

# Podocarpus totara: managing natural regrowth

*In the Northland region of New Zealand is a significant indigenous resource whose natural regeneration has the potential to transform the 'productive landscape' – as Michael Smith reports in this first part of a two-part story.*

*PODOCARPUS totara*, is a native species whose natural distribution ranges from coastal regions to a maximum of 500 metres (less in southern climes) throughout New Zealand. It tolerates a wide range of weather conditions, most soil types (but not wet feet) and grows especially vigorously on pastoral hillsides and along riparian areas in Northland – where two groups are exploring its timber production potential.

The Northland Totara Working Group (NTWG) concentrates on the management of existing and naturally regenerating (second-growth) stands of totara on farms. Paul Quinlan, a landscape architect and member of the working group, says: "Promoting its sustainable management for commercial use is seen as the most effective incentive to develop this resource on private farmland, thereby also gaining the many environmental and landscape enhancements that come with it."

The group's work is ably supported by Tane's Tree Trust, which has a broader scope that includes promoting the planting of totara and other native species for timber production, biodiversity, restorative and legacy purposes.

Quinlan says totara has a weed-like ability to colonise poor pasture and is relatively unpalatable to livestock. "It's a unique opportunity to integrate an indigenous tree species into existing pastoral production systems – and could offer sustainable land-use options for extensive areas of marginal hill country."

## Promising trials

He adds that extensive pruning and thinning trials of stands on a number of farms



**Northland totara: an economic opportunity for sustainable management.** Photo: ©Paul Quinlan

throughout Northland have indicated that totara responds well to silviculture.

Dr David Bergin, a scientist with Environmental Restoration Ltd and fellow member of NTWG, says: "Some stands have densities of several thousand stems so thinning to 1000 stems or less is a first step – with the eventual aim of fewer than 500 over several years, depending on the age and growth of the stand. Pruning of these tight stands is not necessary, but form pruning is essential on open-grown trees."



**Extracting a farm-totara log during a trial harvest and stand-improvement exercise.** Photo: ©Paul Quinlan

growth rates may be possible. But the reality for large-scale forestry of any natives will be on hilly sites with less-than-optimum growing conditions. On fertile lowland sites totara would be competing with far more productive land uses."

## Further investigation

Research to determine totara's suitability as a managed plantation crop is ongoing – from genetics and nursery production of seedlings to planting trials with and without nurse or shelter crops. Quinlan says the data thus far has yet to establish a refined silvicultural prescription. "Options range from wide spacing for quicker growth, which would require a lot of form pruning – to higher stocking and thinning, instead of pruning, with slower growth rates."

Bergin says: "Plantation totara has a propensity to form multiple leaders and coarse, steep-angled branching if not planted at high density or if not interplanted within a crop of native shrub hardwoods to provide side shelter and shade.

"Open planting of totara – even at 2500 stems per hectare – after 10 years results in trees that will require form pruning of double leaders and steep-angled branches, certainly from the lower boles. Smaller, more horizontal branches will die off naturally as they become shaded as trees develop, and are not necessarily a priority for pruning."

But as he points out: "Investigations are at very early stages for totara and virtually all other native timber species – with limited funding compared with the millions of dollars spent on research for

Cont P 11

# Developing an industry from regenerating resource

From P 10

one species [radiata pine] over many decades.”

## Wide-ranging uses

European settlers used totara for house piles, jetties and posts/gates, while Maori continue to value it for carving and waka (canoes). Feature-grade farm totara is used for furniture, interior linings, flooring and joinery – although not on any significant commercial scale.

Quinlan says farm-grown totara from Northland is widely used and considered to be an excellent native softwood timber with exceptional machining and finishing qualities. Studies indicate it is stronger than old-growth totara from the central North Island and is equivalent to rimu, kauri and macrocarpa – suggesting it “should be a relatively valuable specialty timber” (NTWG Newsletter).

## Stakeholder support

A number of stakeholder groups have expressed strong support for promoting the use of ‘farm-totara’ timber and for developing an industry around this regenerating resource – among them many architects and designers who would specify totara if there was a continuity of supply.

And as Quinlan emphasises: “This is an opportunity to manage abundant natural regrowth on private land – in particular its scale and



**Farm-totara table and chairs.** Photo: ©Paul Quinlan



**Totara carving at the entrance to Devonport Library, Auckland: illustrating Maori history and tribal authority.** Photo: ©Michael Smith

advanced growth. Plantations would complement the existing resource, but right now it is not a case of planting and waiting 80 years.”

Part two of this article will consider the economic viability of establishing a commercial-scale totara industry. It can be read in the March 4 edition of Timber & Forestry enews.



**A sample plot of totara within a naturally regenerating stand, near Whangarei.** Photo: ©Michael Bergin

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