

Preliminary results of independent research show a high usage of materials – especially in primary schools where over 70% of teachers have already used the materials or have written Forestry Insights into their teaching programmes.

The second theme, Processes, is due to be released to schools in April and promises to be even better than The Forest. The main areas covered in this theme are harvesting, transport and export, pulp and paper, panels and timber.

Forestry Insights aims to tell the forestry story and it has achieved that aim because it meets both industry's and education's needs. It is the partnership approach that ensures its use in schools – and its success.

Work is due to start on The Environment in May and sponsorship is still being sought for this theme. If you would like to be part of Forestry Insights, phone Gendie Somerville-Ryan on (09) 358 2993 or fax (09) 303 2558 or write to C.P.O. Box 39, Auckland.

**Gendie Somerville-Ryan**



## 1993 AGM and conference

Sir,

This is in response to J.J. Hosking's letter in NZ Forestry, August 1992, in which he commented on the style of Institute Annual General Meetings.

I would like to reassure him that organisation is well advanced for a back-to-basics forestry conference and AGM in Napier from May 12 to 14 this year.

We are planning a variety of local and national topics and speakers to achieve a good mix of relevant technical papers and human interest. The objective of the conference is to discuss the influence of forest product market requirements and trends on forest management. This will involve keynote and lead papers on international and local market opportunities. The programme will then examine market requirements and opportunities for a range of wood products; how forest management might best cater for these markets; people in forestry; the influence of the Resource Management Act and district schemes; and a summary of developments in the forestry investment scene since the last conference.

This will be the third Institute AGM to be held in Napier. The first was in 1958. We expect to have some of the personalities who were present at the 1958 AGM look back at the Institute's last 35 years.

We are arranging field trips which should appeal to the most discerning. We intend to provide alternatives for those more interested in forest management or processing. We have crops which illustrate the range of treatments which have been in vogue over the years. This diversity provides a challenge to today's managers trying to meet tomorrow's market requirements. We hope to be able to control the fierce debate which is likely to develop.

In addition to the field trips we are encouraging delegates to bring their families to sample the holiday pleasures of Napier's sunny climes. Family tours are being arranged to cater for all interests. The youngsters should enjoy Marineland and Fantasyland and the more mature should enjoy the wine trail and some of Hawkes Bay's outstanding country gardens.

Mr Hosking will be glad to hear that in addition to the usual opportunities to share a convivial ale we can also offer vineyards ranging from the historic and reverent ambience of the Mission to the most modern and technological of viticultural facilities. We hope to capitalise on these and Napier's Art Deco cafes and restaurants.

We look forward to seeing members and families in Napier in May.

**Barry Keating**  
For AGM Organising Committee

## Forestry and political dogma

Sir,

The Minister of Forestry, John Falloon, in his reply (NZ Forestry, August 1992) to A.L. Poole's open letter to the Prime Minister, says "I hope this letter clarifies the issues you raise". It hardly does so, and in any case "clarification" surely was not the response hoped for. Poole presented his arguments perfectly clearly. What would have been helpful would have been some show of understanding and discussion of these issues, which are very important ones, by the Minister.

Poole drew attention, in particular, to three undesirable results of Government policies.

Firstly, he made the point that no New Zealand Government had ever shown any real interest in, or commitment to, the management of our timber-bearing rain-

forest for sustainable production, in spite of a considerable amount of promising investigation. As a consequence, this indigenous resource had been single-mindedly cleared almost to extinction for other purposes.

Secondly, Poole noted that the selling off of cutting rights in State exotic forests to a number of different buyers had effectively destroyed all the long-term State plantation plans to create a group of forests in the various regions which would have eventually provided sustainable yields of wood large enough to attract substantial industries to enhance regional development and employment opportunities.

Thirdly, he observed that the new private owners of the State exotic forests would naturally act as they saw fit to meet their own particular and perceived needs and objectives, which might or might not be in the best interests of New Zealand or indeed even make the optimum use of the forest resource itself. Already, one has seen an enormous increase in sales of logs overseas for immediate availability of cash, rather than their use in local industries.

How does the Minister of Forestry reply to, or comment on, these criticisms?

On the question of native forests, he makes much of Government's recent introduction of the Forests Amendment Bill, which is intended to promote sustainable management of our indigenous forests. Yet, after four years of debate and indecision on an indigenous forests policy, and after another four years before the introduction of controls on the milling of native timber comes into effect, one is hard pressed to detect much urgency or commitment. Meanwhile, the small production forest resource remaining is diminishing further all the time.

Then, does Government really expect private landowners to take kindly to controls more stringent on their own properties than are to apply on land still publicly owned, when they see that West Coast Timberlands is to be allowed to continue to clearfell up to 800 ha per year of beech, and also to patchwork clearfell rimu on its 132,000 ha of indigenous forest?

And what about all the exceptions and exemptions in the Bill, which water down the effectiveness of its provisions, and which will make strict enforcement by the Ministry of Forestry both difficult and controversial?

As a plus, Government does indeed state that it is considering measures to reafforest suitable land in indigenous species and rehabilitate degraded indigenous forest. Some early positive action in this regard would do much to reassure foresters, and general public alike, that the

Government took the indigenous forest capability seriously.

Or have we after all, as Dennis Richardson suggests (NZ Forestry, August 1992), "virtually turned our backs on our own natural forests"?

Concerning the sell-off of State plantation forests, and in spite of the undesirable consequences described by A.L. Poole, the Minister it seems has nothing further to add except to say that he is still quite satisfied that the future of New Zealand forestry and forest-based industries is in good hands. It may safely be left to market forces to determine the amount of planting that takes place and where it is located – and presumably also how it is managed and harvested.

Yet, in the absence of a national exotic forests policy, there is not even a framework within which the new private owners could be constrained to operate, nor a benchmark against which their performance could be assessed as to what extent it conformed to the national interests of New Zealand as well as the private and possibly also overseas company interests.

On a slightly more encouraging note, one can welcome at least some belated recognition by Government that market forces alone will not provide appropriate management to achieve environmental and social benefits in areas such as the East Coast of the North Island. Hopefully, the State subsidisation to enable afforestation of 200,000 ha of protection/production forest there under the tendered grant scheme will be the forerunner of other such schemes elsewhere in New Zealand before too long.

Forestry is far more than the application of narrow economics. It was not by chance that the former Forest Service was also given a community mission.

**Eric Bennett**

## The prostitution of our State forests

Sir,

In response to A.L. Poole's letter and the Minister of Forestry's reply in the August 1992 issue, I do not think much of the Minister beginning his response by pointing out the period when Mr Poole was Director General of Forests. Although Mr Poole was D.G. in the 1960s and 1970s he was in a position to know why the forests were planted and I support his views. I finished my ranger's certificate in 1981, my forestry degree in 1984, and my Forest Service career in 1987, but perhaps I am out of touch too.

Last century this country began with two million hectares of kauri forest, of which about three per cent is now left. What would the market value of this resource be today, or using discounted cash flows; what was the cost to nature to provide this resource? Obviously few people then really knew much about future values or past costs, or really cared when they chopped the kauris down.

A similar exploitation has occurred with the State's pine forests. Using discounting, the forests were shown to have meagre rates of return by Treasury and the whole concept of investment in the planting of forests was undervalued. On this basis, perhaps future investments in forestry would have been unwise until thinking had been clarified. However, Treasury were not talking about "future" investments but "past" investments. The pines were already planted and paid for but it seems to be that justification was needed to open the forests up to the marketplace.

The other alternative is that Treasury and Government had no idea what they were doing. The present Minister makes a mockery of what happened by now talking about a three-fold increase in new plantings to former Forest Service levels. Obviously planting forests wasn't such a bad idea after all.

Like the kauri forests last century the pine forests this century were a resource waiting to be exploited. Although the public wasn't party to sensitive commercial information such as the sale of their forests, I understand that the parts of Esk Forest that were not leased Maori land sold for about \$4200 per hectare. If this is true it indicates a price tag of about 55 million dollars for the whole of Esk.

I worked at Esk during my last years of the Forest Service. When the woodflows come on stream the cut should be about 480 hectares per annum, and the whole forest should generate about 10.5 to 11.5 million dollars each year. This indicates that once on stream, and with a sustainable cut, the original bill could be paid off in as little as five years (I am not sure how long it would have taken for Esk to come on stream and obviously there would be interest payments on buyer's borrowing). However, if forests are over-cut the bill can be paid off in less time.

I question the 700 per cent plus increase in sawlog exports since 1986. Selling unprocessed logs overseas does little towards providing jobs for New Zealanders and seems an appalling waste of past taxpayers' investments. If the sale of our nation's forests does not generate major new industry that has long-standing benefits to all New Zealanders, then what will have been achieved?

The Minister stated "that investors in wood processing generally prefer to have control over forest resources that supply their plant" and cited Juken Nissho's new veneer plant in Masterton as an example that justified the selling of State forests. There are also reports of other intended processing plants at Gisborne and Tauranga. Perhaps Government policy is paying off. However, the Masterton forests (which are about the same area as Esk) constitute only about one-fiftieth of the former State forests. With another 50 times the Masterton mill capacity perhaps the sale of the nation's forests will have been worth it.

Once upon a time the Forest Service pine forests belonged to all the nation's citizens and their children. Now they belong to the marketplace and foreign owners. At the end of the day, if we New Zealanders see jobs and wealth in our communities from major investments in wood processing, then perhaps all the pain will have been worthwhile. If on the other hand we continue to export logs like a third world banana republic, then I believe the politicians who sold us can take credit for having behaved like pimps who have prostituted our nation.

**Bob Boardman**

## Two hundred years of forest protection

Sir,

In his article on "The development of the concept of steep-land protection forestry in New Zealand" (NZ Forestry, May 1992) Peter McKelvey reviewed the history of that concept in Europe and North America. He pointed out that in the USA the concept stemmed from the publication in 1864 of G.P. Marsh's book "Man and Nature". As a footnote it is worth recording that the idea of "forest influences" had been given practical expression in the New World almost a century earlier.

That was on the Caribbean island of Tobago, which lies 50 km farther off the north-east coast of South America than its larger neighbour, Trinidad. Tobago is only 40 km long and between 5 and 11 km wide, but in the north-eastern half there is a central ridge which rises from the sea on both sides to almost 600 m, where the rainfall is over 3000 mm per year.

For more than a century the ownership of Tobago was disputed by the Dutch, French and British until it and several other islands were ceded to Britain by the Treaty of Paris in 1763. The British Government then set up a Commission to

organise the survey and subdivision into estates of these islands. The Tobago plan, completed in 1766, included the reservation from clearance and settlement of nearly 2500 ha along the upper flanks of the Main Ridge as "Woods for the Protection of the Rains". In spite of control of Tobago reverting to France between 1783 and 1793, the Main Ridge forest has been officially protected since 1766, although it was not until 1906 that it was extended to almost 4000 ha and given legal status under a Forests Ordinance.

The Main Ridge Reserve is now recognised as providing protection from, rather than of, the rains. The forest stands on a region of steeply-dipping schists, where, with the high rainfall and steep slopes, cleared areas are prone to land-

slips. The montane tropical rain forest contains few species of timber value and, apart from occasional cutting of single trees, has been little disturbed by man. But Tobago lies within the Caribbean hurricane belt and has experienced at least half-a-dozen such storms in the last two centuries. After a considerable gap a particularly severe one occurred in 1963, and, as the locals vividly described it, Hurricane Flora "mashed up" the canopy trees and defoliated the understorey. However the lower vegetation recovered quickly, and the protective value of the Reserve was little impaired.

In trying to relocate the Reserve boundaries after the hurricane, I was tempted to suspect that the original surveyors' concern for the "protection of the

rains" might have been influenced by concern for their own safety on the slippery slopes leading to the summit! In fact it was often obvious during that work how the Main Ridge induced cloud formation above it while the sky remained clear on either side, and doubtless the 18th century surveyors had also observed that phenomenon.

On none of the other islands for which the Commissioners prepared plans after the Treaty of Paris was any provision made for forest reservation. As a result of the unique feature in the Tobago plan, the Main Ridge Reserve has probably the longest history of forest protection in the Americas.

R.G. Miller

## ARTICLES

# Measurement of roundwood in New Zealand

John C. Ellis, Forest Research Institute, New Zealand

### Abstract

*Weighscaling is the principal method of measuring forest outturn in New Zealand. The truckload weights are obtained from weighbridges. In the absence of a suitable weighbridge front-end loader based weighing systems are used in the forest. These have replaced most hand scaling operations. Export logs are measured and documented mainly by manual methods. Research is continuing on improving sample methods for weight to volume conversion calculation and automating data collection.*

### Introduction

This paper describes the present methods of measuring roundwood in New Zealand. Last year New Zealand produced an estimated 14.7 million cubic metres of roundwood.<sup>1</sup> Of this volume 3.8 million cubic metres was exported as logs. Most of these sawlogs are cut from stands of radiata pine. Logs are less than 80 centimetres in small-end diameter and they contain no rot or internal defect.

Roundwood is sold on an underbark volume (cubic metre) basis, although a few sales are based on weight. Log volume is derived from weighscaling throughout New Zealand. Weighscaling is done with weighbridges, but in areas where a centralised weighing site is not practical, front-end loader based weighing is done at the point of loading in the forest. Hand measurement continues to be used in the small operations, sample loads for monitoring weight to volume conversion factors, and the volume of export logs. These are measured by a scale requested by the log buyer.

Up until the late 1960s the saleable volume of roundwood from exotic conifers was scaled using two-dimensional log volume tables applied to individual log measurement of small-end diameter (underbark) and length. By 1968 two million cubic metres (from State plantations) were being scaled annually. In the larger logging operations log volume tables were becoming impractical because they required constant updating to ensure that the outturn estimates were accurate for various populations. Weighscaling was introduced into the large operational areas and gradually replaced hand measurement. However, for the smaller log sales, there were many forests which could not justify the costly installation of a weighbridge.

During the 1970s a single three-dimensional formula was designed to replace an estimated 60 individual two-dimensional log volume tables still in use. The new formula gave log volumes based on small-end diameter (underbark), length, and large-end diameter or average taper. When average taper is substituted for large-end diameter it allows volumes to be based on the two measurements of small-end diameter and length.

Indigenous logs have always been scaled by Hoppus or cylinder formula. Although most of the logging in State owned indigenous forests has ceased, some privately owned estates are producing indigenous softwood and hardwood logs. Overbark mid diameter is measured to the nearest even centimetre class (using girth tape) and length to the nearest tenth metre. Gross volumes are derived from two-way look-up tables after the overbark diameter has been reduced by a fixed bark allowance for that species. The nett volume of the log is obtained after the volume of internal defect is subtracted from the gross volume.

*This paper was previously published in the Proceedings of the Technical Conference on Wood Measurement Systems, April 30-May 1, 1991. Woodlands Section, Canadian Pulp and Paper Association. Montreal, Quebec.*

<sup>1</sup> Ministry of Forestry Statistical release, January 22, 1993.