

## Report from the Maniapoto Youth Biodiversity Forum

Maniapoto Māori Trust Board

Ruakuri Bush Reserve, Waitomo



## Purpose of the Maniapoto Youth Biodiversity Forum

The purpose of the day was to:

- Inspire students learning and understanding of biodiversity and conservation
- Provide an experiential link from the classroom learning to biodiversity in the bush
- Provide a fun learning experience for students to increase their knowledge of biodiversity.

## The pōwhiri and workstations

Recently the Ruakuri Bush Reserve became an outdoor classroom for 90 year 10 students from Otorohanga College, Te Kuiti High School, Piopio College and Te Wharekura ō Maniapoto. Tauira (students) from participating schools contributed to the planning of the day and workstations.

Students, teachers, workstation facilitators, tūākana (university student mentors/assistants) and Kaiāwhina were welcomed by mana whenua with a pōwhiri, Aunty Miria Tauariki responded to the call and led the procession of manuwhiri under the waharoa and along the footpath to the picnic area. Uncle Barney Anderson spoke on behalf of manuwhiri acknowledging all present, and Manawa Huirama from the University of Waikato laid down our koha of a native plant for Tokikapu Marae. During the kōrero a kererū called from a large tree beside the reserve which was a fitting contribution to the welcome.

After the pōwhiri all of the students, teachers and helpers were treated with a warming morning tea of soup and buns. Then it was time for the groups to start rotating around the eight workstations. The stream workstation introduced the students to the animals living in streams and the characteristics of a healthy stream. They observed different aspects of stream habitat and learnt about the range of different life forms in streams - plants, algae, invertebrates and fish (native and introduced). The students viewed and touched live eel and learnt about their life cycle and habitat requirements. Finally the students got to see a variety of aquatic invertebrates (mayflies, stoneflies, caddisflies, worms and snails).



Identifying aquatic invertebrates

The workstation on the Waitomo catchment covered issues such as the sediment affecting the stream and caves, smothering the food source of the glow worms and discolouring the caves. The students learnt about what is being done to improve streams and caves including the importance of riparian planting. The workstation facilitator held a "name that plant" competition using the plants displayed and a native planting booklet.

The Department of Conservation workstation focused on bringing together information pertaining to kererū, native bats and weta species. The students learnt points of factual relevance on these species through the viewing of actual (taxidermy) specimens.

At the terrestrial invertebrate workstation the students hunted for invertebrates in the understorey of the bush and in the leaf litter of the forest floor. They used magnifying glasses to examine the insects up close and identify their name using books and cards. The workstation facilitators encouraged them to find out facts about the insects and identify their head, thorax and abdomen.



Learning about the life in caves

Waitomo Education Centre staff introduced the students to the impacts of tourism on glow worms. They demonstrated the dissolving of the limestone with a mini-cave polystyrene model which showed the damage of carbonic acids and their interaction between trees, soils and limestone. They also demonstrated the impact of a stronger (HCL) acid on limestone chip. The group went into the Aranui Cave and saw for themselves the direct and indirect impacts that tourists can have on caves. The Waitomo Caves Environmental Officer showed students his tools for monitoring cave health through measuring lighting paths, CO<sub>2</sub> and temperature.

A seed of learning was planted with students around aspects of rongoa Māori, facilitated by local wāhine, the workstation touched on whakapapa, wairuatanga, health and safety and identification of plants. The animal pest control station covered the different types of traps to control stoats, possums and rats and how they were used e.g. baiting stoat traps with eggs. The students got to see how the traps were set and triggered while keeping fingers out of the way. They also learnt about where and when bait stations are used.



Learning about stoat traps

A local bee keeper provided hives for the students to view and talked about the yearly activity of bees. He described how NZ has no bees living in wild hives now and all NZ bees are housed in man-made hives. Bee keepers provide the bees with warm dry houses and help combat disease and predators in return for honey and pollination. The bees have approximately eight weeks to collect nectar from the native bush before the flowers die away. The bees fan the nectar with their wings to evaporate the moisture away leaving the solid honey.

## A summary of feedback from the students

Evaluation forms were completed after the workstation rotations, and 57 responses were received in total. The glow worms, caves and tourism workstation ranked the most popular, followed by the tuna and aquatic invertebrate workstation and the terrestrial invertebrate workstation. There was a lot to learn about the effects of tourism and humans on glow worms and the limestone formations. Whānau connections and how we can take care of these taonga was interesting to learn also.

Thirty six students were inspired for the following reasons; use of plants for healing purposes and rongoa Māori, formation and beauty of the caves, ecosystems, tuna and their habitat, evolution, diversity of species, bugs and how little creatures are important to nature, pest management and why we need to protect and preserve the environment. Responses by students to new facts learnt included how tuna spawn in the sea, female tuna are bigger than male tuna, the difference between longfin and shortfin, cave weta are blind and deaf, bats carry pups on their back, how caves are formed and the significance of  $CO_{2,}$  invertebrates are spineless, 28 species of honey bees in the world and six in NZ, kererū hang upside down to cool their stomach and cold water has more oxygen than warm water.

In the event that the Maniapoto Youth Biodiversity Forum was held again, the following recommended improvements were suggested. More practical hands on experience and less talking, allow more time at each workstation, increase the number of workstations, hosting the forum in the summer, providing seating, and more fun and food.

A number of relevant NZ publications were presented to students along with Maniapoto Māori Trust Board scarves as spot prizes and workstation facilitators received native plants for their contribution to the forum day.

In summary the forum day was a great opportunity for the mana whenua of Te Kuiti and Waitomo to join with conservationists from the Waikato region to provide students with an experience to enhance their understanding of biodiversity in their rohe.

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Learning about riparian plants



Identifying terrestrial invertebrates















