

In our Contemporaries

N.Z. Journal of Botany

NUTRIENT RETURNS IN LITTERFALL IN TWO INDIGENOUS AND TWO RADIATA PINE FORESTS, WESTLAND, NEW ZEALAND.

By M.P. Levett, J.A. Adams, T.W. Walker, Vol. 23 1985

Abstract: Mean annual fluxes over a two-year period of Na, K, Ca, Mg, P, Cl, S, and N in foliage, wood, and total litterfall were measured in a podocarp-hardwood, a hard beech (*Nothofagus truncata*), and two *Pinus radiata* (aged 9-10 years and 18-19 years) forests. Maximum monthly foliage litterfall occurred on the podocarp-hardwood plot during summer, and on the hard beech and 18-19-year-old radiata pine plots during spring and early winter. Seasonal cycles were observed for C1 and P concentrations in total litterfall at all plots; P concentration in foliage litterfall of the 18-19-year-old radiata pine and hard beech plots, and in wood litterfall on the hard beech plot; and K concentrations in the 18-19-year-old radiata pine plot. Potassium and, to a lesser extent, P and Mg were removed relatively rapidly from senescing leaves either before or soon after abscission. Calcium levels were higher in foliage litterfall than in intact foliage.

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RED BEECH DEATH IN THE MARUIA VALLEY SOUTH ISLAND, NEW ZEALAND.

By G.P. Hosking and D.J. Kershaw, Vol. 23 1985

Abstract: Many red beech trees died in parts of the Maruia Valley between 1978 and 1980 following an outbreak of the scale insect *Inglisia fagi*. Annual diameter increment of trees and climatic data suggest the primary cause to be a series of spring droughts between 1974 and 1978. In the worst affected stands of mixed red and silver beech a large proportion of the red beech trees died.

Release from competition was reflected in the greatly increased growth rate of the residual silver beech which generally

was not heavily attacked by the scale insect; early response of surviving red beech was limited because of reduced foliage.

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DERIVATION OF VEGETATION MAPPING UNITS FOR AN ECOLOGICAL SURVEY OF TONGARIRO NATIONAL PARK, NORTH ISLAND, NEW ZEALAND

By I.A.E. Atkinson, Botany Division, DSIR, Private Bag, Lower Hutt, New Zealand. Vol. 23 1985

Abstract: A method of deriving vegetation mapping units from quantitative data is described, based on results from an ecological survey of Tongariro National Park. A particular aim was to develop a repeatable procedure. The method of classifying the samples uses a polythetic agglomerative technique in which the sorting strategy has, as a priority, the combining of similar entities that are closest together in the field. This allows class boundaries to be made more nearly coincidental with map boundaries. A naming system for vegetation mapping units is further refined from an earlier published system. The names convey both structural and compositional information about the vegetation in such a way that diagnostic field criteria for most mapping units are summarized by the unit names. Although emphasizing cover estimates, both the classificatory method and naming system are independent of the sampling technique used to estimate cover. The method is suitable for a wide range of terrestrial habitats.

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New Zealand Agricultural Science PASTORAL LAND — HORTICULTURE AND FORESTRY AS COMPETING LAND USES

By J.R. Fletcher, Vol. 18 1984

Introduction: In recent years horticulture and forestry have become viable al-

ternatives to pastoral farming in many areas of New Zealand. This trend is expected to continue at the present rate into the next decade. Exotic forest, which is expected to increase in area by 30% to 1.3 million ha by 1990, could produce 20-25% of our exports by the year 2000 (Kirkland, 1981). Horticultural exports could be earning \$1000 million by 1990, a four-fold increase from 1982 (Horticultural Export Development Committee, 1982). This paper discusses where the expansion of horticulture and forestry is most likely to impinge on existing pastoral land. The Land Use Capability (LUC) concept is used throughout the papers as a land resource base for discussing land use trends.

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AGROFORESTRY DEVELOPMENT AND RESEARCH IN NEW ZEALAND

By N.S. Percival and M.F. Hawke, Ministry of Agriculture and Fisheries, Vol. 19 No. 3 1985

Abstract: The initial development of agroforestry in New Zealand was closely related to changes in the forest industry that resulted in *Pinus radiata* being grown at much lower densities than previously. The inter-relationships between forestry and agricultural production are described and the implications for the development of commercial agroforestry systems discussed. Since agroforestry is a concept rather than a technology, there is a range of possible outcomes. It is thus very important for those adopting an agroforestry system to have clear objectives before any trees are planted.

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FARM — SCALE FORESTRY: A RURAL DEVELOPMENT PERSPECTIVE

By P.H.B. Aldwell, Forest Research Institute, Vol. 19 No. 3 1985

Farm-scale forestry, as a means of diversifying farmer incomes and providing an alternative to large-scale forestry development, is increasingly evident throughout New Zealand. This paper considers some of the land-use planning constraints im-

posed upon both forms of forestry and discusses the implications of these constraints for rural localities.

Farm-scale forestry is defined in this paper as exotic afforestation on farms. It includes all private plantings not conducted by companies or local authorities and implies that a forestry enterprise is secondary to pastoral production. Throughout the paper the terms 'woodlot' and 'plantings' are used interchangeably to refer to farm-scale forestry. The analysis draws on data from a survey of Forest Service Extension Officers, from examination of district schemes, and from a register of privately owned forests.

The paper concludes that planning constraints do not affect farm-scale forestry in most districts. Further, because most farmer woodlots are small (less than five hectares), there is unlikely to be noticeable employment change as a result of current patterns of farm-scale forestry. New management techniques being evaluated may, however, provide greater opportunities for rural development.

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AN ECONOMIC EVALUATION OF AGROFORESTRY

By M.J. Arthur-Worsop
Vol. 19 No. 3 1985

Abstract: Agroforestry is investigated in a range of farming situations, product price assumptions and circumstances, from a farmer's viewpoint. Profitability is measured using post-tax Net Present Values (NPV), and Internal Rates of Return (IRR), for the investment, while post-tax cash flows specify financial requirements for the venture from the stage of establishment to clear felling at 30 years. Using current price schedules for timber, and agricultural returns based on estimates for 1985/86, investment in agroforestry is shown to be profitable for the farmer. The profitability is sensitive to tree harvesting costs, transport costs, and the cost of lost agricultural production from the tree growing area.

The major constraint to widespread adoption of the practice, however, is likely to be the difficulty in financing the investment due to the long period before harvesting and income.

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ECONOMICS OF AGROFORESTRY: THE FARMER'S VIEWPOINT

By K.M. Stewart
Vol. 19 No. 3 1985

Agroforestry has been evaluated within a cost benefit analysis framework using data

from four principal trial sites: Whatawhata, Tikitere, Invermay and Akatore. The analysis considers the development of agroforestry on land which is currently in pastoral agriculture. Potential returns from the forestry component of the agroforestry system have been derived through the application of SILMOD, a computer-based mathematical model. The standard analysis for the four sites has been confined to a final tree crop stocking rate of 100 stems per hectare and a rotation of 30 years. The agriculture component of agroforestry has been determined using livestock data from the four trial sites and data from the NZ Meat and Wool Board's Economic Service. Livestock-carrying capacity, expressed relative to open pasture with no trees, is reduced over time as trees increase in size. Allowance has been made for a reduction in average individual animal performance. Gross margins have been used to estimate the annual returns to agriculture. Returns to agriculture on open pasture have also been determined, and these are an opportunity cost associated with agroforestry.

The results of the analysis show that from the national viewpoint, agroforestry is more economic than pastoral agriculture or forestry on its own, given standard site and management conditions when discounted at the public sector discount rate of 10 percent. Sensitivity analyses examined the sensitivity of the results to changes in key parameters for both agriculture and forestry: carrying capacity percentage, livestock-carrying capacity, rotation length, stems per hectare, haulage distance, site index, early growth, logging costs, timber prices.

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The Accountants Journal

SPECIAL FEATURE —
FORESTRY

By Chris Wright and others
Vol. 64 No. 9 Oct. 1985

A series of five articles on forest valuation and forestry accounting as follows:

- What are our trees worth?
- Revaluation — Who is going to do it?
- Timber — Who wants it?
- Is there a bonanza in forests?
- How do you value a tree?

The first four papers are by the Assistant Editor, Chris Wright; the fifth is by A.J. Ogle of J.G. Groome and Co. In the paper entitled "Is there a bonanza in forests?" Wright examines two conflict-

ing views on returns on investment — those of the Forest Service and of Dr Peter Grant of the Native Forests Action Council. There is also, under the title "Investing in trees", an interview with A.B. Downey, Chairman of the Forestry Development Council.

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FRI Bulletins

A GUIDE TO THE USE OF HERBICIDES IN FOREST ESTABLISHMENT

By N. Davenhill. No. 108 (1985)

This bulletin is a guide to the use of herbicides in forestry with particular emphasis on forest establishment. Topics covered include the naming of herbicides, types of herbicides, formulations, surfactants (wetting agents), mixing and handling, hand application, aerial application, monitoring procedures, storage, and safety. Principles of chemical weed control and selection of herbicides are emphasized but with no specific recommendations given for particular weeds.

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PERFORMANCE OF THE KAINGAROA GROWTH MODEL FOR LOW-STOCKING REGIMES

By B. Manley No. 113 (1986)

Thinning trial data were used to evaluate the performance of the Kaingaroa Growth Model in predicting relative stand growth for different final crop stockings. Results show bias in model predictions with the basal area increment of low-stocked plots (200-250 stems/ha or less) being overpredicted. This bias affects the relative profitability of regimes with different final crop stockings.

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People and Planning

PLANNING LIMITATIONS ON FORESTRY

By A.D. Meister and D.E. Fowler
Vol. 31. 1984

Land use for forestry appears to excite some and antagonise others within the rural sector.

(Continued on page 39)

NEW ZEALAND FORESTRY COUNCIL FOREST PRODUCT PRICE INDICES

NEW ZEALAND FORESTRY COUNCIL	INDEX AT SEPT 30 1986	QUARTERLY CHANGE (%)	ANNUAL CHANGE (%)
Sawlogs	1237	-0.4	7.3
Pulplogs	1070	7.1	4.7
Reconstituted Wood Panel Logs	1178	6.6	12.2
Peelers	1105	4.3	7.7
Preservative-treated Roundwood Logs	1208	0.0	5.4
All Log Groups	1135	3.8	6.0
DEPARTMENT OF STATISTICS:			
Consumers' Price Index	1251	3.3	11.0
Producers' Output Wood and Wood Products	1316	1.5	13.0
Producers' Output Paper, Printing and Publishing	1196	3.6	9.8

NOTES:

- i) Expression base for all indices is December 1984 = 1000.
- ii) NZFC Forest Product Price Indices exclude export incentives and G.S.T.
- iii) NZFC Indices are constructed by the Department of Statistics as contractor to the NZ Forestry Council. Quality standards are equivalent to those applicable to other Department Indices.
- iv) Examples of typical regimens can be found in NZFC Working Paper No. 7.

In our contemporaries (continued)

Those in favour argue for a complete absence of constraints on forestry in country planning documents, while those against argue for a plethora of them. In the middle of the contest are the county councillors. Their role as arbiters of land use policy is a difficult one. They are influenced by their own perceptions, by the feelings and pressures of local people, by government departments and by events. The final outcome is reflected in district schemes which vary from being liberal to over regulatory with regard to forestry.

In a recent survey, the district schemes of county councils in the Wellington Conservancy of the New Zealand Forest Service were analysed. Emphasis was on the restraints placed on forestry, on the process that led to the final formulation of these restraints and on the factors involved.

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NZ Journal of Timber Construction

RADIATA PINE TIMBER: GRADING AND TESTING FOR STRUCTURAL USES

By Andrew H. Buchanan,
Buchanan/Consulting, Christchurch
Vol. 2 No. 2 1986

Abstract: This paper reviews grading and testing of New Zealand radiata pine timber.

New grading methods are described, with reference to structural requirements, export markets, and the physical properties of the timber.

The value of New Zealand's timber exports can be significantly increased if the fied and marketed overseas as a high quality engineering material.

FORESTRY HANDBOOK

A completely updated, revised, second edition of the NZ Institute of Foresters 'Forestry Handbook' has just been published.

This is a must for everyone concerned with conservation and management of trees, woodlots, and forests.

75 top authorities have contributed to sections on ecology and environment, people and forests, forest health, silvicultural principles, agroforestry, mensuration and harvesting, forestry as a business, managing forest workers, and the utilization and sale of forest products.

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