Who should purchase this book? I recommend those involved in managing New Zealand preserved heritage will find this book a very useful reference. Similarly those who have an interest in the flora of New Zealand and in ecological ideas will find it invaluable. Its easy readability, without an over-dramatic flowery style, also makes it an interesting book to the non-specialist yet serious reader.

D.J. Mead

Pinus radiata plantation soils

A Technical Classification for Soils of *Pinus radiata* plantations in Australia: Field Manual. Edited by Nigel Turvey. Bulletin No. 6, School of Forestry, the University of Melbourne. 1987. 15BN 0-86839-613-3

This bulletin was produced by a working party within the Soils and Nutrition Research Group of the Australian Forestry Council. The objective was to provide forest managers with a tool to classify their soils. This would assist in stratification of forest areas for wood production yield predictions, silvicultural operations and help in extrapolation of research results.

The basis of the system is to classify soils by a series of easily described attributes –

Group A – Parent rock
– Primary soil profile form
– Depth to and type of impeding layer

Group B – Texture of surface
– Surface soil condition
– Degree of weathering
– Nature of subsoil

Group A attributes were chosen to provide generalized soil information for planning purposes while those of Group B should provide detail to assist the management of the soils. As such the technical classification is not intended to predict stand growth, but rather form the basis of a soils information framework on which to build other information.

The bulletin describes the system, comments on the reasons for choosing the attributes but does not go as far as describing in detail how the forest manager would use the system in the field. It is therefore not a full field manual, the actual field techniques being left for training courses.

This book will interest those involved in integrating plantation management with land-based data systems. It describes a system but does not evaluate it – this is the subject of other papers by the editor.

It would be interesting to try the system in New Zealand and other countries. It should be easy to use and does not require large backup services for laboratory analyses.

D.J. Mead

Exotic forest description

"A National Exotic Forest Description System" J. Collins, F. McGregor and J. Novis.
Ministry of Forestry, Working Paper No. 3.3, Wellington; March, 1988; iii + 107 pp. ($27.50 NZ, $45.00 overseas)

This is the fourth in a series of statistical reports about New Zealand's plantation resources. The design, collection and summary reporting of these statistics was originally set up under the auspices of the New Zealand Forestry Council. When that organization was, unhappily, disbanded in December 1986, the Ministry of Forestry was charged with assuming responsibility for maintaining and disseminating this vital data base. The information gathered pertains to species group, area, ownership, age, crop history, silvicultural and terrain attributes, yielding capability and location. The summary report contains information on areas, volumes and current annual increments in volume by five-year age class and county, which figures are then disaggregated first into four species groups (radiata pine, accounting for 89% of the total area, Douglas fir – 5%, other introduced conifers – 5% and introduced hardwoods – 2%). The report indicates that, at April 1, 1987, there were 1.154 million hectares of plantations in New Zealand with a total stem (but not realizable merchantable, of course) volume of over 200M m^3 growing annually at more than 21M m^3. There are further disaggregations by intensity of silvicultural tending with or without production thinning. Gone, however, are the breakdowns by ownership and terrain class, but as all the disaggregations are not hierarchically structured anyway, this is not a serious loss. Potential users of the information, provided that they comply with confidentiality requirements, can gain access to certain raw data at the United Council level of aggregation, and they will need to do so if they are to make any headway with regional planning or other wood supply modelling exercises.

Describing any significant resource is obviously an ongoing process in which attempts to refine information should always command a top priority. It is pleasing to note that such an approach has been adopted in this case. Changes have been made through arranging to collect 77% of the data directly from major forest owners: by extending this most valuable co-operation of owners, a target of 90% can likely be achieved. The remaining 10% of forest area will continue to be a formidable challenge in accurately determining reliable statistics in the absence of any continuous forest inventory programme, unless they can be gathered appropriately from other statistical survey sources.

Standard regional yield tables have been substituted for those provided previously by the owners themselves. I have no quibble with this move, but have some concern that there is still no provision for ascertaining the volumes actually realized with which to calibrate the yield table estimates. While there is a need to reduce the number of yield tables to provide indicative estimates of volume, the progressive refinement will be hindered by a lack of knowledge of both actual realizations and the best forecasts, if available, that the individual owners can give. It is most unsatisfactory that estimates of actual roundwood removals quoted in publications such as "Statistics of the forests and forest industries of New Zealand" have to be derived backwards from conversion factors applied to the outturn of final manufactured products. Working Paper 3.3 makes an acknowledgement of the problem, but offers no hope of possible solutions.

Whatever the mechanism for estimating removals that is finally adopted, these should be broken down by log category, species and ownership, i.e. similar to the plantation resources. Moreover, information on costs of all forestry and forest industry operations should also be surveyed and reported on, together with manpower and equipment productivities. Considerable benefit for researchers involved in sector studies would also be derived from knowledge on suitably aggregated regionally averaged data on plant capacity, plant production, raw material conversion factors, average transport distances, port costs, port capacities, regional consumption patterns, wood prices (domestic and export), energy consumption, energy costs, and so on.

Such additional information is vitally important to sector researchers for evolving national strategic plans to make effective use of the greatly increasing plantation wood supplies. It is to be hoped that the Ministry will strive to ensure that planning in and for the sector is based on a consistent framework of accurate and up-to-date data pertaining not only to resources in the forest but also to other knowledge relevant to the forest sector. The improvements made

(Continued on page 32)

In our Contemporaries

NZ Journal Of Ecology

PHYSICAL INFLUENCES ON FOREST TYPES AND DEER HABITAT, NORTHERN FIORDLAND, NEW ZEALAND

Stewart G.H., Harrison J.B.J. 10: 1-10 (1987).
Deer distribution largely reflects food preferences and availability. This paper relates use of specific forest types in Fiordland by deer to the underlying physical environment to determine whether landform type or stage in soil development can be used to predict areas of high deer use.

******

RECOVERY OF NORTHERN FIORDLAND ALPINE GRASSLANDS AFTER REDUCTION IN THE DEER POPULATION

Rose A.B., Platt K.H. 10: 23-33 (1987).
Remeasurement of permanent plots in Fiordland alpine grassland enabled assessment of recovery patterns in the vegetation after 11 years of intensive aerial hunting of red deer and wapiti. As the area is the one favoured for reintroduction of the rare takahe, the recovery of foods preferred by this bird was assessed, and the implications of takahe management are discussed.

******

FOREST UNDERSTOREY CHANGES AFTER REDUCTION IN DEER NUMBERS, NORTHERN FIORDLAND, NEW ZEALAND

Stewart G.H., Wardle J.A., Burrows L.E., 10: 35-42 (1987).
Monitoring of forest composition in geographically similar areas with different histories of deer occupation has enabled assessment of animal impact on forest understoreys in Fiordland since the 1960s. This paper describes changes in forest structure and composition after reduction in animal numbers in the 1970s, determines which changes are attributable to these reductions, and identifies which forest types are still vulnerable.

******

CHANGES IN THE DENSITY AND DISTRIBUTION OF RED DEER AND WAPITI IN NORTHERN FIORDLAND

Nugent G., Parkes J.P., Tustin K.G. 10: 11-21 (1987).
FRI staff surveyed north Fiordland in 1969, 1975, and 1984. This paper describes changes in deer density and distribution between surveys, relationships of deer with habitat (1984), the effects of hunting pressure, and the extent of cross-breeding between wapiti and red deer.

******

Forest Industries Engineering Association of New Zealand

SAWMILL IMPROVEMENT

Cown D.J. Forest Industries Engineering Association of New Zealand Inc. Annual Conference, November 1985.
Increasing log prices and labour rates around the world have led to the development of sophisticated methods for the measurement and breakdown of sawlogs at ever-increasing production levels. However, owing to varying log characteristics and markets, different regions have tended to give different emphases to aspects of sawmilling.

******

Commercial Horticulture

NEW PINE STRAINS ENTER THE WAR ON NEEDLE BLIGHT

Carson S., Carson M. 19(1): 19 (1987).
Dothistroma needle blight is reducing growth over large areas of radiata pine forests in New Zealand. This paper summarizes the efforts of the Forest Research Institute to breed pines resistant to the disease.

******

NZ Tree Grower

RADIATA PINE WOOD DENSITY – IMPLICATIONS FOR GROWERS AND PROCESSORS

Maclaren P. 9(2): 41-43 (1988).
Forest location and position of the wood in the tree are as important as rotation length in determining wood density. For example, 15-year-old trees from Northland average the same density as 45-year-old trees from Southland. Anxiety about the density of new-crop radiata pine should be tempered by model calculations that put the question of density in perspective.

******

PLANTING TO RESTORE OR EXTEND NATIVE FOREST REMNANTS

Bergin D., Pardy G., Beveridge A.E. 9(2): 44-47 (1988).
Almost 30 years ago, some 30,000 native conifer seedlings were planted in trials on the Mamaku Plateau to "enrich" partially logged native forest. These early FRI trials have provided valuable insights into restoring native forest on difficult sites. Recent trials have refined planting techniques and investigated use of native hardwood species on lowland sites. Guidelines are provided for the landowner wishing to restore degraded native forest remnants or extend native forest to open sites.

******

FRI Bulletins

No. 12

PREDICTING 'DIAMETER-OVER-STUBS' IN PRUNED STANDS OF RADIATA PINE

Knowles R.L., West G.G., Koehler A.R. (1987).
The relationship between maximum "diameter-over-stubs" (DOS) and other

tree variables was investigated for pruned stands of radiata pine throughout New Zealand. The study showed that a single equation is adequate to predict mean stand DOS for any section of the stem from 0 to 11m, for all forests and a wide range of silvicultural regimes.

******

No. 128

PROCEEDINGS OF THE CONVERSION PLANNING CONFERENCE

Kininmonth J.A. (1987) (Comp.)
The original objectives of the Conversion Planning Project Team are outlined, along with the problems encountered in carrying out the research, and the final development of an integrated Conversion Planning Model System. The integrated Model System has been designed to help address the problems facing the New Zealand forestry sector.

******

No. 129

FURTHER DEVELOPMENTS AND VALIDATION OF THE EARLY GROWTH MODEL

West G.G., Eggleston N.J., McLanachan J. (1987)
Developments to the EARLY growth model include a low basal area function, scheduling pruning to a target DOS, and other utility improvements. The appropriate basal area function was determined for several forests. Over a wide range of sites and silvicultural regimes the overall model error was found to be ±15%.

******

No. 131

EQUATIONS FOR PREDICTING DEFECT CORE SIZES FOR PRUNED RADIATA PINE BUTT LOGS

Gosnell T. (1987)
Analyses were carried out on the results from sawing a wide range of swept, pruned, radiata pine, 5.5m butt logs. Equations were developed to predict diameter over occlusion (DOO), log defect core size, and partial defect core size.

No. 132

STAND ASSESSMENT BY LOG GRADES USING MARVL

Manley B.R., Goulding C.J., Lawrence M.E. (1987)
A cruising decision-tree, to be used with the MARVL pre-harvest inventory method, has been developed for consistent assessment of stands in terms of proposed log grades. The procedure has been successfully tested in stands in Kaingaroa and Golden Downs Forests.

******

No. 133

A MANUAL FOR SELECTING CROP TREES WHEN PRUNING AND THINNING RADIATA PINE

Maclaren P. (1987)
This booklet describes the reasons for pruning and thinning radiata pine in New Zealand, how to determine the timing and intensity of pruning and thinning, and the criteria for selecting crop trees.

******

No. 134

CERTIFICATION SYSTEM FOR FOREST TREE SEED AND PLANTING STOCK

Vincent, T.G. (1987)
This bulletin details a voluntary scheme for tree seed and certification in three categories: *Pinus radiata,* Other Exotic Species, and Native Species. *Pinus radiata* is certified by Breed Code and Improvement Rating; provenance is the major characteristic for Other Exotic and Native Species. (17 p.)

******

No. 138

SAMPLING AND MEASURING PROCEDURE FOR TREE VOLUME AND TAPER EQUATION CONSTRUCTION AND TESTING

Gordon A., Penman J. (1987)
This manual contains detailed instructions for planning and executing a sample survey (inventory) of tree volume and taper. The resulting sectional measurement data can be used to text existing tree volume and taper equations, and to derive new ones.

What's new in Forest Research

No.144 Effects of commercial hunting on red deer populations
No.145 Computers in the forest
No.146 Beech management – Its effects on bird populations
No.147 Toppling of radiata pine
No.148 Impact of rising levels of atmospheric $C0^2$ on New Zealand's forests
No.149 Reforestation after fire in Canterbury beech forests
No.150 Replacing pampas grass – Alternative species for low shelter and amenity plantings
No.151 New Zealand's indigenous grasslands
No.152 Feral goal control
No.153 Management prospects for tawa
No.154 WATMOD – A means of predicting water use by forests
No.155 Eucalypts – Selecting high-quality crop trees
No.156 Exclosures – A means of assessing the impact of browsing animals on native forests
No.157 Which radiata pine seed should you use?
No.158 Raising native trees and shrubs from seed

Book Reviews – continued

in the format to Working Paper 3.3, therefore, will need to be widened considerably, as indicated earlier here, if this country is to put right the assessment made by Leslie (1986) in Working Paper No. 9 of the New Zealand Forestry Council, that

> "Forestry sector planning is almost non-existent in New Zealand. There is plenty of planning within the sector but hardly any of it encompasses the sector as a whole and it is all taking place in a vacuum", having "little to do with what goes on at the top and little more to do with what actually happens in the field."

What is the future for successive annual revisions of the National Exotic Forest Description? There is little doubt that the compilation of data should continue annually and that much value would accrue from having a wider range of information. But serious sector study researchers will need access to more comprehensive and disaggregated annually updated data while those with a less specialized interest are likely to refer to a summary report such as this Working Paper No. 3.3 (priced at $27.50) without the need for the same frequency of revisions. The Ministry of Forestry may have an obligation to direct contributors; but one wonders who else will continue to be satisfied with this particular format.

A.G.D. Whyte