

cost and hence the main determinant of financial viability. Machine planting and direct seeding are two obvious means of reducing establishment costs. At the moment machine planting looks more attractive, due to its greater reliability, but if research can reduce the inconsistency usually experienced in seeding operations then the lower costs of direct seeding could well make this the most attractive forest establishment technique.

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# Management of Eucalypts Cooperative

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In 1986 the formation of the Management of Eucalypts Cooperative brought together the main eucalypt growers of New Zealand, the NZ Forest Research Institute (NZFRI) and one overseas member, the Forestry Commission of Tasmania. The original objectives of the cooperative were to investigate the growth and yield of selected eucalypt species over as wide a geographical range and as wide a range of silvicultural regimes as practicable, and to develop eucalypt growth and yield models. In 1990 the objectives were modified to include "eucalypt growth and yield response to site, establishment and silvicultural practices".

The cooperative research programme has, over the last seven years, made a significant contribution to the research database for analysing eucalypt silviculture. The database is derived from the measurement of existing NZFRI trials and permanent sample plots from members' stands throughout the country. In 1986 NZFRI researchers were measuring approximately 100 eucalypt growth plots, mostly from regime trials and elder spacing trials in the central North Island, established in the late 1970s. Now the cooperative has approximately 550 plots spread throughout the country. Figure 1 provides a breakdown of these by species.

Although the trials were initially based around traditional "ash" group eucalypts (*Eucalyptus regnans*, *E. fastigata* and *E. delegatensis*) and *E. saligna*, recent emphasis has been on *E. nitens*. Until recently this species was not widely planted in New Zealand because of severe Tortoise Beetle (*Paropsis charybdis*) defoliation, particularly in the North Island. Since the successful biological control of this insect by *Enoggera nas-saui*, *E. nitens* has been established in

plantations for fibre. The establishment of seven *E. nitens* regime trials from Whangarei to Invercargill from 1990 to 1992 will be a valuable source of data for future analysis of growth and yield.

The main thrust of the research programme has been in data gathering to develop a broader data base than previously existed. More than half of the total plots in the programme are measured annually to give a consistent and detailed data series for growth model construction. The remaining plots are usually measured on a cyclic programme every second, third or fourth year. Once gathered, all measurements are processed through the NZFRI Permanent Sample Plot system where the data are checked against previous measurements for any discrepancies or errors and then, after any necessary corrections, plots are summarised into a form suitable for analysis in growth modelling

and other research uses. In addition to plot measurement, detailed sectional measurements of trees have been undertaken for the development of yield and taper equations for individual species. Volume tables and compatible taper equations have been developed for *E. nitens*, and *E. saligna* by the Cooperative; *E. fastigata* and *E. regnans* also have volume tables available.

Currently cooperative members have the use of two growth models, one a central North Island *E. regnans* model, and recently a national *E. saligna* model. While neither of these has the sophistication of recent radiata pine models, they represent a major advance, enabling forest managers to better predict future yields for plantations of these species.

Although the research project on siting commenced only in 1992, it has already provided exciting results. Preliminary analysis of site data collected near Toko-

MANAGEMENT OF EUCALYPTS COOPERATIVE PLOT DISTRIBUTION BY SPECIES

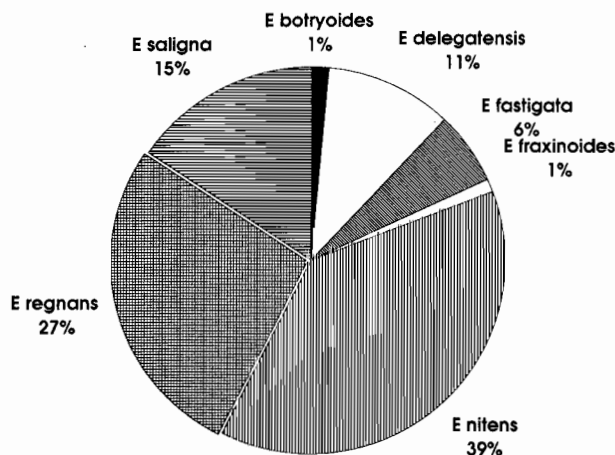


Figure 1

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roa in *E. regnans* stands has accounted for 70% of the variation in tree growth. More detailed analysis is planned, and validation plots are being established to provide data for testing the preliminary model. It is likely that this project will be extended into evaluating *E. nitens* growth and site relationships.

The cooperative has, since 1986, produced 18 research reports. Another important aspect of cooperative technology transfer is the regular field trips. These have taken members from Waipoua Forest in Northland to Te Waewae in Southland and across to Tasmania. They provide members with excellent opportunities to discuss one another's problems and share ideas on solutions. This exchange of information at both the technical and practical level is one of the main strengths of the cooperative.

The cooperative research programme is developed with input for its nine technical members who have created a programme relevant to the management of eucalypts. The siting project is expected to give information of immediate use to



Members of the Management of Eucalypts Cooperative examining a one-year-old *E. nitens* stand in Kinleith Forest.

forest managers. In addition, the data from long-running NZFRI trials, new trials, and Permanent Sample Plots are all providing a foundation for new growth models. The

cooperative is now established as a key mechanism for funding and managing the eucalypt silvicultural research programme at NZFRI.



## INSTITUTE NEWS



### Presidential comments

#### Forest Investment Information

The process of publicising the Institute's concerns for ensuring that the investing public are informed on investment in forestry was given a considerable boost by the publication and distribution of over 2000 copies of Rob van Rossen's "Guidelines for Forest Investment".

At the Forest Industries 1994 Exhibition (FI94) the Institute set up and manned a seminar tent booth which drew together seven papers by NZIF authors illustrated by slides. (See R. van Rossen report, p 34).

The whole process was designed, developed and controlled by Rob van Rossen and the success of this unusual initiative was demonstrated by the size and attentiveness of audiences. The time and effort expended by Rob, with the support essential from his employer, CHH Forests, deserves the thanks of the entire membership.

#### Indigenous Forests

Indigenous forests occupy about seven million hectares of New Zealand, most of which is the administrative responsibility of the Department of Conservation. The

passage of the Forests Amendment Act 1993 recognises, however, that for indigenous forests on other tenures, preservation goals of management may not be predominant. Then sustainability, and all it can be presumed to mean, is the priority. To define the limits of forest owner responsibility under the Act is the duty of the Ministry of Forestry and their newly-recruited team.

Many of the definitions of forest characteristics are familiar from the work undertaken by NZ Forest Service and Forest Research Institute prior to 1987. To collate this experience with the requirements under the new Act requires experienced personnel, many of whom are no longer available. As a profession, we have noted the wastage of skill and know-how in indigenous production management. This has been mainly due to conservation aims which have been intolerant of production values but which do not suit many Maori, private and company owners of indigenous forests. The Act now requires this production process to be codified in a practical and economic fashion which recognises ecological specifics of the many species of value for timber. The



Peter Olsen

Ministry of Forestry's efforts are subject to the critical views of the conservation groups. They also deserve our professional concern and support.

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