



CHAPTER 9 - ECONOMIC ANALYSES

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The economics of growing redwoods are uncertain because of many unknown figures in costings (Table 8), yields and returns. As more data are gathered and models become more refined, confidence in economic predictions will increase.

In a recent comparison of alternative species it has been estimated, based on certain assumptions, that redwood plantations could return an IRR of 10.5%. This was higher than any of the other species assessed (radiata pine, Douglas-fir, eucalypts and blackwood). However it was stressed that this required good growing sites, and assumed that durability issues would not impinge on the market price. The redwood prices used in this

study were based on Californian prices costed back to New Zealand dollars.

The average MAI of 13 sites based on growth model predictions gives a mean volume MAI of 26 m³/ha/yr with a range of 15-53 m³/ha/yr. Based on the mean volume MAI of 26 m³/ha/yr and a rotation length of 35 years, this represents a total volume of 910 m³/ha. Assuming that 95% is recoverable logs a total of 865 m³/ha of recoverable logs is used in these assumptions.

It is estimated that 39% is pruned material, 34% large diameter unpruned and that 27% is smaller diameter unpruned logs.

Table 8: Costs and operations used for base case analysis

Operation	Stand age	Cost(\$/ha)
Land cost	-	0
Land prep	0	648
Tree stocks	0	1360
Planting	0	320
Fertilising	0	252
Releasing	0	240
Releasing	1	250
First prune	6	800
Second prune	8	840
Third prune	10	780
Thin	10	380
Annual costs		60

Management fee (15% of costs) Rooding, log and load (\$50/m³)

The revenue is based on figures quoted by Piers Maclaren who used a New Zealand value of \$184/m³ at mill door. This was derived from calculations by Wade Cornell working back from Californian prices at the time (2003) to a stumpage value back in New Zealand of \$144/m³. This was converted back to a mill door value of \$184/m³.

This provides a base case with an IRR of 9.3% (not including land costs). If land costs of \$4,000/ha are included, IRR drops to 6.7%.

If plant costs are halved to \$720, IRR increases to 8.9%. Using Cornell's stumpage of \$144 across all log grades gives an IRR of 9.2%.

N.B. As the figures used in this analysis are of a general nature only, more detailed site specific analysis evaluated by professional advisers should be used on a case by case basis before investing in redwood forestry.

Key Points

- Analysis of redwood forestry shows a positive return (based on Californian prices), with an estimated IRR of 9.3%.
- Seek professional input before any large investment in redwood forestry.
- Insufficient information is available to analyse giant sequoia forestry.

Suggested reading:

Maclaren, 2005

