



'ONE BILLION TREES' - What does it mean?

By the time this is being read the "new" government will have been in office for 120 to 130 days and the outline of forestry's role in helping achieve government's targets - be they related to climate, regional development, job creation, or in helping address the complex issues of land use and water quality - may be clearer. Nevertheless, even at this stage forestry's profile and importance is already significantly greater than it has been for a number of years. There's a Minister of Forestry (Hon Shane Jones), with a Ministers group to work through crunchy forestry issues (and there are plenty of them!), proposed changes to investment in forestry rights by overseas investors, a Government commitment to achieving the planting of a billion new trees over the next 10 years and, while it looks unlikely a completely independent stand-alone Rotorua based forestry agency will be created, the Ministry of Primary Industries has just created a new (interim) position of 'Head of Forestry at MPI'. Julie Collins has been appointed to the role with the responsibility of coordinating current forest activity within MPI and providing a lead for the planning and development of 'Forestry New Zealand'. At this point this new agency is seen as being part of MPI's 'Branded Business Units' programme. (The model the bureaucracy appears to be running with seems like that applying with the US Forest Service which is a unit within the Department of Agriculture (USDA)).

Still the programme attracting the most attention to this point is, without doubt, the One Billion Trees programme. Big numbers can be fascinating simply because they are big - and a billion new trees sounds a lot; even if spread over 10 years. However, what do the numbers really mean in terms of new or extra areas of afforestation? Or in terms of new added indigenous afforestation? Sadly, in neither case is it possible to give a satisfactory definitive answer to the question based on material so far presented.

While there are reasons for optimism - the Minister is on record as saying that afforestation with indigenous tree species will play a key role in the government's programme and that MPI will look to involve TTT in the programme as it progresses, to ensure the right approach is taken with regard to afforestation with indigenous species - there are also reasons for tempering optimism too.

It appears that trees required to replant stands in existing plantation forests after harvesting will count as part of the programme. So that means that of the programme's average of 100 million new trees to be planted each year for the next 10 years, a significant portion won't add any new areas of forest. The plantation sector is already planting some 50 million trees each year; some sources even suggest the plantation number might be nearer 70 million, so potentially as much as 70 percent of the target is already 'in the bag' - with little or no change to afforestation rates that have applied for much of the last 15 years. If one were to be truly cynical it might be possible to throw in better accounting for some indigenous and/or non-timber or non-commercial plantings such as the trees used in riparian plantings or established by the Manuka honey industry or perhaps some New Zealand Transport Agency (NZTA) roadside plantings - and conceivably find the 100 million new trees per annum planting target is already being achieved right now.

But if we assume that isn't the case - and that the goal of the programme really is an increased level of afforestation, then at best the

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Paul Quinlan leading a discussion and practical demonstration of pruning planted totara during the combined Farm Forestry and Tāne's Tree Trust field trip to Rewanui Forest Park, Wairarapa.

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AGM & FIELD DAY

On the first weekend of November last year a group of Tāne's Tree Trust members joined other foresters for a weekend of activities based in Masterton and jointly organised and hosted by Wairarapa branch and the Indigenous Forest section of NZFFA.

Saturday morning began with a visit to Rewanui Forest Park. Conversation rippled up and down the line as it stretched and straggled its way up a well formed vehicle track and around the hillside, through monoculture stands of 15 different native species. The line compressed to a loose huddle at various points where we stopped for overviews and explanations. At the totara block, Paul Quinlan deftly form pruned an unlikely looking 11 year old bush into something much more closely approximating a young timber tree. Several people had a go at pruning beech trees too.

From memory it was totara, kauri and beech which were star performers among the native species in terms of growth, though I wasn't aware at the time I'd be writing a report - or I might have taken notes. There was an elegant stand of coastal redwood too, but we tend not to mention those. I thoroughly enjoyed the opportunity to wander among these experimental plots (planted in 2006). In fact, I made a mental note to revisit the Rewanui Forest Park for another leisurely stroll through the trees on my next trip to Masterton.

After lunch, back at the woolshed, we held our AGM attended by TTT members and most of the NZFFA folk there for the weekend. Peter Berg kept it short in deference to the number of non TTT members present. Wind gusting noisily past the open doors of the woolshed and the intermittent sound of chainsaw milling going on outside may also have nudged the meeting in the direction of brevity. I'm sure it has its adherents, but I joined the convoy for our trip to Castle Point having mentally added chainsaw milling to my list of things for which life is just too short, along with golf and reality cooking shows.

Castle Point is a magnificently architectural piece of coastline, well worth the drive if you ever get the chance. On the warm sand of a vast low tide beach, David Bergin talked us through the causes of and methods to combat coastal erosion.

At around 6pm we regrouped at Masterton RSA club for a meal and a chance to share experiences with other forestry addicts. At the end of a long day and three and a half hours after the bar opened, the local QEII rep Trevor Thompson was thrown something of a hospital pass when he stepped up at 9.30pm to instruct us (with slides and video) how to propagate mistletoe. Continuing bravely against the rising tide of nodding heads and heavy eyelids he did his utmost to equip us with the necessary skills for wiping mistletoe bogeys off our fingers and into the forks of host trees.

This was my first time attending an NZFFA Action Group weekend. I found it highly educational and would like to thank the organisers and hosts for running such an enjoyable event.

- Ian Brennan

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announced programme appears to involve planting little more than an extra 50 million more seedling trees each year above what the country already does now.

A 50 million per annum increase to the current annual tree establishment figure is a respectable figure - even if not as attention grabbing as a billion. But, there's still the question of what that figure could mean in terms of extra hectares of newly established forest. And the answer is quite a lot or relatively little.

With the stocking rate set at 4,000 trees per hectare that sort of increase represents something like an extra 12,500 hectares planted each year for the next 10 years. However, were the stocking rate to be set at 1,000 stems per hectare the annual addition to the national forest estate is much more impressive - 50,000 hectares per annum or four times as much. And the figure gets even more impressive if the stocking rate is set even lower.

As with most things the devil is always in the detail - and at present it's detail that is lacking. The figures used to illustrate the potential impact of detail on the expansion of NZ's forest estate weren't chosen completely at random. Four thousand stems (or more accurately plants) per hectare is a figure often suggested for establishing new indigenous forests - although to be fair in this type of planting up to 85% of the stock will typically be short lived shrub species that, in terms of the billion trees programme, probably shouldn't be counted. They're planted to suppress/control weeds and provide shelter for a (final) tree crop of (typically) less than 600 trees. An initial stocking rate of 1,000 stems per hectare is a typical planting rate for much of the commercial radiata pine estate.

Most greeted the 'billion tree programme' as a welcome boost by government to afforestation efforts. Public perception of its success, or otherwise, is therefore more likely to be determined by changes to new and total forest area rather than to numbers of trees planted.

- Gerard Horgan

FUNDING ANNOUNCED FOR NORTHLAND TŌTARA PROJECT

Funding for the Tōtara Industry Pilot (TIP) project has been announced as part of the government's regional development package. Through the Our Forests Our Future programme, Tāne's Tree Trust initiated this large collaborative tōtara project proposal. Partner organisations include Scion, Te Taitokerau Maori Forestry Collective, Northland Inc. and the Ministry for Primary Industries (MPI).

This is a two year project exploring the Northland Tōtara opportunity. Essentially this is a research project involving the harvesting and processing of up to 500m³ of farm-tōtara logs. There will also be a regional resource inventory component and, ultimately, an analysis of the regional business case.

The premise of the project is that a viable regional industry based on the sustainable management of a farm-tōtara resource would be an effective way to encourage the retention and management of naturally regenerated stands of tōtara on private land, and also to encourage the planting of extensive new areas of native forest.

The recent announcement confirms a \$450K contribution to the project by central government. The remainder of the project is funded by Scion and Northland Inc. Peter Berg of Tāne's Tree Trust chairs the project's Steering Group and Paul Quinlan represents the Northland Tōtara Working Group.

Progress reports and updates will feature in future newsletters.

- Paul Quinlan

MYRTLE RUST (MR) UPDATE - MARCH 2018

The number of new identifications and locations has continued to climb through the summer with some 360 properties with confirmed infections. This includes localities such as Wellington and Auckland (both first located in November) and in a number of suburbs in each case. Taranaki, Waikato, Bay of Plenty and Auckland have the most significant infections while the mix of property types is quite wide - everything from home gardens to nurseries and parks. Of the species most commonly infected ramarama is notably prominent with pohutukawa and rata species following along behind. Eucalyptus trees, feijoa and manuka have all been virtually untouched (1-2 infections each). While surveillance is continuing, especially in areas with existing infection, the effort is moving from eradication to containment - it appears that the strain of the rust that has arrived here is the same one found in Australia and other more virile strains are known to exist in South America but have not yet made it to this part of the world. Long may that remain the case, meanwhile as advised previously if you think you have the pest at your place please advise MPI so that identification and containment can follow.

TIMBER TREES OF THE FUTURE

PINK PINE - (*Halocarpus biformis*) also known as Yellow Pine and Alpine Tar wood

by Ian Barton

HISTORY

Pink pine was known as *Dacrydium biforme* until 1982 when a new Genus, *Halocarpus*, was established for three *Dacrydium* species, including pink pine.

Pink pine does not appear to have a Maori name, which suggests that it was little used by them; possibly because it grew in places they did not often visit. It was however used by early settlers for fence posts, sleepers and house blocks.

DISTRIBUTION

Halocarpus biformis is a small tree with spreading branches and a rounded crown. In exposed places, eg, alpine areas, it often forms a tight, rounded, cypress-like shrub. Bark is silver-grey, peeling away in small thick flakes to reveal a reddish-brown inner layer. It has quite a wide distribution but is scattered and restricted to sub alpine sites in the North Island - from latitude 39° South, although Wardle states its northernmost location is on Moehau, at latitude 36° 35', in the Coromandel Ranges. (He gave no reference for this but his source must have been a paper by L B Moore, published in Tāne in 1973.) On the southern slopes of Mt Ruapehu it is found occasionally in the forests and above the bush line around bogs with *Halocarpus bidwillii*. In the south it is commonest in Westland and Otago, especially the Catlins but mostly above 300 metres. It grows down to sea level in Stewart Island and is typically found on low fertility, poorly drained sites in high rainfall areas. On more fertile sites it grows into a small tree.

Pink pine is not regarded as threatened because it is relatively widespread and frequent in the South and the population is not declining.

TREE SIZE and GROWTH

On good sites it grows up to 10 metres tall and one metre diameter. Growth rate is very slow on most sites and Wardle states that trees can reach the age of over 1000 years. It has been used in dendrochronological studies. Although no trial data is available, it will probably grow much faster on more fertile sites.

TIMBER and OTHER USES

No measured timber characteristics are available for pink pine. The timber is yellowish brown in colour, sweetly perfumed and straight grained with great strength and durability. It is easily worked and is a useful turnery timber, although with little figure. It is possibly the most durable of New Zealand native woods. With rimu and some other closely related podocarps it is an important food for kakapo.

The most important economic value of *Halocarpus biformis* is that it contains the highest level of the bicyclic diterpenoid, manool; more than any other plant – 6 to 8% dry weight. Manool can be converted into ambreinolide, a constituent of ambergris, very important in the manufacture of perfumes. There have been several attempts to produce manool from the timber of *H biformis*, it being estimated that there would be enough timber on the West Coast to produce 20 tonnes of manool annually for 25 years. However as most of the available supply grows on land administered by the Department of Conservation it would seem that a supply from natural forests is precluded. A few years ago a firm in Otago was extracting manool from pink pine logs and exporting it to the United States. Currently the southern Iwi, Ngāi Tahu, are investigating potential utilisation, based on traditional cultural practice.

DAMAGING AGENCIES

Pink pine is a hardy species and no information on fungal diseases or insect attack has been found. The name tar wood suggests the tree is highly resinous and this makes it very prone to fire damage.

POTENTIAL

The species is worthy of study because of its high manool content and its durability. As far as is known there have been no attempts to grow pink pine commercially for any purpose.

RESEARCH REQUIREMENTS

Pink pine should grow quite fast on moist, well drained, fertile soils and trials are needed to determine whether this is so and what growth rates might be. Also, if it grows faster, will the 6-8% dry weight level of manool be altered? Reasonably moist and fertile sites in the Central North Island may be suitable for trials. Wardle suggests that propagation (as with rimu) should be straightforward. Propagation trials to date have probably been with seed. Because seed production is known to be irregular, propagation by cuttings from young plants should be investigated.

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Update on the tōtara harvested in March 2017

In March 2017 Scion undertook a pre-pilot study to harvest 40m³ of standing tōtara from the Thomas property just to the south of Kaeo. This resulted in the production of forty-four 6m logs. All the logs were transported to the Toi Ohomai training mill at Rotorua and were sawn within two weeks into rough-sawn boards from 75×25 to 200×57mm using a combination of flat and quarter sawing. The timber was then graded by Grade Right NZ Ltd using the current indigenous softwood grading rules as per NZS3631:1988 "New Zealand timber grading rules".

There has been some discussion about the drying/seasoning times required for tōtara timber that is comprised of pure sapwood, heartwood and mixed grades, and of different dimensions, and whether those times could be accelerated. Therefore, the timber was filleted and stacked in the Scion timber drying sheds with data-loggers placed in the stacks to monitor temperature and other variables as it has been drying. A very wet winter in Rotorua was not conducive to rapid natural drying and it has taken nearly 11 months for the timber to attain a moisture content below 20%. During this time various samples have been removed to begin exploring kiln drying schedules, with some encouraging initial results. This will have implications for the amount of tōtara timber needing to be held by timber merchants in a future business based on tōtara.

A number of projects have also been initiated using small quantities of the sawn timber. At Paul Quinlan's instigation, some of the 200×25 mm boards will be donated to the Matauri Bay Church to replace the current particle board flooring, once an appropriate moisture content has been achieved. A record of the processing of the timber and its performance after installation will be kept. In a second project, a number of the 200×50mm boards were sent to NZ Sustainable Forest Products Ltd at Reefton to be sliced into veneers. Scion has recently begun to refurbish its offices on the Rotorua campus, and to demonstrate its commitment to a developing indigenous forestry industry has had some of the tōtara veneers laminated over MDF timber to show-case the species to Scion visitors and to produce high quality tables for meeting rooms and new office spaces. To date, no issues have arisen with the timber recovered from this pilot project that would cause us any concerns for a new tōtara timber industry.

Greg Steward, Scion



Some examples of veneered tōtara furniture produced for Scion.

DONATIONS: A note from the treasurer

All members should be aware that all donations, but not subscriptions, are eligible for a 33.33% tax rebate on your income tax. We will be able to send you a certificate of donation for you to submit to IRD with your tax return.

Please remember us in your bequests.

Update on Phytophthora Agathidicida (Kauri dieback)

The Kauri Dieback Governance Group¹ met on 25 January and agreed to put the following activities in place:

- A Controlled Area Notice (CAN) for kauri dieback,
- A National Pest Management Plan (NPMP) - presumably just for kauri?
- A Strategic Science Advisory Group (SCAG)

The first objective of these actions is to target people and persuade them to act appropriately when entering areas where kauri grows. This places a legal requirement on people to follow the correct hygiene standards when entering and leaving kauri areas. However since 25 January the Auckland Council appears to have resolved to ban all access to the Waitakere Ranges, before gradually opening up those tracks that are not close to kauri. This would appear to be a logical process to follow but presumably a process will have to be worked out between MPI and Auckland Council. At present there does not appear to be a clearly defined leads agency or chain of command and this needs to be sorted out and publicised so that the efforts made to control/overcome kauri dieback can be effective.

One would hope that the second proposal, the NPMP, will be set up to achieve this aim but the proposal currently is that it would be a "longer-term measure for managing kauri dieback and extensive consultation will be required to develop it". By implication this is going to take years, not months, and that is not acceptable. A firm approach needs to be taken as soon as possible. Tāne's Tree Trust strongly recommends that a provisional NPMP be put in place within four months and that work on processes to finalise it be started at the same time.

This process needs to be guided by the SCAG, which will have a major input into the NPMP as well as oversight of the research required to achieve comprehensive results.

The new process must be in place and moving forward by mid 2018.

Meanwhile for our members growing kauri we recommend you continue to take careful quarantine action when visiting kauri sites to avoid transferring dieback to your trees. This includes when planting seedlings from elsewhere into your forest, even where it is not kauri as it is still possible to transfer the disease in soil around the roots. And if you see anything suspicious happening to kauri at your place or elsewhere please report it so that prompt action can be taken to contain it. A report form can be found at: https://www.kauridieback.co.nz/media/1439/kauri-dieback-disease-reporting-form-5_7_17.pdf

¹ Comprises representatives from Waikato Regional Council, Northland Regional Council, Bay of Plenty Regional Council, Auckland Council, Ministry for Primary Industries (MPI), Department of Conservation (DOC), and Te Roroa and Tangata Whenua.



SUBSCRIPTION REMINDER:

Invoices for the 2018/19 year subscription will be issued with the next newsletter. If you are not sure if you have paid your 2017/18 membership please contact Mel or Keri in the office: office@tanestrees.org.nz