New technology to monitor bats

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Bats have declined since the arrival of European colonists in New Zealand. Likely causes of decline include clearance of lowland forests destroying roosting and foraging sites, predation by introduced rats, cats, mustelids, possums, introduced and native owls. Bats are sensitive to predator numbers as they roost in colonies within holes in trees. They are therefore a sensitive indicator of whether pest management is working. Long-tailed bats continue to survive on fragmented landscapes which are still under threat from land-use changes. The most robust method of monitoring bat survival is using mark-recapture methods. Long-tailed bats are routinely marked with small aluminium forearm bands and caught each year at maternity roosts. This method requires skilled staff, is relatively costly and requires ongoing commitment for a number of years before trends are revealed. Simplified methods of monitoring such as roost counts and transects walked on roads using bat detectors can also be used but there is usually high variability in such counts and in the case of transect counts have to be repeated for up to 15 years before reliable trends can be resolved. Recently the Department of Conservation Electronics Department has produced a new and highly sensitive bat recording device that partially automates the recognition of calls. Already many of these devices are in operation and more presence/absence surveys are being done. A database has been developed to record data from these surveys so the results can be collated and will be widely accessible. The potential for using these new recording devices to provide a more robust index of bat abundance methodology will be discussed.