

Research explores how the management of feral cats can protect native species

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New Massey research hopes to improve the management of feral cats for the protection of native species.

The study looked at a population of feral cats on New Zealand's Ponui Island in the Hauraki Gulf to study their ecology and factors that should be considered to develop efficient control operations.

Part of the study analysed the cats' diet and found they ate rodents, although they were not completely reliant on rodents and were found to eat many native species, including brown kiwi, morepork and fantails.

Dr. Kathryn Strang, of Massey's School of Sciences, says that in New Zealand the continued decline of native species is largely due to invasive predators.

"Feral cats are often a secondary focus for [pest control](#), and their impacts within an ecosystem are not well understood."

The study, part of her Ph.D., mapped the home ranges of eight cats on the island using location points from very high frequency radio-telemetry and camera traps.

"Predators distribute themselves and move within their environment in relation to prey availability and habitat type. These factors vary between locations, leading to differences in home range sizes that are difficult to predict," Dr. Strang says.

She found the removal of two males, seven months apart, had an impact on the population. The first removal resulted in an increase in the home range sizes of the remaining cats, whereas the second removal saw an invasion of four unmarked male cats.

"These results show that feral cats change their home ranges according to changes in density, and removals, such as control operations, result in a change in feral cat behaviour, which need to be accounted for in control programmes."

Welfare

Dr. Strang says feral cats are often live-trapped during control programmes to reduce capturing non-target animals.

"This technique is labour intensive because traps need to be checked frequently for welfare purposes. Describing feral cat activity patterns can dictate when live-traps should be set and checked."

The study found that feral cats were most active between sunset and sunrise, and live-traps should be set during these times to increase trapping efficiency and reduce bycatch. They found this by using [camera traps](#) to estimate activity patterns, validated against accelerometry devices.

Successful control programmes

She also studied the reproductive biology of the cats to predict the recovery of the population following control operations. While the females had many kittens per year, very few kittens survived to the age of one year, possibly because the population is at carrying capacity. She also found through genetic work that the cats on this island have most

likely been isolated with no recent introductions, suggesting the removal of cats from this island would be successful with low chances of reinvasion.

Dr. Strang says the findings from this thesis can be applied to feral cat management to develop efficient control operations.

"The decision to control a population should be based on both dietary and genetic data to reduce possible cascading ecological effects from the predator removal and to identify genetically isolated populations. Home range, activity, and diet data can be used to determine the control protocol, including trap spacing, the time traps should be set and checked, and if secondary or primary poisoning should be used and the seasons that cats would uptake the baits.

"If we spend time researching a population and then design a control programme based on that knowledge, we will be more efficient at controlling feral cat populations. This study was an example of showing how we can apply the knowledge of the ecology of [feral](#) cat populations to designing the control operations."

The study, "The ecology of [feral cats](#) (*Felis catus*) on a New Zealand offshore island: Considerations for management," was completed as part of Dr. Strang's Ph.D. study.

Provided by Massey University

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