

Pekapeka, Long-tailed Bat

As well as being endemic to New Zealand, the long-tailed bat is one of only two species of native terrestrial mammals in this country. The long-tailed bat can be found throughout New Zealand in varying habitats, but its numbers are declining due to the removal of trees (where bats roost), predation by pest mammals, and increasing competition for roost sites e.g. rats and possums.

Long-tailed bats are capable of long distance flight. These bats may have large home ranges and regularly move between forest fragments to feed and roost. Hamilton is the only city in New Zealand to still support a resident population of long-tailed bats. There are a few confirmed bat roosting sites in the southern part of Hamilton city, but bats are likely to be more widely distributed throughout the city and surrounds than previously thought.

Bats leave little sign of their presence or activity, and because they fly at dusk and after dark they are rarely seen. Because of their size and flight pattern, they may also be mistaken for fantails or swallows.

Bat guano (faeces), are about the size of mouse droppings and are occasionally visible outside a cavity being used as a roost. A strong ammonia smell from the urine soaked droppings may also alert the trained nose to bat presence.

In the past, bats used large, old canopy trees (rimu, kahikatea, totara, pukatea) to roost in, either beneath the bark or in cavities. With the clearing of native forest and subsequent loss of natural habitat, bats have had to find other suitable roosts in old exotic trees. Recently long-tailed bats have been detected roosting in pine, eucalyptus and oak trees in and around Hamilton.

Project Echo led by Environment Waikato aims to gather information on bat distribution throughout the city, identify bat roosting sites and raise awareness of the species needs and threats. This project could lead to on-going work to protect bat roosting sites and control predators.

Long-tailed bats:

- Are small, weighing 8–14 g with dark brown to black fur on its torso. Limbs and membranes are virtually hairless. They have a wing-span of about 250 mm.
- Feed on flying insects e.g. moths, beetles, mayflies, midges and mosquitoes (solely aerial insectivore).
- Use echolocation to identify food and other objects while flying.
- Rest by day and feed by night.
- Roost in small cavities in old or large trees, including dead trees – and have more than one roost which they frequently switch between (e.g. day and night roosts). Bats hang upside down, and hold onto their roosts with the claws of one or both feet.
- Are social (colonial) with sometimes quite large numbers (10–50) roosting and feeding together. There may be separate male and female colonies during the breeding season.
- Breeding females give birth to only one pup per year. Juveniles are carried during feeding flights by the mother until they reach adolescence at around 4-6 weeks.
- Are preyed upon by native runu (morepork), feral cats, stoats and rats.
- Are threatened by habitat loss.



Photo: Kerry Borkin

Photo: Lisa Cawthen



Many members of the public aren't aware that bats are commonly found in their own communities.

Public outreach is an effective way of educating the public about bats, and inspiring people to play their part in the conservation of their local bat populations.

Why use public outreach?

- Bats are cryptic, nocturnal creatures, so they're rarely seen by the public. Many populations of bats are declining, or are listed as threatened or endangered.
- Most people are unaware that native bats exist, let alone in their urban backyards, and few people understand the threats that bats face from both natural causes and human activities.
- Public outreach programs can educate the community about the species of bats in area, and engage the community in programs to help conserve bats and their ecosystems.
- Giving the public their own learning experiences will inspire people to take action and play their part in conserving their local bat communities.

Photo: Ben Paris



Case Study: Project Echo, Hamilton, New Zealand "Bat conservation in full flight"

New Zealand is home to just two species of bat – the Long-tailed Bat (*Chalinolobus tuberculatus*) and the Lesser Short-tailed Bat (*Mystacina tuberculata*), both of which are endangered. Populations of Long-tailed Bats are declining in New Zealand, but Long-tailed Bats have recently been found near urban centres in Auckland and Hamilton. Bats are difficult to see, and are usually only found by using a bat detector (which detects ultrasonic bat sounds).

Photo: Gerard Kelly



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About Project Echo

- Project Echo is a bat conservation organisation based in Hamilton, New Zealand.
- The project is coordinated by a group of agencies including city councils (Auckland, Hamilton and Waikato), the University of Waikato, the Waikato Museum, the NZ Department of Conservation, Bat Conservation International and Riverlea Environment Society Inc.
- The project conducts scientific research on Long-tailed Bats and their conservation.
- Members of the public can contribute to a sightings database by reporting when they see a Long-tailed Bat in Hamilton (or detect one using a bat detector).
- The project runs educational programs and activities such as classroom talks.
- Project Echo also runs a popular public engagement program using nocturnal bat tours.

Looking for more information about bats? Please see our fact sheets on a range of issues, available for download from: www.ausbats.org.au



Photo: Ben Paris

About the Nocturnal Tours

- The Nocturnal Tours have been running since July 2010.
- The Nocturnal Tours are advertised locally with a fun message (e.g. "Walk on the night side with the Batman") and with pricing affordable for families.
- Tours are 3 hours in duration, and are accompanied by two museum staff and a bat expert.
- Group numbers are limited to 15 people to maximize the individual experience for each participant, and to make logistics easier for the staff running the tour.
- Bats were seen or heard in over 60% of the Nocturnal Tours, providing a unique experience of observing the animals in their native setting.
- The same number of bats were seen when the tours had large groups as when they had few people, indicating that large groups of people don't appear to affect the bats' normal behaviour.
- The Nocturnal Tours are offered in school holiday programmes every year and continue to be very popular.
- There has been positive media coverage, such as "Bat fever is rising as interest in the winged creatures soars" NZ Herald, 23 Oct 2011.

Fun Fact!

As of March 2012, the Nocturnal Tours have been run 16 times, with a total of 317 participants aged between 5 and 70 years of age.



You can find out more about Project Echo via:

www.waikatoregion.govt.nz/projectecho



2. Community Bat Detectors

- Bat detectors are electronic devices that turn the inaudible echolocation calls into sounds people can hear.
- The calls of the two bat species in New Zealand are very different and easy for the public to distinguish from each other. In Australia, the calls of some bat species are very similar to each other, so help would be required from a local bat specialist if you are wanting to get more than an overall indication of bat activity.
- Help community groups to apply for external funding grants to obtain their own detectors.
- Run a workshop for community groups on how to efficiently use bat detectors.



Photo: Ben Paris



Photo: Kerry Borkin

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3. Classroom education

- Be ready to respond to requests for bat talks by schools and youth groups.
- Have a consistent message in all the bat education materials.
- As it is not usually possible to show live animals, make use of video, photos and sound as much as possible.
- Have practical material or props available such as bat roost boxes, bat detectors or stuffed pest predators (particularly relevant in New Zealand).
- Provide children with writing paper, cut out masks, or colouring competitions to encourage after-class activities.

Lessons learned from Project Echo

1. Communication via websites and fact sheets

- Have a dedicated website that's easy to "google".
- Outline basic facts about bat biology (great for school projects).
- Consider different multi-media expressions of information including video, sound and photos.
- Use social media like Facebook and Twitter to keep the public interested with regular updates such as bat photos, facts and website links.
- Show a live "bat map" on your website illustrating general distribution locations of where bats may be found. If possible, allow the public to add their own sighting locations (use interactive mapping tools such as googlemaps.com) to the website, if identifications can be confirmed.
- Include information on a fact sheet that the public can take away and digest.
- Include "calls to action" to encourage people to get involved in conservation, including video, sound and photos.



4. Nocturnal tours

- Organise nocturnal tours using advertorials in local newspapers (often free as bats can be seen as a feel-good story).
- Have an inside classroom education activity, followed by the outside nocturnal tour.
- Use a "red cellophane over torches" activity as a preparation exercise before going outside.
- Provide participants with torches, bat identification sheets, bat detectors, etc.
- Have other interesting nocturnal creatures you can "discover" if no bats are detected during the tour (for example in New Zealand glow worms, owls, spiders and eels).
- Provide take-home activities: bat mask template, crossword challenge, fact sheet, observation recording sheet.



Photo: Ben Paris