

# Coast Redwood

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Recently IFS has reached an agreement to source Redwood clonal stock for planting and selling in New Zealand. I believe Redwood is a species with great potential in New Zealand. For more information browse the pages below.

## About Coast Redwood



Coast redwood is a species of grandeur not rivaled by any other species of commercial value in the world. The old redwoods of northern California and southern Oregon have to be seen to be believed. With some more than 2,000 years of age, they have stood the test of time withstanding floods, fires, and windstorms.

Coast redwoods have contributed to the welfare of many cultures that have occupied California at one time or another including native American Indians, Russian explorers and settlers, Spaniards, as well as the mixture of ethnic backgrounds of those who now call themselves Californians. For these various cultures the properties of redwood have seen it shaped for many uses. Redwood has been a major part of many forestry empires. Its versatility, huge tree wood volume and comparatively high timber prices have carried companies' fortunate enough to have owned redwood forests through depressed markets when other forest owners have struggled to survive.

Most of the original 'old growth' forest has been harvested since the early 1850's with production ramping to a peak in the mid to late 1940's following World War II. Until the early 1960's there was little attention paid to reestablishing redwoods following harvesting but, because of its habit of coppicing (sprouting) from the stumps redwood forests became reestablished on their own. For the last 20 to 30 years these regenerated 'young growth' forests have accounted for an ever increasing portion of the harvest until today. Nearly all redwood production is from 'young growth' forests with little 'old growth' in the mix.

The predominant share of remaining 'old growth' redwood forest is now preserved in parks and reserves where harvesting will never take place.

Over the past 30 years foresters in California have been planting and improving the genetic quality of redwood planting stock. Due to the time required to grow redwoods in California the rewards of this developmental effort are yet to be financially realized.

What has been confirmed now is redwoods grow exceedingly well in New Zealand, outstripping Californian growth rates.





New Zealand offers a number of advantages over California for investors including more rapid rates of growth, fewer restrictions and greater flexibility in establishing, managing and harvesting forests.

With a growing hunger for the versatile timber, investors and foresters are searching for alternative areas in which to establish and grow commercial redwood forests. New Zealand 'straddles' the same latitudes south of the equator, as to the natural range of redwoods north of the equator. Parts of New Zealand also have similar climatic conditions to the natural range of redwoods in California. Because of this New Zealand has been identified as the single most significant opportunity in the world as an alternative growing location.

Along with the change from old growth to young growth harvesting, there has also been stringent harvesting restrictions imposed by the California state government in efforts to minimize potential environmental risks. To a certain extent these restrictive harvesting regulations are rendering some young growth redwood forests unharvestable.

The change from old growth to young growth in the Californian commercial redwood forestry sector has resulted in a change from huge dimension logs to much smaller logs.

## **The History of Redwood Use in California**

Redwoods have played an important part of the history of Northern California. They have been used to construct the railroads, for wine vats, water pipes and much of the housing in the area.

### **The Natural Range**

In the USA, SW Oregon and NW California Redwoods are confined to coastal areas (within 60 km of the sea) experiencing a great deal of fog; at elevations generally below 300 m, occasionally to 1000 m.

### **Early History**

Originally local Indians made use of large redwood logs to construct "dug-out" canoes. Russian explorers first used redwood lumber to construct their settlement at Fort Ross near Fort Bragg. Later European settlers and their descendants used redwoods to construct their houses, forts and towns. It wasn't until the 1906 earthquake which leveled San Francisco that the redwood industry really began its development. By then much of the scattered redwood near San Francisco Bay had been used, so people looked north to the main areas of redwood for the supply of redwood lumber needed to rebuild the city. These northern forests began supplying sawn lumber that was used for construction as well as split shingles that were used to roof the structures.



At about the same time, farmers and ranchers started using significant quantities of redwood for grape stakes and fence posts. Posts and stakes were hand split whilst the lumber used for building was sawn.

Into the first half of the 1900s as vineyards matured and towns and cities grew, the other more exotic uses of redwood developed including use in wine barrels and vats and pipe lines for delivery of city water supplies. The Great Depression and poor access into the heart of the redwood region limited expansion of the redwood industry so it was not until after World War II that the redwood industry reached its peak of production in response to a national housing boom.

Today redwood is very sought after and commands very high prices that lends its use for more decorative purposes including inside wall paneling, outdoor wall cladding, decks, garden furniture and back yard fencing.

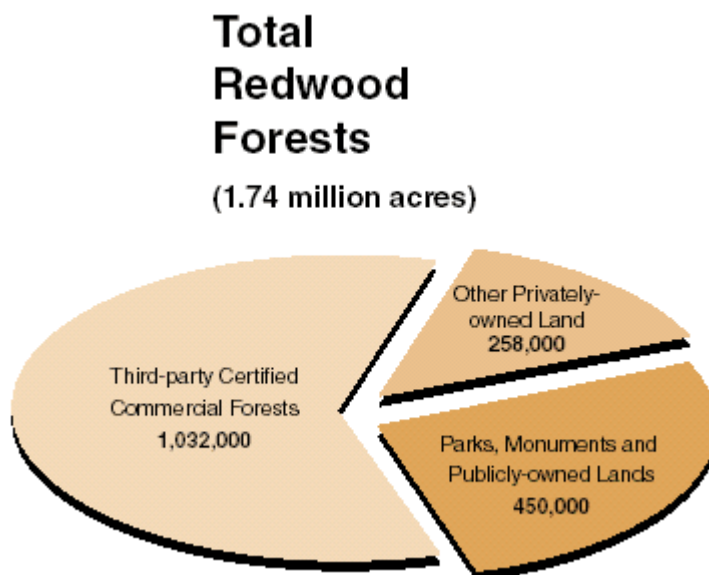
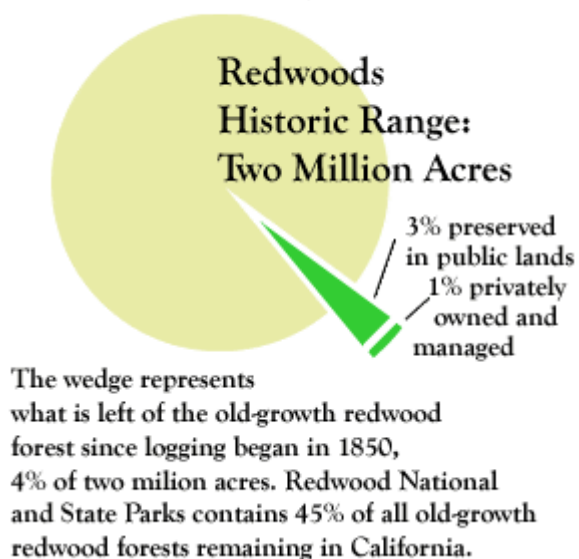
## **The Future of Redwood in California**

Although redwoods have been harvested in California for well over 100 years, many fine groves have been preserved in a number of State parks as well as a National park. In addition where the original forests were harvested there now exist very fine young growth redwood forests that are well managed as commercial forests.

Harvesting continues in most of those young growth forests but ever more stringent harvesting regulations have been imposed by the state of California Department of Forestry. These stringent harvesting regulations make it impossible for the redwood forest industry in California to satisfy the demand for redwood lumber.

Although redwood prices are strong and are expected to continue to be, the regulatory situation is not likely to improve and instead is likely to become more difficult for the redwood forest industry in California. As with many crops difficulties in one area contribute to opportunities in another. According to redwood specialists from California, New Zealand has an opportunity to take advantage of the situation in California.

**Today 85,000 acres of old-growth redwood forest remain. RNSP contains 38,982 acres of this total.**



## The Future of Redwood in New Zealand

The climate and soils of New Zealand have proven to be suitable for growing many forest species native to California. In fact the forest industry of New Zealand is based on one of those species - Radiata pine, with Douglas-fir, another Californian forest species, also of importance.

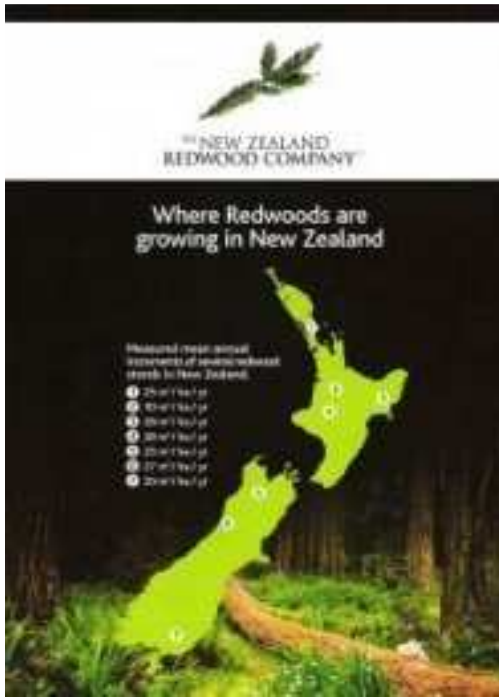
Other less commonly grown Californian species include Macrocarpa which in California is known as Monterey Cypress, Wellingtonia which in California is known as Giant Sequoia or simply Big Tree, redwood which in California is known as Coast redwood, and a number of other pines including Lodgepole, Ponderosa and Bishop.

While Radiata pine and Douglas-fir forests grow outstandingly well in New Zealand forests with little or no establishment or growing costs, similar products are produced throughout the world creating severe competition for the New Zealand forest industry. Because of this primary forest producers in New Zealand have been considering what alternative species might provide greater economic benefit from their land.

As mentioned in other sections of this web site, a Californian based forestry company has begun establishing redwood forests in New Zealand. The success of these newly established forests and the many other successful examples of redwood forests in New Zealand is encouraging others to follow suit.

Who is to say just where all of this new activity may take the New Zealand forest industry, but the past failures of the species in New Zealand can now be forgotten. Good site preparation followed by effective weed control for the first two growing seasons following planting, along with quality planting stock have solved most problems encountered in the past.

These solutions, along with the fact that the value of redwood forest products is much greater than from pine and/or Douglas-fir forest products now makes redwood an obvious candidate as the primary alternative forest species of choice in New Zealand.



The following map indicates those areas of New Zealand where redwood forests are likely to grow well.

This range of sites does not take into account the quality of the stand. But look to give a graphic description of how Redwoods will grow in different climatic conditions.

IFS wishes to thank the NZRC for the use of this map.

The primary reason redwood is so valued is because it is a specialty wood prized for its appearance rather than being just another construction timber. Primary uses include interior paneling, exterior cladding, outdoor decks, garden or backyard fences and railings. Markets for these uses are very strong but are not being satisfied. With time (approximately 30 years) and the development of a sustainable area of redwood forest, New Zealand is in an excellent position to very profitably enter those markets. In fact, New Zealand has several times more land upon which redwoods can be profitably grown than does California so there is real opportunity to not only enter the market with redwood products but to take over leadership in supplying those markets.

In pursuit of these opportunities, Soper-Wheeler Company, through its subsidiary The New Zealand Redwood Company has selected the best individual redwood trees and is propagating them for use as the planting stock for its forests in New Zealand. Independent Forestry Services has access to this planting stock and strongly recommends its use with all investors interested in establishing redwood forests in New Zealand. Use of this stock is strongly recommended as it was selected for propagation based on its form, tendency to produce small branches and thus small knots, and fast growth rates.



## Interesting Characteristics of Redwood

### 'Coppicing'

Redwood is one of the few commercial timber species grown that 'coppice'. Coppicing occurs after a tree is felled. The stump of the tree remains alive and grows sprouts around its perimeter. This provides a naturally regenerating forest that never needs replanting!



### **Redwoods Root Structure**

The root system of the redwood tree is surprisingly shallow, especially given the great height the mature tree attains. There is no tap root and the other roots may reach no deeper than 6-10 feet. One way in which the trees are able to remain upright for millennia is by growing close together with other redwood trees intermingling their root systems. This creates a continuous living root mat through the soil.



### **Shade Tolerance**

Redwood is shade tolerant and will grow in the understory of mature trees. As trees are cut out of a forest coppicing occurs, due to this shade tolerance the sprouts will continue to grow in the hole created by the tree removal or under the canopy of neighbouring trees. This characteristic allows a Redwood forest to be harvested on a sustainable coup or clearcut basis. This versatility gives greater options to the grower through varied management techniques.

This characteristic of Redwoods is ideal for the NZ governments planned Emissions Trading Scheme. This legislation applies to exotic and native forest planted from 1989 onwards. The system rewards forest owners for the value of the carbon stored in their forests by issuing units that can be traded with other market participants. The Emissions Trading Scheme will allow forest owners to receive another income stream whilst their forests grow.

More detail is provided on the 'Carbon Consulting' link on the IFS home page.

# The Versatility of Redwood

## Fire

The bark of a coastal redwood is very thick, as much as a foot in places. It exhibits an unusual property when exposed to fire- it chars into a heat shield. It actually turns into a pretty effective ablative, similar to the way a heat shield on a re-entry vehicle works.

## Insects

The chemical composition of the tree itself is apparently distasteful or even poisonous to normal tree pests like termites and ants. That is why it was used as the first layer of boards in a wall, because termites and carpenter ants won't burrow into it.

## Acid

In the 30's to the early 60's redwood was used as a separator between the plates of electrolytic (auto, truck and airplane) batteries. The wood could withstand the battery acid and still retain its shape.

Redwood is very resistant to water associated rot. It is not uncommon to drill a well in a creek bed in this area and end up drilling right through a redwood log that may have been buried there for thousands of years. The wood comes out of the pipe sound and in good shape.

## Unmatched on the Flood plains

Coastal Redwoods have the unique ability to survive rising soil levels over their immense life spans. Rising ground levels are commonly brought about by flood deposits, deposits that typically smother other trees root systems, killing them. The redwood simply grows a new lateral root system! Seven successive layers of roots were observed on one fallen redwood meaning that the ground level had risen dramatically up the tree seven times and each time the tree responded with a new root system.

The total rise on one particular tree was 11 feet over the trees 1200+ year life. It has been observed that some 1000+ year old redwoods have experienced and survived rises in ground level of as much as 30 feet! Couple this with redwoods ability to survive long periods of immersion and their immense durability in the face of flood borne debris and you will realize that the redwood can survive and indeed thrive in flood plains that wipe out less hardy tree species.