

CATS ON NORFOLK ISLAND

*How many free-roaming cats do we have,
and what can we do to reduce numbers?*



Australian Government
Director of National Parks



LATEST CAMERA SURVEY RESULTS

Recap

In August 2019 an information pack consisting of three information sheets on free-roaming cats on Norfolk Island was released by Norfolk Island National Park to the community via a single post box drop (now also available on the Norfolk Island Regional Council website

<http://www.norfolkisland.gov.nf/services/waste-and-environment/pests-and-noxious-weeds>).

Information Sheet 1 – summarised results from a community opinion survey in 2017 which showed majority support for continued cat ownership, but under controlled conditions. Progress towards addressing community comments was demonstrated, including a snapshot of cat control over the years. The importance of education, incentives and regulation was highlighted.

Information Sheet 2 – provided facts and figures on the characteristics and impacts of free-roaming cats on Norfolk Island, including preliminary results from camera surveys.

Information Sheet 3 – explained how the community could get involved to support an integrated approach to managing free-roaming cats (feral and domestic).

The full information series forms part of an overarching 3-year project (Sept 2018 to Dec 2021) aimed at cat and rodent control on Norfolk Island, funded by Parks Australia and the Threatened Species Commissioner. It is a direct response to the local community survey undertaken in 2017 and links to several key strategic plans of relevant organisations.

Spatial capture-recapture analysis

For one month in October 2018 and October 2019, cameras were set up across the island to help predict island-wide abundance and movement of free-roaming cats.

Using this data, modelling suggests that there are **approximately 100 free-roaming cats** living on Norfolk Island at any one time (plus and minus ongoing breeding and culling). Density of cats was not found to vary significantly between 2018 and 2019.

Many factors can affect the accuracy of the model. For example, the number of cats that cannot be 'individually marked' (identified from camera to camera). Norfolk Island has many pure black cats – about 25% of cats captured over recent years were black. Issues such as distance from the camera traps, speed of movement, and even variability in cameras (of the same type) can also cause an underestimate of the true population. McIntyre et al. (2020)

For the above reasons, as well as the number of domestic cats on the island, the potential breeding rates, and the current rate of control, the modelled/predicted abundance figure is likely to be very conservative (an under-estimate).

CAT DENSITY PER SQUARE KM

100 cats roaming across the 35 square kilometre island, equates to 2.86 cats per km². A comparison with other Australian islands where feral cat control programs are, or have been in operation, is shown below.

Island	Free-roaming cat density per square km	Context
Christmas Island	0.01 cats (current estimate)	Community supported total cat eradication in 2011. The program has been running since that time (residents agreed to end domestic cat ownership once existing pets came to the natural end of their lives). Although eradication was expected to be achieved by 2020, they are still a long way from it.
Kangaroo Island	0.37 cats (current estimate, pre 2020 bushfires)	Community supported program to eradicate feral cats by 2030. The program has been running since 2016.
Dirk Hartog Island	0.60 cats (prior to successful eradication)	An uninhabited island and the site of the world's largest successful island feral cat eradication campaign to date. Commenced 2014 – last cat observed in 2016. Size of the island is 630km ² .
Norfolk Island	2.86 cats (modelled estimate)	With moderate control
Bruny Island	51 cats in 2016 (prior to project commencement) and 15 cats in 2019 (following control works) ²	Bruny island is a 352 km ² island with a human population of approximately 770 people. In 2015, 86% of the community supported the eradication of feral cats from Bruny island. This is expected to be a 20+ year project.
Australian islands		There is clear evidence of an island area effect, with the smallest islands tending to have two orders of magnitude greater density of cats than mainland Australia and Tasmanian sites.

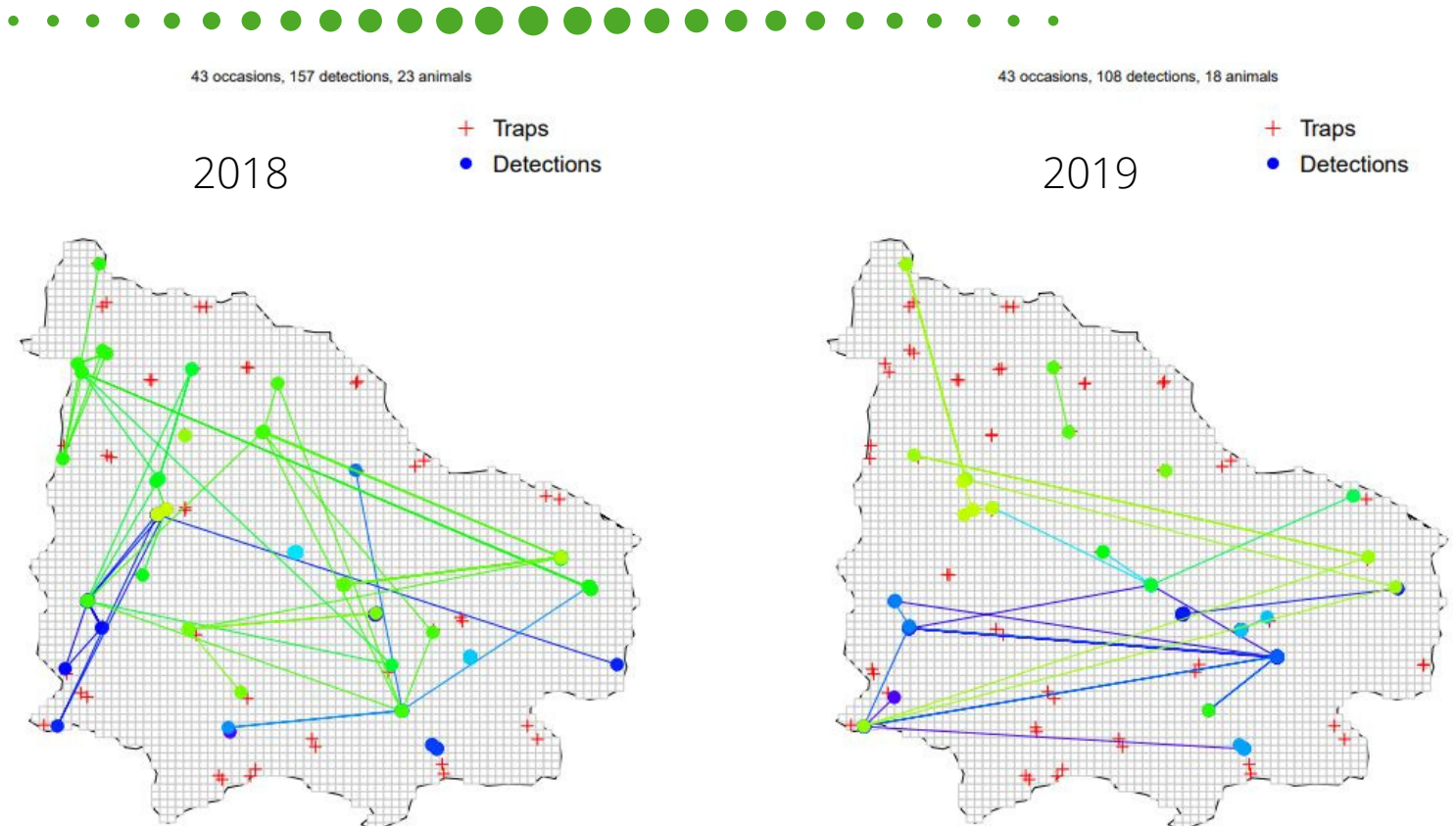


Cat movement

Using camera survey data, the movement of identifiable cats was able to be determined.

The average distance that cats moved/travelled during the one-month survey period was 950m in 2018 and 1.2km in 2019.

Some cats moved a lot further - up to 6.9km in 2018 and 6.8km in 2019. As such, a cat that is seen at Steeles Point one day, can also be spotted at Puppy's Point just a few days later.



Each shade of colour is a separate individual and if captured at more than one location, then a track line is drawn for that individual. With so many unique individuals (23 in 2018 and 18 in 2019) it is difficult to tell the shades of colour apart, but it goes from a light yellow-green, through different shades of green, light blue through to dark blue.

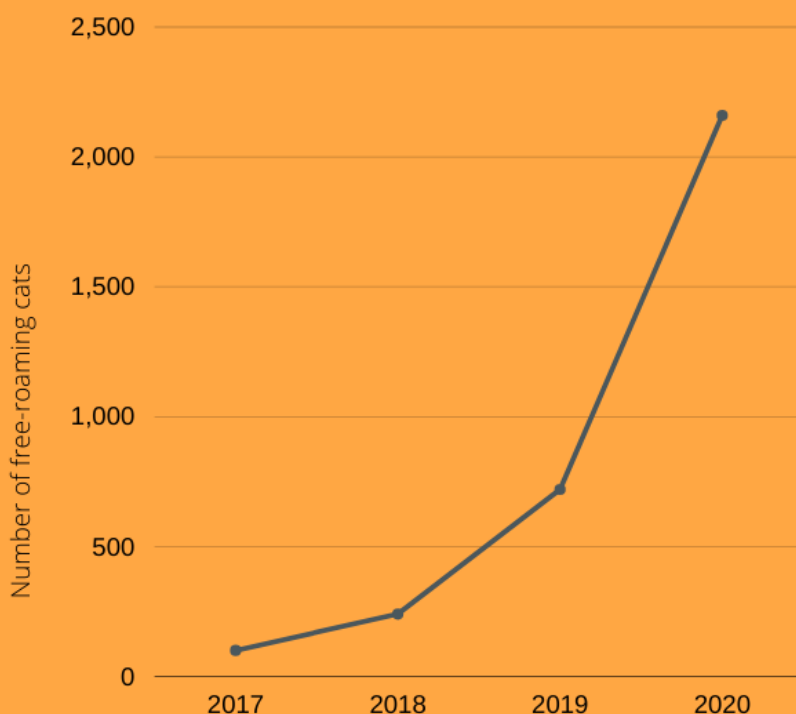
MODELLED FREE-ROAMING CAT POPULATION VERSUS CURRENT CONTROL EFFORTS

This graph shows the potential number of free-roaming cats if no control was undertaken by authorities on Norfolk Island.

Cats can have litters of up to 5 kittens and can breed several times a year when resources are not limiting. When conditions are good, populations of feral cats can double every 8 months (Parkes *et al.* 2014). With a lack of mammalian predators and high prey availability in terms of rats and land and sea birds, it is likely that resources rarely limit breeding on Norfolk Island. Therefore, the representation shown in this graph is conservative – we've based it on 80% of female free-roaming cats (e.g. in Year 1, 40 cats of the estimated 100 being female and of breeding age) breeding twice a year and having three kittens each time (with a higher breeding rate the number would be significantly higher!)

The current level of control of free-roaming cats by Norfolk Island National Park and Norfolk Island Regional Council (average of 137 cats p.a. between 2017-2019) is keeping a rapid population rise at bay - not seeing a decline in the population, but not seeing it get significantly worse. **Any decline in control efforts, and/or an increase in domestic cats roaming and potentially breeding will cause the free-roaming cat population to increase dramatically, with dire consequences for wildlife.** Specialists suggest that the feral cat population will remain stable unless a minimum of 70% of feral cats on Norfolk Island are removed on an annual basis (Lessa and Bergallo 2012; Speed pers. comm. 2016).

POTENTIAL FREE-ROAMING CAT POPULATION WITHOUT CONTROL, NORFOLK ISLAND



Without control
= Exponential growth based on 80% of free-roaming female cat population breeding 2 times p.a with av. 3 kittens per litter
(conservative rate)



THE IMPACT OF JUST ONE FREE-ROAMING CAT CAN BE DEVASTATING...



This series of photos shows the fate of the endemic and endangered Norfolk Island Green Parrot, hunted by a free-roaming cat: from live bird to scat.

How much can a cat consume?

The number of domestic cats on Norfolk Island is approximately 500 (local Vet records), which is significantly higher than the number of cats per person in Australia.

If a domestic cat can eat several cans of cat food each day, imagine what it (and the free-roaming population) can potentially consume in the wild - many birds, especially easy prey like ground or low nesting birds. **Researchers believe that an average feral cat requires about 300g of food per day.** To equate, below is the average weight of the some of Norfolk Island's iconic birds:

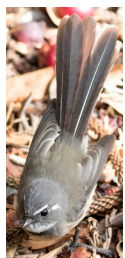


Photo: Luke Halpin

Green Parrot	130g
Norfolk Island Robin	15g
Grey Fantail	9g
White tern	98g
Masked booby chick	60g

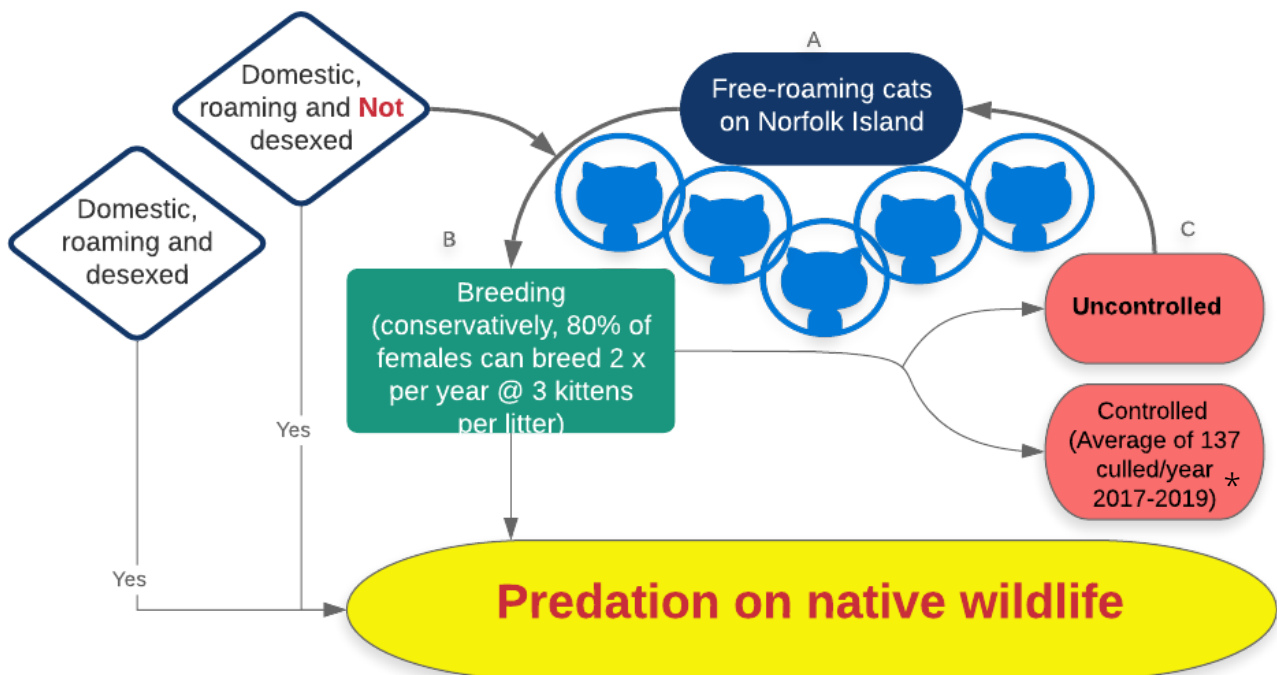


Containing your cat to keep it safe

Feral cats can attack domestic cats, causing injury, death or infections that are expensive to treat. Testing of the feral cat population on Norfolk Island in the past found that 100% of areas had cats with feline **AIDS**, which can be passed to domestic cats through any contact, including feeding from the same bowl. Testing for the dangerous **Toxoplasma gondii parasite** has also commenced. Contained within your property, cats are also safe from vehicles and dogs.

ALL FREE-ROAMING CATS (FERAL AND DOMESTIC) HAVE AN IMPACT ON WILDLIFE

All free-roaming cats (feral or pets) have the potential to contribute to biodiversity decline on Norfolk Island. Domestic cats that are de-sexed will help to prevent a growing population of cats in the wild. Although early modelling suggests approximately 100 cats in the wild, this population figure is likely to be conservative and growing given the high number of domestic cats, potential breeding rates and current control efforts.



*by Norfolk Island National Park and Norfolk Island Regional Council

We must all act if we want to see a decline in free-roaming cats...

Already, local organisations are implementing and investigating an increased range of management measures. Incentives for responsible domestic cat management are being continued, while regulatory responses are being developed. See over.



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**Results of desexing and microchipping clinics in 2019:
3 clinics, 61 cats microchipped, & 32 cats desexed (17 male; 15 female).**

COMMITMENTS GOING FORWARD

Norfolk Island National Park

- Employment of a dedicated integrated pest control officer with the ability to assist with free roaming cat control on private property and within the park.
- Offering ongoing financial incentives for de-sexing and micro-chipping domestic cats (see below).
- Investigating complementary trapping techniques (e.g. Felixer trap).
- Collecting blood samples from captured free-roaming cats to test for toxoplasmosis. Cats are the primary host for this parasite which can cause serious complications for pregnant women and people with weakened immune systems. It can also negatively affect livestock – particularly sheep.
- Investigating additional funding options for increased cat control.

Norfolk Island Regional Council

- Development of pest management plan and update of reserve management plans.
- Recent purchase of more cat traps and commitment of additional resources for trapping.
- Development of policies for domestic cat management, e.g. consideration of the establishment of a pound and compulsory registration with an option for heavily discounted lifetime registration for de-sexed and microchipped cats.
- Expansion of control areas, potentially including private land in high priority areas.
- Investigating additional funding options for increased cat control.

The community

Responsibilities and Opportunities

- **Do not allow your cat to roam (there are many great home enclosure designs (see www.catiospaces.com))**
- **Have your cat micro-chipped.**
- **De-sex your cat.**
- **Do not release unwanted cats or kittens into the environment. Surrender them at the veterinary clinic for re-homing or humane dispatchment.**
- **Help support the island-wide trapping programs:**

Call Norfolk Island National Park on 22695 or Norfolk Island Regional Council on 22244 if you observe a suspected feral (free-roaming) cat on your property. With permission a trained operator can attend your property and attempt to capture the cat.



Next micro-chipping and de-sexing clinic:

When: 21st Sept-2nd Oct 2020
Future clinics will be advertised.

Where: Norfolk Island Veterinary Surgery
Phone 23838 to make an appointment.

Cost: 50% subsidy*

**If financial hardship is preventing you from having your cat de-sexed or micro-chipped, please give the National Park a call to discuss receiving additional help.*