BOOK REVIEW

MANAGEMENT OF RADIATA PINE

by N.B.Lewis and I.S.Ferguson

(in association with W.R.J.Sutton, D.G.McDonald, and H.B.Lisboa)

Inkata Press (Butterworth-Heinemann), Melbourne & Sydney. 1993.
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At the outset, a potential conflict of interest must be declared: the author of this review has just written the "Radiata Pine Growers' Manual". A reviewer should be aware of, and resist, the temptation to denigrate a work that could be seen as a rival, but it must be stated that the "Management of Radiata Pine" does not live up to its title. This is a great pity, as there is a considerable need for a good book of this sort.

Lewis & Ferguson set out to cover the full scope of radiata pine management in the Southern Hemisphere. They are to be commended on their bravery. In the Preface they state that their goal is to describe "the *practice* of plantation forestry" and to supply material "in respect of *applied* stand and forest management" (their italics). Unfortunately, they have failed to do this: the book is written by academics in a verbose and pompous style, and is readable only by academics of that inclination. Clarity would be improved, and little information lost, by a reduction of the text to one-quarter of the size.

As a typical example, on p.53 we read:

> "*Site capacity is specific to species, since different species appear to make different use of the same site, and may even use different parts of it. Intrinsically poorer sites fluctuate about site capacity levels which are lower than those which obtain for better sites. Effects of silvicultural measures upon site capacity can be more complex. Measures which initiate a sustained higher rate of growth can change the capacity of a site permanently. Fertiliser use is the prime example, since in general it upgrades a site to a higher level of site capacity, particularly if repeated periodically to sustain growth rates at levels above those of the unassisted sites.*"

I translate this as:

> *The ranking of site capacity will depend on the species used, as different trees favour different sites or parts of sites. Poor sites grow poor trees (!), but site capacity can be temporarily or even permanently enhanced by silvicultural measures such as fertiliser treatment.*

A reader, therefore, is forced to work hard for little gain. Although I was intensely interested in the subject matter of this book, I found it difficult to read a whole page without

skimming or daydreaming. The editor must share the blame with the writer. The standard of layout is poor. Most pages are written in "tombstone" fashion—in a single column broken only by indented paragraphs. Many of the paragraphs comprise only one or two sentences, such as on p.394 where there are successive paragraphs with only four or five words. There also seemed to be little logical structure to the chapter sub-headings or to the order of paragraphs. This will reduce its value as a reference book, as a reader will have to wade wearily through many words before finding the point of interest. The index, however, may assist.

In a book of this size and scope there are bound to be many errors, and this book is no exception. One of the most amusing was on p.133 where we read that "*In New Zealand ... [damage by possums] ... is rarely serious enough to merit intervention*" but "*water rats are the main species [of rodents] that cause serious setback to growth*"! The Australian bias is very noticeable in places. For example, the chapter on Natural Hazards lists "wildfire from lightning strikes" as one of the most "widespread and important" hazards (it is a rare occurrence in New Zealand), but nowhere in the chapter is there a mention of volcanoes, arguably New Zealand's greatest forestry hazard. A greater omission is the statement on p.63 that the only major stand productivity rating used in New Zealand is site index. The authors know nothing of basal area levels, for reasons I will come to later.

Although there is an impressive list of references after each chapter, these are very selective. Conspicuous by their rarity are symposium proceedings and issues in the *FRI Bulletin* series. Thus, the section on grazing makes no mention of the Agroforestry Symposium held in Rotorua, New Zealand, in 1986 (*FRI Bulletin No.139*), and the authors seem quite unaware of the important IUFRO Division P4.02.02 Symposium in 1989 "New Approaches to Spacing and Thinning" (*FRI Bulletin No.151*). Similarly, no reference is made to the international conference on "Alternatives to the Chemical Control of Weeds" held in 1989 (*FRI Bulletin No.155*), the "Workshop on Growing Radiata Pine from Cuttings" in 1986 (*FRI Bulletin No.135*), the widely used "Manual for Selecting Crop Trees when Pruning and Thinning Radiata Pine" (*FRI Bulletin No.133*), and so on.

The knowledge of silviculture expressed by the authors is at least a decade behind current New Zealand thinking. There are two reasons. The first is no fault of the authors: most of the work done here in recent years has been "published" in the form of confidential reports to Industry Cooperatives. The second reason is that an increasing proportion of technology transfer takes an electronic form: researchers distil their work into mathematical equations which are computerised and made directly available to users as licensed Expert Systems. Although these are still far from perfect, constant feedback from users enables researchers to concentrate on those deficiencies of greatest economic importance.

Describing silviculture in New Zealand without mentioning STANDPAK is like discussing Australian forestry without referring to the genus *Eucalyptus*. STANDPAK is a suite of models that enables a manager to simulate a stand of trees in considerable detail. It is used by almost every significant forest company in New Zealand for yield prediction, regime evaluation, and silvicultural scheduling. Five years ago—a long time in software development—it superseded SILMOD. Yet Lewis & Ferguson do not mention STANDPAK, although there is a passing reference to SILMOD on p.262. Instead, they list case studies, as on p.246:

> *"According to Sutton and Crowe (1970) the diameter over stubs of the knotty core can increase by about 1.5 cm for every metre of height growth that pruning is delayed once tree height is around five metres or so."*

This calculation can be performed in minutes by anyone with access to STANDPAK, and the database has been considerably strengthened in the last 24 years.

That the authors belong to a pre-computer era is plain. They hint at this in their final sentence in the chapter on Strategic Planning:

> *"That considerable profitable radiata pine forestry preceded the advent of computers is testimony both to the soundness of knowledge and experience as a basis for decision and to the flexibility of practical judgement in using them."*

The fact is, a modern forester who is not computer-literate is as useful as a modern bushman who cannot use a chainsaw.

Are there any good features to this book? Indeed there are. I found the chapter on monocultures well worth a revisit. The separate chapters on radiata pine in Australia, New Zealand, southern Africa, and Chile are excellent reference material. Sutton's chapter on New Zealand, for example, is elegantly concise.

To summarise: the definitive book on radiata pine management in the Southern Hemisphere is still to be written. When it is, it is important that at least one of the main authors is a New Zealander, and furthermore one who is in touch with developments in the fast-moving field of computer technology.

Piers Maclaren