

**Newsletter No 9 May 2006**  
**ISSN 1176-1245**

---

**EDITORIAL**

*This editorial has been written by Trustee Maggie Lawton, who Northern Regional Manager of Landcare Research. Maggie's background is in chemistry and she originally worked as a forensic scientist. The rest of her story is below.*

## A Foreign Land no more

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.

In my first few years in New Zealand the bush seemed like a strange, tropical jungle by comparison with the English countryside. While busy with a young family I virtually ignored the compact indigenous vegetation until later, with children nearly grown and more free time, my curiosity about my adopted country grew. I learnt that the thick bush like undergrowth of the Waitakere ranges was the form of a young forest, not many years recovered from near annihilation and that the mature forests of Pureora were more like the spacious old growth forests I had encountered as a child. I learnt that, before humans came, about 90% of New Zealand had been covered in forest and occupied by an abundance of birds and that what remained, was under threat from a range of predators which sadly until recently, included ourselves.

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 recognize the majesty of a mature Kauri. Nor would I have known the sheer satisfaction of transforming an erosion prone grassed hillside where I live in Ararimu, back into a miniature native forest and marveled at the restorative powers of nature, once my family and I had given her an initial helping hand.

In my line of work, involved with environmental issues, we talk a lot about terms like ecosystem services and the benefits that people get from native bush; they 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 Lawton

## **TRUST ACTIVITIES** (November 2005 to May 2006)

### **Website:**

Don't forget to check the website ( [www.tanestrees.org.nz](http://www.tanestrees.org.nz) ) as Mike updates it regularly. If you haven't got them you will find earlier newsletters there. One change has been the removal of the discussion and questions section. It was not being used and seemed to attract a range of unwanted material –usually of the less savory kind. Mike wants to build up the “Gallery” section so if anyone has good photographs of native trees, especially planted ones, please send them to him –preferably by email (<mike.dodd@agresearch.co.nz>)

### **Donations:**

During the 2004/5 year donations were received from the following network members: -

|                        |               |                  |              |
|------------------------|---------------|------------------|--------------|
| S Anderson             | C Barnard     | N & B J A Bryant | J Hogan      |
| A Williams & J Parfitt | A Edgar       | P & J Brodie     | H Gordon     |
| D White                | P McKelvey    | A & Y Robinson   | E Macky      |
| A McPherson            | D Seddon      | H Phibbs         | P & A Millen |
| J Purey-Cust           | T & S Wilding |                  |              |

### **Renewal of Subscriptions:**

Subscription notices for the 2005/06 year are attached to this newsletter. The Trust would be grateful if you could renew your subscription before mid July if possible. Those members who joined after 1 January 2006 have paid for the 2006/07 year and you will not receive an account

### **Funding:**

Membership subscriptions have brought in approximately \$10,000 in the 2005 / 06 financial year (full details will be in the annual financial report) Apart from the Sustainable Farming Fund the trust has received grants and donations from a range of organizations such as Forest Owners Association, the forestry training organization - F.I.T.E.C, Institute of Forestry etc.



### **Sustainable Farming Fund:**

The project being run by Mike Dodd, “*Opportunities for Native Trees on Farms*”, is now in the final editorial stage. It will go to the printer in a month or two and should be available later this year. Network members will receive their copy of the bulletin (which is in the same series as the Kauri and Totara ones) with the November newsletter.

The Workshop programme is going well and we have now completed 11 with 7 still to come. The Trust is very pleased as all workshops have been very successful with attendances between 40 and over 100. Feedback is usually very positive and many new members have joined from the workshops \_the most successful being at Nelson where we signed up ??,. On 9 & 10 May we ran a joint workshop with Nga Whenua Rahui. This was the first with a Maori perspective and we were very encouraged by the response of those present. Trustee Rob McGowan who did the bulk of the organizing wrote the following report: -

*Tane's Tree Trust joined with Nga Whenua Rahui for a wananga at the Pureora Forest Lodge. This was a new venture for TTT; it was the first time it has worked with Nga Whenua Rahui – the Maori equivalent of the Queen Elizabeth Trust - and the first time it has presented in such a traditional Maori setting. Pureora is the heartland of Ngati Rereahu; here the traditional knowledge of the world of Tane, the forest, is very much a part of the lives of the people who live in the area. The aim of the wananga was to build the connection between traditional Maori knowledge and the knowledge and research that TTT was set up to share and advance.*

*Nga Whenua Rahui works with Maori landowners throughout the country who wish to protect and enhance their lands that a still in their natural state; to date more than 230,000 hectares throughout the country have been set aside in kawenata (covenants). This is a reflection of the priority Maori give towards protecting their forests, and how committed they are to ensure that coming generations have that taonga (treasure) to enjoy. There is also a real awareness of how important it is to look after trees such as totara, rimu, matai, and kauri to ensure that there are trees available for special cultural needs, particularly timbers for carving, in the future. Hence the interest in the work of TTT.*

*On the first day there were about 45 people present from various iwi and hapu in the central North Island. They came from Ngati Kahungunu (Whakaki, Wairamarama, Ocean Beach), Tairāwhiti ( Ngai Tai, Te Whanau Apanui, Te Whakatohea), Tuwharetoa, Ngati Rangī, Whanganui and the hosts Ngati Rereahu, Ngati Maniapoto, Tainui. Most of the Nga Whenua Rahui team were also present.*

*The opening address was by the Ngati Rereahu Kaumatua, Piripi Crown. This focused on the history of the local area and its forests, and the traditional knowledge of the forest. This set the framework for the rest of the wananga. TTT made the first part of their presentation in the afternoon, followed by an evening session which covered a number of issues relating to the native trees and their place in the landscape. There was full participation from everybody present. Much of the discussion was in Maori; to have so much input from kaumatua was certainly an indication of how much the presentations from the TTT were appreciated.*

*The highlight of the wananga was the fieldtrip the next morning. The Waipapa ecological area is one of the best remaining examples of Central North Island mixed podocarp forest. The walk next to the Pureora Lodge progresses from open ground, to the first stages of regeneration, to more advanced regeneration into old forest, all in less than a kilometre of superb forest. This provided good background for the final presentations from TTT, which focused on the establishment and maintenance of podocarp plantings.*

*The wananga at Pureora was a very successful step forward. We can look forward to a growing involvement of Maori landowners throughout the country with Tane's Tree Trust.*

If you are interested in having a workshop in your area before July 2007, please get in touch with Ian Barton.

Work on the production of a Continuous Cover Forestry for manual for New Zealand continues with second draft almost complete. The aim is to have this to the printer by May next year.

The "Archives" project, which will result in the production of a database of information on all research relating to the planting of native trees, is nearing completion. Danielle Whitham has finished searching all Archives New Zealand depositories and most University theses. Tony Beveridge has only a little more work before he will finish checking Forest Research archives and Peter Berg is working on records at the Matakōhe Kauri Museum. I repeat here the call for anyone who knows where any research data is held, apart from in the repositories noted above, to get in touch with Ian Barton urgently.

The "Profiting from Biodiversity" bulletin was published and a copy sent to all members. It has also been sent to all Regional and District Councils. Further copies are available if anyone knows of others who might be interested.

The final project in the current series is just being started by David Bergin. This involves setting up an interactive information database system for establishment and management of native timber plantations. This will record all native tree plantings on the database system run by Forest Research. Will anyone who is planting native trees for future productive purposes please make contact with David Bergin, who will run this project as he is keen to build up a preliminary list of what is planted around the country.

#### **Other Projects:**

The Trust is working with the Trimble Foundation in the Wairarapa to set up planting trials on native trees on their property, Rewanui Station near Masterton. Planting of a variety of species will be done this winter and periodic measurements made. It is hoped that this will be just the first of many projects of this type throughout the country.

A meeting of interested parties was held in April to discuss the serious lack of research in the indigenous forest area. The conclusion was that we should hold a workshop of people involved in the policy determination, funding and conduct of research. Planning for this is underway and it is hoped that it can be held within the next few months. While network members cannot all be invited to attend it may be that there are some with strong research interests who may wish to go. If so please contact Ian Barton for further information.

At a national level there have been further meetings on the Permanent Forests Sink proposal and Kyoto issues generally. As you are no doubt aware from media releases we are not really any closer to having this difficult situation resolved. However, of all Kyoto issues, the P.F.S initiative is one of the few still alive.

The Trust, in the persons of David Bergin and Peter Berg, is supporting the recently set up Totara Working Group in Northland. They are attempting to quantify the amount of totara regeneration and formulate management proposals etc.

### **Membership:**

Membership has now reached 290, of which 24 are corporate members. Existing members are urged to tell others, who may be interested, about Tane's Tree Trust. The Trust brochure has now been updated and reprinted and is available from Ian Barton to anyone who would like copies to distribute.

### **Trustees:**

Trustees retire by rote each November but are eligible for reappointment. Those who stand down next November are John Kneebone, Ian Barton and Roger MacGibbon. John has indicated that he does not wish to stand again. We are now calling for nominations for 3 Trustees to be appointed in November 2006. A nomination form is included with this newsletter and any network member is able to nominate any person to be considered for Trusteeship. If there are more nominations than places, a committee consisting of the Trust Deputy Chairman, one other Trustee and 2 Trust network member or Trustees to be elected by the AGM, will consider the nominations and make a recommendation to the trust as to who should be appointed.

### **Strategic Plan:**

The current Strategic Plan covers the period April 2004 to March 2007. Of the 19 key performance targets to be achieved in the period; 26% have been achieved, 52% are underway and 21% were not begun at 31 March 2006.

## **A.G.M JULY 29 2006**

This year's A.G.M. will be held at Ngongotaha in the local hall and will proceed a SFF workshop. An agenda is included with this newsletter. Included with the agenda are directions to the Hall and the field venue at Jaap van Dorsser's.

## **TIMBER TREES OF THE FUTURE**

**KOWHAI (*Sophora tetraptera* and *S microphylla*) -by Ian Barton**  
(*Kowhai is the National Flower of New Zealand*)

### **HISTORY**

Early Maori used the wood of kowhai for a wide variety of purposes which utilized its durable, elasticity and toughness. It made wedges which were used to split wood: was uses for fences and in whare construction: implements and weapons such as k , patu, eel spears and taiaha: and carefully selected kowhai roots were used to make large fish hooks. Although it was used for bowls and other utensils it has been recorded that people became ill from eating from a spoon made of kowhai wood. Various infusions of kowhai bark (normally taken from the sunny side of the tree) were however used extensively for medicinal purposes including as a purgative: treatment of scabies: poultices for sprains, bruises, tumours, and wounds: a cure for gonorrhoea and ringworm and relief from colds and sore throats. Flowers, seedpods, twigs and bark all yielded dyes of various hues between yellow and brown. The small size of most trees restricted its use by European settlers. Main uses were for sleepers, house blocks, fence posts and piles. Its toughness and durability also made it valuable for the teeth and bows of hayrakes, shafts and

other implements and for cabinet work. It is understood that there is a woolshed in the Wairarapa built from kowhai timber.

Another aspect of the history of kowhai is its use as a garden plant. Because its bright yellow flowers drew the attention of the first visitors to New Zealand, seed was taken to many places in the world. Banks took seed back to Kew where it was grown and kowhai was planted from about 1772 –flowering trees being recorded in London in 1779 and in Ireland in 1800.

### **DISTRIBUTION**

While the smaller *S. microphylla* is found up to 800 metres altitude in lowland and lower montane sites areas over most parts of New Zealand, the larger *S. tetraptera* is confined to lowland stream-sides and forest margins from East Cape to Wairarapa. Because of its ornamental use, both species kowhai are now found throughout New Zealand. The kowhai's are frost hardy and moderately wind and drought tolerant. They do not grow well on hard or waterlogged soils, being best on moderately fertile sites. *S. tetraptera* is not as hardy as *S. microphylla*.

Most of the information in this article relates to both the main tree species of kowhai. At this stage it is not known which species might be more useful for timber production. In addition, several new species of *Sophora* were determined few years ago from the huge variations which exist, particularly in *S. microphylla*. Whether or not these new species have any potential for timber production is unknown.

### **TREE SIZE and GROWTH**

Normally up to 12 metres tall for *S. tetraptera* and 10 metres for *S. microphylla* with both growing to 60 cm diameter. The tallest recorded has reached 20 metres in height. Measurements of trial plantings in eleven New Zealand locations showed initial height growth of about 45 cm per annum, slowing to less than 20 cm for 80 year old trees. Diameter growth averaged 8 mm per annum for trees up to 20 years old, dropping to between 4 and 5 mm after 35 years. Assuming that properly managed planting could grow faster it is reasonable to expect that trees 20 metres tall and 50 cm diameter could be grown in 50 years.

### **NITROGEN FIXATION**

Kowhai is a legume and nodules on its roots fix nitrogen. For this reason, and because it is New Zealand's only deciduous tree, it may have an important role to play in continuous cover forestry in this country.

### **TIMBER**

Kowhai heartwood is yellowish - brown in colour with darker streaks, is tough, elastic and durable in the ground for at least 20 years. It is one of New Zealand's strongest hardwoods. The wood is lustrous and finishes well although it is prone to cracking when drying. It is a useful turner timber.

Timber characteristics, with *P. radiata* figures shown in brackets for comparison, are as follows: -

|  |                        |                          |
|--|------------------------|--------------------------|
| Density @ 12% m.c                      | 770 kg/ m <sup>3</sup> | (500 kg/m <sup>3</sup> ) |
| Moisture content: green                |                        | (130%)                   |
| Tangential shrinkage -green to 12% m.c |                        | (4.7%)                   |
| Radial shrinkage                       |                        | (2.2%)                   |
| Modulus of rupture                     | 135 Mpa                | (90 Mpa)                 |
| Modulus of elasticity                  | 13.6 Gpa               | (9 Gpa)                  |

### **DAMAGING AGENCIES**

Kowhai is attacked by the caterpillar of the kowhai moth (*Uresiphita polygonalis maoralis*) which can completely defoliate trees however observation suggests that the tree is tolerant of defoliation. It appears that the moth may be subject to periodic viral or bacterial disease which keep populations in check. The New Zealand drywood termite is known to attack dead, sound kowhai wood.

### **POTENTIAL**

No research appears to have been done to investigate the multi use possibilities of kowhai. It has the potential to produce useful medicines and dyes; it can fix nitrogen –a valuable attribute in a country where most soils are somewhat deficient in that important nutrient; it is durable, tough and elastic –attributes also in short supply in most New Zealand timber species; Its potential for

furniture and cabinet work is also high and finally, it may have an important role to play in continuous cover forestry.

## **RESEARCH REQUIREMENTS**

Research into every aspect of growing and utilizing kowhai is urgently needed. To begin with comparative growth trials of both main species, and the new species recently determined, plus its use as species in Continuous Cover mixtures should have high priority.

## **REFERENCES**

- Allan H H 1961. *Flora of New Zealand Vol. 1* Government Printer Wellington
- Brooker S G, Cambie R C & Cooper R C 1988. *Economic Native Plants of New Zealand*. Botany Division, D.S.I.R
- Brooker S G, Cambie R C & Cooper R C 1981. *New Zealand Medicinal Plants*. Heinmann
- Burstal S W & Sale E V 1984. *Great Trees of New Zealand*
- Clifton N C 1990. *New Zealand timbers*
- Howard A L 1948. *A manual of the timbers of the world*. MacMillan & Co, London
- Kay M K 1980. *Uresiphita polygonalis maoralis* (Felder) Kowhai moth. *Forest and timber insects in New Zealand No. 42*. Forest Research Institute, Rotorua. 8p
- Milligan R H 1984. *Kaloterme brouni* (Froggatt) New Zealand Dry wood Termite. *Forest and timber insects in New Zealand No. 59*. Forest Research Institute, Rotorua. 8p
- Pardy G F, Bergin D O & Kimberley M O 1992. *Survey of Native tree plantations*. FRI Bulletin 175
- Pollock K M 1986. *Plant materials handbook for soil conservation; Vol 3: Native plants*. Water and Soils Misc Publication No. 95. Soils Conservation Centre, Palmerston North.
- Tipa R 2004. *Kowhai: Our national Flower*. In Te Karaka, 25.(Spring 2004) pg 16 - 17

## **CONTRIBUTIONS FROM MEMBERS**

This month we have two contributions from Trustees giving different perspectives on the planting of indigenous species outside of their natural range. This is a subject upon which a great deal more debate is needed so it is hoped that many readers will send comments on the two items below.

### **Planting native trees outside their natural range by Greg Steward**

Tane's Tree Trust vision is bold and unambiguous - promoting indigenous forestry. Planting native trees for production does, however, raise the potential for conflict between the ecological, conservation and cultural values associated with individual species. For the average private landowner such issues are likely to be outweighed by price, quality and projected returns, but it is still worth reflecting on how these conflicts may arise

One of the species likely to be a favourite among commercial forest growers is kauri. Kauri has a restricted latitudinal range, occurring naturally in the upper North Island. Prior to human settlement the species had wide fluctuations in the latitudinal and altitudinal range of its distribution, in response to climatic changes. If our plans for planting were based simply on the locations where we find kauri growing naturally today we would be using a very restrictive set of site criteria. However, we do have many historical plantings to draw experience from and we know that there are many sites outside the current natural range suited to planting this species for production.

The question arises - should we?

Little is known of the diversity, or lack of it, within the small disconnected populations and isolated mature relics left since the days of intensive logging. If there is genetic diversity within and between the kauri remnants there may be an argument, for conservation and cultural reasons, for keeping them separate. But, there is also an argument to introduce as much variation as possible

to our production plantings. This could encourage and develop hybrid vigour and robustness, as has been done for many exotic forestry species.

There is also the possibility that some stands survived logging because they were not reflective of the quality of the general kauri population, therefore some remnant natural stands could be considered less desirable to propagate from on the basis of form, or other merchantable property. Should we deprive ourselves of the benefits from better performing provenances?

Given the ongoing significant human impact on our native forests and the reality of climate change shouldn't we give our native species a chance to evolve with us by actively promoting mixed provenance stands?

There is much to be said for empowering decisions through knowledge, but ultimately it will be the landowner who decides. It is the role of researchers to provide the information to solve the current and future issues regarding planting with native species. The famous proverb *caveat emptor* (let the buyer beware) applies, or in this case *let the grower be aware*.

## NOTICES

### **FUTURE WORKSHOPS:**

Future workshops are planned for most of the following locations between now and 30 June 2007. Dates for most have not yet been finalized.

|              |   |
|--------------|---|
| 29 July 06   | Ngongotaha                              |
| July 06      | Special workshop on indigenous research |
| September 06 | Otorohanga                              |
| November 06  | Taupo                                   |
| February 07  | South Auckland                          |
| March 07     | Gisborne                                |
| June 07      | Whangarei                               |

For more details contact Ian Barton 09 239 2049 or e.mail [ibtrees@wc.net.nz](mailto:ibtrees@wc.net.nz)

### **CHAIRMAN' ABSENCE:**

Ian will be overseas from 4 August to 27 October. For matters requiring attention during that time contact the Deputy Chair, Peter Berg at [thebergs@xtra.co.nz](mailto:thebergs@xtra.co.nz).

### **PUBLICATIONS AVAILABLE:**

*On joining members have the choice of one free publication from those on the list marked \*. Others can be purchased at the members rate listed below, sales to non members usually being 33% more. Some publications, because they have been paid for from grants are free and these are usually sent to members when they become available.*

|  |           |
|--|-----------|
| Back numbers of Newsletters 1, 2, 3, 4, 5, 6, 7 & 8  | \$1.00 ea |
| Proceedings of the launch of T ne's Tree Trust (fir st copy free)  | \$6.00    |
| T ne's Tree Trust brochures (free copies to pass to others)  | No charge |
| Totara: Establishment, growth and Management by David Bergin *   | \$10.00   |
| Kauri: Ecology, establishment, growth and management by David Bergin and Greg Steward *  | \$10.00   |
| Native Trees: Planting and early management for wood production by David Bergin and Luis Gea. *  | \$15.00   |
| Indigenous Forestry: Sustainable Management. MoF & NZFFA (212p)  | \$25.00   |
| Performance and tree health of a six year old planted kauri stand in the Bay of Plenty by Greg Steward & Ian Barton (first copy free to members) |           |
| T ne's Tree Trust Bulletin No. 1   | \$3.00    |

Profiting from Biodiversity: Reducing the impediments to planting native Trees. Proceedings of seminars held May 2003 Eds: Ian Barton, Roger MacGibbon, Bruce Burns and Peter Berg.

No charge

### **Post and Packing:**

For publications to be mailed add: -

\$1.00 for single publications

\$1.50 for two

\$4.00 for 3 or more.

### ***Send requests to:-***

Ian Barton

P O Box 1169, PUKEKOHE

Telephone 09 239 2049

[ibtrees@wc.net.nz](mailto:ibtrees@wc.net.nz)



*Tane's Tree Trust*  
Native Trees for the Future

Scion Logo

Tane's Tree Trust is indebted to Scion and New Zealand Post for assistance with the printing and mail out of this newsletter.