



An unconventional forester: More to forestry than pine trees

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Ross Greenbank, a sawmiller of 40 years' experience, running the portable Lucas swingblade mill he operates for MacBlack Timber. Photo / Rachel Rose

Pinus radiata. Of late, it's making some people rich, and filling others with intense aversion.

Radiata makes up fully 90 per cent of New Zealand's 1,747,000ha forest estate. That narrow base is even more surprising (or disappointing) given we can grow a wider range of timber species than just about any country in the world.

There are alternatives to fence-to-fence monocultures of radiata. The end markets are still developing for timber from alternative species, but strong demand won't be generated until there is regular supply in sufficient quantities. It's a chicken-and-egg situation. I'm spending this winter planting alternative species again because I believe the long-term prospects for these high-end-use timbers are good.

Three separate concepts can stand alone or work together to create a different kind of forestry in New Zealand: alternative species, continuous canopy forestry and low-impact harvesting. In the case of the forest my partner and I are establishing outside of Whanganui, we're betting on all three. But you can pick and choose to suit your site, your timeframe and your motivations.

Alternative species is a big category because it's everything that isn't radiata, but it basically divides into exotic species and natives. Tane's Tree Trust is a charitable trust that plays a pivotal role in trials and research into growing native forest for timber production. It's more viable (and on shorter

timeframes) than is commonly assumed. The clear frontrunner is totara, which grows remarkably quickly if open-grown and produces wood of legendary quality and utility. And in Northland (and other parts of the country) you don't even need to plant it, such is the natural regeneration that is under way.

Another voluntary organisation, NZ Farm Forestry Association, holds a great deal of the knowledge about exotic species. It has specialist action groups focused on redwoods, blackwoods, cypresses and eucalypts and there are long-standing trial blocks on private land around the country. A visit to Ian Brown's remarkable timber plantations in the Waikato last year has informed much of our plans for growing Tasmanian blackwood and redwoods.

Marlborough Sounds forester Paul Millen is spearheading significant research into durable eucalypts through the NZ Drylands Forestry Initiative. It's attracting serious support for trials and is part of the Specialty Wood Products Partnership. Its research is influencing our choice of eucalypt species. We believe there will be growing demand in the rural sector for naturally ground-durable posts, battens and other timber for on-farm use to replace pine treated with chromium, copper and arsenic.

Continuous canopy forestry

So: there's plenty of scope to grow trees other than radiata. What about alternatives to clear-felling, with all its attendant risk and environmental pressure? Continuous canopy is a genuinely sustainable way to grow wood; once the canopy is established, it remains intact. Individual trees or small coupes are selectively logged, perhaps annually, although experts suggest a 5-10 year harvest cycle is optimal.

The light wells created by harvesting prompt a growth spurt in the adjacent trees. In a native forest, succession may happen on its own. Some exotic species coppice or sucker after felling, the mature root system throwing up a burst of new growth.

Harvesting under this regime is more expensive per unit than clear-felling so it's viable only if quality timber is being extracted. That means more thoughtful establishment and more management: pruning, thinning, pest and weed control. That means more jobs, higher skill levels - and greater job satisfaction, I believe.

Continuous canopy forestry offers considerable possibility but the lack of research has been woeful, such is the industry's mono-focus on growing quick-rotation pine, only to fell it all and plant back into the slash. Tolaga Bay now stands as a powerful warning about the risks of this approach and there are new national regulations that set out where and how forestry can happen.

There is already evidence that continuous canopy management can work with radiata as well as other species. Ian Barton wrote *Continuous Canopy Forestry* in 2008 and it remains the bible for New Zealand foresters interested in this approach. It includes a case study of the Wardle family's operation in Canterbury, where they manage radiata as well as black beech under a continuous canopy. Barton's book impressively collated existing experience and laid out the research that needed to happen. Sadly, precious little of it has happened in the decade since it was written but there is some movement: the Sustainable Farming Fund funded an excellent NZFFA feasibility study this year into continuous cover forestry in small-scale radiata pine plantations.



Production thinning of Tasmanian blackwoods at Papaiti Forest. Photo / Richard Thompson1

Low-impact harvesting

Low-impact harvesting is a crucial third component of our plan for our forestry. Perhaps 15ha of our 28ha block will be forested and that is already too small to attract much interest from harvesting contractors. The move to ever-bigger plantations and increased (expensive) mechanisation will continue to undermine small, specialist forestry operations. Neither does the steep country we're planting on lend itself to the construction of large skid sites or high-grade roads. Instead, we are developing a track network over which small machinery can move individual logs. These will be milled on-site using a portable sawmill, and only sawn timber will leave the farm. That's far less pressure on our tracks and the rural roads.

New possibilities

These ideas create new possibilities that expand forestry beyond radiata monocultures. More family farms could plant a few hectares of trees to supply timber for on-farm use that will be milled on site (we are, after all, nearly at the end of the farm macrocarpas that were planted by present day farmers' grandparents).

Investors interested in earning carbon credits would do well to consider the giants of sequestration, like coastal redwoods and Eucalyptus regnans, the Australian mountain ash. Unlike radiata, these giants will keep growing - absorbing and storing carbon and providing all their services to the ecosystem - for many hundreds of years. I'm planting as many redwoods as I can and expect they will be more valuable as living trees than as timber, even in narrow economic terms.

Selective harvesting that preserves a forest canopy could be the best fit for erodible land that needs tree cover but is too risky to clear fell. (The catch: hauler-based harvesting isn't suited to this system so ground-based harvesting needs to be planned for at establishment phase).

I'm as doubtful about the long-term returns from manuka as I am about prices staying high for commodity pine exports. Instead, mixed native forest can offer a variety of products even as it offers recreational and educational opportunities, increases biodiversity and protects soil and water. It can even yield honey that tastes good (rewarewa honey, anyone?)

Lastly, these different approaches to forestry have the potential to involve many more New Zealanders. A forestry rights framework already exists that facilitates bringing capital and land together in order to plant forests which benefit both investor and landowner. I'd prefer to see our land and the trees growing on it owned by the widest possible number of New Zealanders, not multinational corporations or overseas investment consortiums.

Planting a forest of diverse species, committing to not clear-felling and/or to low-impact harvesting all have the potential to inspire more New Zealanders to invest in small-scale forestry that is good for rural communities, for our domestic economy and for our planet.

* Rachel Rose and her partner were awarded the Michael Hay Memorial Award for young farm foresters at the NZFFA conference in May. Their farm is featured in a case study (<http://bit.ly/ccf-2>) just published by Horizons, alongside Papaiti Forest, the maturing alternative species forest that inspired their own efforts.

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