

The future of indigenous forestry: A Tane's Tree Trust perspective

Sir,

Piers Maclaren's "Random thoughts and economic realities", in the August 2002 Journal makes disquieting reading. Are we really to be subjected to millions of hectares of *Pinus radiata*, and is no one going to want to buy higher value timbers just because they cost more to produce? Somehow I think not. Piers seems to have become confused about the difference between quality timber and industrial wood fibre. Forests growing the former can not only produce wood of much higher value but also other forest values such as social and environmental returns. In the long term, growing high value species may well prove to be as viable an option as the production of industrial fibre.

There is no doubt that Piers is correct when he says that "modern industry requires a standardised feedstock". But he is wrong in assuming that this is all that people are concerned with. People do want high value timbers as part of their lives. Why else would top grade kauri be worth well over \$1000 per cubic metre and rimu currently be the leading choice for valuable furniture?

Foresters can no longer be concerned with just growing wood and must become much more sensitive to the multiple values of the forests that we grow. We must begin to practice forestry as the wide ranging discipline that it is.

The reasons why we should be putting a great deal more effort into growing indigenous trees for timber fall into four main areas:

1. The Royal Commission Report on Forestry of 1913 concluded that the idea that species like totara and puriri could be profitably grown was "altogether erroneous". The reason was their supposed slow growth rates compared to trees grown in plantations around the world. In addition, indigenous trees were reputed to have a surface rooting habit - which made them prone to wind damage, and their seedlings were thought to require shade in order to grow. These early assessments are now known to be largely incorrect.

The Commission, and its advisers never seemed to have considered that the application of management techniques could have ameliorated or overcome these supposed difficulties. For example preliminary studies show that while volume M.A.I of natural kauri pole stands is about 5 m³ that of a managed stand can be as high as 19 m³ per ha per annum. With the exception of hurricanes, kauri is rarely blown down and it only requires partial shade in the first two years of its life after which maximum light will produce best results.

2. The risk to which our exotic forests are exposed is a major reason why New Zealand needs to revisit the idea of sustainable indigenous forestry. In 1969, *Pinus radiata* made up 54% of our plantation forests; today



Lindsay Poole standing in a plot of 26 year old planted kauri. Volume M.A.I 14 m³/ha/year. Apart from releasing there has been no silvicultural treatment.

it comprises 91%. At the same time the risk of exposure to outside pests has also increased. While gypsy moth and pine pitch canker are obvious problems it should not be forgotten that in California there are 93 fungal pathogens (of which 27 pose a high risk) and 317 damaging insects (of which 24 pose a high risk) found on *P. radiata*. At 1993 none of these were present in New Zealand (Flux *et al* 1993).

Burdon (2000) has suggested that we should be giving serious consideration to growing "contingency species" in case replacements for *P. radiata* are required. Some indigenous species could fill this bill because native trees are generally much better able to withstand disease and insect attack than exotic trees since, with the exception of non host specific species like gypsy moth, most imported pests are specific to a single species or a small range of species. They are not adapted to attack New Zealand plants.

But the threats to our forests are not just from insects and fungi *per se*, as Dyck (2002) has recently pointed out. There is the sociological risk from humans; either those who knowingly import dangerous species or those who, as is presently the case with people in west Auckland, protest at the spraying of painted apple moth because they do not understand the issues involved.

3. That New Zealand tree species can produce some of the world's finest timbers is well known. For example the annual report of the Director of Forestry (A. R. Entrican) in 1949 stated of kauri "As far as properties are concerned, it is difficult to point out any disadvantages, and it may well be claimed that no other sawn timber has such outstanding excellence in so many fields of use". Likewise totara has special properties in that "because of its durability and dimensional stability, totara performs as well as any softwood in the world under conditions of extreme exposure to the elements" (Clifton 1990).

These are only two of our timbers which have high value and international repute. We know little about most of our species. For example can you recognize this

timber from its description? "White, firm, strong and of great elasticity, and is suitable for a great variety of purposes requiring strength, toughness and elasticity with light weight" (Howard 1948). No it is not hickory or ash but mangeao (*Litsea calicaris*). As far as is known no research has ever been carried out into the management potential of mangeao.

Because of their timber quality, many native timbers are quite valuable. A recent examination by myself of the potential returns from a sustainably managed kauri forest, planted with a blackwood nurse crop, for the purpose of timber production suggests that after 80 years it could return almost 8% on the investment. From then on, managed as a continuous cover forest on a selection system. It would return about 18% per cycle.

- The final reason for re-establishing sustainably managed indigenous forests are the non timber values. Of these carbon sequestration may be the most important, for forests managed in this way could be between 26% and 46% more effective than *P radiata* as a long-term carbon sink. Biodiversity enhancement is another important consideration. A study involving kauri grown with a range of exotic nurse species showed that after 28 years a total of 46 indigenous species had invaded the site – originally in pasture and blackberry. Of these nine were timber species, only one of which had a seed source adjacent to the trial (Barton & Steward 2002). A plantation of native species will encourage the invasion of further indigenous species and, because the new forest will be actively managed – including animal control, there should be little doubt that such forests will be extremely valuable as sites of species diversification.

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Footnote:

If anyone can inform the Trust of the whereabouts of old indigenous trials, records etc we would be pleased to hear from you.

For further information on Tane's Tree Trust please contact Ian Barton at 105 Cowan Rd, Hunua, R D 3 Papakura (telephone 09 2924 825; e-mail ibtrees@ihug.co.nz)

The world's biggest *P. coulteri*?

Sir

I enclose a photo of a very large *Pinus coulteri* (big



cone pine) near Gore. Ted Ramsay and I measured it in October 2002 for a mean height of 41.5 metres and breast height diameter of 1.5 metres. Like all tall trees it is difficult to photograph. The small brown thing at its base is me, which gives some indication of the tree's size. It is quite a well-formed tree though well studded with large dead branches and with a very small

crown. It appears healthy despite that.

It grows, along with other large trees of other species, on the old Waimea homestead site at Longridge on SH 94 just west of Riversdale. The exact age of the tree is uncertain but the homestead, a palatial affair of 21 rooms and made of dressed stone, was built in 1867. The gardens and ornamental plantings look to have been laid out at about the same time.

The homestead burnt down many years ago and is now a gothic ruin, surrounded by laurels and woodland, in what is otherwise a rather arid and windswept countryside.

My experience of coulteri is that it is not a large tree, and it occurs to me that we might here have the world's tallest specimen. Can anyone help me on that?

John Purey-Cust