

Weta Watchers - a Participatory Science Project

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The Weta Watcher project aims to engage students from primary schools in South Auckland to carry out a research project on the ecology and conservation of tree weta. Weta ideal candidates for citizen science and science outreach projects because they are easier to work with than most other insects, they can be relatively large and are very appealing to school students, particularly tree weta. Weta motels were placed on the grounds of three South Auckland primary schools in May 2016. Weta motels are wooden refugia that simulate natural galleries used by weta and other invertebrates. They have a hole that is big enough to let weta in, but too small for its predators (mice, rats). Using weta motel, students can census tree weta population on the schools grounds and determine their diet by carrying out DNA analyses of their droppings.

These droppings will be analysed using DNA-based methods to identify the plants eaten by weta. This analysis will be a two-steps process:

1. Extracting, amplifying and observing the DNA: this will be conducted at the schools and experiments will be performed by the students using the portable BentoLab device.
2. DNA purification and next generation sequencing: this will be performed at Unitec using the MinION DNA sequencer. School students will Skype in during the final sequencing step.

This project constitutes a citizen science project, actively involving and empowering school students with an appealing hands-on research project. Furthermore, this project will lead to scientifically useful data and so exemplifies the goals of citizen science. Because weta are good biodiversity indicators, the data collected in a shared network in South Auckland will provide important information about the health of school ecosystems and the often unseen urban biodiversity.