

South Westland's special purpose species programme

Liz Solari

South Westland's special purpose species programme has a long history. The programme was initially agreed to by Government as a form of compensation to the local community: in part for the September 1981 decision to include South Okarito and Waikukupa State Forests into the Westland National Park, and, secondly, for implementing a logging moratorium on all remaining forests south of the Cook river until 1990.

The programme was to involve the establishment of a 10,000 hectare forest resource of specialty, high-value species. The plan was to generate employment through establishment, tending of the crop and subsequent harvesting. The expected high revenues would enable a resulting infrastructure to be created, establishing sustainable economic activity in the region.

An "Officials Committee Report on Review of Assistance Options for South Westland" was published, recommending a programme of planting Australian Blackwood (*Acacia melanoxylon*).

The negotiations of the 1986 West

Coast Forest Accord affirmed the Government's commitment to the previous Government's programme. The Crown's agency was eventually passed to Timberlands West Coast Ltd (TWCL), who are contracted to implement the programme. In July 1993 the current Government agreed to provide funding of \$6 million.

The New Zealand Forest Service (NZFS) started planting on a reasonable scale in 1982, and over the next five years planted some 655 hectares of Blackwood. This planting put considerable pressure on available tree stocks, with Westland using most of the available Blackwood tree stocks from NZFS nurseries around the country. After the demise of the NZFS in 1987, a Blackwood planting programme of 150 hectares per annum was maintained by the New Zealand Forestry Corporation (NZFC), who established a further 575 hectares.

When TWCL was set up in late 1990, this programme of establishment was maintained until a lump-sum package was finalised by Government and announced in July 1993. At this point a resource of

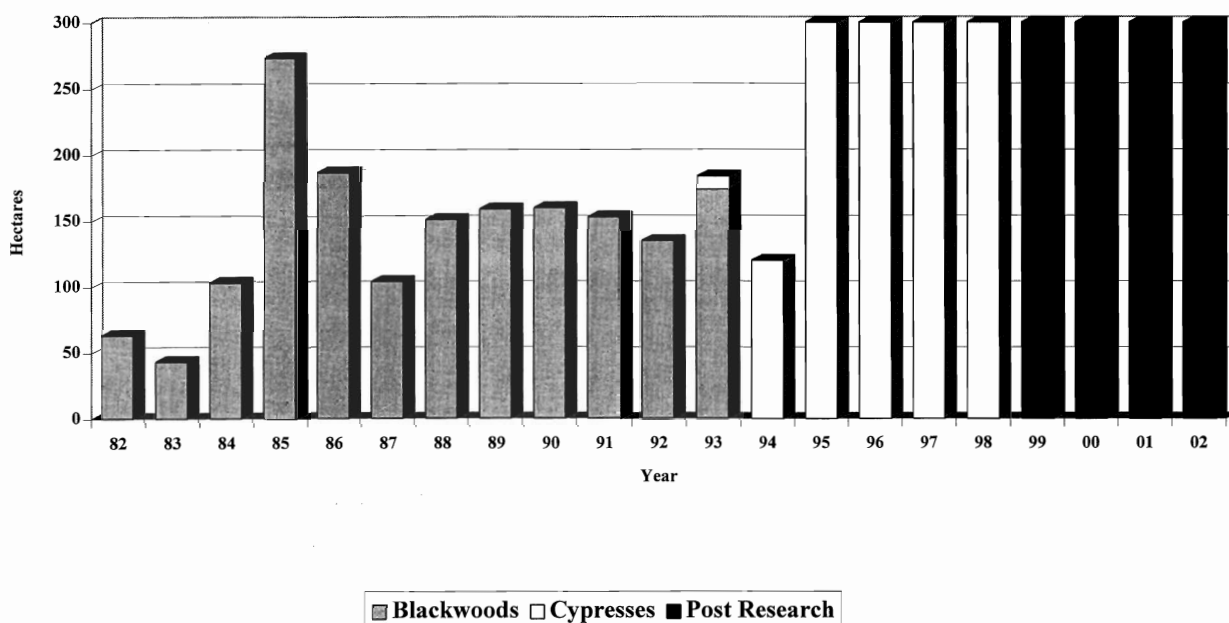
some 1590 hectares of Blackwood and 129 hectares of cypress had been established.

To ensure the best possible outcome for the programme, TWCL is adopting a cautious approach, both because of the large amount of public money involved through the Government subsidy and because of the uncertainties of growing such a non-traditional resource. The uncertainty is not dissimilar to that experienced by the State and private growers when planting radiata pine for the first time 80 years ago.

Timberlands now has a 200 hectare per annum programme of special purpose species establishment in Ianthe and Wanganui Forests, at the same time establishing a series of research projects to investigate the problems and performance of Blackwood as well as cypress species such as Lawson's cypress (*Chamaecyparis lawsoniana*), Mexican cypress (*Cupressus lusitanica*) and macrocarpa (*Cupressus macrocarpa*).

The cypress component of this programme is still very young, with the 1993

South Westland Special Purpose Species Plantings



plantings comprising 103 hectares of 129 hectares total. The early indications are very encouraging in terms of both survival and early growth, with height growth of 0.4 metres to 0.6 metres per annum.

Mexican cypress is the preferred cypress species to date, largely because of availability, but also because of its better canker resistance and the performance of the species planted earlier in Mahinapua Forest. Lawson's cypress has also performed well in Mahinapua and, subject to the availability of tree stocks, is another potential candidate for South Westland.

Research

Because of concerns about the variable performance of Blackwood, the emphasis was changed so that for the next five years the majority of the planting will be with proven cypress species. This change in direction has taken place while a reassessment of the performance of Blackwood is conducted to identify specific areas requiring improvement. These areas could include site selection, site preparation, tree stocks and seedling handling.

This change in emphasis has a three-fold purpose:

- it allows time for research to find some answers to the Blackwood problems before there is too large a resource at risk;
- it allows the existing resource to gain a further five years in age so that better judgement can be made;
- it allows a rapid build up of a cypress resource, the silviculture and growth of which is better understood.

The planned research programme will be looking at the nutritional, silvicultural and health requirements of both Blackwood and cypress species. It will also be looking at identifying the most promising provenances that ought to be used.

On some sites there has been noticeable psyllid attack and corresponding growth has been variable. However, most variation is due to the variable quality of trees and the quality of site selection and preparation. Annual diameter growth varies from 5 millimetres to 20 millimetres.

One of the aims of the research is to determine how serious the psyllid problem really is in the long term, as its effects have, in some areas, made maintenance of tree form difficult.

There has been a learning curve progression in the quality of success of establishment as the people involved have come to grips with the problems and requirements of a new species. Evidence of this can be seen in the variability of the early stands. TWCL has benefited greatly from the experience gained by staff in the NZFS and NZFC. They now have a good

understanding as to what sort of conditions are needed to ensure good establishment and survival. The challenge now is to achieve these requirements in the country and sites that TWCL has available, and at a cost that does not become prohibitive.

Silviculture

The silviculture of Blackwood is aimed at achieving a clear bole of 6 metres or better and this is being done by a combination of form pruning and stem pruning. The first operation is a form prune to remove multiple leaders and strongly competing branches. Subsequent visits are

to stem prune the lower bole and form prune the next section above. The requirement for associated nurse crops has also been strongly reinforced following a recent visit by Timberlands staff to Tasmania, in Australia. Unfortunately, the problem of psyllids is making it difficult to carry out the form pruning effectively.

The special purpose species programme offers exciting potential to South Westland. It is a major challenge for Timberlands to ensure that the continuing research and the growing understanding of the species involved eventually bears fruit and, consequently, benefit to the company and the South Westland community.



Mixed red oak, white oak, maple forest in N.E. U.S.A. The diversity of these forests has not prevented disease and insect problems in the past. Photo: D.J. Mead.