid snake encounters and minimise the risk of snakebite.

Western Shield

The work being done at Dirk Hartog Island National Park to eradicate cats complements the State-wide wildlife recovery program *Western Shield* which is working to control introduced predators on conservation lands throughout WA with the aim of restoring native animal populations.

Since the project was launched in 1996, *Western Shield* has cemented itself as one of the largest wildlife conservation programs in Australia. It is delivering the greatest impact of any program for protecting species and allowing threatened species to persist.

Baits used in the program contain the poison 1080, which occurs naturally in certain native plants in the *Gastrolobium* genus. Native animals have a high tolerance to this compound, whereas introduced predators do not, allowing the effective targeting of foxes and feral cats.

The program involves laying one million baits annually across more than 3.8 million hectares of Parks and Wildlife-managed land reducing fox numbers by 55 per cent in south-west baited areas.

Impressively, 37 new populations of threatened native animal species have been established under the program and populations of at least 53 species of chuditch, woylies, black- flanked rock wallabies and numbats among others remain in existence due to the program.

A feral cat bait, *Eradicat*®, has been developed and successfully trialled by Parks and Wildlife scientists and is being expanded to new sites of the program.

This means feral cats can now be controlled on a landscape scale in key areas where they pose a threat to native animals.

Hear more about *Western Shield*

Scan this QR code or visit Parks and Wildlife's '*LANDSCOPE*' playlist on YouTube.

Top Turtle Bay, Dirk Hartog Island National Park.
Photo – Janine Guenther

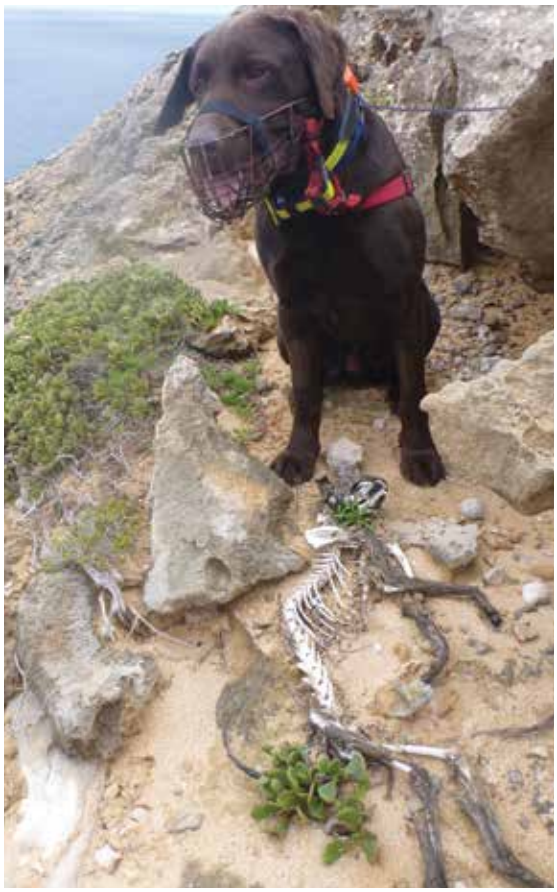
Above Greater stick-nest rats will be returned to the island.
Photo – Kim Branch/Parks and Wildlife

Opposite page
Above right Bozo with a long-dead cat.
Photo – Mark Holdsworth
Above far right Sue Robinson and Bax.
Photo – Michael Johnston/Parks and Wildlife
Right Bozo on patrol.
Photo – Mark Holdsworth

ALL IN A DAY'S WORK

Each day, two handlers and their dogs walked two loop routes within the priority search areas, each taking two to three hours. On each search, the handlers discreetly placed a fresh cat scat to ensure the dogs were still searching correctly and to reinforce a positive reward experience for finding a scat. Each dog wore a GPS logger, which revealed that the dogs covered up to twice as much ground when compared to the handlers' GPS tracks. During the 2015 survey, the dogs covered a total of 874 kilometres, with the long-legged 'Bax', a malinois, leading the way with 253 kilometres, while the handlers walked a total of 540 kilometres.

In addition to the work of the dogs, the handlers, Sue Robinson and Mark Holdsworth, accumulated approximately 100 hours of spotlighting using high-power headlamps. In some open vegetation and high dune areas the spotlighting was effective for several hundred metres and it provided an additional survey method and contributed to the confidence of the search result.



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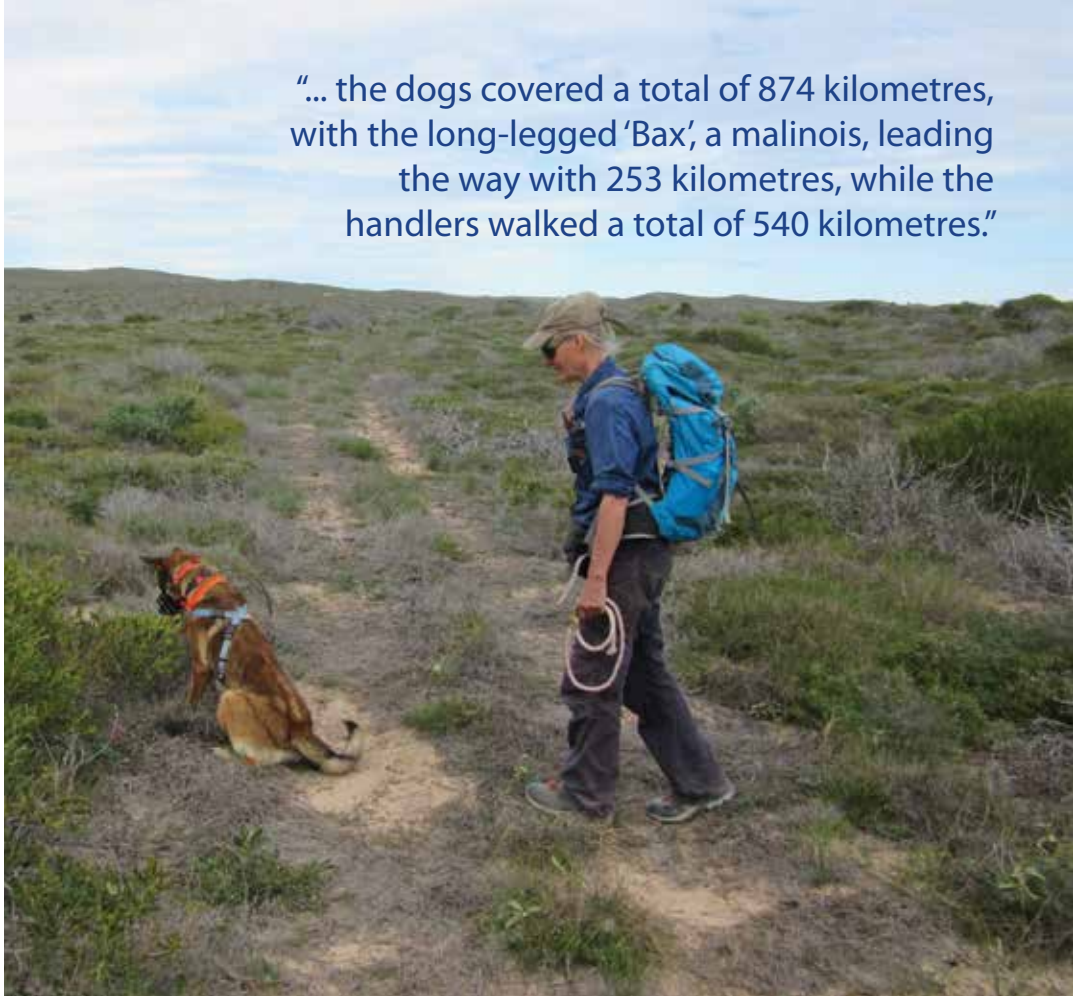

By the end of the 2015 survey, the dogs had detected just one recent cat scat. Interestingly, the handlers found some old latrines and single desiccated scats but the dogs were not interested in these, indicating they were very old and possibly pre-dated the death of the last cat trapped in the south. One thing that Clay and her colleagues cannot interpret for us is the age of the scats. The areas where scats were found were searched by a different dog. The dogs did not adopt their 'focused response' posture during repeated surveys in these areas suggesting that it had been some time since a cat was resident. A cat was subsequently removed in November 2015 and there were no fresh detections made during the follow-up 2016 winter survey.

The combination of monitoring techniques provides a high level of confidence that the south of Dirk Hartog Island is likely now to be cat-free. However, the cost of missing a cat in a program of this nature warrants continued vigilance and monitoring for another two years. Additional monitoring techniques will also be employed to provide further verification that eradication has been achieved.

The dogs had a well-earned break on the day before they left the island, while their handlers visited the area north of the barrier fence to undertake a reconnaissance in preparation for the winter 2017 survey. At twice the size, this northern area will require considerable search, trapping and monitoring effort to confirm hat cats have been removed. It's a big task but Clay and her pack are up for the challenge.

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Mark Holdsworth worked for the Tasmanian State Government as a wildlife management officer and ornithologist for more than 30 years. He now shares his expertise across a range of conservation endeavours across the nation including the Dirk Hartog Island Cat Eradication Project. He can be contacted by email (mark.holdzy@bigpond.com).

Sue Robinson is a wildlife biologist specialising in invasive species management. Since 2002, a significant part of her work has been focused on the training and deployment of detector dogs for eradication and biosecurity programs. She can be contacted by email (robinson_sue@bigpond.com).

Dave Algar is a senior research scientist at Parks and Wildlife's Science and Conservation Division at Woodvale. He has worked throughout WA conducting research on feral cat control for the past 20 years. He can be contacted by email (dave.algar@dpaw.wa.gov.au).

The Dirk Hartog Island Ecological Restoration Project *is funded by the Gorgon Barrow Island Net Conservation Benefits Fund.*