



Coast redwood

Coast redwood grows well in New Zealand, producing durable timber on par with that grown in its native California.



Coast redwood (*Sequoia sempervirens*) grows well on selected sites throughout New Zealand. Plantings of coast redwood are steadily increasing and were estimated to cover around 10,000 hectares in 2018.

Coast redwood thrives in sheltered inland areas with deep, fertile, moist but well drained soils. It is shade tolerant but dislikes windy and coastal conditions.

The potential of the long-lived species to capture and store carbon ranges up to around 305 tonnes of carbon per hectare over hundreds of years.

The wood is soft, straight-grained and easy to work. The heartwood is durable. The timber is thought to have very good market potential in the USA, where local supply is now limited.

In the right place, coast redwood can offer very good erosion control via many fine lateral roots and a strong tendency to coppice from cut stumps.



History

California coast redwood grows along the fog belt of the Pacific coast from southwest Oregon to central California. Some specimens are among the tallest living plants in the world at over 100m.

In New Zealand, redwoods have been a feature of the landscape since the mid 19th century, having been established as small plantations, shelterbelts and ornamentals throughout the country.

Coast redwood has the potential to become a key erosion-control species in New Zealand due to its comparatively fast growth rate and the production of many fine lateral roots. It also has a very strong tendency to coppice from cut stumps. Both these features could be advantageous on steep land that is vulnerable to erosion and landsliding post-harvest.

Silviculture

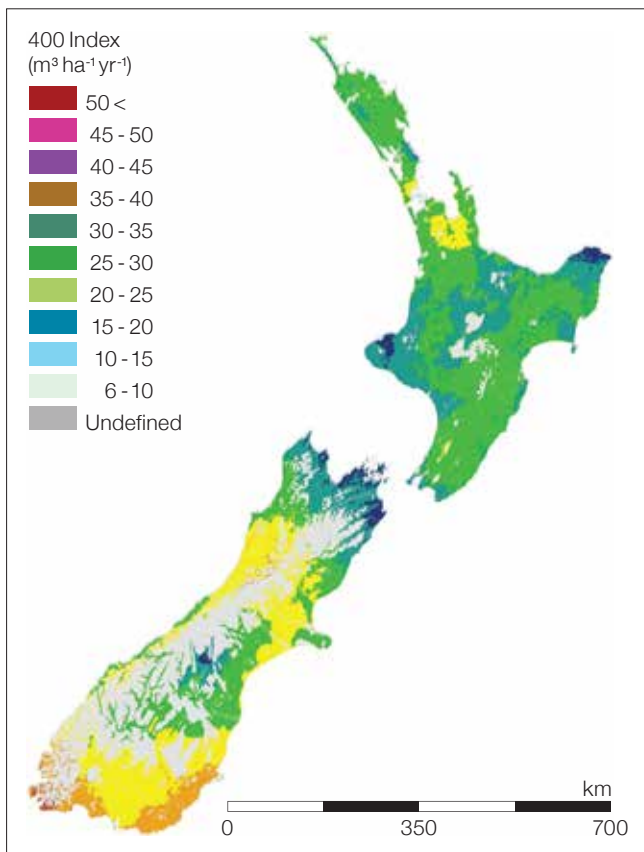
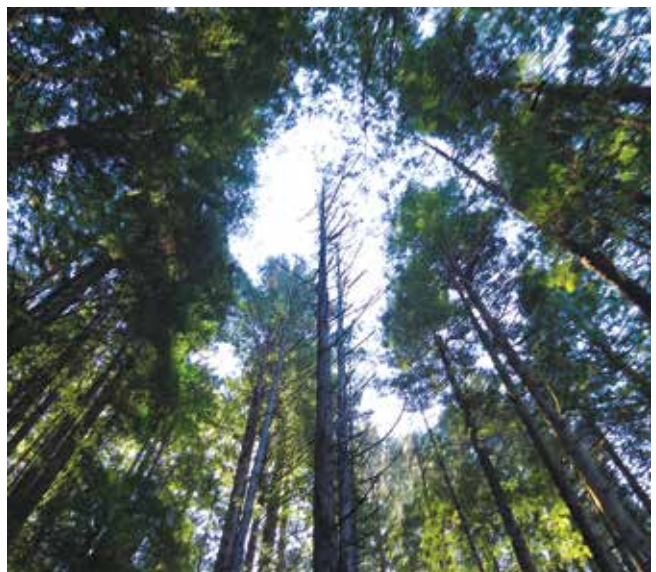
Redwoods perform best in well-drained, fertile soils, with regular rainfall on sheltered, inland sites. They grow relatively slowly at first, meaning good weed control around young trees is more important than for other species.

Young trees are intolerant of exposure and need shelter from strong winds and severe frosts. Coast redwood is very shade tolerant and can recover from almost indefinite suppression. It maintains a remarkable capacity, even when quite old, to accelerate growth rates when released from competition.



Specialty timber

Coast redwood produces wood that is soft and straight-grained, easy to work, odour free, non-resinous and free of oily materials. There is little shrinkage and it is very stable once dry. The sapwood is almost white and surrounds deep reddish brown heartwood which, when exposed to light, changes to brown. The heartwood is durable. It is used for a range of indoor and outdoor products including weatherboards, decking, outdoor furniture and indoor joinery.



Coast redwood productivity (400 Index).



Photo: Destination Rotorua

The famous redwoods in Rotorua were planted in 1901.

Improving performance

Redwoods are not currently part of any New Zealand forestry industry-funded research programmes. However, several small research projects have been carried out recently, including:

- Investigating the effects of genetics x environment on growth and wood properties of various clones.
- A heartwood durability study, which developed a new method for assessing redwood durability. The study concluded that young New Zealand-grown redwood has similar heartwood durability to second rotation Californian-grown redwood.

Carbon sequestration

The average carbon stock potential of coast redwood is modelled to be 245 tonnes of carbon per hectare, rising to 305 tonnes of carbon per hectare under the most favourable conditions (assuming 40 years, 400 stems per hectare).

References and resources

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About Scion

Scion is the Crown research institute that specialises in research, science and technology development for the forestry, wood and wood-derived materials and other bio-material sectors.

Scion's purpose is to create economic value across the entire value forestry chain, and contribute to beneficial environmental and social outcomes for New Zealand.



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Prosperity from trees *Mai i te ngahere oranga*