

## A FARM-TOTARA HARVEST



Fig.1 Harvest involved selecting single stems from stands of trees in paddocks.



Fig. 2 Harvest using continuous cover forestry principles leaves taller and better formed, but thinner trees to grow on for the future.



Fig. 3 Logs were loaded onto a truck and trailer on the farm.

This autumn saw the successful harvest and milling of some farm-tōtara in Kaeo, Northland. This was a joint research project by Tāne's Tree Trust and Scion, with Scion funding all the operational expenses. The property had an MPI approved Sustainable Forest Management Permit in place providing for a harvest volume of 41m<sup>3</sup>. This presented an excellent opportunity to explore some of the practical issues and research questions around the harvesting and milling of farm-tōtara on a small scale. Continuous-cover-forestry principles were applied to harvest 35 trees. Forty-four logs were milled and now a modest stack of timber is held by Scion for some basic testing. The insights and experience gained from this small operation will help plan and target further research projects on farm-tōtara in the region.

The property is a dry-stock farm, formerly used as dairy-farm run-off block. The harvest was from unfenced stands of regenerating forest, dominated by tōtara. A much larger area of fenced-off and more diverse native bush was excluded.

Paul Quinlan oversaw the harvest planning and execution. This involved pre-felling stand assessments and harvest tree selection. Long-term forest management ideals were put into practice and in most cases, harvest trees were selected from a pair at close spacing, or from a group of stems. Thicker trees with shorter boles were taken and taller thinner trees left to grow on. Most of the trees were at the edge or margins of the stands and could be felled out into the paddocks.

Logs were extracted using an excavator with a grapple, and sometimes logs were pulled out with a rope. The machine worked from the outside and never needed to enter the forest. Non-merchantable branch, crowns and stem material was placed back into the stand. There was no damage to residual trees and only minimal disturbance to the pasture and farm-tracks. After log-making, the logs were transported to the training timber mill just outside of Rotorua.

Discs have been taken from each end of the logs and heartwood content measured. Then the logs were remeasured and 'bar-coded' before milling (Fig.4). This enables each piece of timber to be electronically traced back to its parent log and tree, and its relative location within the stem.

Early results show fairly good recovery of rough-sawn timber - 53% of the log volume - and some excellent timber grades resulted. This reflected the relatively good quality of the logs. However, as is typical of the farm-grown resource, heartwood content was often low, even in some of the largest diameter trees (N.B. LED ranged from 37.5 to 70cm.)

More detailed results from tests on wood quality, chemical composition, drying, veneering etc. will feature in future Northland Tōtara Working Group newsletters.

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### 2017 AGM and Field Trip

The date for our 2017 AGM and field trip is the weekend of 4<sup>th</sup> and 5<sup>th</sup> November. The meeting and the field trip will be held in Masterton this year with more details on venues etc to follow shortly. The field trip will commence in Masterton at around 10.00am on the Saturday to allow people to travel there in the morning.

The Saturday visit will be made to Rewanui, where extensive plantings of native trees 7-8 years ago permitted a mix of species and conditions to be tested in replicated planting trials and which Tāne's Tree Trust participated in setting up. At the end of the day we will hold our AGM at a venue in Masterton to be followed by dinner.

We are hoping to have a speaker or two on the Saturday evening, probably the local QE II Trust representative who has an encyclopaedic knowledge of the Wairarapa native trees and how they are coping, or not. Members may also join in Sunday visits to other forestry areas of interest including species such as eucalyptus and cypresses, and which will finish around mid-day on Sunday to allow people to get home at a reasonable time - or you may just wish to participate in Saturday's proceedings.

This small-scale harvest and milling project has been an excellent practical exercise that has provided valuable insights that will help to better target and design larger future research tōtara projects.

Paul Quinlan (Northland Tōtara Working Group)  
& Greg Steward (Scion)

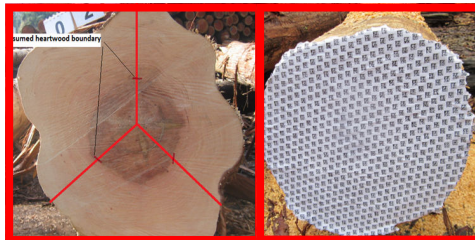


Fig. 4  
Log end with heartwood measured along three equally spaced radial transects and then the barcoded end ready for milling.



Fig. 5  
Tōtara timber stacked after final grading and assessment of volume recovery. The boards above are 200x50mm and around 6m in length with 150x50mm boards in the pallet behind. The timber will be left to air dry with pieces occasionally removed to scope preliminary drying trial test.

## MYRTLE RUST

Myrtle rust was first identified in New Zealand on 3<sup>rd</sup> May this year in a Kerikeri plant nursery. The rust is a fungus *Puccinia psidii*, native to tropical South America but now quite widely spread around the world. As its common name implies it is a pest on many species of the *Myrtaceae* (Myrtle) plant family. Airborne urediniospores released by the fungus permit rapid, long-distance spread and once established in Australia (first identified there about 2010) it was expected that its arrival in New Zealand was “simply a matter of time”. In the early 1970s poplar rust arrived in very much the same way and after a period of prolonged westerly weather, being located over a period of only a few days at several locations along the west coast of the North Island.

Myrtaceae species in New Zealand include native species such as manuka and kanuka, pohutukawa and rata, and ramarama; while exotic species of significance here are the eucalypts, feijoa and a range of other ornamentals. Because of its potential to be quite damaging to our native flora some preparations for its arrival had been made and these enabled early recognition and action.

After being first identified at Kerikeri, other identifications have been made in rapid succession in Taranaki, King Country and Te Puke in the Bay of Plenty. Not too surprisingly, by far the greatest incidence is in the west-facing Taranaki region – investigations have not found obvious links between several of the introductions, and this lends weight to the possibility that most and possibly all are the result of a wind-borne infection.

The plant species that myrtle rust has been detected on include *Lophomyrtus*, *Metrosideros*, *Syzygium*, *Leptospermum* and *Eucalyptus*; predominantly the first two. Myrtle rust has not been confirmed on feijoa.

Symptoms to look out for on infected plants are:

- Bright yellow powdery eruptions appearing on the underside of the leaf (young infection)
- Bright yellow powdery eruptions on both sides of the leaf (mature infection)
- Brown/grey rust pustules (older spores) on older lesions.

Some leaves may become buckled or twisted and die off.

It is interesting that mostly younger plants are being infected; in Australia eucalypts are affected mostly at the juvenile stage and with modest malformation resulting, however in Brazil larger plants and some clonal material is now being damaged.

MPI request that if you've seen the symptoms of myrtle rust, do not touch it. Instead –

- Call the MPI Exotic Pest and Disease Hotline immediately on 0800 80 99 66.
- If you have a camera or phone camera, take clear photos, including the whole plant, the whole affected leaf, and a close-up of the spores/affected area of the plant.
- Don't touch it or try to collect samples as this may increase the spread of the disease.

Incident control is based in Wellington; MPI is acting as the lead agency for the response with support from other central and local government agencies, industry and tangata whenua.

Local co-ordination is based at the DOC Bay of Islands office in Kerikeri; in New Plymouth, local co-ordination has been set up at the Taranaki Emergency Management Office, 45 Robe St, New Plymouth (including Waikato operations). Generally destruction and removal of infected plants and their neighbours has been undertaken and surrounding plants heavily treated with a fungicide and all areas closed off and monitored for further outbreaks.

The most recent identifications at Te Puke (now seven sites) was the first for a couple of weeks and while this is unlikely to mean that the outbreak is being contained it does indicate that with good practice the consequences of this new pest may be able to be lessened. For those growing native species and particularly members of the Myrtaceae, particular care should be taken to ensure plants are healthy, and shifting plants from one location to another should be avoided where possible.



Photo credit: MPI



Photo credit: MPI



TREES THAT COUNT



TE RAHI O TĀNE

## A TREE FOR EVERY KIWI TO BE PLANTED IN 2017

Late last year Trees That Count was launched – this was the first step in an ambitious plan to create a movement where Kiwis unite to help restore and enhance our environment, encourage biodiversity in our cities, clean our air and waterways and make a difference to climate change.

Funded by The Tindall Foundation, and delivered by Project Crimson Trust in partnership with Pure Advantage and the Department of Conservation, Trees That Count aims to keep a live count of the number of native trees being planted across the country and to set a new target each year. For 2017 this is 4.7 million trees, one for every New Zealander. The live native tree 'count' is a New Zealand first and currently the only vehicle recording native tree plantings nationwide.

Seven months on, Trees That Count are pleased to report that New Zealanders are getting behind the cause, pledging to plant native trees, funding trees through the website, registering their planting projects, pledging to volunteer and gifting trees for special occasions. Over two million trees have been pledged so far.

Trees That Count is encouraging people to plant more native trees and record them on [www.treesthatcount.co.nz](http://www.treesthatcount.co.nz). The organisation is working on a number of ways to increase native tree planting throughout New Zealand. Very soon, planting projects registered with Trees That Count will be able to use the platform to fundraise for native trees and connect directly with volunteers who want to help.

Sir Stephen Tindall, co-founder of The Tindall Foundation, is passionate about the project and encourages people to get involved. "Planting native trees in your neighborhood, on your farm, at school or outside your office is one of the best things you can do for the local environment and for the planet. It is also a great way to bring people together and connect with your local community. Trees help record the history of your family and grow alongside you and your children. I'd love to see our streets, parks, playgrounds, front yards, farms, hillsides and rural areas full of trees and New Zealanders able to enjoy all the benefits they bring for generations to come."



Trees That Count is about planting native trees and shrubs that count – for climate change, for biodiversity, for restoring and enhancing our environment. Every Kiwi can play a part – let's register 4.7 million natives planted this year – one for every New Zealander. It's free and it's easy to register your planting – check out our website [www.treesthatcount.org.nz](http://www.treesthatcount.org.nz)



### MAGGIE LAWTON 1950-2017

Dr Margaret (Maggie) Lawton died from cancer on 13 March 2017; she was 67. I first met Maggie about the turn of the century, for she was one of the initial members of the steering committee which set up Tāne's Tree Trust and she became one of the ten inaugural Trustees. In one of our early newsletters (May 2006) she wrote the Editorial, and part of it is reproduced here.

*I came to New Zealand 30 years ago. I called myself a Londoner, being born and bred only a few miles from the sound of Bow Bells but equally, I had a rural upbringing on the outskirts of Epping Forest on the Essex/London border. There, cattle used to roam freely across the common land outside our gate, sometimes venturing into our garden and demolishing roses that had been lovingly tended by my parents. I grew up enjoying a spacious, leafy, deciduous albeit modified landscape and a freedom to roam in those forests which is unknown to many children today, whether in England or New Zealand. I count myself lucky that I had friends and colleagues who opened my eyes to the uniqueness of New Zealand's flora and fauna. Had my life taken a different route I may never have been able to fully appreciate the lushness of a Podocarp forest nor marvel at Rata in full bloom or recognise the majesty of a mature Kauri. My work is with environmental issues and we talk about ecosystem services and the benefits that people get from native bush; these being enhanced landscape values, water quality, various products, less erosion and even carbon credits, not to forget the preservation of biodiversity. All those attributes are very valuable and if they help gain wide-spread recognition of the role of indigenous trees in our lives, then I'll promote those benefits at every opportunity. However, for me it's enough to walk through a bush track at the end of the day, smell the forest scent and relax in the coolness of its cover and know that our land would be a much poorer place without the welcoming, shady sanctuary our native forest provides.*

Maggie began working in New Zealand as a forensic scientist with DSIR. While there, she led the forensic enquiry into the Rainbow Warrior sinking and set up in New Zealand the world's second DNA database. After the formation of the Crown Research Institutes in 1992, she became General Manager of Forensic Science in the Institute for Environmental Science and Research, before moving to Landcare Research in 1995 as General Manager of Environmental Quality, overseeing research and consultancy in land management and greenhouse gas related science. She was responsible for the Landcare Research staff and sites at Hamilton and Auckland and was an inaugural member of the Marsden Research Committee.

Maggie, whose home in Auckland was a farm forestry block at Ararimu, left Landcare Research in 2006 to set up her own consultancy and resigned as a Trustee of Tāne's Tree Trust two years later. She had lived in Wanaka at various times over the previous ten years and finally moved there in 2012. Here she was soon taking a leading role in regional environmental groups and in 2016 was the successful candidate for the Dunstan ward of the Otago Regional Council. Sadly, she spent only six months in this role before her untimely death. Her daughter Ella is seeking to replace Maggie on the Council; the election is at the end of June.

Ian Barton and Bruce Burns

# WIND-BLOWN INDIGENOUS TIMBER UPDATE

June 2017 - how quickly time flies. When the Cyclone Ita wind-throw legislation was passed under urgency in July 2014 we had a huge task ahead of us. Now 40-odd months later the opportunity is coming to an end. With natural processes taking their toll and timber recovery becoming unviable, today it is only a few bigger logs being recovered for the most valuable heartwood.

To refresh, in April 2014 Cyclone Ita caused major damage to an estimated 40,000ha of indigenous forest across the West Coast region. Damage ranged from scattered individual trees within stands, to the total devastation of hundreds of hectares.



While the storm recognised no boundaries, the salvage legislation prohibited recovery of timber from National Parks, ecological areas and the World Heritage Area.



The beauty of helicopter extraction is that there is no damage to the residual stand, no soil compaction and no damage to regeneration.

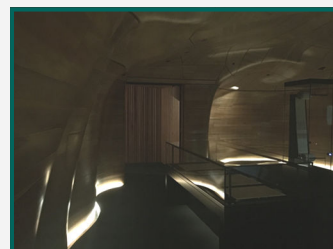
Overall across the 40,000 hectares, operators have removed around 7,500 m<sup>3</sup> of rimu and beech, returning \$1.5 million in revenue to the Department and generating in excess of \$16 million as timber is processed and sold across New Zealand.

One of the unique mechanisms of the Act was that it specified revenue was to be targeted at regional conservation initiatives rather than transferring into the Government consolidated fund.

Today, the open sites are rapidly over-growing with vigorous shrub hardwoods and sub-canopy species. Perhaps the most interesting question revolves around what forest type will



Questions around what level of harvest removal is ecologically neutral remain, in light of our limited understanding of nutrient cycling.



He Tohu, National Library, permanent exhibition of founding documents. A fitting end-use for salvaged rimu?

In summary the Act -

- Allowed removal of trees that were irreversibly damaged by Cyclone Ita from some conservation land on the West Coast of the South Island.
- excluded forests in National Parks, ecological areas, the white heron breeding area near Whataroa and land covered by the South-West New Zealand World Heritage area.
- requires that adverse effects to the environment are kept to a minimum, conservation values are not unreasonably affected and that soil disturbance is not significant.
- expires after five years and will be repealed on 1 July 2019.

The underlying principal of the Act was that a large ecological gain could be achieved through the sensitive use of a small proportion of wind-blown timber. In other words, the ecological benefit made possible through additional weed and animal pest control outweighs the minor short-term ecological costs of salvage.

The vast majority of salvage has utilised helicopters to extract the log component only, with all the nutrients and minerals contained in the fine roots and leaves being retained on site.

eventuate on the site of some of these disturbances. Rimu saplings and poles are scarce enough to be notable by their absence and seedlings are extremely scattered and poor. Given the lack of canopy trees over areas of several hectares, and the paucity of bird numbers to act as a viable seed dispersal mechanism, I imagine the naturally long canopy replacement times are going to be lengthened further.

While it is recognised this is a highly contentious issue and many people believe it is a crime to salvage this timber, this belief ignores the reality of our wood-use requirements. In 2016 we imported \$99.6 million of sawn hardwoods and cedar. With imported wooden furniture added, our annual consumption was \$656 million, with these figures growing at 9% year on year.

Careful operators have shown that salvage can occur in a safe and viable manner without damage to the conservation environment. I believe that at some point in the future, given our declining biodiversity and the very real threats faced by our forest ecosystems, limited-use models like this will be viewed in a positive light, both to sustain regional communities and fund conservation work.

Jon Dronfield

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