

The "Izing" of British Columbia Nurseries'

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INTRODUCTION

It has been 12 years since the Western Forest Nursery Council held the 1976 Conference in British Columbia, at Surrey. It is a little over two years since I approached the Ministry of Forests Executive with the proposal that we co-host the 1988 meeting in Vernon, B.C., and requested authorization for Ralph Huber to travel to the United States to extend the invitation to our sister associations, so that all the planning, preparation and organization that is essential for a successful conference could commence.

Since I expected to retire in early 1990, I had anticipated that the 1988 Conference would be the last I would be attending as Manager of Provincial Nurseries. I was looking forward to this meeting as the cap-stone event in my career as Nursery Manager, providing me with the opportunity and the forum to wax eloquent about all the marvelous improvements we achieved during those 12 years, in nursery techniques, in quality of stock produced, in economic efficiencies, etc., etc.

I did not anticipate that the mad rush of events and changes during the first 10 years would actually accelerate in the next two years. The winds of change in fundamental forest management policy in British Columbia have not only dramatically altered the landscape of forest nursery practices and responsibilities for reforestation, but left the writer on sidelines, prematurely retired, no more than an interested spectator to the latest developments in "Fantastic Land".

CONTAINERIZATION

In 1970, seedling production was approximately 55 million seedlings, all basically field

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grown bareroot seedlings, with a few transplants and a test program of containerized seedlings. By the time of the 1976 Conference in Surrey, the Province of British Columbia was growing 80 million seedlings annually, all in nine Ministry of Forests Nurseries, 20 million container-type seedlings and 60 million bareroot seedlings, including 8 million transplants. The program of seedling production in provincial ministry nurseries peaked in 1980, at 105 million seedlings, consisting of 75 million bareroot seedlings and 35 million container-type seedlings. Since then, the Ministry nursery program has remained about 100 million seedlings annually but the ratio of container-type seedlings to bareroot seedlings has been reversed to 70 percent containers and 30 percent bareroot. Since 1980, all program increases have been achieved in private sector nurseries, which in 1988 had risen to more than 135 million trees. Except for 7-8 million bareroot seedlings being grown in one licensee nursery, all are container-type seedlings. Consequently, the total provincial program annually is now about 237 million trees, of which 200 million are container-type stocks.

Further, a rapid increase in large bareroot transplant stock which reached over 30 million by 1984, with a market demand for over 50 million, has been replaced by large two-year container stock types, particularly for hot lift and summer outplanting. As a consequence, the production of bareroot transplant stock types has dropped back to around 5-6 million annually and should drop even lower in the next two years.

COMMERCIALIZATION

Until 1980, all seedling production for reforestation on Crown Land was produced in Ministry nurseries. In 1976, the Pearse Royal Commission report on forestry issues in B.C. was tabled. Among its many recommendations and conclusions was the finding that there did not seem to be any good reason to continue the policy of excluding private nurseries from the opportunity to produce seedlings for Crown Land reforestation. Subsequent to the Royal Commission report, a task group chaired by the writer was formed with a mandate to investigate and prepare a white paper on the potential for

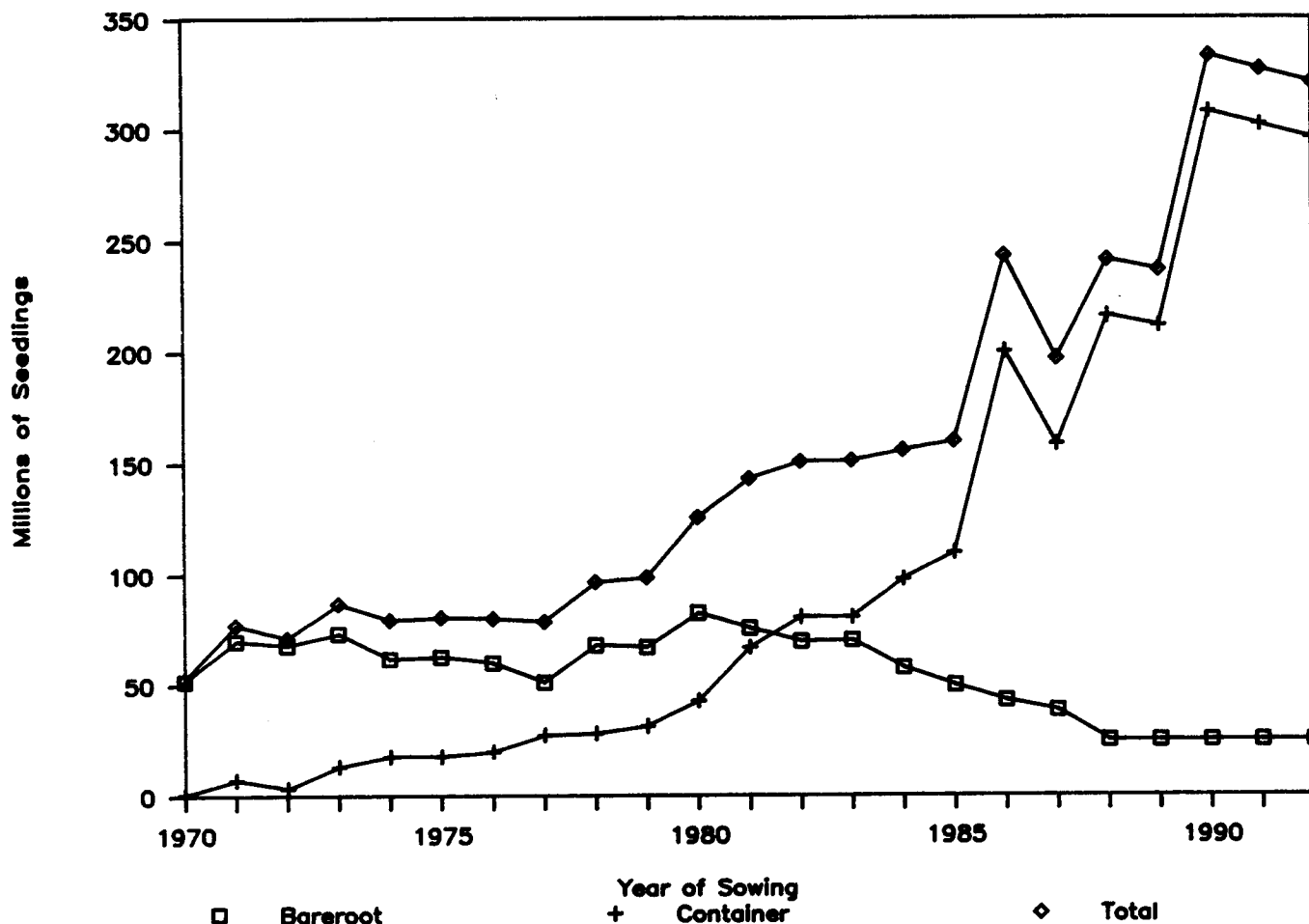


Figure 1.--Nursery production, bareroot and container, showing millions of seedlings sown for from 1970 and anticipated production to 1992.

private sector participation in such tree seedling production.

Among the more significant conclusions reached by the task group, subsequently endorsed by both the Ministry of Forests Executive and by the government, were (1) that the five and ten year targets for expanding seedling production in the 1980's could only be achieved by private sector participation, due to the staffing and capital cost constraints on government facilities; (2) that the Ministry of Forests nursery production should be capped at around 100 million seedlings annually, with future emphasis to be placed on conversion from bareroot to container stock types, to satisfy existing demands; (3) that all future increases in seedling production for Crown Land reforestation requirements should be directed to private sector nurseries through appropriate contractual arrangements.

From this policy,--the Forest Nursery Association of British Columbia was eventually born. Private nursery production started in 1980 with 8.8 million seedlings being sown for, rising to more than 135 million seedlings in 1988, produced in six licensee and over 25 commercial nurseries. The reforestation program which will approach 240 million trees in total in 1989, is expected to peak under present management criteria at about 325 million in 1991-92. By this time, all but 30 million trees will be produced in private nurseries, and all but possibly 20-25 million, are expected to be container stock types.

COMPUTERIZING

Almost hand in hand with the phenomenon of containerization and commercialization was the development of computerization.

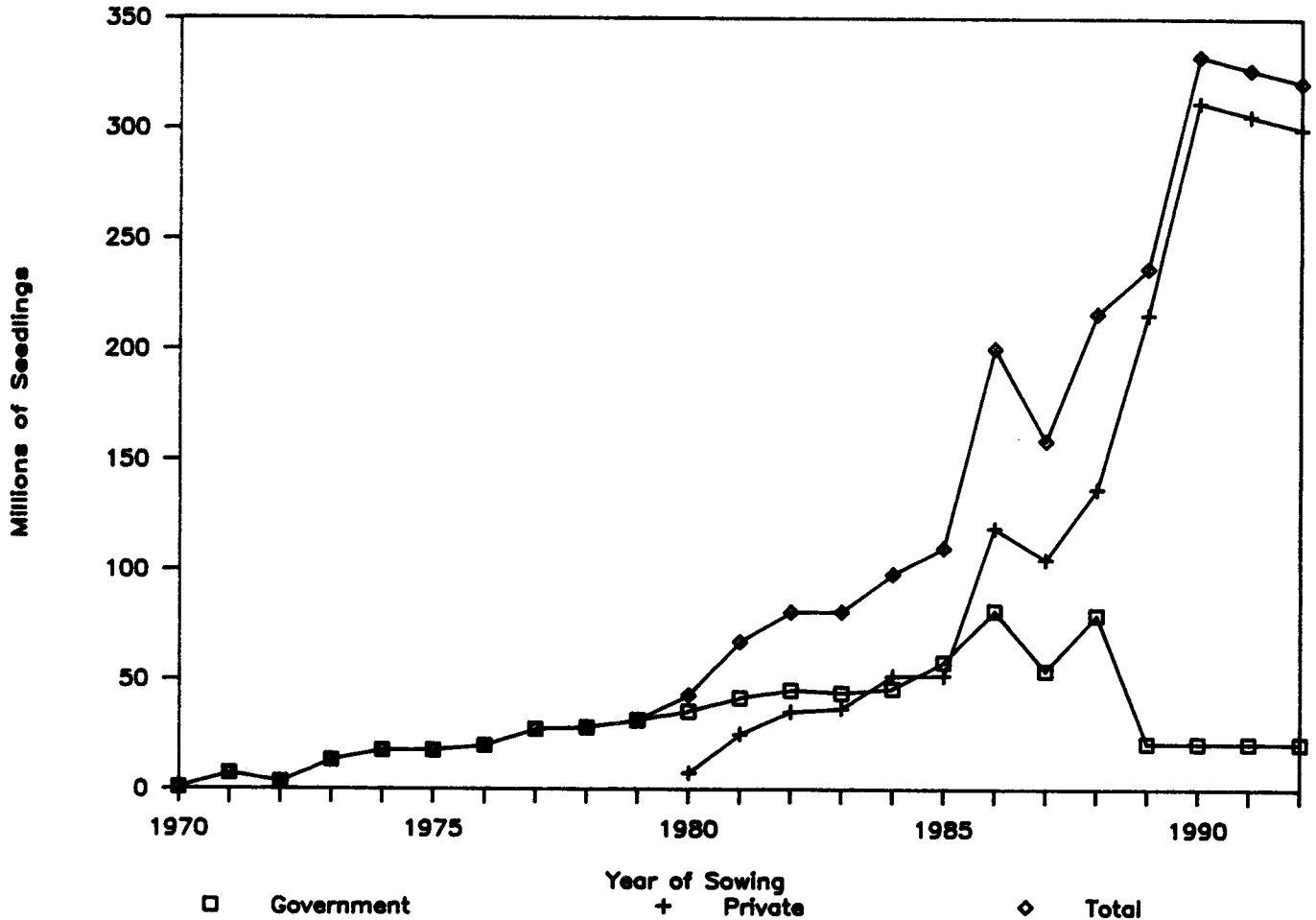


Figure 2.--Container production showing millions of seedlings sown for from 1970 and anticipated production to 1992.

Computers were introduced into operational nursery management activity in 1979, basically to rapidly process thousands of sowing requests into numerous nurseries, consistent with their growing capacities, contractual obligations and stock type capabilities.

Prior to the introduction of computers for this purpose, sowing request allocation procedures required manual processing that took 2-3 months to complete. It was the principal bottleneck to prompt withdrawal and preparation of seed for early spring sowing. As we gained experience, modified our management time-lines and made our computer programs more sensitive to our needs, the lead time from receipt of sowing request to sowing allocation was reduced from months to weeks to days, and finally, same-day turnaround of individual request data by nursery is now achievable.

Computers were initially introduced as an operational management tool to "crunch

numbers". As they became more versatile, more sophisticated, and less expensive, they became tools for quality control technicians and biologists to track seedling performance and monitor the interactive processes of environment and seedling development; they enable the operational technician to modify that biological environment to optimize development in accord with the biologists' recommendations. Fully automated environmental control systems with computer managed biofeedback are operational realities.

More recently, with network hardlines and integration of programs, the same computer systems are giving higher management and executives a direct window and immediate access to all on-site operational information, to the same information and timeline used by the on-site technicians. There are no secrets anymore.

Data can no longer be winnowed, interpreted, held in reserve or screened through several levels of management over extended periods of weeks or months. Management can make its own decision as to what is relevant or extraneous, on a real time basis. Middle level management becomes increasingly superfluous to the decision-making process - fewer people on fewer levels are needed to keep the process functionally viable; management level "downsizing" becomes another feasible option. Computers are excellent tools for operational activities in nurseries; they are also excellent tools for strategic management decisions; they may prove to be the nemesis for most mid management people.

DOWNSIZING

In every year since 1981, there has been a decrease in the manpower resources allocated to Ministry nursery operations. Some years the decrease has been small, 3-5 percent; some years it has been large - over 20 percent, but every year fewer resources.

Innovative techniques had to be implemented to offset this reduction, including contracting out of work, use of piece work incentives, reduction or elimination of ancillary services, and transfer of responsibilities to the private sector. In 1988 we have the ultimate form of downsizing. The conversion of all but two of the eleven Ministry nurseries to private ownership, with the closure of any facility which does not prove to be an economical viable entity in the private market place. A further 177 man years of nursery labour and technical staff, headquarters administration, and specialized extension services will be eliminated, over 60 percent of current Ministry nursery services staff levels, a significant downsizing to anyone's standard.

PRIVATIZING

It is not my intent to explore the issue of competition between or the relative efficiency of government versus private nurseries. Thomas Landis presented an excellent paper on that subject at the Intermountain Nursery Association meeting in Oklahoma last year. All of his definitions and most of his commentary are relevant to the experience in British Columbia.

The single major distinction is that, in B.C., the Crown owns 95 percent of the forest land base. Until September 1987, our policy was that the landowner (i.e., the Crown) was ultimately responsible for the cost of reforestation, regardless of who managed or harvested the trees under license.

Under that philosophy, the Crown supplied planting stock for all reforestation on its lands at no cost to the licensee. From 1928 to 1979, such stock was only produced in nurseries operated by the Crown. From 1980 to 1987, as I

previously indicated, private nurseries were encouraged to participate in seedling production for Crown land reforestation under appropriate contractual agreements; the Crown continued to supply such stock at no cost to the licensee until this year.

A major policy change - one could almost say revolutionary change, since it discarded a policy that had stood for 60 years - occurred in September 1987. The government, with supporting legislation, made the licensees solely responsible for all costs of silviculture, including costs of reforestation and planting stock on all areas harvested by forest licensees after October 1, 1987. This policy change effectively shifted the burden from the Crown to the licensees. It also freed the licensees to spend their money as they saw fit to achieve the silviculture objectives set out in their approved pre-harvest silviculture prescriptions. In reforestation work, this meant they could grow their trees in their own nursery, buy them, or contract to have them grown in a commercial nursery of their own choosing. They could also purchase or order them from a Ministry facility; however, this last option was discouraged except where bareroot seedlings or specialty container-transplant stocks were required, since the Ministry was initiating the parallel process of privatizing Ministry nurseries.

The major shift in policy meant that total Ministry capacity would, within five years, exceed the Ministry's internal need for seedlings to reforest on forest lands which were not licensee responsibility (such as wild fire and small business program harvest areas still managed by the Crown). The incentive was thereby created to either privatize or close most of the Ministry nursery capacity, preferably while economically viable units could be incorporated into the expending private sector market for tree seedlings.

Consequently, one nursery has already been sold, six more are scheduled to be transferred to private ownership within the next month or so to a consortium led by Charlie Johnson, past Director of our Silviculture Branch. Two more nurseries will likely be on the market in early 1989, or will be designated for alternate land use. Only two nurseries, Surrey and Skimikin, will remain to provide some of the Ministry's internal requirements for reforestation on Crown owned and managed forest lands, and to permit continued experimentation with new nursery techniques, improvements in technology and automation.

The Government of British Columbia provided generous early retirement packages which not only facilitated the process of staff downsizing but removed, by volunteer decision, most of the middle and senior management people who might have most resisted the proposed changes in policy. The Government facilitated the process

of employee participation in the purchase of privatized facilities by freely providing financial and business planning services to develop the required proposals.

The Government passed Draconian legislation that forced the transfer of responsibility for reforestation to the forestry industry, but it then eased the impact by providing a 5 year phasing-over period for implementation. By judicious use of such measures as honey to sweeten the medicine, the Government of British Columbia achieved its triple objective of privatization, downsizing and transfer of responsibilities to the private sector with a minimum of disruption, employee dissension or public resistance to the radical changes in government policies.

The triple-edged sword of privatization, early retirement incentive plans, and radical changes in Forest Service policy on silviculture has changed the world within which Ministry nurseries function and the role which they will be expected to play in future, whether operated as public or private businesses.

MECHANIZING AND AUTOMIZING

From the mid 1960's when seedling production first was increased in a major way through to the present time, a critical emphasis has been to keep costs and manpower requirements in check, by increased mechanization, automation, and employee productivity':

In bareroot sowing, we went from manual broadcast sowing to random drill sowing to species-specific precision sowing standards with specialized seeders. We went from manual lift to Grayco lifters to Fobro lifters to integrated lifter-combines with large bin trailer processing, in association with cold-storage sorting area complexes. We solved the problems of lateral pruning with species-specific procedures; and were working to operational solve the problem of cross-bed pruning in bareroot seed beds. However, even faster than we improved our techniques for bareroot seedling production, we were converting to container-seedling production. The opportunities for cost and labour savings by automation and mechanization were even greater. Productivity per employee was much higher and improvements were easier to achieve.

We have already begun development of a prototype automatic extraction machine for container-type seedlings. I confidently expect we will see a fully automated container processing line in operational use within three years, capable of extraction, grading, counting, bundling, wrapping and packaging into cartons as a single integrated operation, with only one or two people required to process 10 million seedlings.

THE NEXT DECADE

What are my other predictions for the next 10-12 years? Based on the past 12 years experience, my first prediction is that almost all the other predictions I make will be wrong.

I believe we may have too many eggs in one basket with the current overwhelming reliance on container-stock types. The potential for biological and environmental disaster is extreme in a system that lacks buffer or resilience to adverse influences. A return to significant production of large bareroot or container transplant stock types seems a reasonable possibility, particularly on sites where prompt establishment of "free growing" plantations is essential for planned rotational growth.

The monopolistic nature of material supplies in container production should be of real concern to all seedling producers - investigation of alternative suitable growing mediums and cost-competitive container structures should be given high priority.

I believe we will also see a major increase in use of local nursery seedling production for hot lift planting in all seasons, avoiding the need for cold storage or long-distance transport logistical planning. The emergence of large 3 to 4 year old planting stock for crop-tree establishment may prove to be a viable economic option in concert with local nursery utilization, along with pre-conditioning of stock prior to shipment to the planting site.

I am sure that forest management firms, freed from the "dead hand" of government, are going to come up with innovative concepts in silviculture and reforestation, perhaps even invalidating the current high reliance on reforestation with nursery grown planting stock, to achieve the objective of "free growing" plantations for which they are responsible to achieve in their approved silviculture plans.

I believe the next decade will see the further development and strengthening of a healthy viable private nursery industry with competent management and technical staff producing superior quality planting stock to meet the site-specific requirements demanded by the forest industry. I believe there will also be a winnowing out of some "weak" nursery operations due to the pressures of competition or the unplanned risks of environmental disasters with which private enterprises unhappily must contend. I believe there will be development of horizontally integrated companies providing all silvicultural services from cone collection, seed processing, seedling production, planting to plantation maintenance, in the same manner that contract loggers provide "stump to dump" services for the large forest companies.

For those who can stay the course, there will be rewards, both financially and in

personal satisfactions. This is a great business to be in, even when the greenhouse gets too damned hot.

In conclusion, there may be meaning to that strange topic phrase "the Izing of Privatization", if the word is spelled I-c-i-n-g. The newest consortium of entrepreneurs operating privatized government nurseries reputedly have outstanding managerial, technical and operational capabilities.

If they are as efficient, technically competent, and informed on all biological issues of seedling production and quality control as they have indicated to the present commercial nurserymen, then the "icing of privatization" will be the incredibly profitable nursery operations they will establish, and the wealth they will individually and collectively accumulate in the years to come by being successful entrepreneurs, to the betterment of all of us residing in British Columbia, depending on the forest resources for our livelihood.