

Open Space

A VERY ROYAL QCC

*Royal recognition for
Covenantors*



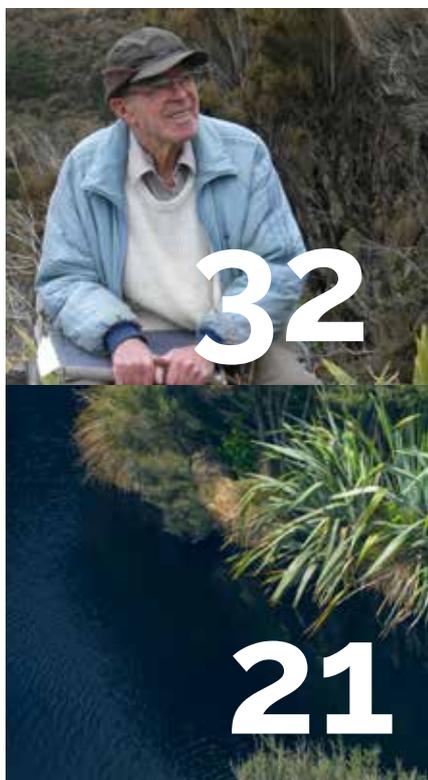
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Nga Kairauhi Papa Forever protected

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A word from the Chair

As we move onwards from our 40th anniversary celebrations, we're continuing to look towards our future. We even embraced a once in a lifetime opportunity with great success and are excited to share that with you all in this issue.

I am, of course, referencing the Queen's Commonwealth Canopy dedication event of the Carol Whaley Native Bush that we held in Redvale on Auckland's North Shore in October. The dedication formed part of the 2018 Royal Tour with Their Royal Highnesses The Duke and Duchess of Sussex.

I had the great pleasure of meeting The Duke and Duchess on their arrival to the North Shore Riding Club and accompanying them in the short drive through the protected native bush through to the plaque unveiling.

While you may have seen the coverage of the event to be focused on all the different kinds of gumboots present, I was not one to shy from the reason for the event when I had my time with Their Royal Highnesses. I took the time to brag about one of the things that I am most proud

of – QEII people. Our landowners, who epitomise the national ethos of what private land protection is all about and the fact that it is driven, not by incentives or coercion, but quite simply, by the belief that it is the right thing to do. Not to mention our staff and regional representatives who have worked hard to get QEII to a point where we can now proudly boast over 4500 landowners with covenants protecting 183,000 hectares of indigenous biodiversity, much of it rare, threatened and under-represented in our modified landscapes.



The high public interest of the event gave us a rare opportunity to reach an audience that we do not normally get to reach. By harnessing the global interest held by The Duke and Duchess of Sussex, we were able to not only leverage our name in the New Zealand conservation conversation, but also on a worldwide platform.

We look forward to continuing to build on that success and recognition as we go forward into the new year and beyond. We hope it gives us the chance to inspire a new generation of landowners who chose to protect their open spaces through QEII.

James Guild
Chair

Call for nominations for QEII National Trust Board of Directors

Members of the Queen Elizabeth II National Trust can now nominate and vote for two Directors to serve on the Board of Directors for a three-year term. The term will be effective as of 1 April 2019.

Nominations are now open and will close on 14 December. After candidates have been confirmed, ballot papers and voting forms will be sent to all eligible voting members by 8 February 2019. Voting will close just over a month later, on 11 March 2019. After the voting period has closed, results will be confirmed by the end of March 2019.

If you want to nominate a QEII member for the elections or have any questions about the voting process have a look at the FAQ's here [LINK].

For any other queries relating to the nomination and election process, email iro@electionz.com or phone 0800 666 031.

More information can be found on our website at <https://qeiiationaltrust.org.nz/2019elections/>

Troy loves the outdoor life

Our Hawke's Bay rep Troy Duncan has always been an outdoors kind of guy. With his background in fruit growing, possum monitoring, predator control and a love for hunting and fishing, Troy was never going to choose spending every day behind a desk. "I enjoy the job because I'm outdoors, seeing different places and meeting all kinds of people," Troy says.

He's now been a rep for a decade, combining his QEII role with work as a predator control contractor and looking after his own land where he and wife Tracy grow fruit and farm some stock. It's a long way from the three northern hemisphere summers in the 1990s when he travelled around Scandinavia with a team building silos for farmers and living in a caravan.

With a 12-year-old son and nine-year-old daughter keen on sports, life is busy these days. "I've got a fishing boat in the shed collecting dust but the kids enjoy getting out into the bush, so we get out there when we can," Troy says.

The number of covenants Troy looks after has grown from 162 to 211 during the past decade. Most are remnant bush blocks, a precious refuge in a region where the development of pastoral farming is largely responsible for leaving just 25 percent of indigenous vegetation and two percent of wetlands remaining.

"We have come from a long period of a colonial slash and burn ethos where anything that wasn't in grass was a waste. Hawke's Bay doesn't have a lot of native vegetation left, so every bit counts now," he says.

Some of the remaining native vegetation is primary forest but much is regenerating secondary forest or the manuka and kanuka scrub, all of which have a role in preserving native habitats. The largest Hawke's Bay QEII covenant is 4,600 hectares in two blocks and the region's iconic Te Mata Peak on the outskirts of Havelock North is part of a 95 hectare covenant. The smallest covers a 0.16 hectare site containing Maori midden pits.

The landowners are as varied as the covenants. "The people aspect of the job is huge. You're meeting a cross-section of people across varied situations and they all have their own stories and motivations. If you can't connect with the owner of the land, your job is going to be pretty hard.

"You have to be creative and practical about providing solutions. Many of our landowners are practical rural folk so practical, sensible solutions are what's required."

"I really enjoy seeing improvements in the covenant areas and the positive gains from the initiatives landowners have taken in the past. I like working with willing landowners and seeing a positive end result."

Some of the developments Troy has seen in the last decade have been less positive. Weed problems are getting worse in the region and don't receive attention from most people. Deer and goat numbers are also rising, threatening native regeneration.

"Conventional farm fences don't keep them out. People love to see them round and have them to hunt and eat. Goats are seen as a way of controlling gorse and blackberry on farms and therefore sometimes aren't a priority to eradicate. I'm a hunter and a landowner so I understand that these things are important to some people but they simply don't mix with native species restoration and regeneration, it's as simple as that," he says.

Like other reps, Troy feels privileged to get to out of the way places most people don't get to see. One of his favourite covenants is a forest where the Maungahounga Stream flows in Northern Hawke's Bay. Amateur palaeontologist, the late Joan Wiffen, spent many years there making fossil discoveries that led to the confirmation in 1979 that New Zealand was once home to dinosaurs. The stream on land owned by the Forest Life Force Restoration Trust is also home to rare whio (blue ducks).

When he was young, a typical trip into the bush for Troy was "bum up and head down" in pursuit of game. These days he'll stop, look around and see what's there. His knowledge and experience saw him join the management committee of the Hawke's Bay Biodiversity

“The people aspect of the job is huge. You’re meeting a cross-section of people across varied situations and they all have their own stories and motivations.”

Troy Duncan

Guardians this year after working with the regional council and other organisations to help draw up the Hawke’s Bay Biodiversity Strategy 2015 – 2050.

“All of what we have left is important, even some of the less impressive stuff, because it’s not necessarily what it’s like now but what it can be in the future. It’s a long term view and most people don’t think like that but you’ve got to remind yourself sometimes that’s what we’re working for.”



ROYAL RECOGNITION FOR COVENANTORS

The dedication of The Carol Whaley Native Bush as a Queen's Commonwealth Canopy covenant by the Duke and Duchess of Sussex celebrated not just the Albany property but also the permanent protection of all 44 areas of forest under the QEII National Trust's QCC programme.

"I think having the royal couple involved recognised how important this programme has been as part of a Commonwealth-wide initiative," said QEII National Trust Chief Executive Mike Jebson. "Having the Duke and Duchess here seeing the very latest of the Queen's Commonwealth Canopy forests has been fantastic, they were a delightful couple and brought real star power to the event."

QEII National Trust was chosen as the New Zealand partner of the Commonwealth-wide programme, which aims to improve the protection of indigenous forests throughout the 53 member countries. QEII created a special category of covenants to ensure the permanent protection of QCC forests on private land.

Despite an early downpour during the welcoming ceremony for the royal couple, everything went to plan at the October 30 dedication at the North Shore Riding Club's property near Albany in Auckland. QEII, the riding club, the Trees for Survival environmental group and Pinehill School worked closely together to make the visit a success.

The property consists of two valleys of paddocks and riding facilities divided by a forested hill which is permanently protected by the QCC covenant. The forest is named for Carol Whaley, who was the riding club's club secretary for over 20 years and the driving force behind getting the forest permanently protected with a QEII covenant.

North Shore Riding Club President Adrienne Deeley said the dedication was a highlight for club members and a reminder of the value of the forest. "I take a second look now and realise we really are so lucky," she said.

Their Royal Highnesses planted a kōwhai and a puriri tree with the help of pupils of Pinehill School to commemorate the dedication, and joined the pupils for a gumboot-tossing contest or "welly-wanging" as it was called by the British media.

QEII president James Guild told around 100 guests, including QEII covenantors, that having Their Royal Highnesses dedicate the native bush to the Queens Commonwealth Canopy highlighted the importance of the work QEII does to protect New Zealand's biodiversity. "This is great recognition for the 4500 other QEII protected covenants around NZ and highlights the importance of private land conservation," James said.

"We invited a selection of our members from around the country to be at the event today, many of whom also have QCC covenants and are also passionate about the importance of protecting beautiful forests like this one for future generations to enjoy. We are proud to be New Zealand's connection to the QCC and the important work land owners are doing around the country, and Commonwealth, to protect precious native forest".

RIGHT FROM TOP

Prince Harry arrives

Kowhai flower in bloom -

photo credit Malcolm Rutherford

The Carol Whaley Native bush from above

Students from Pinehill School sing waiata



Kōwhai and puriri planted by Royal couple

The choice of a kōwhai to be planted by the Duchess of Sussex at the dedication was a happy reminder of the kōwhai flower chosen to represent New Zealand on her wedding veil in May. The veil was embroidered with 53 flowers representing each of the Commonwealth countries.

Kōwhai is one of New Zealand's iconic native trees, with the blooming of an abundance of brilliant yellow flowers announcing the arrival of spring every year. The flowers attract hordes of native nectar-loving native birds such as tui bellbirds and silvereyes as well as kererū that feast on the flowers and new leaves.

Eight species of kōwhai are found in New Zealand. All are trees, except two which are bushy or prostrate. The most widespread species of kowhai, *Sophora microphylla*, is found throughout both the North and South Island, while three species are naturally uncommon.

The Duke of Sussex planted a puriri tree in recognition of several impressive examples existing in the Carol Whaley Native Bush, some of which are up to 300 years old. Puriri is another valuable food species for native birds thanks to their pink flowers and ripe red berries.

The natural range of the puriri is in the top half of the North Island, and are most common in areas of fertile volcanic soils. Māori used infusions of puriri leaves to treat sprains and aches, ulcers and sore throats and the timber has been valued for its durability.

The puriri also plays host to the moth of the same name, which in its caterpillar phase burrows into the trunks and branches. New Zealand's largest moth has a wingspan of up to 15 cm and is usually green, although the colour can vary to include yellow, red and blue-green.

The Duke of Sussex praised the work of all the land owners contributing to the Queen's Commonwealth Canopy and to the QEII National Trust. "When you think that each of those covenants is enabling the protection of important areas of biodiversity on private land – that is a huge achievement and one that deserves recognition. And as I learned in the car there are no incentives; farmers are doing this because it's the right thing to do," he said.

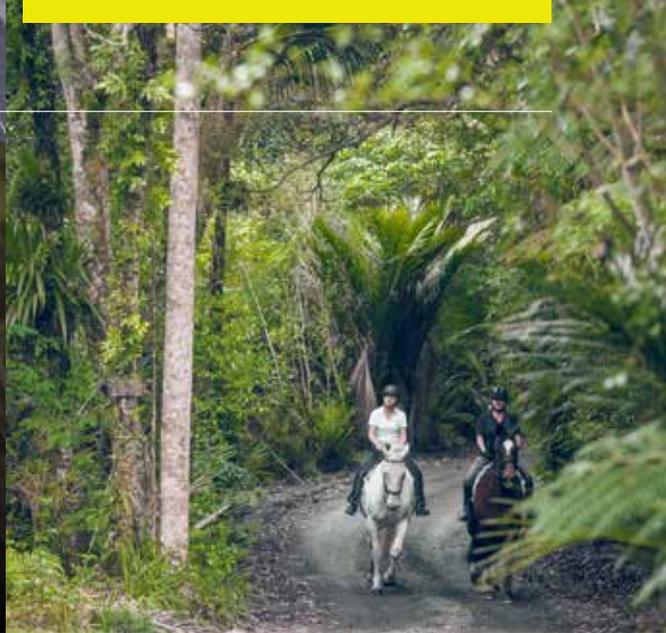
Recent news that the Duchess is expecting the couple's first child was front of mind when it came to choosing presents. They were given a copy of Lynley Dodd's classic New Zealand children's book, *Hairy Maclary* by Pinehill School and QEII presented them a New Zealand merino wool baby blanket along with a pair of children's gumboots showing Kiwi birds in a bush scene. QEII board member Gina Solomon also gave Their Royal Highnesses Ngāi Tahu pounamu (New Zealand greenstone) pendants.

James Guild said QEII was very pleased to work with North Shore Riding Club, Trees for Survival and Pinehill School on the event and see the next generation so engaged in conservation and planting native bush.

The school's pupils have planted 1600 plants along 80 metres of waterway as part of the Trees for Survival programme. The programme involves 5000 students from 133 schools as well as community groups, businesses and local government in its planting days, which see around 70,000 trees being planted annually.



Their Royal Highnesses planting trees with Trees for Survival



The Queen's Commonwealth Canopy Initiative

The QEII National Trust is the New Zealand partner of The Queen's Commonwealth Canopy Initiative (QCC), which was announced in 2015 to mark Queen Elizabeth II's long reign and service to the Commonwealth. Launched at the Commonwealth Heads of Government Meeting in Malta, the goal was to create a network of forest conservation initiatives throughout the 53 member countries of the Commonwealth and raise awareness of the value of indigenous forests.

QEII has approved 44 Queens Commonwealth Canopy covenants throughout New Zealand, protecting a total of 2831 hectares of forest, under a \$1 million dollar three-year funding programme by the Government. The first QCC covenant to be announced in 2016 was at the Mt Terako property owned by Sue and Peter Turnbull to protect 392 hectares of high country beech forest, sub-alpine scrub and shrubland in the Seaward Kaikoura range. It is home to native birds including kea, kaka and falcons.

The largest QCC covenant covers 613 ha and all of the forests meet national priorities for biodiversity protection on private land. Many are habitats for endangered species such as kiwi. "They are a fantastic set of forests that are now protected for ever," QEII National Trust Chief Executive Mike Jebson said.

"The average QEII covenant these days is about 38 hectares. These QCC forest covenants average 68 hectares in size and they represent different types of native forest throughout New Zealand."

The QCC covenants are covered by the usual conditions for QEII National Trust covenants but are also part of the Queen's Commonwealth Canopy and vetted by the Commonwealth Forestry Association and rainforest protection charity, Cool Earth. "So they've not only had our stamp of approval, they've had an international stamp of approval," Mike said.

He added the National Trust is hoping to create more forest covenants under the QCC umbrella but that would depend on securing more funding.

The Carol Whaley Native Bush

The Carol Whaley Native Bush covers 20 hectares on the property of the North Shore Riding Club north of Albany in Auckland and is much loved by club members.

The 93 hectare property has been owned by the riding club for about 40 years and the protected lowland forest and kākūka on the property provides a natural oasis as development encroaches into nearby areas. The forest includes mature taraire and puriri as well as young kauri. Horse riding trails passing through the forest are opened for club members when conditions are drier in summer and are very popular.

"The coolness of the bush in summer is loved by the riders. As soon as you get under that canopy it's truly blissful," club president Adrienne Deeley said.

Carol Whaley has been a leading member of the North Shore club for more than half a century and was secretary for over 20 years. Carol started working with QEII in 2004 to get the bush protected. "She wanted to ensure the bush would be protected for ever and she got a huge amount of support from club members for that," Adrienne said.



ABOVE
QEII Chair James Guild with the Royal couple
North Shore Riding Club members riding through the covenant
The Carol Whaley Native Bush QCC plaque

ARE YOU READY FOR **NATURES PARADISE?**

KELBURN





OTATARA

< 15 Boundary Road, Kelburn, Wellington City

A place that is truly special and unique, this 1905 villa at the end of a private path shows the importance of nature in cultivating a place for the soul.

Set on 374 sq metres of land this family home is up for sale for the first time in 55 years. Consisting of three bedrooms, study, sunroom along with open plan kitchen/dining and a large separate living room. Blessed with all day sun, showcasing bush and city views. Complete with a garage on the street. An additional 396sq metres of the property is protected by a QEII covenant. It has reverted to native bush and is bursting with native flora and visiting birdlife from nearby Zealandia.

A mere minutes' walk from the friendly amenities of Kelburn village. The neighbouring Botanical Gardens is a multi-pathed gateway to seasonal displays or pleasant walkways to the central city.

Tender Wednesday 21st November 2018, 1:00 p.m. (unless sold prior)
Listed on Sothebys Realty, reference WEL10162

^ A sanctuary in Southland

195 & 197 Grant Road,
Otatara, Invercargill

The dream property for someone who loves birds, trees and natural spaces, while giving the feeling of living on an island – without the hassle of being too remote or expensive. Main dwelling is a 2 storied house with a lounge and bedroom on the top floor and 3 bedrooms, a lounge, kitchen, bathroom 2 toilets and sunroom in the ground floor, heat pumps and 2 fireplaces keep the whole place warm and cosy. Complete with an extensive vegetable garden, 5-metre tunnel house and a small glasshouse – ideal for someone with a keen green thumb.

Enclosed in native forest with 5,1164ha land in regenerating forest, mature podocarp forest and wetlands on 2 titles and mostly protected under QEII covenant and council plan.

The property boasts lovely views from the house and the estuary to Bluff and Stewart Island from the boardwalk, which links to a gravel track and goes through forest and wetland.

Asking price \$750,000. Listed on Trade Me, reference FSY270

PRIVATE LAND CONSERVATION HELPS WITH 'DOOMSDAY INSURANCE'

Department of Conservation botanist Brian Rance and Southland QEII field representative Jesse Bythell teamed up last autumn to collect seed from a cryptic native shrub with patchy distribution. The goal was to collect material from heart-leaved rohutu (*Lophomyrtus obcordata*) so it can be banked in the New Zealand Indigenous Flora Seed Bank.

By *Jesse Bythell*

What exactly is seed-banking? Seed-banking anticipates radical reductions in the abundance or genetic diversity of our native plants and has been described as an 'ambulance at the bottom of the cliff' approach. It is an insurance policy that no one wants to have to have to make a claim on. Frustratingly many plants cannot even be banked because their seeds lack a dormancy period, so they cannot be dried and frozen for storage without destroying them – swamp maire (*Syzygium maire*) is a native myrtle which is 'recalcitrant' like this and cannot be banked.

One challenge for seed-banking is gaining access to a wide range of populations of plants to collect diverse genetic material. Many threatened plants occur in the lowland of New Zealand, an area not well represented in the public conservation estate. This bias to protecting upland habitat means the efforts made by private landowners to protect

lowland ecosystems is even more critical, especially for species which only occur in the lowland or are naturally rare.

To the casual observer, heart-leaved rohutu can look like many other small-leaved native shrubs, but few people realise it has the same threat classification as the kākāpō. Due to the imminent threat of myrtle rust, the New Zealand Indigenous Threat Listing Panel has recently elevated the threat status of all our native myrtle species. New Zealand has 26 native myrtle species, some of which, like pōhutukawa, mānuka, rātā, kanuka, are well known and loved. The arrival of myrtle rust puts the long-term survival of these species in jeopardy, though to date the rust seems to damage only some of our myrtle species.

Because heart-leaved rohutu is well-camouflaged and its distribution is patchy, finding the right plant at the right time can be a challenge for seed-banking. It is also important



The threat of myrtle rust has not receded, and seed-banking is a last-ditch option for conservation management of our myrtle species. Currently myrtle rust has been detected across various parts of the North Island and the top of the South Island. It is a wind-borne fungus and can be present in plants which do not display symptoms, so detection is difficult. Eradication is deemed impractical, but there are some steps we can take to ensure we limit the impact of this invasive fungus:

- Learn to identify myrtle species so you can look out for myrtle rust
- Don't touch!
- Don't collect samples as this might spread the disease.
- If you can, take a photo of the rust and the plant it's on.
- Phone MPI's exotic pest and disease hotline 0800 80 99 66.
- If you accidentally come in contact with the affected plant or the rust, bag your clothing and wash clothes, bags and shoes/boots when you get home.
- Also consider limiting the use of myrtle species in restoration projects.
- Get in touch with your local QEII rep if you are interested in seed-banking.

that specimens collected from are free of obvious signs of myrtle rust and that voucher specimens should be collected and submitted with the seeds.

While carrying out their seed collecting task, Brian and Jesse felt like characters in some Mission Impossible movie plot – carefully manoeuvring a pruning device on a long pole high above their heads to collect heart-leaved rohutu from shrubs which were too fragile to climb and whose canopies are too tall to reach. At times it was remarked that a trained monkey might be a useful team member for these sorts of jobs! Many of the seeds of our native myrtles are dry and unrewarding for our native birds, but some such as heart-leaved rohutu and bush rohutu (*Neomyrtus pedunculata*) are fleshy – so getting the fruit before the birds do added more pressure to the seed collecting mission.

John and Rhonda Cowie's generosity in allowing heart-leaved rohutu seeds to be collected from their central Southland covenant was vital to the success of this seed-banking mission. The plants in their covenant are younger and growing in the open, so seed collecting was a lot simpler and more productive. The Cowie's have two covenants which support a range of threatened species in ecosystems which are vulnerable to human damage – limestone outcrops and lowland riparian forests. Covenants not only provide local scenic and biodiversity benefits but can also contribute to the conservation of our unique species at a national level.

QEII takes rep coast to coast

Tom Stein doesn't worry that he spends a lot of time on the road covering the top of the South Island from the east to the west coasts as representative for the Marlborough and Nelson-Tasman regions. "I think being a QEII rep is a pretty cool thing but doing it in Nelson and Marlborough is even cooler."

Tom has been a rep for a decade now, firstly for Marlborough and later adding Nelson-Tasman. To cover his large territory, most months he spends several nights a week away from his home at Linkwater in the Marlborough Sounds, and he's quick to express his gratitude to wife Liz for putting up with his work schedule.

The variety of landscapes, wildlife and vegetation in the two regions is Tom's favourite thing about his patch. "We've got near desert on the east coast of Marlborough with some of the lowest rainfall in the country, sub-tropical forests in Golden Bay, through to the

high country in South Marlborough. There are beech forests near St Arnaud, and lowland podocarp in the Marlborough Sounds. That huge variety is the thing I love about the area."

Tom grew up in Auckland's Waitakere Ranges, developing an early love and respect for New Zealand's natural environment and wildlife. He was with the Auckland Regional Council for about 10 years before moving to Marlborough where he worked for DOC and private landowners doing pest and weed control and related work before joining QEII.

There's not a lot of spare time but he and Liz like to spend time with their three daughters and two granddaughters. Tom also builds walking tracks on a neighbouring property and enjoys tinkering in his shed, where he's just finished restoring a 1965 Triumph Herald.

Work keeps getting busier and the number of covenants in Tom's two regions has grown from 145 to 246 over the last 10 years. "A friend of mine was surprised at the number of covenants when he went for a drive with me. As we drove along I was pointing out each side of the car and



telling him: 'That's a covenant, that's a covenant, and so is that.'

"I often find in conservative areas there'll be no covenants in a particular area and then one person will put one in. Then four or five years later other covenants will pop up because they all watched what happened on the first covenant, realised the world didn't end and thought, 'that's not a bad idea.'"

Like the land, there's a big variety in the people Tom deals with, from big runholders in Marlborough, farmers and lifestyle block owners. The largest number of covenants are in the Nelson-Tasman region but the biggest blocks tend to be in Marlborough, so the area of covenanted land in both regions is about the same. The largest covenant in Marlborough is around 1200 hectares and another 800 hectares is on an adjacent property.

Working with people is the most important part of Tom's job and he loves dealing with enthusiastic covenant owners keen to do the best for the natural values of their land. "Some of the covenantors are putting a huge effort into controlling pests and weeds and restoration plantings, they're having huge benefits for those forest and wetland areas."

While there is a lot of attention given to predators these days with the Predator Free 2050 goal and lots of new predator control groups popping up, there's less attention paid to weeds. Old man's beard is the biggest threat to covenants in Marlborough and Nelson. "It's a lot harder to persuade people to have a go at old man's beard taking over the forest. But if they don't do that, there won't be anything of value left to protect. It's the vegetation that supports everything else."

For some people buying lifestyle blocks or other rural land these days, an area of protected forest, or a small wetland may be part of the appeal. "A question we often get asked is, does a covenant increase or decrease the value of your property and I always say it's like a swimming pool, if you want a swimming pool, it increases it and if you don't, it decreases it. Generally, people who buy properties with a covenant on it like it and that's why they bought it."

Tom's work satisfaction remains undimmed after a decade and he loves having a job that helps make New Zealand a better place. "I like knowing I'm doing something for the good of the world. I would never go for a job just for money. I love meeting the landowners, and I love getting to see bits of the country nobody else gets to see because it's private land."



"I love meeting the landowners, and I love getting to see bits of the country nobody else gets to see because it's private land."

Tom Stein

Tom Stein visiting a covenant

THE PATH TO POISONS

When it comes to pest control, QEII takes a pragmatic approach with landowners with the choice being ultimately up to them to determine. Most landowners find that the choice can best be determined through test and learn and it's often not as easy as the traps of the past where the mantra is to set and forget. Judy Gilbert from the Windy Hill Rosalie Bay Catchment Trust on Great Barrier Island talked to us about the use of toxins in conjunction with rat traps as a method to suppress both kiore and ship rats.

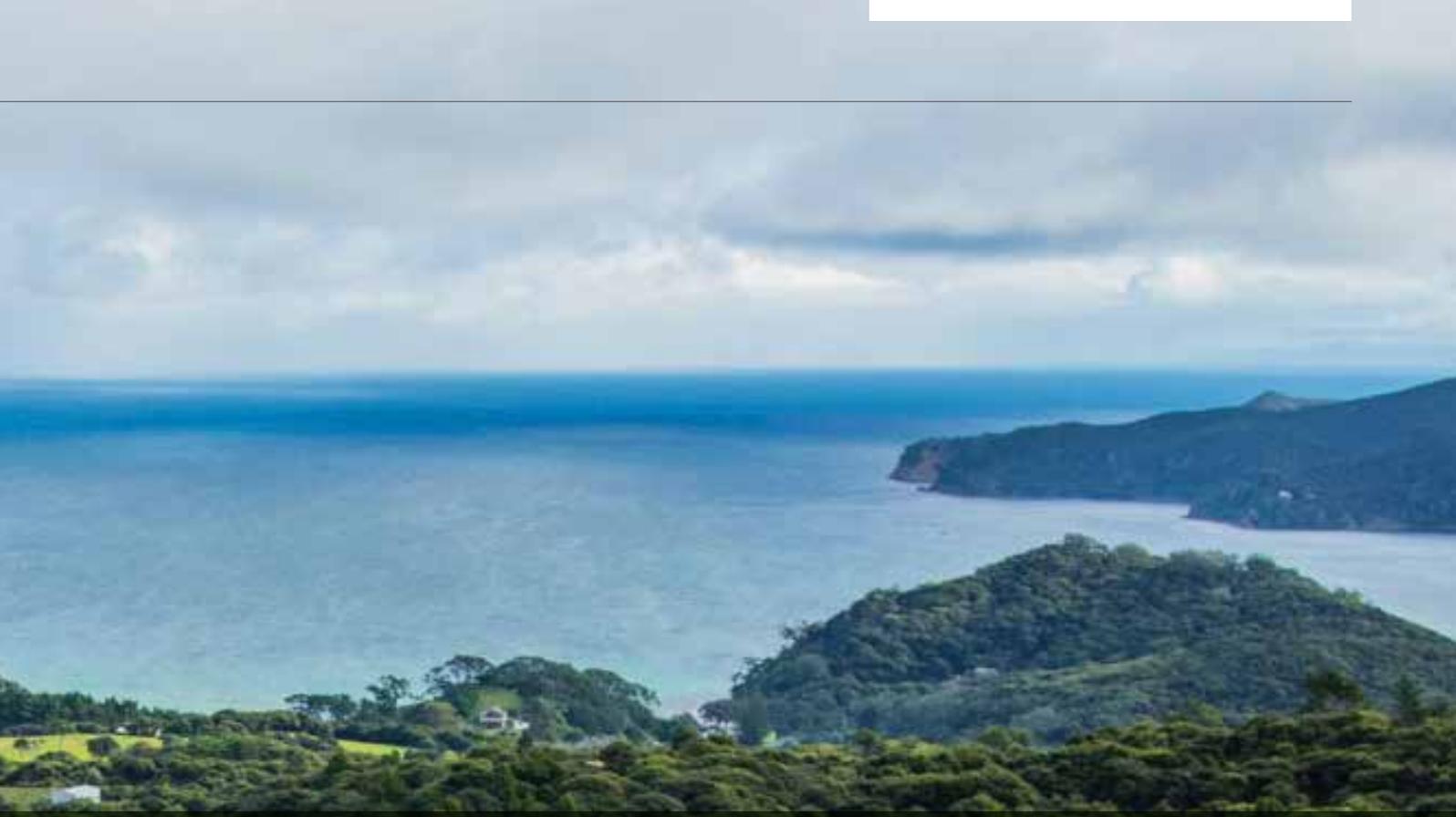
The impact of toxins on the planet is a pressing and vexed matter. For those who practice kaitiakitanga in their QEII covenants using rat bait, it poses an ongoing concern that requires vigilance and constant evaluation.

Toxin use has been a challenge for the Windy Hill Sanctuary on Great Barrier Island that commenced in 1999 as a poison free initiative. The 770-hectare Sanctuary has the goal of protecting and enhancing the biodiversity values of the south eastern area of the island, which includes three QEII covenants totalling 267 hectares.

Integrated pest management of plant and animal pests has been carried out for nearly 20 years keeping ship rats, kiore, mice, rabbits, feral cats and pigs, and a range of weeds suppressed sufficiently to allow native species to flourish. Great Barrier is blessed to have no possums, mustelids, goats, deer, hedgehogs or Norway rats but is plagued with enormous numbers of rats. 53,000 rats have been trapped to date in the Sanctuary alone.

From 1999 – 2005 the Sanctuary management of rats relied solely on trapping. Detailed data was kept over 6 years which showed unequivocally that trapping alone on a landscape scale cannot reduce rat numbers sufficiently to make the effort and the cost worthwhile. One of the main reasons for this is that traps cannot be checked frequently enough when you have a

*ABOVE
View from Windy Hill
Sanctuary on Great
Barrier Island*



couple of thousand traps spread over a large area. Other issues include:

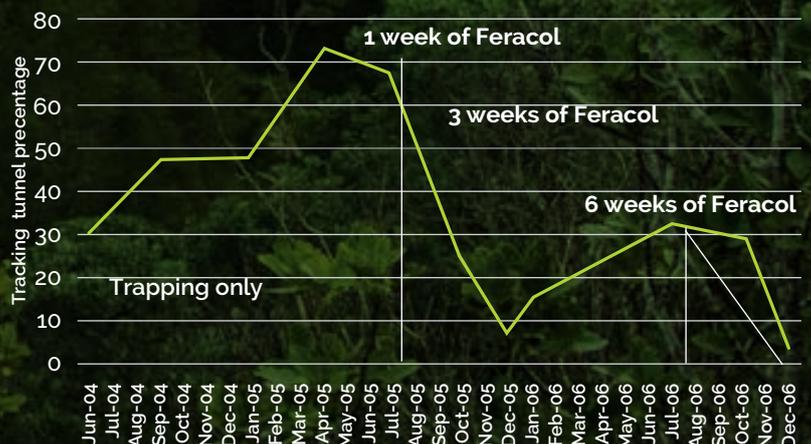
- a trap can catch a rat on the first night it is set and thereafter is useless until next checked -in our case a month later
- the lure (usually peanut butter) may get eaten by slugs, snails, and ants leaving the trap with nothing to attract rats
- some rats can get trap shy or have resistance to entering any kind of station, especially as food abundance increases as rat numbers decline

The Sanctuary knew that they had to look at other options to control the rat population on their property. They went on to test three different types of bait - cholecalciferol, brodifacoum and diphacenone.

In 2005, the Sanctuary landowners cautiously agreed, and not unanimously, to the very careful introduction of Vitamin D3 or cholecalciferol which was to be 'pulsed' twice a year. Pulsing describes the method whereby baits are put out and, at the end of a specified time, the remains retrieved - this method limits the amount of time that bait is present in the environment. Feracol was chosen as it was deemed acceptable for rat suppression on organic farms and it had a limited risk of secondary poisoning.

This toxin was prudently introduced for just 1 week for the first pulse, 3 weeks in the second pulse, and 6 weeks thereafter. The longer pulses were necessary to ensure that less dominant animals had time to access to the bait after the dominant animals. The graph shows how effective these 'pulses' were over the first 18 months. Trapping carried on during and between the pulses. The prime target of pest suppression is to reduce rats to 5% or less tracking tunnel rates and this graph illustrates how difficult this is to achieve.

**Windy Hill Rat Tracking Tunnels
Pre and Post Vitamin D3 (feracol) Toxin Introduction**



In 2007, a master’s Science Student began her thesis on the spatial distribution of rats in the Windy Hill Sanctuary. The thesis was able to show that over the following year that we were not able to keep rat numbers at sufficiently low numbers with this mix of trapping and Feracol pulsing.

This coincided with a worldwide shortage of Vitamin D3, which is prescribed for people who do not get enough sunlight to boost the body’s own Vitamin D3 production, and this pushed the price of this bait up significantly. Along with the need to further reduce the levels of rats the Sanctuary was conscious that it was best practice to change bait regularly to reduce the risk of rats building up an immunity to certain toxins over time.

This prompted the introduction of brodifacoum, a second-generation anticoagulant, as the sole tool for rat suppression programme in 2009. Within 18 months however, the landowners had some concerns about the long-term impact of this poison and its tendency to persist in the environment and cause secondary by-kill. To manage this, brodifacoum use was restricted to a smaller area in the sanctuary and its effectiveness measured over the next three years.

Towards the end of the three-year period, samples of feral pig liver and muscle taken from the Sanctuary were sent to the toxicology department at Landcare Research. All three samples of liver came back with detectable levels of brodifacoum and because pigs are part of our food chain its use in the Sanctuary was terminated.

The same samples were also tested for diphacenone, a vitamin K antagonist which also has anticoagulant effects on rodents. At the time, diphacenone was being used in other parts of the Sanctuary. The results came back with no detectable levels found. This confirmed the reduced risk of bio-persistence in this first-generation anticoagulant and diphacenone is the toxin still in use combined with trapping in the Sanctuary.

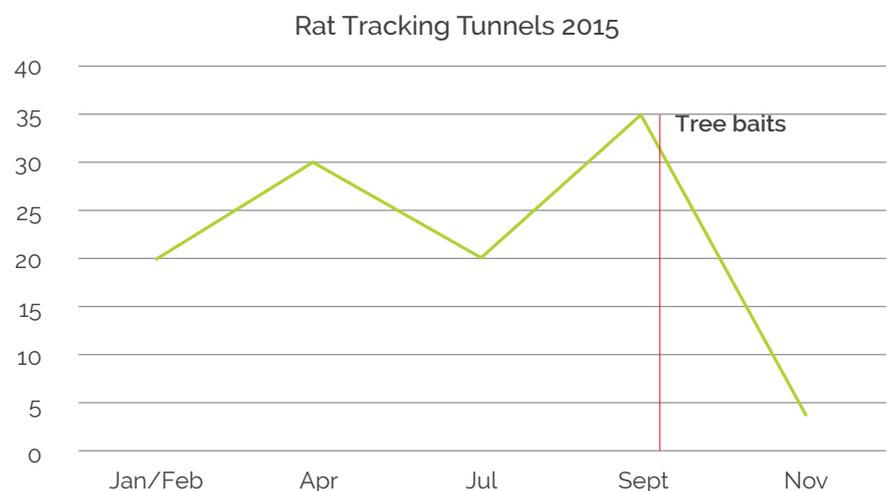
In choosing to use a first-generation multi-feed anticoagulant, the necessity for trapping as a back up is seen as essential as sub lethally poisoned rats can then potentially be picked up by the traps. Over the last six years the Sanctuary has carried out research to establish the most effective amount of bait to be provided. The goal was to minimise both waste and the amount of bait in the environment yet have enough bait available to the rats for at least 4 nights of feeding.

A two-year weight trial showed that more than half the bait came out of the field after its attractiveness diminished and was processed through the Sanctuary worm farms. Trials of bait at 50, 100, and 150 grams indicated that 50 grams was not enough and that 100 or 150 grams resulted in better rat tracking tunnel rates.

Trials are still underway establishing whether 100 or 150 grams is best because weight to carry into the field and costs are a big consideration. Diphacenone is purchased as a paste and is bagged in ziplock plastic bags to maximise its longevity and to reduce the availability of the bait to snails and slugs.

When rat numbers rise baits are pulsed in trees from time to time. This is an effective way of providing bait to rats that reduces any perceived risk of having to enter a station. The graph below illustrates how effectively this can bring rat abundance down.

In the absence of more advanced pest management tools, the mix of traps and baits is working well for the Sanctuary. In 2017 the annual tracking tunnel average for the Sanctuary managed area was 5% with the unmanaged control area at 43%. This is a great result for an unfenced Sanctuary in contiguous bush.





Wetland protectors reap rewards

When Ian and Jenny Gamble bought a property on the edge of the New River estuary across from Invercargill in 1991 they were looking for somewhere quiet where Ian could rest between regular night shifts and do a bit of fishing in his spare time.

"It didn't work out that way. We often tell people that this place has changed us more than we changed it," Ian says. That's saying something because there's been plenty of change to the property. An area that was once pasture is now regenerating forest and the place is filled with birdsong, including that of rare fernbirds and native forest birds.

The Otatara property of just over five hectares, includes two areas totalling 4.3 hectares with QEII covenants. About a third is mature bush, a third re-establishing forest and the remainder wetland shrubland and oioi, or jointed rush. Apart from a small garden, the house is totally surrounded by bush.

Even before the Gambles moved in the area was known for fernbirds and they would regularly see cars parked at the end of the road near their house with a copy of Chambers Birds of New Zealand guide lying on the passenger seat. After nearly 27 years of predator control and restoration work, the fernbirds are now a much more common sight.

"The big reward for us here has been seeing the big increase in fernbirds especially. We're now seeing them around the house quite regularly and the whole of this property, even in quite open areas they're being seen quite often and that is only due to the pest control work," Ian says.

He still finds fernbirds mysterious after all these years. Sometimes Ian will see none on the property's 600 metre circular walk, which includes a boardwalk partly funded by the National Trust.

At other times they can be seen hopping along the boardwalk and he'll see a dozen on a single circuit of the property. "There's no rhyme or reason to the way they behave, there doesn't seem to be any day or time of year you'll see more of them – it seems totally random really."

Bellbirds and brown creepers have also responded really well to the predator control work. Other birds commonly seen include fantails, tui, kereru, harrier hawks and southern grass skinks are well established. Royal spoonbills and godwits are around too, although they usually feed in other parts of the estuary.

The mature podocarp forest includes trees over 400 years old. Ian has been told the property is the best remaining area of forest adjoining an oioi estuary in Southland. School groups and the public were able to visit for many years and today Ian and Jenny run a bed and breakfast business, Fernbirds B&B, for nature-loving guests.

After moving to the property Ian and Jenny saw development going on in the surrounding area and decided taking good care of their land was the

priority. Early on there were around 500 possums, and lots of weasels, stoats and ferrets and feral cats taking a heavy toll. Later the couple realised

they needed to focus more on rats which were causing havoc in the house as well as on the land.

"They were pretty difficult to deal with and it's only in the last five years we've knocked them quite hard. The way we've been able to do that is by regularly swapping around the baits we're using on them."

Almost all the couple's spare time went into their restoration in the first 20 years, including replanting the pasture in natives and weeding the newly restored areas. Now the regenerating forest has taken hold, the need for weeding is much reduced, although there's no let-up in the predator control. As well as their own land, Ian looks after traps and bait stations across the road from his property while a volunteer group takes care of a reserve next to the Gamble's property.

"For me it's a pleasure – there isn't really anything I enjoy more on a nice day than having a ramble along these trap lines and doing the job. It's quite swampy in places – each time I walk along the line I mentally tell myself to remember this particular hole and nine times out of 10 I forget it and over the gumboot it goes."

After more than quarter of a century Ian and Jenny have decided it's time to seek new experiences and they have put the property up for sale. "We don't see ourselves as owners of the forest, we see ourselves as guardians really, and that's going to be a big part of trying to find a new owner." See page 13 for more information.

Agri-curriculum and the Awapikopiko Reserve

Conservation is an ever-growing conversation and it's only logical that it should start from a young age. Kumeroa School, just outside of Woodville, believes in the importance of their students understanding the impact of agriculture and horticulture on New Zealand and to encourage this, the school has implemented an agri-curriculum.

This sees students identifying ways that they can learn about agriculture and horticulture. This is often through student-led projects that give back to and involve the local community. There are a large range of projects that the students are involved in, including calf, chicken and lamb raising, fixing chicken coops, designing and building a sensory garden, and plant to pizza where the students grow herbs and other various ingredients that end up on a pizza.

A group of students from Kumeroa School chose to adopt the Awapikopiko Reserve project, which is run by Queen Elizabeth II National Trust. The Awapikopiko Reserve is a walking track which runs through 28 hectares of virgin native podocarp forest, which was gifted to QEII by David Druce in 1995. The forest is rich in native flora with more than 130 recorded species and is one of the few remaining remnants of the original 70-mile bush that existed when the Maori and settlers arrived in the Tararua area. The students know how important the environment is to the sustainability of New Zealand and are passionate about keeping this reserve alive and the eco-system thriving.



At Kumeroa School, the Awapikopiko Reserve has various projects which students can focus on. This shows the children the value of protecting diverse values and teaches them about the various things that can affect an eco-system.

Areas of focus for the students are the eels in the area, looking at discovering whether the reserve contains native New Zealand eels or mudfish and ways to help the population flourish. The water quality was also examined at the reserve and students learnt about how water quality can affect the eco-system. A beehive was also placed in the reserve which enabled students to learn how to care for and maintain bees and educating them about products that can be created with honey. A guide book about caring for bees is being created by current Kumeroa School students to pass on to future students that will be involved in this project.

The Awapikopiko Reserve project also covers the topic of trapping, assisting students in identifying, creating, building and monitoring traps for pest control in the area and track care and upkeep to ensure that the track into the Reserve is maintained. Track up-keep also includes looking after signs along the track about the various flora and fauna that can be found in the reserve.

All these groups have set goals, sought advice from various sources to assist them with their projects succeeding including QEII, Horizons regional council, scientists and Department of Conservation. Regular trips to the reserve are an important part of their projects and they are lucky enough to have QEII Regional Representative for Tararua, Bill Wallace, often join them.

Awapikopiko Reserve is one of the many QEII covenants with public access. To get there, 13km east of Woodville, turn off SH2 and travel to Kumeroa. Follow Kumeroa Road to Druce road, where the reserve is signposted.

BELOW
Children from Kumeroa School getting involved in the reserve



TO SOW A FOREST

Imagine if we could establish native trees as easily as sowing pasture.

*Janice Lord, Associate Professor,
Department of Botany,
University of Otago*

A customised seed-mix delivered to site and applied over hectares of prepared land using agricultural techniques. Such an approach could change the future of native reforestation in New Zealand and is already being used successfully across the Tasman to rehabilitate and reforest degraded land in a national-wide initiative known as Greening Australia. Janice Lord from Otago University writes about how native revegetation from seeds could work in New Zealand and the work that QEII is doing as part of the Ngā Kākano Whakahau seeds project.

Initiated by the QEII National Trust in April 2018, Ngā Kākano Whakahau, the seeds project, aims to develop ways of establishing large tracts of native forest from seeds under New Zealand conditions with New Zealand species. The Ngā Kākano Whakahau research consortium brings together expertise from QEII National Trust, University of Otago Botany Department, Taeye Engineering and Department of Conservation, and has funding support from QEII National Trust, Soho Properties and the New Zealand Bioheritage National Science Challenge to undertake stage one of this. QEII is in discussion with Te Uru Rākau over funding for stage two of this research.

The novel approach of the project is to combine agricultural seed delivery innovation with a detailed understanding of how native seeds and seedlings interact with essential mycorrhizal fungi. The outcome will be a drastically cheaper and more effective method for native reforestation at large scales over even difficult terrain. Although the project will initially involve trials in Canterbury and Otago, it is critical to achieving a step change in how native reforestation is approached nationally, and therefore critically important to the achieving the target for 25% new native forest set under the Government's One Billion Trees initiative.

One Billion Trees necessitates an ambitious tree planting programme over the next ten years and proposes a key role for native species and the establishment of permanent forest to complement short-rotation plantation forestry. The commercial forestry sector has efficient methods for large scale tree planting. However, current methods of native tree establishment using nursery grown stock are costly and labour-intensive, especially when it comes to large-scale projects. Ease of propagation and establishment mean that often the variety and quantity of regionally appropriate species available to landowners and government agencies is limited. There is a growing interest in methods for establishing native species from seed, and approaches such as hydroseeding and direct drilling are now available through contractors. A shift to seed-based reforestation offers a cost effective, rapid means of meeting native tree planting targets.

The Ngā Kākano Whakahau project targets two critical barriers to native reforestation using seeds. Firstly, within the One Billion Trees initiative, much of the land potentially available for permanent reforestation with native trees is low productivity or erosion prone hill country and riparian margins on private land. The establishment of permanent native forests on marginal land would lift the productivity of regions by providing



FROM TOP

Ectomycorrhizal fungi from Mahu Whenua Cortinarius sp photo credit Penelope Gillette
Beech regen sampling Mahu Whenua photo credit Cara-Lisa Schloot
Ectomycorrhizal fungi from Mahu Whenua Cortinarius sp photo credit Julia Bohorquez
Motatapu beech fragments photo credit Janice Lord

alternative sustainable income streams such as manuka honey, wild foods and traditional textiles materials, while also protecting against erosion, improving water yield, sequestering carbon and conserving biodiversity. The project will investigate agricultural innovations that would enable seeds to be sown into challenging terrain such as steep hill country or over fragile wetland soils. Direct drilling has been used successfully by project partner Tim Whittaker from the Department of Conservation, in Canterbury and Otago, with the type of single tyne seed drill used to establish trees in Australia. These trials have demonstrated that native species can be successfully established from a direct drilled seed mix.

The second critical barrier to successfully establishing native species from seed, or even as container grown plants, is the reliance many native species have on mutualistic mycorrhizal fungi. Mycorrhizae are fungi which form an intimate association with host plants roots, hence the name mycor (fungus) – rhiza (root). Most land plants form mycorrhizal associations and while these associations are not always beneficial to all species, without them vegetation diversity is drastically reduced, and some plants are unable to grow. The key feature that makes a mycorrhizal association beneficial for many plants is that the network of fungal hyphae associated with the plant's roots are much more effective than the host plant at foraging for essential soil nutrients such as phosphorus and nitrogen. These nutrients are typically transferred to the host plant through specialised structures in and around the roots and in return the mycorrhizal fungus obtains carbohydrates from the host plant.

While mycorrhizal fungi are incredibly diverse, they can be divided into two basic types. The most common and widespread type are endo-mycorrhizal fungi which live inside

the host plant roots, and the most common of these is arbuscular mycorrhizae (AM). This fungal group, the Glomeromycota, are all closely related and don't form mushrooms, but rather form asexual resting spores in the soil. In New Zealand most trees, shrubs, ferns and herbs have AM associations; sedges and grasses generally don't associate commonly with mycorrhizal fungi. Some native species such as broadleaf are highly dependent on AM and will stop growing if no mycorrhizae are present in the soil.

The other basic type is ecto-mycorrhizal fungi (EM) which form a sheath on the outside of the host plant roots. These fungi are very diverse and form mushrooms during sexual reproduction. The only native species in NZ that form EM associations are the southern beeches, manuka and kanuka. The beeches are highly dependent on EM fungi and will not establish in soil that lacks it. Manuka and kanuka can form associations with both AM and EM fungi so are a key pioneer stage in the establishment of beech.

One of the major obstacles with establishment of native trees from seed is the lack of native mycorrhizal fungi in degraded or agriculturally managed soils. Stage 1 of Ngā Kāmano Whakahaū which is currently underway involves proof of concept research into methods for sowing native tree seeds and beneficial mycorrhizal fungal spores together to enhance seedling survival.

Our trials are aimed at developing methods for introducing mycorrhizal inoculum with seeds during direct drilling or mulch-based application, but also to demonstrate smaller-scale methods that can be used by landholders and community groups to make their own AM or EM inoculum for local reforestation projects.

Brazilian beetles tackle Tasman weeds

Tasman Bay landowners David Chadwick and Lisa McIlwraith are chuffed to be getting a helping hand from a horde of Brazilian beetles to control the weed tradescantia carpeting parts of their forested covenant. The release of the beetles is the first by the QEII National Trust on a covenant in the Nelson-Tasman region and was made possible by a generous gift of beetles by Manaaki Whenua - Landcare Research. "We don't use chemical herbicides on our property, so any help we can get from the beetles is welcome," David said.

Tradescantia is a major headache for many landowners and gardeners, especially in the North Island and warmer parts of the South Island. The Brazilian native is tolerant of deep shade and can form a deep carpet on the ground, preventing other seedlings from taking hold.

The beetles, also native to Brazil, have been approved as a biocontrol in New Zealand since 2008. Manaaki Whenua has until recently been breeding and selling them for release to combat the weed, which is resistant to sprays and other conventional control methods.

North Canterbury QEII representative Miles Giller was offered beetles for free by Manaaki Whenua Science Team Leader, Biodiversity and Conservation, Lynley Hayes. They had been used in a PhD project by Hester Williams to investigate the conditions required for insects to establish a population in a new environment. This study has important implications for both invasive species in New Zealand and those introduced for biocontrol purposes.

"Hester had surplus beetles and was happy to give them away to good homes," Lynley said. "I think covenants are perfect places for weed biocontrol because as a rule they're not going to get grazed, mown or sprayed."

Miles released some beetles on covenants in his own region and offered some to Marlborough and Nelson-Tasman rep Tom Stein. "I knew Tom was really keen to get some going in his patch but hadn't so far because they usually cost a lot of money.

"But he's got a bigger problem with tradescantia than I do because his region is a lot warmer which suits the weed better. So when I went up there for the QEII annual conference (in September) half a dozen of us went out and liberated them up there."

Tom said the covenant owned by David and his family was chosen because it's a high value ecosystem with lowland alluvial matai/totara and a number of rare plants. "It's not particularly big but it's a great piece of forest."

The main problem for David was controlling the weed on a less accessible part of the covenant of about 2.5 hectares. "It will be interesting to see what effect they have. Even if they slow down the growth it's all good – I'm sure they won't eradicate it completely," he said.

Tradescantia, or Tradescantia fluminensis, was first brought to New Zealand as an ornamental plant but has become the most troublesome ground cover weed in the North Island and some northern parts of the South Island. It's not known to produce seeds in New Zealand but stem sections break off easily and take root.

Manaaki Whenua first imported the beetles into a secure containment facility in 2007 and carried out a number of trials before their initial release. "It's a long process and it takes a long time to find suitable safe agents, go through all the regulatory hurdles, and breed them up and get them out in the field," Lynley said.

Three different tradescantia beetles have been imported, bred and released in New Zealand. Tradescantia leaf beetle (Neolema ogloblini)

“It will be at least a couple of years before we can get a good idea of how they are going. If they do well that will be great – tradescantia is one of the nastiest of the ground cover weeds for us.”

Tom Stein

was the first species released in 2011, followed by the tradescantia stem beetle (*Lema basicostata*) in 2012, and the tradescantia tip beetle (*Neolema abbreviata*) in 2013.

The results of the releases have been encouraging, particularly in northern areas of the North Island, where the beetles can reproduce more quickly. Tradescantia has almost disappeared from some survey plots and in others the weed has been reduced to levels where native plants can again become established.

Whangarei QEII rep Nan Pullman released leaf beetles supplied by the Northland Regional Council into Ian and Sandy Page’s covenant in 2011. It took several years before the population expanded sufficiently to allow beetles to be collected for other sites. The insects, which can fly, have also spread into surrounding areas of their own accord, Nan says.

“There’s been varying levels of success but in some blocks where there’s been a thick sward of tradescantia, it seems to have reduced down and opened up. Where the areas have opened up, we’re seeing native seedlings coming through. Overall, it definitely looks promising.”

The beetles appear to be less effective on flood prone sites but Manaaki Whenua is hoping the release earlier this year of another biocontrol agent imported from Brazil, a yellow leaf spot fungus (*Kordyana brasiliensis*), will work well in those areas.

It’s still relatively early days for the beetles and fungus but landowners and gardeners will have their fingers crossed. Tom Stein can’t wait to see how the beetles perform on David and Lisa’s property – he’s hoping the population will grow quickly so he can harvest some for other tradescantia-affected covenants in his region.

“It will be at least a couple of years before we can get a good idea of how they are going. If they do well that will be great – tradescantia is one of the nastiest of the ground cover weeds for us, it likes those nice, easy alluvial places where you’ve got the rarest forests,” Tom said.

People wanting to get tradescantia biocontrol agents should register their interest with their local QEII rep and/or regional council biosecurity section. These will be supplied for free as the harvesting of existing sites permits.

BELOW
Close ups of Brazilian beetles on the tradescantia plant
Brazilian beetles being released onto the covenant







WETLAND PASSION PAYING OFF FOR NATURE

When Brent Johnson and his team started planting 15,000 natives around a rare covenanted wetland for a lifestyle block developer in 2016, he never thought he would end up owning it. The wetland, the third largest lowland swamp in the Tasman district west of Nelson, started as his job and became his passion.

I spent a few days in there and then I started thinking it was something

“QEII have been able to help through the Stephenson Fund, which has been awesome.”



ABOVE FROM LEFT
Views of the wetland
Brent Johnson in his wetland

we should look at buying because I really liked it. It looks awesome now but it's just going to get better and better," says Brent, who runs a native revegetation business.

The wetland contains lots of flax and other natives including swamp buttercup (*Ranunculus macropus*), swamp astelia (*Astelia grandis*) and *Gratiola sexdentata*. It is home to birds including kingfishers, tui, quail, pheasants and occasional kereru. Brent always harboured hopes of finding rare bitterns and fernbirds as well.

One day while he was working in the wetland, his 10-year-old son called out to say he'd seen a fernbird. "I thought to myself, this'll be a thrush for sure but when I went over there were two fernbirds, not one. That's the first known fernbird sighting we've had and I'm hoping bitterns might come one day."

With help from the QEII National Trust, Brent has been able to continue planting an additional 1,000 trees each year in a buffer zone around the wetland, as well as controlling weeds until the natives become more

established. "QEII have been able to help through the Stephenson Fund, which has been awesome. We've had two successful Stephenson Fund applications," Brent says of the fund which can help covenantors with the ongoing costs of protecting and enhancing their covenants.

QEII's Nelson-Tasman rep Tom Stein says Brent puts huge time and effort into protecting the wetland. "Brent is a young guy, with a young wife and family and is in the middle of building a house and running a business. As well as all that, he plants thousands of trees and sets traps and has killed hundreds of predators in a wetland he owns. His motivation is amazing."

The new family home is being built on land next to the 7.6 hectare covenanted wetland and buffer zone, so Brent will be able to follow its progress. "We're going to build that one house and stay there. You don't want to put all that work into something and then not see it grow. I'll be happy to stay there as long as I can and watch the plants grow."



“We’re going to build that one house and stay there. You don’t want to put all that work into something and then not see it grow.”

The long, narrow wetland is in a shallow gully surrounded by a cat-proof fence about a kilometre long and 100 metres wide – 2.5 kilometres of fencing in all – which was installed by the developer. Inside the fence are about 60 traps targeting stoats, weasels, ferrets, rats, mice and hedgehogs, with more than 370 predators caught in a little over a year and a half. “It’ll probably never be 100 percent predator-free but I certainly think it can be very, very low predator numbers.”

The wetland and a large pond at one end are home to longfin and shortfin eels, as well as giant and banded kokopu. The fish can only enter the pond and wetland during flood events because the stream running

from it has been diverted into a pipe on an adjacent property. But as part of consent being given for a new subdivision by another developer on the adjacent land, a \$50,000 fish passage will be built to provide permanent access for fish and eels to and from the pond and wetland.

Brent says the district council previously identified subdivision consents as a useful way of introducing environmental protections which otherwise couldn’t be imposed on landowners. “I think it’s quite a good model for the council to be using.”

When the demands of the business, family life and housebuilding allow, Brent heads to the wetland. “There’s always something – at this time of

year there’s the weeds, and there’s always walking around the traplines and rebaiting the traps. “I don’t mind because I really like going up there and hanging out, it’s a beautiful place to spend a day. It is work but in another sense it isn’t.”

Brent is already looking ahead to planting big canopy trees such as rimu to take over from the pioneer tree species now becoming firmly established in the buffer zone. “We’re at the perfect stage for that, so that’s the next mission. They’ll be for the next generation to admire but that’s alright, I’m happy to be doing my bit for the future.”



Lifelong forester, adventurer, gentleman and QEII covenantor Ashley Cunningham, 1928 – 2018

QEII covenantor and well-known lifelong forester Ashley (Ash) Cunningham passed away peacefully at home in August 2018 aged 90.

Ash had an affinity with New Zealand's mountains and bush from a young age and subsequently spent most of his life working in and around them. Ranger training started Ash's forestry career in Northland's Waipoua Forest, who then moved onto Tairua on Coromandel Peninsula. While in Wellington on a compulsory Forest Service Head Office secondment, Ash embarked on a BSc degree studying part time at Victoria University.

His involvement in the National Forest Survey took Ash to the South Island which presented the opportunity to tackle the Southern Alps. This began a lifelong love for mountaineering that saw him involved in many epic adventures and traverses of the famous peaks of the South Island, some of them little known back then.

One trip of note was one starting at Mt Alba heading south, climbing 25 peaks of which 13 were first ascents. Many of Ash's adventures involved Mt Ruapehu, starting with his first climb there at the age of 13 and perhaps none more memorable than the time he climbed it when the volcano erupted in 1945. "A huge bubble perhaps 75 metres across, appeared in the crater lake and burst, throwing out big rocks with trails of black smoke. Clouds of smoke and steam blotted out the sky and we heard the thump of boulders falling back into the crater"

After completing his BSc at Victoria University and a Diploma in Forestry in Canberra, Australia and marrying his wife Sheila, the couple returned to New Zealand and lived and worked in Hamner Springs where

amongst other things Ash was involved at the inception of the Lake Sumner Forest Park.

1959 saw the Cunningham's relocate to Napier where Ash headed the North Island branch of the Forest and Range Experiment Station. The station was well-placed for a study of forests from the Raukamaras to the Aorangis. Before the Experiment Station was disestablished in 1971, Ash and others had established a vast number of vegetation survey plots and revisited many for re-measurement. As well as a photographic record of the vegetation of the North Island axial ranges, which was a library of 16,000 images when he retired in 1985. He was also involved in research and establishment techniques for tree species to combat the erosion problem being seen in the ranges. This led to the planting and sowing of *Pinus contorta*. The swift decision of the hierarchy to go with *contorta* didn't sit well with Ash who thought "we should do more research before taking such a bold step".

The last 13 years of Ash's career saw him in production forestry, management of the Ruahine, Kaimanawa and Kaweka Forest Parks.

Publishing was also another notable part of Ashley's and Sheila's life together. As well as Sheila's own book 'Hawkes Bay for the Happy Wanderer' (1983). Ashley is a published author with of over 70 papers and articles in tramping and alpine magazines and forestry journals. After Sheila's passing in 1988, Ash wrote a biography of her life using her diaries and self-published in a limited edition for family and friends. He also published 'Bush Yarns', a collection of true stories from throughout his life.



The QEII covenant that Ashley and his family registered in 2014 is the smallest covenant in Hawkes Bay, a 0.16 hectare grassed archaeological site which expands into their private property in Bay View from the neighbouring extensive and significant pa site administered by DOC.

Having grown up in Hawkes Bay myself, spending time in the hills and my first job out of school being cutting out *Contorta* pine on the Kaweka Range, Ash's name was well known, although we hadn't met. To some he was 'that guy' that planted the *Contorta*. After receiving a letter in the post in 2014 inviting me to visit his much-loved property at Bay View to discuss establishing a QEII covenant on the property I was to find out he was so much more than 'that guy'. A true gentleman whose life story dedicated to conservation, the outdoors and his family was a privilege to be a small part of.

Troy Duncan

Hawkes Bay Regional Representative

FROM TOP

Ashley in his early mountaineering days

Planting a rimu tree in 1977

On Franz Josef Glacier in 1953

District Council	Name	Covenant Name	Area (ha)	Main open space type
Otorohanga	Ngutunui		10.4644	Lowland modified primary and secondary forest
South Taranaki	Makakaho		4.9187	Lowland primary modified reedland, shrubland, and open water
Far North	Taipa		3.7319	Coastal secondary broadleaf forest, and riparian re-vegetation area
Southland	Te Anau	Four Mile Covenant Extension - Eweburn	8.7778	Lowland modified primary shrubland, rushland, and secondary modified grassland
Ashburton	Ealing	Thornton Wetland	3.4246	Lowland secondary shrubland, and modified primary sedgeland
Ashburton	Staveley	Baxter's Bush	1.698	Lowland modified primary forest and secondary shrubland
New Plymouth	Egmont Village	Rocklands Bush	1.5579	Lowland modified primary forest
Christchurch	Akaroa	Purple Peak Curry Conservation Area	192.393	Primary and secondary forest and shrubland with recreational, educational, landscape, and historic values
Taranua	Alfredton	I B Cowan Bush	1.799	Lowland modified secondary forest
Dunedin	Allanton	Moeraki Bush	8.8011	Semi-coastal modified primary forest and treeland
South Taranaki	Eltham	Rotokare Trust Covenant	13.3343	Lowland grassland and regenerating scrubland
Far North	Waipapa	Lower Farm Covenant - Puketotara	48.438	Lowland secondary riparian forest, shrubland, fernland and raupo wetland
Whangarei	Hikurangi Swamp - Hukerenui		4.9535	Lowland modified secondary forest and oxbow lakes
Christchurch	Wainui	Saddle Hill East	26.864	Montane forest, shrubland, and tussockland
Taupo	Whakaipo Bay	Whakarua	177.8941	Landscape protection with recreational values
Waikato	Onewhero	Lady Kelliher Covenant	19.2089	Lowland secondary forest
Buller	Cape Foulwind Plain	Hateley's Bush Covenant - Cape Foulwind	6.6125	Semi coastal modified primary forest and streams
Ashburton	Staveley	Joshua's Bush	6.772	Lowland modified primary forest

Thames-Coromandel	Te Puru	Sanford	20.5285	Semi-coastal modified primary forest
Timaru	Orari Gorge	Orari Gorge	60.7979	Lowland modified primary forest
Hastings	Havelock North	Hawea Stream Bush	20.69	Lowland secondary forest
Southland	Te Anau	Sue's Garden Extension - Eweburn	2.5862	Lowland modified primary sedgeland, shrubland, and grassland
Tasman	Upper Moutere	Hapua Rimu	2.6744	Lowland modified primary and secondary forest, and revegetated shrubland
Whangarei	Ruatangata	Rockstead II	5.312	Lowland modified secondary forest
Whangarei	Ruatangata	Rockstead III	4.925	Lowland modified secondary forest and reedland
Far North	Kerikeri		9.2149	Coastal modified secondary shrubland and pohutukawa forest, with kiwi habitat
Christchurch	Wainui	The Kelly Sykes Covenant	15.0435	Lowland modified primary forest, vineland, and secondary forest
Southland	Feldwick	McMeeken - Edwards Covenant	1.2148	Lowland modified primary shrubland and rushland
Buller	Fairdown Straight	Donaldson Kahikatea	0.4446	Coastal modified primary forest
New Plymouth	Hurworth	Lusk Bush	0.7264	Semi coastal modified primary forest
Buller	Cape Foulwind Plain	Jacko's Covenant - Cape Foulwind	17.5624	Semi-coastal forest and scrub, open water, and streams
Ashburton	Ashburton	The Galloway Wetlands	6.072	Open water, mossfield, sedgeland, grassland, and shrubland
Marlborough	Manaroa	The Richardson Covenant	92.2137	Lowland modified primary forest and modified secondary forest, treeland, and shrubland



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