

# TE KAAHU O TUAWHENUA

Issue 6 November 2010

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ISSN 1176-8096 (Print)  
ISSN 1178-3400 (Electronic)



## Overview and updates in brief

The relationship between the Tūhoe Tuawhenua Trust and Manaaki Whenua remains active in promoting research to improve management of lands administered by the Trust for its beneficiaries. The mahi involves projects that research issues that will take some time to resolve (e.g. restoration of podocarps), short-term projects (e.g. paihamu trapping strategies), and advice (e.g. carbon farming on lands administered by the Trust).

### RESTORATION OF PODOCARPS

Restoration of podocarps has been the longest-term project involving Manaaki Whenua and the Trust. It is pleasing to see 3-year MAF funding going directly to the Trust to fund podocarp restoration at some sites.

### PAIHAMU TRAPPING STRATEGIES

Manaaki Whenua is funding a 2-year project around Ruatāhuna on the influence of trapping patterns on the spatial distribution of paihamu in forests. Certainly these forests have an abundance of paihamu.

### CARBON FARMING ON LANDS ADMINISTERED BY THE TRUST

The rules around carbon credits continue to change and our knowledge about managing carbon in indigenous forests is limited. Periodically Manaaki Whenua is updating the Trust on progress in this area.

### MANAGEMENT OF ABORIGINAL LANDS IN AUSTRALIA

Manaaki Whenua funded a visit to Australia, including Jim Doherty, to look at management of aboriginal land in the Northern Territory for conservation. Tahae recounts this trip later in the newsletter.



For more information about the overall project

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## A Brief on the Activities of the Tūhoe Tuawhenua Trust

Prepared by Brenda Tahī, Executive Trustee

### TRUSTEES AND OFFICE OF THE TŪHOE TUAWHENUA TRUST (TTT)

Korotau Tamiana, who lives at Ruatoki, has recently re-joined the TTT as a trustee. The other trustees are:

- Jim Doherty, Ngāputahi (Chair)
- Hekenoa Te Kurapa, Ruatāhuna (Trustee)
- Tane Rua, Ruatāhuna (Trustee)
- Anthony Te Kurapa, Ruatāhuna (Trustee)
- Brenda Tahī, Ruatāhuna (Executive Trustee)

Brenda has been appointed as an Executive Trustee for the Trust and deals with all administrative matters. Accordingly, the office of the Trust has been moved to Brenda's office at Mataatua, Ruatāhuna. Details for the trust are:

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Mail: Tūhoe Tuawhenua Trust, c/- Brenda Tahī, Executive Trustee, Private Bag 3001, Rotorua 3046

### LANDCARE RESEARCH – MANAAKI WHENUA (LCR)

We are continuing to work closely with LCR in a number of areas:

- A team from LCR came to measure conditions for growth of podocarp seedlings in the tawa coups (gaps) on Apitihana block.
- Trustees met with LCR scientists in Christchurch in September 2010 and took a field trip to view initiatives in honey production and utilisation of a regenerated beech forest.
- We will arrange a planning/reporting hui here in Ruatāhuna later in the year or early next year for all of Landcare Research as we have had before.
- We are looking to 2011 or 2012 to hold a Bioblitz in Ruatāhuna where in partnership with Te Wharekura o Huiarau and LCR we can hold this major event for the first time in a rural area.
- We are working with LCR on further research projects in the future.

### RUATĀHUNA KAKAHU MAUKU DEVELOPMENT PROJECT

TTT is researching feasibility studies on the possum industry and honey production as possible areas for further development on TTT lands in Ruatāhuna. Elizabeth Kerekere of Te Po Kerekere Consultants has been commissioned to complete these reports. We are well through some of the field work and research for these reports and looking out now to completing draft reports by the end of October 2010. The draft reports will be available for review and comment by those interested, and the final reports presented by the end of November 2010.

### BLACKBERRY ERADICATION & REVEGETATION

TTT is currently working on a project to clear blackberry at "Sharpies" – the local swimming hole area in Ruatāhuna. If we are able to gain the support required, we plan to fence suitable parts of this area and plant it out with broadleaves and podocarps over the next couple of years.

### POSSUM RESEARCH

TTT assisted LCR earlier this year on researching the kill-rates of possums and rats on trap and bait lines. Essentially the research found that the kill-rates remain high for at least the trial period of 14 nights, when you are operating in areas where no trapping has been done for some time.

We are pursuing further research opportunities of how possums behave on trap and poison lines so that we have information that can assist possum hunters to improve their efficiency and effectiveness in their vocation.

Landcare Research kindly gave us a book on possums' biology and behaviour when we visited there last month and this makes for very interesting reading. Just when we thought we knew everything there is to know about possums along comes a book full of researched information that proves us wrong or tells us so much more!!!! We will provide snippets of general information out of the book in further newsletters in Ruatāhuna.



## Forest Restoration on Lands of the Tūhoe Tuawhenua Trust

### WHO'S INVOLVED?

Tuawhenua Trust: Brenda Tahi, Jim Doherty,  
Hekenoa Te Kurapa, Anthony Te Kurapa, Tane Rua

Manaaki Whenua: Fiona Carswell,  
Sarah Richardson, Rob Allen

### WHY ARE WE DOING THIS?

The Tūhoe Tuawhenua Trust initiated a project for the restoration of podocarps on the bush lands under its responsibility. A number of factors underpin the interest in podocarp restoration on Tuawhenua lands:

- The Tuawhenua blocks were selectively logged for podocarps in the 1950s and 1960s.
- The podocarps are of particular value to the Tūhoe people – the rimu and kahika as great trees of the ngahere, the toromiro in particular as a key food source for kererū and other birds, and tōtara as a special timber source.
- Podocarps are not regenerating in places in this forest where tawa has become dominant, and is not regenerating overall at a rate that would make up for the loss of podocarps due to logging.

Accordingly, the Trust seeks to increase the incidence or population of podocarps on Tuawhenua lands. It has been estimated that 11 adult trees were logged per hectare on Tuawhenua lands. To restore the original numbers of podocarps, we consider that we need to plant at least 20 seedlings per hectare because we expect about half of the seedlings planted will die. The overall outcome sought is an increase in the number of seedlings per hectare in a total of 200 hectares of forest. The total seedlings to be planted will be 4,000.

### HOW ARE WE DOING THIS?

We have considered buying seedlings from an outside nursery, but the preference of the Ruatāhuna people is clearly to source seedlings from the same blocks on which they are to be planted. This maintains the types of podocarp in the Tuawhenua forest true to their areas, and also helps to strengthen the association of those

working on this project with their lands.

We have also considered growing seedlings from seed in this project but discounted this option as:

- The seedlings need a lot of tending before they are planted – a lot of effort and cost.
- The seedlings will still be small after 1 or 2 years and at risk in the bush environment.
- The transplanting method has been found to be successful if done properly.
- There is adequate supply found in the bush to meet the needs of this project.
- The collection work provides some employment locally and skills and understanding on these matters grow in this way.

We have trialled transplanting seedlings from the bush into another site and this has been found to be successful, with high survival rates particularly where seedlings have been planted in shaded or partly shaded sites. A range of sites are being tested – out in the open, under mako, kaponga, mānuka, and also in gaps cleared in stands of tawa.

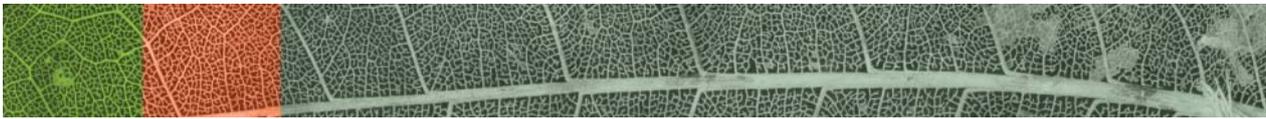
Three blocks of the Tuawhenua lands are included in this project – Apitihana T, Hiwiotewera and Tarapounamu. Hapū involved in the work for this project are Ngāti Tawhaki, Ngāti Manunui and Te Urewera.

### WORK TO DATE

The project has been a great success so far. To date we have completed the planting of 1,200 podocarp seedlings as follows:

- Apitihana (200 in 2009; 500 in 2010)
- Hiwiotewera (200 in 2009)
- Tarapounamu (300 in 2009)

We have found that there is ready supply of seedlings in the bush. Podocarp seedlings can grow in large groups near to mature seeding trees. We were able to recover hundreds of rimu seedlings from underneath a grove of rimu trees, and up to 100 toromiro seedlings from another spot near mature toromiro trees. Our hunters in the bush are now always on the lookout for such plots



of seedlings!! In the past not much interest was taken in these seedlings and where they grow – indeed some of our people that frequented the bush have only recently learnt how to recognise seedling podocarps, as they can look quite different to the adult trees.

### WORK COMING UP

In September 2010, we will be focusing on planting out

another 1,000 seedlings at Waituhi and Hiwiotewera and completing the second stage of the forest manipulation. In 2011, we are looking forward to planting out another 1,500 seedlings and completing the manipulation of the forest canopy for testing and assisting the growth of the podocarp seedlings. Below is a guide to collecting and transplanting podocarp seedlings for those who wish to increase the regeneration rates of these great trees in your ngahere.

#### GUIDE TO PODOCARP SEEDLING COLLECTION & PLANTING

<i>Task</i>	<i>Guidance</i>
<i>Finding</i>	<ul style="list-style-type: none"> <li>• A patch must have more than 10 before seedlings can be taken.</li> <li>• At least two must remain (as we assume that half of what's left will die); but it is best to leave more than two if possible.</li> <li>• Where there are at least three trees of the species at a height of 5 metres or more, then all seedlings underneath or close by can be taken as the mature ones will take the space. Just leave some on the edge.</li> <li>• The preferred target species are rimu, toromiro, mataī and tōtara. Kahika are already plentiful and will only be used if others are in short supply and we need to make up numbers.</li> <li>• Good places to look for these species are terraces and ridges, especially those with some clearing, pulling tracks and short spurs. Tawhero areas also seem to be ideal. If needed kahika will be in damp or swampy places.</li> <li>• The best size seedling is about knee-high (50 cm) as this can be easily dug up. A mix of larger and smaller seedlings is also OK but no taller than waist-high (about 1 metre). Smaller seedlings are ideal in that they transplant better; but larger seedlings are also sought as they are more likely to succeed in replacing lost adults</li> <li>• Seedlings need to be as healthy as possible – preferably with lots of leaves, green and healthy, strong single stem, no lichen or disease.</li> </ul>
<i>Collection</i>	<ul style="list-style-type: none"> <li>• There is a trick to digging and lifting the plants with minimum stress to the plant.</li> <li>• Dig well away from the plant to start to loosen the soil, as deep as possible and right around the seedling, then lift it with the taproot intact.</li> <li>• Do not break the taproot, and try to lift the seedling with the dirt around it</li> <li>• Place into the bag or container for transport and pack some soil around the roots</li> <li>• Keep the plants out of the sun and away from heat.</li> <li>• Don't store the plants for long – we must minimise the time between digging them up and planting them.</li> <li>• Water the roots and soil if the plants are held for longer than a day; if they dry out in any way; and/or if the planting days or sites are dry</li> <li>• Seedlings are best stored in the bush in a cool, sheltered and shaded place as this is the best place and saves unnecessary transporting.</li> </ul>



<i>Task</i>	<i>Guidance</i>
<i>Planting</i>	<ul style="list-style-type: none"> <li>• Choose planting sites that have nursery shrubs such as mako, mānuka, etc. Some can be tested in kaponga areas. Gaps and edges are good places but not in full sunshine or dry areas, unless you are prepared to water your plants.</li> <li>• Dig at least one spade-depth deep and loosen soil well, ready for planting</li> <li>• Place seedling into the hole with taproot pointing down and firm soil around the roots.</li> <li>• It a good idea to mark each seedling with a ribbon, so you know for future reference which ones you have planted.</li> </ul>
<i>Equipment</i>	<p>You will need the following equipment:</p> <ul style="list-style-type: none"> <li>• Spades</li> <li>• Sharpening files (forest roots will rapidly dull the spade blade)</li> <li>• Large plastic sacks or crates</li> <li>• Backpack or shoulder bag for carrying sacks of seedlings</li> <li>• Ribbon for marking trees</li> </ul>
<i>Data collection</i>	<p>You can record the following data for each seedling at planting:</p> <ul style="list-style-type: none"> <li>• Site</li> <li>• GPS position: E &amp; N co-ordinates</li> <li>• Species: rimu, toromiro, mataī, tōtara, kahika</li> <li>• Shade level: no shade; open; part-shade; shaded</li> <li>• Seedling number</li> <li>• Height in centimetres</li> <li>• Date measured</li> </ul> <p>Later when monitoring growth you can add:</p> <ul style="list-style-type: none"> <li>• Condition: good; OK; dead</li> <li>• Comments on growth or special conditions</li> </ul>



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## Global Exchange with Other Indigenous Peoples on Managing Resources such as Te Manu me Te Whenua

### WHO'S INVOLVED?

Tuawhenua Trust: Tahae (Jim) Doherty

Manaaki Whenua: Phil Lyver, Rob Allen

### TE WHENUA

I was one of three selected by Te Kotahi a Tūhoe to travel to Australia Northern Territory to look at the return of national parks to the Aboriginal people of the Northern Territory; the other two were Te Hau Tutua and Cliff August. Others on the trip were Phil Lyver and Rob Allen of Manaaki Whenua, and representatives from two other iwi – Ngāpuhi and Ngāti Wai.

We were to cover the parks from Alice Springs to Darwin. Our first stop was Uluru National Park (Ayers Rock ) Maunga Tapu-o Te Iwi Moemoea. We were taken on a tour of the sacred rock and shown tapu watering holes (springs) and places of significance to tangata whenua. The rock is 10 km around with walking tracks covering some parts and they have this huge parking area, set back about 1 km from the rock on the west side so tourists can take photos of the sunset's effects on the rock – it turns the rock bright red; it never happened for us on the two afternoons we were there (Tūhoe Hoodoo!!).

On the second day we visited Park Headquarters to meet with the Chief Ranger and some of the local elders. The Chief Ranger and elders welcomed us and I responded with a mihi, before our cup of tea and informal kōrero. After this the Chief Ranger explained

the agreement between the Government and the Aboriginal people. The government returned the land on condition the tangata whenua lease the land back to the government for 99 years with right of renewal and with a small rental fee. We could not communicate one-on-one with the tangata whenua because none could speak English; we were fortunate that the ranger in charge could speak the local language and he translated for us.

The main source of income for the area and community is from tourism – 400,000 tourists visit Uluru National Park annually at a charge rate of AUS\$25.00 per person. The downside of all this activity is the maunga tapu is heavily polluted. The tangata whenua have been battling with the Government for decades to stop people from climbing their maunga tapu without success; people just poo and pii anywhere on top as there are no facilities. The visitor centre displayed a lot of the local art for sale. Only a small part of the community is white, because all the land is desert and the only form of employment comes from tourist and park management activities.

From there we flew back to Alice Springs to meet with the National Land Council. This body is a bit like our Waitangi Tribunal. Its main job is researching all the claims put forward by tangata whenua, and then make recommendations to the government.

The National Land Council has 90 members representing all the clans (mobs) in the Northern Territory. I was very disappointed by the lack of





attendance of the members only one out of the 90 attended. All those in attendance were either staff or researchers.

Te Hau and Cliff presented an overview of our Tūhoe Claim for our land (Urewera National Park) and we talked about the difficulties we were having with our government; they were unable to offer any suggestions as our understanding of returning land to tangata whenua was oceans apart. I got a clearer picture of the leasing arrangements between the government and tangata whenua, and this arrangement flowed through to all the parks in the Northern Territory.

The next morning we flew from Alice Springs to Larjamanu for 3 hours on three small planes. We were welcomed by the locals, had a kai, and then our driver took over and we were off on a hunt with the locals. We drove about 80 km into the bush and stopped by a waterhole. We were all issued with a small tent and sleeping bag, after which we were taken by the locals on a hunt. For us it was a brand new way of hunting: the locals, made up of young men and elderly women, walked along the road setting fire to the grass and tussock along a 50–60 m front and as the fire moved forward the locals followed along behind looking for goanna lizard burrows. We didn't have any luck. When evening set in, the young men gathered firewood, lit a fire and the elderly ladies squatted next to the fire, pulled out some kangaroo tails from a bag and started singeing the fur, and then wrapped them in tin foil and buried them under the ashes and left them for about 1 ½ hours. Our Ngāpuhi mates reckon it was awesome. I was too chicken to try any!

Next morning we returned to the village where we met a lady from Tūhoe who was a Biddle! She managed

the Art Centre where we were presented with some paintings.

From here we drove to Nitmiluk National Park; we saw some awesome sites and views along the way, including all the rock paintings in the many caves. Nitmiluk National Park is in the Katherine area, the largest community before Darwin. Here we met with the Jawoyn people. This group appeared to be more advanced in business management and welfare of its people. They owned and operated several businesses in town, had their own office apartment that they shared, and had a well-prepared strategic plan. Our driver took us out to Katherine Gorge, and from here to Kakadu National Park, the largest of all the Northern Territory parks. It's 2 Mha – the size of all of New Zealand's plantation forestry put together! We were taken out on boat rides on the huge wetlands where there are thousands of birds of all shapes and sizes and of course the famous crocs. The Bininj people own six of these boats, which carry 60 people per 2-hour trip at a cost of \$85.00 per person. While we were there all the boats were fully booked.

I really enjoyed my trip and learned a lot and have a more in-depth understanding of what's happening to our whanaunga across the ditch and I certainly would not recommend that we go down their track in terms of our claims.

To end, with a very special thanks to Landcare Research, Jocelyn Davies our organiser and tour leader, Luke our driver and cook, and Te Kotahi a Tūhoe for the experience.

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## Are deer eating the rimu and toromiro seedlings around Ruatāhuna?

### WHO'S INVOLVED?

Tuawhenua Trust: Jim Doherty, Brenda Tahī

Manaaki Whenua: Sarah Richardson,  
Fiona Carswell, Rob Allen

Over the last few years, we have been trying to figure out if there are enough podocarp seedlings in Tuawhenua forests to provide adult trees for the future.

We already know that there aren't many podocarp seedlings in Tuawhenua forests. We are currently monitoring seedling growth and survival to learn whether those few seedlings are likely to make it to become tall trees. This is particularly important in the logged-over forests.

Until recently, people always thought that podocarps weren't eaten by deer because they have tough leaves that taste nasty. However, observations around Ruatāhuna and down in Fiordland now suggest that deer will eat podocarps, once they've eaten all their favourite plants like kotukutuku and pāpāuma. This could be bad news for the podocarps, as those chewed seedlings are unlikely to make it into adults.

We would like to understand how much deer impact on podocarp seedling growth and survival around Ruatāhuna. We believe this information will be useful to the Trust when planning the future of your forests. Back in 2007, we selected 20 sites around Ruatāhuna where we marked out areas of podocarp seedlings for study. We tagged each seedling and measured its height. This summer, we would like to remeasure the seedling heights and work out their growth rate since 2007. Then, we would like to put small fences around half of the seedlings. We will then measure the seedlings each year to see whether the ones inside the fences grow faster than the ones that are being eaten by deer.

Our exclosures will look something like this one in the Waikare forest near Otanatea Hut. It was put in by the Forest Service in 1980 to keep out deer, pigs and possums. We would like to build exclosures similar to this, but without the netting top.

We would like to start this work this coming summer.

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## Possum trapping to maximise financial gain

### WHO'S INVOLVED?

Tuawhenua Trust: Jim Doherty, Brenda Tahī, Anthony te Kurapa, Hekenoa Te Kurapa

Manaaki Whenua: Chris Jones, Phil Lyver, Morgan Coleman, Mandy Barron, Graeme Nugent, Bruce Warburton

Landcare Research is working with the Tuawhenua Trust to design a strategy for possum fur harvest that not only provides a sustainable income over the long term for trappers, but also leads to benefits for the ngāhere. The general idea is that possums are harvested for fur/skins along trap lines, but unharvested strips are left in between (similar to 'coupe' harvesting used in forestry). Different trap lines are used in each year so that, in any one year, possums in some areas are recovering for future harvest. We are also testing whether a one-off sowing of rodent poison along trap lines can help to control rat populations for little extra cost. It may also be possible to examine some possum carcasses for Tb. For 'coupe harvest' of possums to be sustainable depends to a large degree on how quickly possum numbers in harvested blocks/strips recover to levels that can be sustainably and economically harvested again.

For us to predict the 'best' combinations of trap-line spacing (= strip width) and time between harvesting a strip, we need to know:

- How far on either side of a trap line are possum numbers affected?



- How quickly do possum numbers within the harvested strip recover?
- Is the new possum population in this strip 'normal' (number of males, females, juveniles)?
- How effective is a single pulse of rodent poison, set during trapping, at controlling rats?
- What costs are involved and how are profits estimated?

So far, the research partners have carried out a pilot (or 'test') trial of a trapping and poisoning design near Ruatahuna. Our pre-trapping data showed an even spread of possums and rats across the forest study area, but there were so many possums around that two weeks of sustained trapping made little noticeable dent in overall possum numbers. We plan to trap again early next year for even longer and to carry out more tests of the rat poisoning design. We will also use economic models of possum harvest to estimate the sustainability of our approach.

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## Seedlings in logged versus unlogged forest

### WHO'S INVOLVED?

Tuawhenua Trust: Jim Doherty

Manaaki Whenua: Sarah Richardson,  
Fiona Carswell

We have now completed surveys for seedlings in both logged and unlogged forest blocks. Sample points were selected as 136 points on a grid in areas thought to represent the whole of Tuawhenua lands.

We navigated to each of the points using a GPS device and once there we counted the number of seedlings in a defined area (a circle 4 m in diameter) and measured some other factors that might help explain seedling presence or absence (such as slope, altitude, other trees overhead).

We found no difference in the number of seedlings in logged versus unlogged forest. This means that either dispersal between logged and unlogged blocks is adequate OR there are still sufficient parent trees in logged blocks to give the same density of seedlings OR seedlings present were there before the logging. (The last explanation is unlikely but podocarp seedlings can live for at least 80 years and still be under 50 cm in height!)

Figure 1 (below) shows the percentage of plots for which there were seedlings present of either podocarp or broadleaved species. Note that about 60% of all plots had NO podocarp seedlings at all. The numbers of podocarp seedlings are low across all blocks, compared with similar forests elsewhere in the North Island.

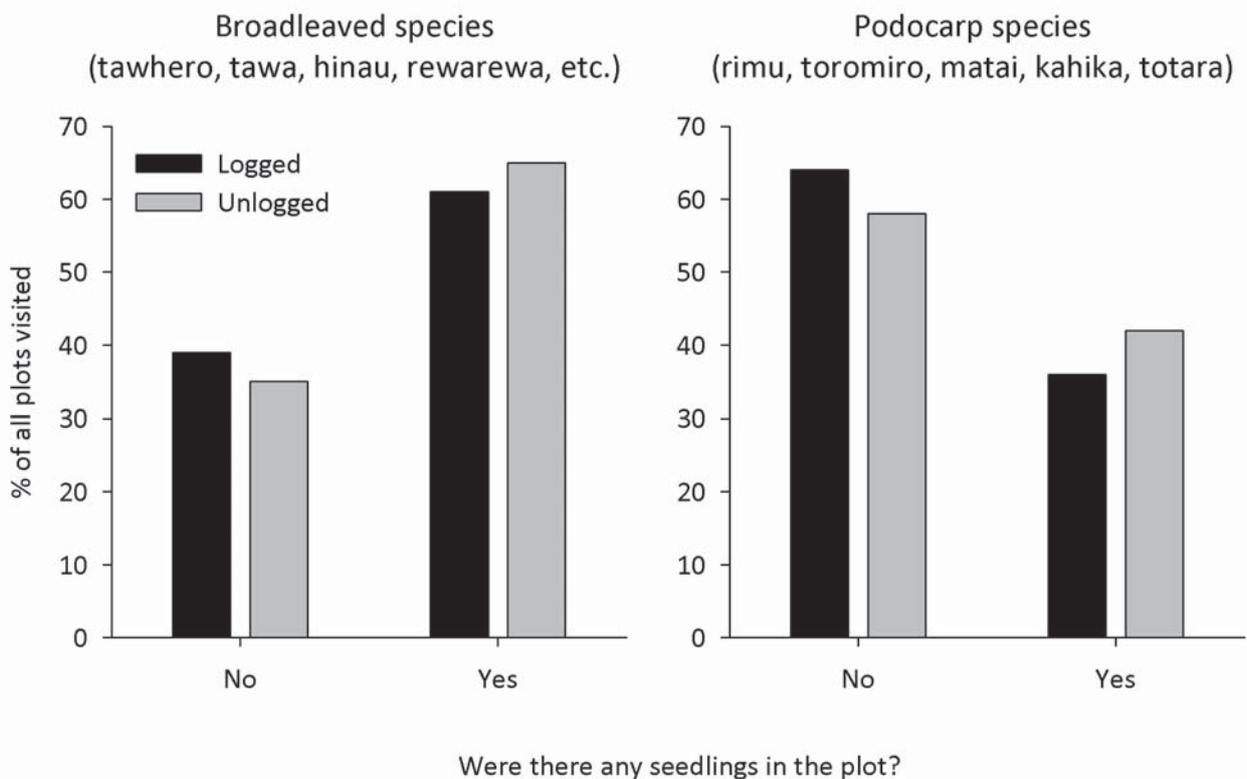


Figure 1: Percentage of plots visited that had seedlings of key tree species in them. Podocarp species (rimu, toromiro, kahika, mata , totara) are compared with broadleaved species in logged and unlogged blocks.

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## Tūhoe Tuawhenua in Tofino

### WHO'S INVOLVED?

Tuawhenua Trust: Tahae (Jim) Doherty

Manaaki Whenua: Phil Lyver

On 7 May 2010 Tahae Doherty and Phil Lyver (from Landcare Research) departed New Zealand for the west coast of Vancouver Island, British Columbia, Canada. Their destination was a small seaside town called Tofino, located on the tip of the Esowista Peninsula, at the southern edge of Clayoquot Sound. Historically this site was occupied by Nuu-chah-nulth (pronounced “noo-chall-nuth”) First Nations and was traditionally a fishing and whaling village. It was here that the International Society of Ethnobiology was holding their 12th International Congress to which Tahae and Phil had been invited to deliver a presentation on Tūhoe strategies for the conservation of kererū.

The overarching theme of the 12th International Congress of Ethnobiology was *Hishuk-ish tsa'walk*, which is a Nuu-chah-nulth phrase that embodies the concept of “*everything is one*”, the understanding that everything is connected and nothing is isolated from other aspects of life surrounding it and within it. At the traditional welcome ceremony Tahae had the opportunity to talk with a local elder and exchange information on their different cultures and beliefs with regards to nature and culture. Tahae found they had a lot in common with respect to applying their lore (*ture*) prior to harvest.

A highlight of the week was meeting six aboriginal women from the central desert (Alice Springs –Tenant Creek) region of Australia. The presentation by the Aboriginal ladies on bush foods (tucker) was hugely informative and it outlined a system of environmental management based on kinship or skin groups. Tahae also attended a presentation by a group from South Africa who talked about the ruru (owl) and its role as the bearer of bad omen if observed out of its usual night-time context – a concept that Tahae could easily relate to.

Tahae and Phil's presentation was titled “Flavour or forethought: Tūhoe traditional management strategies for the conservation of kererū (*Hemiphaga novaeseelandiae*

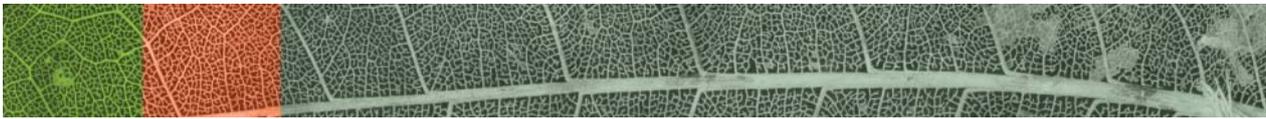


Photo captions: (upper) Tahae relaxing on the deck between conference sessions in Vancouver; (lower) Tahae hanging out with the Australian contingent – Fiona Walsh, Josie Douglas and Gina Smith.

*novaeseelandiae*) in New Zealand.” The goal was to outline traditional Tūhoe lore for conserving kererū and how changes in local climate patterns and delays in the fruiting of toromiro could potentially influence the sustainability of the harvest. Tahae spoke about the importance of kererū to Tūhoe and their customary lore, while Phil covered changes in kererū abundance and modelling the effects of harvesting kererū later in the year if toromiro fruiting became increasingly delayed with climate change. The guys felt their presentation was well received as it created a lot of discussion afterward.

One of the lessons that Tahae felt emerged from the conference was that most Indigenous people round the world share very similar traditions and customs and perspectives around wildlife and natural resources.

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## What are podocarps?

Podocarps are a group of trees that include rimu, toromiro, mataī, kahika and tōtara.

rimu



toromiro



mataī



kahika



tōtara



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Editors: Fiona Carswell  
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Layout: Cissy Pan  
Thanks to: Christine Bezar

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