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BETTLERS BOOM ON MAUNGATAUTARI

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JULY 07

Native beetles in the southern enclosure of the Maungatautari Ecological Island have increased by at least 300% in the two years since the area was enclosed and completely cleared of pests.

A scientific study of almost three years, conducted by Landcare Research invertebrate ecologist, Dr Corrine Watts, shows that in some instances there has been a four-fold increase in beetle numbers in the 65 hectare southern enclosure. Dr Watts says the study may be an indication of how predators such as rats, mice, wild-cats and possums can affect native insects.

She said the survey, funded by the Maungatautari Ecological Island Trust and the Foundation for Research, Science and Technology, began several months before the southern enclosure was enclosed and became pest-free.

She gathered a wide range of beetles from pitfall traps set both inside and outside the enclosure before and then again after it was fenced off.

Last summer a further set of samples was taken, and it was these that showed the massive increase inside the enclosure. "The changes inside the enclosure are happening quite quickly," she said. "The numbers of species are not changing – it's just the abundance of them that is changing. "After mammal eradication, beetle abundance increased 8 per cent a month inside the enclosure and 2 per cent a month outside."

Dr Watts said 128 different beetle species were caught in the traps, with 44 species "undescribed" (known, but not yet formally identified) and several of them rare. The Maungatautari area was also a previously unknown location for the 44 undescribed species. Predominant among the beetles was the large carabid species (*Mecodema oconnori*) which measure up to 4cm in length, is shiny black in appearance, and "stinks" when it is disturbed.

Dr Watts said the numbers of this large beetle increased to 500% in the enclosure, and she thinks it possible that they may be a food source for rodents, particularly rats, in forest areas. The most common beetles found in the area were rove beetles, weevils and fungus beetles. "Birds will eat all of these three types," she said.

The study is one of only two such invertebrate research projects undertaken in New Zealand, and the Maungatautari study is of special importance because it was carried out before and after pests were removed, and before native birds were introduced into the enclosure.

"It provides a good baseline for studies to look at what effect introduced native bird species will have on the beetle population," she said. "The beetles can also be a source of food for native geckos and skinks."

Dr Watts said beetles make up 50% of the country's known insect species.

Jim Mylchreest, CEO of the Maungatautari Trust, said the survey had been "a real eye-opener" and was an excellent indication of how much damage small pests such as rodents, cats, possums and mustelids could do to native species. "Having this build-up of a basic food-source for birds, skinks and geckos means that when the birds and other species are reintroduced to the area they will have an abundant food supply and will therefore probably breed very well," he said. "If the beetles are making such a great come-back, it makes me wonder what other insects and native plants are suddenly making a come-back to

"Now that we have eradicated most of the pests except a few mice, we should see some major changes on the mountain."

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