The Native Forests of New Zealand

by John Halkett


Following on from The World of the Kauri which John Halkett co-authored, The Native Forests of New Zealand is a fine contribution to the literature on our natural forests and how we have used or misused them during our short history. The book traces the evolution of our native forests from the time of disintegration of the ancient continent of Gondwanaland, through the eras of Polynesian and European settlement to 1990 and our attempts to grapple with the issues pervading the current debate over indigenous forest policy.

The Native Forests of New Zealand is an easily read and extremely well illustrated book. It is not the detailed encyclopaedia of the form of Michael Roche’s History of Forestry, being clearly directed at a much wider audience.

The author initially asks the question whether native forests can continue to make a valuable contribution towards the welfare of humankind but still retain their majesty, diversity and wonder. The Native Forests of New Zealand is dedicated towards introducing the reader to the ecology of our forests, to our exploitation of their natural wealth, and to the issues around which policy has been formulated during the last 150 years, all of which are essential ingredients to wisely choosing the future forest values to be sustained.

The geological isolation of the land area of New Zealand and its primitive biological cargo are initially described as putting a unique stamp on the present-day flora and fauna, with about 90% of the tree and shrub species being found nowhere else.

Despite the central role of the forests of Aotearoa on Maori mythology and the sacred nature of forests portrayed therein, evidence suggests the Polynesian had a greater role in changing the landscape than was first realised. Fire, both deliberate and accidental, is thought to have destroyed about half the original forest. The introduction of the potato into New Zealand by European travellers led to dramatic changes in Maori horticultural practices and an upsurge in forest clearance.

The Native Forests of New Zealand introduces the reader to concepts of forest structure and broad forest types through text, coloured prints and line drawings by Nancy Adams. The native and introduced forest fauna is described, with the impact of dogs, cats, rats and ferrets emphasised by the case of the Stephens Island lighthouse keeper’s infamous cat which was held responsible for exterminating the entire population of the Stephens Island wren. The cat was almost certainly implicated in the disappearance of 12 other species of bird on the island.

The liberations of deer and possums, among 50 different species of wild animal introduced to New Zealand to contribute to the pleasures and profit of the inhabitants, are highlighted as examples where no consideration was given to the consequences of releasing animals into New Zealand’s herbivore-free forests.

While the ecology of our forests is the first theme of The Native Forests of New Zealand, exploitation is the second. From the first recorded utilisation of timber by Europeans in New Zealand in 1770, the development of the timber industry is chronicled. The northern Wairaoa harbour with as many as 10,000 kauri logs awaiting export and 50 to 100 ships moored in its waters, must have been an amazing sight. A number of excerpts from the West Coast’s Grey River Argus provide intriguing, humorous and sometimes horrific accounts of the challenging and dangerous nature of the work of early bushmen and mill hands.

From the first pit sawn timber for export shipped in 1814 and the first steam-powered mill which operated in 1841, the industry exploited a resource and a buoyant export trade. The author notes that while criticism of the early settlers’ extravagant use and destruction of the forests comes easy, kauri was the country’s top foreign exchange earner for much of the second half of the nineteenth century and could truly be said to have built the cradle that nurtured young New Zealand.

With forest clearance for agricultural development occurring alongside the exploitation of the timber resource, the pattern of New Zealand land use was clearly apparent by the end of the nineteenth century.

The third theme of The Native Forests of New Zealand concerns a political awakening that the forests were not inexhaustible, and the evolution of a conservation ethic. The early involvement of politicians such as Julius Vogel and Richard Seddon leads into the establishment of the State Forest Service and the appointment of Leon Macintosh Ellis as the first Director of Forestry.

Providing an objective account of the Forest Service’s involvement in native forest management has been a challenge beyond many commentators. John Halkett’s summary is balanced and brings into the light of day initiatives of the Forest Service to achieve levels of harvest which had some prospect of being sustainable, but which were rejected by their political masters or frustrated by The Treasury.

During the period 1975 to 1984 timber production from State native forest was to decline by 94%. One of the consequences of this noted in The Native Forests of New Zealand was the greatly increased pressure on privately owned native forests to supply mills. This has relevance to the current debate on controls on private land to protect native forest. The author contends that the central question this now presents, is whether or not New Zealand is politically prepared to face the real cost of conservation?

Finally the book considers the move to a free market economy, local government reform and resource management law reform. All have implications for the future management of our native forests. Globally the relentless desire on the part of the human race to pursue a course of environmental destruction leads us to issues such as the importation of tropical timbers.

The Native Forests of New Zealand focuses on the active use of the forest resource and the land, and on the production of wood in particular. While this is clearly central to the greater part of the history of our native forests, the passive use values that have been to the fore in determining policy in the last two decades receive only limited direct attention. Perhaps the passive use values
of our native forests will be the focus of the author’s next book.

The Native Forests of New Zealand is an excellent and readable book to read. The easy style and comprehensive illustrations should lead many a “student” of New Zealand forestry to gain a good insight to the complex story of our native forests and the impact of human-kind. A very useful reference list is also provided for those who wish to pursue in greater depth any of the many issues traversed.

John Novis

**Greenhouse New Zealand**

**Greenhouse New Zealand: our Climate: Past, Present and Future.** Jim Salinger, Square One Press, Dunedin.

It is a rare book that receives the stamp of approval of the Governor General, stated publicly at a scientific meeting. Yet this happened to “Greenhouse New Zealand” at a recent symposium held at the University of Auckland. So what is it that so pleased Her Excellency about this 104 page, landscape format small volume with the intriguing cover design of the New Zealand islands splattered with exotic fruit salad?

First, this is not a text book. It is designed to inform the intelligent but not expert reader about the climate change issues which are much in the public eye at the present time, and with which the author has been very much involved. To this reviewer’s taste it perhaps tries a little too hard to be informal, with a liberal sprinkling of exclamatory remarks and attempts to relate changes to the reader’s experience – “Actually 1990 was the warmest year on record, closely followed by 1988!” Chapter 1 is entitled “The Weather Machine” and the analogy is used consistently and persistently through several chapters, with fan belts and cogs popping up from time to time – which is fine for those who are familiar with the workings of the internal combustion engine. Even they, however, and no doubt others with less mechanical knowledge, can probably relate to the concept of eddies without the assistance of the analogy.

Reviewer’s quibbles notwithstanding, Dr Salinger presents in compact form an overview of how the world’s weather systems work, what changes they have undergone in the past, which may occur in the future, and why. This includes an account of the Greenhouse Effect and the role of the various greenhouse gases, as well as comments on the implications for sea level and the ozone layer. While a global overview is necessary, the real focus is on how these matters affect New Zealand. Thus the book passes rapidly from the global to the regional, and summarises influences controlling this country’s weather and climate, and the changes these have undergone in the past. Chapter 6 presents scenarios for specified periods in the future given specified departures from the present atmospheric composition. These scenarios originally appeared in various official reports, and present possible effects on crops and the natural environment. The author is careful to emphasise that they are scenarios, and not predictions. The final chapters include one on possible actions which may reduce the increase in CO$_2$ and/or ameliorate its effects.

The writer of a book which ranges as widely as does this must necessarily draw on many sources, with which he is unlikely to be as familiar as he is with his own speciality. Compared with the confident approach with which Dr Salinger handles the chapters which relate most closely to his own research interests, the section on past climate changes is a little cautious in its methodical account of probable environments. Here the climatologist is dependent on information provided by other specialists, on which he then places a climatological interpretation. The complexities of the factors controlling such proxy data make this a somewhat uncertain exercise. It is however a valuable example of the way in which elements of the physical environment interact, and of the importance of climatic factors in controlling their distributions and changes through time.

It is unfortunate that the diagram using a section of the geological time scale to show New Zealand climate (internal diagram title/New Zealand temperatures (printed caption) from two million years completely confuses the names of the Late Quaternary glacial and interglacials. There are other, usually minor, errors and infelicities resulting perhaps from a combination of enthusiasm and carelessness – for example, on page 10 there is a comment that “There is lots of cloud and rain in this zone (the Intertropical Convergence) because it is made up of very warm rising air.” This discussion to this point has made no mention of water content of air masses, rising or otherwise. A small point, but the kind of thing that can lead to persistent misconceptions. On p.11 the term “Roaring Forties”, given to the relevant section of the Southern Ocean by sailors in the days of windjammers, is attributed to pakeha settlers of New Zealand.

“Greenhouse New Zealand” is abundantly illustrated with diagrams and black and white drawings. These are surprisingly variable in type and quality, given that only one graphic artist is acknowledged. Lettering varies in style from diagram to diagram, from the sparse to the florid, and may or may not duplicate the printed caption. Some illustrations are very much to the point, while the relevance of others must be queried. For example, an elaborate full page drawing of “Tasman Glacier ice in 1888” has little point, since there is no comparison with the scene at any other time, and it is not reasonable to assume that every reader is familiar with the modern view. Showing the workings of the atmosphere two dimensionally is always difficult, but even allowing for this the solidity of the representation of “The Hadley Cell”, for example, is more appropriate to a furniture catalogue than to a description of air masses. Other diagrams suffer from inadequate explanation. Thus while Fig: 1.6 shows “Tropical Circulation During the High and Low Phases of the Southern Oscillation”, which of the two rather crowded sections of the diagram is which is not specified. Maybe this is included as an informal test of the reader’s comprehension of the text. A little later on the diagram of “The Southern Oscillation” could well carry more information than is provided by more or fewer isobars and beaming sun faces. In contrast, a section on typical New Zealand weather situations is illustrated by accurate and neatly drawn excerpts from synoptic charts.

Many people, who may not have the time or inclination to delve into more specialised texts, should find this book a useful source of information. It is written by someone who is both competent in, and an enthusiast for, the study of climate. This also means, however, that non-climatic aspects of environmental change are at times ignored or brushed aside (e.g. as “feedback” effects), and this should be kept in mind. Overall, the book is readable and reliable. The amount of detail and discussion that is provided is necessarily limited by its size – the author is, after all, attempting to compress into small space a topic that is occupying a rapidly growing acreage of library shelves. Caveats must be entered at the number of relatively minor but nevertheless irritating errors and infelicities of the kind noted above, but these result from that enthusiasm which will make the book attractive to many readers. Dr Salinger is to be congratulated on his initiative in making accessible information not available elsewhere in such compact form.

Jane M. Soons
Properties and uses of NZ radiata pine


During the early and mid-1980s I worked in the New Zealand Forest Service providing advice on wood utilisation. During this period I heard there were plans for the Forest Research Institute to produce a book on radiata pine wood. After the break-up of the New Zealand Forest Service I moved into another area of work and forgot all about the book until it actually appeared on my desk two weeks ago.

When working in the business of providing advice on forestry products I fielded a wide range of enquiries: everything from match sticks to marine piles, from bark to bobbins. After some time I realised that what most enquirers sought was not the very latest developments in research but just basic information. Most of this information had been around for several years, but required recirculating. In this respect the book will serve a useful role.

Having had relatively little to do with the technicalities of wood properties since early 1987, I am struck by how much of the basic information on radiata pine wood properties has not changed. This has been a pleasant surprise. It also reinforces the usefulness of the work as a reference book, in that it is unlikely to date quickly. However, this may be less true of volume two, which has still to be published, and will be concerned with New Zealand radiata pine processing, products and uses.

The blurb on the dust jacket reads “… this book is a comprehensive account of the wood properties of New Zealand radiata pine and helps to explain why this species has come to occupy a pre-eminent place in the New Zealand wood industry. It reviews research carried out in this country over the past 50 or so years, providing up-to-date information on the formation, structure, and chemistry of wood and bark, log quality, wood physical and mechanical properties, wood/water relationships and biodeterioration…”

The scope is unashamedly New Zealand radiata pine. Comparisons with radiata pine from other countries, and with other softwoods in general, are left to the reader to research.

It is far from being a mere coffee table book. Its style is serious and the content is technical. At the end of each of the nine chapters there is a substantial list of references. The book is illustrated with numerous black and white photographs and also contains a large number of diagrams and graphs. The nine chapters of the book vary in length, the fourth, which is concerned with wood chemistry, being by far the longest.

Even if the book had not been prepared by the Forest Research Institute, which of course enjoys respect both domestically and internationally, the thoroughness and attention to detail with which the work has been prepared suggest that readers can have full confidence in its technical accuracy.

The dust jacket also says: “This book is for everyone who wishes to understand radiata pine as a wood material and who is interested in its further development, marketing and use.” I doubt whether the majority of people involved in New Zealand radiata pine wood processing, marketing or utilisation will wish to read the book from cover to cover, as each of the nine chapters deals with rather different subject material, not all of which is likely to be directly relevant to a single occupation. For example, chapter five on log quality may be the most relevant section for those involved with the sale, marketing or purchase of logs, while chapters six to nine are likely to be the most relevant for those involved with the marketing or use of sawn timber. However, the book in toto could function as a useful reference work, not only for those involved with processing, marketing and utilisation but also as a first point of researchers and academics.

As more and more of New Zealand radiata pine is destined for export, in one form or another, it is to be expected that this wood will become increasingly well known on world markets. There is a need to supply information, at various levels of sophistication, to facilitate a wider understanding of the wood’s properties and uses. This book, by providing technical information to actual and potential overseas purchasers and users, is likely to make a valuable contribution to this process. This function is all the more important in view of the shift from “old crop” radiata pine to “new crop” material, as outlined in section 1.4 of the text.

Mike Blakeney

Presidential address – continued

similar volume to current harvest of tropical hardwood sawlogs.

Substitution by reconstituted wood is an option but that would require both a huge volume of wood (the source of which is difficult to identify) and a very large capital investment. Some of this will happen and some of the new plantations in the tropics could be used as raw material. But again a huge effort will be required.

Substitution by some non-wood products is unlikely to be a practical option. Even if there are suitable substitution products the solution would only be a short-term alternative. All wood substitutes (plastics, metal, concrete etc.) require a large amount of capital to be invested in plant etc. At least equally important, considerably more energy will be required for the production of the substitutes than was needed for wood products which it is replacing. Large-scale substitution therefore depends to a large extent on the availability of cheap, renewable and environmentally friendly energy.

CONCLUSIONS

We can be sympathetic with a need to stop utilising the remaining tropical forests, but the reality is that there are no significant alternative sources of wood supply, nor is substitution likely on the scale necessary.

Although as Forest Managers we must be aware of non-wood demands on our forests, wood production seems certain to remain a primary concern.

Returning to my original question – “Are we too concerned about wood production?” – the answer must be a definite NO.

If anything we should even be more concerned, if only because of the urgent and desperate need to find an alternative supply to replace the tropical hardwoods sawlogs.

REFERENCES

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