Tāne's Tree Trust
Native trees for the Future
Newsletter
June 2012

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EDITORIAL

Montfort Trimble Foundation works with Tāne's Tree Trust in the Wairarapa

Ian Campbell, Chairman, Montfort Trimble Foundation

In 1940 Dr Montfort Trimble left a bequest to the people of the Masterton County Council for the purposes of public afforestation. Dr Trimble was a lawyer in Masterton and was very concerned with environmental issues, particularly the rate at which the native forests were being depleted. The Masterton County Council administered the bequest on behalf of the trustees and bought 127 ha of flat scrub-covered land north of Masterton which was then planted in radiata pine. When the second crop of trees on this land was ready for harvest the County had merged with other local bodies to form the Masterton District Council. It was at this time that the Montfort Trimble Foundation was formed by an Act of Parliament to take over the forest and continue to manage the bequest on behalf of the trustees of the Trimble Estate.

Objectives of the Foundation

The objectives of the foundation are all to do with the growing of trees and production of timber. With this in mind, the trustees used a portion of the money from the second crop of trees to purchase a 334 ha property now known as Rewanui Forest Park which is located east of Masterton. This hill country property had 70ha of native bush and ample area of pastoral land to retire from grazing and experiment with growing a range of trees that might suit the east coast hill country and provide timber other than radiata pine.

In 2008 the Foundation obtained a Sustainable Farming Fund grant that enabled it to carry out a full ecological study of the Rewanui Forest Park to provide a baseline to compare future changes.

Planting of native trees

In 2006 the foundation established a joint project with Tāne's Tree Trust to ascertain which native tree species that have timber producing potential would be suitable for the east coast hill country. Twelve species of native trees were planted in thirty two blocks of about fifty trees each. The area planted is fairly steep with scattered scrub and has two distinct soil types. The upper part derives from decaying greywacke rock while the lower section has an unstable mudstone. Blocks for each species were planted on both soil types. As the trial area has patches of regenerating manuka and kanuka, native trees were planted either under a light canopy of manuka and kanuka along the edge of these stands, or in the open.

Monitoring performance

Each tree is individually tagged and mapped with measurements of height, root collar diameter, DBH (diameter at 1400mm) as trees become sufficiently large, and a subjective score of plant vigour being recorded each year since planting. In addition to this information we have embarked on a program of photographing each tree at regular intervals. At first each tree was identified with a bamboo pole and light aluminium tag. The tags proved susceptible to wind and were not easy to read so the system has evolved to a fibreglass fence standard with a plastic cattle tag attached. One of the advantages of this is that the numbered tag shows up clearly in photographs to link the photo with the tree.

STUART ORME, forester involved in the establishment and management of the native plantings at Rewanui Forest Park, eyes up a kahikatea planted less than 5 years earlier. Ian Campbell, Chairman of the Montfort Trimble Foundation, who has set up the web-based monitoring system for the native planting trials, looks on.

Block information consist of a GPS position of the planting block, the relative position of each tree within each block, and a history of the treatments of the trees. In addition the degree of manuka/kanuka cover of each tree in the block is recorded.

Annual measurements of each tree are recorded using a rugged tablet computer and a custom made programme that shows the position of the tree within the block and its history. This method of recording has proved faster and more accurate than writing data on paper and later transposing to a computer. Analysis and viewing of the data is accomplished with the same programme and a unique report has been developed that gives a visual representation of each tree, its current height, diameter, recent growth, vigour and aspect. In addition the block ►

Montfort Trimble Foundation works with Tāne's Tree Trust in the Wairarapa

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report shows the average growth for the block and the treatments used. These block reports are available on the Montfort Trimble Foundation's website www.trimblefoundation.org.nz and are updated after each remeasurement.

Early performance

Further analysis of the data is carried out by Tane's Tree Trust to compare the growth rates of the various species. While the trial has only been going for five years, there are some interesting trends in growth between species already. Survival for most species was over 80% five years after planting reflecting good site preparation, matching of appropriate species to planting sites, timely weed control, ongoing pest animal control and exclusion of domestic stock.

The fastest growing native conifer was totara especially on open sites with kahikatea showing the slowest growth rate. Matai and miro are both looking promising. Beech is highly variable with red beech growing over 2m since planting five years earlier and black beech only doubling in height over the same period. All species except tawa and kauri are growing well on open sites.

NEW PROJECTS UNDERWAY

Developing and managing farm grown totara forests for high value native timber

Beginning in July this year, this is a joint project between the Northland Totara Working Group and Tāne's Tree Trust. The project involves the re-measurement of silvicultural trial plots set up more than five years ago. The purpose of the trial is to determine how far both growth-rates and tree-form (log quality) of naturally regenerated totara stands can be improved by active management (thinning and pruning).

The results of this project will provide:

- The most up-to-date published information on the early performance of thinned and pruned naturally regenerating pole-stands of totara on farms.
- Essential base data for analysis for more accurate projections for harvest, yields, time-frames, and carbon sequestration.
- Help refine practical silvicultural management options and prescriptions (i.e. optimal time and relative intensities of thinning and pruning etc).
- The above information will enable land-owners to better consider the business-case for this sustainable land-use option.

This will also be extremely useful information for private forest owners and land-owners considering this land-use option and equally so for MAF in administering Part 3A of the Forests Act, particularly in the Northland area.

To date research projects have all indicated very encouraging results regarding the potential for regenerating totara to be managed to produce high-quality timber. However, better information on growth rates and management is still required.

The project is funded by the Ministry of Primary Industries' Sustainable Farming Fund, NZ Landcare Trust, Northland Regional Council and Hine Rangi Trust. Michael Bergin and Paul Quinlan will be carrying out the fieldwork and Alan Griffiths of MPI will be assisting with interpretation of the results.

Paul Quinlan
Project Manager

Slashing the Cost: Implementing Forestry Methods for Establishing Indigenous Plants

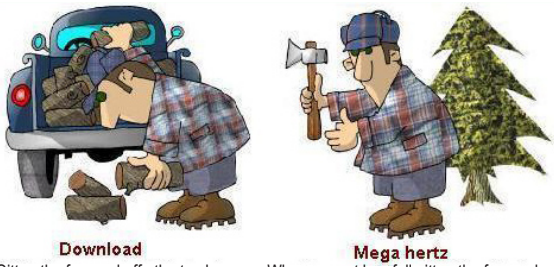
Tāne's Tree Trust has been awarded $25,000 from SFF (Sustainable Farming Fund) to follow up earlier work on the benefits of using open grown native planting stock.

Previous work led by Cimino Cole at Mahurangi and funded by SFF (SSF 06/041) has shown that native plants started in open ground survive transplanting at least as well as container grown plants. The cost advantage of this method of raising plants is significant, with open grown plants costing about half that of container grown plants. Early results from those Mahurangi Harbour catchment trials and from trials in the Rotorua area demonstrated that forestry-style methods are more cost-effective than those using container-raised stock. This success led directly to similar trials being established by TTT in the Lake Taupo catchment.

This project will build on these results by analysing on-going survival and growth rates of these trials, and by providing nurseries and planting agencies with practical techniques to inform their decision as whether to embrace the open-ground method and to ensure the best possible outcome should they do so. The Mahurangi work is led by Cimino while we have great support from Jaap van Dorsser (the doyen of open grown techniques) Philip Smith (Taupo Native Plant Nursery) and from Environment Waikato, Environment Bay of Plenty and other local authorities.

Warwick Silvester
TTT Project Manager

COPING WITH TECHNOLOGY...



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Gitten the farwood offn the truck

Mega hertz
When yer not keerfull gitten the farwood

CURRENT PROJECTS UPDATED

TTT planting trials in the Lake Taupo catchment

Monitoring of the native species planting trials established over the last 3 years on steep hill country and riparian sites in the Taupo catchment by Tāne's Tree Trust in collaboration with the Lake Taupo Protection Trust, local landowners and other agencies is continuing. The trials are aimed at reducing cost of establishing natives including comparing early performance after planting of seedlings raised in containers or as open-ground (bare-root) plants, evaluating the use of radiata pine as a temporary exotic nurse cover, and comparing selected site preparation and weed control options.

Almost 10,000 natives have been planted in the trials comprising mainly hardy shrub hardwood natives with some native conifers (rimu, totara, kahikatea, matai, miro) planted within sheltered and open sites. In general, there is no significant difference in survival and growth in the first 2 years between open-ground and container-raised plants for many of the commonly planted shrub hardwood and monocot species. Trials confirm the need to establish a cover of hardy shrub cover as shelter before planting native conifers on exposed hill country sites.

Preliminary evaluation of the costs of establishment including nursery production, transport and handling, and planting indicate that open ground native shrub species are likely to be 50% cheaper to establish than PB 3 container stock and marginally cheaper than Hillson root trainer stock. However, a continuing substantial cost is post-plant weed control as natives can be slow to establish requiring 2 or more years of releasing especially on weed-infested sites.

David Bergin and Roger MacGibbon

Kauri Thinning Project

This 12 month project is now successfully completed. The results are looking extremely positive and a full report will be available from the Trust shortly.

For further information on any of the Tāne's Tree Trust projects please contact the office. Details on the back page.

Early Notice of AGM

The 2012 AGM is to take place in the Bay of Plenty region in August and will include a visit to the spectacular Te Puna kauri. Details including the agenda and programme for the day will be available on the website, www.tanestrees.org.nz, and from the office, 07 8584404 from July.

Publications Now Available

The Beeches:
Establishment, growth and management

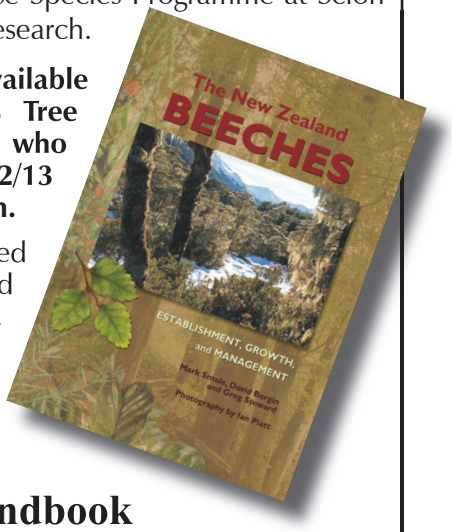
The much anticipated Beech Bulletin, the latest in the Scion series of Indigenous Trees produced by Tane's Tree Trust is now available.

Co-authored by Mark Smale, David Bergin and Greg Steward, this exquisite publication has over 250 photographs captured by Canterbury based Ian Platt.

The Bulletin is the product of a 3-year project run in collaboration with Landcare Research and Scion with funding from the former Ministry of Agriculture and Forestry's Sustainable Farming Fund (renamed Ministry for Primary Industries or MPI), Tane's Tree Trust and the Diverse Species Programme at Scion via Future Forests Research.

The bulletin is available free to all Tane's Tree Trust members who renew their 2012/13 annual subscription.

If you have renewed your subscription and would like a copy, please contact the office, details below.



Technical Handbook

The second print run of the "Planting and Managing Native Trees Technical Handbook" is completed.

Thank you to all those who had ordered a copy but had to wait for delivery due to unprecidented demand. You should all have received your copies by now.

If you haven't already done so but would like to order the Technical Handbook for $35.00 plus 3.50 p&p, please contact the office.

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Tuesday and Wednesday 9.30 to 4pm

TIMBER TREES OF THE FUTURE

KAHIKATEA *Dacrycarpus dacrydioides*

DISTRIBUTION: The genus Dacrycarpus consists of species of tall trees found from Burma and China in the north, through New Guinea to New Zealand. The sole New Zealand species is kahikatea which is found throughout the country, predominantly in riverine and swamp forests and may have been our commonest conifer. In the North Island it grows from sea level to 750 metres, this upper level decreasing further south so that it scarcely above sea-level on Stewart Island.

It is most abundant in high rainfall areas and occupies a wide range of soils. The fastest growth rates are on deep, well drained river terraces.

TREE SIZE AND GROWTH: Kahikatea grows into a very large tree, up to 60 metres tall (which only rimu and kauri occasionally exceed) and 1.5 metres in diameter. Annual growth rates of planted trees range from 10 to over 70 cm height and 8 to 108 mm diameter. The largest tree recorded in Burstall and Sale is near Ngongotaha and in 1980 was 50 metres tall and 1.84 cm diameter. . The poorest site was on sand at Woodhill forest and the best on volcanic soil at Cornwall Park, Auckland and at Holt's Forest, Hakes Bay on moderately leached yellow/ brown pumice soil derived from Taupo ash.

TIMBER: Kahikatea heartwood is bright yellow and the sapwood creamy white and often at least 20 cm wide, even in old trees, compared to about 5 cm in other conifers. Historically the susceptibility of sap kahikatea to borer and rot has severely limited the use of the timber of this species because heartwood, which is reasonably durable, is slow to form and is more prominent in kahikatea from hilly sites. Sapwood can be treated with CCA preservative to prevent borer attack but is not suitable for in-ground use.

POTENTIAL: Kahikatea is easy to establish and grow and its relatively fast growth and potential for many uses when treated, suggests that kahikatea should be given greater prominence than it is. Because of its prolific fruiting habit it is also important for bio-diversity

RESEARCH REQUIREMENTS: Very little research has been done on this species so work in all areas will yield important information. Of greatest need is acquiring better information on siting and establishment techniques. The fact that it is easy to grow on a range of sites suggests that it will not be difficult to improve performance.

Kahikatea is easy to establish and grow

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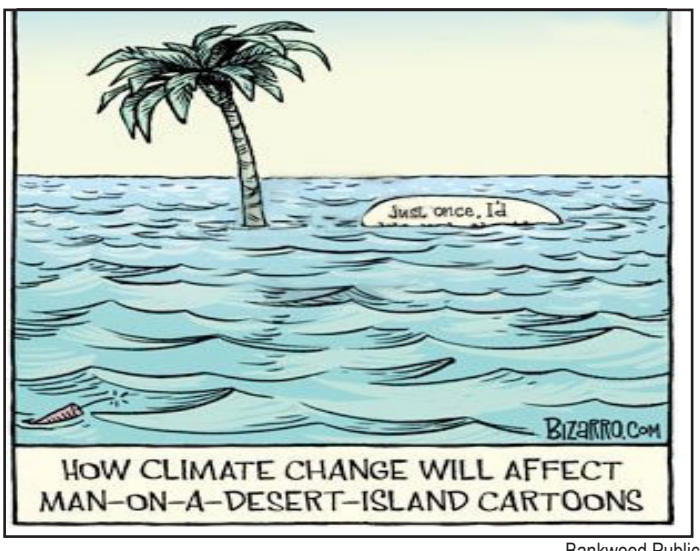

Joke Competition

"Two olives are friends, and they're hanging from the tree like they've been doing for months. Suddenly, one falls to the ground. The remaining one says, "Are you ok?" And the other replies, "Olive!"

Now that is funny in a grimacey kind of way….

Send in *your* best tree joke (defined as having any reference to a tree in it). The best joke as determined by a panel of tree and joke experts will win *Managing Native Trees – Technical Handbook.* Entries in by August 31st. Enter by email, phone or mail as listed on page 3.