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## **Bats in the Backyard**

New Zealand is home to only two bat species, and they account for 100 percent of the nation's native terrestrial mammals. The New Zealand long-tailed bat and New Zealand lesser short-tailed bat are found nowhere else on Earth.

With partial support from a BCI Global Grassroots Conservation Fund grant and a range of partners, graduate student Darren Le Roux of the University of Waikato used arrays of automated bat detectors to assess the presence and activity of long-tailed bats in and around the city of Hamilton, New Zealand's fourth-largest urban area with some 150,000 residents.

These insect-eating bats typically roost in cavities of large, old trees. But the old-growth forests have been disappearing for centuries and now cover less than 14 percent of the country.

Hamilton is a growing city, with many proposed land-development projects planned, and the threats facing these urban bats are immediate and serious, especially since little is known about bat populations in and around Hamilton. Le Roux's long-term goal was to develop specific recommendations for the long-term conservation of long-tailed bats.

He notes that only about 5 percent of New Zealanders are even aware that they share their islands with native bats, so public education about the value and conservation of bats is critical. To that end, Le Roux cofounded (with Environment Waikato) Project Echo, a multi-organization program that combines community education with monitoring bat populations. The team is also experimenting with bat houses, which had previously been used in New Zealand.

The initial study, designed to develop monitoring strategies while learning more about bat-activity patterns, was limited to two sites – a forest fragment and urban parkland – along the Waikato River where bats previously had been confirmed. Bat detectors were used to monitor bat activity for a total of 217 days over a period of 10 months.

"We recorded 23,000 echolocation calls," Le Roux says. "Ninety-four percent of them were classified as search-phase calls (the slow, steady pulses used to locate prey), while 6 percent were feeding buzzes (the very rapid hum of bats closing on their prey)."

The next step was to apply what they had learned in the pilot project to multiple urban and rural sites. The first such effort confirmed the presence of bats at 8 of 11 monitored sites. Subsequent surveys expanded that to 16 habitats used by bats, all of them on the southern urban/rural fringe of the city.

These results confirm the importance of maintaining and restoring well-connected, less-developed habitats for urban bats.

Continuing research and monitoring are clearly needed and Project Echo is soliciting reports of bat sightings in the city and lending bat detectors to interested residents. The program also works with citizens to protect standing old and dead trees as habitat for bats and other wildlife.



*New Zealand youngsters get a lesson in bat houses. Photo courtesy of Darren Le Roux*

Throughout this time, the team also conducted bat talks and walks at the Waikato Museum and is developing an education program for schools.

And they are testing the feasibility of bat houses for long-tailed bats. With support from the Hamilton City Council and BCI, they have installed 25 bat houses of four different designs. "Unfortunately," Le Roux says, "no bats have moved in as yet, but we remain hopeful."

Meanwhile, more New Zealanders are learning that there are bats in their backyards – and that bodes well for the New Zealand long-tailed bats of Hamilton.

*BCI Members can read the whole story of New Zealand's backyard bats in the Fall 2012 issue of BATS magazine. To support vital conservation efforts like this Global Grassroots Conservation Fund project, please visit [www.batcon.org/donate](http://www.batcon.org/donate).*

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