

Do New Zealand's plantation forests play a significant role in mitigating the greenhouse effect?

Reviewed by Colin O'Loughlin

Trees in the greenhouse. J. Piers Maclaren.

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Piers Maclaren's latest publication provides clear insights into the role of forests in influencing the uptake and release of carbon from and to the atmosphere. The large amount of current publicity surrounding the Kyoto Protocol, the influence of greenhouse gases on climate, the means by which it might be possible to counter the increasing levels of greenhouse gases in the atmosphere and carbon trading is often confusing if not bewildering to the lay public. *Trees in the greenhouse* distills large amounts of information about the greenhouse effect and the role of forests into a form which is easily comprehended. However, this publication retains sufficient scientific and technical rigor to ensure that the fundamental processes and mechanisms controlling atmospheric greenhouse gas levels and the uptake of carbon by trees are accurately described. Consequently, the publication is a most timely and useful production. Maclaren focuses on radiata pine plantations in his analyses of carbon sequestration and release by forests.

The first two chapters covering important aspects of the global warming debate and the rise in greenhouse gases respectively, provide the reader with a broad framework of understanding which helps place the more detailed information in the later chapters in perspective. Chapter 3 examines how forests sequester carbon. Maclaren emphasizes that individual forests are not a perpetual carbon sink and provides a clear analysis of the broad carbon dynamics of a plantation established on pasture. He also places the importance of wood products as a sink and as a reservoir of carbon in perspective. Chapters 4 and 5 provide a very good account of how to measure and predict carbon in a forest and the forest management options to enhance carbon sequestration. Chapter 6 examines in some detail the carbon dynamics of radiata pine forests and plantations and compares these with the dynamics of Douglas fir forests with relatively longer rotations and short rotation Eucalypt forests. Chapter 7 considers various carbon accounting methods and proposes a system for carbon credits. Chapter 8 provides answers to common questions about forests and their role in influencing atmospheric CO₂ levels. In his conclusions Maclaren emphasizes that carbon sequestration by forests is only a partial and

temporary measure and that bioenergy provides the most durable contribution of forestry to the world's greenhouse gas problem.

Trees in the greenhouse is an attractively illustrated, comprehensive and logically laid out account of forestry's role in mitigating the greenhouse effect. It should be of interest to forest managers and owners, researchers, policy formulators and students as well as those members of the general public who have an interest in climate change issues. Its simple, easy to read style belies the fact that it contains large amounts of technical information assembled in a way that is very digestible. *Trees in the greenhouse* carefully avoids becoming bogged down in contentious issues but does warn in the conclusions, that carbon uptake by forests is no more than a partial and temporary solution to the greenhouse problem.

Trees in the greenhouse is a very good publication that is worth the surprisingly high cost of \$90.00 for an electronic copy or \$95.00 for a hard copy. The possible role of forests in moderating climate change is likely to remain a major issue for some time and will possibly influence the way forests are viewed and managed in the future.

The comprehensive and balanced viewpoints presented in this publication provide good guidance about how the issue should be considered and managed.

Australian plantation report

Plantations of Australia 2001 is the first comprehensive report on Australia's industrial and farm forest plantation resources.

It contains detailed description of plantation forest resources for wood supply regions and is the first comprehensive study of the arrangements that govern land and tree ownership of plantations in Australia.

The report is based on information collected under two coordinated, yet distinct inventories – the National Plantation Inventory (NPI) and the National Farm Forest Inventory (NFFI).

Both projects are part of the National Forest Inventory, which is funded by the Natural Heritage Trust and managed by the Bureau of Rural Sciences. *Plantations of Australia 2001* is available from BRS for \$55 (including GST).

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