

## Quollidor Annual 2017

Spotted-tailed quolls live in our backyards



OEH

### Collective fox control by private landholders reaps rewards: New quoll pups on the ground!

As camera monitoring of the quoll population continues, we are steadily filling in the gaps, showing that almost all of Barren Grounds Nature Reserve and Budderoo National Park are home to the quoll population. The December 2017 image collection has once again revealed the first independent youngsters for the year, which first show up on the cameras in mid-November. This information is providing us with an approximate quoll population of 20 animals within the Budderoo National Park and Barren Grounds Nature Reserve!

Our camera data is showing a trend in this population distribution: generally, between Gerringong Falls to the west, Knights Hills to the north, Wattamolla to the south and Foxground to the east.

Specifically and most interestingly, we've observed one resident male, aka 'Swampy', across a huge area of 20km<sup>2</sup> within these rough boundaries!

Furthermore, the December collection also revealed the first quoll photographed on private property in Carrington Falls - Spotted- tailed quolls really do live in our backyards!

Such activity of quolls demonstrates the importance of our efforts to reduce fox densities in a coordinated manner across the landscape, gradually reducing the capacity for foxes to recolonise areas of core quoll habitat.





The main man – aka Swampy – the resident male quoll captured at our Knights Hills camera station in April 2017. (OEH)

A total of 45 privately owned holdings were baited in the Spring campaign, including holdings in the areas of Jamberoo, Foxground, Brogers Creek, Wattamolla, Kangaroo Valley, Upper Kangaroo River, Upper Kangaroo Valley, Barrengarry, Robertson and Knights Hill.

From results reported back to campaign coordinator, Evelyn Osborne, bait take ranged from 0-90%, with an average of 36%.

**To have 45 individual holdings surrounding the Barren Grounds Nature Reserve and Budderoo National Park actively controlling foxes at the same time, is a tremendous effort.**

Overall, this has been a very successful campaign, and sets the bar high for the Autumn 2018 campaign! Thanks to all of those involved.

In November/December, South East Local Land Services Pest Animal Controller, Mark Sobierajski, completed 10 days of targeted fox and feral cat trapping in Barren Grounds and Budderoo National Park. In both reserves, there was little to no fox activity observed, and only one cat was trapped in Barren Grounds. This is the first time that fox activity has been 'quiet' for a couple of years and

does not necessarily align with the fox activity observed on the quoll cameras, but is a promising observation at the least.

Don't forget that private landholders surrounding the Barren Grounds and Budderoo reserves have the opportunity to borrow fox cage traps, leghold trapping kits, canid pest ejector (CPE) kits and monitoring cameras (15 available). We continue to offer these cameras to holdings to set up and monitor pest animals and (hopefully) quolls.

The Quollidor Autumn Fox Baiting Campaign 2018 will hopefully commence in March/April with dates to be confirmed early in the new year.

Please contact Biosecurity Support Officer Evelyn Osborne ([evelyn.osborne@lls.nsw.gov.au](mailto:evelyn.osborne@lls.nsw.gov.au)) to borrow cameras, CPEs and trapping gear, or for more information about the Autumn 2018 fox control campaign.



Quoll pup in Barren Grounds, December 2017. (OEH)





Hamish Pritchard from UOW weighs a spotted-tailed quoll during a trapping survey in Barren Grounds, May 2017. (Bear Hunt Photography)

### Changes through time: genetic diversity of historical vs current spotted-tailed quolls

University of Wollongong (UOW) honours student Hamish Pritchard recently completed his research which aimed to determine the genetic diversity of spotted-tailed quolls currently residing within Budderoo National Park and Barren Grounds Nature Reserve by comparing their DNA with that of individuals obtained from collections (e.g. museums) belonging to past populations.

DNA sequences of a gene located within mitochondrial DNA, called cytochrome-b, was obtained from each individual. Mitochondrial DNA is maternally inherited (from the mother alone) and, therefore, we call a gene sequence from this DNA a haplotype. Once haplotypes are obtained you can compare how they differ between each retrospective quoll or whether they are the same,

as well as how the entire population's genetic diversity has changed between past and present individuals. By measuring the genetic diversity of a population, we can get an idea of the population's ability to survive stochastic events (random events that occur in nature, e.g. a heat wave or cold snap). Populations with higher genetic diversity have a greater chance of both short-term and long-term survival.

The results of this study found that individuals from historical populations were not genetically different from those in the current population. However, genetic diversity was found to have declined, with many of the individuals of the modern population having a cytochrome-b haplotype with the same DNA sequence, and a unique haplotype belonging to individuals from historical populations appearing to have been lost over time. However, DNA from our now infamous resident male quoll, Swampy, possessed a unique haplotype not observed in any other quolls, indicating that some diversity is likely present in the population. There was also an indication that this population had suffered a decline in the past and that the population was still recovering, which may explain why genetic diversity was low. However, one gene (with a small sequence in comparison to other genes found within the DNA) is not enough to come to a firm conclusion. Further work is currently being undertaken to better understand the current population's genetic diversity so we can develop informed conservation management actions.

For more information, contact Hamish Pritchard at [hp719@uowmail.edu.au](mailto:hp719@uowmail.edu.au) or his Honours supervisor Dr Katrina Mikac at [kmikac@uow.edu.au](mailto:kmikac@uow.edu.au)



Quoll country: Gerringong Falls, Budderoo National Park. (Bear Hunt Photography)

## Monitoring the long-nosed potoroo

We have completed our annual monitoring of potoroos, which involves both cage trapping and camera monitoring techniques.

The cage trapping results suggest that potoroo numbers continue to decline in Barren Grounds Nature Reserve, at least in the small section of the reserve we intensively trap. This is despite the extensive fox baiting and fox/cat trapping program. This has prompted National Parks and Wildlife Service to discuss whether any ecological burning is required in some of the reserve to regenerate habitat which has not been burnt for more than 30 years.

Meanwhile, broad scale camera monitoring has been established across both Barren Grounds and Budderoo in addition to the existing quoll camera network. These results are still being collated with thousands of photos to look through, so we can identify where potoroos are turning up across the broader landscape. Early results suggest that potoroos still have a good distribution across both reserves.

Ongoing camera monitoring over the next few years will help identify how the local population is holding up against feral predators and guide our fire management planning.

**Mel Norton**

**National Parks & Wildlife Service Fitzroy Falls, NSW.**



Long-nosed potoroo captured via remote camera station, Budderoo National Park 2017. (OEH)

## Never heard of the quollidor?!

With huge home ranges – from 300 to 3000 hectares – quolls move across landscapes irrespective of tenure, making it hard to monitor population health and breeding behaviour.

Fortunately, under the Office of Environment and Heritage (OEH) Saving our Species program, the Quollidor Project has been established to improve the monitoring of resident quolls and manage increasing areas of habitat in and around the Barren Grounds and Budderoo reserves in order to gradually increase the resilience and size of the local population.

For more information about the Quollidor Project, head to The Barren Grounds-Budderoo Quollidor project webpage at [www.environment.nsw.gov.au/quollidor](http://www.environment.nsw.gov.au/quollidor).

Contact OEH (Wollongong) on 02 4224 4150 to:

- report activity of spotted-tailed quolls and other threatened species
- get help with private land conservation options, including Land for Wildlife, conservation agreements and BioBanking agreements
- find out how to prevent quolls from taking your chooks.

Contact South East Local Land Services (Berry) on 02 4464 6000 to:

- find out how to join the twice-yearly fox-control program
- report pest animal activity.

For more information about the Quollidor Project, email [simon.tedder@environment.nsw.gov.au](mailto:simon.tedder@environment.nsw.gov.au).

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