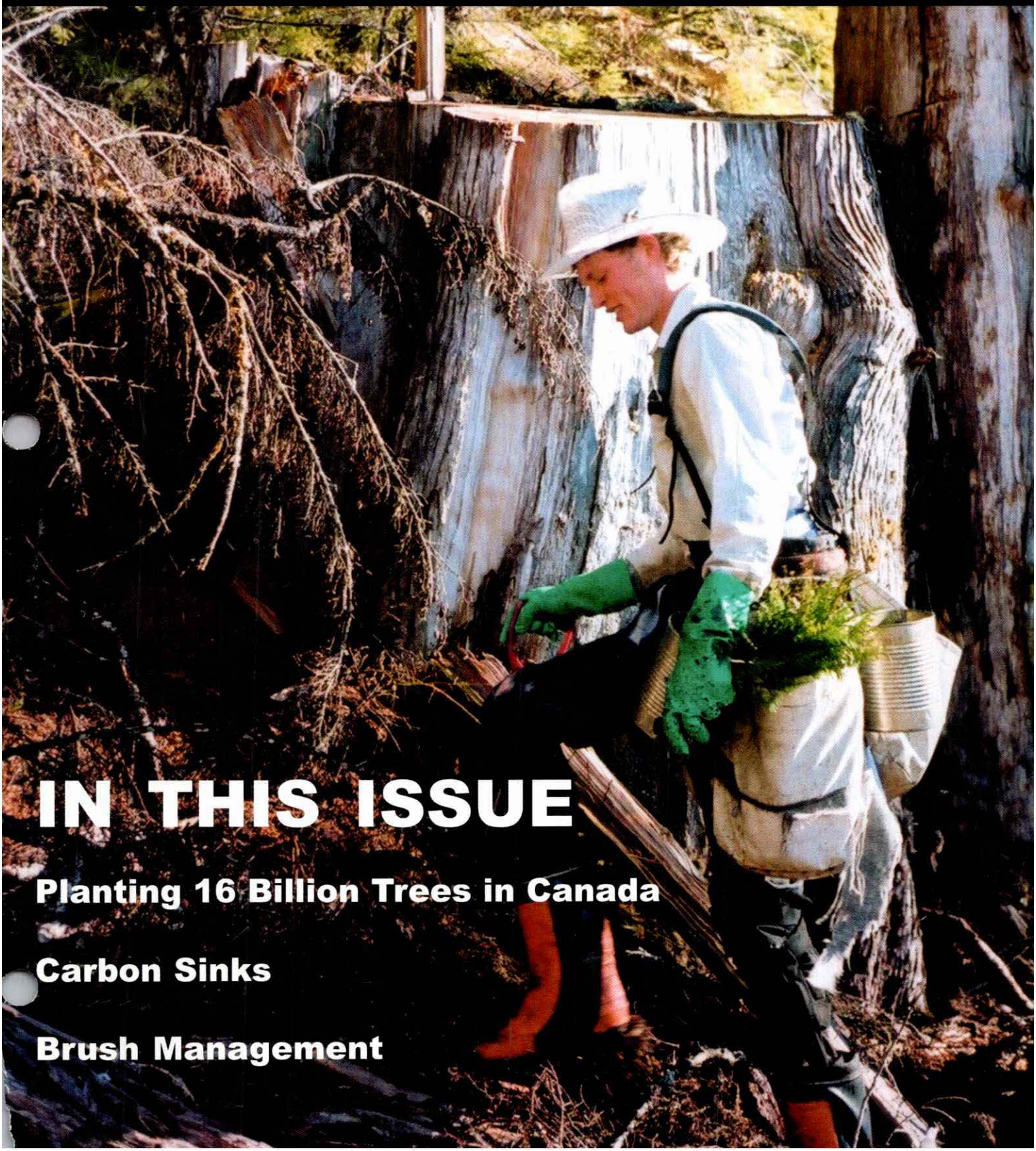
CANADIAN
SILVICULTURE
Fall 2001



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Planting 16 Billion Trees in Canada

Carbon Sinks

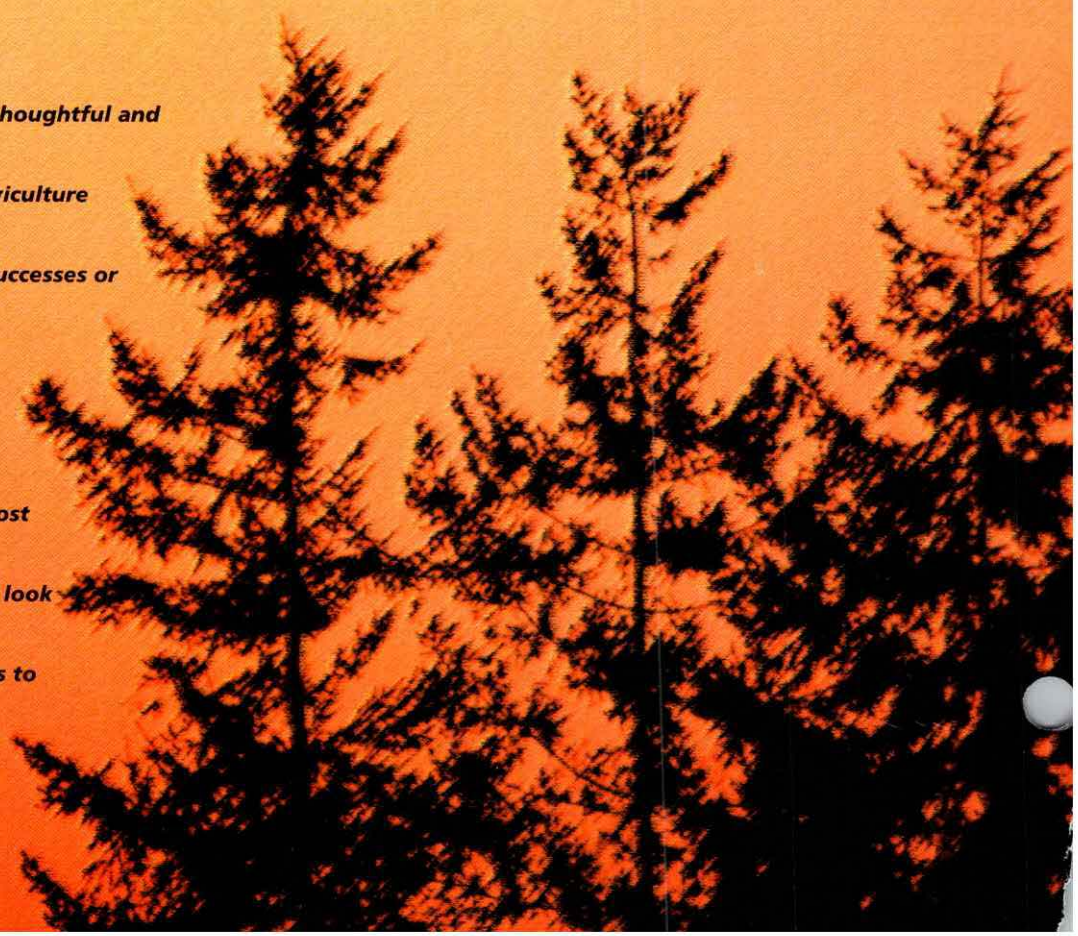
Brush Management

Welcome to CANADIAN SILVICULTURE

At Canadian Silviculture, we are very pleased to bring the magazine back to the industry after four years. Much has changed in that time but in many respects, things have also stayed the same.

As Canada gets set to celebrate the planting of 16 billion trees across this vast country, it is a time for the silviculture industry to be very proud.

We look forward to bringing a thoughtful and insightful publication to the silviculture industry. Whether celebrating successes or looking at ways to improve, Canadian Silviculture Magazine will provide readers with the most detailed coverage available. We look forward to serving you for years to come.



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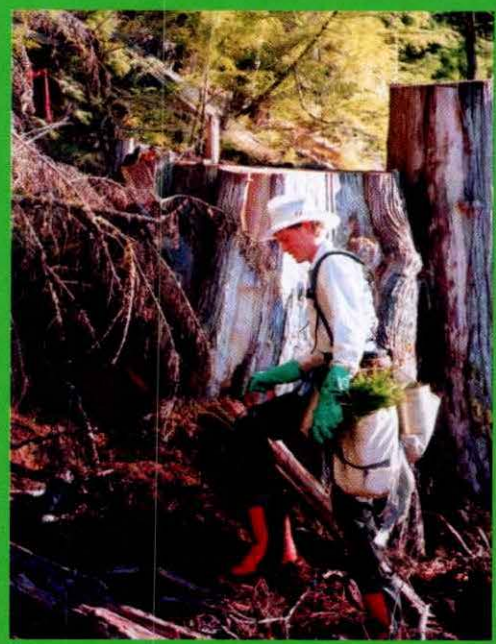

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Dirk Brinkman, Editor

The Way of the Free Market

"Governing a large country
Is like frying a small fish.
You spoil it with too much poking."

Lao Tzu, an obscure Chinese bureaucrat from 500 BC in his Tao Te Ching.

While silviculture practices are thousands of years old, in Canada the silviculture industry is only about thirty years old. Like most market sectors, the factors driving opportunities, problems and prices are too interlinked to permit it to be predictable. But like all classic chaos systems, silviculture exhibits coherent patterns and runs in a broad direction. Its watershed, slope and weather trends can be assessed, and like all economic systems, influenced.

Beginning in 1978 with the Pacific Reforestation Workers Association Newsletter, then through the Western Silviculture Contractors Association Newsletter in 1982, and in 1993 through the Canadian Silviculture Magazine (CSM), this editor has played a role in giving industry associations a voice. Since the last edition in the fall of 1997, the CSM has been silent. We are proud now to re-launch the Canadian Silviculture Magazine, with new mast-head, more color, and through EMC, a professional publishing company, a renewed voice with which to influence, predict and report silviculture in Canada.

Historically, silviculture funding flowed from mountains of government policy and regulation, but trends towards reducing regulation, and privatizing and linking the forest sector to free markets are changing the sources of funding.

The silviculture industry started with provincial agencies procuring contract services through low bid auctions. In the last fifteen years, provincial governments have transferred most silviculture responsibilities to industry through regulatory obligations. The remaining provincial procurement tends towards Requests For Proposal, including quality of service in procurement decisions along with price.

Forest companies and private land managers prefer to directly purchase silviculture services from one or a select group of preferred contractors resulting in stable business relationships and continuous improvement in quality. As a result, the time to reach free growing has declined in all ecosystems and growth in stands that have benefited from silviculture interventions have outperformed growth and yield projections by 30% and rising.

The initially fractured silviculture industry of one to two thousand contractors and over one hundred nurseries who emerged to compete for about three quarters of a billion dollars in service contracts have succeeded in raising the industry's initially low entry barriers though improved service quality and a degree of corporate concentration.

Project size has increased from five thousand dollars to two hundred thousand dollars, with individual contracts as large as two million dollars. Contracts tend to be let under larger, more integrated and longer term agreements which permit the development of service improvement and operational efficiencies.

Over 40% of the national silviculture dollars are expended in BC alone, where the highest forest value per hectare is found, with another 10% in Alberta. BC also has the greatest ecosystem diversity of any jurisdiction in the developed world. The concentration of over 50% of Canada's silviculture in the richer and more diverse western forests has formented both intense competition and continuous innovation.

The higher proportion of private land in the east, especially in the Maritimes, has resulted in silviculture practices being rationalized virtually out of existence by free market forces. Free market is the language for the direction for silviculture in the west. What does that mean?

The return on investment from natural processes is (s)low compared with th high returns required from business investments. Business has to hurdle high taxes on profits before seeing returns. To avoid the unnatural effect of 'free'(read taxed) market economics mining our renewable forest resources, provincial governments introduced regulations based on the economics of intergenerational equity. By viewing reforestation as a forest asset replacement cost of the harvest, instead of a future investment, governments made industry responsible for reforestation. Privatizing the responsibility for regeneration has resulted in all areas harvested being reforested, at lower costs and to great effect. Tending of crown managed forest stands across Canada remains a provincial responsibility badly underfunded, and in need of similar sustainable economic reform.

Revenue Canada treats forest owners as businesses, instead of as farmers. Canada's new Forest 2020 accord intend to create up to 8 million hectares in new plantations, enough to supply over 20%

of Canada's current timber volume and allow further natural forest preservation. This requires removing tax deterrents to afforestation and stewardship of private forestland in Canada.

Canada lies north of the Return On Investment (ROI) latitude, below which growth in plantation value offers reasonable rates of return after tax, establishment and tending costs. Canada has, however, secured the right to sink carbon emissions into millions of hectares of plantations, both to offset forest depletion from building roads or development, and for meeting up to 15% of its emission reduction requirements. It remains to be seen how far north of the 44th parallel carbon credit sales, combined with tax reform, can move the ROI Latitude and whether Canada will join the rest of the world in increasing the rate of plantation establishment.

BC's forest sector has had a decade of social engineering, regulatory burdening and new market interventions, capped by the grand-daddy of social engineering, FRBC. These have put BC's once mighty forest sector at risk, showing average returns on capital employed of less than 4% over the past 10 years. BC's new government's commitment is to let the Tao of the free market find the way of getting the highest value from its public forestland base. The new government has begun to strip off old policy with a goal of linking the industry with the free market, including removing obligations to:

- funnel wood through the local mill (breaking the social contract with local community)
- undertake minimum harvests during uneconomic market down-cycles (breaking government's entitlement to guaranteed annual stumpage fees)
- pay fixed stumpage despite the current market
- give back 5% of the volume if the licence is sold
- comply with environmental regulations through a collaborative industry/ government approval process
- pay 'superstumpage' to fund Forest Renewal BC

So in a free market, why do we still need a forest ministry?* The answer the BC Minister gives is still a balance of protecting and managing the forest asset and maximizing public revenue from that asset. To maximize revenues, government policies have to create a leading edge forest industry that is recognized around the world for its production and its environmental stewardship.

In the past century, environmental stewardship in the form of silviculture was driven by public forest management concerns translated into government policy, either as regulatory industry requirements to reforest or through an allocation of federal and/or provincial funds. In this century concerned citizens have realized that they only vote for governments once every four years, but they can vote for sustainable forest management every time they choose whose forest products to buy.

For now, Canada faces continuing problems if we are to remain world leaders in natural forest management.

Purchaser voting began with boycotts, evolved into certification and is now driving companies to address public and international environmental concerns to recover or secure market share. In 1999, MB committed to replace all coastal clear cutting with variable retention logging within five years without government pressure. This commitment is being honoured by its new owners, Weyerhaeuser. This spring, coastal licensees entered a mid-coast accord with Greenpeace and the Sierra Club to stop logging portions of the Great Bear Rain Forest and use only, still-to-be-defined ecological logging in the rest. All certification systems include a requirement to replace the stand as a cost of the harvest.

The combined effect of industry initiatives, provincial deregulation, and international trade and environment regulations will bring about some new directions in silviculture in BC.

For BC to capture international market-share for its ecologically sustainable forest management, it will have to solve the inter-generational problems of funding tending. The following initiatives will all combine to create new directions in Canadian silviculture:

- provincial regulatory changes to permanently eliminate the US countervail
- forest management certification and innovative responses by industry to customer driven environmental stewardship requirements
- Canada's negotiated right at Bonn to sink 20 megatonnes of carbon into agro-afforestation
- planned federal tax and regulatory adjustments to level the playing field between farm and plantation investments

While silviculture's new directions may not be predictable, the need for Canadian Silviculture Magazine is predictable. This industry magazine looks forward to once again being the silviculture industry's voice influencing outcomes in ways that are positive for Canada's forests and its forest people.

**The new Minister of Forests, the Honourable Mike De Jong's answers to the 'core' questions of the government's review in his televised presentation to cabinet are available on the internet at* http://www.gov.bc.ca/prem/popt/cabinet/playback_videooct_24.htm

Publisher's Notes

We are excited to present the first issue of the revitalized Canadian Silviculture magazine. We look forward to working with industry professionals to bring you the latest news in the Silviculture industry and ask your help in keeping us informed of newsworthy items. Press releases and articles should be sent to silviculture@emcmarketing.com.

Your first issue of the magazine is complimentary. You can subscribe to the quarterly magazine for an annual fee of $20.00 & GST for members and $30.00 & GST for non-members. Subscribe on-line through our Web site at www.emcmarketing.com/silviculture, send an e-mail to silviculture @emcmarketing.com, fax us at 604-574-2196 or call us at 604-574-4577. Past subscribers to the magazine will be happy to know that we have records from the previous publisher showing how many issues you paid for and we will be honouring any outstanding subscriptions. However, please contact us in order to reactivate your subscription.

In this issue, we are celebrating 16 billion trees that have been planted in Canada over the past century. Generations of silviculture contractors have planted these trees and future generations will be planting the next billions. No doubt, the techniques and technology used to do that will continue to change and we look forward to bringing you the latest innovations in the industry.

Joyce Hayne, Publisher

PLANTING 16 BILLION TREES IN CANADA

By Dirk Brinkman

Over the past century Canada has been known as a forest nation. In its last decades Canada's forest wilderness image was tainted by charges that its forest practices were not ecologically sustainable.

While sustainable forest ecosystem management (SFEM) is much more than planting trees, early tree planting was an essential step towards SFEM and reforestation has evolved, over the past century, into an integral part of SFEM throughout Canada.

When early in this past century, a few visionary Canadians began to plant trees, it was in order to restore and sustain some of Canada's precious forest species. Over the decades, the reforestation program gradually grew to include all species, becoming more ecologically appropriate as well as more effective at getting the mixed species plantations to free growing.

Each province and territory has its own reforestation specialists including foresters, forestry technicians, nursery growers, contractors and workers. Many of these heroes have been unsung, because many provinces do not keep a public record, nor has anyone compiled the historical silviculture statistics for Canada. Yvan Hardy, Assistant Deputy Minister of Natural Resources Canada requested that we provide him with this number, so that appropriate acknowledgement and celebration could be scheduled into the fabric of Canada's forest management life.

The Data

In the past century Canada's silviculture practitioners have planted 16 billion trees. The total number of trees for which we

were able to compile records to the year 2000 was 15,993,297,199, however, there is certainly data missing which would probably add more than 7 million trees to this total. Each year, Canada's unique national silviculture industry grows, plants and tends on the order of 640 million seedlings on approximately 600 thousand hectares.

The numbers for Canada are totalled from those independently developed by each of the provinces and territories. The numbers are mostly a bit less than the totals reported in various federal annual reports. It is our understanding that this is because in some years the total trees reported in federal reports were derived from provincial numbers of seedlings grown at the nursery or available for shipping, not the number planted, and that the federal numbers include estimates for seedlings planted on private land but not reported directly. This report chose to use the more conservative numbers where given a choice, to give unqualified assurance to anyone sharing the celebration of any regional or national achievements, that the celebrated number has been fully and completely hurdled.

As we enter the new millennium, approximately one out of every 25 trees in Canada are a product of artificial reforestation.

Following are also the number of trees planted annually for each province or territory from which the national totals were derived. In some cases there are some minor discrepancies or gaps, especially with the early data, as records have different terms of reference, and some may have been lost.

Because the national numbers are derived from the provincial and territorial totals, they share the minor issues or discrepancies.

Canada is planting trees at a pace that reduces the incremental significance of identifying some further small planting programs from nearly a century ago, or of small additional programs within the provinces. However, if readers of this report note areas where

Tree planter Rodney Bernier, celebrating his personal two-millionth tree planted.

numbers can be corrected or added to at a later date, this data will be updated, and, with the Natural Resources Canada's permission, be posted to the Canadian Silviculture Association or its magazine, Canadian Silviculture, along with other national silviculture data.

A Cause for Concern and Celebration

Growth and survival records suggest that over 80% of these trees have or will reach free growing—that is, they will grow to be taller than the brush and herbaceous vegetation on that site. This means that approximately 12 billion of the trees planted by Canadians can reasonably be assumed to grow to become a part of Canada's maturing forest ecosystems. As we enter the new millennium, approximately one out of every 25 trees in Canada is a product of artificial reforestation.

Considering the extent of direct seeding, manual thinning of dense naturally regenerated stands selecting for desirable leave trees, and site preparation to induce seed germination, an increasing portion of Canada's wilderness forests are the product of the designed beneficial interventions by silviculture professionals. This is both a cause for concern and celebration.

This is a cause for concern, because some of the areas reforested in the past century were neither with species native to the local ecosystem, nor were these plantations tended in ways that favoured the appropriate species on those ecosystems. These concerns have fuelled cynicism in environmental organizations both in Canada and in Canada's markets.

This is a cause for celebration because increasingly, Canada's reforestation program replicates the original species mosaic, increasing wildlife habitat and ecosystem functions. Canada's reforestation programs are emerging as an integral part of the sustainable management of the country's forest ecosystems.

Entering Canada's new forest century and western civilization's new (potentially more environmental) millennium is a time to reflect on and celebrate the milestones on our path to sustainability. The milestones recognized in this review are simply occasions of hurdling familiar decimal points in our civilization's numerical system. They are only important as occasions to remember, recognize and acknowledge the people who have dedicated their lives, and celebrating the degree to which they have made forest ecosystem management sustainable in Canada. While the degree of SFEM currently practiced in Canada depends on your point of reference, no matter what point of reference is used, Canada leads the world in SFEM.

Canada's Unique Sustainable Forest Ecosystem Management

Canada deserves to be recognized internationally for ensuring that not only nearly every area harvested is reforested, either naturally or through tree planting or seeding, but also:

- areas of uneconomic agricultural land and wildfire or pest damaged areas that have not reforested naturally are planted
- that reforestation is with native species, mixed to recreate healthy local forest ecosystems, taking into account the natural regeneration of some species, by planting the difficult-to-regenerate species, and finally
- that Canada is engaged in one of the world's largest forest ecosystem restoration programs, as opposed to reforestation with monoculture plantations, the predominant model in many other countries.

The unprecedented character and forest ecosystem integrity of this national program emerged from a cauldron of criticism from ENGO's and professional problem solving and creativity by Canada's silviculture practioners. Canada's SFEM is world class and globally unique and will continue to define sustainable forest ecosystem management internationally for decades.

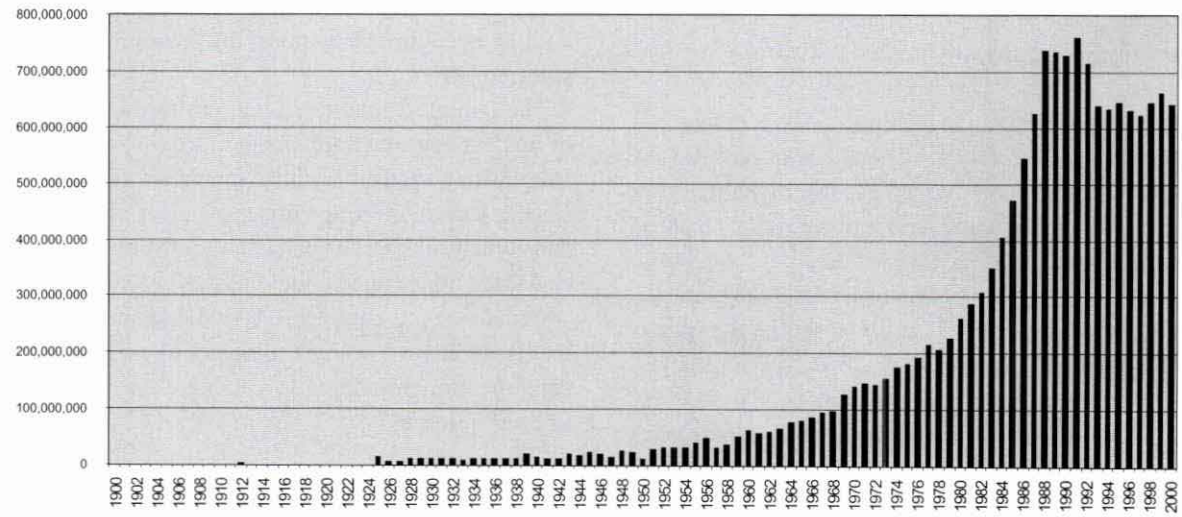
Canada has to continue the challenge and internal dialogue that is leading it towards ecological forest sustainability in this century through helping to celebrate the achievements of its unsung heros.

Dirk Brinkman is the President of Brinkman & Associates Ltd. This study was done on behalf of the Canadian Silviculture Association.

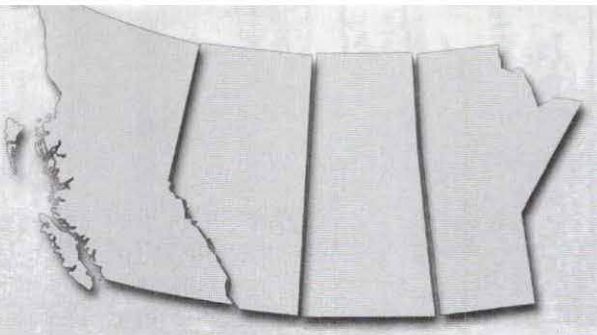
CANADA

Total Trees Planted: 15,993,297,199

Year	Trees Planted	Year	Trees Planted	Year	Trees Planted	Year	Trees Planted
2000	641,794,167	1975	181,613,405	1950	10,832,000	1913-1925	13,100,000
1999	661,825,486	1974	175,379,696	1949	23,132,807	1905-1912	1,480,000
1998	643,814,693	1973	154,459,597	1948	25,381,970		
1997	623,002,891	1972	142,283,046	1947	14,565,176		
1996	631,384,611	1971	145,766,071	1946	20,364,223		
1995	644,352,299	1970	141,059,451	1945	22,625,875		
1994	633,967,991	1969	127,005,860	1944	18,128,156		
1993	639,657,272	1968	98,539,118	1943	19,888,554		
1992	713,417,882	1967	93,298,890	1942	12,040,442		
1991	760,668,904	1966	86,868,281	1941	12,463,287		
1990	729,665,362	1965	79,003,924	1940	13,779,224		
1989	735,280,671	1964	77,619,538	1939	19,931,000		
1988	736,284,384	1963	66,464,169	1938	12,416,425		
1987	626,260,034	1962	61,019,691	1937	11,323,000		
1986	543,392,254	1961	56,894,833	1936	10,184,000		
1985	470,274,202	1960	64,313,532	1935	10,750,000		
1984	405,446,603	1959	51,652,170	1934	10,341,000		
1983	470,274,202	1958	38,422,235	1933	9,440,000		
1982	405,446,603	1957	30,184,022	1932	10,365,000		
1981	349,901,813	1956	49,466,062	1931	11,810,000		
1980	306,160,502	1955	39,118,533	1930	11,140,000		
1979	286,348,453	1954	31,620,358	1929	12,700,000		
1978	259,556,492	1953	30,205,585	1928	11,100,000		
1977	225,248,002	1952	32,600,779	1927	7,100,000		
1976	206,272,490	1951	29,541,298	1926	4,400,000		



Western Silviculture Contractors



By Chris Akehurst, WSCA President 2000-2001

Is it only four years since the last Canadian Silviculture magazine was published?

At that time, in 1997, we were faced with Glen Clark's infamous "Jobs and Timber Accord," and the mandated unionization of the coastal enhanced silviculture workers under the aegis of New Forest Opportunities Ltd. (Newfo). All that now seems to be ancient history as we face a whole new set of challenges, the softwood lumber tariffs, the economic uncertainty after September 11, a broken provincial economy and a government that is going to decimate the civil service.

In the last four years under the leadership of past Presidents Peter Gommerud (1997-1998) and Tony Harrison (1998 –2001), and the Executive Director, John Betts, the Association has matured into fulfilling more of a pro-active role, rather than the merely reactive one it used to perform. This is primarily due to the hiring of John Betts as the Association's first full-time Executive Director. John was relatively new to his job in 1997, and since then he has grown into the position and in the process made the Association a much stronger and more viable organization. Thanks to John's presence, the WSCA is now widely known and recognized as a force in the industry, and an important player on many committees and policy reviews.

I am often asked, "What is the purpose of the WSCA?" In my mind it exists primarily to give us a collective voice as an industry that we would lack as individuals. Secondarily, it acts as an information conduit to inform members of relevant issues. Tony Harrison was fond of using Aidan Vinings quote: "Your Association exists to ensure the well-being of your industry. The most effective way to ensure a healthy industry is to increase the demands of your services while ensuring there are standards that define that service, therefore helping to restrict access from unqualified providers." This adds the idea of standards and professionalism to the mix.

How have we done, with that mandate in mind, over the last four years? A lot of energy was spent fighting some of the ill-conceived policies of the NDP government. The idea of replacing existing silviculture workers with IWA members struck at the very core of the survival of our industry. We tend to forget, but in 1997 the Newfo model was destined for the interior as well. The WSCA was very influential in preventing the spread of this model and was resolute in its opposition to Newfo. (Newfo will be ceasing operations on December 31, 2001).

On the pro-active front, the WSCA approached the Ministry of Labour to design a new set of Employment Standards Regulations that were relevant to our industry. What most contractors didn't realize was that 99% of us were operating outside the law under the old regulations and had an unfunded overtime liability that would have ruined most of us. Under the very able chairmanship of Dan Cahill of the Ministry of Labour, the WSCA and CREWS (Canadian Reforestation Environmental Workers Society) were able to work out a ground-breaking agreement that recognized piece work as a legitimate form of payment, and gave us hours of work provisions that enabled us to avoid the overtime constraints of the old regulation. As contractors, we agreed to adhere to some basic tenets of Employment Standards, such as bi-weekly payrolls, that were not commonly followed in our industry. We are currently working with the Ministry of Labour and CREWS to see that these basic minimum standards are enforced.

We made submissions to Gary Wouter's ill-fated Forest Review and proposed a Forest Trust model as an alternative means (to FRBC) of funding enhanced forestry. More recently we met with the new Minister of Forests, Mike de Jong, and his deputy, Don Wright, to bring the new Government up-to-date on our issues. Also, we are currently submitting some papers on the value of enhanced forestry to the FRBC Core Review process.

We have spent a lot of time exploring the First Nations issues. We have had a number of workshops at our annual conferences on this topic, and John and I spent three days this spring in Williams Lake on an information exchange with aboriginal silviculture contractors. For a while, Shane Wardrobe of the Shuswap Band was one of our Directors.

For those of you who did not attend our conferences over the last few years, you have missed that unique mix of "global" and "nut and bolt" issues that

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have become our trademark. Last year's conference in Prince George was particularly successful. This year's conference is in Victoria, February 6-8, 2002.

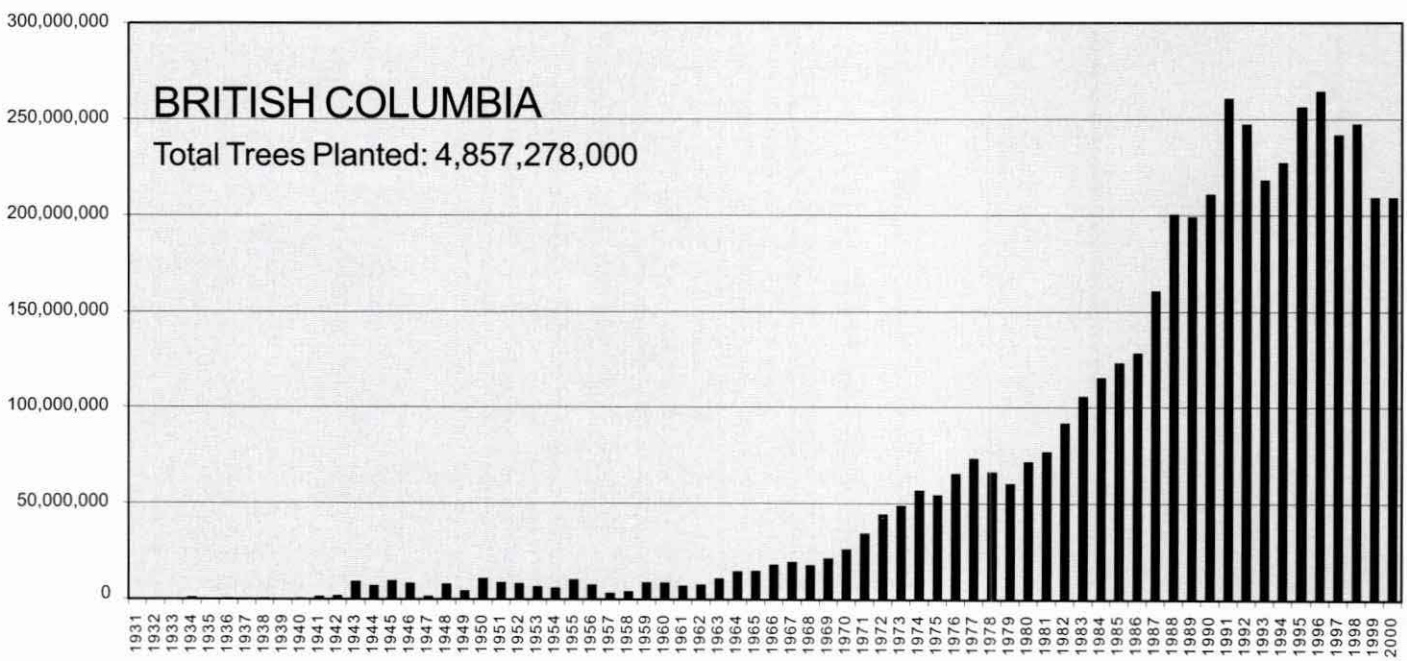
On those "nut and bolt" issues we are in continual dialogue with all the regulatory agencies, especially WCB where we have made submissions on First Aid Regulation Review, the Wildlife Danger Tree, Prime Contractor status, and are exploring a Silviculture Health and Safety Association.

The advent of digital technology has greatly increased our ability to communicate with our members. All our members get emails from John Betts informing them of any regulatory changes and major news stories. John emails his popular monthly column, "The WSCA Rumour Mill" to all members. We also have an active website, www.wsca.com that profiles interesting news items, membership lists, supplier members, etc. Our aim is to update this at least once a month so the site is never stale. Check it out!

All the above actions either increase the demands for our services and/or ensure the well-being of the industry (see Aidan Vining quote). What have we been doing on the harder task of ensuring there are standards that define our service? We started down that road when we approached the Ministry of Labour on the Employment Standards issues. As a result of that initiative, we now have a set of standards that we can all adhere to while still working in our traditional manner.

The Employment Standards work has led us to exploring joint WSCA - Government licensing. Licensing would mean that each silviculture contractor would need a licence to practise. The licence would have a nominal cost and be valid for one year. To get a licence, the contractor would have to show knowledge of the ESA regulations and be financially viable. We have discussed many different scenarios, but the ultimate goal of licensing is for the WSCA to become self-regulatory, where we would be able to guarantee the standards and professionalism of our members. Obviously, we are not there yet, but the licensing partnership with the Ministry of Labour is seen by the directors as one step in the process of becoming a self-regulatory association. At the moment, the licensing proposal has been approved by all the Ministry of Labour civil servants but is stalled at the Minister's desk. The irony here is that the Minister sees this proposal as unnecessary red tape! We'll keep you posted.

As you can see, we have been very



Note: The 40,000 trees noted in 1930 are an estimate of the number of trees planted on 26 ha of the Green Timbers plantation. Numbers given include some of the trees planted on private land, but almost certainly not all.

busy. Many times we have ventured up blind alleys and seem to spin our wheels, going nowhere. However, our presence is there, and every once in a while we get a concrete achievement.

Where do we go from here? There are many difficult issues to deal with, but the WSCA is better positioned than it has been in the past to try and solve them. On the global picture there are still the uncertainties of the whole forest industry that I mentioned in the first paragraph. There is not a lot the association can do there, though a lot of our funding problems on the enhanced side result from the current structure (tenure system) of the industry, and we are putting a position forward on that.

Of the "nuts and bolts" issues that

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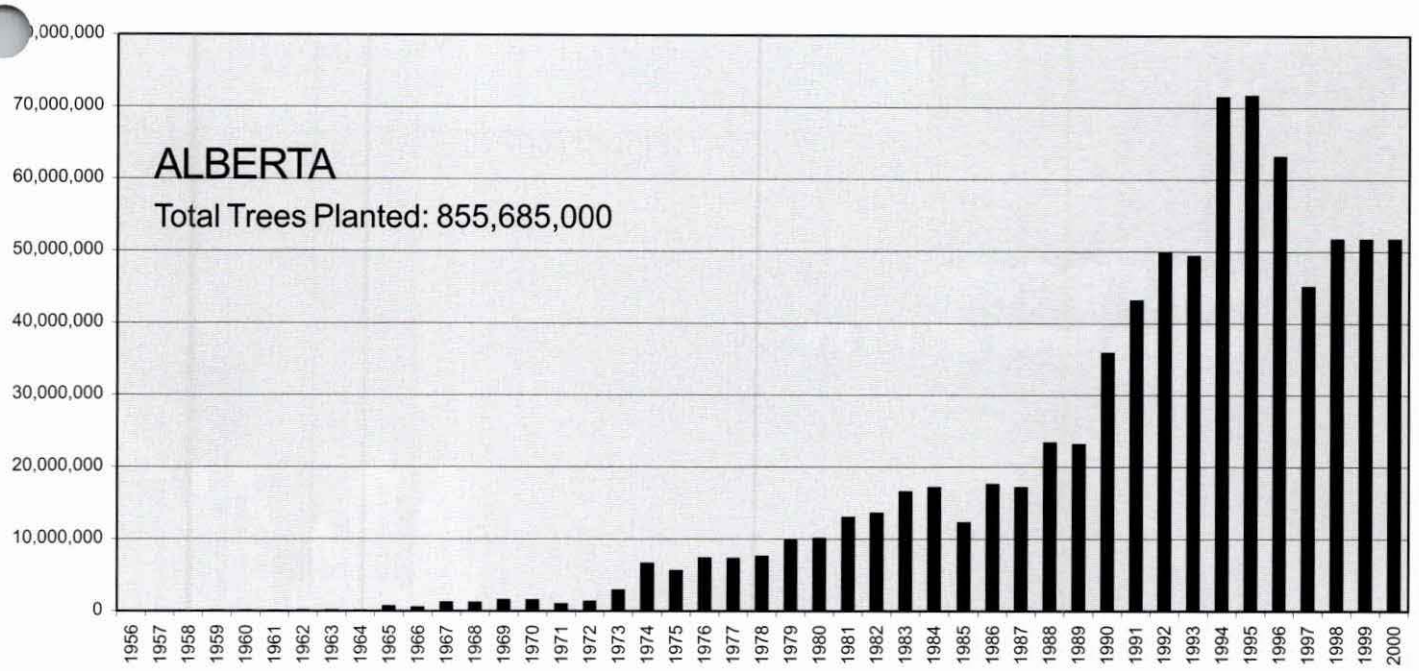

Notes: It is known that some trees were planted in Alberta prior to 1956, including plantations near Hinton, and near Strachan in the late 1940s or early 1950s. The earliest Dominion Forest Service planting trials were done in the 1920s and 1930s in the Kananaskis area related to shelter belts, and it is thought that there was planting going on in the old Cooking Lake Timber Reserve east of Edmonton in the early 30's as well. No estimates of the numbers of trees in these plantations have been included.

The information for the 90s is rough, as a process is currently underway of transferring and converting all of the silviculture records to a new record keeping system. Until the data conversion process is complete a final compilation of the reforestation data cannot be completed. 1999 and 2000 numbers are estimates.

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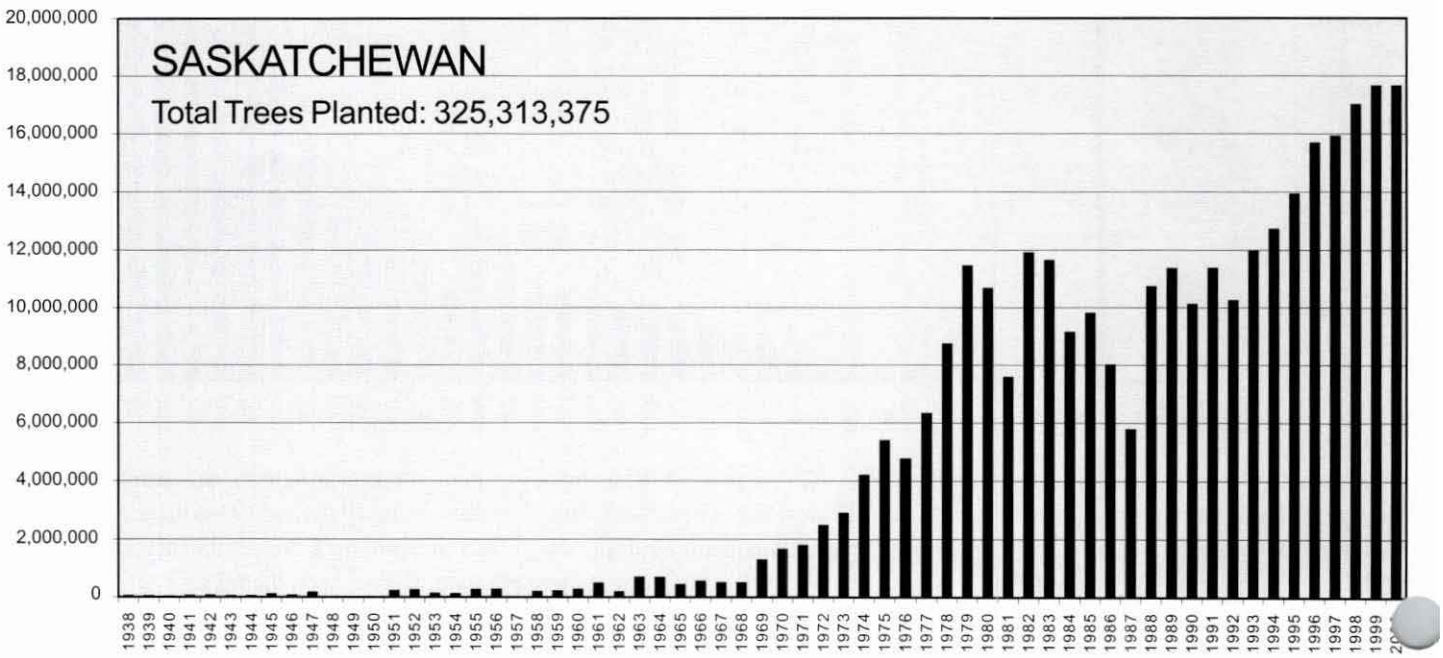
the continuing downward price spiral. Anecdotally, we all know that prices have dropped in the last few years and this was recently confirmed by some WCB statistics which reveal that the average weekly wage in treeplanting has declined 20% since 1996.

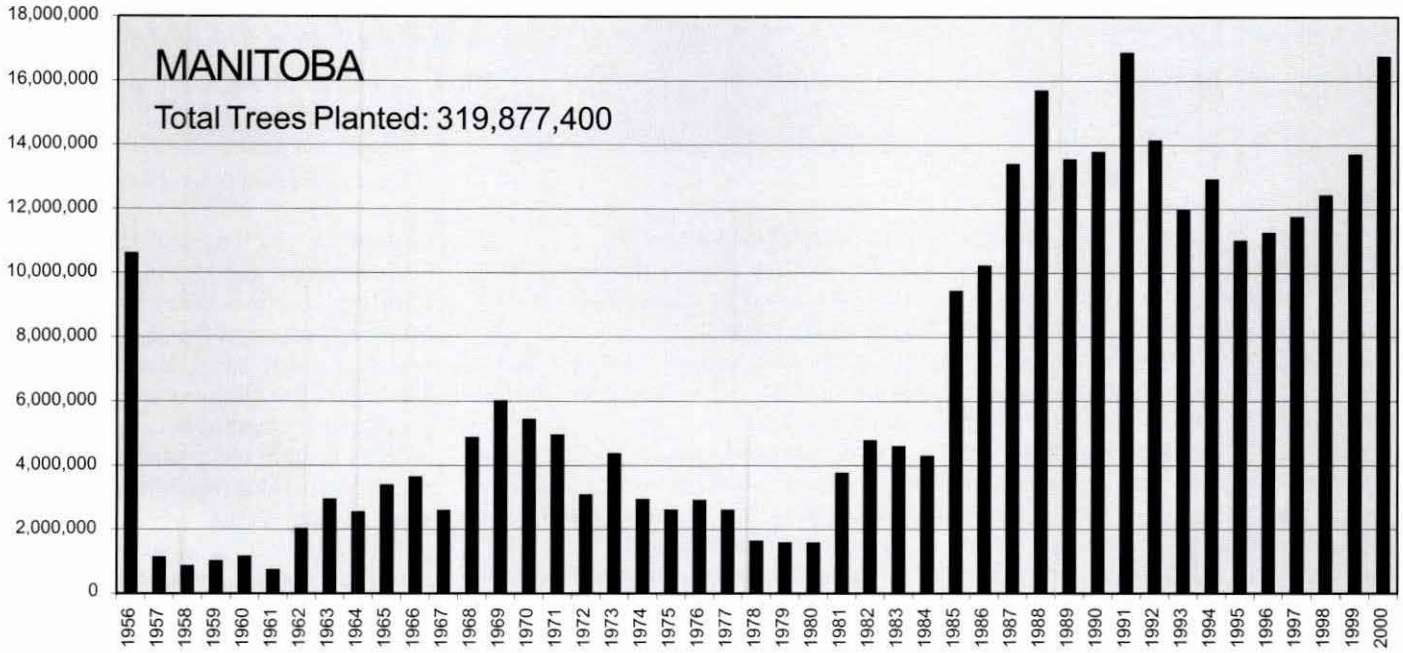
As contractors we are being asked to do more all the time — safety plans, safety meetings, EMS training, Wildlife Danger Tree Certification, micrositing, larger stock, stock management, increased paperwork and constant documentation. I have not even mentioned inflation...How much have gas prices risen? The only change that makes the job easier has been the increase in 'F' layer planting. In this climate it is becoming increasingly hard for rookies to clear minimum wage requirements. We are our own worst enemies in this regard as we foolishly bid down prices to get work. In order to make the whole thing work, some contractors are beginning to cut corners and compromise their product, their employees' safety and right to a decent wage.

It is with issues like this that the Association sees licensing being a positive step where there is a certain basic level (i.e. an adherence to all the laws and regulations that affect us) from which all of us must bid. It's that old level playing field argument again. Free enterprise is about innovation and efficiency, not about having to cut corners to make the job work. Most of our clients are suffering right now and we are under heavy pressure to give on prices. Don't sharpen your pencils so much that you can't do the job properly!!!

I would like to conclude these remarks by welcoming the Canadian Silviculture Magazine back. It has been sorely missed. I am always getting questions about what happened to the magazine and when will it next be published. Well here it is ...Enjoy!



Note: 1938 numbers are believed to include trees planted during 1900 - 1938



Notes: The numbers for 1956 include trees planted between 1931 and 1956. The numbers include planting in Forest Reserves and other crown land (there are no privately owned industrial forests in Manitoba). The numbers do not include unknown amounts of shelter-belt and woodlot trees planted under the PFRA (Prairie Farm Rehabilitation Administration) and the MFA (Manitoba Forestry Association) on the "Tree Train".

Ontario Silviculture Contractors

By John Lawrence and Grant Brodeur

The Ontario Silviculture Contractors Association was most active in the late 1980's and early 1990's when the government was a major player in the silviculture industry both as a deliverer of silviculture treatments and as a regulator of the industry. Since the mid-1990's the government has pursued a less interventionist policy vis-a-vis forest renewal and relied increasingly upon industry self-compliance within the framework of broad legislation governing forest sustainability. For the most part this has led to an increase in forest renewal activity since its collapse in the early nineties. Despite this recovery, the silviculture market remains exceptionally tight, driven primarily by relatively low yields (as compared to parts of Alberta and B.C.) at harvest and the cyclical nature of the forest products industry. Moreover, while there are some pockets of intensive silviculture in the province, basic silviculture in the form of tree planting remains the primary forest restoration, maintenance or enhancement activity.

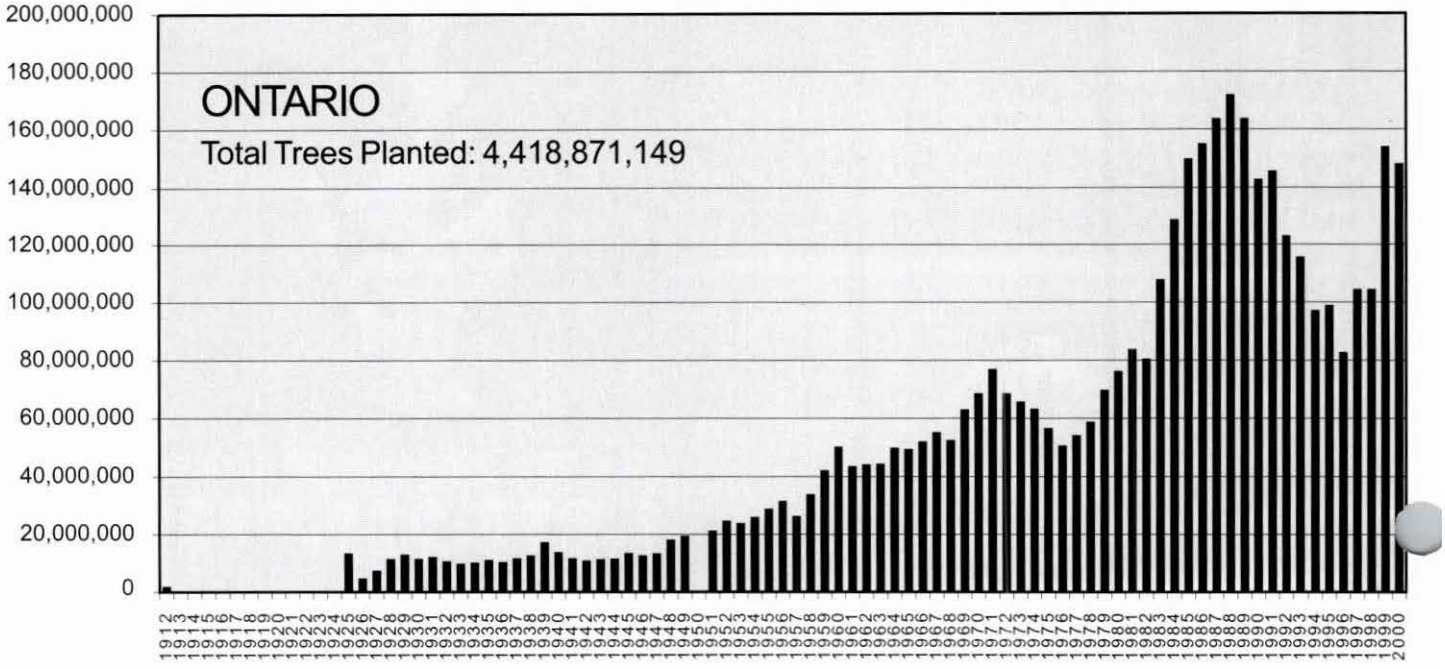
The many challenges, developing over the last several years, now facing contractors include:

- an increase in winter harvests and a reduction in all-weather access to treatment areas
- an increased reliance upon natural regeneration and fill-planting
- a reduction in mechanical site preparation prior to planting
- an increase in compliance requirements and accountability
- an increase in the number of forest product companies actively involved in, or pursuing, ISO and FSC registration as well as various EMS strategies.

Since 1999, contractors have reported a marked shortage of experienced planters capable of high productivity with more difficult access and less site preparation. In the past, contractors relied upon new planters learning quickly in the relatively simple scenarios of block access and site preparation in the short 6-8 week season. It is now critical that contractors engage in a rigorous and effective training regime to meet the challenges of fill-planting, difficult access and less site preparation within the same short time frame. Moreover, where in the past contractors would, in many cases, merely show up and begin work, they now must be able to plan and implement a host of programs in order to comply with industry standards and the particular requirements of their forest industry client.

The Ontario Silviculture Contractors have adapted to the changes and survived while continuing to offer some of the best value in silviculture services in the country. At the same time, with the increasing demands in conflict with tightening prices, it is a further challenge to maintain the experienced personnel necessary t operate efficiently and effectively withi the province and the industry.

This report prepared by John Lawrence of Brinkman & Associates Reforestation Ltd. and Grant Brodeur of Broland Enterprises, both former Directors of the Ontario Silviculture Contractors Association.



Association des entrepreneurs de travaux sylvicoles du Québec

Par Monsieur Guy Fortin membre exécutif du comité l'AETSQ

L'AETSQ, association des entrepreneurs des travaux sylvicoles du Québec, a été fondée le 2 février 2000. Sa mission principale est de défendre les intérêts des entrepreneurs en travaux sylvicoles, d'assurer une représentation auprès de divers comités provinciaux et de donner de meilleurs services aux clients. Nous désirons également assurer une viabilité et une stabilité à long terme à nos entreprises.

Les entreprises privées, excluant les membres du regroupement des sociétés sylvicole œuvrant sur forêt privé, le R.E.S.A.M et la conférence des coopérative Forestières, la C.C.F.Q effectuent entre 40 et 50% des travaux au Québec, elles emploient plus de 6000 ouvriers qui effectuent tout près de 80 000 hectares de traitements annuellement.

De plus les membres de l'association se préoccupent profondément des conditions de travail des employés. Plusieurs représentations auprès du gouvernement ont permis de débloquer des fonds importants pour la formation de nouveaux forestiers. L'Association des entrepreneurs des travaux sylvicoles du Québec, siège sur le comité interministériel au développement de la main d'œuvre en aménagement forestier.

Notre prochain congrès provincial et le salon forestier 2002 se tiendra le 14 et 15 février 2002 au centre des congrès de l'hôtel le Montagnais à Chicoutimi sur le thème : « La certification environnementale : l'heure des choix ».

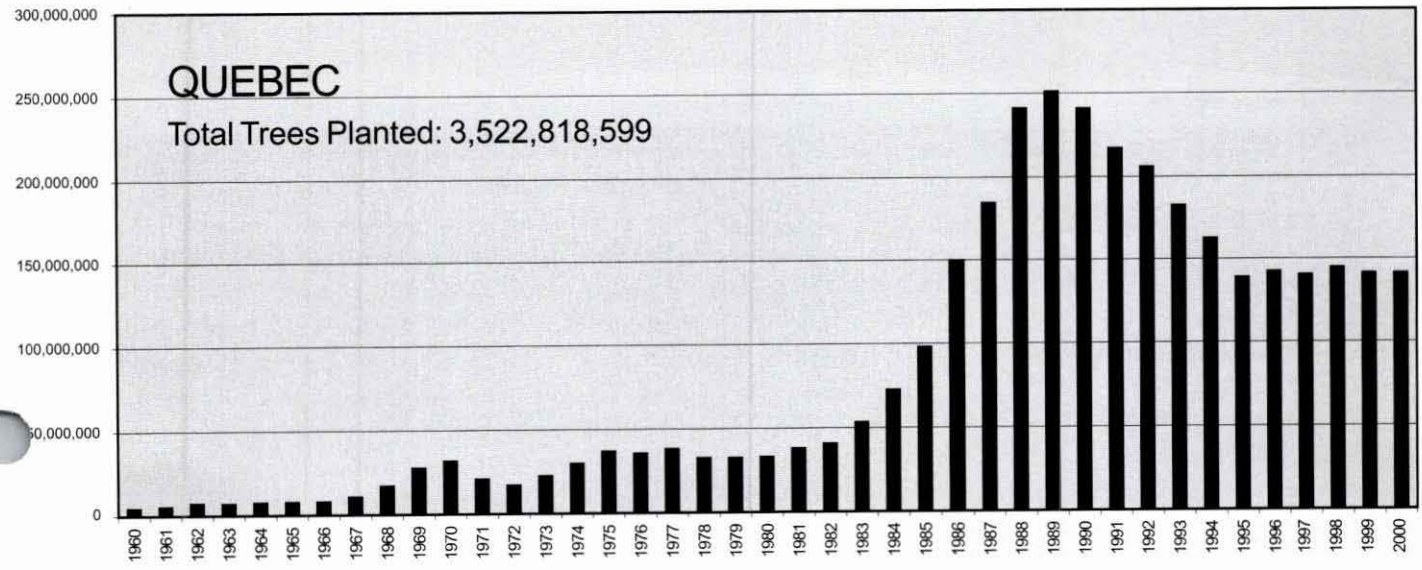
The AETSQ (Association des entrepreneurs de travaux sylvicoles du Québec), founded on February 2, 2000, is an umbrella organization linking 27 forestry service companies throughout Quebec. Its role is to provide mutual support, develop contacts with governmental and other agencies and enhance customer relations, while ensuring long-term stability for companies in the industry.

Private businesses, excluding personnel employed in private forests (RESAM) or forestry co-operatives (CCFQ), account for between 40% and 50% of forestry services in Quebec. They employ more than 6,000 forestry workers and their activities affect almost 80,000 hectares of forest each year.

In addition, the members of the Association take a keen interest in the working conditions of their employees. Numerous submissions to the provincial government have resulted in the release of substantial funds for the training of new forestry workers. The Association is represented on the joint ministerial committee charged with developing forestry manpower.

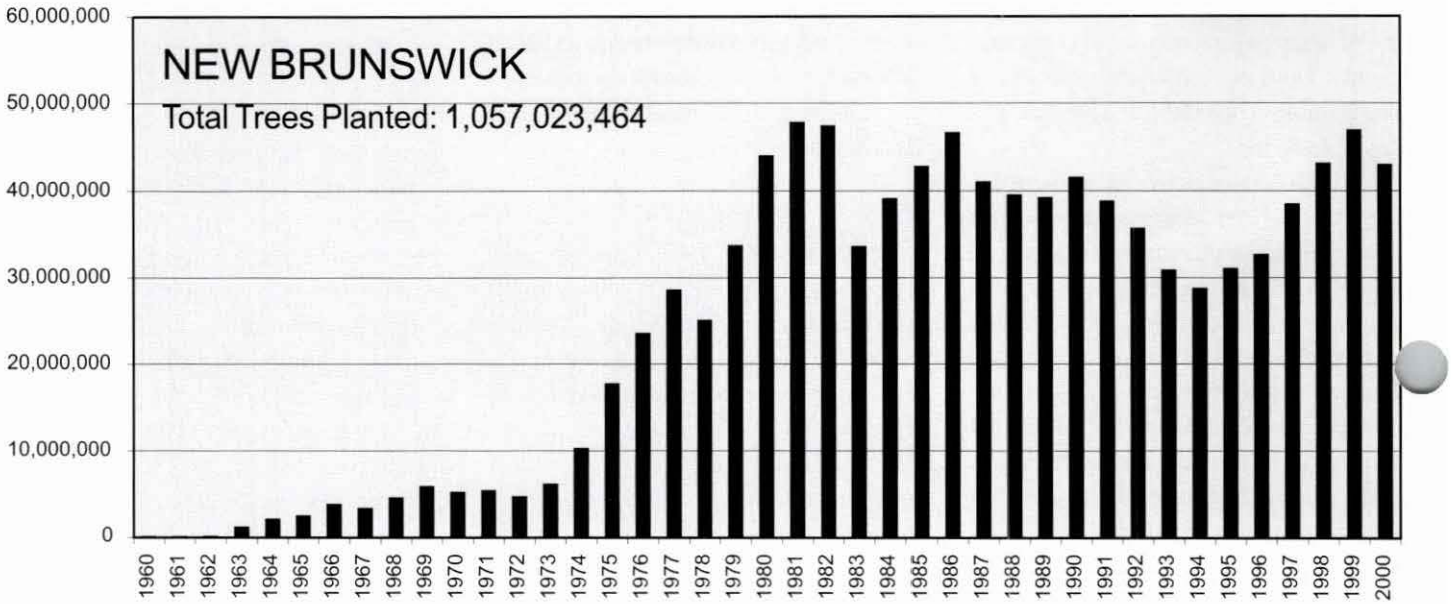
The Association's next provincial conference and forestry exhibit will be held in the Conference Centre of the Montagnais Hotel in Chicoutimi on February 14 and 15, 2002. The theme of the conference will be "Environmental Certification: A Time for Decision".

Mr. Guy Fortin is a member of the Executive Committee of the AETSQ.



New Brunswick Independent Silviculturists Association

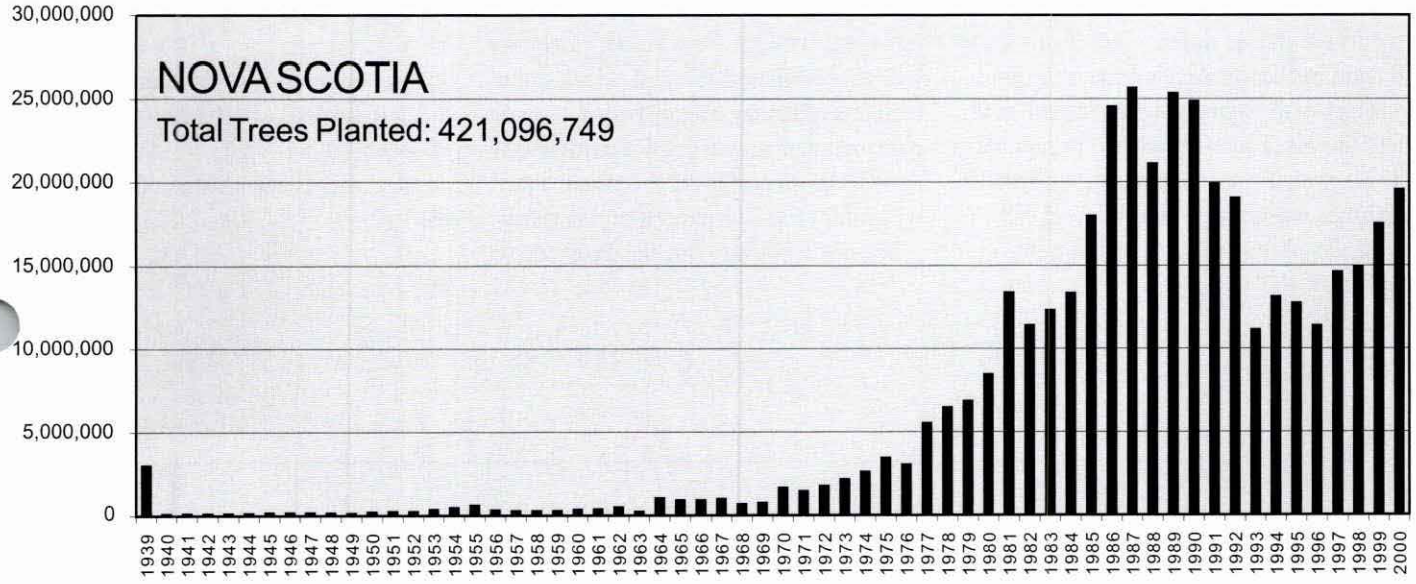
New Brunswick, having recently surpassed one billion trees, has an occasion to celebrate.



Note: Numbers are for the quantities of seedlings planted on Crown, industrial freehold, and private woodlots in New Brunswick. We were not able to determine annual planting levels for private woodlots for the period 1960-1994, only the gross number planted in this period, so the total was distributed evenly across those years, amounting to an average of 29,570 trees per year. There were trees planted for many years before 1960, but no numbers were obtained.

Nova Scotia Silviculture Contractors Association

Nova Scotia will be reaching its 500 millionth tree planted in the next few years.



Note: 1939 numbers include trees planted up to 1939.

Prince Edward Island Forest Improvement Association

By Wanson Hemphill, Manager

Summer has been busy on the Island with strong market demand and fluctuating prices. Market uncertainity over U.S. lumber agreements, Maritime exemptions, anti-dumping and now the terrorist attack has made for many, quick market ups and downs, but harvest levels remain constant.

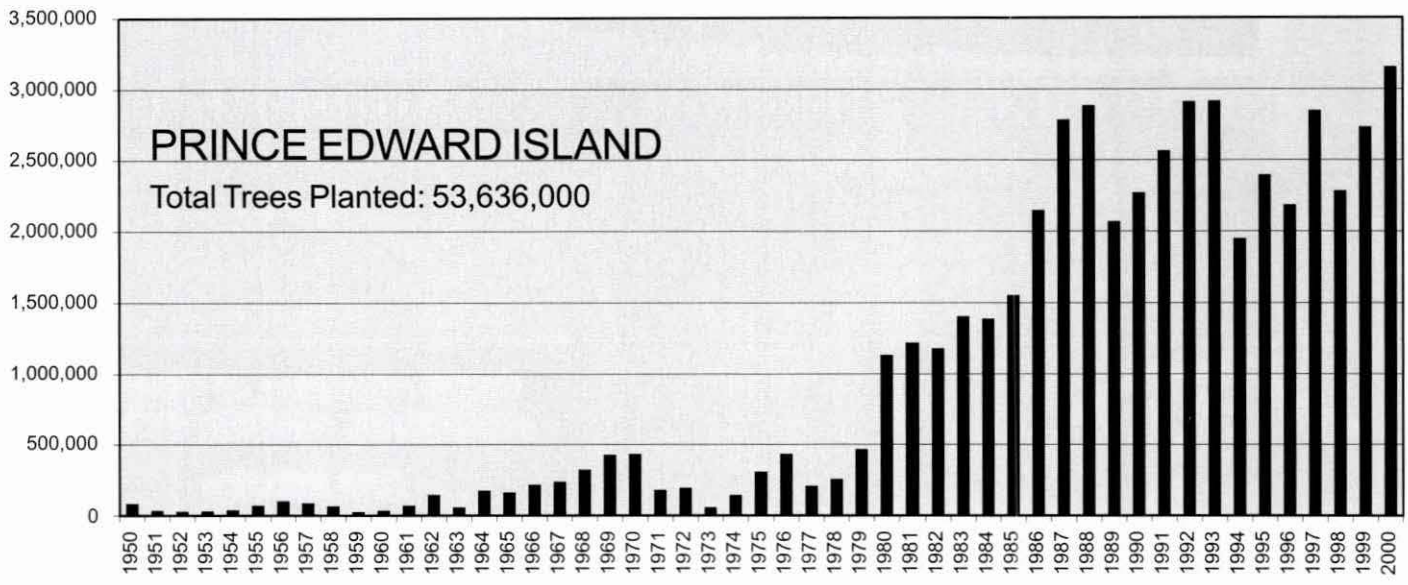
Much of the spring tree planting will now be done this fall due to a record dry summer. There weren't any major forest fires all summer, with just a couple of close calls.

Much of our attention has been on reducing the very high WCB rates of $10.93/$100 payroll plus or minus 25% for experience rating. Preliminary rates now suggest a decrease to $10.67/$100 for 2002 but with a yet to be announced surcharge to begin paying off the $31 million-plus unfunded liability. New WCB legislation will be considered this fall which could include a three-day waiting period, chronic pain treatment and an employer advisor. A new Occupational Health & Safety Council will work on safety and prevention issues.

We are working with the Province to lobby for a Model Forest presence on PEI to help with research, demonstration and awareness. It seems that Best Management Practices for harvesting will become a focus for PEIFIA.

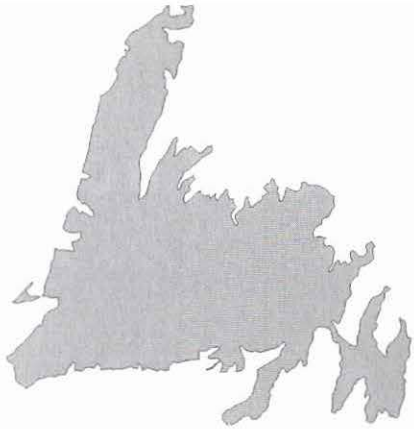
We are beginning a 10-week research project on forest industry human resource needs, forest certification and safety models.

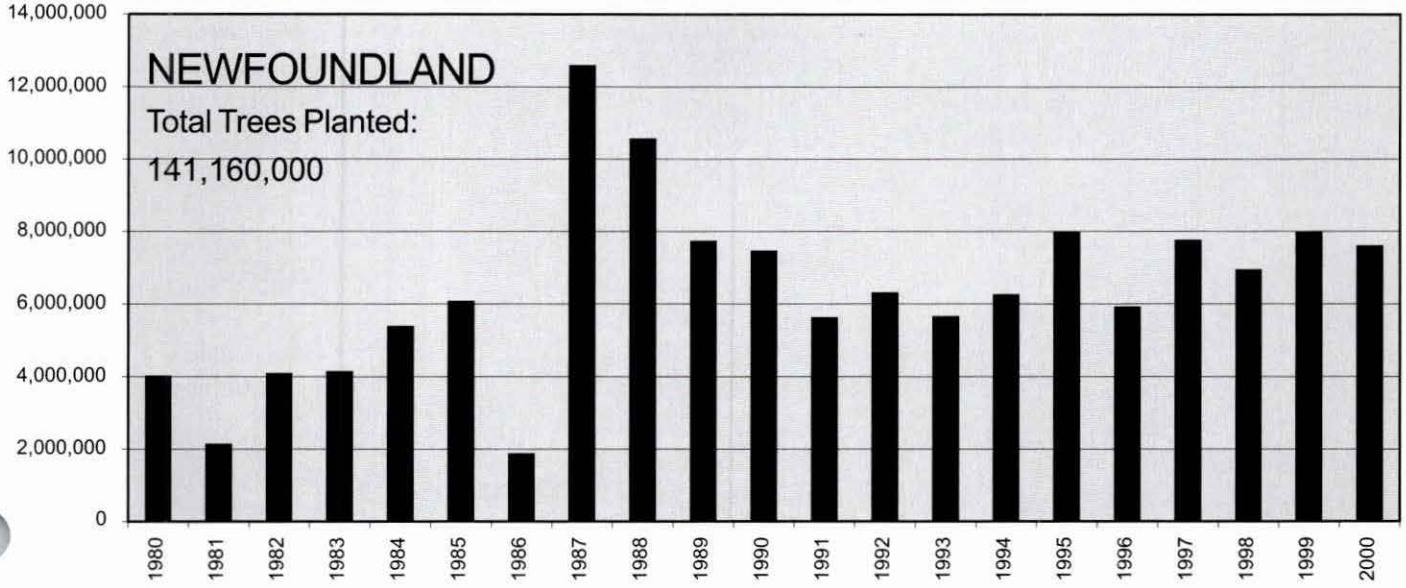
Best wishes for a safe and productive fall.



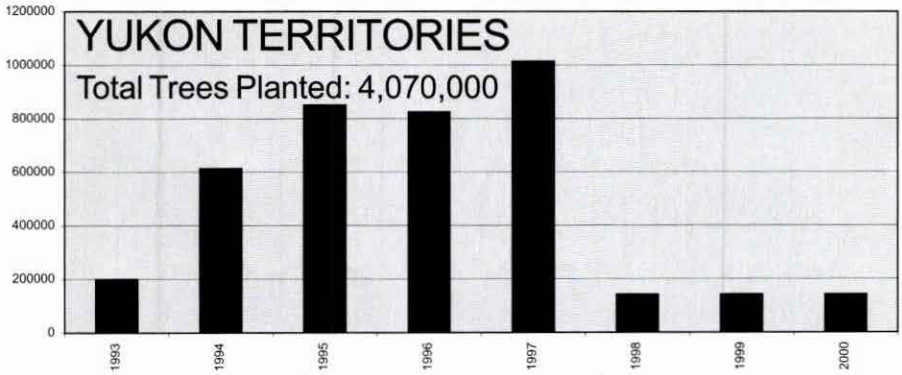
Note: The first forest nursery in P.E.I. began production in 1950. Before that there were a few trees imported by the National Park from N.B. and Maine, but numbers were not available.

Newfoundland

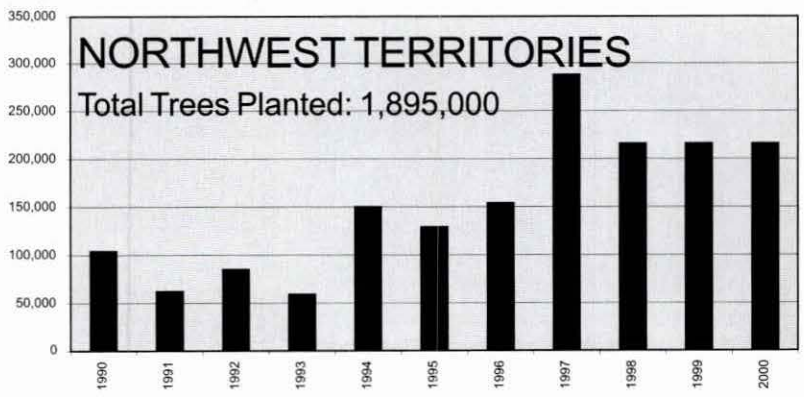




Note: Very little information was available on trees planted before before 1981, but 4 million was given as a good estimate for all trees planted prior to this time.



Note: There was planting in the Yukon prior to 1993, but no numbers were available.



Note: The information on the Northwest Territories was derived from the national Forestry Database Website http: nfdb.ccfm.org, as recommended by Northwest Territories personnel. It is unclear whether any trees were planted in the Northwest Territories prior to 1990. Numbers for 1999 and 2000 are estimates

Notes from the Ledge

No More Newfo

In 1998, New Forest Opportunities (Newfo) was appointed as the employer of record through which all of the silviculture contractors who were working on projects funded by FRBC in the Pacific Regions had to do their (usually low bid) contract work. This meant that the people they were responsible to supervise were actually employees of Newfo—though their WCB claims record became a liability of the contractor. In addition, Newfo was responsible to select up to 50% of the workers from their registered worker lists, functioning as a union hiring hall.

Promisory Note

When Gordon Campbell, then Leader of the Opposition, gave the WSCA its keynote address at their 1998 AGM, he was asked by the members to get rid of New Forest Opportunities. As an experienced contractor, Denis Graham wanted his promise to be in writing. The promise written on notebook paper showed up in the New Era document of the BC Liberals as a part of their ninety day agenda.

Promisory Note Kept

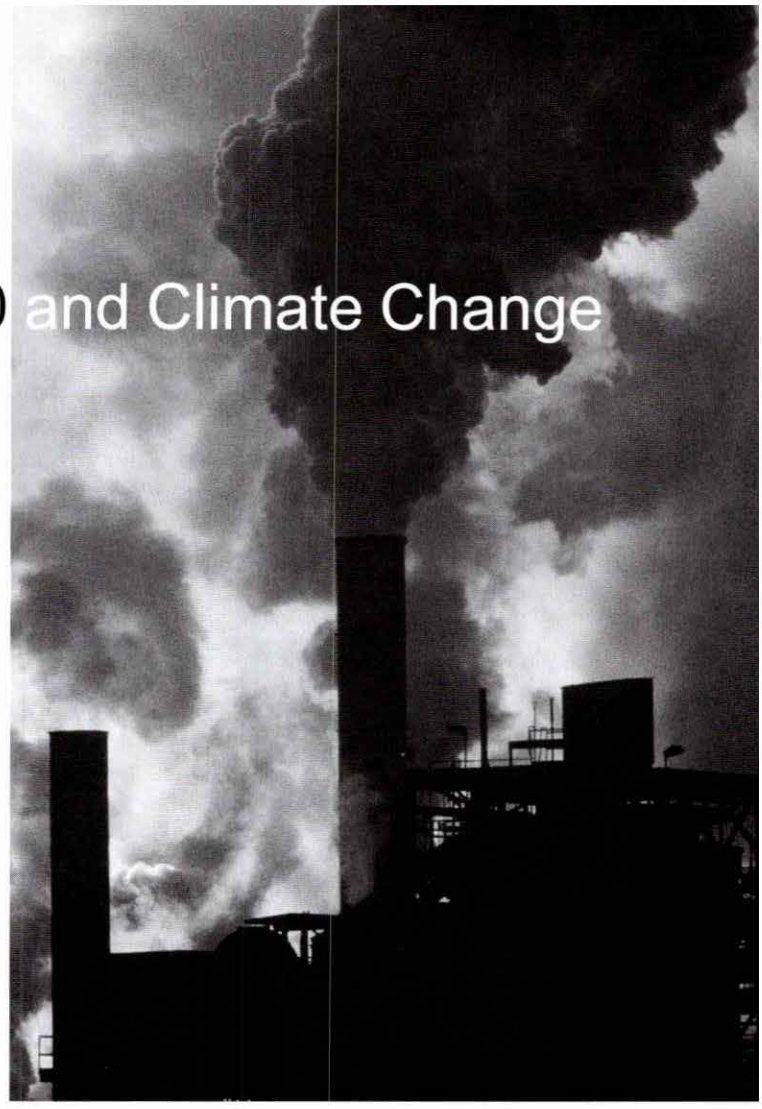
Wednesday, July 18, 2001 the Minister of Management Services, Sandy Santori put several proposed actions before cabinet including ending New Forest Opportunities by the end of the year.

Costs for silviculture under Newfo went up over open market work by 38% to 117%. Newfo trained over 4,000 displaced harvest sector workers and placed over 2,000 on silviculture jobs. At the same time it funded the retraining of the silviculture workers who wanted to exit the silviculture industry because they were displaced by the displaced forest workers (whose training was also funded). As Newfo is being dismantled, the displaced harvest sector workers are no longer working in silviculture and hundreds of experienced professional silviculture workers are permanently lost to the silviculture industry in the sectors where their training was also funded by Newfo. The IWA did not protest or oppose the dismantling of Newfo.

Getting rid of Newfo is one baby step towards a climate within which labour and management can work together to restore global competitiveness to the coastal forest sector. The next steps may neither be quite so obvious, nor so easy.

CARBON SINKS

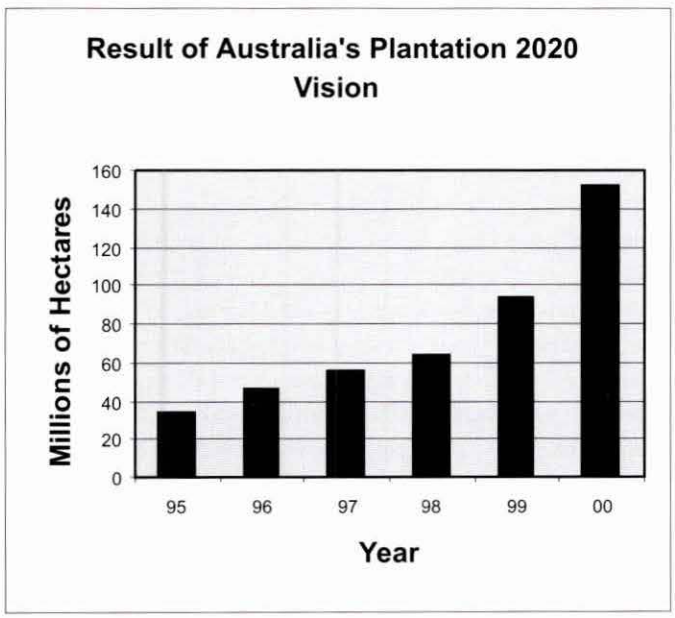
Forest 2020 and Climate Change



By Deborah Bakker

The year 1999 represented a significant turning point in Canadian forestry policy. In July of that year, the Canadian Council of Forestry Ministers (CCFM) announced a new task force to collectively shape a forestry plan for the year 2020 that would both conserve forest resources and sustain economic development in the industry. Vague words, but powerful implications.

Modelled after the Australian government's plan*, the Canadian version, Forest 2020, emphasizes intensive, plantation-based forestry (tree farms) using fast growing tree species (e.g. hybrid poplar) to sustain wood fibre supply while conserving natural forest areas. Launched in 1996, Australia's Plantations 2020 vision was to treble its one million hectares of plantation estate at a rate of 80,000 hectares per year through Aus. $3 billion in private capital investment on marginal farm land. It expected to reverse the Aus. $2 billion trade deficit in wood products and create up to 40,000 in plantation, forestry, logging, transportation and processing jobs.



The Canadian government and provincial forest ministers are responding to a global trend. Because of their use of plantations, New Zealand, Chile and Brazil now count among Canada's global competitors on the timber market. China, India and Bangladesh expected to increase their plantation areas by 2%, 7% and 26% respectively in 1995. According to the United Nation's Food and Agriculture Organization (FAO), fast-growth high yield plantations represent less than 3% of the world's forest land area but supply upwards of 22% of the world's wood, and FAO's most optimistic scenarios predict that plantation forests could provide the world's total demand for timber on as little as 5% of the current world forest land base. Most of these plantations are managed for production of sawn wood, wood-based panels and wood pulp; intensive management has, in general, improved rotation times and fibre quality.

Demand for wood products is growing as world population grows, and wood consumption – currently at 3.5 billion cubic meters annually, half for fuel wood – is also expected grow. Around the world, the creation of tree plantations is at the heart of the debate in the forestry sector on how to best balance production and protection, use and conservation. Internationally, Canada is not considered to have any plantations, but one of the goals of the Forest 2020 exercise was to determine whether Canada should implement a system of fast-growing plantations.

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'Plantations for Australia - A 2020 Vision, http://www.plantations2020.com.au/header3.html

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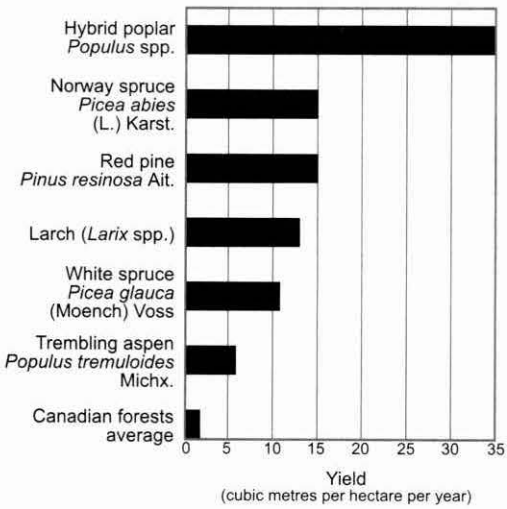
At home, some small-scale plantings of a fast-growing species of poplar have been initiated in southern Quebec, eastern Ontario, Saskatchewan, southern British Columbia and on Vancouver Island. Because of Canada's cold winters and short summers, only a few tree species have been bred for fast growth and high-volume yield. The most commonly used species is hybrid poplar (Populus spp.), a mix of native and non-native poplar species. The graph below shows the yield of this hybrid poplar species – currently averaging 9 to 25 m3/ha – as compared with the yield of other fast-growing species grown in Canada. Note that yields vary widely due to factors such as soil quality, climate, damaging agents such as



Source: Canadian Council of Forest Ministers, http://www.ccfm.org/forest2020/factsheets/plantationscanada_e.html, 2001

insects and disease, and the intensity of management.

Introducing high-yield, fast-growing species will change rotation times, quality of wood, and may create thousands of jobs in the forestry sector here in Canada, but, away from home, may have equally as important and strategic consequences. The logic, extremely simplified, goes like this: Trees sequester carbon by converting carbon dioxide into cellulose and tissue. Carbon emissions from the burning of fossil fuels contribute to global climate change. Planting trees can counteract carbon dioxide emissions and possibly prevent some of the negative effects of climate change.

In July, at international climate change negotiations in Bonn, Germany, countries with large forest assets (e.g. Canada, Russia) successfully negotiated to have their forest reserves count as credits against their carbon emission reductions that will be legally required of them after they ratify the Kyoto Protocol. Canada's allowance for emmisions was set at 12 megatonnes of carbon per year and its allowance for off-sets (replacing forest lost to development etc.) was placed at 8 megatonnes which may translate into 100 million trees per year.

Countries with carbon stocks, including developing countries, are awaiting the carbon emission market, which may soon become the largest commodity in the world, conceivably worth US $150 billion by 2012. Under the Protocol, signatory countries will be able to buy carbon credits in the form of afforested or reforested areas that can allow them to reduce the required reduction in carbon dioxide emissions (for Canada, currently set at 6% below 1990 levels by the year 2012). In 1996, the Australian plan anticipated the kind of economic benefits this might have. In fact, the Australian 2020 plan is already heavily marketed with the climate change message: Plantations will reduce greenhouse gas emissions. The Australian government has introduced tax breaks for plantation owners and are obtaining corporate financing for its plan by selling plantations as an investment opportunity. The longer term implications of plantation-based forestry in Canada, particularly related to climate change, will have to wait for the outcome of this round of negotiations for the Kyoto Protocol, currently ongoing in Marrakesh, Morocco.

One of the most complex international agreements ever negotiated, the Kyoto Protocol ties a large coalition of countries who have collectively promised to reduce their contribution to a natural atmospheric warming that may have changed the planet in a host of ways - raising sea levels, melting ice caps and changing rainfall patterns. When ratified, the agreement will require industrialized countries to cut emissions of greenhouse gases (GHG), so called because they trap heat in the atmosphere, from power stations, vehicles and other sources of these gases, which include carbon dioxide.

The value and future success of the Kyoto Protocol came under threat when it was rejected by the United States, the source of 24% of global greenhouse gases. President George Bush has called the treaty unfair and potentially harmful to the U.S. economy. After the September 11 terrorist attacks, there is no indication that Washington will change its mind about Kyoto.

In Bonn, negotiators decided on rules they would be bound to under the Kyoto Protocol, but also agreed on ways to delay action through so-called mechanisms. Countries can offset part of their quota of reductions through afforestation and reforestation, buying credits from countries that exceed their targets, or helping developing countries control their emissions. In Marrakesh, technical questions must be settled on how these rules will be carried out. In addition, representatives from 180 countries must decide on how to report and verify emissions to prevent cheating and decide on penalties for the noncompliant.

Perhaps most of interest to the silviculture community is the category of matters relating to land use, land use change and forestry (LULUCF); outstanding issues for discussion at Marrakesh include the elaboration of agreed definitions for "afforestation", "reforestation" and "deforestation", the criteria that should be applied for including new activities in the scope of the Protocol, and which activities should be selected.

For daily updates and summaries of the negotiations, see http://www.unfccc.int/cop7/index.html and http://www.iisd.ca/climate/cop7/index.html.

BRUSH MANAGEMENT at time of regeneration

By Robert Seaton

Within many Canadian biomes, stand tending is typically required to achieve an established or free-growing forest stand.

In most cases, stand tending is required to accomplish one of two goals:

- Reduction of competing brush which is causing growth losses or mortality in the stand
- Reduction of tree densities where inter-tree competition is causing or has the potential to cause growth losses or stand stagnation.

Whether accomplished chemically or manually, treatments are often one to many years after planting or natural regeneration. Whatever treatment is used, separate entries typically add significant costs.

This article reviews options for time-of-planting methods to avoid brush competition and the requirement for separate treatments.

Brush competition problems typically fall into one of three categories:

1. Competition causing rapid plantation mortality.

Even for shade intolerant species, shading by brush will typically not cause rapid mortality. Most typically, rapid mortality results from heavy grass or other competition resulting in snow and vegetation press and burial of seedlings within the vegetation mat.

2. Competition causing long term growth loss and mortality.

Long term growth loss and mortality is typically associated with shading by brushy species or, in some cases, deciduous trees. Even shade tolerant species will show significant growth reduction with heavy shade.

3. Root competition causing growth losses.

Separating the effects of above ground and below ground competition is typically difficult. In some cases, below ground symbioses may exist between tree and other species. However, it is generally assumed that very high levels of competition include some root competition effects. This may be particularly true in areas with high levels of seasonal moisture deficit.

Problems of root competition cannot typically be addressed at time of planting. Screefing deeply enough to remove the root layer will often remove the majority of the nutrients from the site, resulting in poor seedling growth. Herbicide treatment soon after planting, using some method of shielding the seedling from the herbicide, can reduce root competition, but still involves a second pass through the treatment area.

Pre-planting site preparation, either by mounding the nutrient layers under mineral soil caps, or through aerial herbicide treatments, can be successful in addressing this problem. However, both treatments can have controversial consequences, and can fail.

Mechanical site prep can involve severe soil disturbance, and even within soil disturbance guidelines, can cause soil erosion. It is highly effective in creating raised planting sites in wet areas. However, when dealing with rhizomatous grass species, mechanical site prep may be followed by rapid regrowth of the target species, resulting in severe competition with the planted stock.

Aerial herbicide spraying before or after planting impacts both habitat and non-target species, and as a result may not be acceptable in many areas. Furthermore, aerial herbicide often produces patchy results in some of the tougher competing species.

Both herbicide and site prep can also be effective in dealing with the first two competition related problems: Short term mortality, and medium to long term growth loss and mortality from shading. However, these problems can also be addressed through the use of time-of-planting treatments, which may offer lower impact, more reliable alternatives.

Reduction of Immediate Competition Related Mortality

As mentioned above, this form of competition is typically associated with vegetation aided snow press. Planting as soon as possible after harvest is one of the most effective approaches to reducing this problem. Site preparation and pre or immediate post planting herbicide treatment can both be used to additionally reduce this problem, but may have unwanted side effects or be ineffective,

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as discussed previously. Currently, several time-of-planting solutions are also used to address this problem:

PLANTING LARGER, HEAVY CALIPER STOCK

The use of large stock, which is more resistant to snow and vegetation press, does typically increase survival rates. However, on high competition sites this treatment alone may not result in sufficient survival to establish an acceptable stand.

OBSTACLE PLANTING

Planting trees next to slash, stumps, and other obstacles which will support the grass and snow, preventing it from crushing the tree, is a successful strategy. However, typically there are not enough obstacles available to permit all of the planted trees to be protected in this way. As well, biasing planting sites toward obstacles may result in the use of poorer microsites in some cases.

BRUSH BLANKETS

Placement of brush blankets to reduce or eliminate the growth of competition in the immediate area of the seedling can be successful. However, problems have occurred with keeping the brush blanket in place. Heavier brush blankets are better in this regard, but also more expensive to purchase and install. In areas where rodent damage is a concern, brush blankets have also been shown to create ideal rodent habitat, resulting in high levels of rodent damage to planted trees.

In addition to these solutions, a couple of other time-of-planting treatments with the potential to address this problem exist:

STAKING

Since obstacles are often not present in sufficient numbers or in the right places, staking can be used to create an artificial obstacle. A firmly installed 3 to 4 foot 1" by 2" stake placed immediately beside the planted tree will deflect some of the collapsed vegetation after snowfall, and will typically increase the survival rates of the planted trees, although some mortality will still occur. In extreme cases, this treatment may be combined with tree straightening, in which a crew straightens each tree which has been pressed in early spring, with the stakes serving to locate the trees.

BROWSE PROTECTION

A much more expensive treatment which can be highly successful in high competition sites is the placement of browse protection tubes around each tree. In this case, browse protection must be firmly installed, in some cases with two stakes, as the tube may have to support a considerable snow and vegetation load. As well, browse protection will typically have to be removed after a few years, adding to the cost of the treatment.

Using a combination of several of these treatments will add costs at time of planting. However, when compared with the cost of one or more treplantings, they may be the most economical approach.

Reduction of Long-Term Brush Competition

Long- term competition related problems are typically associated with overtopping of the tree by brush or deciduous species. As with immediate mortality problems, planting as soon as possible after harvest is the first step in reducing this problem. Herbicide or mechanical site prep may also be effective in some cases, although again rapid regrowth of competing species and patchy control may be problems.

Time of planting solutions to this problem typically focus on keeping the planted trees above the competition until

the growth of the brush begins to slow down. This can be effective in the case of most brush species, but will typically not be effective with deciduous tree species. For areas where brush is the primary problem, time-of-planting treatments to address this problem include:

PLANTING LARGE STOCK

Planting of large, vigorous stock with a good root to shoot ratio can result in more rapid height growth throughout the critical years. However, in many cases very large stock will have a lower root to shoot ratio, and will not grow rapidly enough during the first few years to maintain its advantage over smaller stock.

NUTRIENT LOADED SEEDLINGS

Initial seedling growth can be improved in two ways. One is through fertilizing in the nursery after top and root growth is complete, in order to load the seedling and plug with a maximum of stored nutrients to draw on after transplanting. This is becoming an increasingly common feature of nursery services. The other involves mixing a slow release fertilizer prill in the container peat mix just before seeding. Using the correct release profile for the fertilizer allows the fertilizer to begin to release after planting. The technical challenge of growing without releasing this new product has been overcome by several Canadian nurseries and is now being offered. Field results in the US have shown good results, but results from parallel trials in Canada are needed.

TIME-OF-PLANTING FERTILIZATION

Time-of-planting fertilization, properly carried out, can significantly reduce planting shock and increase height growth. Fertilizer must be properly formulated, to supply the right nutrients to the tree at the right rate. As well, placement of the fertilizer is critical, to avoid root burn while minimizing the degree to which the competing species are also aided by the fertilizer. A carefully designed fertilization program can significantly reduce brushing requirements. The volume of manually applied fertilizer at time-of-planting can be five to twenty times the volume available through fertilizer loading in the nursery, allowing for sustained benefits over several years.

Conclusion

Combinations of these various options are increasingly being used on a site specific basis. New tools and techniques are being developed on many fronts. Of these options, fertilizing at planting to assist trees to outgrow brush competition offers the greatest potential at the least cost, plus significant spin-off benefits in increased AAC. This option, while applied extensively on the coast of BC for ten years and in the Pacific North-west US for longer, still faces considerable challenges. More research is required to optimize treatment efficacy, and manage planter health issues.

In Quebec, all herbicide treatments have been banned for the past four years. Some of the solutions to brush control at regeneration that are reviewed in this article are in use there, such as larger stock, but the author does not have current information on other shifts in treatment responses in Quebec over the past four years since the herbicide ban. Work in Quebec may reveal some other promising approaches to controlling competing species.

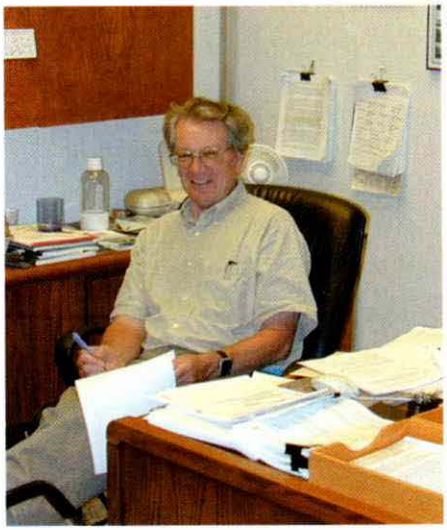
As with all silviculture treatments, choices of treatment options must stand up to cost benefit analysis. Where brush results in high plantation mortality, the costs of replanting typically make most control options economical. On the other hand, where competition results in reduced growth, and delays achievement of legislated regeneration requirements, cost-benefit analyses may be more complex, involving calculations of AAC effects. For instance, in the boreal forest, on sites where the growth impeding effect of competition is less severe, such as on pure spruce sites with moderate brush and deciduous competition, it is usually more practical to postpone any treatments until just before the stand is required to meet legislated requirements. Use of this sort of "just-in-time" treatment will allow the silviculture forester to optimize the species mix and choose the best trees after they are well established. On the other hand, on sites with higher growth rates and more severe competition effects, the loss of growth prior to treatment may result in unacceptable loss of AAC and support the use of treatments integrated with regeneration.

In general, silvicultural responses to competing species should be designed on the same basis as those to pests using Integrated Pest Management. Use of combinations of several treatments, such as large calliper stock and staking, or site prep and fertilization, offers the silviculture forester more flexible, site specific responses to the competition problem. This approach should, where possible, be combined with larger scale planning which integrates economic analyses of treatment costs, and timber supply and other benefits, to identify the optimal target species and areas for more aggressive treatments.

Robert Seaton is a Silviculture Analyst with Brinkman & Associates Reforestation Ltd.

Industry News

Robin Brown Retires



After 31 years in various silviculture related roles in the Ministry of Forests, BC's Manager of Conservation Branch retired on September 28th. A smorgasbord of gentle roasting of the penny-pinching Scot's extraordinary career revealed his respected management style. Despite instructions to his staff to not make a feast of his exit, lunch and an evening in the suds at the Legion topped off a tree planting ceremony a few weeks earlier at the Mesachie Lake Forestry Camp in his honour. Robin managed to let his team 'do their thing' while demanding high standards. The silviculture industry also wants this wry, self-deprecating leader to get a royal send-off, despite his stubborn refusal to share any biographical information for this article.

Tree planting began in a state of high dysfunction with a low level of information and attention to ecosystem dynamics, including factors critical to seedling survival. Robin brought intelligent, informed and practical solutions to the reforestation process. He played a valuable role in making silviculture successful.

For over two decades Robin Brown was the ear in Victoria for the silviculture industry. Mixing perceptive concern with wry amusement, he sorted out the issues he could change and laughed with us at issues he couldn't. He was always a valuable sounding board to debate for WSCA policy proposals before bringing them to the government of the day.

Robin contributed richly to developing BC's silviculture industry into a world-class leader in the first half or government employee stage of his career. On behalf of the WSCA members and directors both historic and today, we wish Robin a continuing diet of interesting challenges in his ate consulting career.

Softwood Lumber Duties Increase Again

Late in October, Canadian softwood lumber exports were hit with another round of duties ranging from 6% to 20%. This is in addition to the 19.3% tariff levied in August. The U.S. Commerce Department is applying the penalties because of allegations that Canada is dumping wood at cut-rate prices and provincial governments are subsidizing forest companies.

The industry is demanding that the federal government put a priority on this issue and start formal discussions with the US to resolve the stumpage fees issues and review tariffs.

New Markets for BC Wood

A trade delegation from BC has gone to China to sign memoranda of understanding that will help open China to BC wood products. The delegation included Council of Forest Industries president Ron MacDonald and senior executives from companies such as Canfor, Weyerhaeuser, West Fraser Timber, Weldwood of Canada and Riverside Forest Products.

China has one of the fastest growing economies in the world and currently builds approximately 10 million housing units a year. However, 98% of these buildings are concrete. Earlier this year, China asked Canada to develop a wood-frame building code that could see China using wood vs. concrete in their new home construction. The Council of Forest Industries developed a strategy to support a program of training for designers, builders and developers of wood-frame buildings.

For Sale: BC Government Seedling Nurseries

The provincial nurseries in Newfoundland and British Columbia may be the last of the government forest seedling nurseries that used to cover the country like a native button blanket of public concern for the forests. Two decades of privatization sweeping back and forth across the country like an iron popping buttons have privatized the facilities of every other province.

On October 25, 2001, the BC Ministry of Forests announced it will be selling the two remaining operational seedling nurseries that produce approximately 18 million seedlings annually. These two Forest Service nurseries are Skimikin Nursery, located at Tappen, just west of Salmon Arm, and the Surrey Nursery in Surrey, B.C.

Until the early 1980's, virtually all of the stock grown for reforestation in B.C. was produced in one of the 10 Ministry nurseries. New policy provided for expansion of the seedling capacity through contracting to industrial and private nurseries. In 1987, industry was given responsibility for re-stocking its own land and at the same time, seven of the Ministry owned nurseries were "privatized" by being sold to an employee group, now Pacific Regeneration Technologies, trading on the TSE as PRT Income Trust. Green Timbers nursery was closed in January 1999.

Today, more than 40 privately operated facilities now provide the remainder of B.C.'s 200 million annual seedlings.

Surrey Nursery

The Surrey Nursery began operations in 1969 and now produces up to 14 million seedlings on 186 hectares, ten of which are used for container growing, while 59 hectares were once used for bare-root seedling production. Twelve greenhouses hold up to 42,500 styroblocks and open compounds can hold another 227,350 containers. The nursery produces interior spruce, Douglas-fir, white pine, lodgepole pine, western red cedar and other, less-widely planted species. Surrey Nursery has always been involved in experiments in new cultural methods and species production.

Questions can be directed to the nursery manager, Tony Willingdon: Tony.Willingdon@gems2.gov.bc.ca

Skimikin Nursery

The Skimikin Nursery at Tappen, near Salmon Arm, was established in 1972. It now produces interior spruce, lodgepole pine, Douglas-fir and other minor species of seedlings. This nursery is rapidly gaining a reputation for its abiltiy to produce high-quality crops consisting of the more difficult species (eg. low germination Abies spp. and white pine). Today, more than five million seedlings are shipped from the nursery each year for planting on forest sites. Container seedlings are produced in 27 greenhouses (capacity 54,000 styroblocks) and open compounds (capacity 50,000 styroblocks).

Congratulations

Homesteader Meats Ltd. of Prince George, BC has won the Customer Service Award (Canfor) at the 10th Annual Prince George Chamber of Commerce Business Excellence Awards banquet held recently.

What's New?

New HTH245 Harvester/Processor Head from Waratah

Waratah Forestry Attachments has entered into an exclusive supply agreement with Innotec Engineering Incorporated to distribute their 1850 RS Fixed Rotation Harvester Head, now referred to in Waratah literature as an HTH245.

The HTH245 offers the unique advantage of high and low feed speeds to match the type of wood. High speed is for fast delimbing of smaller trees, and low speed with maximum torque is used for tougher hardwoods. A dedicated 10-inch (254 mm) stroke system also helps in processing heavy-limbed wood. The four delimbing arms, plus a floating upper knife, offers clean, efficient processing.

For unequalled tree control, a powerful 220 degrees lateral tilt wrist and forward tilting link enables precise placement of the tree, minimizing residual tree damage after processing and allowing stems to be placed in the best location for retrieval.

The easy-to-use PLC measuring and control system is quickly programmed to eight lengths using control buttons on the display monitor. Waratah products are used for hardwood and commercial thinning.

Full launch of the product will occur in the next 30 to 60 days. Please direct inquiries about the new Waratah HTH245 Fixed Rotation Harvester Attachment to your local distribution center.

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