

able for forestry should not be in farming. However, the farmers also are desperately short of capital and lack of confidence in, and knowledge about, the market.

Government now has a key role in developing processes and mechanisms by which some of our farmland can be converted to plantation forests.

The forestry companies, contractors, consultants and the Ministry of Forestry have plantation forestry know how, trees etc.; other groups (like super funds and investors) have the capital; the farmers have the land and some may be willing to input their labour; unemployed are paid to do nothing when many of them would be willing to be meaningfully employed. What we lack is a means by which all these groups could be brought together to achieve the plantation opportunity.

We urgently need a government-led initiative to begin a major plantation forestry effort.



The NZ Institute of Forestry Council is pictured at its meeting in the boardroom of the NZ Forestry Corporation on the last day of the Corporation's existence.



NEW INFORMATION



Sometimes forecasting and reality do coincide

Mike Colley*

Some in the forest industry spend their time forecasting the likely future output of forest estates. The subsequent years then set about demonstrating how good these forecasts are. An example of a remarkably close coincidence on a large scale between forecast and subsequent reality is at hand in New Zealand.

In 1986 Burrows, Levack and Novis (1) produced a forecast based on simulation of the New Zealand plantation estate. Basic data were sourced from the 1985 edition of the National Exotic Forest Description (as at April 1, 1984) (2). Simulations were carried out under the following conventions:

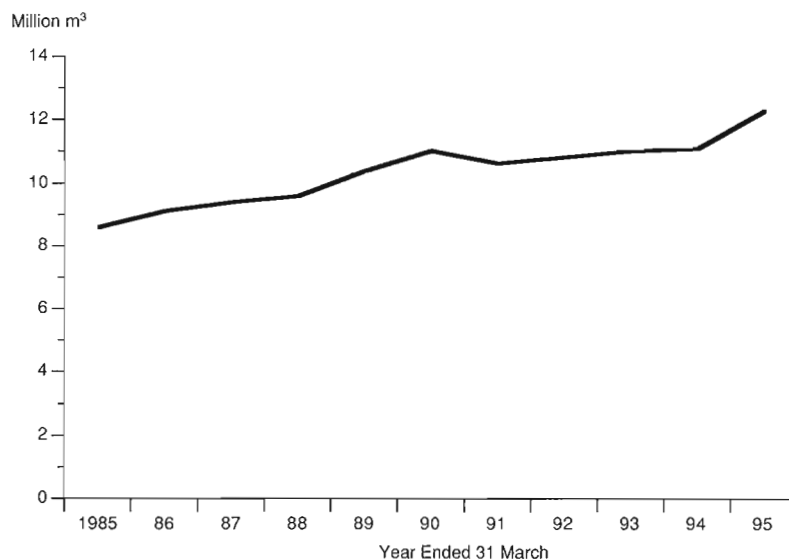
- the State resource was modelled using the NZ Forest Service's Harvesting and Marketing Strategy (3) as a guide;
- the private resource was modelled using regional harvesting estimates made by the NZ Forest Service for 1984/85 and 1985/86 as starting points;
- non-declining yield;
- rotation lengths tending toward 30 (radiata), 55 (D. fir), and 35 (other species) years;
- three levels of new land planting

(none, 20,000 ha per annum, 50,000 ha per annum). This article is concerned with the period up to 1995. The level of new land planting is therefore irrelevant as it has practi-

cally no effect on yields during the first ten years.

The outcome was a forecast of production as follows:

ESTIMATED N.Z. PLANTATION HARVEST



* Resource Manager, Tasman Forestry Limited

The estimated harvest shown includes both clearfelling and extraction thinning.

The Ministry of Forestry produces statistics on estimated removals from the plantation estate (4). Removals are largely inferred from surveys of industrial plants and therefore have some inherent element of inaccuracy.

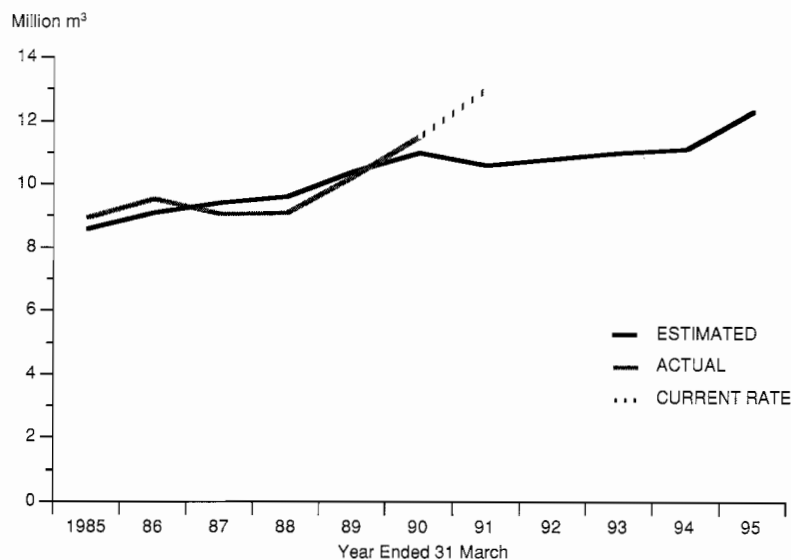
When removals are compared with the 1986 forecast the following is obtained:

ward by five years through the new forest ownership forces that are now at work.

- During the past six years the national estate has been cut in a fashion commensurate with the ultimate attainment of a rotation length of 30 years for radiata pine. (There is, however, still a high degree of choice open to New Zealand in target rotation.)

The production from a forest estate is determined mainly by three factors:

N.Z. PLANTATION HARVEST



Some observations to be made are:

- During the six years 1985 to 1990 actual plantation production has closely followed the 1986 simulation based on April 1, 1984 data.
- Even if the high correlation between actual production and forecast is largely a result of "cancellation of errors" in the forecasting and statistical recording systems, the result nevertheless can give comfort to statisticians and planners.
- The inception of the New Zealand Forestry Corporation as from April 1, 1987 does not show up in any marked increase in production immediately from that date.
- Of more interest is the current rate of production extrapolated to March 31, 1991 on the graph. It is based on actual production from April 1, 1990 to September 30, 1990 (six months) multiplied by two. This could well be a result of the sale of State plantation forests, mooted in mid 1989 and officially launched in October 1989, building upon the prior corporatisation of the New Zealand Forest Service. The 1986 simulation did show a sharper climb in production during the second half of the 1990 decade. Possibly this has been brought for-

- the inherent ability to produce, determined primarily by age class structure;
- market forces;
- aspirations of the owners.

The first is measurable and largely predictable and cannot be changed in the medium term (natural disasters permitting). The second is constantly changing, more difficult to measure, and cannot be forecast with certainty. The third factor, ownership and aspirations, is the one that has changed greatly during the past year or so and is the one that may have the greatest effect on the national plantation production during the remainder of the 1990s. For this reason a national simulation produced now may not enjoy the six year "honeymoon" that the 1986 simulation enjoyed. Nevertheless, a national simulation does provide a basis for monitoring and the important thing subsequent to its formulation is not necessarily how close it matches reality but interpreting the divergences between it and reality. In this way trends in the measures of productive capacity (e.g. average harvest age; rotation length) of the national estate can be observed. The steering committee of the National Exotic Forest Description does have on its agenda the production of a

new national simulation. It would be timely for this to be produced now.

REFERENCES

- (1) Burrows G.D., Levack H.H., Novis J.B. 1986. A National Forestry Planning Model For New Zealand. NZ Forest Service 1986.
- (2) Butler C., Levack H., McLean D., Sharp J. 1985. A National Exotic Forest Description. Working Paper No. 3, New Zealand Forestry Council.
- (3) New Zealand Forest Service. 1985. Harvesting and Marketing Strategy for State Forest Plantations. NZ Forest Service.
- (4) Ministry of Forestry. 1990. Statistical Release. Estimate of Roundwood Removals from New Zealand Forests. Year ended March 31, 1990. Ministry of Forestry, New Zealand.

BOOK REVIEWS

Handbook of NZ Mammals

THE HANDBOOK OF NEW ZEALAND MAMMALS, edited by Carolyn M. King. Oxford University Press, Auckland. 600 pages. Retail price \$69.95.

This book describes the physical characteristics, field sign, variation, history of colonisation, distribution, habitat, food, social organisation and behaviour, reproductive behaviour, population dynamics, predators-parasites-diseases, adaptations to New Zealand conditions, and the significance to the New Zealand environment of the 46 species of land-breeding mammals which now live (or have lived) in the wild in New Zealand. It includes all the introduced species, the native bats, and the seals and sea lions, but excludes whales and dolphins.

The editor has achieved remarkable stylistic consistency, given that 29 people contributed to the descriptions. The standard format and style for each species makes the huge amount of information easily accessible, and this alone will ensure the success of the handbook as a ready source of technical data on most aspects of introduced and native mammals. The information itself is up-to-date, the latest references being from the late 1980s.

The Handbook is not just a digest of facts and figures about various mammals, but attempts to summarise the place of each species in an ecological context. In many ways this latter function may be the most important contribution of the work as it will stimulate the debates and research needed if we are to manage wild mammals (particularly the introduced species) in any rational way.