CANADIAN SILVICULTURE MAGAZINE

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Planting cottonwood whips for floodplain restoration on an island on the Fraser River. Photo by Robert Seaton.

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Can FRBC balance its social, economic and environmental goals?

Dirk Brinkman

In his talk to the 1996 WSCA conference, then BC Minister of Forests Andrew Petter (now Minister of Finance) reported that the number of jobs in BC forestry had declined from 1.5 jobs/1000 cubic metres in 1990 to 1.4 jobs/1000 cubic metres in 1995.

One month before the 1996 election, Premier Glen Clark announced that a future condition of the forest industry's continued privilege to harvest would be the requirement to create an additional 21,000 jobs. That is approximately as many full-time jobs as the number of part-time workers presently in BC's silviculture industry.

Job creation was envisioned in two sectors: value added and Forest Renewal BC. Just before the election, the government passed a bill establishing a silviculture agency to coordinate the matching of displaced forest workers and silviculture jobs.

BC spacing contractors, who had worked steadily for the past five years, but had not worked since FRBC created a new bureaucracy, were dismayed to see the NDP promise to create another bureaucracy designed to replace their by-passed businesses. The provincial government's silviculture agency would hire and commit people to doing the work.

FRBC had already replaced some of their crews with subsidized contractors and forest workers matching the social priorities of FRBC. Some contractors had engaged legal advice on demanding compensation for being put out of business.

FRBC representatives were less than appreciative that a part of *CSM*'s last editorial was summarized in a WSCA News Bulletin under the headline "Dismantle FRBC Says Silviculture Contractor." The *CSM* editorial was written in the context of the 1987 WSCA initiative to give the responsibility for basic reforestation to industry. This initiative not only created accountability

...CSM does not advocate the dissolution of the Forest Renewal trust fund, which is fortunately independent of government revenues....

(increasing reforestation success from 69% to 97%) but stabilized the silviculture industry by making it a real market place, where quality of service is valued along with price. It also faciliated the development of long-term relationships between contractors and industry. Moreover, the *CSM* editorial did not call for the complete dismantling of FRBC but for some radical changes in how FRBC funds and delivers programs.

For instance, *CSM* does not advocate the dissolution of the Forest Renewal trust fund, which is fortunately independent of government revenues. The trust fund concept was the WSCA's recommendation, and is working well in Alberta, Saskatchewan and Ontario. In Alberta, which has the only intensive trust fund, the Forest Renewal Inventory Program (FRIP) is finally beginning to work.

As well, FRBC can play a legitimate, critical and on-going role in facilitating the adustment of displaced forest workers — preferably by having them allocated to regular silviculture contracts with a top-up for training and lower initial productivity — and in expanding its efforts in Aboriginal forestry, which has the potential to become one of FRBC's success stories.

The value-added industry may be FRBC's greatest job creator, and should be pursued. To date, FRBC policies have respected the existing value-added industry — i.e., the concern with unfair suibsidies and competition — unlike FRBC's approach to silviculture, which has functioned to replace the existing industry. Some of FRBC's value-added strategies may be a model for silviculture.

From the pluses to the minuses

Frustration with FRBC's inability to deliver its planned programs is a common experience of the forest industry, MOF, the silviculture industry and labour sectors. The dollars are not flowing to the forests but are trapped by consultants, studies, administration, and a job creation program with social not forest enhancement goals.

There are at least three problems:

1) Mixing goals

FRBC's balance of economic, environmental and social aspects is a "made in BC" definition of sustainable forest managememt. FRBC's mandate mixes social goals with silviculture (economic) and watershed (environmental) goals, making for an impossibly complex situation and risking the failure of all goals. FRBC represents the promise to labour of jobs for forest workers displaced from the strive to meet environmental goals, and is designed to strike a compromise between two

separate and disparate NDP-support groups, organized labour and citizens concerned about the environment. But FRBC's commitments to community, partnerships, laid-off forest workers, unions, local workers, local contractors and training often contradict its silviculture goals. Enhancing forests is not

...the dollars are not flowing to the forests but are trapped by consultants, studies, administration, and a job creation program with social not forest enhancement goals....

a suitable job creation arena because it requires skilled, knowledgeable, and committed workers. Furthermore, timing is essential in biological processes, and the species-specific micro-site judgements required every moment in silviculture demand extensive training and good planning.

2) Coordinating two bureaucracies

Approval and administration is not restricted to FRBC's bureaucracy with its regional and central offices, committee executives and board of directors. Instead, every project also has to be approved and co-administered by the Ministry of Forests and/or the Ministry of the Environment.

At this time, implementation of the Forest Practices Code (FPC) has these ministries gridlocked with confusion and overload. Many cutting permits have been delayed and logging operations interrupted. Today's MOF does not have time to engage in the doubly complex process of co-managing with the new and still disorganized FRBC bureaucracy.

Of course, the situation is temporary — many FRBC and MOF people are recently hired, and unfamiliar or inexperienced; and MOF and MOE are impossibly busy because the complexities of implementing the FPC are still being worked out. One day, presumably, the FPC will become more functional. But with the new guidelines still being printed, that day is somewhere over the horizon.

Even after such temporary factors no longer complicate things, the presence of an independent FRBC bureaucracy for the approval and administration of its complex social/biological agendas in coordination with MOF and MOE represents an added, permanent administrative expense.

3)$80,000 to $110,000 per job

The Coast Forest Industry Association recently pointed out that FRBC's first report indicated an average job costs between $80,000 and $110,000 — three times the average earnings in BC of $30,100.

This cost is partially the result of a temporary problem — there is a tremendous amount of professional consulting required up front to plan the projects, and these consultants are in high demand and charge a premium. As well, the administrative expense attached to processing and administering will keep the cost of creating jobs unacceptably high.

Where do we go from here?

A simple solution is to require industry to develop and administer the enhanced silviculture program, let MOF approve and audit the proposals and results, and allow FRBC to continue to manage the trust funds.

It has been suggested that transferring the responsibility to industry should perhaps follow a provincial review of tenure. This line of thinking represents the old school of "Why should forest companies invest in enhancing forest stands when they do not know if they will be the ones who harvest them?"

The land for harvesting is nevertheless public land, and the people want the stands enhanced. Not only that but the money has already been collected for the work. The problem is simply how to implement forest enhancement most effectively. Many forest companies refuse to apply for FRBC projects. Yet forest companies can best predict future market requirements and plan appropriate stand-enhancement treatments. Requiring all companies to enhance the most critical stands on their licenses will distribute the funds back to the regions from which they were collected. Retaining 15% for social goals would provide a new FRBC with $60 million a year for the pursuit of those goals.

Let the forest companies have the ability to strategically maintain their AAC and improve their timber value. Adding another FPC guidebook requiring all licensees to enhance their forest license areas will create a normal market for enhanced silviculture, and result in stable

...the Coast Forest Industry Association recently pointed out that FRBC's first report indicated an average job costs between $80,000 and $110,000....

long-term contracts being awarded to the most responsible, efficient and high quality contractors. On long-term year-round contracts, local workers always have the advantage. And if there isn't a skilled work force in place, then the best people will move to those areas where there is work. Delivering enhanced silviculture in this way will best sustain local communities for the long term. ❖

Horse logger named BC Minister of Forests

David Zirnhelt was appointed BC Minister of Forests on June 17, 1996. Born and raised in the Williams Lake area, Zirnhelt and his wife Susan breed draft horses and raise cattle on their Beaver Valley ranch. He also practises selective logging on his nearby woodlot. He and Susan, a school teacher, have three sons. Zirnhelt has also been a part-time planning and economic development consultant for a number of Cariboo Indian bands. A graduate of UBC, he holds a Bachelor of Arts and a Master's degree in political science and public administration with a focus on resource management.

Zirnhelt is the first entrepreneurial minister of forests in many years. Since he has logged, managed his own woodlot, been a successful rancher, and comes from the Ministry of Economic Development, Small Business and Trade, he will be sensitive to the importance of keeping the forest sector globally competitive and silviculture efficient. The silviculture industry welcomes such a practical hand at the helm of the Ministry of Forests when the top priority is to cut through the paper forests in FRBC and the FPC, so we can see the trees again.

MOF and WSCA

CFLA claims FRBC jobs cost $83,000 each

The provincial forests ministry is spending an average of $83,000 for each forestry job it creates through Forest Renewal BC (FRBC), according to figures released by the Coast Forest and Lumber Association (CFLA). Using MOF figures, the CFLA calculated the ministry spent $62.7 million in FRBC funding to hire 752 people during the fiscal year ending March 31, 1996. The CFLA figures also show where FRBC dollars are going, at least those administered by MOF. Of the ministry's $62.7 million, the largest expenditure at $32.2 million is for enhanced silviculture. Watershed restoration accounts for another $17 million. Inventory work accounts for $4.1 million, research for $7.7 million and woodlot licences for $1.7 million.

FRBC vice-president of policy planning Dana Bonnieux said the CFLA figures are not complete. They do not tell the whole story on the per-job cost of FRBC because the MOF does not administer all FRBC projects. "If somebody has tried to do math based on the ministry's involvement with our activities ... it won't be a complete picture," she said. She said FRBC is spending cautiously as it gathers steam. The Crown corporation has been collecting $400 million a year since June 1994, through stumpage increases charged to the forest industry. In 1994-95, FRBC spent $39.6 million. It spent $155 million in the last fiscal year and is expected to spend more in 1996-97.

Vancouver Sun

BC keeps job pressure on forest firms

The BC government served notice that it wants 21,000 new jobs from the publicly owned forests within five years without increasing the amount of wood that is cut. Premier Clark has vowed that companies that don't play ball under the government's new rules risk losing their supply of wood. The government says it will act unilaterally if companies don't get serious about boosting their employment levels an average of 20% to meet the province's job target. Industry giant MacMillan Bloedel Ltd. could be on the hook for 2,000 new jobs.

The unprecedented jobs-for-trees demand was widely scorned by the forestry giants as pre-election posturing when it was first presented by Clark in March. But the NDP was returned to office in the provincial election last month, and the order to create 21,000 new jobs was formally enshrined as a government policy priority in the throne speech opening the new session of the legislature.

Critics such as the David Suzuki Foundation are calling for radical restructuring of the industry through tenure reform and a reduced rate of harvest. A consultant to the foundation has suggested that 20% of the harvest might be turned over to value-added businesses such as window-frame manufacturers, which create more jobs for the wood that they use than traditional sawmills that produce building lumber.

The government wants a voluntary accord with industry on job creation. That looks unlikely as long as the government clings to its demand for 21,000 jobs. It arrived at the figure after a study reported that between two and 2.5 jobs were created for every 1,000 cubic metres of timber harvested in Washington and Oregon, while in British Columbia the overall ratio was just 1.4 jobs. But a report for the BC Council of Forest Industries argued that if one discounts the volumes of imported wood used in Washington and Oregon, the true jobs to domestic timber ratio is between 1.7 and 2.3.

The Globe and Mail

NB premier attacks clearcuts

In May in Miramichi City at the National Round Table on the Environment and the Economy, New Brunswick premier Frank McKenna made dramatic statements pertaining to clearcutting. He stated that the province will use taxation to penalize poor management practices in woodlots. Unless operating according to a recognized management plan, clearcutting more than 10% of a given woodlot will result in the loss of favourable tax status. In addition, no clearcutting will be allowed within 30 metres of all main highways. Existing DNRE staff and local marketing board

...continued on page 41

The Griz is loose in the woods

The Griz-R-Ex is a twin-headed, hydraulically powered site-preparation implement that mounts on an excavator to create a continuous elevated planting bed for tree seedlings. The Griz mixes mineral soil and organics over an undisturbed section of forest floor.

The mixed bed is elevated, so that the seedling will be higher than the surrounding terrain, keeping it out of water that would otherwise collect. The competing vegetation is controlled as the Griz has incorporated the material on either side of the furrow into the elevated mixed bed in the centre. Also, the bed is aerated to enhance increased microbial action. Due to the mixing of the soils, the bed is a darker colour that enhances thawing in the spring to increase the growing season.

The Griz was initially developed as a result of applied research trials to create a heavy-duty, mixing tool configuration that would both elevate and aggressively mix the forest service debris and organic layer with the upper mineral soil. The conceptual prototype was designed and built by the Canadian Forest Service.

The Griz will penetrate to 30 cm and will create beds up to 35 cm in height, depending on the disc size and angle (which is adjustable), the soil condition (i.e., density and moisture), and surface ground impediments. All measurements approximate, the bed width will be 60 cm with an overall disturbance of 110 cm.

The excavator creates the furrows in a herringbone pattern to aid in planting the seedlings. Each of the furrows allows planting of three to four seedlings, depending on the density requirements of the site. The furrow enhances rootability through soil heating, elevation, aeration. Furthermore, the site has decreased soil bulk density and improved moisture management, and retains nutrients stored in the organic layers.

Contact: Trainer Bros. Equipment at 1-800-684-3266.

STIHL introduces innovative new saws

STIHL's latest chain saw, the 023C, has been acknowledged by *Popular Science Magazine* with the 1995 "Best of What's New" award.

This saw is easy to start, thanks to STIHL's exclusive ElastoStart, a uniquely designed starter grip with a built-in shock absorber. The ElastoStart is designed to reduce the kick associated with high-compression engines. In addition, a fuel primer and a decompression valve guarantee easy starting.

But starting isn't everything. STIHL's exclusive Quick Chain Adjuster is also a standard feature on this saw. The Quick Chain Adjuster allows the user to adjust the chain without tools. The operator simply twists the large lever in the centre of the sprocket cover, and adjusts the chain by pushing the adjustment wheel with the thumb. Of course, the saw must be shut off before the adjustment is made. The STIHL 023C weighs just 4.6 kg and has a 40.2 cc engine.

The STIHL 023L: World's quietest gasoline-powered chain saw.

STIHL also introduced the 023L, the world's quietest, gasoline-powered chain saw. The saw's sound pressure rating is only 68dB(A) (ANSI standards). This is comparable to the ratings of many electric chain saws produced today. Even the most sound-sensitive neighbours shouldn't be bothered by the noise.

STIHL engineers accomplished this feat by adding a quieter muffler, a modified air filter cover, and a rubber grommet to the cylinder cooling fins to more effectively channel the air flow.

New publications

A book from Bruno the Beaver

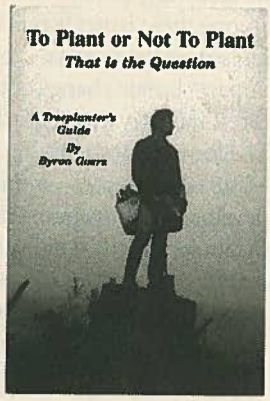
A read through trivia and lore in the world of woodlot management and harvesting is provided by Bruno Viskel in his new book, *Woodlot Management.* From horse logging advice to small sawmilling, Bruno's book is filled with sound tips, facts and fun. The many illustrations and photos are focused on what the reader needs to know or will enjoy.

Bruno's passion for "beaver logging" and his book's use of beaver-harvested paper shows that his heart is buried deep in the forest ecosystem. At the same time, this voice from the beaver house is highly practical for the two-legged Canadian beaver — woodlot managers.

The book is also recommended reading for silviculture workers who want to broaden their understanding of forest management. Contact Lone Pine Publishing at (604) 687-5555.

Making the decision to plant

To Plant or Not To Plant?, a new book by Byron Goerz, is a must for every treeplanter or prospective treeplanter. It



covers everything from making your decision to go treeplanting and learning the basics, to turning you into a money-making machine. The information is spiced with humourous treeplanting anecdotes and photos. You will recoup the cost of this book on your first day of planting with its motivational hints and time-saving techniques.

The book is also full of pounding tips for the experienced planter. The author has a decade of experience in the field, and has planted over three quarters of a million trees from Ontario to British Columbia.

"To plant or not to plant? That is the question.
"To toil in the dirt, chewed by insects, to sweat and swear for what?
"For the future. I may now afford another year of school, and maybe, just maybe, my grandchildren's breath may come a little easier to their lips for the work I have done.
"When I am grey I'll visit old clearcuts and gaze at a forest I once held in my hand.
"To plant or not to plant? Was there ever any question?"

— Byron Goerz

Contact: The Forest Shop at 1-800-668-1345.

ABCPF launches new Forum

The Association of BC Professional Foresters (ABCPF) has launched the new and improved *Forum*, the official newsletter of the ABCPF, which reaches every registered professional forester and forester-in-training in BC.

Over the last four months *Forum* has undergone a transformation. The inside-page design and editorial content have been revamped to reach a wider audience. The changes also include a higher circulation and a higher profile in professions other than forestry.

Every issue of *Forum* now features "Viewpoints," with several writers exploring a forestry issue from different (often opposite) directions. The May/June Viewpoints focuses on Aboriginal rights in the forests and whether or not the MOF's protection of aboriginal rights policy is working.

New Web sites

This issue, *CSM* is launching a new section of *SilviTools* listing World Wide Web sites of interest to the silviculture community. Please send us information about your Web site or one you think would interest our readers.
You can e-mail us at:
gordon_murray@mindlink.bc.ca

www.pfc.forestry.ca

The Pacific Forestry Centre of the Canadian Forest Service has redeveloped its home page on the World Wide Web. Under "PFC Research Programs", the site includes the latest developments in Digital Remote Sensing, Montane Alternative Silvicultural Systems, plus Pacific Yew and Taxol. As well, "Reports and Publications" have been updated and can now be ordered on line.

www.forestry.corn/forestry

Forestry Today's home page on the World Wide Web is designed to provide information on the Canadian forest industry. Topics include: What We're About; Articles; Equipment For Sale; Forest Communities of Canada; Governments; Education; and A Forestry Forum. A job category is in the making, bringing together Canadian organizations and job seekers. This site will soon be available in French, too.

www.panda.org

The World Wildlife Fund for Nature (WWF), the world's largest independent conservation organization, has launched its World Wide Web site, the WWF Global Network. This site provides news and information on more than 14,000 screens, and covers all aspects of conservation and the environment. Topics include forests, climate change, marine issues, pollution, species, and sustainable development.

Some features include:

- The "News Room" with "Hot off the Press" environmental news items and access to news publications archives.

- A "Green Resources Guide" provides instant access to all other related Internet sites, mailing lists, and news groups.

- "Publications and Research" contains extensive information on biodiversity, climate change, forests, freshwater ecosystems, oceans, and species.

- An "Experts' Database" with biographical data on more than 1,000 researchers, scientists and experts that is useful for communicating and networking.

www.forestnet.com

ForestNet teaches visitors about the commercial aspects of the forest products industry. ForestNet's partner is the *Logging and Sawmilling Journal* (*LASJ*). *LASJ* articles complete with photographs are available on line.

ForestNet provides audio interviews with people such as Richard Vlosky, a forestry marketing professor at Louisiana State University, who discusses the Web potential for the forest products industry.

www.infoserve.net:80/forest/cfa.html

Visit the Canadian Chapter of the Commonwealth Forestry Association's new Web presentation on the Internet.◆

If you have a new product or publication that you would like listed, please send information to: CSM, *Box 65506, Station F, Vancouver, BC, V5N 5K7.*

Trees vulnerable to UV-B Rays

Although it is well known that UV-B can damage crop plants, relatively little work has been done on trees. In the first study of its kind in BC, scientists from the Ministry of Forests research program have been looking at how conifer seedlings respond to increasing amounts of UV-B radiation.

They have found that one-week-old seedlings respond quickly to added UV-B — their needles curl up, growth slows down, and at high doses, they tan and in some cases die. Four-month-old seedlings also showed curled needles, and some were more vulnerable to freezing in the fall.

Like people, plants produce protective pigments to filter out harmful UV-B. Those plants that grow at higher elevations or closer to the equator usually have higher amounts of these pigments. The pigments protect chlorophyll, which gives plants their green colour and is essential for photosynthesis. When chlorophyll is destroyed by UV-B, the leaves turn bronze or pale brown and die.

To measure the effects of UV-B, the researchers exposed seedlings to four levels of radiation, from zero to levels equivalent to summertime in Victoria, northern California and the equator, which is the highest. The seedlings came from different elevations because UV-B increases with elevation.

The researchers plan to measure the amount of genetic variation in UV-B resistance in trees, and use this information in future forest management.

BC MOF

CO_2 worsens ozone damage

Carbon dioxide, which is increasing in the atmosphere at the rate of about 1% per year, may not protect forest trees from the effects of expanding ozone pollution as scientists once hoped. Instead, studies conducted by researchers from the Michigan Technological University and the US Forest Service show that higher levels of carbon dioxide, when combined with ozone, cause even greater negative physiological responses in trees than when carbon dioxide exists in normal amounts. Researchers used two types of aspen genotypes in the study — those that were genetically selected for their tolerance or ability to resist ozone damage and those that had proven to be sensitive or susceptible to the effects of ozone pollution. Most of the research in the past three years has been conducted in open-top chambers set up in Michigan's Upper Peninsula and in northern Wisconsin.

Over the next two years, researchers will test aspen plantings in south-eastern Wisconsin and south-western Michigan where they have found unusually high levels of ozone. If field studies support the findings of the chamber experiments, scientists will have convincing evidence that the current federal secondary-ozone standard needs to be re-evaluated to protect valuable commercial tree species.

Forestry Chronicle

Global warming may increase weevil hazard

The Mackenzie Basin Impact Study (MBIS) was formed in 1990 as a multidisciplinary working group comprising government and non-government organizations whose goal was to gauge the potential implications of a warmer climate on the area bounded by the watershed of the Mackenzie, the twelfth largest drainage area in the world. The study focused on this particular area of the north because of its important natural ecological boundaries that may shift in response to climatic change. These boundaries include treelines at the northern and southern extent of the boreal forest, as well as at the discontinuous and continuous permafrost zones.

The six-year MBIS project, partially funded by FRDA II, began with an integrated assessment approach, including water management, sustainability of ecosystems, economic development, infrastructure, and sustainability of native lifestyles. Included among these issues was the role of forestry in the western economy and what impact climate change could have on the forest industry in the Mackenzie Basin. The forest sector working group of the MBIS concentrated its efforts on developing an integrated forest sector database, which contains information on forest cover, species mix and age, soils, site quality, economic (census) data, pest data, climate, protected areas, and other important relevant factors.

One area of research was the potential hazard of white pine weevil in the Mackenzie Basin under the implications of climate change. The spruce weevil is a major forest pest creating $15 million a year in damage for the BC forest sector. According to an MBIS working group report, an increase in summer air temperature as a result of climate change could increase weevil hazard, enabling it to survive in areas currently too cold for completion of its life cycle.

This weevil work fits in with research on both forest growth and yield, and fire danger forecasts. Pathogens such as the weevil create tinder at the base of the tree. The availability of fuel, such as tinder, represents an element of forest dynamics that could influence fire size and behaviour. This link between white pine weevil and wildfire conditions is an essential element in the group's development of a sensitivity model.

FRDA II

Mustard and sunflowers decontaminate soil, water

Mustard plants and sunflowers could be the key to cheaper, less disruptive cleanups of polluted and radioactive soil and water. Researchers have found that certain plants, under controlled conditions, can safely extract lead and other dangerous heavy metals as well as radioactive substances from soil and water. Using special plants in a process called "phytoremediation" would reduce soil cleanup costs by at least 50%, compared with current methods such as

excavating soil and dumping it in a hazardous waste landfill.

Phytoremediation also has environmental benefits. Topsoil remains in place for reuse, metals absorbed in the plants might be safely recycled, and residents near a toxic site see plants or flowers growing instead of workers using noisy excavating equipment and blowing around contaminated dust.

Under an Energy Department subcontract, phytoremediation is also being tested for removing uranium from water. One of nine current field tests is going on at Chernobyl, where radioactive soil and water are being treated.

So far, the researchers have found that amaranth and Indian mustard plants work well in absorbing heavy metals from soil. The fast-growing crops are then harvested and new ones replanted until the soil is safe. The metal-laden plant material can be reduced in size by drying, pressing or composting before landfilling, and researchers are also exploring using acids to extract the metals so they could be reused by industry.

For cleaning up polluted water, hydroponically grown sunflowers do a great job because they produce an enormous amount of roots, and they produce them very fast.

Associated Press

Estrogen-mimicking chemicals dangerous

The author of a new study of the world-wide decline of male sperm counts (published in the *British Medical Journal*) has said if the rate of decline continues, men could start becoming sterile by the mid-21st century. One hypothesis for the 42% decline in the average sperm count over the last 50 years is the increased prevalence of man-made estrogen-mimicking chemicals found in many manufacturing substances and processes, such as plastics, pesticides, detergents, pulp, and composite wood.

Although the theory remains controversial, a growing body of evidence is emerging that a wide variety of petro-chemicals mimic the shape of estrogen and cause reproductive problems in humans and animals, including lowered sperm counts, genital abnormalities, prostate cancer and breast cancer.

Building materials such as plastic, concrete and metals, used as an alternative to forest products, require more energy and are more environmentally devastating. And now, plastics may have another constraint — the production of persistent organic pollutants that mimic estrogen.

However, these pollutants may also be present in pulp products and composite wood products.

Whether or not this will affect the demand for pulp and composite products in the long term is too early to tell. But the extensive news coverage to date is enough to suggest ever higher prices for clear dimension lumber and untreated forest products.

CSA

Insurance claims double since '80s

The warmest year for the planet since record keeping began was 1995. Global insurance claims for weather-related disasters from 1990 to 1995 are almost double the claims for all of the 1980s. In Canada, 1995 saw the third warmest July/August in 101 years and the second greatest area burnt by fire. All models of global warming predict climatic anomalies characterized by greater extremes of cold, heat and storms in northern latitudes.

Areas of southern Alberta and coastal BC had "once in a century" floods. Southeastern BC had the highest snow pack (150% of normal) in 27 years, holding three weeks later than it has ever held with 60% water saturation from rain — a combination that may break more flood records.

This spring was also a foretaste of the potential effects of "climate anomalies" on the silviculture industry.

...continued on next page

BIO BRIEFS

...continued from previous page

The snows held late into May in BC, Alberta and Ontario. The spring planting start-up was so late in BC's northern interior that the Salvation Army opened a tent camp in Prince George to accommodate the planters waiting to begin their season (and the many who went on spec, hoping to get a job).

Flooding in Timmins, Ontario, inundated La Fluers Greenhouses, putting them through the worst week of their growing careers, slogging trees out of the flood zone for a week by hand. While they saved 90% of their trees, the seedlings, from greenhouses that had collapsed during the winter's extreme snows, did not.

Weather-related insurance claims for the nursery sector will affect the cost of seedlings. Growing seedlings is already classified as a high-risk business due to its biological and weather-related risks.

The greatest havoc plays itself out in the field planting program, with roads unusually soft, shipments stuck behind washouts, planting blocks inaccessible, and planting itself more difficult. Planters and contractors carry most of the production disruption costs as these are defined as "acts of God" in the contract. However, the financial effects are often softened by compassionate foresters who cover some of the access costs.

CSA

Reducing wood-drying pollutants

Control of volatile organic emissions from wood-drying operations is a critical environmental issue facing the forest products industry. To address this, Georgia Pacific Corporation and the Electric Power Research Institute (EPRI) are sponsoring a two-year project at the Institute of Paper Science and Technology. Managed by EPRI, the study will determine the mechanism of wood drying; develop methods for accurately measuring gaseous organic emissions in the presence of water, organic particulates and other species; and recommend changes in the drying procedure to minimize emissions. The study will examine the feasibility of instituting novel control options for reducing emissions. The overall goal is to dry wood to the same product specifications with reduced emissions of volatile organics.

Forestry Chronicle ❖

Stabilizing streambanks amid shifting criteria

Penelope O'Malley

Note: Reprinted with permission from Erosion Control *magazine (May/June 1996).*

Streambank protection and stabilization fundamentally involve a process of reducing the force of water flow within a channel, or increasing erosion resistance by protecting banks with one of a number of materials. The general measure of a project's success has been the degree to which it solves the bank protection problem, comes in on time and within budget, uses available resources effectively, and is appropriate to a given site. More and more, however, additional factors come into play such as regulatory agency requirements and environmental and aesthetic considerations, making project assessment more complex.

A project may succeed in its primary erosion control goal but create other challenges that project managers may consider important. Aesthetic or environmental considerations may be waived in deference to protection of existing man-made structures. A project may meet design criteria but fail because of incorrect or inadequate installation, or because an unforeseen problem evolves. Given these considerations, erosion control specialists working on stream stabilization are wise to consider a range of factors when assessing a project's effectiveness, as well as procedures for rectifying failure by expanding their focus beyond the immediate streambank problem.

Streambank systems failure

Dale Miller, whose Montana company Inter-Fluve Inc. specializes in stream restoration, believes streambank systems fail for three reasons. "Either the designers look at the wrong design criteria," says Miller, "or use the right criteria but calculate the wrong numbers in the design, or the project isn't built as designed." Illustrating his view, Miller describes two projects that failed because of a combination of inadequate design criteria and faulty implementation.

The goal of the first project was to provide bank stabilization and enhance fish habitat in a stream on private property in Montana. The section of the bank selected for stabilization had retreated 4.5 to 6 m as a result of a major storm. Soil in the area was thick, loamy topsoil with no rock content; woody vegetation was heavily browsed by elk. An initial feasibility study prioritized the stream reaches that needed the most work. After being backsloped at a ratio of 1:1 to 2:1 (H:V), approximately 150 to 210 m of the streambank on either side were covered with a combination of biodegradable fabrics, including loose coconut fibre and woven jute applied in the traditional manner according to the manufacturer's instructions. The banks were then seeded and planted with salvaged willow clumps as well as unrooted willow cuttings.

Within a year most of the fabric remained, but the banks had retreated approximately another metre. In evaluating the failure, Miller considered both design and materials.

"What we didn't realize is that a simple bank treatment was not sufficient," Miller explains. "We really needed to deal with stream dynamics as well. Eventually, we ended up altering the channel geometry in addition to restabilizing the banks. The other thing we didn't fully address is that, even though we were looking at the fluvial dynamics of the channel, we probably also could have done a more thorough engineering analysis to look at our anticipated scour depths. We might have been looking at a fairly mobile bed during bank-full or high-bank flow events." Continuing to evaluate the failure, Miller admits, "We might have done better installing a rock foundation that might have prevented the scour and unraveling at the toe — obviously failure tends to happen at the toe first and then migrate up slope. A lot of what we're doing now provides for a rock toe

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foundation, even though it may be totally submerged and invisible to the eye.

"I think there are a lot more types of products available," Miller continues, "and having used a combination of products, I know now that in a similar situation I would probably recommend that we use a woven coconut fibre similar to a Dekowe-A900 or a RoLanka Bio-Mat D90 or a BonTerra C9 because the tensile strength is superior. We probably would use an under-fabric of a loose coconut-fibre fabric held together with a mesh weave, or put down a relatively heavy straw mulch to prevent piping loss of fine soil particles. One of the most important things one has to do is recognize what the possible modes of failure are, and piping is always a big one."

Inter-Fluve's repair included placement of rocks at grade to provide channel stabilization and control degradation, and to manipulate the adjacent lateral bar deposits to move the thaweg of the channel away from the bank. Crews went in and laid back the slope again, and applied a combination of biodegradable fabrics. They excavated a key trench using heavy equipment and backfilled with existing river gravel, which effectively provided an altered channel cross-section and more toe stabilization with the fabric and gravel. Because of the problem with fabric separating from the soil surface during high- or over-bank events, the manufacturer's staples were replaced with custom-fabricated, L-shaped rebar segments. The banks were replanted, this time with rooted cuttings.

"Seven or eight years ago when we would do a project such as this, the project team tended to be one or two people," says Miller. "The person who did the initial work on the particular project was a fisheries biologist. The person who did the repair was a fluvial geomorphologist. They're very different. In addition, now we have a civil engineer whose expertise is hydraulic and geotechnical engineering, a plant ecologist who has a master's degree in riparian ecology and has been involved in a lot of installations, and hydrologists with strong backgrounds in geomorphology."

Miller considers that a primary factor that contributed to the failure of the original installation was lack of design, and reliance on traditional generic methods rather than detailed analysis of the particular situation. "Now we do more geomorphic analysis, actually measuring cross-sections of a channel to see if we have an anomaly in capacity. We also do analysis to estimate tractive force and scour depth, and compare that with what methodology we may use." In terms of product applications, Miller says Inter-Fluve does more with fabric encapsulation, wrapping fabric around compacted earth fill to provide very compartmentalized, stable lifts that are placed on top of each other and are "much more bomb proof" than just laying fabric on soil. Miller also adds that today the company uses prerooted cuttings that it grows in very small tublings which then can be planted through a fabric without affecting its integrity.

Miller's second failed project involved creating a private recreational pond on a stream in a narrow 150-m canyon. Because Montana law prohibits impoundments on a live stream, the project called for building the pond over the existing channel, and then routing 120 to 150 m of stream out around the edge of the pond. And because of the narrowness of the site, the impoundment berm was wrapped around the side as well as the floor of the canyon in an attempt to drop the stream down as gradually as possible.

"We did a fair amount of analysis in terms of erosion force," says Miller, "but we were dealing with a very steep reach of channel because of the amount of land that was available." The new streambed was built from scratch from natural materials that ranged up to large boulders 60 to 90 cm in diameter. The banks were covered with non-woven coconut-fibre fabric and planted with unrooted cuttings.

The project failed in part from the short length of the bypass and the resulting steep grade. "We had bed instability not bank instability," says Miller. Some of the large boulders migrated out of position, creating a nick point and a very large grade instability. This eventually resulted in a 30-cm drop in the channel bed that eventually undermined the toe of the bank. To correct the situation, the bed was rebuilt with a more balanced grade and larger rocks, and the banks were reconstructed. "Had we had the opportunity," says Miller, "we would have made the channel longer with some meanders to dissipate more energy."

Secondary goals flounder

Although project managers were able to claim success from an erosion control

standpoint in the reconstruction of two trout streams in Canada, they nonetheless had to face the fact that the project failed in achieving an essential secondary goal — the preservation of habitat. "Physically they were a success. Biologically [the success] was marginal," says Project Director James Wraith of Ontario-based Soil Enrichment Systems, which was brought in to design native flood-plain revegetation. Wraith explained both Tannery Creek and Bogart Creek ultimately failed because they were overdesigned in crucial aspects that inhibited them from providing suitable trout habitat throughout the entire year, a condition imposed by the Ontario Ministry of Natural Resources.

Realignment and restoration of Tannery Creek were proposed because of widening of an adjacent roadway. Because of the creek's status as a trout stream, traditional channelization techniques such as gabion baskets, armor stone, or rip-rap were ruled out. Additional planning restrictions included the relatively narrow corridor through which the new stream would pass, and increased stormwater volumes resulting from the road widening. In its revegetation plan NRCS recommended a varied, bioengineered approach for two sections of the channel slated for realignment; one is 53 m and the second is 69 m. The NRCS approach included Propasys and application of Geocoir erosion-control materials as channel liners, plus use of such bioengineering staples as lave stakes, willow bundle posts, and brush layers.

The situation in Bogart Creek was somewhat more complicated in that it involved the re-establishment of a natural watercourse that had been straightened into a trapezoidal channel 20 years previously in another road improvement project. The design of the new channel included moving 85 m (281 ft.) of the stream 74 cm (2.4 ft.) north of its straightened path. The new channel would assume a naturally meandering pattern with definable pools and riffles resulting from vortex rock weirs. The hydraulic radius of the channel was

...the new channel would assume a naturally meandering pattern with definable pools and riffles resulting from vortex rock weirs...

lined with Geojute, and then covered with 20 cm of rounded river stone 10 to 25 cm in diameter. Outside banks at meanders were treated with rootwads of native material and lunker (cedar post platform) structures. Banks were secured with Geojute blankets and seeded with native herbaceous ground cover, supplemented with intensive vegetation and woody plants.

The difficulty was that design of both restoration projects was predicated on bank-full events, with the result that fish passage in Tannery Creek during low flow is impossible and aquatic vegetation is stressed. Furthermore, the channel morphology assists in excessive ice formation because the pools were over accentuated, and water storage during limited-flow periods allows ice to develop. Additionally, according to Wraith, break up of ice in the spring tends to scour the banks and bed, removing aquatic vegetation and shifting vortex rock weirs.

"I believe that more base-flow/low-flow design considerations should have been implemented to rectify these situations," says Wraith. "This type of work in southern Ontario is basically new, and so the projects were designed to be overly cautious from a safety standpoint. Nobody wanted them to fail on an erosion basis."

In much the same way as Tannery Creek, a realigned section of Bogart Creek was designed for bank-full or high-flow events. The resulting width of the newly aligned channel was excessively wider than the original, causing extreme sedimentation and lowering the stream's hydraulic potential. The excessive sedimentation filled the lunker structures and covered the river-stone channel liner. "In my opinion," says Wraith, "the channel should have been narrower, which would have resulted in quicker flow through the section of realignment, thus reducing the amount of sedimentation."

Because of financial restraints, no repair was made on Tannery Creek. Teams went into Bogart Creek, however, and working by hand pulled sediment on the base of the stream back off to the side to create a narrower, low-flow channel. Grass seed also was planted along point bars for stability. The new banks were protected

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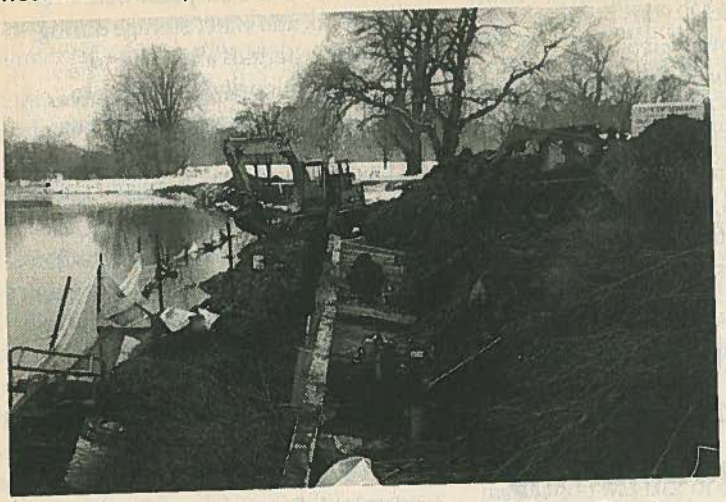


Before: *Streambank erosion control on Gibbons Creek, London, Ontario, fall 1994. Photos by John Lawrence.*

with jute matting and planted with pregerminated seed, which resulted in vegetation within a few days.

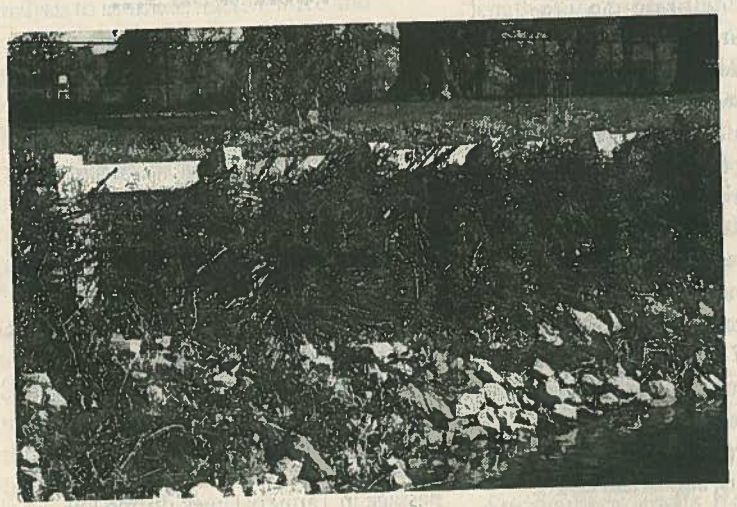
Asked what he would do differently, Wraith says, "I would do a bit more study of the stream in low-flow conditions to see how it's reacting at least over one whole season, get the extremes, and not count so much on hydrologic simulations because they always err on the upside for factors of safety. You can get a good idea by watching it for a year, and then going back through and looking at the water, precipitation, and climate records, to see what you're dealing with.

"If the time were available to be thorough, I'd probably design a really defined selvage channel within the channel and try to incorporate some flood plain features, and I would over-accentuate some point bars really, really low so there is some flood compensation volume within the channel system. I'd allow the stream to over top its banks every once in a while."

Missing the stream for the bank

In Pennsylvania's Valley Forge National Historic Park, Natural Resources Manager Brian Lambert looked at a section of Valley Creek that had been stabilized with a rock wall, assessed it as an environmental failure, and determined to use something else to protect a section of streamside hiking trail endangered by bank erosion. "When you dump a ton or two of rip-rap over the side of a creek you basically cut the streambank off from the stream," says Lambert.

"But the streambank is organically connected to the stream — they go together — one supports the other. Same thing if you put a wall in. The gabion wall is protecting the trail just fine, but the trouble is there's no longer a streambank there. There are no plants there, no dirt. The corps of engineers may look at a stream as a way to get water quickly from one point to another point, but we're managing Valley Creek as an aquatic community. We would like the fish to do very well. We're trying to take care of the aquatic insects. We would like to develop these riparian buffer zones along the sides, which are much more environmentally friendly to a creek than dumping a ton or two of rip-rap over the sides."



After: *Spring 1995.*

Sections of the 3.2-km stretch of the stream that runs through the park had been stabilized using a rock wall in order to protect a state roadway that runs along the side of the creek with a sewer line beneath it. The road had previously washed out, leaving the sewer line dangling. Because of this, the Pennsylvania highway department's preference is to gabion-wall or rip-rap most of the creek as it runs along their road. Lambert has installed a test project to demonstrate that the banks, which are mainly unconsolidated soil, can be stabilized using other methods.

"This kind of soft system will allow erosion to be managed in such a way that the road is not threatened," Lambert explains. "I'm choosing my words carefully because I know that bioengineering is not going to stop erosion along Valley Creek in this area. The creek banks are too high." Valley Creek is 2.4 m high, 10 to 12 m wide, and carries about 45 million litres per day drained from a 59.8-km^2 watershed.

For his demonstration project, Lambert has installed rolled coconut Fiber Roll from Bestmann Green Systems. Lambert installed 90 m of Fiber Roll logs on two sides of the stream on the creek bottom, and planted water-loving grasses and sedges along the top of the logs. His plan was that the installation will eventually degrade, leaving a small wetland or riparian buffer zone to protect the toe of the bank slope. Along the slope Lambert planted willows, alders and dogwoods to help hold the soil.

Lambert reports the fix has worked just as planned. "When we designed the installation, we decided to move the logs out into the stream about five feet from the toe of the bank. The idea was when the stream overflows, it would dump silt behind the log — between the log and the streambank — and what we're hoping to do is collect enough silt in there so that the silt, in addition to the log, will protect the toe of the streambank. That's the reason for our streambank collapses here.

"The toe of the bank is being undermined. There really isn't any hydraulic pressure pushing the banks out into the creek.

"What we envisioned has actually happened. We have a real nice, little riparian zone, a nice little wetland developing between that log and the toe of the streambank. So if the streambank sloughs down, which has happened in a couple of cases, we're not too concerned about that. In fact, if anything, it will decrease the very steep angle of the bank."

Bottomless ditch rehabilitation

In Lexington, Ohio, the Darby Ditch rehabilitation was assessed as a success because it accomplished its goals and stayed within budget, despite the fact that silt continues to migrate from the stretch of the stream that was stabilized. Darby Ditch is normally dry except in the spring when increased run-off from development adds to stormwater flows, heavily eroding the streambanks and threatening nearby apartment complexes on the channel's west side. As a temporary fix some stone and dump rock had been installed, and the initial approach to more permanent stabilization was to use rip-rap or line the channel with concrete. Both approaches were eventually rejected because they were too expensive for the town budget to absorb, and because both were unacceptable aesthetically.

In an unusual move, Columbus-based Meredith Brothers suggested erosion control blankets. "This was probably the first time we had really looked seriously at this whole idea of reinforced turf," says Meredith Brothers' Mark Converse. "Up until that time we had just been selling blankets to use on hillsides and had not been really thinking of putting a synthetic blanket on a stream bottom like that. They had always used hard armor of some kind, so this was a big change to go to something that's flexible, a thin profile material that can be put down as fast as you want."

The project was eventually completed using North American Green's P300 nylon blanket. Although the original idea was to use the material on the bottom and sides of the stream, money ran out and project engineer Larry Lee was faced with a dilemma. According to Converse, the now-retired Lee opted to use what he had on the streambanks and leave the creek bottom bare. Converse, who has monitored the project for eight years, says from a streambank stabilization standpoint the installation has been a success. "The P300 looks just like the day it was put in," and because of the bank protection, the stream hasn't migrated from its original channel. "It's still centred just fine," says Converse. However, where the blanket was installed only along the banks, the streambed has dropped 60 cm straight down. Silt and soil have washed away, leaving a fast-running gravel bottom that no one has attempted to correct.

Converse admits that Lee concluded if he had to do it over again, he would install the material in the stream bottom and skip the sides. Converse estimates the cost of the project to be about $20,000 to $50,000. When it was suggested that in some parts of the country the eroding stream bottom would have called the project's success into question, Converse answers, "What they did is a lot for out here. Ohio is just coming around."◆

In Brown's Woods: A 19th-century forest restoration project yields lessons for the next century

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Introduction

Restoration of the structure and function of forest ecosystems on degraded land has been attempted for a considerable period of time, preceding even the earliest attempts to understand forest succession. Forest plantations on cleared land in western Europe in the late 17th century were designed to restore forest cover, whereas those of the 19th century were intended to reduce erosion, reduce runoff, and ameliorate climate. None of the early attempts at restoration emphasized the importance of biotic interactions that are currently discussed in forest ecosystem restoration.

In North America in the late 19th century, many observers noted rapid deforestation, yet by 1880 few investigations had been made of suitable methods of land restoration. Some of this research placed enormous importance on the idea of careful rehabilitation of denuded land, but the effective advocacy of these ideas did not occur until 1900. Unfortunately, the time period of 1914 to 1945 was one of relative quiescence in the field of forest rehabilitation, largely because public and private resources were committed to the world wars.

Restoration ecology in its present form, therefore, dates from the period of high prosperity in the 1950s and 1960s. Restoration ecology currently exploits modern ecological theory and observation, but there are a few examples to cite of very early restoration, rehabilitation, or reclamation.

William Brown and the Ontario School of Agriculture

The Ontario School of Agriculture and Experimental Farm opened in the spring of 1874. The land base for the school until 1840 was a lush maple-beech-bur oak forest, with abundant butternut, walnut, and other native components of the forest community now called the Niagara section of the deciduous forest region of Canada. The land was cleared in 1840 and sold to the Province of Ontario in 1873.

...Brown was aware of the social costs of habitat deterioration and of the economic value of landscape restoration...

The school was later to become the Ontario Agricultural College and is now known as the University of Guelph.

William Brown, an arboriculturalist from Scotland, was hired as the first Professor of Agriculture in 1874. Brown had conducted reforestation in Scotland from 1855 to 1869, and there is evidence that he was aware of the social costs of habitat deterioration and of the economic value of landscape restoration.

As early as 1877, Brown had prepared a summary of the biophysical conditions of the college campus, and had begun to experiment with the restoration of denuded land using monocultures of trees such as European larch and black walnut. When the North American Forestry Congress was planned for Cincinnati for the summer of 1882, Brown assisted in the organization of the meetings. The intensity of concern over land clearing and the benefits seen in forest restoration were evident in papers published by Brown and others in the narrow period of time around the Cincinnati meeting. Brown's paper on forestry and rainfall in Ontario presented at the Cincinnati congress played a key role in focusing some attention on the problem of habitat loss and its environmental costs. Brown noted that European experiments in forest restoration would probably not apply well in North America because of the difference in climatic extremes. He also included hypothetical landscape-scale maps in his publications illustrating the benefits of forest plantations to the problems of soil erosion, precipitation runoff, and climatic fluctuations.

Brown's final experiment

By 1885 it appears that many of the monospecific stands planted by Brown had shown signs of sensitivity to environmental extremes. In response to this, in 1886 Brown organized a larger scale multispecies planting of trees directly into a newly abandoned, 1-ha gravel pit situated in close proximity to the new college buildings. No record exists of the reasons for selecting the 14 species that were included, but the inclusion of both native and non-native taxa suggests that issues of local biodiversity were not commonly discussed at the time. An undergraduate work crew conducted the planting in the spring of 1887 in field number 3 and the following details of the planting were recorded in the College Annual Report for that year:

"The young trees, from three to five feet high, were raised from seeds in the garden

or in the experimental grounds, and are composed of a varied assortment, both evergreen and deciduous. The plantation is bounded principally by Norway and native spruces, larch and Austrian pines, enclosing walnut, butternut, English and American ash, birch, elm, linden, Norway and hard maple, etc. [Sycamore was also planted, but this was not reported until 1892.] The whole is planted in lines eight feet apart which will admit of the ground being cultivated for several years until the trees are well established."

At the densities cited, 2300 saplings were planted at the site. The ground was not drained or fertilized. The last reference to the site indicated that the plantation had been successful and that further site maintenance was not needed. Brown resigned his position in 1888. Between 1892 and 1994, the site was not actively managed by the university, but for a period of time from about 1920 to 1940, waste concrete and rocks were dumped in the northwest corner of the site, and deadfall was continuously removed to supply fuelwood for campus buildings. No effort was made to census the survival of the different taxa, or to determine the rate at which whole-system productivity changed over time.

Methods

To assess the present status of the forested gravel pit in the summer and fall of 1994 and the spring of 1995, a crew composed of staff and undergraduate students carried out measurements in the site. The distribution pattern of trees was mapped using the 1978 aerial photograph modified by the 1993 image and the ground survey conducted in 1994. All vascular plants present in the site were collected and identified. To determine the degree to which the structure of Brown's Woods has changed over time, the 1930, 1955, 1978, and 1993 aerial photographs were digitized to determine the changing proportion of the canopy dominated by coniferous versus deciduous trees. The total amount of open ground was also assessed.

Results

General description

The topography includes a level plain in the northeast corner of the site and a small but sharply defined esker-like ridge along the southeast side. Coniferous trees still line the northeast, southeast, and southwest sides of the site, whereas deciduous trees are most abundant along the northwest side and through the centre. Black walnut still occurs in distinct rows, but this is not true for the other deciduous species. Gravel extraction appears to have taken place along the edge of the ridge.There is a series of mounds along the northwest side of the site that is composed of broken blocks of cement and coarse, rocky debris that were deposited in the 20-year period from 1920 to 1940. The total number of canopy trees larger than 30 cm dbh is over 220, and there are few large canopy gaps present in the current stand, except at the southwestern corner of the site. The largest individual trees in the forest are black walnut and Norway maple measuring between 60 and 78 cm dbh and between 20 and 30 m in height. They form the greatest proportion of the total canopy at 38% and 40%, respectively. The surviving white spruce measure only 40 to 50 cm dbh, are 15 to 25 m tall, and form less than 8% of the canopy.

Table 1. Percentage of total ground cover dominated by large patches of open ground, coniferous canopy, and deciduous canopy revealed in successive images of Brown's Woods.

Category of Cover	1930	1955	1978	1993
Open patches	14.0	7.4	5.0	4.9
Coniferous	31.9	17.2	6.1	5.5
Deciduous	53.1	75.4	88.9	89.6
Total Tree Cover	85.0	92.6	95.0	95.

Regeneration status

By 1930, 85% of the site supported at least a sparse canopy. This value has increased to over 90% since that time, and the canopy is now relatively continuous. Large expanses of open ground have decreased from 14% to 5% (Table 1), and most of this open space is

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in the southwest corner of the site. In 1930, 31% of the forest canopy was coniferous; this figure has declined to only 5% today. Black walnut and Norway maple each represent about 40% of the present canopy.

Growth rates of large canopy trees are similar among the six species examined (Table 2). Black walnut clearly shows the greatest current growth rate, followed by linden and then Norway maple. Too few trees of sugar maple were present to allow it to be included in Table 2, but two trees with dbh values of 50.5 and 35 cm were cored. All of the species show good growth at present, but for all species the larger specimens showed a smaller growth increment.

All regeneration was restricted to areas of the woods where conifers were absent and where deciduous litter was abundant.

Table 2. Mean diameter at breast height and current growth rates for trees larger than 13 cm dbh and 6 m high.

Species	n	Mean dbh (cm)	Growth rate (% + 1SD)
Black walnut	9	45.4	4.06 + 0.60
Norway maple	6	46.5	1.99 + 0.22
Austrian pine	6	42.4	0.70 + 0.09
Norway spruce	9	36.4	0.48 + 0.08
European larch	6	40.5	1.02 + 0.25
Linden	9	38.5	2.72 + 0.67

Understory trees and shrubs

Black raspberry is abundant in the northern half and along the western edge of the site but is scarce in the southern half. The understory is layered at all of the lower elevations and along the western portion of the site, and it is composed of juvenile Norway maple, dogwood and choke cherry. These shrubs occur only in that part of Brown's Woods dominated by deciduous trees. In the upland portions of the site where Austrian pine, Norway maple, and European larch occur, the substrate is covered with needle litter, and herbaceous or woody understory vegetation is extremely sparse. Despite the small size of the site, there is a considerable amount of habitat heterogeneity.

Understory herbaceous plants

Six species of native herbaceous perennials, including Solomon's seal, Jack-in-the-pulpit, wild leek, bloodroot, red baneberry and trout lilly, have invaded the understory near the centre of the site, although most of the vegetated ground in the southern half is dominated by ruderal species . Common comfrey grows in large patches in the understory on the more open south side of the stand, whereas weedy grasses and forbs are abundant along those parts adjacent to roadways.

...none of the surviving adult European larch, Norway spruce, or Austrian pine have regenerated, even though the adults are producing viable seed...

Discussion

Planted native taxa such as white birch, sycamore, white elm, and white spruce that were initially abundant are now absent. Manitoba maple and dogwood, which were not originally planted, are now present and are actively regenerating, but only in areas below the gravel ridge where deciduous litter cover is thick. None of the surviving adult European larch, Norway spruce, or Austrian pine have regenerated, even though the adults are producing viable seed. Thus, after 107 years of woody plant development, 10 of 14 canopy-forming species initially planted in Brown's Woods are still present, and an additional native species has immigrated. Between the two canopy dominants (black walnut, a native, and Norway maple, an exotic), there appears to be no clear advantage.

The patterns of community structure are different from the native forest in southern Ontario, but certain components are becoming naturalized: the well-developed deciduous canopy imposes deep shade on the wide array of herbaceous plants. In the central part of the site, subcanopy shrubs such as dogwood and choke cherry impose an additional layer of shade that appears to favour the development of the native as opposed to the alien flora. The overall appearance and growth rate of the forest are similar to those of mesic temperate forest. The largest structural differences from native forest include the absence of intact logs on the forest floor, the lack of canopy gaps, and the absence of typical understory species such as ironwood and herbaceous stratum wildflowers such as trillium, among others. All of these species occur in surrounding natural forest stands on university property less than 500 m from Brown's Woods at a site known locally as the Dairy Bush.

Although a substantial leaf rain occurs annually in Brown's Woods, an organic layer similar to the surrounding deciduous forests in southern Ontario has not yet developed on the gravel substrate. Litter depth is no greater than 10 cm, and in many places the gravel substrate is still evident. Regeneration of forest trees appears to be restricted to sites with deciduous litter. All three coniferous species show abundant cone production, but this is followed by complete seed and/or seedling mortality. Seed-eating rodents and birds are common in the stand, and seed predation may therefore be responsible for the regeneration failure of many of the woody taxa in Brown's Woods.

The relevance of Brown's Woods to restoration ecology

For its time, the restoration of this completely denuded site was exceptionally modern. Brown made the decision to recruit a large and diverse community of forest trees without resorting to expensive soil remediation and drainage practices that were common during the late 19th century. The plan included the intentional planting of

conifers around the margins of the site in order to provide a more permanent windbreak than would be provided by deciduous trees. Finally, he included large, canopy-forming species commonly found throughout southern Ontario at the time. Unlike monoculture pulpwood or sawlog plantations in southern Ontario in the late 1800s and early 1900s, this plantation appears not to have been intended for harvest. Rather, evidence suggests that it was to be an example of how rapidly and efficiently complex forest cover could be returned to denuded land. To Brown's credit, in the winter of 1993 the City of Guelph mistakingly listed this site as an important natural forest fragment within the city's municipal boundary.

Following Brown's departure, the College of Agriculture made the important management decision not to intervene in the future development of the forest; this decision has added to its present scientific value. Despite the extremely small size of Brown's Woods and the imperfect documentation of its origin, there now exists a complex, multispecies community that has begun to take on the structure, appearance, and certain functional aspects of the deciduous forests of southern Ontario. Careful study can now be made of both the fate of taxa present now and those invading in the future.

There is no doubt that gravel-pit restoration carried out today would be designed very differently from Brown's work a century ago. For example, restoration carried out today would not include alien taxa, and planting would not be carried out in rows. Present-day literature on the importance of autogenic community assembly processes also makes it easier to predict the success of restoration activities on denuded sites by exploiting certain of the natural processes involved in such vegetation development.

...to Brown's credit, in the winter of 1993 the City of Guelph mistakingly listed this site as an important natural forest fragment within the city's municipal boundary...

Brown's Woods represents an example, however, of an ecosystem that was planned and built based on the best information and principles available at the time of the restoration. Brown's Woods now allows investigators to determine the degree to which the artificiality of a restored system is shed after 107 years of "hands-off" management. If left alone for another 107 years, the stand will allow us to study the degree to which homeostatic controls can return the site to something that reflects the lush deciduous forests that once occurred in this part of eastern North America.

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Up to standard: Employment guidelines for silviculture contractors

Jill Walker, Director, BC Employment Standards Branch (ESB)

Note: This article has been edited from a memo sent by the ESB to successful silviculture contract bidders in BC.

The issue of employment standards in BC was recently subject to an extensive and significant review. Three years ago in April 1993, public debate on the issue of employment standards began when the former minister of Labour and Consumer Services appointed a commission, led by Dr. Mark Thompson, to review the act. The current Employment Standards Act (ESA) and associated regulation came into effect November 1, 1995.

As part of the review, the Ministry of Labour developed a comprehensive interpretation manual for the new Act. A specific package of information has been produced for silviculture contractors and other persons interested in information. This article details the current policies of the ESB regarding silviculture contracts.

The Branch's polices were last updated in 1994. There have been no substantial changes to Branch policy in regard to silviculture. Recent revisions by the Branch were meant to ensure that the new sections of the Act were indicated correctly.

The Branch, in accordance with the Act, regards treeplanters/spacers/weeders/brushers as employees, and as such, they are entitled to protections and benefits afforded to employees by the Act.

Silviculture contracts and the ESA

Each year the ESB receives numerous wage complaints about contractors from former employees. The purpose of this article is to explain contractors' obligations and rights under the ESA, and thereby assist contractors in complying with the ESA. If complaints arise from employees, the ESA ensures there is a clear mechanism in place for conducting audits, which would involve a minimum amount of time and give unambiguous results.

Disputes in this industry often involve disagreements between employers and employees as to the number of trees planted or hectares spaced/weeded/brushed on a specific plot and the rate per tree or hectare. Other areas of dispute include hours of work: that is, people working in excess of eight hours per day or 40 hours per week without proper compensation; improper deductions from wages for breakage or damage to equipment; excessive charges for room and board, or rates that are not properly communicated at the outset; no recognition of proper pay periods pursuant to the ESA; and holdback on wages until the employer receives monies. Investigations into complaints are hampered by the lack of proper records.

Travel time versus work time

Time spent on travel during the working day is work for which wages must be paid. Commuting time is not work.

If an employer instructs an employee to report directly to a workplace different from the normal one, whether or not the travel time is paid work is determined by:

- the nature of the work;
- the industry in which it is being performed; and
- whether the distance is reasonable.

Some employers provide a marshalling point from which they transport employees to the work location. The time spent travelling from the marshalling point is work time and must be paid. The exception to this is where the employees are not required to report to the marshalling point, and they have practical alternatives for getting to the work location.

In general, reporting to a different place at the beginning of the shift is not paid travel time, unless the place is far away.

Keeping daily records

The Branch will require, as specified in ESA Sections 27 and 28, that daily records be kept by the employer for the number of trees planted by each employee; the number of hectares weeded or brushed; the unit price per tree or hectare daily rate; and the total hours worked by each employee. Employees must be given a copy of their daily record to ensure the employer and employee agree with the daily totals. The employer representative and employee must verify these figures by their signatures.

The employer has the responsibility to clearly communicate to each employee the price per tree/hectare prior to the starting of work on each particular plant/plot.

The package sent to contractors includes an example of a payment claim form that would be acceptable to the Branch. The contractor may choose another format, but a daily record must be kept that both the employer and the employee can verify as a true record of the number of trees planted; hectares planted, weeded or brushed; and all the hours worked on each given day.

ESA guidelines

Treeplanters/spacers/weeders/brushers are not sub-contractors

Treeplanters/spacers/weeders/brushers are considered employees, and therefore are eligible to receive at least the minimum compensation as outlined in the ESA or the contract of employment.

Treeplanters/spacers/weeders/brushers are eligible to receive annual vacation pay

Annual vacation pay must not be included as part of the unit price per tree

or hectare. Annual vacation pay should be paid once the employee terminates. However, the ESA allows for payment of vacation pay on every pay cheque, provided the employee agrees, and the amount of vacation pay is clearly identified on the pay-stub and separated from normal wages. Vacation pay is to be at least 4% of total earnings. Once an employee completes five years of service, they are entitled to at least 6% of total earnings.

Therefore, every pay stub must show the total wages earned, and how that figure was calculated:

e.g., 250 trees @ $.17/tree = $ 42.50
100 trees @ $.18/tree = 18.00
400 trees @ $.19/tree = 76.00
Total wages earned = 136.50
Vacation pay @ 4%= 5.46
Gross wages earned = $ 141.96

or

1.5 hec. @ $300.00/hec =$ 450.00
2.0 hec. @ $275.00/hec =$ 555.00
Total wages earned $1,000.00
Vacation pay @ 4%= 40.00
Gross wages earned= $1,040.00

The employer would be required to pay overtime as per ESA Section 40 for hours in excess of eight/day or 40/week That calculation is as per subsection (b) in the definition of "regular wage" in Part I, Section 1, ESA.

Hours of work and overtime

Overtime must be calculated pursuant to ESA Sections 1 and 40. This means that on a pay-period basis wages earned are divided by the hours worked in that same pay period to determine an hourly rate, which is then used to calculate overtime in accordance with Section 40.

According to Section 1 of ESA, "regular wage" refers to the following:

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(a) if an employee is paid by the hour, the hourly wage;

(b) if an employee is paid on a flat rate, piece rate, commission or other incentive basis, the employee's wages in a pay period divided by the employee's total hours of work during that pay period;

(c) if an employee is paid a weekly wage, the weekly wage divided by the lesser of the employee's normal or average weekly hours of work;

(d) if an employee is paid a monthly wage, the monthly wage multiplied by 12 and divided by the product of 52 times the lesser of the employee's normal or average weekly hours of work; and

(e) if an employee is paid a yearly wage, the yearly wage divided by the product of 52 times the lesser of the employee's normal or average weekly hours of work.

Section 40 of ESA defines "overtime wages" for employees not on a flexible work schedule as follows:

(1) An employer must pay an employee who works over eight hours a day and is not on a flexible work schedule adopted under Section 37 or 38;

(a) 1/2 times the employee's regular wage for the time over eight hours, and

(b) double the employee's regular wage for any time over 11 hours.

(2) An employer must pay an employee who works 40 hours a week and is not on a flexible work schedule adopted under Section 37 or 38

(a) 1/2 times the employee's regular wage for the time over 40 hours; and

(b) double the employee's regular wage for any time over 48 hours.

(3). For the purpose of calculating weekly overtime under subsection (2), only the first eight hours worked by an employee in each day are counted, no matter how long the employee works on any day of the week.

(4) If a week contains a statutory holiday that is given to an employee in accordance with Part 5,

(a) the references to hours in subsection (2) (a) and (b) are reduced by eight hours for each statutory holiday in the week; and

(b) the hours the employee works on the statutory holiday are not counted when calculating the employee's overtime for that week.

Payment of wages (ESA Section 17)

A "pay period" means a period of employment not exceeding 16 consecutive days. The contractor must, at least semi-monthly, and not later than eight days after each pay period, pay to each employee all wages earned for the pay period by the employee, other than wages for annual vacation or accrued statutory holidays, which are paid upon termination or vacation, whichever occurs first. Statutory holidays are to be granted in accordance with the ESA and regulations.

Where the employment of a treeplanter/spacer/weeder/brusher is terminated by the employer, the employer must within 48 hours pay the employee all wages owing. In the case where an employee resigns (quits employment), the employer shall within six days after the date of the termination, pay all the wages owing to the employee.

All wages must be paid in Canadian currency, or by cheque or money order, payable on demand, drawn on a savings institution, or, if authorized by an employee in writing, by deposit to the credit of the employee's account in a savings institution.

Deductions from wages

Employers must not deduct from an employee's pay cheque, any money without full written consent from the employee. Any unauthorized deductions from an employee's pay cheque without approval will be considered as unpaid wages by the ESB. Deductions for stashing trees, crop failures, or damage to equipment will not be considered acceptable deductions. There are other avenues employers may pursue with respect to such matters.

The ESB accepts that the normal remuneration in the silviculture industry is based on a piece-work basis. However, employees must be paid for work spent in camp set-up, dismantling, obtaining supplies, and/or replanting by the hour. In such cases, the employer should establish an (hourly) rate of pay for such duties.

General branch policies on the silviculture employment relationship

The ESB expects each contractor to provide adequate supervision for their employees to meet the needs of the owner/client, e.g., Ministry of Forests or forestry firm. Supervisors may be paid at an hourly rate, monthly salary, or a combination of piece-work and incentive commissions based on the crews' productivity. If the supervisors are true and verifiable managers, they are not covered by the "Hours of Work and Overtime"

provisions of the ESA.

Regarding the planting of the plots, the employment contract must be set out in such a fashion that an individual's planting rates and subsequent adjustments are based solely on the individual's performance versus any type of group measurement.

Should the assessment be so low that the contract (contractor) is required to replant, then an employee cannot be required to replant without compensation. That compensation can be the regular compensation arrangement with the contractor (e.g., "piece rate per tree" or an hourly rate of pay) including overtime where applicable, that is not less than the minimum wage for all hours worked.

Contractors must distribute the hand-out ESB has prepared to each employee, in order to ensure that the employer and the employee start each contract with an understanding of their relationship and the employment contract. This hand-out as well as the Guide to the ESA should be placed in an area accessible to all employees. As Section 6 of the ESA states:

(1) An employer must display in each workplace, in locations where it can be read by employees, a statement of the employees' right under this Act.

(2) The statement must be in the form provided by the director.

Additionally, employers must post the Employment Standards poster where workers can readily view it (e.g., camp site, vehicle).

The ESB hopes silviculture contractors will view this information as a means to assist them in their relations with their employees.

FEATURE

Watershed renewal meets with peaks and valleys

Robert Seaton

After two years into the Forest Renewal BC Watershed Restoration Program (WRP), the number of steps along the path to completed restoration projects is longer and more complex than most of us at first expected. Many of these steps are technical requirements for which there are excellent reasons, while others represent administrative hurdles. The net effect is that employment in this program to date has occurred primarily in the administrative and technical consulting sectors, with relatively few person years of work for forest sector field workers. As the first projects move into their third and fourth years, the anticipation is that more onsite restoration will be accomplished. However, in the meantime many proponents and contractors have experienced frustration with a series of hurdles that includes:

1) Ongoing changes to the FRBC application process, and delays in approvals.

2) The need to involve increasing numbers of professionals in the assessment and prescription phases to meet the Forest Practices Code, with shortages of qualified personnel in some areas.

3) Limitations placed on the amount of work that can be administered by MOF and MELP staff overwhelmed by the combination of the Code and FRBC.

Initiatives could be taken within the structure of the existing programs to remove some of the bottlenecks. Some of these initiatives have already been taken by MOF, MELP and FRBC personnel, while others (below) await development:

1) The ongoing effort to produce standard contract documents for WRP work in the MOF has the potential to significantly reduce the administrative load generated at the district level.

2) Development of intensive, subject-specific programs to provide WRP/Code-specific training in technical areas, and allow the replacement of professionals by WRP technicians in specific circumstances. For instance, for in-stream restoration, we currently see in some of the specifications, requirements for registered professional biologists to oversee every aspect of a program. Instead, many of these functions could be undertaken by forest sector workers given a four-to-six month, intensive training course. Similarly, a course is currently offered in terrain stability mapping and assessments, but enrollment is restricted to existing professionals. Redevelopment of this program to open enrollment to a

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wider audience would increase forest sector worker employment. However, to be effective, courses such as these or the University of Victoria's restoration program would have to be given Code recognition.

3) In some specific districts, it may make economic sense to work out funding for an additional WRP person within the MOF or MELP, in order to ensure that work is delivered. When the lack of a $40,000 person is holding up millions of dollars in restoration work, the returns to the economy of releasing those funds will more than pay for the costs of increasing ministry staffing. At the same time, ensuring that these programs can be efficiently delivered with as few administrative expenses as possible is in everyone's interest.

The other problem currently facing WRP is the likelihood that when field work does begin to happen, it will flood onto the market at once, overwhelming the available personnel and resources. Within the contracting community, ensuring that a rapid but orderly ramp-up period occurs will improve the ability to deliver quality work. In order to meet community and other goals, much of the early non-machine work has gone to groups chosen on a social policy basis. These groups are unlikely to be able to undertake the scale of work needed to be done once the program is in full swing. The existing contracting community will need to step in to take up the slack. Integrating FRBC's forest worker employment goals into the structure of the existing contracting community would promote a more orderly ramp up.

All of these hurdles can and will be overcome. Examining them from the point of view of efficient delivery of services will ease the path to a fully functional watershed renewal program.❖

UI reform greeted with little fanfare

Note: Reprinted from The Vancouver Sun, *May 9, 1996.*

The House of Commons has passed legislation that will mark the most dramatic reform of unemployment insurance in a quarter-century. What was once a cushion for the unemployed will become a trampoline designed to bounce them back into the workforce. And yet, since the bill was tabled in December, there has been little fanfare.

"It's very strange, very quiet," said Ken Battle, president of the independent Caledon Institute of Social Policy. "The shrinkage of the program is truly astounding. Are people just worn out by social policy reform?"

Canadians got their first inkling of what lay ahead January 10, 1994, when then-human resources minister Lloyd Axworthy promised an "employment insurance" scheme that would give the jobless incentives to find work. At first, there were noisy protests and close scrutiny of proposed changes. But in recent weeks, little has been reported about a Commons committee that studied the bill this spring.

But the legislation is far from timid. It would:

- slash the size of the $17-billion UI program by $2 billion within five years;
- make it more difficult for some jobless to qualify for pogey by changing eligibility from the number of weeks worked to the number of hours worked;
- reward (by giving higher benefits) unemployed workers who put in long hours before losing their job;
- penalize frequent UI recipients (mostly in seasonal industries) with reduced benefits;
- shorten the maximum duration of benefits for all recipients;
- provide benefits, for the first time, to part-time workers; and
- take $800 million annually from the UI program to fund new wage subsidies and supplements, self-employment grants, and training and job creation plans.

Liberal MP Maurizio Bevilacqua, formerly Axworthy's parliamentary secretary, is now chair of the committee that studied the UI bill.

He says most Canadians have come to understand why the UI reforms are necessary in a changing economy where more people are holding short-term jobs and require training assistance from the UI fund. "I think we have the best package you can possibly have, given the [fiscal] framework that we're working within."

Kevin Hayes, senior economist with the Canadian Labor Congress, disagrees. "We have an absolutely obscene situation going on here." Hayes says the bill will devastate the UI program, cutting the jobless off the pogey to seek jobs that don't exist. And yet, he says, Parliament and the media are barely paying attention.

There are several explanations for the lack of scrutiny, all of which tend to serve the Chretien government's political strategy of promoting the reforms as positive news rather than as a major cut to a key social program. The bill is complex; few MPs understand it. The myriad changes — such as how people will have to compile up to 700 hours of work to qualify for UI, but still won't necessarily receive a full benefit — are difficult to explain.

The parliamentary opposition is fragmented. The Reform party wants even more stringent reforms, while the Bloc Québecois essentially argues for the status quo. And the Bloc's criticism is often marginalized because many people don't trust a party that defends a key Canadian social program, while at the same time advocating the breakup of Canada.

Public hearings have been limited. While a committee travelled the country extensively in the fall of 1994 gauging

public views on broad reform topics, it's been a far different story this winter. Only about two weeks were set aside for a Commons committee to hold hearings on the actual bill. The committee remained in Ottawa. And eventually, the government imposed a time limit on the committee's detailed analysis of the bill's many clauses.

Amendments made this winter may have left the impression that seasonal workers had been spared. Within hours of replacing Axworthy in January, Doug Young had raised those expectations. The amendments do soften some of the bill's measures by fixing technical anomalies — seasonal workers with gaps in their employment won't be unduly disqualified from UI, and low-income families will be exempt from certain penalties. Still, the bill will penalize chronically unemployed workers for their reliance on UI.

Some elements of the new program took effect July 1. ❖

French forestry expo proves insightful for Canadians

Joyce Murray

Forexpo '96, a forestry exposition held June 5 to 7 in the Aquitaine region of southern France, was judged a success by organizers. "The weather has cooperated, attendance is exceeding expectations, and everywhere forestry people are networking," stated a representative of La Maison de la Forêt.

Forexpo took place on 40 hectares of maritime pine forest near the town of Soutons, France. The location allowed equipment representatives to carry out product demonstrations such as pruning, mechanized thinning, scarifying a recently logged area, and planting by hand and by machine. Forestry equipment suppliers from a number of countries, including Canada, attended the exposition to display their products, as well as take part in the hauling contest, equipment demonstrations, training forum, forest policy symposium, and *un gourmet déjeuner complementaire.*

The Aquitaine region deserves the attention of Canadians concerned about increasing the number of jobs created by the forest sector. According to 1992 statistics from the Aquitaine region, the 1.7 million hectares of primarily softwood forest yields an annual harvest of 8 million cubic metres. Thirty thousand direct jobs are sustained by the harvest, renewal and processing industries. Compare this with a BC working forest of over 20 million hectares, from which the harvest of 74 million cubic metres generates an estimated 84,000 primary and secondary jobs. Aquitaine's forest area is 8.5% the size of BC's, the volume harvested is 12 % of BC's, yet the number of jobs is 36% — in other words, more than three times the number of jobs per cubic metre harvested. Given the BC Premier's commitment to increasing forest sector jobs here, there could be something we can learn from the Aquitaine region's forest industry. ❖

NRTEE sponsors woodlot-cutting round table

Jim Verboom

The National Round Table on the Economy and the Environment (NRTEE) is offering to sponsor the establishment of a round table on private woodlot cutting in New Brunswick and Nova Scotia.

The National Round Table is a panel of 24 Canadians appointed by the prime minister as opinion leaders from a variety of regions and sectors in Canadian society. Their mandate is to improve the quality of economic and environmental policy development by providing decision makers with the information necessary to make reasoned choices on a sustainable future for Canada.

Their "State of Debate" report includes a listing of the various opinions held by all the stakeholders on a particular subject. It shows what these people agree on and where their opinions differ. As well, the report now contains recommendations to decision makers on further action on the subject in question.

Many stakeholders in the Maritimes have been encouraging the NRTEE to look at the issue of private woodlot cutting. The Provincial Round Table in New Brunswick has agreed to participate in the proposed round table on private woodlot cutting, while Nova Scotia's Round Table has yet to decide. Participation would give both provinces an opportunity to learn from each other.

Many issues influence cutting on private woodlots including tax implications, market access, availability of information, training and expertise, community stability, suitable contractors, and regulations (or the lack thereof).

The Round Table process will offer all Canadians with an interest in our forests to have their input in the debate and a chance to influence the way our forests are managed.❖

Forest coalition reports

Jim Verboom

Plans are under way for public input this fall into the work done by the Nova Scotia Coalition of Forest Interests. The current document is the result of almost two years worth of behind-closed-doors discussions, during which time all members (including association presidents) were prevented from consulting with their constituencies.

The result of this work is a draft outlining a sustainable timber supply strategy, which includes:

1) statements supporting sustainability of wood supply;

2) numerous voluntary guidelines for good forestry practices;

3) no means to encourage those carrying out sustainable forestry practices;

4) no penalties for those who harvest with no thought of tomorrow;

5) no provisions for the sustainability of the work force that earns its living in forestry, or the communities that they live in; and

6) no input from any part of our society that has vested interest in our forests, other than industry insiders.

In short, it appears this draft will maintain the status quo, that is:

1) the elimination of small independent contractors and woodlot owner-operators through denying them market access for pulpwood; and

2) over-cutting of spruce while under-utilizing balsam fir, aspen, pine, red maple, etc.❖

Corporate responsibility?

Jim Verboom

Millions of public dollars have been spent since 1978 on private woodlots in Nova Scotia. These investments have had several major benefits, including giving birth to a new generation of contractors and woodlot owners who found it possible to earn a living while leaving the best and taking the rest.

Now that the public dollars are gone, the ability of these people to continue depends on market access for their pulpwood.

All three local pulp companies in Nova Scotia have the opportunity to be a positive influence on the forestry practices in their province when they pick who they will buy fibre from. Due to the chronic shortage of market for pulp fibre, who they choose to buy from greatly affects the forestry practices encouraged in Nova Scotia. Will they give first access to market to those who are practising good forest management or will they favour those that strip woodlots with no thought to the future? Only time will tell.❖

Kimberly-Clark refuses private woodlot fibre

Jim Verboom

The Kimberly-Clark pulp mill in central Nova Scotia is refusing to purchase fibre produced by landowners and independent contractors. Since 1965, private woodlot owners have been supplying up to 250,000 m3 (i.e., 25% of the mill's consumption) annually.

At the end of December 1995, the mill stopped taking round wood and converted to using chips as its sole source of fibre. During 1995, the mill twice refused to discuss purchasing pulp chips from an operation that had provided it with a stable supply of round wood for over ten years.

Kimberly-Clark planned to have all the round wood channeled through local saw mills where logs suitable for lumber would be sawn and the rest turned into pulp chips. This plan has resulted in the price of round-wood pulp dropping 45%

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Éclaircie commerciale — encore beaucoup à découvrir

Tony Côté

Au Québec l'éclaircie commerciale prend de plus en plus d'ampleur. Les premières expériences dans un domaine sont souvent très révélatrices et remplies de surprises. En ce moment on connaît les effets bénéfiques de l'intervention, mais très peu de chiffres existent sur sa rentabilité financière. C'est donc avec les connaissances théoriques actuelles que les entrepreneurs se lancent à l'assait de l' éclaircie commerciale.

À l'automne 1995, une éclaircie commerciale à été réalisée dans une pessière noire B2 70 située sur station humide. Le volume était de 125 m3/sol/ha. Les objectifs étaient de stimuler la croissance des arbres dégagés d'augmenter leur production de bois et de récupérer la mortalité. L' intervention à donc été effectuée dans les règles de l'art, ce qui implique le respect des distances entre les sentiers, le prélèvement de 35% du volume et le martelage de la totalité du terrain.

La coupe a été effectuée manuelement sur 12 hectares de pessière avec 3 équipes d'abatteurs totalisant 143 jours travaillés. Leur production a été estimée à 4.23 m3/sol/ jour Ce qui a permis de récolter 604.89 m^3/sol de billes de l.22 m. (Tableau 1).

Tableau 1

Semaine	Nombre de personnes	Jours travailles	Estimé du volume récolté m^3/sol
1	2	8	ND
2	11	26.5	112.10
3	7	33.1	39.59
4	7	27.5	116.33
5	7	30	126.90
6	7	18	76.14
TOTAL		143	604.89m^3/sol

Un Timberjack 230 muni d'une remorque sans chargeuse a permis de sortir les bois coupes jusqu'au chemin de camion. Quatre opérateurs avaient la responsabilité d'effectuées l'operation. Cette étape n'a pu être comptabilisée efficacement car le bris de la machinerie et la neige abondante ont forcé les opérateurs à arrêter durant de longues périodes discontinues.

L'autovérification des travaux nous a permis de constater que l'abattage manuel était très efficace et donnait des résultats plus que satisfaisants dans la qualité d'exécution. Cependant, quelques points pourraient être améliorés pour augmenter la production et l'efficacité du travail.

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to $20/tonne roadside. As well, Kimberly-Clark will take the pulpwood only when it wants the sawlogs bad enough.

Since pulpwood markets are essential to practising sustainable forestry, these changes are destroying the private woodlot owner-operators' ability to make a living from their woodlots while leaving their properties in better shape than when they got them.

Many woodlot owners are now leaving this good fibre on the ground to avoid the cost of bringing it out at a loss — that is, if a sale can be found for it at all. ❖

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Les bois coupés sont difficiles de manutention quand leur diamètre dépasse 26 cm. Dans l'éventualite' de billes de longueur supérieure à 1.22 m, cette difficulté augmente proportionnellement à leur longueur. En effet, u'ne production de 4.41 m³/sol/jour est faible et, si la longueur augmente, celle-ci diminuera. La solution suggérée est de débarder les arbres des sentiers en longueur et de les débiter au chemin de camion. Cette mesure a pour objectif de produire des billes supérieures à 1.22 m et d'augmenter la productivité et la mécanisation. Les bandes pourront ainsi être récoltées en billes de 1.22 m.

...les objectifs étaient de stimuler la croissance des arbres dégagés d'augmenter leur production de bois et de récupérer la mortalité....

Les distances de débardage sont aussi des facteurs limitatifs dans l'exécution des travaux. La distance ne doit pas excéder 300 m car le rendement des transporteurs diminue du tiers. Les morceaux traites doivent donc être situés près des chemins de camionnage.

Le troisième point à retenir est le martelage. Cette étape demande beaucoup de temps, donc d'argent. Une formation spécialisée des ouvriers pourrait devenir très intéressante pour augmenter la production dans les bandes. L'apprentissage des méthodes de coupe et de choix de tiges devrait être un investissement rentable. Cette technique est déjà enseignée et présente de bons résultats.

Pour conclure, du côté forestier, l'éclaircie a donné des résultats très convaincants. Par contre, financièrement l'intervention est très difficile à rentabiliser. Les travailleurs à forfait ont beaucoup de difficulté à couvrir leurs frais et 'obtenir un salaire satisfaisant. Il faudra donc bien cibler les peuplements à traiter, car le volume à l'hectare et les accidents de terrains font la différence, pour les abatteurs et le trasporteur. En forêt, trop d'impondérables peuvent faire la différence entre une réussite ou un échec.

English summary: Commercial thinning — so much to discover

Commercial thinning is expanding in Quebec. The physical effects of this treatment are well known but much less is known about its long-term financial returns.

One project in the fall of 1995 was done on 12 hectares of pine with a density of 125 m³/ha. The objectives were to remove 35% of the volume, getting rid of deadwood and stimulate the growth of the leave trees. The stand was thinned with powersaws by three teams, and the timber was forwarded to the logging road.

The manual thinning was effective and high quality, but there are several points that improve the production rates. The pieces are difficult to handle when their diameter is greater than 23 cm. For lengths greater than 1.22 m, the difficulty increases proportionally. The distance forwarded should not exceed 300 m or else the efficiency of transporting the wood suffers considerably. Special training in choosing and cutting the stems appropriately can make the thinning process much more efficient. Unless the specific terrain and conditions of the stand are well targeted, the contract workers will have a difficult time making a decent wage. This can make the difference between a successful or a failed project.❖

Woodlot owners talk change at March AGM

Chris D. Smissaert, RPF, Chief Forester, Silvi-Crew Ltd.

Forest management on small private woodlots is undergoing significant changes. On these lands, pre commercial thinning (PCT) is the main silvicultural treatment carried out, seconded by planting (PLT) and management plans. Local marketing boards administer the private woodlot programs. This year the York Sunbury Charlotte Board reduced PCT from $704/ha to $650/ha, while the landowner's contribution increased from 15% to 20%.

Landowners who actually do their own work receive the base rate of $520/ha and do not make a landowner's contribution. In other jurisdictions, contractors have been allotted funds for various specific costs such as wage expenses, workers' compensation, or profit. For individuals not having these costs, reimbursement rates should be modified. Furthermore, in the past, these individuals have not been issued T4 slips from the marketing board or the Department of Natural Resources and Energy (DNRE) in what amounts to a government-sponsored underground economy. We will try to get the minister to act on these concerns.

Since the DRNE has taken over from the federal government the funding of forest management on small private woodlots, there has been a downward pressure on PCT reimbursement rates. On Crown lands, the DNRE has used a density-dependent formula to calculate reimbursement. Applying Crown land procedures to small private freehold may be like trying to put a round peg into a square hole. Costs are significantly higher on small private freeholds when considering the amount of "prospecting" required for the next job. Sometimes the same amount of set-up time can be spent on five acres as on 50 because block sizes are considerably smaller, often with irregular boundaries. Moreover, scattered residuals are more common on private woodlot properties.❖

Some clearcut talk on clearcuts

Chris D. Smissaert, RPF, Chief Forester, Silvi-Crew Ltd.

In May in Miramichi City at the National Round Table on the Environment and the Economy, Frank McKenna made dramatic statements pertaining to clearcutting and the use of taxation to penalize poor management practices: unless operating according to a recognized management plan, clearcutting more than 10% of a given woodlot will result in the loss of favourable tax status.

Supposedly, existing DNRE staff and local marketing board staff (but not according to them) will implement the program. No details exist yet on what constitutes a "recognized management plan" or who can write one. In addition, no clearcutting will be allowed within 30 metres of all main highways. Property owners have been singled out, but some people argue the real problem is demand for forest products and unregulated logging contractors (often with big machines purchased through government grants and loans that necessitate clearcutting one property after another).

More significantly, recent government "deregulation" of the small woodlot sector has turned contractors loose to negotiate their own contracts with any buyer. Another nail in the coffin of the small private woodlot's sustainability is the prohibition on small contractors operating on Crown land (Crown Lands and Forest Act 1982).

All players recognize the dangers of over-cutting the resource. However, the above new policies will fail to protect the small private woodlots. Meanwhile, logging contractors will continue to do any number of things including blatant highgrading where the best 70 to 80% of the wood will be removed, and the junk left behind (*voilà* — no clearcut!), or the lot will be simply clearcut and turned over to the Crown in lieu of taxes.

Talking positive

On the positive side, Repap in Miramichi City has developed and begun to implement "Sustainable Forestry: Master Training Plan for Continuous Improvement 1996-2000." The five-year plan focuses on four occupations including pre-commercial thinning, powersaw, forwarder, and processor operators. This integrated training concept is very good, and Repap and Joe O'Neill and all their workers should be congratulated! ❖

Building partnerships in PEI

Wanson Hemphill, General Manager, PEIFIA

PEI forest stakeholder representatives have reached an agreement to work together on forest management programs and issues. The pooling of effort and resources is expected to save time and money, and yield more relevant silviculture results. The private sector will be represented by directors of the Forest Improvement Association representing sawmillers, forest workers, forest contractors, woodlot owners, forest instructors and Christmas tree growers. The Province of PEI will be represented by the managers of the Forestry Division.

Funding for the programs will be shared at 70% from government and 30% from the private sector. Private funding is generated from a $1/cord checkoff on softwood sales paid by both forest contractors and sawmillers or by processors/shippers, and from a $40/acre cost to landowners for plantation establishment. In this way, the cost of future forest management will be shared by owners and users of the resource and governments that benefit from taxes and economic activity.

Contingent upon the cost-sharing of silviculture treatments is the principle of sharing in the decision-making process. The Council will decide all silviculture programs, incentive rates and standards through a consensus process. The amounts and types of trees to be seeded, grown and planted will be decided two years in advance. Silviculture budgets will be negotiated annually based on need and available contributions. Any extra private dollars will go into a renewal trust fund managed by the Council.

Money for the operation of the Forest Improvement Association and member organizations is included in the total shared budget. To date, private sector Council directors have taken a "lean and mean" financial approach with no member organizations requesting funding.

Sound too good to be true? Can competitors and governments actually sit down and make rational non-vested decisions for the benefit of future generations of Islanders? The results to date have been encouraging but not without differences of opinion. By working together and hearing the reasons behind opinions, stakeholders have come to respect other ideas and suggestions using the acid test of "what's best for PEI forests." A strong chair ensuring fairness, honesty, consistency, confidentiality, cooperation and participation are necessary components.

That private stakeholders are volunteering their time at meetings while government partners are being paid represents a potential problem area. No one resents this imbalance, but there is the potential for volunteer overload and burnout. Many silviculture program issues — as well as current issues and concerns over harvest levels, codes of practice, and preparation for sustainable forest certification — must be discussed and decided upon within given time frames. In addition, meetings of stakeholder groups to keep people informed and give representatives direction are necessary. Everyone is interested and motivated. The challenge will be in keeping that interest and motivation.❖

Protecting immature forest stands

Wanson Hemphill

The PEI Forest Partnership Council is only a few months old, but directors feel motivated to begin some immediate action on current issues that can't wait. First on the list is the recent increase in softwood harvest levels, and what that means to the future sustainability of our forest resource. The current age-class structure and life cycle of the old-field white spruce, as well as the existing harvesting capacity driven by market access, necessitates that we begin by working on a code of practice to protect immature stands from being harvested, and to help ensure our thinnings and plantations have a chance to achieve maximum yield.

To monitor whether immature stands are being cut, we first have to know where the cutting is taking place. To that end, a regulation requiring 30-day notification of the location of each harvesting activity is needed. Also, in order to assure compliance by all harvest contractors, a system of contractor certification, together with severe penalties for those who choose to disregard the regulations, must be in place. Put this all together with some definitions of terms, minimum ages for harvesting, a random monitoring system and a permit exception requirement, and you have the basis for a draft discussion paper. This is where we are now.

Over the summer, we hope to allow for discussion, input and suggestions. There is not a lot of opposition to protecting immature stands as long as everyone is fairly treated. Where most discussion is expected is on the requirements for regulations on reporting and contractor certification. Over time, developing this section of a code of practice may lead to a more comprehensive practices code covering all aspects of PEI forest operations including environmentally sensitive treatments, and may help us get ready for sustainable forest certification.❖

Over-cutting or over-reacting?

Wanson Hemphill

Many areas have recently become concerned about increased softwood harvest levels. Workshops, round tables, press releases and stakeholder meetings have produced a variety of recommendations and ideas to work on this perceived problem. Governments and political groups have also spurred some actions such as tax increases for liquidating areas without recommendations from a forest management plan; 30-metre buffer strips along highways; and a proposed referendum on clearcutting.

Are we overreacting to an increased market demand and harvesting capacity? Why has this issue caused such quick reactions? To what extent are these actions politically motivated? Did we not know we were exceeding our AACs last year? If not, why not? Perhaps, we should consider the implications of sounding big alarm bells and possible over-reactions that may in turn cause other problems.

Discussions to date have yielded some obvious conclusions worth consideration:

1) We need accurate up-to-date information on the resource, AACs, sales and uses.

2) We need to work together on common issues to produce joint solutions. We may shoot ourselves in the foot by over-reacting.

Markets tend to fluctuate over time and some have shown to be cyclical. Age-class structures may affect available numbers of trees ready for harvest. Everything in forestry should be planned for the long term. ❖

Despite problems, WSCA backs FRBC

Roy Biv

Although many of its members are not enjoying completely harmonious relations with Forest Renewal BC, the WSCA says it doesn't want to throw out the two-year-old Crown corporation. WSCA President Peter Gommerud stated the association's official position as a response to a controversial editorial in the spring edition of *CSM* that called for the partial dismantling of the new forest bureaucracy.

"We want to keep Forest Renewal and see it operating efficiently," said Gommerud in an interview this spring. "It's the best thing we've seen so far, for consistently driving enhanced forestry in the province."

Gommerud says there is almost universal support for FRBC's mandate. However, he warns the FRBC program has some severe delivery problems that have to be dealt with promptly. Otherwise, the corporation could begin doing more bad than good in BC's forests.

"I think FRBC has to take a more strategic approach to implementing its mandate. It has to come up with a broad program rather than just working from one project to another. If FRBC continues to only look ahead to the next proposal in its hopper, it will never have time to see where it's going," says Gommerud.

And already FRBC may be getting off track. Gommerud says the corporation's mandate should be directing it to keep underemployed West Coast stand-tending workers and contractors busy all year round rather than replacing them with displaced harvest sector labourers, community trainees, and new contractors partly sponsored by FRBC loan guarantees.

The WSCA president is just as worried about Bill 22, an amendment to the Forest Renewal Act, that passed first reading in the BC legislature in April. The amendment will establish an agency charged with giving priority hiring on FRBC funded work to laid-off forest workers and First Nations groups.

"Here's the old problem of recognition. It's as if we don't exist. This bill has the potential of putting contractors and their crews out of work all over the province."

Just as serious a threat to silviculture contractors is the apparent administrative congestion between the MOF and FRBC that is keeping approved field work from making it to the forests.

But the WSCA says it is behind the corporation despite its problems. "FRBC is growing steadily more sensitive to silviculture contractor issues as well as to how the whole forest industry operates," says WSCA Forest Renewal Coordinator John Betts. "I think we have to allow this new corporation some time to develop its own collective intelligence. After all, FRBC has the task of inventing itself as a corporation while at the same time operating under a crushing weight of expectations. It would be unnatural if it didn't make a few mistakes."

Betts says the real test will be how well FRBC responds to the criticism and advice it receives from the communities and industries it's supposed to serve. He says there is reason to be optimistic.

"At the moment FRBC is conducting a customer service review. This survey is likely to contain some criticism of the corporation. If FRBC is willing to go out

Where is Alberta's FRIP at?

WSCA Bulletin

Silviculture contractors operating in Alberta are beginning to wonder what is happening with the province's Forest Resources Improvement Program. Contractors say, so far, the fund has yet to translate into much silviculture work on the ground, concentrating instead on industry inventory-and-survey programs. This process has left contractors wondering what to expect.

"It would take some lead-in time at the operational level to gear up for a massive program," said WSCA President Peter Gommerud. "We're not in a position to make a smart business plan for the future."

Gommerud admits the industry has no idea if FRIP would amount to a marked increase in the provincial workload of silviculture projects. He says it's time the contracting industry got involved in the policy making that will eventually put FRIP into practice.

"We may not be able to contribute to all the complex technical debates involved here, but we have operational expertise that can't be overlooked. We are closer to the ground, and understand the limits and possibilities of what actually can be done."

Gommerud fears that "desktop forestry" too often guides forestry decisions and that the "art of forestry" is being lost. "That art is not lost for us contractors. We're right there in the field."

He thinks the contribution of the working silviculture contracting community is essential to any programs FRIP might be considering for implementation. At the moment, the silviculture contractors are not active on the sub-committees that consider FRIP's direction.

Gommerud said FRIP is implicated in a number of complex debates in Albertan forestry at the moment, as well as a major restructuring of the Alberta lands and forest service. These major silvicultural and administrative transitions have made the evolution of the FRIP program all the more complex, he added.❖

and ask what they're doing wrong and right, there is hope they might be just as willing to change things. This is unusual for a bureaucracy. It gives us encouragement to keep working with them." ❖

Many reasons for shorter treeplanting season in West

Roy Biv

Although weather and out-of-work treeplanters received most of the press this spring, the real issues behind the changing pattern of treeplanting in BC may have gone unnoticed, according to the Western Silvicultural Contractor's Association. The WSCA says even if the weather cooperates next year, the May-June interior season is likely to be shorter than planters would like.

"Industry expects us to plant their trees in shorter time than they have in the past," says WSCA President Peter Gommerud. That combined with an anticipated decline in the number of trees planted provincially will likely add up to fewer planting days for planters. But even if the trees stay constant, planters will still have fewer days running shovels — and that's not just because of a shorter planting window. Planters are becoming victims of their own success.

"Because some of the planting standards have changed, we're finding novices catch on a lot quicker," says Mike Rushant of Silvaram Holdings Ltd. "We've had a major increase in productivity from inexperienced crews — something we weren't counting on." Silvaram wound up sending a crew of novices home early this year because their crews had managed, more or less, to plant themselves out of work.

Contractors are also finding they have more experienced planters staying with them longer. Contractors figure the job market outside the forest sector is bleak to the point where college-age planters, who would normally move onto other careers, are returning to planting.

"The average age on our crews is increasing," says Gommerud. The result is higher crew productivity, which takes more days off the planting season. It may be good news for clients that their trees are going in the ground quicker and better, but Gommerud is worried about the long-term effects.

"This could be a recipe for disaster." If the season continues to shorten, Gommerud says the chance for college students to earn enough to be able to return to school will grow remote. At the same time, if the veterans stay with treeplanting there won't be an opportunity to train new people. That could leave contractors without any new planting legs if fatigue or opportunity causes an exodus of veterans.

...contractors figure the job market outside the forest sector is bleak to the point where college-age planters, who would normally move onto other careers, are returning to planting....

"I think we have to watch these developments, and make sure our clients understand the impacts some of their policies are having on the industry," Gommerud said.❖

WSCA pushes standtending issues

On May 31, the WSCA Forest Renewal Coordinator and three standtending contractors from the Interior and Vancouver Island met in Victoria with key policy makers from the Ministry of Forests and Forest Renewal BC. This "standtending summit" raised the issues surrounding the plight of West Coast standtending crews, including the diversion of traditional contract work to displaced workers and First Nations groups; the threat of Bill 22 to contractor crews; the Ministry of Forest's inability to implement FRBC proposals in parts of the province because of staff shortages; and the need for a comprehensive study of the province's existing standtending industry.

According to the WSCA's John Betts, the group succeeded in getting the attention of high-level administrators who included Gerry Armstrong, deputy minister of forests, Colin Smith, chief executive FRBC, and Don Cochrane, forest jobs commissioner.

"I think we made a highly effective presentation. These people are now a lot more sensitive to our issues. We weren't expecting instant results but we did open some eyes, and I'm hoping, a few minds."

Already there have been some results from the meeting. Key administrators went to Kamloops soon after the Victoria meeting to discuss with contractors immediate short-term solutions to problems in the Clearwater District. Some success was achieved there, said Betts, but the problem of ministry staff shortages, commitments to other priorities, and the implementing of FRBC projects remain major obstacles. The WSCA is drawing up a proposal that takes the Ministry of Forests out of the FRBC project loop, leaving it to audit and monitor projects similar to the way in which basic silviculture is done with licensees.

Approval was given to the development of a study of the standtending industry. A subsequent meeting with FRBC brought approval in principle for a similar analysis of the treeplanting sector. The Ministry of Forests in the Vancouver region is currently tracking standtending funding on a district-by-district basis on parts of the West Coast and Vancouver Island. The ministry also indicated it would be looking at some of the costs of FRBC partnership standtending projects currently under way in the region. The results of these investigations will be made available to the WSCA.❖

— W E S T —

WSCA to discuss Bill 22 with Minister

Roy Biv

The WSCA will meet with Forest Minister David Zirnhelt in early July to discuss Bill 22, a proposed amendment to the Forest Renewal Act. Standtending contractors say they need to talk to the minister because the bill's promise to give displaced forest workers priority hiring on FRBC-funded work amounts to a death knell for their part of the silviculture industry. Introduced in the legislature just before the election, contractors expect the amendment to be back in the near future. They want the bill shelved or at least rewritten to include a clause recognizing and protecting the province's existing standtending industry.

"We've been banging our heads against the wall over the past year trying to get the government to realize the standtending industry is in real trouble on the West Coast," said one Vancouver Island contractor, who would only be known as "Fred".

"We're basically circling the drain as businesses, and the politicians come up with this Bill 22. It's like being given the Ebola virus as an antidote. It's really a job-killing piece of legislation that will wipe out those of us contractors and workers who are still on our feet."

Fred and other contractors in the spacing and brushing industry say they haven't had enough work over the past year to keep them in business. They say they are losing skilled workers and support from their bankers. Worse, they see FRBC partnerships and standtending training programs flourishing, while their own crews sit idle at home — out of work. Bill 22 is the last straw, the contractors say, because it basically guarantees the remaining enhanced forestry work in BC forests to the same groups now being targeted by FRBC projects.

"It's no consolation being told that under Bill 22 we will be recognized as forest workers," says 16-year veteran spacing-contractor Bruce Perry. "That just means our crews can join the line-up for positions on the very projects that put them out of work in the first place."

In a recent letter to the forest minister the WSCA stated, "The amendment does not recognize that there are silviculture workers and contractors already doing enhanced forest work in the province, who naturally expect to be able to continue working as standtenders as FRBC takes over the funding of these activities. The way the amendment reads now, this new bill could amount to displacing existing experienced standtending workers with displaced workers from the harvest sector."

Contractors' fears about how Bill 22 might be implemented were not helped by Premier Clark's comments on the legislature steps after the bill passed first reading in April. Clark told reporters the amendment was justified because forest jobs were being taken away from BC residents by people from out of province.

"This is neither an accurate nor a fair description of our industry," said WSCA President Peter Gommerud. "If this is the premier's impression of us, we have a problem."

But visibility and recognition are not the only problems for the standtending industry. In its letter to the minister of forests, the WSCA says, "The existing standtending industry is chronically underemployed, and is now at the point where contractors and workers are being forced out of the industry. It makes sense to first fully employ this industry before we begin targeting other underemployed or laid-off groups into it."

The WSCA says no one consulted them directly on the development of the amendment, which includes the creation of an agency to match displaced workers to FRBC jobs. The FRBC board of directors passed a resolution in February giving displaced workers first priority on FRBC-funded work. However, Bill 22 didn't make it to the FRBC committee stage for comment until April. By that time, says the WSCA, the scheme was *a fait accompli.*

According to Joyce Murray, WSCA Forest Renewal Lands and Resources Committee representative, government is wrongly trying to wring jobs for displaced forest workers out of the silviculture sector of the forest industry — a place where silvicultural contractors say there is no surplus of work.

"We would all be better off if government would look for creative opportunities in the value-added manufacturing sector," said Murray. "That is where the true opportunities to create jobs lie. It may mean that the government will have to follow through on their commitment to tenure reform in the province. At the moment, the Province grants large-scale concessions to an industry that doesn't know how to extract the best value from our forests."

Murray went on to say that last year, when the WSCA complained to the FRBC about the small share contractors were getting of FRBC work, the association was told there was no information base in place yet to investigate the matter.

"But when the IWA complained that its laid-off members weren't getting enough FRBC work, they got an act presented in the legislature."

In presenting the bill to the legislature in April, then forest minister Dennis Streifel said the proposed amendment would give priority hiring to displaced forest workers "utilizing the knowledge and experience of these workers." But contractors say that whole notion is folly.

"A few of the younger laid-off guys might make it as standtenders," said one Campbell River spacing contractor. "But if some hoe operator or middle-age guy off the green chain thinks they can fly at the woods with a chainsaw and become a spacer overnight — or ever — they are mistaken. It takes years to become a competent spacer and it's dangerous, ugly work. You have to know what you're doing so you don't damage the forest or yourself. I don't think half these laid-off guys want to do it. Meanwhile, our skilled crews are getting squeezed out. It's a sad farce."❖

WSCA hires Forest Renewal Coordinator

WSCA Bulletin

The board of directors of the Western Silvicultural Contractors Association is pleased to announce the appointment of John Betts as the association's first full time Forest Renewal Coordinator. The position is jointly funded by FRBC and the WSCA, and will allow silviculture contractors to provide a constant and consistent line of communication with Forest Renewal BC and other agencies.

Betts began his work with the WSCA April 1, 1996. He has 17 years experience in the silviculture industry in British Columbia, Alberta and Ontario. Since 1991, he has worked as a reporter for the *Nelson Daily News* and is president of his own communications consulting firm. He lives near Nelson, BC.

The newly appointed Forest Renewal Coordinator says the silviculture business can no longer afford to be the invisible industry of BC's forests. "One of the first things we have to do is get the silviculture contracting business noticed," said Betts after his first month as the full-time liaison between the province's silviculture contractors and Forest Renewal BC.

"Silviculture contractors have been putting forest policy into practice in this province for the past 20 years. Still, we don't have a seat on the Forest Sector Strategy Committee, we're not on the board of directors of the FRBC, and we're the least represented stakeholders at the FRBC committee level."

Betts says it concerns him that many policy makers and community leaders still think that silviculture work is transient, unskilled and taken up by uncommitted seasonal itinerants.

"It's not as if silviculture is still an emerging industry in this province. We've been planting and tending the forests here for years and doing a good job of it. We have thousands of home-grown, committed and skilled silviculture workers working for efficient and experienced contractors. It is almost bizarre that there are still influential groups of politicians and administrators that don't see the good work being done in BC forests and who has been doing it."

But Betts says the problem is not just ignorance. "As layoffs continue in the other forest sectors, the silviculture industry will be under increasing pressure as the place to target those displaced workers."

Already there are powerful alliances operating at the political level that clearly do not care to recognize the silviculture industry and its workers, says Betts.

"Our problem is not just one of lack of publicity. We don't have much political clout. Our association will need the support of every contractor in the province, as well as our forest industry allies."

Betts says the creation of the Forest Renewal coordinator position is a good first step and an important bit of recognition from FRBC.

"We contractors have to accept some of the blame for our lack of profile. We've not always been that easy to get a hold of."❖

...continued from page 9

staff is supposed to implement the program. Property owners have been singled out, but some people argue the real problem is demand for forest products and unregulated logging contractors — often with big machines purchased through government grants and loans that necessitate clearcutting one property after another.

NBISCA

PEI forging forest partnerships

PEI forest stakeholder representatives have reached an agreement to work together on forest management through the PEI Forest Partnership Council. Funding for the programs will be shared at 70% from government and 30% from the private sector. Private funding is generated from a $1/cord checkoff on softwood sales paid by both forest contractors and sawmillers, or by processors/shippers, and from a $40/acre cost to landowners for plantation establishment. In this way, the cost of future forest management will be shared by owners and users of the resource, and governments that benefit from taxes and economic activity. Contingent upon the cost-sharing of silviculture treatments is the principle of sharing in the decision-making process. The council will decide all silviculture programs, incentive rates and standards through a consensus process. The amounts and types of trees to be seeded, grown and planted will be decided two years in advance. Silviculture budgets will be negotiated annually based on need and available contributions.

PEIFA

Who will audit Ontario's forest management?

Under Ontario's Crown Forest Sustainability Act, the Ministry of Natural Resources must audit Forest Management Agreement (FMA) lands to ensure that cut areas are reaching their free-growing targets. But the budget brought down by the Ontario Conservatives this spring promised the forestry and mining sectors "a reduced regulatory burden." Although no official announcement has been made by MNR, it is widely believed that the Conservatives plan to move to industry self-regulation and to streamlining the MNR's auditing functions. A recently released FMA review of McKenzie Forest Products shows that major problems exist in the woods: "[A]lthough road construction and harvesting were carried out at over 80% of their planned levels during the period under review, only 40% of the planned regeneration activities took place ... The committee interprets this as a pursuit of short-term profits at the expense of long-term sustainability." This hardly seems the time or the place to introduce industry self-regulation.

CSM ❖

Council on Forest Engineering 19th Annual Meeting

This year's conference will focus on sustainable forestry, green certification, occupational regulation of loggers, and best management practices compliance.

Theme: Planning and implementing forest operations to achieve sustainable forests
Location: Moncton, NB
Date: July 29 - August 1, 1996
Contact: (906)482-6303

Canadian Institute of Forestry Annual Meeting

The 88th CIF AGM will feature workshops, a trade show, field trips and family entertainment.

Theme: Global influences and local realities
Location: Thunder Bay, ON
Date: August 19-21, 1996
Contact: (807) 344-5190

10th International Stream Habitat Improvement

The state of the art in how to worry intelligently about stream habitat improvement.

Theme: Operation solutions to problems in forested streams
Location: Corvallis, OR
Date: August 19-22, 1996
Contact: (541) 737-2329

Forest Nursery Association of BC

Theme: Annual meeting
Location: Quesnel, BC
Date: September 23-26, 1996
Contact: (604) 992-8631

Sustainable Forestry

Joint conference by the Ontario Professional Foresters Association and the Canadian Institute of Forestry.

Theme: From theory to practice
Location: Ottawa, ON
Date: October 3-5, 1996
Contact: (613) 234-2242

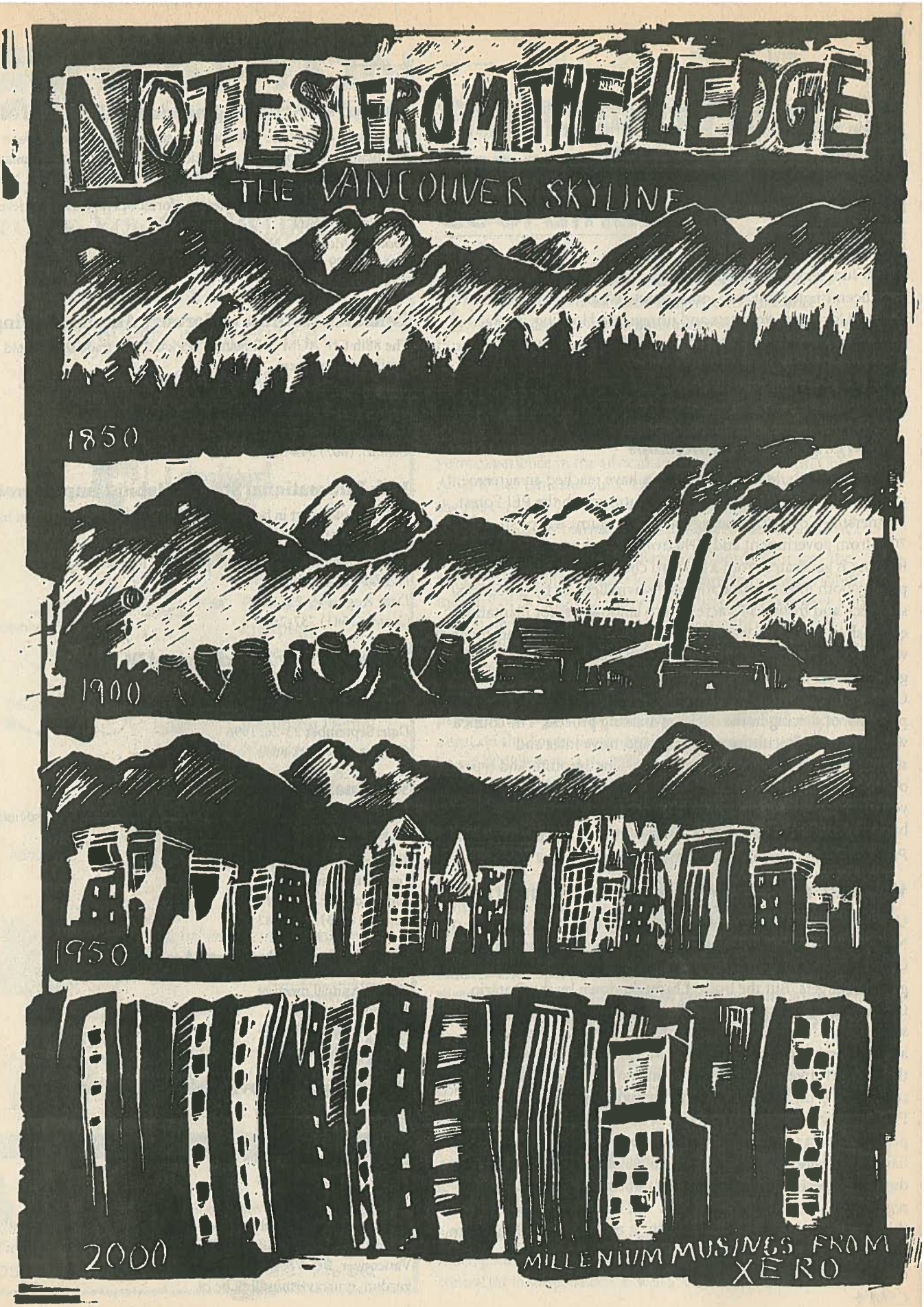
Alberta Forest Products Association

Theme: Annual meeting
Location: Jasper, AB
Date: October 3-5, 1996
Contact: (403) 452-2841

50th Congress provincial et Salon Forestier

Theme: Annual meeting
Location: Robson, PQ
Date: October 16-18, 1996
Contact: (819) 562-3388

To list your event, send your correspondence by fax to (604) 875-1403; by post to *Canadian Silviculture Magazine*, Box 65506, Station F, Vancouver, BC, V5N 5K7; or by e-mail to gordon_murray@mindlink.bc.ca


NOTES FROM THE LEDGE
THE VANCOUVER SKYLINE
1850
1900
1950
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MILLENIUM MUSINGS FROM XERO