

Continuous Cover Forestry

What is it and why consider it?

Continuous canopy (or continuous cover) forestry is an alternative to clear-felling even-aged forestry stands. It may be a mixed or single-species forest on any scale that produces high quality timber through appropriate siting, species selection and silviculture. Only individual trees or small coupes are harvested. The resulting light wells encourage natural regeneration of subsequent generations of trees; replanting may not be required, depending on species.

Continuous canopy is being applied to *P. radiata* and alternative species (both exotic and native). Extraction costs are higher per unit, which is offset by producing higher value timber. It is economic even with radiata if harvested by a ground-based logging crew. Helicopter harvesting of individual logs may be economic for very high-value species such as select natives.

The periodic harvest does not exceed the growth of the forest over the same time period, making this regime genuinely sustainable. Harvest cycles between five and 10 years are recommended. Because the canopy is maintained, there is better protection of soil and water and micro-climates are maintained. It is also aesthetically more appealing as the forest remains; even as individual trees are harvested. Over time a continuous canopy plantation more closely resembles a natural forest, offering recreational, biodiversity and cultural value.

For such reasons, continuous canopy forestry could be expected to be acceptable or of interest to a wider range of New Zealanders compared to the current conventional system of clear-felling even-aged stands of radiata.

Several of these forests already exist in the Manawatū-Whanganui catchment, at different stages of establishment. Papaiti Forest is a 16 ha plantation established in the early 1990s by Richard Thompson and Laurel Stowell, in a dry stock farming area 15 minutes from Whanganui. Principal species are Tasmanian blackwood, a renowned joinery timber, and macrocarpa. Silver wattle has been successfully harvested. Production thinnings are already yielding useable timber.

The couple have established a specialist timber merchant business, MacBlack Timber, to market the wood from their own forest. They also own a portable Lucas sawmill and their sawmillers produce a range of

timber from shelterbelts and farm woodlots around the district. Demand for their timbers is steadily increasing, with orders arriving from around New Zealand.

One of the MacBlack sawmillers, Hamish Randle, is establishing a continuous cover forestry operation on a 28 ha hill country block in Okoia, also near Whanganui. Specialist poplar, durable eucalypts and blackwoods have been planted, with macrocarpa, redwoods, silver wattle and more eucalypts going in during the winter of 2019.



Sawmillers Hamish Randle (left) and Ross Greenbank operating the MacBlack Lucas sawmill
Photos: Rachel Rose

Both forests have or will be planted and maintained by their owners. Track networks have been developed on the basis that individual logs will be milled on-site and only sawn timber removed. This reduces roading costs for each farm as well as pressure on the rural roading network.

The owners see great potential for more of this style of forestry in the Whanganui district, given the amount of highly erodible soils and steep country. The logistics of portable milling and incremental extraction make it feasible to harvest small, remote or less accessible blocks.

Useful Resources



For more information visit www.horizons.govt.nz
or freephone Horizons on 0508 800 800

The **New Zealand Farm Forestry Association** is a long-established peer-based network, which hold a great deal of knowledge about alternative species timber production and integrating farming and forestry (including radiata). The **Middle Districts branch** is particularly active, with a year-round programme of field days and activities. The website contains a wealth of information: www.nzffa.org.nz

slui@horizons.govt.nz Horizons Regional Council: 0508 800 800 www.horizons.govt.nz

The **1 Billion Trees Fund** offers funding for plantings, both exotic and native, that meet its criteria. www.teururakau.govt.nz/funding-and-programmes/forestry/planting-one-billion-trees/one-billion-tree-fund/

1 Billion Trees is administered by **Te Uru Rākau**, the new forestry service within MPI: www.teururakau.govt.nz/te-uru-rakau-forestry-new-zealand

The New Zealand Dryland Forests Initiative is carrying out a well-resourced research project into growing select ground-durable eucalypts in New Zealand: www.nzdfi.org.nz

Ian Barton’s book **Continuous Cover Forestry: A Handbook for the Management of New Zealand Forests** was published by Tane’s Tree Trust in 2008 and is still the best resource available in New Zealand on continuous canopy forestry. It is available from the publisher, and from NZFFA: www.tanestrees.org.nz/resource-centre/publications/

Ian Barton was a founding trustee of **Tane’s Tree Trust**, whose purpose is to encourage growing native plantation timber. The Trust has conducted significant research and published a wide range of high-quality books and periodicals. See its website for details (above).

NZFFA’s quarterly magazine published several articles by Ian Barton, available on its website:

“Continuous cover forestry – an introduction”, *New Zealand Tree Grower* November 2005, available at www.nzffa.org.nz/farm-forestry-model/resource-centre/tree-grower-articles/tree-grower-november-2005/continuous-cover-forestry-an-introduction/

“Continuous cover forestry: Management practice”, *New Zealand Tree Grower* May 2006, available at www.nzffa.org.nz/farm-forestry-model/resource-centre/tree-grower-articles/tree-grower-may-2006/continuous-cover-forestry-management-practice

Continuous cover forestry			
	<i>P. radiata</i>	alternative exotics	native
Market	established	emerging	demand exists but little supply
Knowledge	a lot	some, varies by species	some
Destination	overwhelmingly export	mostly domestic; export will require far greater quantities and guaranteed supply	domestic
Value	low	high	very high
Research	sustained, well-funded research over decades	exists, but informal and/or privately funded. More funding and attention needed	

Fig. 1 Characteristics of continuous cover forestry by species type

The official New Zealand **definition of a forest** is an area of at least one hectare of a forest species (any non-horticultural woody vegetation capable of growing to 5 metres high) with a crown cover of more than 30 percent on each hectare; and an average crown-cover width of at least 30 metres.

