Silviculture - A Theme Paper

Working Paper #5

Project 87
FOREWORD

There follows a preliminary theme paper examining the pattern and development of innovative administration in silviculture.

The paper is based on material found in Annual Reports of the Ministry and on interviews with Ministry staff. It is a working paper only. Your comments, suggestions and additions are welcome. Contact Doug Adderley, Project 5255 Co-ordinator, in Information Services (387-5885).
SILVICULTURE

Although concerns for more effective forest management and active reforestation were voiced in early reports and studies, little was done in the early years of the B.C. Forest Service. The seemingly over-abundant supply of mature timber focused attention on the immediate harvesting of the vast resource and not on future requirements for a continuing yield from the forests. Silviculture studies began in 1913, but were abandoned because of the war. In 1924, Aleza Lake Research Station was established followed by the Cowichan Lake Experiment Station in 1929. In 1927, the first nursery was established in Victoria, followed by Green Timbers in 1930, and 1932 saw the modest beginnings of the reforestation program. Management for sustained yield did not become policy until the 1945 Sloan Commission Report.
After 1945, with the implementation of the sustained yield policy, the program to improve our forest resource and to reforest logged-over areas gained momentum. Research facilities such as Aleza Lake, the Cowichan Lake Experiment Station, and the nurseries at Green Timbers and Koksilah began the work that will ensure future generations an equally abundant and profitable forest resource. Despite these early efforts and a vast expansion of nursery facilities in the 1960s, it is only within the last eight to ten years that the silviculture program has gathered the momentum that its goals warrant.

Nursery activities began as bareroot facilities. Seedlings were germinated and nurtured in the ground. The process entailed manual transplanting, both time-consuming and damaging to the seedlings. In the 1960s, Jack Walters, then Director of the University of British Columbia Research Forest in Haney, pioneered the bullet, a test tube-like container for seedling growth. The containerization of seedlings continued with the development of the styrobloc at Koksilah in 1970. This was a co-operative development of the Pacific Forest Research Centre and the Forest Service. Designed to
accommodate up to 240 seedlings, the styroblocks allowed for an enhancement of germination and growing conditions in a controlled environment. The blocks are easy to handle so seedlings can be moved from one location to another to simulate optimum growing conditions without the traumatic, and costly, necessity of transplanting them. At the present time, approximately 35% of nursery production is containerized. In the future, with the additional capacity of private sector nurseries, it will likely increase to 50%.

Along with the rangers and protection staff, the nurseries have been particularly inventive in pioneering techniques and equipment to assist their work. Tasks originally done by hand have been increasingly mechanized since the 1950s through the development of equipment to meet the peculiar needs of sorting, planting, root pruning and packing seeds and seedlings. Mechanization became vital to the silviculture efforts as the demand for seedlings increased. From 1964 when 14 million seedlings were shipped out, provincial production has increased to an estimated 135 million seedlings in 1981. The future calls for 150 million seedlings a year, a doubling of the 1980 program.
Parallel to the work of the nurseries in cone collection, seed testing and cataloguing, and seedling production is the fascinating work of the tree improvement program. To ensure a strong, fast-growing and disease-free forest resource in the future, scientists have been experimenting with the selection, testing and development of improved trees, better suited to providing a profitable second growth and on-going forest resource. Their work includes "plus"-tree identification, scion and cone collection by helicopter and the parallel development of equipment for the process, and the grafting, cloning and testing of potentially superior trees. The increased importance of the silviculture program was emphasized in the forest legislation of 1979, which links allowable annual cut to the active reforestation of licence-holders.

Increasingly, the private sector is becoming involved with seedling production to meet the growing demand; however, seeds, seed records, testing and storage are still controlled by the Ministry of Forests, through the seed centre at Koksilah, to ensure the optimum future forest resource.

The increasing tempo of the reforestation program is placing demands for innovative administration on the Ministry to effectively manage the distribution of seeds to an expanding network of government nurseries and the private sector.