Declaration

An epic project carried out over several years to eradicate feral cats from Dirk Hartog Island National Park has set the stage for reintroducing native animals to the island and returning it to its pre-European state.

on Dirk: feral cats eradicated

by Michael Johnston, Dave Algar, Mike Onus, Gary Desmond, Cameron Tiller, Jason Fletcher and Neil Hamilton

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Main Quadbikes were used to survey the island to confirm feral cats were no longer on the island.
Photo – Michael Johnston/DBCA

Top left A 2.5-kilogram female was detected by one of the cameras set up across the island.

Above left The last remaining feral cat was captured on the island on 9 October 2016.

Above *Eradicat* baits were dropped from an aircraft across the island.
Photos – Michael Johnston/DBCA

Sunday 9 October 2016 was an auspicious day for the conservation of Australian wildlife – the last feral cat on Dirk Hartog Island National Park was captured. At 620 square kilometres, Dirk Hartog is the largest island on the planet to be rid of these invasive predators, and this milestone paves the way for a number of threatened species to be reintroduced, as part of a project called *Return to 1616*.

HUNTING THE HUNTER

Three days prior to this significant day, cat footprints were observed on the track to Charlie's Harbour, on the west coast of the island. This was the first sign of a feral cat on the island in 100 days, since a spotted grey tabby was photographed in June by two of the 160 trail cameras installed across the island. While the number of observations and camera detections of feral cats were declining, it was not known precisely how many remained. The team laid poison baits during July throughout the area north of the barrier fence that bisects the island. Each bait was placed in view of a camera but this feral cat was obviously able to find sufficient prey, as it did not consume a bait and was not detected again until those prints were seen on the sandy track surface on 6 October.

Determined to capture this remaining feral cat, the team 'freshened' their traps with an aromatic blend of cat faeces and urine, which successfully lured the 2.5-kilogram female. An examination of the feral cat indicated it had never had a litter. This was a promising sign, as the last adult male feral cat was trapped on 6 May and camera and field observations suggested that the last few feral cats were travelling long distances, probably in search of mating opportunities. And, since the gestation period for cats is about 65 days, the fact that these animals had not mated bolstered the team's confidence that this female was indeed the last feral cat.

The absolute certainty of eradication success came after two more years of surveillance, during which time the team visited the island and employed multiple techniques to detect feral cats. After the capture of the 'last' feral cat, the team covered more than 46,000 bone-jarring kilometres on quadbikes without making any more observations of feral cats. The cameras did not record any more photos of feral cats during 114,000 camera trap-nights. And a team of detector dogs searched more than 800 kilometres during a month of intensive surveys (see 'Noses on Legs – detector dogs helping with feral cat control', *LANDSCOPE*, Spring 2016). These surveys were walked during the cool early morning hours to minimise the potential of the dogs encountering snakes. To illuminate their path, the dog handlers wore high-intensity head torches but did not report any eyeshine reflections, which would indicate any cats in the area.

The combined nil results achieved using these different methods over a two-year period, gave DBCA sufficient confidence to declare that all feral cats had been removed from the island.

HOW THE WEST WAS WON

The plan to eradicate feral cats from the island was based on data collected during preliminary studies conducted during 2009 and 2012. GPS radio-collars were fitted to feral cats to record data on their ranging behaviour. This was used to estimate that 300 to 500 adult feral cats were present on the island at the start of the program. Field operations to eradicate the feral cat population began in February 2014 with 15 feral cats being trapped,

Hear more about feral cat eradication on Dirk Hartog Island

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fitted with radio-collars and released. *Eradicat*® baits were dropped from an aircraft over the island in late May and were responsible for poisoning 14 of these collared feral cats. The remaining feral cat was last seen alive 12 days after baiting and was believed to have also consumed an *Eradicat*® bait but died in a location where the collar could not be detected. Trapping to capture surviving (uncollared) cats, removed seven more feral cats from south of the barrier fence.

This 13-kilometre barrier fence was constructed east–west across the 620-square-kilometre island to create two management areas, as it was not practical to monitor feral cat activity across the entire island. The floppy-topped fence was designed to limit movement of 'northern' feral cats into the south of the island and vice versa.

In 2015, five more feral cats were collared in the area north of the fence before it was baited. Only one of these feral cats ate a bait; the remaining cats were recovered in the subsequent months. Rainfall associated with Cyclone Olwyn is thought to have contributed to the reduced baiting efficacy in 2015, which led to a flush in grass seeding and supported an irruption of mouse (*Mus musculus*) numbers. However, intensive trapping removed 42 feral cats north of the fence.

As the project went on, the team was pleased to observe an increase in the number of camera detections of native mammals such as the little long-tailed dunnart (*Sminthopsis dolichura*) and ground-nesting bird species including the painted button quail (*Turnix varius*) and brown quail (*Coturnix ypsilophora*), among others. Informal observations suggest that populations of fairy terns (*Sterna nereis*), Australian bustards (*Ardeotis australis*) and the endemic white-winged fairy wrens (*Malurus leucopterus leucopterus*)

Above left A team of detector dogs joined the search for feral cats on the island. *Photo – Mark Holdsworth*

Above centre A floppy-topped fence was erected to limit movement around the island.

Above Quadbikes covered 29,000 kilometres of the island in search for remaining feral cats. *Photos – Michael Johnston/DBCA*

also appeared to benefit from the removal of feral cats.

GAZING BACKWARDS TO THE FUTURE

Dirk Hartog Island is named in honour of the captain of the *Eendracht*, who landed on the island on 25 October 1616. It is believed that feral cats become established on the island following the arrival of early pastoralists in the 1860s. The impact of invasive species on the island has led to the loss of 10 native mammal species from the island – most of which are listed as threatened species throughout Australia. The removal of feral cats provides the critical foundation to restore populations of these species back onto the island and into the future.

Pilot releases of banded hare-wallabies (*Lagostrophus fasciatus*) and rufous hare-wallabies (*Lagorchestes hirsutus*) were undertaken in August 2017. With these being judged successful, further individuals of these species were released in September 2018 (see 'Welcoming wallabies to Wirruwana', *LANDSCOPE*, Winter 2018). As native species re-establish on the island, the footprints left in the sand will once again reflect those that Dirk Hartog and his crew would have seen in 1616.

Above and inset The white-bellied sea eagle is one species that occurs on the island that is expected to benefit from the eradication of feral cats.

Above right Feral cats have not been detected on the island since 2016.
Photos – Michael Johnston/DBCA and Neil Hamilton/DBCA

Michael Johnston was employed as a senior project officer in Biodiversity and Conservation Science at DBCA. He has worked on feral cat management techniques for the past 22 years. He can be contacted by email (curiosity.catbait@gmail.com).

Dave Algar is a principal research scientist with Biodiversity and Conservation Science at DBCA. He has worked throughout WA conducting research on feral cat control for the past 30 years. He can be contacted by email (dave.algar@dbca.wa.gov.au).

Cameron Tiller was a senior technical officer with Biodiversity and Conservation Science at DBCA. He has worked on threatened species protection and feral cat management programs for the past 10 years.

Jason Fletcher is a technical and field services officer with Biodiversity and Conservation Science at DBCA. He has worked throughout WA conducting research on native and invasive species for the past 10 years.

Mike Onus is a senior technical officer with Biodiversity and Conservation Science at DBCA. He has worked throughout WA conducting research on native and invasive species for the past 42 years.

Gary Desmond is a technical and field services officer with Biodiversity and Conservation Science at DBCA. He has worked throughout the Shark Bay District for 10 years.

Neil Hamilton is a senior technical officer with Biodiversity and Conservation Science at DBCA. He has worked throughout WA conducting research on native and invasive species for the past 17 years.

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