

New Zealand forestry: cultivating an alternative future

Although radiata pine has been the mainstay of the New Zealand forestry industry for over 60 years and is considered a 'genetically diverse' monoculture, moves are afoot to change the industry's single-species focus and find economically viable alternatives – as Michael Smith reports in this second part of a two-part story.

ANY significant developments to diversify the national plantation estate take place against a backdrop of a species (*pinus radiata*) well suited to a variety of growing conditions – and about which we have accumulated extensive silvicultural and manufacturing knowledge, and developed crucial economies of scale.

However, disquiet continues to be expressed – most notably about the biosecurity risks associated with its dominance; the industry's over-reliance on exporting logs without adding value, and the resulting exposure to fluctuating demand; and the need for radiata pine to be treated for external use.

Pine's short rotation may offer a degree of financial and genetic protection, giving the industry a sporting chance of introducing disease-resistant strains should any new threat appear. But if we are to believe that all good timber grows slowly, it's little wonder that architects are reluctant to specify it and many furniture designers look elsewhere for inspiration.

Viable options

At the forefront of alternative species investigation is Crown research institute Scion. Dr Heidi Dungey, Science Leader for Genetics, says: "We are working on diversifying our commercial planted forests to include a number of 'alternative species', each with their own strengths and weaknesses – for example, coastal redwoods, cypresses and Douglas fir.

"Redwoods have very extensive root systems and are ideal for stabilising erosion-prone land. Some cypress species are prone to disease



Podocarpus totara in Northland: an opportunity to manage abundant natural regrowth on private land for timber production. Photo: ©Paul Quinlan.

but have excellent wood properties, so it is important to select the right species for the right site and product. Douglas fir can self-seed vigorously and contribute to wilding problems on some sites. While this can be managed through correct siting and silviculture [we need to determine] if we can breed a strain of sterile or low-seeding Douglas fir to minimise this issue."

Douglas fir is already well

established in the South Island – in areas less suited to pine – accounting for some 5% of the national crop. Although on a slower growth cycle than pine, its strength, durability and resistance to decay have seen it make serious inroads into the framing market in the deep south.

Indigenous species

Scion is also researching the possibility of growing native species in commercial

quantities – notably beech, puriri, totara and kauri. Totara is considered especially promising according to the institute's latest annual report. It outlines work undertaken with other organisations "to explore the feasibility of a new industry based on Northland's extensive totara resources, which could be a boon to the region's struggling economy. Preliminary figures show a potential value of over NZ\$100 million by 2021."

Kauri, too, has considerable potential, according to the institute's research – despite the current concerns about kauri dieback disease. Trial stands planted throughout New Zealand indicate that 60-year rotations are possible, shifting the emphasis from containing kauri dieback to improving growth and developing resistant individuals and populations within a commercial framework.



Government/forestry industry research partnership: "moving up the value chain" beyond exporting unprocessed logs. Photo: ©Timberlands Limited.

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Developing species for current market demand

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Co-operative venture

Most promisingly, a partnership between the Government and forestry industry over the next seven years will kick-start research into alternative species – in an effort to create a “high-value specialty wood products industry from planted species other than radiata pine” (Future Forests Research media release). Funding is on a dollar-for-dollar basis, including an important contribution from the Forest Growers’ Commodity Levy.

The emphasis will be on developing species for which there is current market demand, notably eucalypts, cypresses and Douglas fir – pointedly,

chemical-free, durable and attractive timbers suitable for the decorative domestic and international markets.

Dean Satchell, president of the New Zealand Farm Forestry Association (NZFFA), is hopeful the funding will significantly expand specialty timber production. “This will only happen if there is confidence that we can grow and produce the timber cost effectively and productively, knowing that prices for the resulting products are high enough to be profitable for the grower.

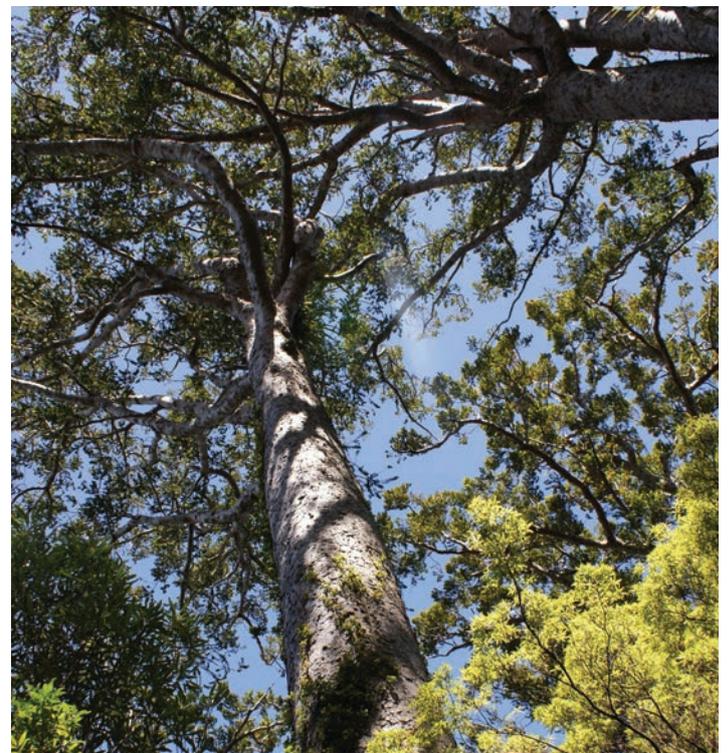
“There will be some investigation into planting of areas not suitable for radiata pine, such as erosion-prone land – where coppicing species might be more suitable – along with breeding work.

However, the programme is also focusing on timber products that take advantage of the wood properties of each species, such as high-strength engineered wood.

Satchell says there is great promise in the suitability of eucalypts and cypresses. “These species are both productive and produce high-value products, and they present a significant opportunity for the forest industry to improve returns. A recent case study by the Farm Forestry Association

indicated returns from solid timber eucalyptus could be higher than for radiata and on a 15-year rotation.”

Because upfront costs for plantation forestry are high, and returns are realised many years down the track, he says the goal of the programme “is to give the forest industry confidence in expanding and opening up new export opportunities – which aligns with current government policy – and substituting imported timber with quality locally produced product.



Promising commercial opportunities for kauri (*Agathis australis*) on a 60-year rotation. Photo: ©Michael Smith.

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