

Comparison of Pruning Regimes for Nine-year-old *Eucalyptus nitens*

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Objectives: - to study the effect of:

- pruning intensity on tree growth and stem diameter over stubs (DOS).
- initial stocking on crop tree quality.

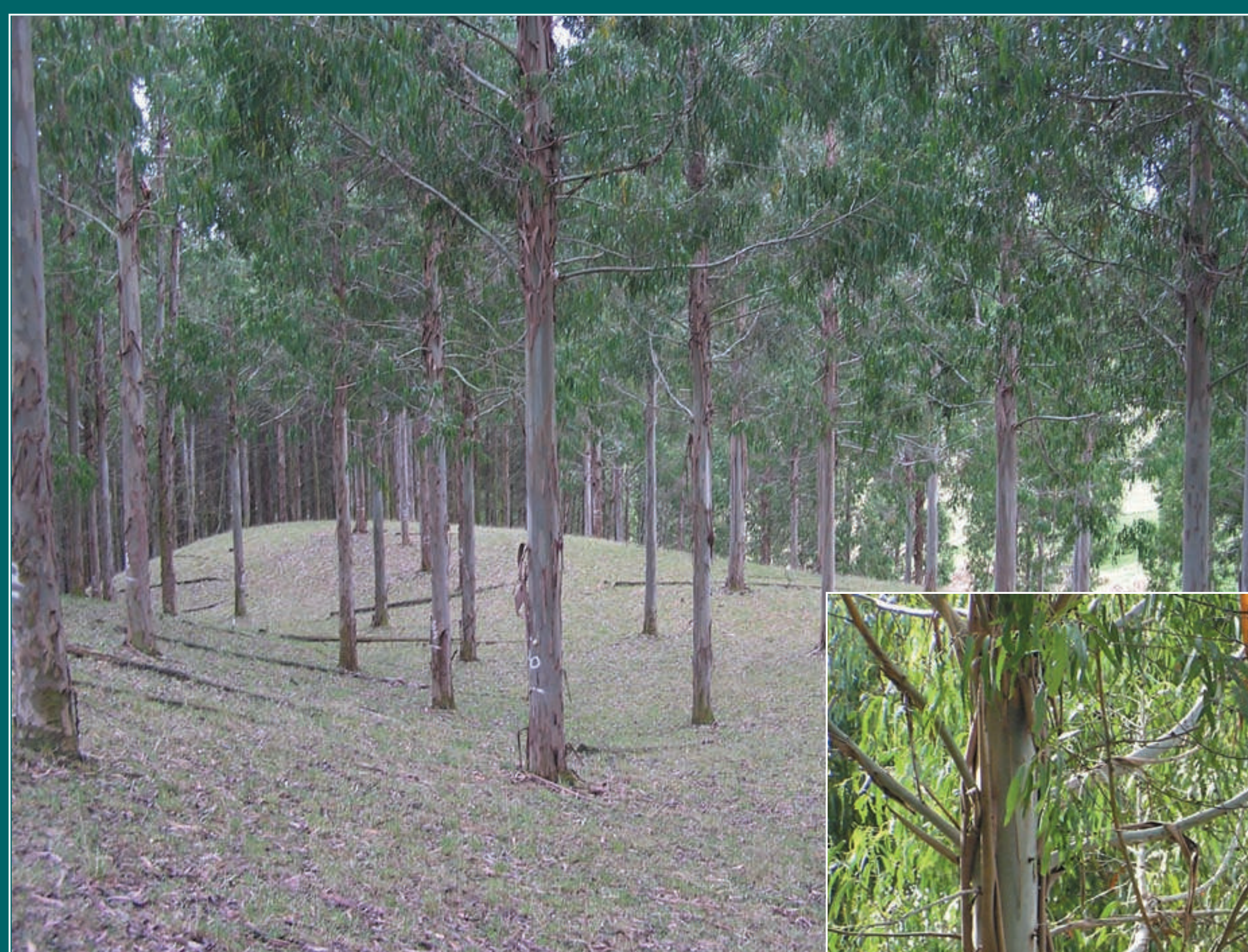
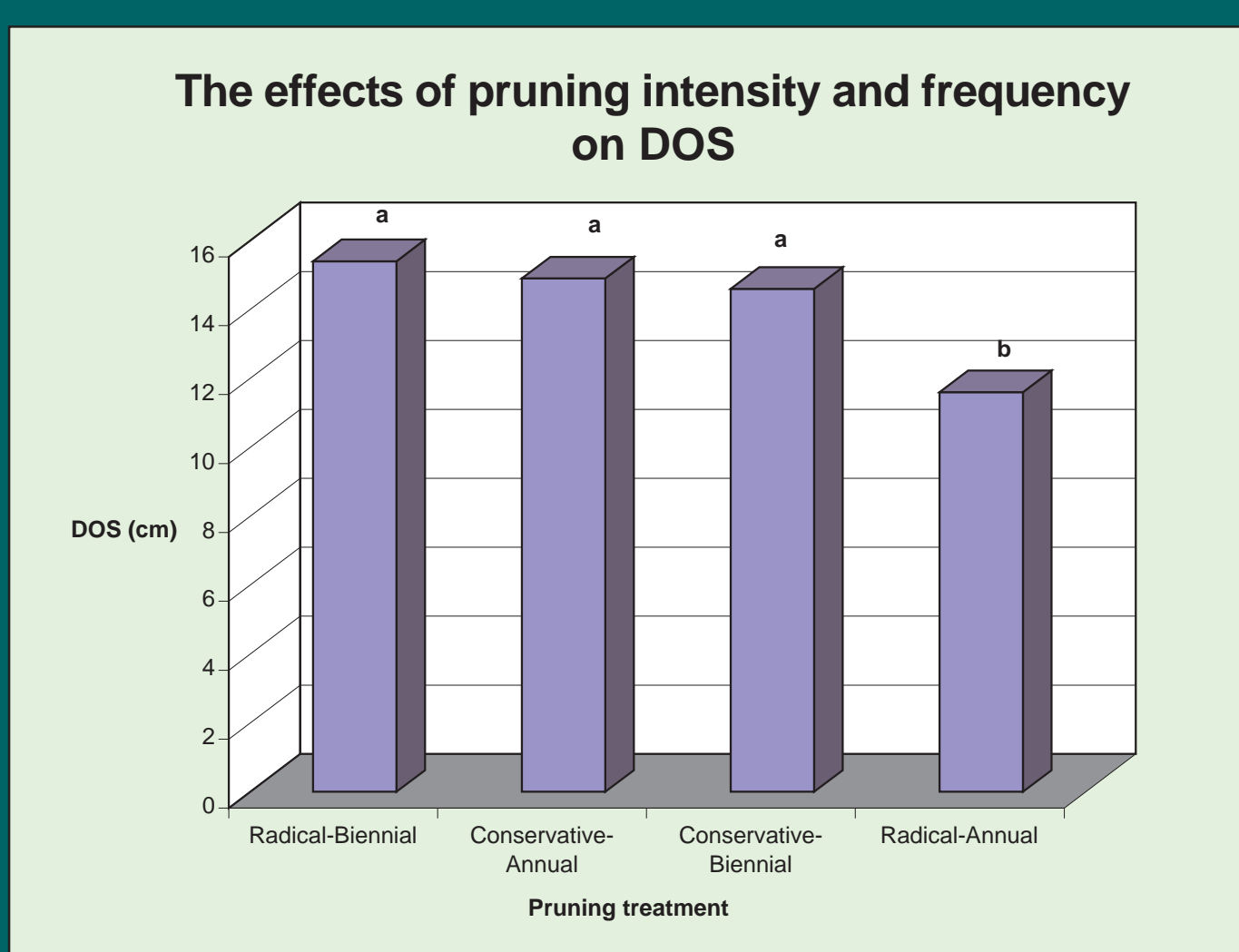
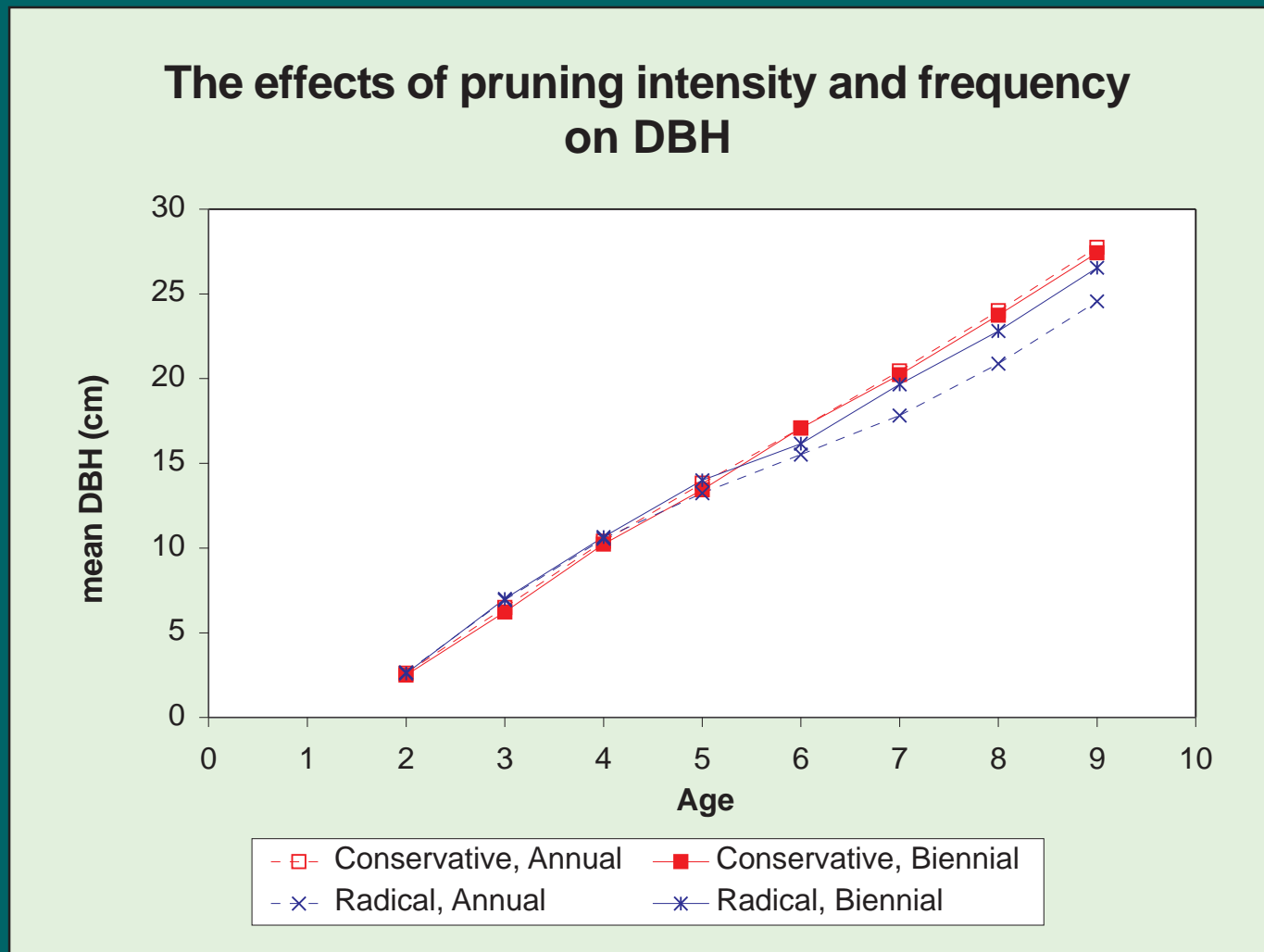
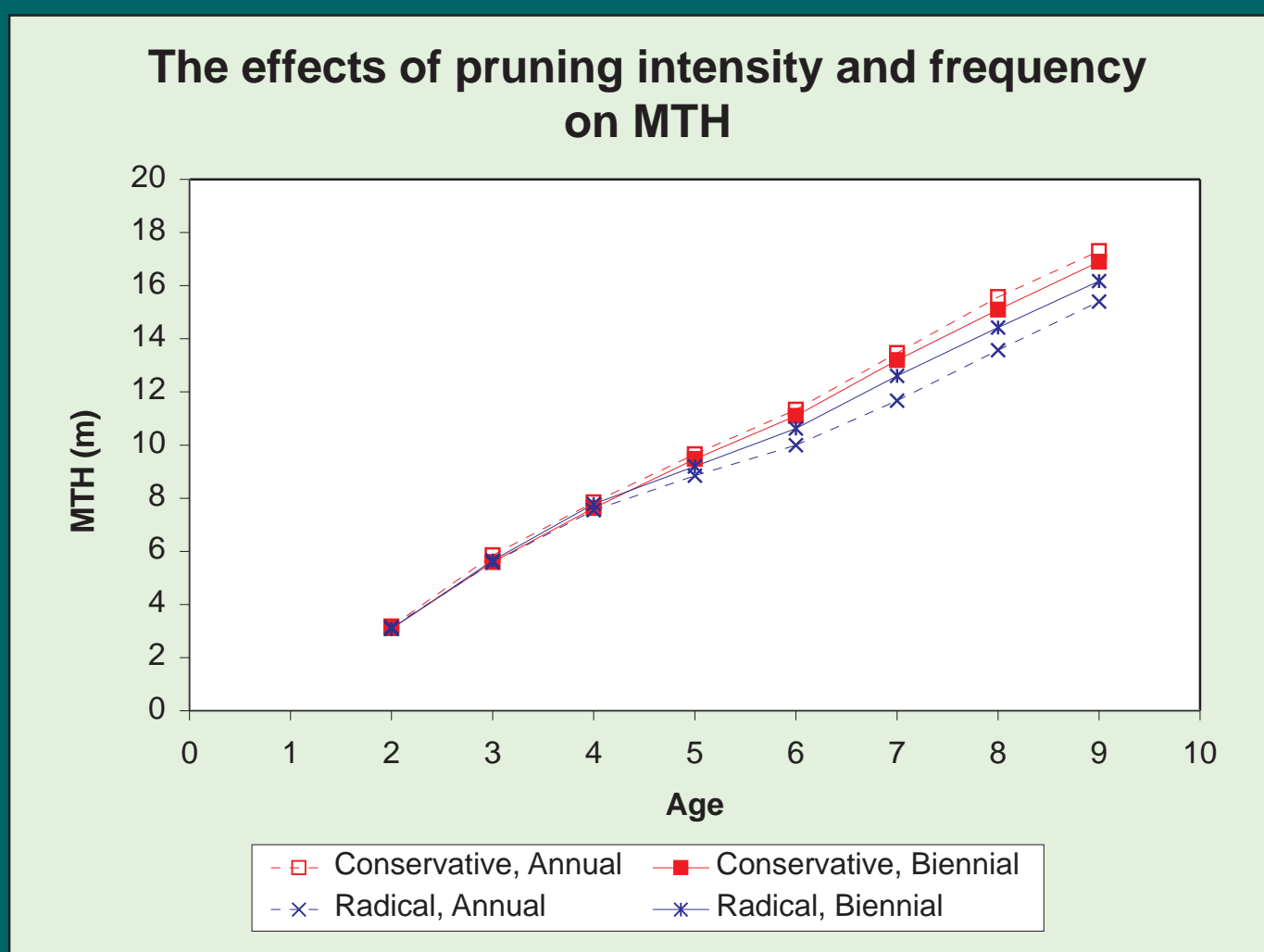
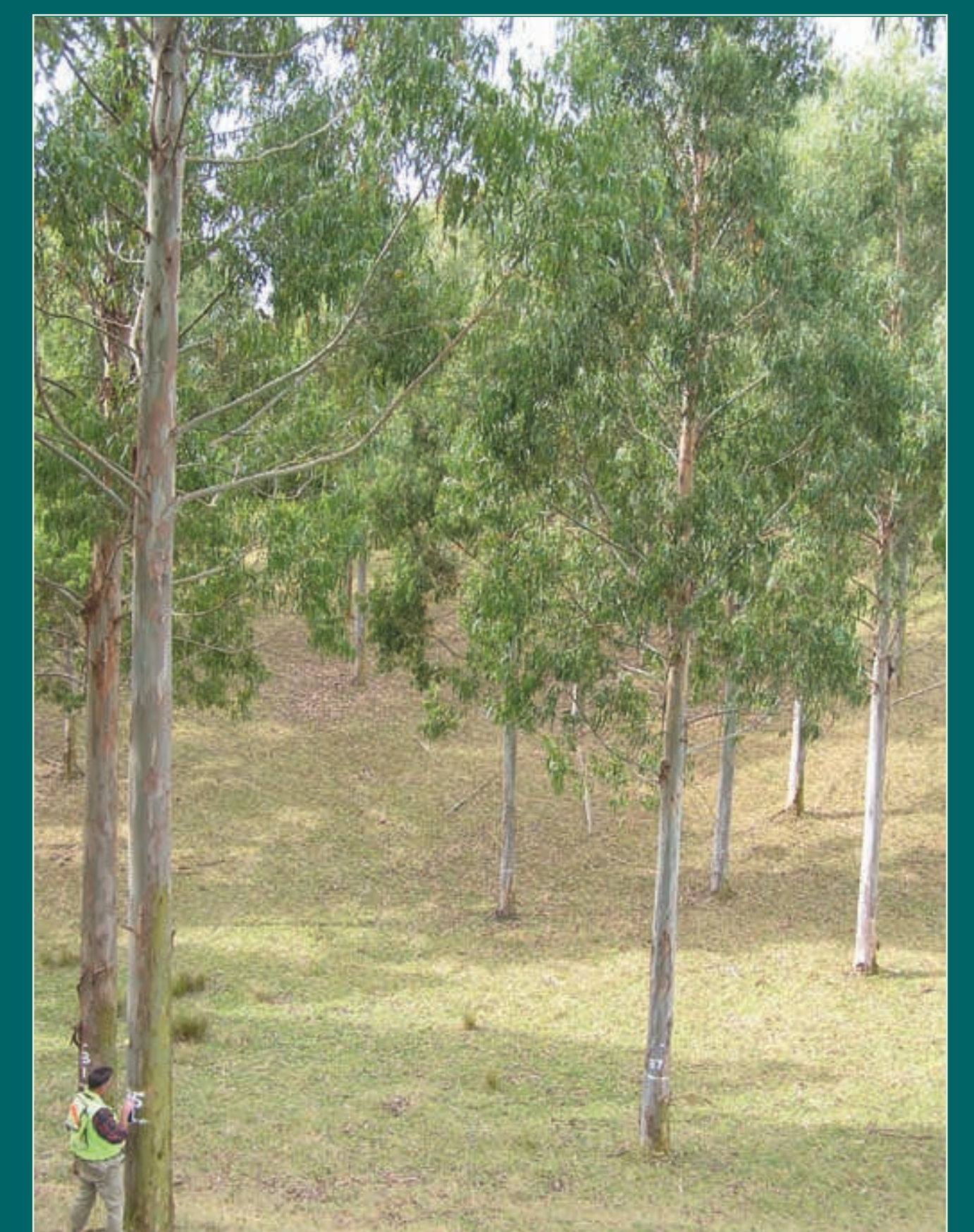
Trial Location: In 1992, a *Eucalyptus nitens* pruning trial was established on farmland at Millers Flat (480 m asl, lat. 46°S) in Central Otago, New Zealand.

Pruning treatments

- Conservative first prune (at age 4) with 9 cm gauge, thereafter using a 10 cm gauge. (Annual and Biennial)
- Radical first prune (at age 3) with 6 cm gauge, thereafter using a 7 cm gauge. (Annual and Biennial)

Thinning treatments

- Initial stocking 300 and 600 stems/ha
- Thinned to 200 stems/ha by age 4 years, and to 100 stems/ha by ages 5 to 7 years
- 600 stems/ha initial stocking unthinned, conservative pruning
- 300 stems/ha initial stocking, thinned to 150 stems/ha age 4 years, and to 100 stems/ha by ages 5 to 7 years
- Final crop stocking 100, 600 and 70 stems/ha



Conclusions - Pruning

- Conservative pruning resulted in no measurable loss in growth
- Radical pruning significantly reduced growth
- Growth rate appeared to recover within a year of pruning
- Overall, the radical annual treatment lost one year of growth compared with the conservative biennial treatment
- DOS was significantly reduced by radical annual pruning (11.6 cm) but did not differ among the other pruning treatments (mean 15.0 cm)

Conclusions - Thinning and Stocking

- No difference in tree size between 300/100 and 600/100 thinning treatments
- Competition in unthinned plots reduced DBH growth after age 6 years
- Height growth was increased in unthinned plots
- Unthinned plots had 6 cm less DBH but 2.5 m greater height than thinned plots at age 9 years