

'One big forest' in Sweden

"One big forest" was how some members of the June 1989 forestry study tour to Sweden described that country. Indeed, on leaving the largely agricultural southern province of Skane the traveller's main impression is of endless plantations, with clearings of various sizes for farmland or towns and cities. In the very extensive route followed in the study tour the only regions where forest did not dominate the landscape were parts of the far north beyond the Arctic Circle and the uplands of the northwest.

The venture was promoted and organised by the writer, in association with the Institute, with members coming mostly from the private grower sector in New Zealand. Commencing with a visit to Elmia Wood, the world's greatest forestry trade fair (reported in "Forest Industries" magazine) the tour comprised a wide-ranging inspection of Swedish forestry operations, organisations and regions. Thanks are due to our many fine Swedish hosts for their shared expertise and hospitality, the travel agents (Russell and Somers in New Zealand, and Nyman and Schultz in Sweden) and the Institute Council.

An almost universal high standard of forest management of the Norway Spruce ('Tall' in Swedish), Scots Pine ('Gran') and Birch is very apparent in Sweden. Well-established, healthy and well-thinned stands are the norm. While acid rain is a major concern, its effect is very gradual, and at this stage not apparent to our unaccustomed eyes. However in some parts of Europe forests are apparently showing at least temporary decline.

The excellent condition of the Swedish forests is of course due to the very strong forestry ethos, together with a detailed policy framework, considered



A fine stand of Scots Pine in central Sweden.

to be over-regulation by many foresters. Perhaps the most interesting Swedish regulations to Kiwi foresters are the legal requirements for professional silvicultural management – for example prescribed stocking rate at a specified time after clearfelling, compulsory thinning in extremely dense stands, minimum and maximum allowable cut and prohibition on felling of immature stands. Above all, there is the Skogs-

bruksplan, or Forest Management Plan. This is a very professionally prepared and detailed planning document. The Skogsbruksplan provides growth and operational data by species, age class, compartment and forest unit. At several levels this tool is invaluable – the private grower, the local Skogsägarna (Forest Owners Association) and the Skogsstyrelsen (National Board of Forestry – the forestry administration body). The plans



Part of the tour group with Minister of Forestry Peter Tapsell at the opening day of Elmia Wood 89 International Forestry Trade Fair on June 1, at Jonköping, Sweden.

appear to provide ample flexibility for growers, with timing of commercial thinning and clearfelling at their discretion within the bounds of prudent management. The plan may be prepared by an Owners Association, the National Board of Forestry or a private consultant.

Detailed Swedish forestry mensurational information is derived from the ongoing national inventory, carried out in two distinct parts. Long-term strategic forest policy related data are gathered in the National Forest survey, implemented by the Faculty of Forestry at the Swedish University of Agricultural Sciences. The general Forest Inventory, covering all private property over a 10-year period, monitors forest condition. Stands outside the minimum requirements are identified and owners advised.

Given the vast national forest resource of 23 million hectares (57% of Sweden's area), the small compartment size, especially in central and southern Sweden where private growers are dominant, is quite eye-catching. A typical forest we saw, of 74 hectares, had 25 compartments, ranging from 0.6 to 7.9 ha. Age classes, expressed in five-year groups, range from five to 125 years – our grower's forest covers 13 of these possible 25 classes. Swedish private forest growers aim for the widest spread of age classes to even out their financial returns. Herein lies one of the greatest contrasts between Swedish and New Zealand private forestry. While the Swedish rotation is three to four times as long as ours, the Swedish grower's earnings are regular, often even an annual cash crop. Of course, this situation is due to the typical commercial thinning programme of three or four treatments, as well as the wide age class distribution.

This type of forest management, with its regular earning capability, is central to the economic viability of the private forest resource in Sweden. There are over 200,000 owners controlling 50% of the total forest area, with average holdings of 48 hectares. Derivation of an internal rate of return in our terms appears to be irrelevant. If forest growing was isolated as a separate cost, we were told that 1% I.R.R. would be typical. The Swedish forest resource predates ours by several decades, having been established in the mid to late 19th century. It is not, however, a "free" natural forest, as it was systematically planted by the early reforestation movements following devastation of earlier tree crops.

As New Zealand's second crop approaches maturity, investigation into suitable harvesting equipment will intensify. To date most Swedish equipment has not been suited to our conditions, due to the very different requirements.

Commonwealth Heads of Government Meeting, Kuala Lumpur – Oct. 1989

Amongst the resolutions agreed to by the Commonwealth Heads were three dealing directly with forestry. They were to:

- promote afforestation and agricultural practices in developed and developing countries to arrest the increase in atmospheric carbon dioxide and halt the deterioration of land and water resources;
- strengthen efforts by developing countries in sustainable forest management and their manufacture and export of higher value-added forest products and, in this regard, support the activities of the International Tropical Timber Organisation and the Food and Agriculture Organisation's Tropical Forestry Action Plan, as well as take note of the recommendations of the 13th Commonwealth Forestry Conference;
- support activities related to the conservation of biological diversity and genetic resources, including the conservation of significant areas of virgin forest and other protected natural habitats.

Resource Management law reform

The new Resource Management Bill is currently being drafted and is expected to be introduced into Parliament later this year.

The reforms proposed will require the new authorities to meet a wide range of objectives related to environmental qua-

lity, sustainable development, ecosystem values, the needs of future generations, and social and economic considerations. There will also be increased opportunities for public participation in developing plans, opposing consents and ensuring compliance.

Central Government will continue to have a general overview on resource management issues, retain a role in the management of hazardous substances and coastal areas, and administer the legislation.

A feature of the changes is giving responsibility for decisions to the community of interest most affected. In this way decisions will be made by those who are closer to the resources and have a clearer understanding of the impact on the environment. (Environment Update, Ministry for the Environment).

Forestry training at University of Waikato

The University of Waikato announced recently that it was to inaugurate a specific stream of its B.Sc. (Technology) in Production Forestry. To do this it will link with Waiariki Polytechnic in Rotorua which currently has responsibility for training. In addition it is seeking funding support from the forest industry to recruit additional lecturers.

The degree is to be a four-year programme in which one year is to be spent in work experience in the industry, for which students will be paid. A flexible programme is envisaged using current courses in basic sciences, management, economics, computing and statistics with a core group of applied forestry courses.

Behind the specific machinery, however, is the Swedish development process, or "creative triangle" between research, grower and manufacturer. If this process can be further "internationalised" we may find that Swedish skills could be of great value to us.

In forest management and processing, we have much to benefit from further extending our association with Sweden.

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Forestry research funding

According to Dr Colin O'Loughlin, Ministry of Forestry, Wellington, Professor Ferguson's report on the funding of forestry research in New Zealand has been received. It is currently being considered by the Ministry and the industry.

Dr O'Loughlin said the report recommends the setting up of a forest industry research organisation designed primarily to secure funding for the Forest Research Institute in Rotorua. However, the review considers all groups involved in commercial forestry research in New Zealand. The non-commercial aspects may be the subject of a future review.