

SCANADIAN SILVICULTURE

vol.2 no.2/3 Spring/Summer 1994

MAGAZINE

Incorporating newsletters from:
CSA ♦ NSSCA ♦ OSCA ♦ WCSA

in this issue:

**Canadian silviculture
worker certification**

**Criteria for sustainable
development of
Canadian forests**

**Seedling root form
debate continues...**

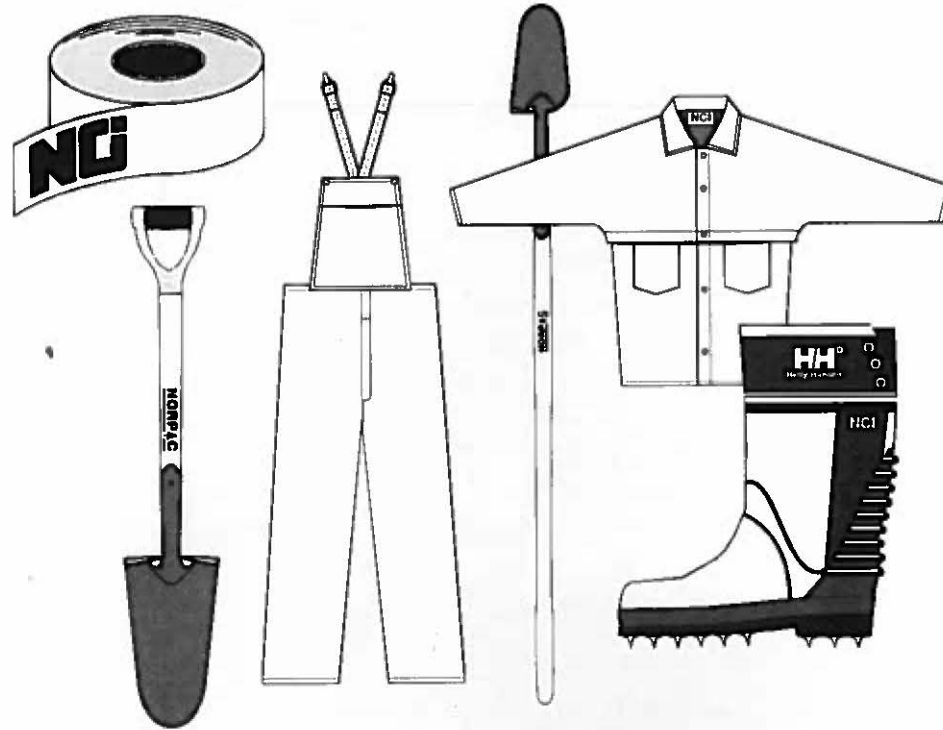


**Typical 1987 Eastern
container seedling**

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REPORT

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A FEW GOOD PHOTOS

We are looking for exciting silviculture
photos to grace the cover and articles of
Canadian Silviculture Magazine. We will
pay a small honorarium to individuals
whose photos we use. Send them to :
#4-1825 Nelson St., Van., BC, V6G 1M9.

in memory, Jim Kitz, RPF

CSM sadly notes the sudden
passing of Jim Kitz, one of Alberta's
most respected silvicultural foresters,
at the age of 36. Jim's commitment to
silviculture and especially silviculture
training in Canada will be sorely
missed.

A trust fund has been established in
Jim's memory for his children at
the CIBC branch in
Sherwood Park,
Alberta.

CANADIAN SILVICULTURE MAGAZINE

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S I L V I C U L T U R E

Ontario Tree growers charge Quebecers given unfair advantage

Ontario Natural Resources stated it was not aware that Quebec seedling growers had a clause protecting them in their own province when they accepted tenders from a Quebec grower. Energie Verte was awarded an Ontario tender for 4.5 million seedlings, approximately one sixth of the crown tender in 1994. Ontario's total seedling tender in 1994 was one half 1993's. Many Ontario growers did not win any seeding tenders.

Global warming accord voluntary

Last fall Bill Clinton watered down the international accord to reduce CO₂ emissions to 1990 levels by the year 2000, by making US industry compliance voluntary. Canada is waiting for a real US initiative. In March, Conference Board of Canada Economist Gilles Rheaume recommended in an 11 page report that "no tax is more efficient than a carbon based tax to curtail overall carbon dioxide emissions." Alberta Premier Ralph Klein, who's province produces 80% of Canada's CO₂, declared he is vehemently opposed to a Carbon Tax.

Environmentalists had hoped that the US would tax carbon or create a carbon quota trading market to limit emissions. Either initiative would promote the planting of trees as a silviculture sink for CO₂ emissions.

Silvicultural apartheid or How to lose treeplanters and save jobs

In Western Canada Wilderness Committee's latest door to door flyer called "How to Save Jobs in the BC Woods" there is an article called "The Choice: Monopoly and Monoculture or Social and Ecological Diversity." It claims that "Silviculture work, which mostly consists of replanting logged areas, is performed by a landless workforce of transient labourers—frequently underpaid and unskilled and with little motivation to stay in business... The existence of a landed workforce could greatly increase the quality of the commercial timber in these forests, which, in turn, would provide the kind of high value wood needed for a value added forest." This kind of nonsense is usually only heard from IWA representatives and their friends. WCWC contributions from treeplanters must have dried up.

Green binder of Canada's training resources

The 6.5 Committee (which gets its name from the National Forest Strategy commitment #6.5, to "By 1994, assess the feasibility of a certification system for silviculture and forest workers to increase the mobility, safety and skills of the workforce") is printing two welcome publications *A Compendium of Existing Training and Certification Programs for Silviculture and Forest Workers in Canada*, and "The Green Binder", a compendium of all training materials in Canada.

Standing committee on natural resources studies clear-cutting.

Clear-cut parliamentary hearings started in April and will go on until June 1994, debating the questions "Is clear cutting ecologically sustainable? or Should clear cutting be banned in Canada?" The debate was televised on the parliamentary channel and the arguments and rebuttals were entertaining media. Industry, labour, Aboriginals and the environmentalists provided both credible and incredible testimony.

Biodiversity leaves BC's forests

A 425 page Environment Canada report called "Biodiversity in BC's Forests," published by UBC Press, condemns the ravages of logging, fishing and development. It says BC's song birds are in decline; frogs, salamanders and snakes are being exterminated; large animals are running out of room; insects and other minuscule creatures may become extinct before they are discovered and named. Fewer than fifty percent of the estimated 35,000 insects in BC have been discovered and named. The report is available from UBC and other bookstores.

Silent Spring returns

Radar data collected from the Gulf of Mexico reveals that bird migrations have dropped to 60% of the level in the mid 1960s. Habitat loss, due to tropical logging and development, is a major cause. For example, in El Salvador only 6% of the forest habitat is left.

A partial recovery

Lumber profits soared across Canada in 1993. BC Forest Sector net earnings were \$500 million with lumber earning \$1.2 billion while pulp and ground wood specialties lost \$700 million. With the dollar at its lowest level in 7 years, 1994 pulp losses may lessen. Under BC's market sensitive stumpage formula, BC government revenues increased from \$562 million to \$794 million.

No name silviculture

The word 'Silviculture' must be too scientific for the public. On April 14, the Premier of BC announced the formation of Forest Renewal BC, a crown agency to tend the forests and prevent the loss of value and volume expected from the reduction in harvest due to parks, AAC adjustments, historic overcutting, land use policies and waterway protection. Increased stumpage of \$400 million will finance the plan which promises no forest worker will lose a job. Besides intensive silviculture, the agency will fund training for the new Forest Practices Code and assistance for value-added utilization.

On April 10, the Ontario Minister of Natural Resources announced the independent Forest Renewal Trust Fund to which the forest industry will contribute approximately \$180 million per year to pay for the reforestation of all areas harvested after May 1, 1994.

In January, Alberta announced the formation of an independent trust fund, Forest Resource Improvement Program, to finance reforestation from a new stumpage fee, still to be announced. Presently the stumpage in Alberta is \$1.40 per cubic meter.

Training Association gets BC Chapter

About 20 trainers, training course developers, and assorted representatives from government agencies met recently in Vancouver to plan and organize a new training association to represent all interested persons across BC. A membership drive will be underway by the time this goes to press. For more information call Don Whiteside at 732-8675. ♦

A sustainable silviculture industry

Dirk Brinkman

The shrinking working forest

BC's first four strategies to meet the environmental demands for sustainable forest ecosystems all reduced the working forest land base.

- **Protected Area Strategy** to increase the land base in parks from 6% to 12% by the year 2000.
- **CORE: Commission on Resources and Environment** comprises three land use Roundtables (Kootenays, Vancouver Island, Cariboo) to divide the land into harvesting areas, integrated use and protected areas.
- **Forest Inventory Review** updates the inventory and adjusts the AAC.
- **Forest Practices Rules** enforces the many guidelines of other ministries, particularly, the buffers for stream-side and waterways.

Forest Sector Strategy

All of these reductions in the working forest land base also reduce the forests' ability to maintain the values that make up the forest sector— employment, profits, exports, and government revenues. In 1993, Dave McGuiness, CEO of Weyerhaeuser Canada, suggested to the Premier that a long term strategy to sustain the forest sector was needed. This led to creation of the Forest Sector Strategy Committee, a blue ribbon committee to advise on the creation of a sustainable forest economy.

The committee's work has culminated in the *Forest Renewal Plan*: a strategy to sustain the forest sectors ability to continue to provide value, employment, and community stability.

BC industry agrees to new stumpage

On April 14, 1994 the BC Government announced that it had obtained the quiet agreement of the forest industry to accept \$400 million a year in new stumpage. In exchange the government guaranteed that the money will be reinvested through a Crown agency to prevent the "fall down" in harvest volume. The result is a sweeping job-creation plan for British Columbians who would lose jobs from the shrinking of the working forest.

Silviculture industry feels threatened

This should be the best news for the silviculture industry, who has been calling for this kind of intensive funding for 15 years.

continued on next page...

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In fact, the silviculture industry's reaction has been one of confusion, upset and anger. Many silviculture workers are afraid that they will lose their jobs to this scheme. The premier's office has been surprised by the messages of outrage and anxiety.

Silviculture industry excluded

This anxiety comes from being excluded—not only did the blue ribbon committee not include any representatives of the silviculture industry, but the government did not direct the committee to consult with the industry in the course of its deliberations. It began to seem ominous that the new Forest Minister did not accept requests to meet with or speak to the industry during the year the committee sat. Past assurances by the Forest Minister and his deputies that the industry would be involved in the Forest Sector Strategy were forgotten in favour of other priorities.

The social agenda

The government's other priorities had already upset some members of the silviculture industry. In 1993 the government came out with BC 21, which transferred some silviculture contract work into training programs for welfare recipients. The silviculture industry, which had a surplus of trained contractors and workers, complained that new BC 21 training funding should go into the existing industry—why train new workers when there isn't enough work to go around? Some contractors lost their entire spacing season to these training projects. The District offices were also advised that some contracts should be awarded directly to local contractors in order to increase stable community based employment.

Aboriginals included

Thanks to the input of George Watts and many other Aboriginals, the Forest Renewal Plan does address some concerns of the aboriginal community. The isolated native communities who until

now have only lost traditional resources to activities in the forest sector are acknowledged and included in the plan.

Premier promises no job losses

During the weeks leading up to the announcement of the Forest Renewal Plan, the Premier faced irate forest harvest workers who were demanding that they not lose their jobs. He promised that not one single forest worker's job would be lost. This alarmed the silviculture industry, who feared that he was promising their jobs to loggers. The Premier may have been unaware that making this promise to the IWA played on the fears of the silviculture industry, which for years has been disparaged by the IWA and characterized as itinerant nomads living in tents.

tion—"if you log it, reforest it"—which created permanent, efficient, free market jobs. From the sometimes turbulent first wave there emerged a healthy silviculture industry which adapted to the changing market. The market in turn, adapted to finding the most efficient operator to do the work.

Will not be excluded

People whose dedication to silviculture has survived 10-25 years of government low bid auctions, and who have spent years lobbying for more silviculture, will not be excluded from the final product of that lobbying. It is an outrageous oversight on the part of the government to leave the many silviculture workers with families and homes (or university educations to pay for) out of a forest renewal formula.

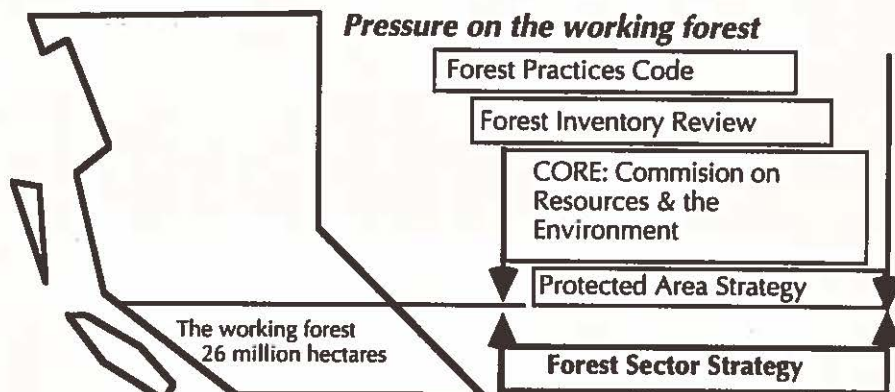
Silviculture workers take pride in their professional skills and have adapted their lives to moving with the seasons and the biological windows to apply their world class expertise. They are true forest workers of BC.

Old boys know best

Many of the members of the Forest Sector Strategy Committee doubtless thought that they knew what was good for us. A committee member assured me that, "the new work will end up being done by those who are most efficient and dedicated, loggers can't plant trees or space. They are not even interested. Just let things work themselves out." The silviculture industry cannot sit by and let the next wave of silviculture be implemented without us.

The cultural gap

It is no accident that the IWA has never been able to organize the silviculture industry. Roger Stanyer, former IWA VP, and Assistant Deputy Minister of Forests and now Assistant Deputy Minister of Labour, once characterized the silviculture worker as a "forest ministry worker." The roots of the cultural gap between the forest industry and the silviculture industry lies



Landless transients

The Western Canada Wilderness Committee aired the dirty laundry of a backroom deal by declaring in its door to door newspaper that local landed forest workers should get silviculture jobs before "a landless workforce of transient labourers." Gerry Stoney, President of the IWA, and a member of the Forest Sector Strategy Committee, promised that the "forest workers would not have to become treeplanters or park wardens." Stranger bedfellows were ne'er so well met. The implication that there is something intrinsically wrong with the silviculture industry which can be fixed by changing who is doing the work is mistaken.

The second wave

With the Forest Renewal Plan, the BC Government unleashes the second wave of silviculture, tending the forests. The first wave was the 1987 Silviculture Regula-

in the very different paths along which the two industries developed.

Those who took pride in their right "to take the best and wreck the rest" left a mess for the government and its "forest ministry workers" to clean up. Indeed, in the seventies and early eighties, it was the government that took the responsibility for forest renewal and all of our contracts were directly or indirectly for the government. In the last seven years, however, more than 70% of the work has been for the forest industry. It's been a relatively free market—with quality and service counting along as well as price.

Renewing dialogue

This kind of free market is necessary for the implementation of the new Forest Renewal Plan. To succeed, the Plan will have to renew communication and cooperation between forest workers and the silviculture industry, where there has been mistrust and cultural differences. The agreement of the forest industry to provide stumpage funding creates motivation for both sides to dialogue. Through this communication we may be able to create a truly sustainable forest sector.

Doubling the silviculture industry

The resources allocated to the program are adequate for all parties to win. The existing 12,000-14,000 seasonal jobs in the silviculture industry are the equivalent of 4,000-6,000 year-round full-time jobs. The Forest Renewal plan is expected to add 6,000-6,000 new jobs, which effectively doubles employment in the silviculture sector.

The \$400 million in new stumpage fees to be diverted into the Forest Renewal Plan assumes that the current lumber price increase is a permanent structural adjustment that reflects worldwide shortages of old growth timber. This market sensitive resource rent motivates the silviculture industry to improve timber volume and value—which means more stumpage and therefore increased funding for silviculture.

The Forest Renewal plan thus has the potential for creating enough harvest related jobs in value added, commercial spacing and utilizing new forest products to accommodate the adjustment of forest workers temporarily displaced by reduced harvests, as well as creating silviculture jobs to space, prune and plant the backlog to increase value and volume, to employ all silviculture workers year round.

A so-so world

Not having been consulted the Forest Renewal Plan led to a result somewhere between the best and worst of all possible worlds for the silviculture industry. The best of worlds has been the silviculture regulation—since it creates a free market, in which quality and service count along with price. The worst of all silviculture worlds has been the government low bid auction, where anyone can write a small number on a piece of paper and get some work. Much of the high-profile abuse of labour standards and of seedlings has been on Ministry of Forest Contracts.

continued on page 9...

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Forest Expo '94

Formerly the Prince George Regional Forest Exhibition, this annual trade show is Canada's most diversified forest industry showcase. Forest Expo '94 illustrates the innovative equipment and techniques used from seedling propagation and pre-harvest planning to world-wide marketing of finished wood products.

Theme: Annual Convention
Location: Prince George, BC
Date: May 4 - 6, 1994
Contact: (604) 822-9104

Educating the 21st Century Forester Symposium

The Association of University Forestry Schools of Canada in cooperation with the Canadian Forest Service are co-sponsoring a symposium on future forestry education in Canada.

Theme: Future Forestry Education
Location: Quebec City, PQ
Date: May 12 - 14, 1994
Contact: (418) 656-2116

EDUFOR '94

Theme: Annual Convention
Location: Fredericton, NB
Date: May 13 - 16, 1994
Contact: (613) 232-1815

Second International Conference on Science and the Management of Protected Areas

Theme: Ecosystem Monitoring and Protected Areas
Location: Halifax, NS
Date: May 16 - 20, 1994
Contact: (902) 426-7012

First International Symposium on Ecosystem Health & Medicine

The International Society for Ecosystem Health & Medicine in cooperation with the University of Guelph will be presenting a symposium that focuses on the development of an ecosystem health perspective for management of regional and global environments.

Theme: Integrating Science, Policy and Management
Location: Ottawa, ON
Date: June 19 - 23, 1994
Contact: (519) 767-5000

BC Northern Silviculture Committee AGM

Celebrating its 20th anniversary, the BCNSC will look at reforestation strategies and trends in natural and artificial regeneration.

Theme: Reforestation — Yesterday, Today and Tomorrow
Location: Quesnel, BC
Date: July 7 - 8, 1994
Contact: (604) 960-5980

WFNC/FNABC Joint Meeting

This joint meeting of the Western Forest Nursery Council and the Forest Nursery Association of BC will combine technical sessions on innovative methods for growing seedlings for reforestation, conservation and biodiversity with field trips to local nurseries.

Theme: Joint Meeting
Location: Moscow, ID
Date: August 15 - 19, 1994
Contact: (208) 885-7017

Management of Northern Forestry Wetlands

Theme: TBA
Location: Timmins, ON
Date: August 24 - 31
Contact: n/a

Ontario Forest Research Institute Symposium

Co-sponsored with the International Union of Forest Research Organizations, the OFRI is staging an international symposium on planting stock performance and quality assessment. Invited presentations by world leaders in plant quality assessment will be supplemented by volunteer papers which will make this meeting a must for researchers, silviculture workers and nursery specialists.

Theme: Making the Grade
Location: Sault Ste. Marie, ON
Date: September 11 - 15, 1994
Contact: (705) 946-2981

Joint 1994 Convention & Exhibition CIF/SAF

The Society of American Foresters and the Canadian Institute of Forestry are holding a joint convention and exhibition to discuss forestry and conservation. In particular, discussion will focus on the circumpolar forests of the northern hemisphere and how they meet the needs of people worldwide.

Theme: Managing Forests to Meet People's Needs
Location: Anchorage, AK
Date: September 18 - 22
Contact: (301) 897-8720

Wood Tech Canada '94

Wood Tech '94 is a trade show for those concerned about where the wood processing industry is going. In particular, there will be a special forum on the fast-growing value-added and remanufactured wood products market.

Theme: The Future of Wood Processing Industry
Location: Vancouver, BC
Date: September 21 - 23, 1994
Contact: (604) 433-5121

Third Annual Advanced Forest Herbicides Course

This Canadian Forest Service course is an intensive, practical program developed specifically for aerial and ground herbicide applicators, foresters and pesticide regulators.

Theme: Herbicides Course
Location: Sault Ste. Marie, ON
Date: September 24 - October 2, 1994
Contact: (705) 949-9461

First Annual Integrated Forest Pest Management Course

This Canadian Forest Service course advances the skills and knowledge of forestry professionals in current techniques and principles for planning, implementing and evaluating Integrated Forest Pest Management programs.

Theme: Pest Management Course
Location: Sault Ste. Marie, ON
Date: October 14 - 23, 1994
Contact: (705) 949-9461 ♦

...continued from page 7

Another crown bureaucracy?

The Forest Renewal Plan calls for an independent agency—like BC Hydro, which is somewhere between a government bureaucracy and a private company. Without the involvement of the silviculture industry in its implementation, this plan has the risk of inheriting the worst qualities of both options.

The worst of all possible worlds for the forest industry would be for the doubled stumpage to pay for the higher costs of less efficient workers to do the same amount of silviculture work. Peter Bentley, President of Canfor, expressed the forest industries determination that the funds be spent efficiently.

Making it so

With the silviculture industry's involvement, Forest Renewal BC could be the policy foundation for true sustainable development of both the environment and the economy in BC.

The hard part, getting the funding, is done. As long as we can work together to identify potential problems, we will be able avoid them. ♦

Editor's Notes

Cover Photo: Changing container types in Canada

The goals of forest renewal are changing, creating an the emergence of new container types are a partial response to Canada's new forest renewal goals.

BC and Alberta's free growing regulations require the seedling to optimize it's growth potential. This has resulted in a shift to copper coated seedlings in BC and Alberta and the emergence of the 100cc Drader Block. In New Brunswick, the Jiffy and Multipot replaced the Paperpot.

The new systems are designed to improve lateral root egress into the top five to ten centimeters of the forest floor, where the nutrients, warmth, micro-organisms, moisture and oxygen predominate (See CSM, Fall 1993 "Root Form and the Forest Floor"). In Quebec, regeneration without herbicides has led to the growing of large seedlings which need less brushing.

The most dramatic example of the search for improved root form and seedling performance has been the disappearance of the Paperpot seedling, once the dominant seedling in eastern Canada. The Paperpot has been almost completely replaced by four systems: 1) Styrobloc, 2) Multipot and 3) Jiffy and 4) Panth. Interest is also growing in trials with miniplug transplant systems developed by Castle-Cook, Jiffy and Panth.

Anders Lindström's article "Stability of young container pine stands" on page 16 of this issue details why the Paperpots are also being phased out in Sweden. In that study, Paperpot seedlings were consistently smaller, more prone to root spiraling, stem twisting and subsequent blowdown than the other container systems investigated.

The cover photo this issue was taken in the field on Ontario Ministry of Natural Resources contract in 1987, and represents a typical Paperpot seedling planted in Ontario at that time— illustrating many of the findings of Lindström's study. The root collar diameter, while not great, is not bad for a seedling just 9 cm tall. Accepting seedlings under the 10 cm minimum was not uncommon for lack of better seedlings. The stem's twisted form suggests nursery nutrient problems. Ontario's nurseries have climbed the cultural and technical learning curves to where they now produce outstanding seedlings. Today not only has the container type been abandoned, but this kind of ultra standard seedling would be culled at the nursery.

Next issue of CSM, the seedling root form debate will continue as we will present an article by Forestry Canada's root expert Peter Saloniis and results from Rob Scagill's root form research commissioned by BC MOF. ♦

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BC Forest Renewal Plan: Working in Partnership

Note: Article taken from BC Ministry of Forests press releases, April 14, 1994.

A sustainable forest future for BC

For too many years, governments have taken the forests for granted. Too much has been cut and too little put back. We now face the prospect of a future with fewer trees and fewer jobs.

To reclaim the promise of forest wealth, we must change the way we manage our forests; we must renew our forests and we must create more value and jobs from the trees we harvest. By achieving these goals, we can ensure a sustainable future for BC's forests, forest workers, and communities.

A plan to renew our forests

The Forest Renewal Plan is a major, new long-term investment in British Columbia's forest future, and in jobs and communities. The Plan will reverse years of neglect of our forests by taking more of the wealth they generate and investing it back into the land.

Goals of the Forest Renewal Plan

- 1) To renew the land and keep the forests healthy.
- 2) To invest in the forest lands which generate much of our wealth.
- 3) To ensure sustainable use and enjoyment of our forests.
- 4) To ensure the continued availability of good forest jobs.

- 5) To ensure the long term stability of communities that rely on the forests.

The Forest Renewal Plan will:

- over the next five years, target an estimated \$2 billion in new money from increased stumpage rates to invest in our forests
- dedicate *by law* this investment to the forests, the people who work in them, and their communities
- complement and enhance this investment with new elements of forest policy framework.

Working in partnership

The Forest Renewal Plan is creating a new partnership of government, the forest industry, workers, First Nations, communities and environmentalists to manage and direct this major investment in our forests.

Priorities of the Forest Renewal Plan

To achieve the goals of renewing our forests and creating more jobs, the Forest Renewal Plan will act on two priorities:

Priority: Giving back to the forests

1. Renewing our forests

Improved silviculture is the key to a healthy, sustainable forest and a healthy economy. Nearly half the Forest Renewal Plan investments will go towards:

- advanced approaches to reforestation and tending of forests
- increasing the lands available for planting new trees
- silviculture research and development.

2. Restoring and protecting our environment

The health of forest-based ecosystems will be restored and protected by cleaning up environmental damage, with priority on rehabilitating rivers, streams and watersheds, and restoring hillsides by removing unnecessary roads

- restocking and protecting fish and wildlife
- researching and developing new environmentally sound forest practices.

3. Strengthening the Plan with policy changes

- test new approaches to forest management, including community forests, an expanded woodlot license program and pilot programs to encourage better stewardship of the working forests.
- new policy to ensure the full range of forest types is harvested in a sustainable way, and make greater use of "partitioned cuts."
- encourage more selective harvesting and commercial thinning.

Priority: creating more value, strengthening communities

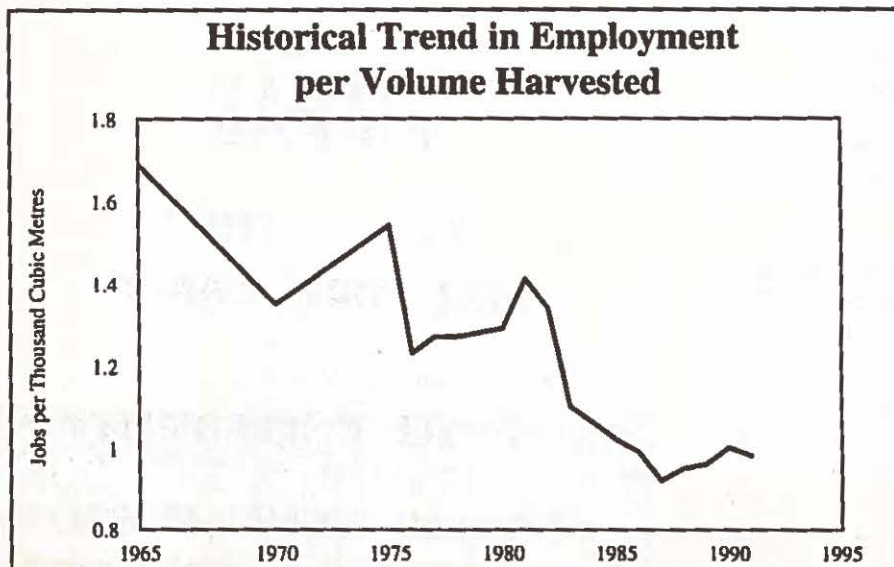
1. More jobs and value from each tree we cut
The Forest Renewal Plan will increase the jobs and benefits from BC wood by making investments in:

- helping value-added companies start up and expand
- value-added research and development of new wood manufacturing technologies, products and markets.

2. Investing in forest worker training

Skills training will be provided through:

- the creation of a Forest Sector Skills Council comprising workers, industry, and government to coordinate and evaluate existing



- training and create new training programs.
- training in new workplace organizations, production technologies and products for those who work in manufacturing
- training in new silviculture practices for those who work directly in the forests
- ensuring aboriginal participation in all training programs.

3. First Nations' participation in the forest economy

First Nations have a special interest in the land and resources. Each program under the Forest Renewal Plan will contain specific initiatives to increase First Nations' participation including:

- structuring joint ventures with First Nations companies
- forest worker training
- competitive bid proposal assessment and development training
- participation in resource management programs.

4. Strengthening communities that rely on the forests

The Forest Renewal Plan will maintain and enhance job opportunities in communities that rely on the forests.

Additional initiatives include:

- funding for economic development planning
- maximizing benefits from government economic development programs
- diversification assistance.

5. Strengthening the Plan with policy changes

- work with industry to ensure greater access to wood supply or value-added companies that will create more jobs.
- work with large and small companies to encourage the production of higher valued forest products.

Financing the Forest Renewal Plan

Stumpage charged for the harvest of public timber will be increased by government beginning May 1994. The net increase in revenues (an estimated \$400 million per year on average) will be dedicated by law to renewing our forests, and will be distributed fairly throughout the province.

A new agency, Forest Renewal BC, will be established under legislation to manage and direct forest renewal investments. It will be a partnership of government, the forest industry, workers, First Nations, communities, and environmentalists.

Immediate priorities

- establish Forest Renewal BC and the Forest Sector Skills Council.
- identify training needs associated with the improved harvesting practices required under the Forest Practices Code.
- develop new silviculture programs such as improved thinning, spacing and pruning.
- continue work already begun in conjunction with the Forest Practices Code to research logging practices which maintain both biodiversity and jobs.

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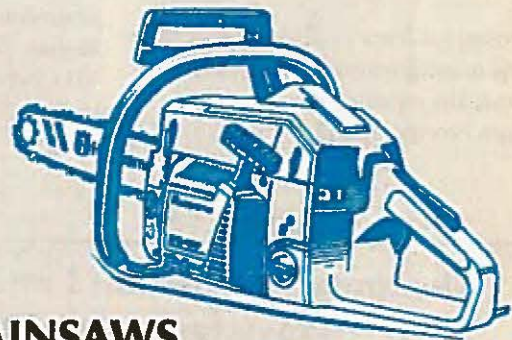
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...continued from previous page

- rehabilitation of watersheds, eroded logging roads and other sites.
- begin planning with communities and First Nations local initiatives with immediate impacts.
- assess proposals for value-added joint ventures and long term contracts;
- get up-to-date timber growth and yield information.
- assist communities facing serious economic problems to plan for their economic development strategies and diversification.
- increase incentives for forest companies to finance their own research and development.

Summary of benefits

Investments under the Forest Renewal Plan will renew our forests and create more value and jobs from the trees we harvest.

Renewing our forests will offset over time the anticipated reduction in the yearly harvest. There will be more trees for the next generation to harvest on a sustainable basis.

Renewing our forests will prevent a serious decline in employment, and new jobs will be created by repairing environmental damage. Promoting and investing in

value-added industries will create more jobs for every tree harvested.

More wildlife habitats will be preserved and the environment will be protected and enhanced in the long term through better forest practices.

Workers will gain new skills to apply new harvest and processing practices, engage in new environmental practices and meet the challenges of global competition and emerging technologies.

Incorporate First Nations' expertise in forest management. Increased training and participation in the forest sector will stabilize and strengthen First Nations communities.

The economies of communities that rely on the forest can be stabilized and strengthened. The impact of boom-or-bust commodity markets will be reduced.

A coordinated approach will ensure forest communities, including aboriginal communities, gain the maximum benefit from all government economic development initiatives.

If you want to be part of the Forest Renewal solution, please send your comments and suggestions to: Andrew Petter, Minister of Forests, 333 Quebec Street, 2nd floor, Victoria, B.C. V8W 3E7 ♦

Silviculture workers used as pawns

Jabez Kruithof

Note: Letter the Editor of the Comox District Free Press, April 14, 1994.

The Provincial Government's plan to institute a province-wide program of intensive silviculture employing former forest industry workers is completely ass-backwards.

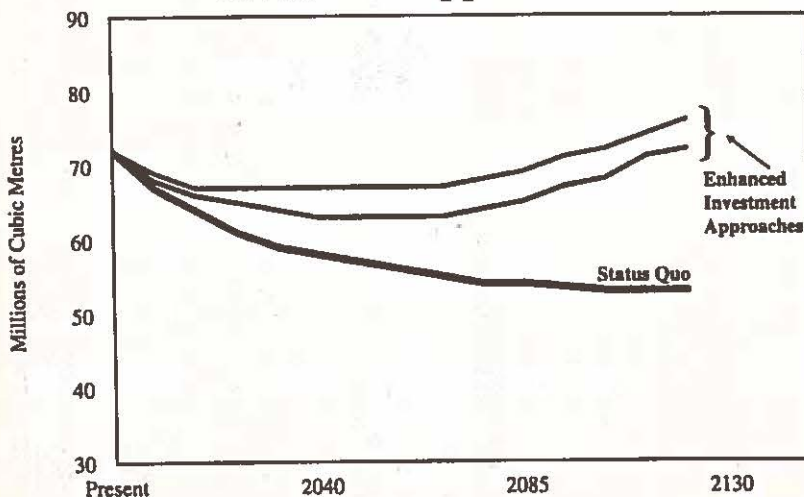
In B.C. there is already a professional silviculture workforce of 12,000 full and part-time workers including a student work force relying on this income to pay for their education. Hundreds of silviculture contracting companies, large and small, have been investing in their businesses for the last 20 years and have built up a vast amount of silviculture experience.

This move by the Provincial Government, forest companies and unions strikes fear and unrest among silviculture workers— many of whom have dedicated large parts of their lives to this industry. Now they see themselves used as pawns by the above parties without having been consulted at all, although the Government, forest companies and unions are very well aware of the Western Silviculture Contractors Association and the Canadian Silviculture Association.

The Government intends to raise \$600 million through the increase of stumpage fees (less corporate tax breaks and incentives). In fact, by paying this premium back into the industry, it will threaten the livelihood of thousands of others. Furthermore laid-off workers of the logging industry, which is highly mechanized do not necessarily make tree-planters, spacers or pruners. These jobs are very manual labour intensive and in general attract young workers who do not mind bending over thousands of times per day or climbing young trees to prune the branches.

This money could be put to better use in New jobs incentives, e.g. into secondary manufacturing of our forest products

The Impact on Harvest Levels of Enhanced Investment Approaches



WSCA requests involvement in implementation of Forest Renewal Plan

Bill Williams, President WSCA

Note: Letter to Andrew Petter, Minister of Forests, April 14, 1994.

The WSCA requests a meeting with you as soon as possible to discuss the Forest Renewal Plan and its effects on the present silviculture industry.

Our members are very disappointed and concerned that the WSCA was excluded from the supposed consultative process that was used to develop this initiative. There are approximately 12,000 people who work in the silviculture industry in British Columbia. The majority of these workers are employed by silviculture contractors. They are involved in all facets of silviculture operations from tree planting to forest road rehabilitation. Will these women and men be displaced from their jobs to provide employment for others?

We do not want our concerns to be construed as being against an initiative that provides \$600 million that will be used to enhance British Columbia's forests. Therefore, the WSCA wants to be involved in the development of the implementation strategy for the Forest Renewal Plan. ♦

Existing silviculture industry left out

Christ Akehurst, Director WSCA

Note: Letter to Premier Harcourt, April 15 1994.

I would like to voice my concerns regarding your Forest Renewal Plan. While I applaud it's overall aims, I am angry at the way the EXISTING silviculture contracting community has been treated.

I notice that your government is spending taxpayers' money on ads claiming you have brought together all the stakeholder groups to formulate this plan. This is simply untrue as NO representatives from the existing silvicultural community (labour or business) were party to any of these discussions. This feels particularly ominous to me—as if we have been left out on purpose and that there's a hidden agenda to exclude us from the implementation of the plan.

My company, Oliver and Giltrap Reforestation, has been in business for 18 years and over that time we have built a reputation as an honest, reliable and conscientious firm. We have trained hundreds of silviculture workers, planted millions of trees and brushed hundreds of hectares.

Like the whole industry we have consistently had to work in a low bid system which has made us very efficient and cost effective. Our workers are professional and probably the hardest working group of people in any industry in BC. We need to know that our efforts in the past to build up a professional, efficient industry, without government assistance, will not be wasted.

My question to you is how do we fit in to the Forest Renewal Plan? Please confirm that the jobs of the existing silviculture work force have NOT been sacrificed on the altar of IWA job losses. I also request that you include our association in any further discussions that you have on the implementation of this plan ♦

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Kootenay Stashing Update

Treestashers net stiff fine

John Betts

Note: This article appeared in the Nelson Daily News, Jan. 24, 1994.

A BC provincial court judge handed down a stiff fine and a stern warning after a tree-planting company recently plead guilty to dumping thousands of reforestation seedlings into a river near Midway in the spring of 1992.

Golden Spruce Treeplanting Ltd. of Surrey was fined a total of \$15,000 after pleading guilty to a count each of fraud and mischief over a thousand dollars.

Similar charges against one of the company's directors, Gurcharan Singh Bhangu, were dropped.

The conviction was the first of its kind in BC's reforestation industry.

Judge Donald Sperry said, in handing down the fines, he wanted to send a "serious message," to deter these actions.

"Those who are found guilty of this can expect higher penalties in the future," said the judge, adding that in future, dishonest contractors can expect fines increased "as much as tenfold."

A spokesman for local forestry contractors said he was glad of the conviction but frustrated that it has taken the Ministry of Forests so long to act decisively against contractors who "stash trees."

"It's long overdue," said Dennis Graham of the Western Silviculture Contractor's Association (WSCA), in an interview from Midway.

"Even after years of incidents like this taking place, there has always been a reluctance on the part of government to bring charges, and guilty contractors have been getting away with it. Now it's actually been recognized as a crime."

What irks contractors like Graham is that the industry's few problem tree-planting contractors have continued to be awarded government contracts in spite of their dishonest conduct.

"This (tree stashing) is the most gross violation of the forest code you could ever want," says BC contractor Dirk Brinkman, of Brinkman and Associates, one of the largest silviculture firms in Canada.

"We've protested to government for years to take restrictive action against contractors who are alleged to be doing this sort of thing. We have cases where one forest district has determined that a contractor has stashed, and meanwhile other districts are awarding the same contractor work."

Brinkman wants to see better communication between districts and a definite policy for government to follow in dealing with unscrupulous silviculture firms.

Under the current provisions of the contract used for reforestation, work contractors can be fined for not planting all the trees they are issued.

A contractor classification based on performance and work history was abandoned by government in 1990.

Depending on the contract price, tree seedlings can be worth over one dollar each by the time they are grown and planted in the ground. Forestry officials estimate Golden Spruce "stashed" over 10,000 trees at a cost of \$8,000 to the taxpayer.

While their case was before the courts, Golden Spruce was awarded reforestation contracts last year across the province, including the Kootenay Lake Forest District.

The WSCA is currently investigating the accused firm's 1993 Kootenay Lake Forest District work for any irregularities. ♦



Drawing by Rob van der Schoor

Seedling crime proved just too dam tough

By Gordon Hamilton

Note: This article appeared in the Vancouver Sun, Jan. 25, 1994.

When a tree-planting crew dumped about 10,000 seedlings into a creek near the US border, they were counting on the evidence of their crime washing clear out of the country.

But they were foiled by a beaver dam, an alert resident and a local Mountie with a penchant for commercial crime.

The beaver dam, a kilometre north of the border on Boundary Creek near Midway, BC, trapped 4,300 seedlings during the spring of 1992.

The resident, logging-truck driver Anthony Lucente, discovered them while visiting the dam near his Midway home.

And in a paper chase that took six months, RCMP Constable Dave Laberge traced the water-logged trees back to a Powell River-based company that had been in the Midway area six weeks before.

Last week in Grand Forks, Golden Spruce

Treeplanting Ltd. was found guilty of mischief and fraud for dumping seedlings they had been paid 34 cents a tree to plant.

Al Barclay, Boundary forest district resource officer, says it's the first successful prosecution of a company for dumping seedlings. Although he said the crime is rare, he's counting on the conviction to send a message to tree planters.

The key to solving the case was that each seedling bundle held an identifying tag from the nursery where they were grown. Laberge said he was able to identify seedlots that had gone to two groups: Golden Spruce and Boy Scouts. Eliminating one suspect was easy.

Laberge said he can only estimate how many trees were dumped into the creek.

The BC forest service believes Golden Spruce planted one to two percent fewer trees than required over 388 hectares, not enough to impair reforestation. The company had been paid \$135,000 for its contract by the time the crime was discovered. ♦

BC tree planting tenders now include "bidder eligibility"

Note: Excerpted from BCFS778

"1.04 The Ministry reserves the right NOT to accept bids from: an individual who has; or...a company that has...been convicted for an offense in respect of a previous tree planting contract, had a tree planting contract canceled, or been assessed charges for failing to comply with the requirements of a previous tree planting contract.

"1.05 Unless the ministry has reasons to believe that the problems leading to a conviction for an offense in respect of a previous tree planting contract, a tree planting contract cancellation, or been assessment of charges for failing to comply with the requirements of a previous tree planting contract have been resolved, contractors will normally be disqualified from bidding for a period of up to two years." ♦

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Stability of young container pine stands

Anders Lindström, Swedish University of Agricultural Sciences

Note: This is an edited version of a technical paper. The complete paper with references and can be obtained from the author at: SUAS, Department of Forest Yield Research, 77698 Garpenberg, Sweden

Background

A criterion of a good seedling when it leaves the nursery is that the root system does not have a shape that may cause the future stability in the field to suffer.

"Spiraling roots" of pines is one type of deformation that has been found to cause poor stability in the field. The types of containers that cause this problem are frequently round plastic pots with smooth walls and fitted with a bottom plate. As the roots grow, they move in a circle down towards the bottom plate where the roots then continue to spiral, frequently in several layers. Pots causing this type of root deformation have either been removed from the market or fitted with open bottoms and internal ribs in order to prevent the occurrence of horizontal fibre directions in the root ball.

New data suggest that the ribs have had the desired effect, i.e., improved stability of plants grown in plastic pots. Plants with roots that have been pruned on the sides and bottom in the nursery also show better field stability than plants grown in pots without ribs. The container volume appears to be of importance for stability since plants grown in large containers will have a stronger root growth after planting.

The ultimate consequence of a root deformation is that the tree becomes so unstable that it falls and dies. Reasons for this may be:

1) Root deformations inhibit the initiation of lateral roots and/or the diameter growth of the roots so that the anchoring of the tree in the ground will be poor, which leads to the risk of wind throws.

2) The attachment of stem to root system is unsatisfactory, which may depend on horizontal wood fibres. This causes a risk of the stem breaking at the root.

During recent years, reports have been received indicating that stability problems occur in established plants (1982 and later) despite them being grown in containers that should not have caused spiraling roots, i.e., containers that in principle exclude point 2 above as being the cause of the problem. However, a long growing period in containers with ribs may lead to a risk that the guiding function of the ribs

becomes reduced so that spiraling roots can nonetheless occur. Long growing periods may also cause compressed roots which may inhibit the growth of the root system in the soil (point 1 above). Studies confirm that pines grown for a long period in the nursery (2 years) in small plastic containers (50 ml) with ribs did not have an improved stability in the field in comparison with plants grown in corresponding containers without ribs.

Other causes of root deformations than container design and rearing period may be that container units in the nursery have been placed directly on the soil during the rearing period, whereupon a root mat may be formed which leads to crooked, tangled roots. This type of deformation may also be caused by pockets of peat beneath the containers where the roots are allowed to

Table 1. Description of stability-tested containerized systems

Container type	no. cont. per m ²	cont. vol. cm ³	Description
Panth system	675	95	Made of hard-plastic. Each container has a rectangular cross-section and has internal ribs to guide the roots.
Hiko V 50	767	50	Made of hard-plastic. Each container has a circular cross-section and has internal vertical ribs to guide the roots.
Combicell 32	1004	77	Containers of polyethylene-coated kraft paper.
Combicell 38	697		Each container has a square cross-section.
Plant system 80	850	48	The pot is without full retaining walls. The cultivation substrate is retained in place by means of vertical "fingers" of hard plastic. The section of the container is octagonal. Roots are controlled by air and mechanical pruning.
Paperpot 408	1002	75	Containers of paper/plastic that allow the roots to go through.
Paperpot 308	1667	45	Each container has a hexagonal cross-section

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develop freely into a mat.

consequences of poor root shape are most serious on compact, poorly aerated soils and on sites with fine earth and lacking rocks and stones. Soil tillage that improves and opens up the structure may reduce the risk of poor stability. With regard to species, root deformation is more serious in pine than in spruce. In contrast to pine, the spruce can overcome root deformations by formation of adventitious roots. The risk of suffering from stability problems in plantations depends, thus, not only on container design but also on numerous other factors.

The aims of this investigation were to study the the extent of stability problems in pine plantations established using containers with a design that was primarily intended to prevent spiraling roots.

Material and methods

During the spring of 1989, the Swedish forestry companies Iggesund, Korsnas AB and STORA, together with the National Forest Enterprise of Sweden, were asked to compile a catalogue of 6 to 8-year-old pine plantations. The sites had been planted with plants grown in the types of containers described in Table 1. In addition,

private landowners were contacted in order to obtain self-regenerated sites for comparison..

Since the number of sites with sufficiently large plants for measurements of stability was found to be restricted for certain types of containers, this resulted in the stability measurements being made on 2 to 6 sites per type of plant. As far as possible, the sites were chosen randomly.

On each sampling area, the 3 trees standing closest to the centre of the area were selected for stability tests. The trees were measured with regard to stem diameter, height and length of the leading shoot. Any damage to the trees was also noted. Mean diameter for most of the plant types was between 47 and 50 mm, whereas plants belonging to the Panth system and plants that were naturally regenerated had a slightly larger mean diameter (Table 2).

Stability tests

In the stability measurements, the test trees were pulled to 10°, 20° and 30° angles in relation to the original position. The power required to draw the trees to these angles was measured by a dynamometer attached to a winch. The direction of pull

was randomly chosen. After the pulling test, the trees were bent down in the same direction as the pulling test so that the top touched the ground. The force was applied at the central point for the catch area exposed to the wind.

When the trees were bent down so that the top touched the ground, mainly the Paperpot 308 suffered a large proportion of root fractures and a large proportion of trees that did not return to the vertical after being bent down. The plant types that best coped with the stresses in the root zone are Panth, Hiko and Plantsystem 80. Naturally regenerated plants had few root fractures but a relatively high proportion of up-rootings. Overall, the majority of the trees were uninfluenced by being bent down. In some cases, the strength of the root was not the limiting factor but the stem broke instead.

Stem base crookedness

Basal crookedness of stems was recorded in four classes:

- 0 = straight (90°)
- 1 = slightly crooked (89°-60°)
- 2 = crooked (59°-45°)
- 3 = very crooked (44°-0°)

Table 2: Ave. diameter, height, leader length.

Plant type	Diameter mm	Height m.	Leader cm.	No. of plants
Panth	54.1	2.36	44.4	36
Hiko	47.6	1.73	30.4	108
Combicell 32	46.6	1.78	38.1	36
Combicell 38	47.9	1.95	35.8	72
Plant system 80	47.4	2.07	35.2	90
Paperpot 408	49.7	1.87	38.9	90
Paperpot 308	49.7	1.91	38.3	36
Natural regen.	54.1	2.51	34.4	108

Table 3: Proportion of crooked stem bases (%)

Container type	Crookedness				No. of plants
	0	1	2	3	
Panth	38.9	58.3	2.8		36
Hiko	50.0	41.7	6.5	1.8	108
Combicell 32	40.0	48.6	8.6	2.8	36
Combicell 38	49.3	37.0	9.6	4.1	72
Plantsystem 80	48.9	46.7	4.4		90
Paperpot 408	36.7	46.7	13.3	3.3	90
Paperpot 308	30.6	61.1	2.8	5.5	36
Natural regen.	55.6	42.6		1.9	108

Among the plant types surveyed, the naturally regenerated plants had the straightest mode of growth and also had the lowest frequency of severely-very severely crooked stem bases. Among the container types, the Panth system and the Plantsystem 80 were the

continued on next page...

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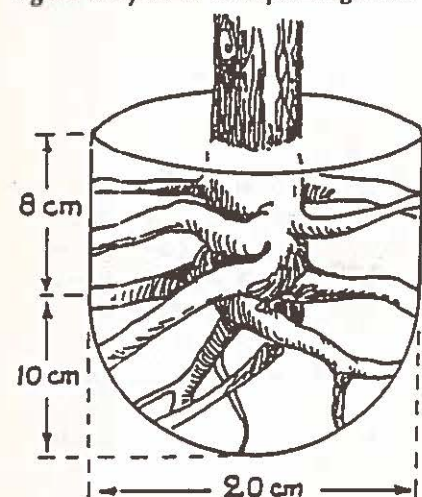
...continued from previous page most positive, with a low proportion of trees with severely crooked bases. The Combicell system and Paperpot 408 had a relatively high frequency of trees with severely—very severely crooked stem bases in the present material (Table 3).

Root studies

After the completed measurements of stability, the tree closest to the centre of the testing area was dug up for root analyses. On each site a total of 6 root systems were dug up, thereby giving a total of 192 root systems on the 32 experimental sites.

The root system was cut off so that it fitted into a cylinder with a 10 cm radius and with a hemispherical bottom. During the measurements, records were made of lateral roots (roots that cut the surface of the cylinder's casing), bottom roots (roots that cut the surface of the hemisphere's casing) and roots in 4 quarters (Fig. 1).

Figure 1. Cylinder for separating roots



The measurements included the numbers and diameters of roots. In addition, the presence of any spiraling roots was noted (Fig. 2). Analyses of the root systems of the different plant types revealed differences in the distribution between lateral and bottom roots (Table 4).

Root systems originating from the Panth system had, totally, a large root area of which a very large proportion consisted of bottom roots. Plantsystem 80 had the largest number of roots among the systems and which were more uniformly distributed between lateral and bottom roots compared with the Panth system. Naturally regenerated plants have the largest root area among the plant types, with a relatively large proportion of the area distributed among bottom roots. These plants also had by far the thickest roots, i.e., relatively few roots make up a large total root area.

The distribution of the roots in 4 quarters of the root system used in the root analysis was most uniform for the naturally regenerated plants. (A low value implies that the root area is uniformly distributed between the quarters.)

Discussion of results

One of the aims of this study was assessing the extent of the stability problems in Swedish late-established plantations of pine. If the sites tested with regard to stability in the present investigation constitutes a representative selection, then there are regeneration areas where there may be problems in the future. However, none of the sites studied showed any immediate indications as to stability problems in the form of sloping trees or windfalls.

Differences between the sites did not emerge until the direct stability tests and the root analyses were made. Admittedly,

Table 4. Distribution of lateral and bottom roots

Plant type	No. lateral roots	No. bottom roots	No. roots, total	Root area, lat. roots	Root area, bottom roots	Root area, total	Unilateral value
Panth	4.92 31.9%	10.50 68.1%	15.42	504.68 26.3%	1415.88 73.7%	1921	0.52
Hiko	6.64 46.3%	7.69 53.7%	14.33	454.64 55.2%	368.46 44.8%	823	0.49
Combicell 32	5.25 43.2%	6.92 56.8%	12.17	362.46 36.0%	644.42 64.0%	1007	0.56
Combicell 38	5.46 44.6%	6.79 55.4%	12.25	410.99 41.2%	583.74 58.8%	997	0.55
Plantsystem 80	7.40 43.0%	9.80 57.0%	17.20	554.02 44.3%	695.71 55.7%	1250	0.49
Paperpot 408	6.37 45.9%	7.50 54.1%	13.87	446.13 41.6%	627.14 58.4%	1073	0.51
Paperpot 308	6.92 47.2%	7.75 52.8%	14.67	671.23 42.7%	900.92 57.3%	1572	0.56
Nat. regeneration	6.00 41.2%	8.56 58.8%	14.56	876.44 39.6%	1334.11 60.4%	2211	0.45

*Unilateral value = the ratio of the root area in the largest quarter and the total root area.



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differences were noted in the frequency of crooked stem bases between different plant types. However, this variable need not be linked solely to the stabilizing function of the root system since basal crookedness may also depend on the roots freezing-up, the method of planting, size of the plant when planting, snow and wind exposure, etc.

A large root area in relation to the above-ground part is usually associated with good stability. Despite a large root area for Paperpot 308 in relation to stem diameter, low torque values were obtained in the dynamometer test with this type of plant as well as large proportion of root fractures and sloping trees during the bending tests (33.3%). This may be explained as a result of many trees standing on rocky ground (33.3%), i.e., the distance to the bedrock was not more than a few decimetres and thus would have an unfavourable influence on stability. If we only consider plants

standing on "normal" ground (sandy and sandy-loamy till), the proportion of root fractures and sloping trees after bending will still be abnormally high (25%). Paperpot 308 is the plant type that, together with some others, have severe spiraling root deformations. When the stabilizing function of a root system is evaluated, the total root area is of great importance together with the degree that the root system is deformed. It might be expressed in such a way that, apart from quantity, also good quality of the root system is required in order to obtain a stable tree.

Both the above criteria are fulfilled by naturally regenerated plants. This is the plant type that has the best opportunities to survive stresses leading to a risk of the tree falling over. Apart from a large root area, lack of root deformations and uniform root distribution, they have dispersed their root area among a few large

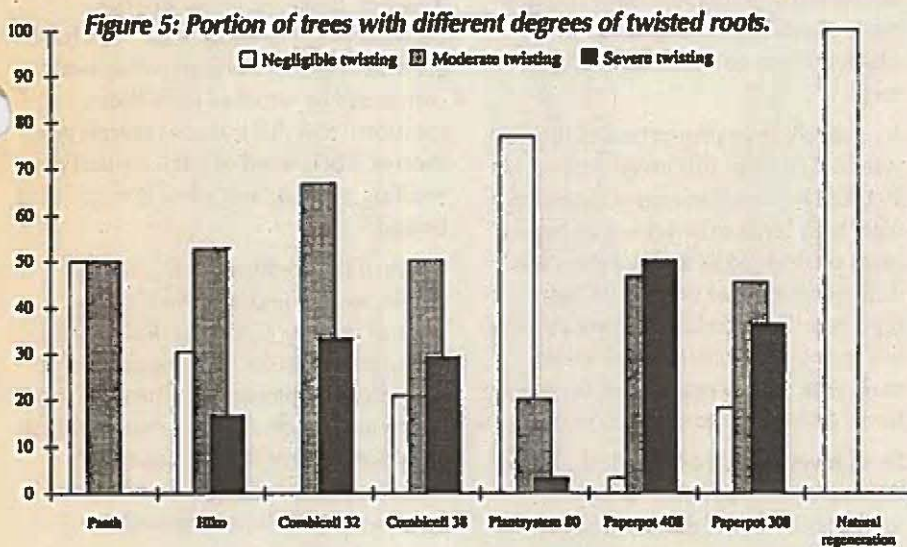
roots. Probably, from the stability viewpoint, it is more efficient to spread the root area among a few stabilizing large roots. The contorta pine in comparison with Scotch pine, has poorer stability properties because of a smaller root area and thinner roots, among other things, in relation to the aboveground part (branch weight).

Among the planted sites there are a few that diverge positively from the others. In the same way as the naturally regenerated plants, those plants belonging to the Panth system had good stability in the field. They also have a large root area, thick roots, relatively few spiraling roots, and a very large area of bottom roots. Stability may be favoured by a large bottom root area. Instability may arise if the bottom roots do not develop sufficiently in the soil.

An important factor that separates the Panth system's plants from the others is the short growing time in the nursery (3 months) in combination with a relatively large container volume (95 cm³). The containers were "sown" just before mid-summer (June 20-25) and were delivered from a cold store to the plantation area in the following spring. The short growing time for Panth seedlings has resulted in the seedlings probably being influenced to a very minor extent by the shape of the containers, i.e., there has been little influence of spiraling roots and root compression.

The major importance of growing time for the degree of deformation of the plants, and thus the stability, has been demonstrated and discussed in several papers. In the present investigation, the

continued on next page...



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older planted plants tend to have suffered more from damage to the root system in the bending test.

In other respects, it can be mentioned that the Panth system, in contrast to the Paperpot and Combicell systems, have guiding ribs that prevent horizontal root development in the container. Guiding ribs in combination with an open container bottom has been shown in shorter growing times to reduce the spiraling of roots and to improve plant stability in the field. If the plants are grown for a longer period in the containers it appears, however, as if the ribs have a decreased functional efficiency.

Plantsystem 80 is a growing system where use is made of the root pruning effect of air combined with mechanical pruning in order to guide the roots in their development. Among the planted plants dug up, Plantsystem 80 was the growing system in which the root system was most similar to the root shape of the naturally regenerated plants. Despite these plants having been grown for a long time in the nursery (7-8 months) in a small container volume (48 m³), the frequency of spiraling roots was low (Fig. 5). The frequency of injury was also low after the bending test. This demonstrates that the root control principle used by Plantsystem 80 was effective and that the container design/root control principle should be included as an important factor when maximum growing time in the nursery is being established in order to avoid stability problems.

Plants belonging to the Hiko system have a small root area in relation to stem diameter. They also showed relatively low pulling resistance in the dynamometer tests but, however, gave good results in the bending tests. A small proportion of the plants had severely spiraling roots. The Hiko sites investigated differ from the others in that they are located further to the north and at relatively high altitudes.

In relation to their height, the Hiko plants have a thick diameter in comparison with other plant types (Table 4).

The planting environment for the Hiko plants was probably more wind-exposed which has implied that, in relation to other plant types, they have used growth resources to enlarge the stem diameter more than the height. That the stem shape is influenced by wind-exposure is known from earlier investigations. If the plant height had been used as an independent size variable instead of stem diameter, the level of the torque function of the Hiko plants' would have been increased in relation to the other plant types.

It is possible that plant height would better describe the toppling stresses a plant is exposed to than the stem diameter. Some use the product of tree height and crown diameter as an independent variable in their torque functions. That we, nonetheless, used stem diameter to describe plant size is because this measure was utilized in several stability investigations and that many plants had been grazed by moose which influenced the height development.

A relatively large proportion of the root systems (20%) in this investigation was attacked by *Armillaria spp.* Correspondingly high levels of attacks in an experiment established with pines grown in different container types have been reported. The attacks may have more or less serious effects on the trees. Normally, the attacks cease when the trees have reached an age of 15-20 years.

In an investigation of this kind where data on sites and plants have a wide variation it may be difficult to reach conclusions on causes of stability problems. However, it would appear, that this investigation confirms what we have earlier known, i.e., that container design and the time the plants are growing in the nursery have a major effect on root deformations and plant stability. In order to improve our knowledge of how different factors, such as tree species, growing time, container design and site coordinate from the stability viewpoint, it is essential to establish monitored experiments. ♦

Reconsidering Hardwall Containers

Arne F. Aiking, BCC
Silviculture Systems Inc.

Note: Letter to the editor of CSM, Feb. 1, 1994.

1. A quick glance at the article "Seedling Roots and the Forest Floor" (CSM Fall 1993) may give the impression that "hardwall containers are bad." We think that this is misleading. We believe that the answer to that question is found with foresters who have grown complete rotations based on seedlings from hardwall containers. We in Canada do not have sufficient experience and neither do the Scandinavians: the fact that our northern latitudes require long rotations makes it impossible for us to look at "mature container plantations."

Some of BCC's customers in Latin America, however, are in a better position to tell us about this. They have grown complete rotations in hardwall containers by virtue of their short rotations, and this includes several pine species. Their word of advice: plant the seedling early; do not allow it to go "root bound."

Many of the seedlings in BC, for example, would be considered "root bound" in their judgment. Many Latin American foresters I have spoken with place little emphasis on caliper the way we do in Canada. Instead, many of them would argue that thick caliper can sometimes be an indication of a root system which is "too advanced."

The lesson from Latin America is that conventional hardwall is fine, provided you are careful.

2. Many of us in the Western world are skeptical of advice from other countries. (This is, in my belief, very unfortunate indeed.) As a result, Canadians and Scandinavians alike are looking for alternatives to the hardwall container.

Your article only mentions one alternative. Your readers should know that there are a variety of alternatives worldwide, besides Jiffy which is a disposable system, made of compressed

peatmoss and plastic mesh, by one outfit in New Brunswick.

There are systems in place today which are beyond the research stage, and which have been producing tens of millions of seedlings annually, on an operational basis. These systems, made by a number of suppliers worldwide, including BCC, have been developed on a cooperative basis with the forest industry, universities and forest nurseries. The aim was to develop a system which combines the advantages of hardwall containers with more active root tips in the plug. They are generally referred to as "sideslit systems."

These are basically hardwall containers made of long-lasting hard plastic, which have slits on the sides to encourage the same beneficial "air pruning" mentioned in your article. This fits into existing styrobloc nurseries: same block loaders, seeding equipment, benches, extraction systems and boxing systems.

The point here is that it is not necessary to throw the baby out with the bathwater: you can have the benefits and advantages of hardwall, along with air pruning.

In these days of environmental concerns, there are some other benefits to keep in mind about hard plastic as opposed to styrobloc:

- Hard plastic containers will serve in the nursery, depending on conditions, between seven and ten years, and are then easily, and commonly, recycled.
- Hard plastic trays are easy to wash in the nursery between crops. Harmful chemicals are not required.
- Hard plastic trays do not require the use of poisonous copper sulfite for root pruning. Root pruning is done with air.
- Warning: several European countries now have legislation in place, whereby styrofoam trays can only be disposed of in industrial incinerators for chemical waste. This presents a substantial financial burden in transportation charges and incineration fees to the nurseries, indeed tripling the costs of a styrobloc system. ♦

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Aboriginal Forest Strategy: Building A Balanced Framework for Forest Management

Harry Bombay, President National Aboriginal Forestry Association

Note: Edited version of a talk given to the First Nations Forestry Council, Aug. 31, 1993.

Background

The National Aboriginal Forestry Association (NAFA) received its letters patent on August 20, 1991. However, NAFA has existed unofficially since the National Native Forestry Symposium held in Vancouver in 1989. NAFA was created originally to promote the goals and needs of aboriginal forest management and to cooperate with governments, the private sector, the forest industry and educational institutions to achieve its objectives.

A primary focus of NAFA is building a policy framework for aboriginal forest management that is consistent with aboriginal goals of self-determination and self-reliance, as expressed by our national organizations. As well, it promotes and supports increased aboriginal involvement in forest management and related commercial opportunities.

In working towards achieving its objectives, NAFA is committed to holistic or multiple-use forestry. This implies the rebuilding and sustainable development of the forest resource to serve community needs including:

- the protection of wildlife and traditional food stuff habitat;
- the protection of fur bearers;
- the protection of clean and adequate supplies of water; and
- the establishment of forested areas for recreation and tourism attractions, traditional cultural and spiritual use, as well as the production of fibre for timber, pulp and paper, and other wood by-products.

Key to the concept of holistic forestry is the idea of community-based strategies for transforming this resource ethic into reality.

From the NAFA perspective, the importance of the forest resource cannot be understated. A review of Canada's forestry inventories shows that 85 percent of all aboriginal communities and reserves are located within areas of productive forest land. As this land's original inhabitants, our lifestyle and cultures developed according to what Mother Earth has provided for us, including an almost total reliance on the forests for the basics of life. Although this direct reliance is less obvious today, there is still an inherent dependence on the forests for food, shelter, cultural and spiritual fulfillment, and for economic

...we have the right to continue using the land and forests of our traditional territories, as confirmed by treaties and other agreements...

benefits derived from traditional pursuits such as hunting, fishing, gathering and trapping. As an example, it is estimated that 50 percent of all registered trappers in Canada are aboriginal.

NAFA strongly supports the view of aboriginal people that we have the right to continue to use the land and forests of our traditional territories, as confirmed by treaties and other agreements.

Aboriginal communities want to achieve a new level of economic self-sufficiency by combining new ways with the traditional ways. The success of their efforts will depend on access to resources, a proprietary interest in the land, a real role in resource management, and a strong say in decisions which affect their communities. Sustainable development, first and foremost, must offer aboriginal people -- and their children and grandchildren -- real choices and opportunities in the years to come.

With Canada's commitment to sustainable

development, the imminence of land claims settlements and the inevitability of aboriginal self-government, an aboriginal focus on forestry is required to address the constraints and foster a new era of aboriginal land stewardship. From the perspective of aboriginal people:

- aboriginal self-government will mean a stronger voice in resource management;
- land claim settlements will mean a more equitable sharing of the land base; and
- the recognition of aboriginal and treaty rights will mean increased access to resources, and in some cases, shared stewardship responsibility.

To assume a larger role in resource management, aboriginal communities have a need to be better prepared. We have to equip ourselves with the tools to manage in a

way that our needs will be better met. Over the past two years, NAFA has identified key issues which will need to be addressed through collective initiatives on the part of aboriginal organizations, aboriginal forestry groups and educational institutions. NAFA has developed an aboriginal forest strategy to address these issues. The objective is to guide aboriginal communities in our efforts to protect, conserve, manage and obtain maximum benefits from forest lands, both on and off reserves, in perpetuity. The development and implementation of this strategy must occur in accordance with the following guiding principles:

- the strategy must be initiated and developed by aboriginal people;
- it must be optional, and therefore, at the discretion of aboriginal people to determine if and when they wish to exercise the powers available;
- it must be consistent with other policies and legislation being developed to advance aboriginal self-government;

- it must not prejudice aboriginal, treaty or constitutional rights; nor be seen as an alternative to constitutional change, nor in any way jeopardize future constitutional change benefiting aboriginal people;
- it must define the responsibilities of the Crown and First Nations, and the means by which these responsibilities will be fulfilled;
- it must recognize that First Nations opting into new forestry legislation will require access to adequate financial and technical resources to exercise their jurisdiction;
- it must not prejudice aboriginal people's access to government programs;
- it must enable the federal government to meet its obligations to aboriginal people for forest land and resources; and
- it must ensure that First Nations' forest lands and resources are adequately protected, reforested, and enhanced in perpetuity, so as to maximize long-term social, spiritual and economic benefits.

Aboriginal Forest Strategy So Far

1. Forest land and resources legislation

Indian reserve lands in Canada are, in effect, federal lands, which come under the ultimate control of the Department of Indian and Northern Affairs by virtue of the Indian Act. In the spirit of self-government, new legislation is needed to recognize First Nations management control over reserve lands, according to the needs and aspirations of First Nations communities.

In the past, under the federal government's stewardship, Indian lands have deteriorated and are now in a deplorable state. As the fiduciary for Indian lands, the federal government has provided services at a level far below the standard of care on neighbouring provincial and other federal lands.

New legislation related to the management of First Nations forest lands and resources would ensure that forests on Indian reserve lands maintain a level of sustainability, equal or exceeding acceptable industry standards, through the maintenance of forest management inventories, the development of forest management plans, the application of modern forest management treatments and the rehabilitation of depleted forests. Most importantly, new legislation would place control in our hands. Control is a necessary prerequisite for capacity building and for development of working relationships based on equal partnerships.

2. Forest management programs

Programming for Indian reserves is now delivered by Forestry Canada through forestry resource development agreements (FRDAs). This programming is vastly inadequate and does not address aboriginal values and the need for capacity building. Furthermore, the federal government announced in its April 1993 budget that the FRDAs will not be renewed after the existing agreements expire.

To replace the FRDAs, we need a comprehensive Indian forest-lands programme which will achieve the following:

- address the need for regeneration on Indian lands;

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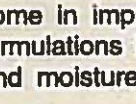
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- honour the fiduciary obligation of the federal Crown;
- facilitate capacity building at the community/regional levels;
- facilitate institutional development to enable aboriginal people to take responsibility for the delivery of the programming; and
- enable aboriginal people to manage natural resources and set their own priorities with respect to such matters as fish and wildlife, and increased participation in the forest industries.

3. Education and training

To strengthen our relationship with the land, a major thrust of the aboriginal forest strategy must be to find ways to increase the number of aboriginal people working in the economy's forest sector. Even though most aboriginal communities are located in productive forested lands, aboriginal people comprise only seven percent of the total forestry and logging work force (1986 Census). Our employment in the forest sector

is very low. In fact, aboriginal employment has fallen considerably over recent decades, partly as a result of technological changes

(which enable forestry-related business to operate in more urban centres), high capital-cost of business investments and new skill requirements. However, new opportunities are appearing, including:

- The second round of FRDAs reflected the continuing commitment of governments to more intensive forest management and to sustainable development. Opportunities for jobs in forest renewal and other silvicultural activities are increasing both on and off reserves.
- The FRDA's Indian forest-lands sub-programs will offer greater opportunities for program management by Indian organizations.
- Some provinces are indicating interest in assisting aboriginal people to acquire more access to forest opportunities off reserves.
- Co-management opportunities are evolving.

- There is a growing tendency among provinces to recognize aboriginal people's rights in natural resource, management decision-making forums.
- The federal government, some provinces and aboriginal institutions have, or are developing, new programs to foster education and training for aboriginal people.
- Land claims settlements and self-government are coming closer to reality, bringing opportunities to develop, manage and work within our own resource management regimes.

If aboriginal people are to take full advantage of these emerging opportunities, they must develop the skills to do the job. The needed skills include those for forest management planning, business development and management, and work force jobs. Programs must be created to promote aboriginal people's awareness of employment and business opportunities in the forestry industry, and must make training available to enable them to gain

...aboriginal forestry, as a concept, must be balanced to reflect the full range of aboriginal values...

the skills they may need to take advantage of these opportunities.

4. Business development programs

Historically, aboriginal people played a significant role in the Canadian forest industry's early development, mainly in manual, semi-skilled harvesting and processing occupations. Our participation in this sector of the labour market has decreased severely in the past thirty years with new technology and government policies which favoured large and diversified forest companies.

In addition, Canada's forestry industry is going through a difficult period. The combination of the recession, increasing competition from foreign sources of pulp, the obsolescence of many pulp and paper mills, pressures to convert bleaching processes to eliminate the use of chlorine, and demands from individual American states for use of recycled paper in news-

print all suggest that recovery to pre-recessionary production levels will be slow. The lumber industry, normally a leader in recovery from recessions, is confronted by protectionist pressures in the United States.

In Canada today, there are a number of significant factors and developments taking place which are impacting on the forest sector and changing the way the forest resource is managed. These changes should be viewed as a window of opportunity to facilitate the re-entry of aboriginal people into the forest sector. For example:

- Canada's commitment to sustainable development will mean continued growth in the silviculture industry.
- The public's concern for the environment and its increasing awareness of the multiple values of the forest resource will require more intensive public consultation in forest management decision-making, especially among those whose lives are most directly affected by forestry decisions.
- The recognition within the forest products industry that new growth will be in value-added processing and specialty wood manufacturing for niche markets.

To take advantage of the opportunities which are now emerging, there is a need for a comprehensive, aboriginal forest-sector, business-development program.

5. Policy and advocacy programs

Access to resources: Most reserves in Canada are too small to support viable forestry operations and most traditional territories (off-reserve Crown land) are allocated to large industrial holders under forest-management agreements. This limits opportunities for First Nation communities to develop self-sufficient forestry enterprises. Treaty and aboriginal rights need to be reflected in new innovative tenure-sharing arrangements. Provinces should be encouraged to diversify their licensing procedures so that more of the forest resource is available to aboriginal communities.

From the perspective of some aboriginal communities, it has been found that the

existing licensing systems are oriented towards timber management only, and that they have imposed requirements in direct conflict with aboriginal values.

Aboriginal forest practices

Most aboriginal communities are now at a point where they are fully aware of the impact of forestry operations on their traditional territories. As we become involved increasingly in the planning of natural resource use, we need to develop arguments which will reflect our values and present alternatives for the wise use of all forest resources. The alternatives will need to be based on our traditional knowledge -- our forebearers and elders of today have been effective guardians of the forest. In effect, we have to question what forest science teaches the non-native forester. For example:

- Will five snag trees per ha. satisfy the needs of nesting birds?
- Will a 30m. or 60m. buffer along a beaver creek satisfy the food and dam-building requirements of the beaver?
- We have to ensure that forest management plans will respect our cultural ties to the land. Will there be sufficient provision made for medicinal gathering areas, berry-picking spots, burial sites and sacred spiritual areas?

Currently, across the country there are numerous aboriginal communities dealing with the issues I have just outlined. We should be sharing information on our approaches and developing common positions to the point that our diversity will allow.

Overall, the factors and developments causing change in the forest sector today should result in increased resource management, employment, and business opportunities for aboriginal people. In summary, the opportunities within the aboriginal forest sector are:

1. To assume control of forest management responsibilities for Indian forest lands;
2. To enter into contractual and co-management agreements with provincial governments for resource management of Crown lands;
3. To enter into contractual or joint-venture arrangements with the non-native private sector;
4. To develop, implement, and manage new resource-management regimes through land claims settlements and the institutionalization of aboriginal self-government;
5. To obtain employment with non-native private sector firms;
6. To develop new business enterprises in the forest sector reflecting market trends for forest products and services.

I have outlined the basic elements of an aboriginal forest strategy. An integral feature which cannot be emphasized strongly enough is that aboriginal people are a part of the environment and that aboriginal forestry, as a concept, must be balanced to reflect the full range of aboriginal values. Aboriginal communities and organizations need to work together to strengthen and implement an aboriginal forestry strategy which ensures our continued and growing participation in forestry management and in a sustainable forestry industry. ♦

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Scientific sleuths suspect thin ozone in mystery deaths of frogs

William Boei

Note: This article appeared in the Vancouver Sun.

An Oregon study has found the thinning ozone layer may be causing mysterious deaths of frogs and toads around the world.

It is the first hard evidence uncovered in a world-wide effort to find out what is killing amphibians, according to a Victoria scientist who heads the search in Western Canada.

The case has been on since 1989, when scientists at an international conference discovered nearly all of them had stories of populations of amphibians suddenly dying off -- even in places with no apparent environmental or habitat problems.

In BC, spotted frogs have apparently disappeared from White Rock, while leopard-frog populations in the Kootenays have taken a nosedive, said Stan Orchard, a research associate at the Royal BC Museum in Victoria.

Orchard is in charge of Western Canada in a global scientific effort to document the phenomenon and pinpoint its causes. Parts of the problem could turn out to be purely local, he said. White Rock's spotted frogs, for instance, may have been supplanted by an imported species, the voracious American bullfrog.

Scientists suspected there could be two global causes: the ozone problem and increasing carbon dioxide in the atmosphere, which might be robbing amphibian eggs of the oxygen they need to develop properly.

No evidence is in yet on the carbon-dioxide theory, but the new study by a group headed by Andrew Blaustein of Oregon State University, says rising levels of ultraviolet light appear to be killing sensitive amphibian eggs.

Blaustein's group says it found a genetic link between the thinning of the ozone layer, which filters out ultraviolet rays, and the amphibians ability to reproduce.

At the heart of the research is an enzyme called photolyase, which enables amphibian embryos to repair genetic damage done by ultraviolet light.

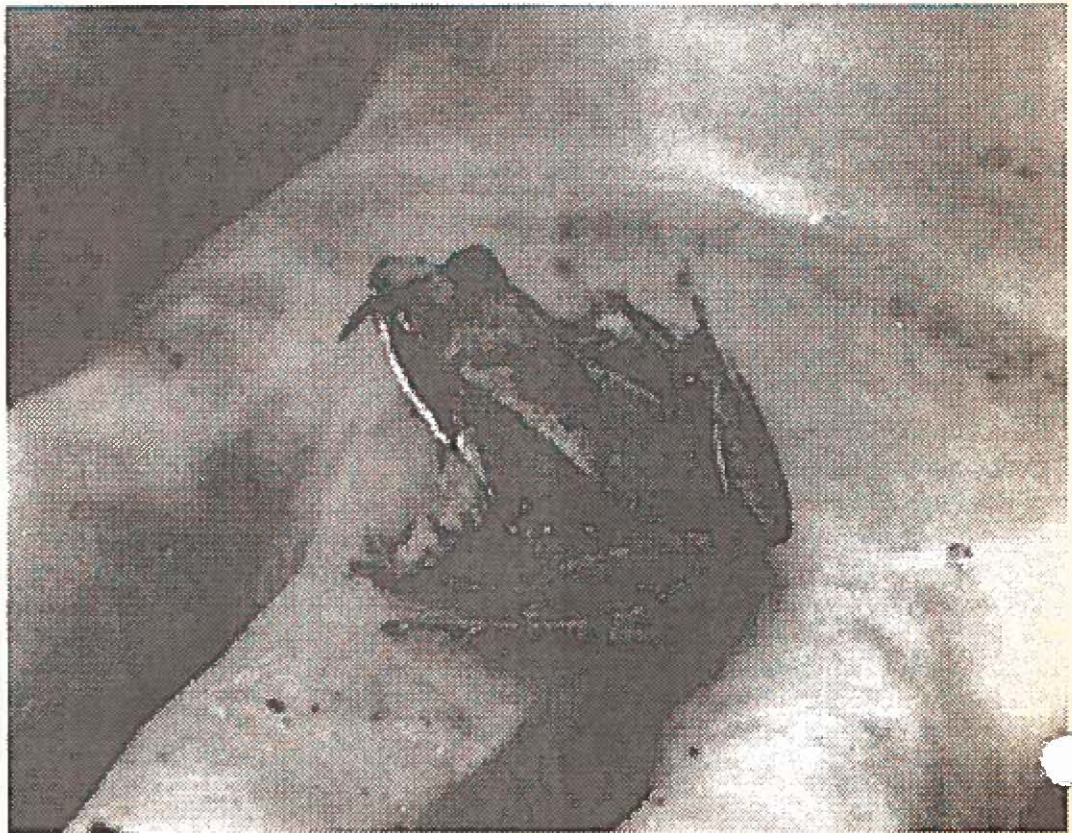
The scientists found some Oregon amphibians have 80 times more photolyase than others. The species

with large amounts of the enzyme in the embryo stage have stable populations, they found. Some with little photolyase are disappearing.

Field tests on two species with small amounts of the enzyme—the Western toad and Cascades frog— show that the adults lay eggs, but many don't hatch. But when the scientists shielded them from ultraviolet light, more of the eggs hatched.

It's not just a question of whether frogs, toads and salamanders survive. Their disappearance would remove a key link from the food chain.

One frog, depending on its species, may produce up to 30,000 eggs at a time. Tadpoles are such an important food source for various predators that 98 or 99 percent are eaten. ♦



Scientists confirm ozone UV link

Wallace Immen

Note: This article appeared in The Globe and Mail.

Canadian researchers have proved what scientists have long suspected: the more the ozone layer in the atmosphere thins, the more cell-damaging ultraviolet radiation reaches the ground.

Using a Canadian-built precision instrument, researchers James Kerr and Thomas McElroy of the federal Atmospheric Environment Centre, measured rising levels of sun-burn producing UV-B radiation over the past five years.

The increases directly correspond to reductions in the protective layer of ozone in the upper atmosphere, the researchers report today in the US journal *Science*.

The amount of sunburn-producing UV-B reaching the ground in Toronto during the summer has increased about two percent a year, up a total of eight percent since 1989, they found.

During the winter, when the ozone is thinnest, UV radiation hitting Toronto has risen by as much as five percent a year, a total increase of about fifteen percent over the past four years.

Kerr said in an interview that the Toronto findings would apply to most of Southern Ontario and Quebec, where ozone thinning has also been recorded. But there are not enough long-term records to calculate the trend for other parts of Canada.

The study was done with a Canadian-developed Brewer ozone spectrophotometer, which is much more sensitive than equipment used in the past. Many Canadian weather stations did not take regular UV readings until ozone depletion became an issue in the 1980s.

Kerr cautioned against an overreaction. "The sun may be a bit stronger over Canada than it was ten or fifteen years ago, but it's not a dire situation," he said.

However, it is cause for concern. Overexposure to UV-B has been linked to sunburn, skin cancers and cataracts, and it damages crops and forests.

Kerr said the study was the first time that precise measurements have been taken over a long term to prove the link between ozone levels and ultraviolet radiation. Previous studies had been done only with readings on sunny days.

Clouds deflect UV-B radiation. In the rainy summer of 1992, heavy clouds blocked much of the incoming radiation, Kerr said.

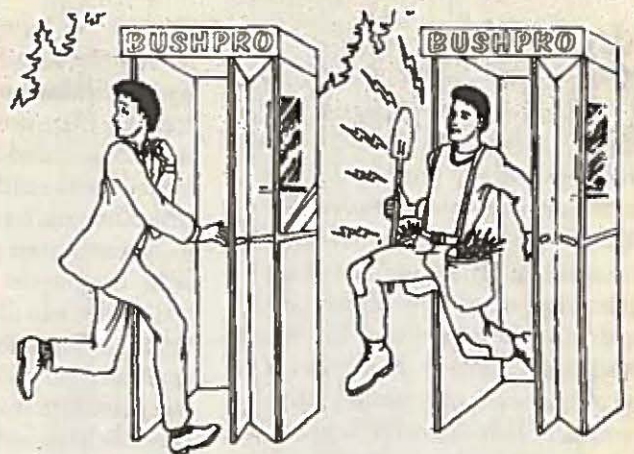
Even on sunny days, weather patterns can cause large variations in the thickness of the ozone layer in the upper atmosphere, he added.

The scientists say the dramatic increases will not necessarily continue.

Wayne Evans, a professor of environmental science at Trent University, said he is completing analysis that concludes the extremely high UV readings in 1992 and 1993 are a temporary phenomena, caused by the after-effects of the volcanic eruption of Mount Pinatubo in the Philippines. ♦

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Silviculture Worker Certification in Canada

L.G. Rugo, Forest Labour Economist, Forestry Canada

Note: Edited version of a paper presented at the Silviculture Conference in Toronto, Sept. '93. The complete paper with references and a bibliography is available from the author, Natural Resources Canada, Canadian Forest Service, Hull, Quebec, K1A 1G5.

Introduction

Over the past decade, the silviculture industry has grown because of increased expenditures by federal and provincial governments and by industry. Between 1977 and 1991, approximately 4 billion dollars were spent on silvicultural activities, representing nearly 30% of all expenditures in forest management. Results are already measurable by the number of hectares silviculturally treated. For example, in 1980 approximately 340 000 ha were treated, whereas in 1991 treatment included some 1 000 000 ha. These silvicultural treatments consist of basic and intensive practices such as tree planting and stand tending.

Labour represents a key to most silvicultural activities such as tree planting. Growth in silvicultural treatments has led to a rapid expansion of the Canadian silviculture labour force, with some estimates placing its membership as high as 50 000 workers. Although a sizable group, this labour force has been characterized as underskilled, undertrained, and transient.

An under-endowed labour force can contribute to rising forest management costs, poor product quality, rising occupational injuries, high job-turnover rates, and a perception that employment within silviculture is short term.

In Canada, it is broadly held that there is a general underinvestment in silviculture training. However, this phenomenon is not exclusive to the silviculture sector, but rather is common throughout the Canadian economy; industry must invest more in training to improve Canada's productivity performance and competitiveness. To influence the level of training activity, there may be a need for government intervention. Silviculture worker certification is one measure by which government can influence investments in their training.

The National Forest Strategy recognizes the contribution silviculture workers can have in the development of Canada's forest resource. In particular, strategic direction item 6.5 has called for an assessment of the feasibility of a certification system for silviculture and forest workers in Canada, to increase worker mobility, safety, and skills. The purpose of this paper is to address the issue of worker certification by informing major forestry stakeholders on the theory and evidence surrounding certification, the merits and shortcomings of certification, and alternatives to certification.

Defining the silviculture worker

Silviculture workers are defined within a broad category of education and training resembling a hierarchy of individual tasks, functions, training, and education. This hierarchy includes the following:

Professional (generally university graduates)

Technical (those who have undergone one or two years of formal full-time training)

Vocational (skilled individuals who have undergone formal vocational training) and

Labour (skilled workers who have either undergone worker training or acquired skill on job, and unskilled workers who have no vocational training or experience).

These educational and training levels are usually recognized and relate to the human resource requirements in most organizations. Silviculture workers are classified within the labour category because of their limited educational and training background within forestry and silviculture; however, these categories are not mutually exclusive. For example, a skilled forestry technician may be doing the work of a professional forester or a silviculture worker may be doing the job of a technician.

Underinvestments in silviculture training

An underinvestment in silviculture implies that wrong decisions on human resource development are being made. However, individual employers are probably making correct decisions about human resource development given the constraints they face. These constraints may lead to decisions that are optimal from an individual employer's perspective, but not necessarily optimal when summarized for the silviculture industry as a whole. An underinvestment in silviculture training may prevail for several reasons: poaching, inability to finance silviculture training, the job turnover paradox, and information problems. These constraints do not represent an exhaustive list; they merely point to central themes.

Poaching

Some silviculture contractors provide worker training that is easily transferable, and they cannot obtain full returns from their training investment because other contractors attract the trainees away by offering a wage premium. Contractors who lure trainees through wage premiums are said to be poachers. The poaching of trainees may cause those contractors giving the training to reduce their training initiatives or become very selective of candidates for silviculture training.

Inability to finance training

The inability of employers and employees to pay for training may prevent the market from yielding a socially optimal investment in silviculture training. An employee's inability to pay for training may simply be associated with an inability to accept a lower wage during the training period, or to receive no wage because of an interruption in the normal work arrangement. An employer's inability to pay for training may be linked to constraints set by the contract-tendering process and forest tenure system under which contractors

operate. These constraints may influence employers to practice cost-minimizing strategies, thus hindering their ability to finance silviculture training.

Job turnover paradox

High job-turnover rates associated with many silviculture activities, such as tree planting, may dissuade the private market from providing a socially optimal investment in silviculture training. It does not pay to train a workforce that may leave the silviculture industry or seek employment with other competing employers.

Hence, a self-perpetuating problem develops: workers are not trained because of a high job-turnover rate associated with voluntary quitting, and workers quit because they lack training to cope with the physically demanding nature of the occupation. Other factors may also contribute to the degree of voluntary quitting, including worker dissatisfaction with career opportunities, and wage differentials between silviculture and other sectors.

Evidence of training underinvestment

The silviculture industry in Atlantic Canada, employing about 12% of Canada's total silviculture labour force, shares common issues related to silviculture training. In New Brunswick, many workers fail to obtain training because they must forego unemployment insurance benefits. The need to bridge wages while on training suggests the inability of workers to finance silviculture training.

The silviculture industry in Quebec and Ontario employs approximately 46% of Canada's silviculture labour force. Ontario has an inconsistent approach to silviculture training. Training appears to be ad hoc in nature with a mixture of formal and informal training. In-house formal training programs exist for some major companies, but silviculture contractors undertake most of the silviculture work in the province. Most training, if offered, is informal, especially in tree planting. Contractors rely heavily on experienced new leaders to provide the necessary on-the-job training. Contractors have

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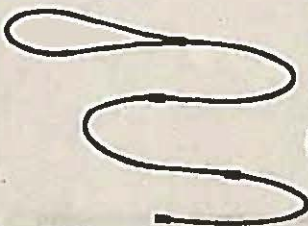
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...continued from previous page attributed the low-key approach to training to the lack of available training programs and funding mechanisms for training.

In Quebec, silviculture training is geared more toward formal training, although informal training is widespread particularly in tree planting. Formal training programs such as are offered through the Quebec Ministry of Education at nine "Centres de formation en foresterie." Program funding is provided entirely by the Ministry of Education. In addition, these programs are offered to industry on demand and financed in part by industry and in part by contributions from Employment and Immigration Canada. Enrolments in some programs have been declining.

The silviculture industry in British Columbia is the largest in Canada, employing approximately 34% of the nation's silviculture labour force. Many silviculture contractors offer some form of on-the-job training, but it is mostly informal. There is no clear indication of the number of workers who receive training. Silviculture contractors themselves admitted that their industry is subject to high job-turnover rates fuelled by voluntary quitting, and employers too frequently try to change the workers to fit the job. This suggests that worker training may be constrained because of the "job turnover paradox." The cost of training was also mentioned by contractors as a concern that blocks training.

Theory of certification

Certification implies both an act and a process. As an act it entails delivery of a certificate to an individual. As a process certification suggests both the awarding of a credential and the essential stages that lead to it: admission, grading, tracking, and examining. The process is commonly referred to as "credentialing" or "formal selection." In actual operation, certification is not "stand alone": it often functions with different forms of institutional accreditation and licensing. Licensing can be viewed as an act or process by which candidates are screened for admission to a certain

profession and accorded the legal right to practice that profession. Institutional accreditation is a process or act whereby a government department or specially constituted agency recognizes the standing of an educational institution in light of its ability to satisfy prescribed criteria.

Certification serves to regulate the quality of training provided and ultimately the quality of labour employed. Therefore, it is a form of economic and social regulation: economic regulation, as it applies to issues of product quality; and social regulation, as it applies to issues of occupational health and safety. Silviculture worker certification can be introduced through government intervention into the forestry sector; governments in Canada have frequently intervened in the management of forest resources because they are the stewards of public interest and owner-managers of the resource.

Certification's functional and dysfunctional aspects

Certification serves to regulate the quality of education and training provided. It attests that the workers have received quality training, thus protecting them as consumers of education. Furthermore, it assures employers that they have received well-trained workers, thus protecting the employers as consumers of economic inputs.

Equally, certification has several dysfunc-

tions. Some claim that certification leads to the widening of the generation gap. For example, young workers benefit from formal training programs and receive credentials for the acquisition of skills not certified in the past. Often, the situation of older workers is exacerbated by the lack of ways to legitimize their knowledge and skills obtained outside the formal training system. Moreover, some contend that certification accentuates the phenomenon of attendance without motivation, because certification is perceived as essential to maintaining a job. Finally, others feel that certification leads to false employment hopes for graduates. Where the number of certifiable workers exceeds the number of jobs available, underemployment and frustration among workers may result from certification.

Certification process

The process of certification includes defining the objectives of certification, determining the target groups to be certified, defining the certification and training standards, establishing a certification structure, and assessing the human resources employed in the silviculture industry

Certification goals

The goals of certification can include reducing occupational health and safety concerns, maintaining productivity,



Informal, on the job training in Ontario.

increasing product quality, reducing training costs, and sustaining a pool of well trained workers. Although these are sample objectives, they are not mutually exclusive, and it is quite possible to have any combination of them. Furthermore, satisfying one objective may require the resolution of other closely related concerns. In the simplest form, worker certification amounts to answering the query: exactly what is the certificate holder expected to do?

Target groups and prerequisites

There are three levels to identifying the population to be certified. First, certification must serve those workers defined as "new entrants" and "veterans."

Second, certification must deal with silviculture workers as a global or disaggregated body, in the sense that there is no differentiation between those performing silvicultural activities such as tree planting or thinning. Alternatively, workers can be addressed according to separate employment groups such as forest renewal, site preparation, stand tending, or nursery workers. Division of silviculture workers based on activity may lead to further choices, such as whether to certify all silviculture sub-employment groups (full certification) or merely some (partial certification).

Third, certification must contend with three labour-force streams, termed "mainstream," "unemployment insurance induced," and "job creation." Mainstream workers are those who have entered the silviculture industry through regular job search. Unemployment insurance-induced workers are those who continue in the silviculture industry long enough to qualify for unemployment benefits. Job creation workers are unemployed workers who receive employment opportunities to maintain their work skills while they are laid off, and who receive unemployment insurance benefits or enhanced benefits paid by Employment and Immigration Canada.

There may be prerequisites for entry into a silviculture worker-certification program. To determine program suitability, candidates may be assessed against a set of entry requirements such as age, work history, experience, and level of formal education.

Certification and training standards

The requirements underlying certification standards are based on three components: education, training, and experience. Establishing these standards is a long and labourious task necessitating the evaluation of all possible levels of education, training, and experience that will amount to a certifiable standard. Training standards reflecting consistency in the curriculum taught and the delivery of training are important considerations in a certification program. The success of a certification program is directly related to the competency of the people involved. The critical component of the training endeavor is the trainers. Training the trainers to be competent communicators and consistent when teaching students is a first step toward delivering effective training.

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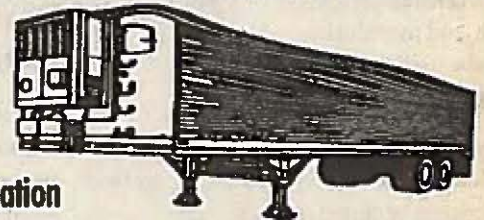
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Certification structures

A silviculture worker-certification program can be structured on either a voluntary or a mandatory basis. In a voluntary program, silviculture employers and employees are free to choose if they wish to participate. Under a mandatory program, employers and employees are required to participate.

Voluntary programs usually coexist with incentives that are used to entice participation. The incentives offered may be a bonus or a rebate. No policing is used to achieve compliance with the program, but monitoring activities may be performed to observe program effectiveness.

Mandatory programs usually function with some form of enforcement including the use of contract language, policy directives, and law.

Some policing is carried out to ensure compliance, and monitoring may be used to observe program effectiveness.

Human resource assessment

Evaluating the education, training, and job experience attained serves several purposes. It identifies gaps between the current quality of human resources in silviculture and the desired labour quality goal. Moreover, a human resource evaluation could serve to determine the costs and resources required to raise the current labour group to the certification level. Finally, the certification standards can be tested to determine whether they are realistic and obtainable goals.

Certification merits

Reducing occupational health and safety concerns

Wage-loss claims and pension-reserve costs (not including medical aid) incurred by the silviculture industry in Alberta and British Columbia are staggering. Between 1982 and 1991, approximately \$4.6 million dollars were paid out by the BC Workers' Compensation Board to tree planters, whether employed by government, industry, or contractors. In addition,

approximately 75 399 person days were lost because of work-related injuries. The costs incurred by the Alberta silviculture industry in terms of "lost-time claims" (wage-loss claims) are also revealing. Over an 11-year period (1980-1991), approximately \$2.4 million dollars were paid out by Alberta's Workers' Compensation Board. The total working time lost amounted to 11 749 person days.

There are several ways to reduce the frequency of accidents. According to a study on forestry accidents and prevention, "all hazards should be eliminated at the source." Furthermore, if risks of injury cannot be eliminated from the source, then hazards should be reduced by technological measures, safety devices, training and information, organization, and personal protective equipment.

...individual employers are probably making correct decisions about human resource development given the constraints they face...

Although these preventive measures are important, worker training is crucial to the success of any occupational health and safety initiative. Worker certification can be used to induce preventative training and ensure that workers have received it, and that employers are getting workers with the proper safety training.

Certification shortcomings

The explicit costs of certification are the costs of program development, worker training, program implementation, and monitoring activities. In a voluntary program, there may be costs associated with the offering of financial incentives to lure program participation. Mandatory programs may incur costs associated with program enforcement.

The implicit costs of certification concern the added labour costs above the wage rate, which may affect labour's ability to substitute for other factors of production such as capital. In other words, the demand for labour could be affected. The total cost of labour wages, plus the cost of human capital development from a certification program, could make labour

more expensive relative to other inputs such as capital. This could result in a decrease in the demand for labour and an increase in alternative inputs.

Jurisdictional control

Provincial governments, besides holding jurisdictional control over their forest resource, also maintain jurisdiction over basic education, training, and certification. Thus, control over the development, implementation, and management of a silviculture worker certification program would reside with the provincial government.

Provinces facing a diversity of forest resource issues would each adhere to a different mixture of silviculture labour components, and different approaches to developing, implementing, and managing a certification program for silviculture workers. Although common ground can be found among provinces because they are all dealing with silviculture, some provinces may stress a full

silviculture worker-certification program and others may emphasize a partial certification program. This may lead to an asymmetric certification program that could create problems associated with labour mobility.

Broad provincial jurisdiction in the area of education, training, and certification means that the precise makeup and function of a national certification program can only be determined after extensive federal-provincial discussion and negotiation.

Between the cracks

In some instances, certification is difficult to categorize in terms of merit or shortcoming. Certification has often meant that there are well-defined characteristics typifying a particular job. The "implicit contract" is that certification leads to a good job. Specifically, the better the training, the better the certification, and the better the job. However, this implicit contract can become diluted during economic downturns. In a recession, certification or credentials do not guaran-

tee good jobs, or any job, because labour demand is reduced.

In earlier times, certification was offered by trade and craft guilds charged with the duty to train new workers in an array of skills to serve society. Many of these skill relationships were set between craft guilds and the state. Today, similar relationships exist in the form of collective bargaining agreements between labour unions and industrial management. Certificates granting a certain degree of competence for specific occupations are usually recognized in such collective agreements. Many graduates are barred from employment opportunity because they are not members of the existing union which controls the flow of new entrants.

Certification and credentials traditionally serve to eliminate control by a single player in the labour market; however, employment of new workers can also be curtailed if their certification is not recognized.

Alternatives to certification

Certification, a regulatory measure, is a form of government intervention to influence investment levels in silviculture training. Other forms of intervention include taxation, subsidies, and the dissemination of information on training programs to employers and employees. Choosing a policy option that can influence the level of investment in silviculture training depends upon many interrelated factors such as the time frame for tangible results, and the cost/benefits of implementing one choice versus another.

Taxation

Tax mechanisms represent a classic solution to influencing investments in worker training. Essentially, taxing employers for not training workers means that their endeavors become less profitable. The threat of a less-than-profitable operation acts as an incentive to train workers. Employers would approach worker training as a means of reducing their tax burden.

The shortcomings are twofold. First, incentives granting tax rebates for training have historically been too broad, allowing

for cost-deductions for training activities of questionable social value. Second, taxation methods tend to benefit large enterprises that are able to afford training in the first place. Smaller employers are usually forced to leave the industry, thus creating other concerns such as unemployment.

Subsidies

Rewarding employers for the successful employment of trained workers by subsidizing the training process could entice employers to engage in training activities. Employers could be reimbursed partially or totally for their training costs incurred, possibly through some form of tax rebate. Offering subsidies for training could solve the problem of market failure created by the "inability to finance silviculture training." An example where subsidies are used to encourage training is found in California. There, if a trained worker gets a job and keeps it for at least 90 days, the training institution is reimbursed for the costs incurred.

A merit of offering subsidizing training is that it can steer employers away from practising cost-minimization strategies. Investments in training become affordable for both the employer and employee. A shortcoming of the subsidy approach is that training can become highly specialized and responsive only to the forms of training that are supported by subsidies. In effect, training can become less market-oriented and may not reflect the real training needs of the industry.

Information dissemination

If employees and employers are not fully aware of training programs or cognizant of their benefits, they may not make decisions that minimize job risks or allow the selection of jobs and training strategies that promote outcomes improving health and safety. This also applies to other considerations such as worker productivity and product quality. The government can play an effective role by informing the silviculture industry on the existence of training programs, training costs, and benefits of training.

An example where the dissemination of information has yielded positive results concerns a campaign by various public

organizations in Sweden to enhance safety in forestry. Several organizations, including Skogsarbeten (the Logging Research Foundation), the College of Forestry and the National Board of Occupational Safety and Health, carried out a comprehensive research and development project between 1976 and 1980 on the incidence and severity of accidents in forestry. These organizations worked closely with manufacturers, forest enterprises, and forestry employees.

A massive program of dissemination was carried out, including courses and training packages, conferences on safety in forestry, and popular publications. The frequency of accidents in forestry fell sharply during the 1970s as a result. Information from the study has been credited with improving protective clothing and equipment, safety courses at upper secondary schools, the employment of instructors at forestry enterprises, and the allocation of resources for R & D work aimed at resolving the problems of accidents.

Conclusions

In Canada, it is broadly held that there is a general underinvestment in training. This does not imply that wrong decisions on human resource development are persistently being made; rather, the silviculture industry is probably making correct decisions given the constraints they face. Constraints include poaching, inability to finance silviculture, job turnover paradox, and information problems.

A variety of policy tools can be used to influence training activity including taxation, subsidies, regulation, and the dissemination of information. Silviculture worker certification is a regulatory measure that can be used to influence investments in silviculture training. As noted earlier, the National Forest Strategy calls for an assessment of the feasibility of a certification system for silviculture and forest sector workers to increase worker mobility, safety, and skills. In the context of the implementation of this action item, an industry, labour, and government committee has been established. Individuals or groups interested in the work of this committee are encouraged to contact their provincial representative. ♦

Criteria for sustainable forestry

Dr. John Gordon, Social Workshop Chair and Professor R. Schlaepfer, Biological Workshop Chair

Note: Edited version of workshop summaries from the Council on Security and Cooperation in Europe (CSCE) seminar on sustainable development of forests, Montréal Sept. 1993.

Sustainable development of forests is recognized worldwide as a critical environmental issue and, equally, as representing social and economic implications. The critical importance of these issues, specifically their inter-relationships, is reflected by discussions that have occurred to date and that are

ongoing both globally and regionally.

This seminar was designed to provide a high-level technical forum to advance discussions by promoting:

- an exchange on measurable criteria/indicators used to evaluate the progress towards achieving sustainable development of forests; and
- an examination of the state of data collection and monitoring activities related to criteria/indicators identified.

To develop some degree of agreement on these two issues, two workshops were held, one taking into account the social and economic dimension and the other, the biological/environmental dimension.

Criteria/indicators sessions

The definition of "sustainable management" of forests as agreed at the Helsinki Inter-Ministerial Conference, is: "the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their bio-diversity, productivity, regeneration capacity, vitality and this potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems."

The proposed definitions of criteria/indicators provided by the organizing committee were as follows: criteria are (measurable) facets or features that must be considered in setting objectives or policy. All criteria involve an element of change. It is this change that provides a guide as to whether the objective (sustainable forest management) is being achieved. Indicators are designed to measure and provide quantitative and qualitative evaluation of the progress toward meeting policy objectives.

Social and economic criteria/indicators

Using the above definitions as guides and the additional parameters of "Is it necessary?", "Is it desirable?", and "Do the criteria relate to the interaction between forest and society?", the workshop on social and economic criteria/indicators reached a general understanding of the following criteria. There is no ranking or priority; they must be taken as an entire set.

1. Institutions and infrastructures to provide for sustainable forests

Indicators Planning

- Measurement of forest area, uses and conditions
- Processes for public participation and social acceptance
- Capability for inter-sectoral planning

Legal

- Existence of appropriate regulatory framework

Economic

- Appropriate incentives for establishment and maintenance of healthy forests and efficient, diverse and dynamic forestry
- Degree to which forest sector policies are integrated with public policies for other sectors

Participation

- Processes for effective public participation

Research and education

- Availability of education and research programs to support sustainable management of the forest
- Availability of communication channels between forestry sector and the general public

2. Long-term supply of social benefits

Indicators

- Cultural, spiritual and aesthetic values
- Historical and monumental sites

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Dirk Brinkman
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- Medicinal
- Landscapes

Recreation and tourism

- Access to forests

Provisions for multiple and complementary forest functions and their uses

- Hunting
- Grazing

Forests for protection purposes (air/water quality, landslides)

Provision for worker health and safety

Diverse and stable local community and forest-based employment

Subsistence uses

3. Long-term output of multiple economic benefits

Indicators

Ability to efficiently provide goods and services to meet the needs of the wider society

Generation and maintenance of long-term and diverse income and employment opportunities

Internalization of environmental costs and benefits for the achievement of sustainable forest management

Existence of mechanisms for the internalization of full costs and evaluation of benefits

Vitality and efficiency of timber and non-timber forest production

- Adequate flow of non-timber products
- Adequate flow of wood

Equity

4. Recognition of and respect for indigenous rights and knowledge, history and archaeological sites

Indicators

Provision of traditional use, goods and services

Compliance with treaty and other obligations

Compliance with United Nations conventions and agreements

Incorporation of indigenous knowledge into ecosystem management and planning

5. Recognition of the full spectrum of forest functions and uses

Indicators

Forest functions and protection

Preservation of forests as unique living systems

Diverse and stable local community and forest-based employment

- Provisions for worker health and safety

Conservation measures to safeguard the full spectrum of forest functions and uses

Provision of raw materials and ecosystem services for the

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Measurement of forest area, uses and conditions

Internalization of environmental costs and benefits for the achievement of sustainable forest management

Research needs

Markets are indicators for those goods and services that participate in them. Technologies for valuing non-market goods and services are emerging. Issues of economic efficiency relevant to the development of appropriate indicators include mechanisms for:

1. Recognizing environmental costs and benefits in non-forest sector planning
2. Recognizing environmental costs and benefits in multiple forest resource planning:
 - externalized/non-priced benefits in forest development projects
 - externalized costs in forest development projects
3. Research and providing information on multiple resource forest benefits and costs to forest and non-forest sectors
4. Addressing market imperfections
5. Addressing policy failures

For assessment of social benefits, it will be important to develop better value typologies for communities with forest-based economies.

Contentious issues

"Equity" was a concept that received much support, but was contentious as an indicator because of doubt about its meaning and measurability.

"Subsidies" was a loaded word, but there was a genuine disagreement about how incentives should be viewed in relation to the measurement of sustainable forestry.

The "Precautionary principle" as advanced at UNCED was suggested as a potential indicator and is obviously a philosophically prudent method of procedure. Some disagreement was evident, however, as to its measurability.

Biological/environmental criteria workshop

A major paradigm shift is occurring in forest management. This shift represents a move from maintaining the sustained yield of forest products to sustained forest ecosystem management. Within the new paradigm, there are a number of elements that need to be considered.

1. Patterns

The consideration of spatial and temporal patterns across landscapes is central to sustainable forest ecosystem management. Landscapes are heterogeneous mosaics of patches (e.g., differing forest types, successional stages, etc.); describing these mosaics requires the identification of patterns. Pattern recognition is the description of variation, and it requires the determination of scales.

2. Pattern formation and characteristics

Once ecological patterns are characterized, the agents of pattern formation must be identified. These agents of pattern formation have been grouped into three categories: biotic processes (e.g., migration and extinction), disturbances (e.g., fires and floods), and abiotic processes (e.g., biogeochemical cycles and soils). Human impact is considered under any of the relevant categories (processes, constraint or disturbance). Ecosystems can then be characterized by matching patterns and processes at different scales. Variability can then be quantified within each level and the emerging pattern can be related to its causes and consequences.

3. Landscape and diversity patterns

The problem of diversity is inseparable from the problem of the generation and maintenance of ecological pattern. Landscape patterns, their components, and the processes that generate them determine the diversity patterns of a specific area. Different patterns of diversity are exhibited at different scales of organization. As a consequence of the hierarchical structure of ecological systems, there is no single correct scale at which landscape and ecosystem patterns and processes should be described, and therefore, there is no single correct scale at which diversity should be described.

4. Monitoring

Hierarchical monitoring schemes should be formulated that consider all scales of organization. Patterns of natural variability across a range of scales must be defined if ecosystems are to be sustained at all relevant scales.

5. Implications

The major consequence of the hierarchical nature of ecological systems (such as forests) is that any management decision needs to be made at the relevant scale(s), and is likely to have an effect at several scales of ecological organization. Sustainable ecosystem management should recognize the multi-scale nature of ecosystems and use this knowledge to ensure the persistence of ecological patterns and processes at all relevant scales.

Criteria/indicators

Natural forest ecosystems (where they still exist) provide a basic starting point for determining the natural variability (in time and space) of other forest ecosystems. A knowledge of this variability is essential for the scientific evaluation of the significance of change in specific indicators. There is no ranking or priority; they must be taken as an entire set.

1. Biodiversity

Biodiversity is defined according to the United Nations Convention on Biodiversity as "the variability among living organisms from all sources, including inter alia terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Biological diversity encompasses not only species but also ecological structures, functions and processes. Critical elements to be considered in the conservation of biodiversity include:

- Conserving the geographic range of genetic material for all species.
- Maintaining the forest such that all species can maintain viable populations for the foreseeable future.

- Maintaining a range of ecosystem types, successional stages and structures across forest landscapes and over time.
- Maintaining an arrangement of ecosystem types in the landscape to ensure that major natural features and habitats are conserved.
- Maintaining adequate levels of natural regeneration in natural and semi-natural forest ecosystems.
- Encouraging increased levels of diversity (i.e., recovery) in degraded forest ecosystems.
- Maintaining the ability of ecosystem components to interact.
- Maintaining the ability of genetic material to flow.
- Maintaining adequate corridors between important natural ecosystems.

2. Productivity

Forest ecosystem productivity is determined by a number of different factors, such as accretion rates of biomass, maximum carrying capacity of ecosystems, and ability of organisms within ecosystems to regenerate and maintain their balance within various successional stages of forest development. Productivity results from the flow and dynamics of elements such as energy, light, moisture and nutrients within forest ecosystems within established norms. The maintenance of these elements will determine whether forest ecosystem productivity is enhanced, maintained or reduced.

Critical elements for the enhancement, maintenance or deterioration of forest ecosystem productivity include maintaining the following:

- Nutrient and organic matter pools and flux rates in the soil.
- Natural processes of decomposition.
- Soil structure, horizonation and chemical composition.
- Natural disturbance features that provide for regeneration of key plant species.
- The climate and atmospheric composition within the natural range of variation.

3. Soil conservation

Many natural disturbances, such as fire, floods, insects, diseases and wind storms,

and human activities such as plowing, timber-harvesting and forest management, can cause the movement of soil, mineral nutrients and debris. These disturbances may be minor or they may result in major soil losses. In some areas, forests have an essential protective function in the landscape, preventing mass transport of material in landslides, avalanches, or debris flows and the slow transport of material in soil creep and solifluction. In ensuring the sustainable management of forest ecosystems, the disturbances associated with human use of the forest, such as harvesting, road construction and recreation, should not cause unacceptable damage to the multiple roles of forest ecosystems.

Critical elements include:

- Preventing deleterious losses of soil.
- In protective forests, maintaining a forest structure that ensures the continuation of their protective role.
- The re-establishment of forests in areas where soil conservation problems have arisen through the destruction of forests.

4. Water conservation

As with soil conservation, disturbance of forest ecosystems can have effects on water quantity and quality. The disturbances associated with human intervention in forest ecosystems, including afforestation, should not cause unacceptable damage to the role of forests in water conservation, or to fisheries and wildlife habitat. Critical elements include preventing the following:

- Deleterious soil and debris from entering water courses.
- Deleterious contamination of water by herbicides and pesticides.
- Deleterious changes in water chemistry.
- Deleterious flow rates (floods).

5. Forest ecosystem health and vitality

Both the short- and long-term sustainable management of forests is dependent on the proper functioning of forest ecosystems. While natural disturbances such as fire, floods, insects, diseases and adverse climatic conditions will always result in some dysfunctioning of forest ecosystems, human activity may result in increases in such disturbances. Sustain-

able management should ensure that any such disturbances do not result in irreversible changes in the functioning of forest ecosystems. In addition, forest management practices should aim at improving the stability, vitality, regenerative capacity, resistance and adaptive capacity of forest ecosystems toward stresses, including their protection against fire (where appropriate), pests, diseases, animals and other agents of damage. Critical elements include:

- Maintaining or reducing air pollutants to levels less than the critical loads or levels identified for the most sensitive elements in forest ecosystems.
- Preventing the development of ecosystem imbalances created by human intervention in forest ecosystems.
- Maintaining adequate levels of regeneration within the forest ecosystem.

6. Contribution to global ecological cycles

Sustainable management must take into account not only local and regional issues, but also global ecological processes and environmental balances. Global environmental issues such as climatic change and biodiversity have been the subject of international discussions and negotiations. At the country level, this criterion is designed to ensure that nations recognize the impact of their forest management activities on global ecosystem functioning and that they actively participate in internationally coordinated efforts to address global environmental issues. The following elements are included:

- In the forest sector, both in terms of the forest and the forest industry, management objectives should minimize activities that over the long-term increase carbon releases into the atmosphere.
- Forest management should aim to reduce to an absolute minimum emissions of other radiatively active gases such as methane or nitrates.
- Habitat for migratory species should be conserved via international cooperative agreements and actions. ♦

PEI FRDA renewal battles continue...

Liberal Feds & FRDAs

Ian Dennison, PEIFIA President

Note: Edited letter to Prime Minister Jean Chretien, Jan. 16 1994.

We were pleased to receive your warm response of August 3, to our letter concerning the previous government's non-renewal of Forest Resource Development Agreements (FRDAs). Since our Association includes woodlot owner associations, Peter de Marsh of the Canadian Federation of Woodlot Owners kindly shared with us your letter of October 22, wherein you express support for FRDAs in the strongest possible terms.

This is very good news indeed. Leadership such as this will be just the thing to get Canadians out of "stall" mode.

Our problem now is to get from here to there. Last April's budget decision prevents any government department, including Natural Resources and the Atlantic Canada Opportunities Agency, from entering into negotiations for new FRDAs. We understand that it will require a policy change from Privy Council.

We urge you to see that this is done most expeditiously. April 1 is fast approaching, and, in order for an agreement to be negotiated and in place on that date, time is of the essence. For forest contractors and their employees, contracts have to be signed, woodlots walked, markets secured, and work forces hired.

PM Responds

Prime Minister Jean Chretien

Note: Edited letter responding to Ian Dennison, Feb. 23 1994.

As you may be aware, the government provided \$1.5 million in our fiscal year 1993-94 to the PEI Government to complete activities initiated under the most recent Forest Resource Development Agreements (FRDAs). In the meantime, the Honourable Anne McLellan, Minister of Natural Resources, is involved in consultations with the provinces through the Canadian Council of Forest Ministers for the purpose of defining new partnerships between the federal and provincial or territorial governments. I must remind you, however, that this exercise will reflect our commitment to fiscal responsibility.

When these consultations have been concluded, we will be in a better position to determine an improved mechanism for federal-provincial cooperation in forestry and sustainable forest management. This strategy will have to be developed through consensus among all of the major stakeholders, including private woodlot owners and their associations.

Renegotiating FRDAs?

Ian Dennison, PEIFIA President

Note: Edited letter to Minister of Finance Paul Martin, Jan. 16.

Implementing a national infrastructure program to create jobs and kick-start the economy makes eminent sense. We know that this approach works because we have had an infrastructure program as an integral part of our Canada/PEI FRDAs for the past ten years. In that time, we have built over 800 km of forest access roads. These road-building programs, besides their intrinsic value for immediate job creation, have opened access for \$20 million of forest products to find their way to market annually. Additional jobs have been created in thinning, harvesting and replanting the forest itself. Some eighteen million trees have been planted and 955 new jobs created.

But there's a fly in the ointment. The April 1993 budget of the previous government cancelled all FRDAs upon expiry. This left PEI without an agreement as of last March 31, but through intensive lobbying, the government was persuaded to extend our agreement until March 31, 1994. So again we are coming down to the crunch.

Prime Minister Chretien has wisely indicated the new government's support for FRDAs, and we are pleased to hear it. In a letter dated October 22 to Peter de Marsh, President of the Federation of Woodlot Owners, he says: "Liberals recognize that the economic and environmental value of private woodlots must not be underestimated. Without a doubt, the first generation of FRDAs contributed to a healthy, productive and growing private woodlot sector. Should we form the government after October 25, we are committed to renegotiating the federal-provincial agreements upon expiry, keeping in mind our commitments to fiscal responsibility."

The problem is that without assurance that an agreement will be ready April 1, forest contractors and their employees will be left up in the air. It will be most difficult to plan work, line up contractors, and hire a work force.

No government agency has any authority to negotiate a new agreement, until the budget decree of April 1993 is reversed by Privy Council. That is why we are writing to you, to ask for your help in speedily implementing this necessary change. Please do your part to ensure that PEI has a new FRDA in place on April 1.

Finance Minister Responds

Paul Martin

Note: Letter to Ian Dennison, PEIFIA President, Feb. 17.

It was with great interest that I learned about the concerns of the Forest Industry Association, that you expressed in your letter of January 16, regarding the expiry of the Canada-PEI FRDA.

I would like to assure you that I understand the importance of forestry to the economy of PEI and Canada, and that I have taken note of your request. As you are aware, the federal responsibility of the forest sector rests with my colleague, Anne McLellan, Minister of Natural Resources. She is in the process of an examination, based on consultations with the Canadian Council of Forest Ministers, of future federal-provincial cooperation in forestry. Therefore, I have forwarded a copy of our correspondence for her consideration.

PEI left hanging

Ian Dennison, PEIFIA
President

Note: Edited letter to David Dingwell,
Atlantic Canada Opportunities
Agency (ACOA), Jan. 16, 1994.

As a Cape Bretoner, you are no doubt aware of the need to continue to rebuild our much abused forest resource. You may also be aware that half of PEI is covered in forest.

This province has benefited immeasurably from ten years of federal-provincial forestry agreements. We have created 955 new jobs. We have planted eighteen million trees, constructed 800 km of forest access roads, and thinned over ten thousand acres.

However, all of this good work came under threat with the previous government's April 1993 budget. Fortunately, Prime Minister Chretien has indicated the new government's intention to reinstate FRDAs, as they expire, and he said as much in a letter to Peter de Marsh, President of the Canadian Federation of Woodlot Owners, last October 22.

The problem at this moment is that ACOA, as the funding agency responsible, has currently no mandate to renegotiate new FRDAs until the budget decision of last April is reversed by Privy Council.

Would you please do your part to see that this happens in the most expedient fashion? Without an agreement in place by April 1, forestry contractors and their employees will be left hanging.

ACOA Minister Responds

David C. Dingwell

Note: Edited letter to Ian Dennison, PEIFIA
President, Feb. 23, 1994.

As you are aware, the ACOA is not in a position to consider a cooperation agreement on forestry until such time as the federal policy on minerals and forestry has changed and funding can be identified.

PEIFIA contacts MNR

Ian Dennison, PEIFIA
President

Note: Edited letter to Anne McLellan,
Minister of Natural Resources, Jan.
3, 1994.

Eighteen million trees planted. Ten thousand acres of woodland thinned. Twenty-eight hundred management plans prepared for woodlot owners. Eight-hundred fifty new jobs created.

These are just some of the accomplishments directly attributable to ten years of Forest Resource Development Agreements (FRDAs) between federal and PEI governments. Thus we are greatly encouraged and relieved by the Prime Minister's declaration that the new government will renew FRDAs that the previous government would not.

However, we must awaken a sense of urgency to get negotiations started on new FRDAs. Time is running short. We have too often experienced the chaos and uncertainty that results when an agreement expires before a new one is in place. PEI's present agreement runs out March 31, 1994. We cannot do business in a vacuum, and these agreements take several months to put in place.

We understand that since the termination of FRDAs on April 26, 1993, by the previous government, neither Natural Resources Canada nor the Atlantic Canada Opportunities Agency (ACOA) have a mandate to discuss renewal or negotiations of forestry agreements with the provinces. We are further of the understanding that the first step in this process will require a change in policy from the Privy Council.

We are looking to you to bring the issue of renegotiating forestry agreements as quickly as possible before Privy Council. Once policy is re-established on FRDAs, Natural Resources can signal other departments, including ACOA, that it once again encourages effective forest management and renewal. Then the process of renegotiation with federal and provincial forestry departments, ACOA and resource stakeholders can commence.

FRDA timing is critical

Walter Bradley, PEI Minister
for Fisheries and Forestry

Note: Edited letter to Anne McLellan,
Feb. 15 1994.

As you are no doubt aware, in April 1993, the previous federal government announced that it would not renew FRDAs. This announcement came as a shock to both the forest industry and to our Department of Forestry, as our Agreement just expired. The shock was compounded by the fact that the Department was nearing completion of negotiations with ACOA and Forestry Canada on a new multi-year forestry agreement. It was only through intense negotiations that the Department and Natural Resources Canada agreed to a one-year contribution agreement which allowed us to carry out a reduced silviculture program in 1993-4.

Timing is now critical. Funding through the current arrangement ends on March 31, 1994. Planning for the upcoming year is in progress and commitments to private woodlot owners, who control 90 percent of our forest lands, must be finalized.

I am therefore requesting your urgent attention to securing a suitable interim federal-provincial funding arrangement for forest improvement on PEI. This will ensure program continuity while your government's policy on longer term forest-management is being confirmed.

continued on next page...

PEI Forest Industry/ Silviculture Association

Box 27, Victoria PEI
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Ian Dennison, President

Not "If" but "when" for PEI FRDA

Ian Dennison,
PEIFIA President

Note: Edited letter to Walter
Bradley, PEI Minister of
Agriculture, Fisheries and
Forestry, Feb. 19.

I wish to bring forward a concern that is strongly felt throughout the industry, and has been expressed at recent meetings of contractors, workers and the Forest Industry Association. When a new forestry agreement is negotiated -- note that my use of the word "when" is deliberate; let us dispense with the use of the wimp-word "if" -- when this happens, we as industry would like to be represented at the table to negotiate the substance of the agreement, and beyond that, we would like to be there whenever management committee or technical sub-committee meet.

I think you will concur that our input thus far has been most helpful; in fact, it may relieve your department of much of the stress that goes along with trying to make decisions without knowing whether the public accepts them or not. If the public is there at the table, you don't have to go too far to ask.

Let me assure you at once -- and we are also united on this point -- we in no way wish to usurp the government's decision-making authority. That's the government's job, and we don't have the time for it. But we would be very helpful in an advisory capacity, and would appreciate your calling on us. ❖

Nova Scotia's 1994 forestry seminar report

Terry Burns, President, NSSCA

Diversity and opportunity were the key words at the eighth annual forestry Operational Efficiency Seminar (OES) held in Truro, Nova Scotia, March 29 to 30. During the two days, some fifteen half-hour information sessions were available to the 100 participants attending.

The two-day seminar was sponsored by the Nova Scotia Silviculture Contractors Association (NSSCA) and the Canadian Forest Service, through the Canada/Nova Scotia Cooperation Agreement for Forestry Development. Terry Burns, Gerry Linfield, Sandy Manley, Ross Rankin and Jim Verboom comprised the seminars' organizing committee. The session focused on a number of new and innovative opportunities that exist within the forest sector, ranging from eco-tourism to mini-pulp mills to wood-fired energy systems.

The OES is one of the most important forums for idea exchange among Nova Scotia's silviculturalists. With rapidly changing trends and technology in forest management, and with the ever-changing marketplace, the seminar has become an annual event which, in the past, has attracted up to 150 participants.

This year's OES looked specifically at shifts in forest market products, including new markets such as wooden fruit containers and uses for specialty woods such as curly maple. Keynote speakers included the Canadian Forest Service's Graham Savage, who discussed the economic opportunities in changing consumer demands; Cumberland Development Authority's Jim Stanley, who presented his views on community-based economic development in the forestry sector; and the Carleton-Victoria (NB) Forest Products Marketing Board's Ken Vasiliauskas, who made a presentation on integrating investment in forest management and product development.

On Tuesday evening, the NSSCA held its annual meeting, followed by a reception and information-exchange session. At the meeting, the Association elected four new directors and made by-law changes, and the President presented a Report and Financial Statement.

Strategy Session

The following "Condensed Comments" are from the NSSCA's Strategy Planning Session which focused on ideas for a new silviculture agreement.

1. Sources of funding

Association to look for creative funding sources

- wood levy \$/cord to all round-wood buyers
- explore community-based economic development programs, e.g., industrial commissions, boards of trade, chambers of commerce and venture centres
- federal diversions, e.g., fisheries programs
- tax credits for companies, landowners to offset costs of silviculture activities
- cost-accounting since presently industry not paying full resource cost for sustainability
- costs/benefits due to environmental pressures, i.e., approved contractors "certified to do environmental treatments" (CPPA initiatives)

2. Cost reductions - efficiencies

Streamline treatments

- less bureaucracy, i.e., FRA Program
- spend more money on the ground
- more site-sensitive treatments, i.e., planting some sites (e.g., alder sites) without site preparation
- tie harvesting more closely to silviculture for sustainability
- better market planning and equity, i.e., purchase low-quality products now to ensure high-quality products after growth

3. Other

- better public relations with landowners, contractors and buyers

The NSSCA asks its members to send in additional suggestions to the new mailing address: NSSCA, RR #2 West Bay, NS, B0E 3K0. ❖

Nova Scotia report

Jim Verboom, VP, CSA

We are hearing reports that building supply centres here are carrying nearly all local lumber, additional proof that lumber marketing patterns are indeed changing. We used to build with Western lumber and sell ours overseas. Now that the US market is more eager to acquire the decreasing Canadian supply, much of our lumber is now going south. This change of course was helped by Europe's "love affair" with the pine wood nematode.

So what?

Since the early eighties, silviculture in Nova Scotia has been more than planting. It has included all the interventions we bring on the trees in our forest, including harvesting. For most of those years, the biggest obstacle to increasing the volume of shelterwoods, merchantable thinnings, remnant removals and regeneration-releases completed was the ability to market the wood produced. The existing mills, however, seemed more interested in maintaining total control of their present wood flow than they were in ensuring a future supply. Despite this obstacle, we have considerable practice at doing "softer" harvesting techniques, often called wood-producing silvicultural treatments. Now, will the wood be easier to sell?

Is the wave coming?

The ripples caused by BC's and the US Pacific Northwest's decreasing ability to supply the increasing lumber demand in the US has finally reached us.

For three to four years, we have had the same price for pulpwood as for logs, a situation that has done little to encourage forest management. Just let it grow, and you will have pulp, seems to be the motto.

Many of us found it difficult to spend extra time separating logs/studwood from our pulp when it meant not an increase in sale value, but a decrease in margin due to most landowners' demands (which were justified) for more stumpage for products that are harder to grow and less common.

In the last six to ten months, this status quo has been washed away, but it is not a disaster for silviculture. Although the pulp

mills have either decreased their purchase price for privately produced pulp or are planning to, sawmills are for the first time finding they have to compete for the log supply by increasing price.

Although the price of \$480/MBFM for logs at the MOF sorting yard in Lumby, BC (as reported in the previous issue of CSM) will stay a dream to us, we have seen many lumber mills increase their log prices 15 to 20% in the last four months. It is now common to get \$210 to \$250/MBFM delivered to the sawmill for our logs.

Encouraging yes, but only a ripple yet. Grade One Studwood is attracting up to \$212/cd delivered here. In Maine, on the other hand, one report has it at \$179/cd Cdn delivered. The waves of change seem to be bigger to the west and south.

What does this mean for good forest management? How many landowners will rush to cash in by cutting their woodlots? How long before our industry changes from being market driven (over-supply) to supply driven (landowners restricting access to woodland)?

Once it does become supply driven, landowners will be able to demand good management services from those who cut their wood. We would hope that with their "new wealth," landowners will be willing to put more back into their woodlot.

NS FRDA: what is next?

Our Cooperation Agreement for Forest Development (CAFD) will expire in March 31, 1995 -- just like the FRDAs in other provinces. As an industry, with the support of the FRDAs, we have been working towards a very simple goal: leaving behind the "take the best and leave the rest" attitude toward forestry and replacing it with a "leave the best and take the rest" approach. We have not always been successful in implementing this change. Still, many contractors, workers and landowners have found they can earn a living and leave an improved resource for their children. If we allow this process to be stopped, a healthy resource and a gainfully employed work force is at stake.

Yet nothing is being done. From reports at the NSSCA AGM on March 29, the stakeholders in our forests have come together, under the leadership of our DNR

Minister, to discuss life after CAFD II. In the process, they have let themselves get distracted by every "worthy" subject that comes along. Our forests are in trouble! Changes are needed, and maintaining the status quo is a luxury that our resource cannot afford.

Continuing on the present course, we will have no forest management program in the near future to encourage "leaving the best - taking the rest." At the same time, we are now entering a period of increasing log prices that will increase the pressure to "take the best," with decreasing returns for the rest. Meanwhile, we have no laws, rules or even guidelines that will ensure that wood is cut when it should be or that the harvester will guarantee that the next crop becomes established.

It is time for two things: first, those who think that everything will go on like it has for the past twelve years must prepare to accept another round of changes or get out of the way; and second, those who care about the future of our forests must work together. We must bring about the changes necessary to ensure that our forests are in better shape when we pass them on than when we received stewardship of them. ♦

Nova Scotia Silviculture Contractors Association

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Terry Burns, President
Dan Dorey, Vice President
Mike Kennedy, Treasurer
John Sutherland,
Safety & Training
Richard Countaway,
Accreditation

The Carman Exercise

John Lawrence, Director OSCA

As you can see from the accompanying OMNR press releases, the "Carman Exercise," as it has come to be known, is still underway. While there has been remarkable progress in drafting a framework for harvest funded forest renewal in Ontario, it appears that a working program is still a long way off.

However, the silviculture industry is pleased to see the government has followed our recommendation in announcing a Forest Renewal Trust Fund. This independent trust fund should stabilize silviculture funding in a province where volatility has been the norm. The fund does risk creating a new bureaucracy that will compromise efficiency.

When the Carman Exercise was originally announced in May of 1993, Natural Resources Minister Howard Hampton said "negotiations would begin towards a new business relationship, the end result of which will be more efficient operations and significant cost savings."

Almost a year later, a sense of *déjà vu* greeted Carman's March 1994 announcement that he planned to "begin formal negotiations" on a new business relationship with forest companies "in the very near future."

As we go to press there is still nothing in place and tremendous uncertainty exists as to whether or not planters and growers will have contracts for work that should have started or be about to start.

When the Carman Committee (formally called the "Office of the Provincial Facilitator Forest Industry/Ontario Government Forest Management Business Relationship") was initiated, it had a timeline to finalize an agreement by April 1, 1994. Yet it was not until March 16, 1994 that the government approved the mandate of the committee, less than two months from when planting would begin and right at the time the 1995 crop should be sowed. The "end result" is naturally to have this in place by the next election.

Most contractors expect to stand by on their radio phone with their crews poised, hoping for a last minute "go" from the Ministry.

The negotiating team is determined that each FMA will sign on for the whole package, not just a one part of the new relationship. Until they do, the nature of the interim funding is only defined by press releases, which indicates that the government will provide transition financing "provided that the Facilitator is successful in negotiating" and "if the residual values system and Silvicultural Trust Fund concept are accepted by industry." The very mistrustful companies are refusing trees grown for them until the government comes forward with signed written commitments promising to pay for the current program.

Ontario MNR seeks seedlings outside province

In a move that has angered tree growers across Ontario, the Ministry of Natural Resources recently awarded a crown growing contract for over 4.5 million trees to a Quebec nursery. This, despite barriers to Ontario growers tendering in Quebec. Moreover, the Ministry has not made quality or past performance a part of its selection criteria. As long as a grower has a greenhouse and a pen they can win a crown growing contract. This points up an essential problem underlying current OMNR tenders. If the grower sows some seeds they will receive the contract price. OMNR rarely turns seedlings back for not meeting specifications, leaving bidders little incentive to price in the true costs of growing.

What was perhaps most frustrating to growers in Ontario is the government's response: as a mature industry the growers must learn to compete. The question is who are growers supposed to learn to compete with? The largest grower of seedlings in the province remains the Ministry of Natural Resources who provides seedlings free of charge. Moreover, if OMNR's free seedlings are not up to specifications the client is provided with the assurance that they won't be responsible for the survival of the seedlings into the future. Until the OMNR can come to terms with reality perhaps it would be better if they said nothing.

Ontario Silviculture Contractors Association

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Grant Brodeur,
President

Ontario touts Green Forestry

Note: From an Ontario MNR media release, April 11, 1994

Mr. Hampton announced last week that the province intends to introduce new legislation to achieve sustainable forestry. He also announced the Policy framework for Sustainable Forests for the future management of Ontario's forests. With these two initiatives—the adoption of a sustainable forest policy and new legislation—Ontario will be a North American leader in sustaining the long term health of forest ecosystems.

There will be approved standards for forest renewal and strong enforcement procedures to ensure that compliance with forest renewal standards occurs.

A key element in the new business relationship will be the creation of citizens committees to enhance cooperation between local communities and forest industries. Citizen committees will be set up to involve communities in developing forest management plans, helping to set local reforestation and ecosystem objectives and performance measures, and resolving local resource conflicts.

Ontario announces new forestry relationship

Forest Industry/Government Facilitator

Note: Edited version of a media release from the Ontario Forest Industry/Government Facilitator, March 16, 1994.

The Ontario government is negotiating a new relationship between the forest industry and the people of Ontario. In this new relationship, industry will assume financial, and in appropriate circumstances, functional responsibility for forest renewal and other silvicultural activities, consistent with provincial and local objectives for the forest. Bob Carman will be facilitating negotiations and has been authorized to proceed.

The Ontario government is committed to resource sustainability and to sustainability of use. In this regard, more effective mechanisms are needed to ensure that our forests are renewed appropriately.

The new business relationship is needed to ensure that appropriate forest renewal occurs and that sustainability is achieved.

It is hoped that Forest Management Agreement (FMA) holders will enter into the new business relationship during the 1994/5 fiscal year. Other companies and licensees (Order in Council Licensees and District Cutting Licensees) will enter into the new relationship by the start of the 1995/6 fiscal year.

Key elements

In negotiations with industry, Bob Carman will be proposing a new stumpage revenue system based upon a "residual value" concept and providing for secure silviculture funding through establishment of a Silvicultural Trust Fund. If the residual value system and Silvicultural Trust Fund concept are accepted by industry, the government will provide silviculture transition funding and will also provide for creation of a Forestry Futures Trust Fund that would allow for renewal in areas which have been depleted by natural factors.

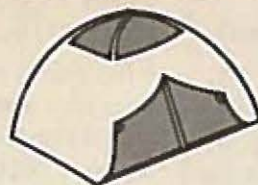
Elements of the new business relationship to be discussed with industry by Bob Carman include:

- modifications to the present stumpage revenue system to ensure both assured silviculture funding, and a fair return to the people of Ontario for the use of the resource;
- provision for the establishment of silviculture standards and performance measures which reflect the broader provincial/public interest, as well as local needs and interests;
- establishment of an independent audit, and for compliance procedures and mechanisms, to ensure that local and provincial objectives are met;
- clear identification of the roles and responsibilities of industry, of the Ministry, and of others in the delivery of silviculture; and
- citizen involvement.

continued on next page...



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...continued from previous page
Proposed new stumpage system

A proposed modification to the present stumpage system, which will be discussed with industry, includes:

- a fixed minimum stumpage rate
- a "silvicultural charge," and
- a "residual value" stumpage rate.

The proposed minimum stumpage rate represents the rate that would be charged when total costs of production, including an allowance for return on capital employed (ROCE), are equal to or greater than market value. It is currently proposed that this rate will be fixed for each of the first five years.

The proposed "silvicultural charge" is an amount equal to the cost of replacing the forest that has been harvested on a per cubic metre basis. It is proposed that the silvicultural charge be fixed for the first three years, based upon existing knowledge of silvicultural costs. After three years, the rate will be reviewed based upon experiences gained.

The proposed "residual value stumpage rate" would be applied when market value exceeds all costs of production, including a reasonable allowance for ROCE. In essence, a resource rent is calculated for the benefit of the people of Ontario when market rates permit.

Funding for silviculture

An important part of the new business relationship is a mechanism which will ensure that funding necessary for silviculture is secured at the time of harvest.

Trust funds are the preferred approach to assuring silviculture funding because they provide accountability, a clear connection between harvest and payment for renewal, and secure funding.

Two different funds are proposed: a Silvicultural Trust Fund and a Forestry Futures Trust Fund. Each has a specific purpose.

Proposed silvicultural trust fund

The Silvicultural Trust Fund's purpose is

to provide assured funding for silviculture on harvested areas.

All funding for the Trust would come from the silviculture charge mentioned above. As industry carries out their forest renewal responsibilities, they will be reimbursed from the fund.

It is currently proposed that in the first three years of the new business relationship, the silvicultural charge will be fixed to ensure that the trust fund grows. As noted, during year three, individual silvicultural charges for each forest management unit will be reviewed, based on the local costs of renewal.

Proposed forestry futures trust fund

The Forestry Futures Trust Fund's purpose would be to provide for:

- renewal of areas depleted as a result of unpredictable natural depletion such as wildfire, blowdown and insect infestations
- financing of intensive stand management or insect infestation protection activities aimed at mitigating local forecast shortages in wood quality and quantity, and
- the necessary funding to undertake silvicultural activities in cases where a licensee becomes insolvent, and the balance of funds in their individual trust account is insufficient to cover the cost of outstanding silviculture obligations.

It is currently proposed that a portion of the provincial revenues from the forest industry will provide funding for the Forestry Futures Trust Fund.

Silvicultural transition funding

The government is prepared to provide funds to bridge forest industries from the present situation to the new business relationship. Details will be confirmed through negotiations.

Other elements of negotiation

As indicated, discussions with industry will also include development of appropriate standards and performance measures, confirmation of roles and responsibilities and local citizen involvement. ♦

Guaranteed forest renewal

Howard Hampton, Ontario Minister of Natural Resources

Note: taken from a letter to forest industry leaders, April 11, 1994

Today I announced a significant step toward ensuring the sustainability of northern communities, forestry-related jobs, and our forest industries. I want to take this opportunity to give you some of the details and to invite you to send me any comments or suggestions you may have.

Our plan for sustainable forests has four principal components:

1. Guaranteed forest renewal

The province intends to establish a Forest Renewal Trust Fund with Ontario's forest industries to guarantee stable and greater funding for the regeneration of our forests. In fact, I am confident that the Forest Renewal Trust Fund, combined with efficiencies that will be created by the new business relationship with the forest industries, continued MNR reforestation support and, finally, transitional funding provided while the new relationship is phased in, will ensure that more funding will be available for the renewal of our forests than ever before.

2. Stumpage reform

Industry has long expressed dissatisfaction with the existing stumpage system which has been viewed as unequitable and vulnerable to U.S. countervail. A new stumpage system will be negotiated with the forest industries based on a residual value model. The residual value system, which includes direct funding of the Forest Renewal Trust Fund, is designed to address the shortcomings of the existing system.

The residual value model which is being discussed with forest industries has three parts — a minimum charge for harvest-

ing, a contribution to the Forest Renewal Trust Fund, and a "residual value" charge. Forest industries would pay a residual value charge only when the market price for forest products exceeds the industry's costs of production, plus a reasonable return on investment.

In short, the new stumpage system takes into account the ability of forest industries to be competitive, is sensitive to the market (like the present system), provides assured funding for forest renewal and provides a fair return to the people of Ontario for the timber harvested by forest companies. It is a fair and equitable approach, and it should assist in defending against U.S. countervail actions,

3. Community involvement

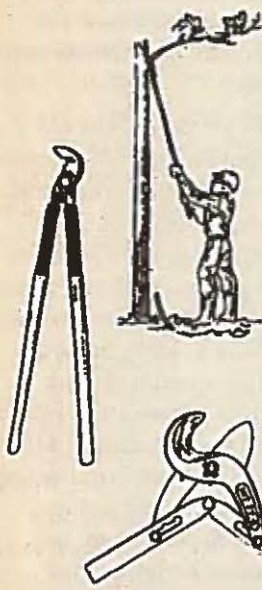
This February in Thunder Bay, I outlined proposals that would open the way we make decisions about Crown land use and give communities affected by natural resource decisions a greater say in the process. Today, I announced the creation of local citizens committees to enhance cooperation between communities and forest industries and guarantee that forest-dependent communities, like many in northern and central Ontario, have a say in how our forests are managed. Citizens committees will help set local reforestation and ecosystem objectives beyond provincial standards.

4. Forest policy and forest sustainability act

Last week, I released the Policy Framework for Sustainable Forests which will guide the future management of Ontario's forests and make the province a North American leader in sustaining the long-term health of forest ecosystems. This framework policy is a historic first in Ontario because it shifts the management of Ontario's forests from a focus mainly on timber values to regarding the forest as a full ecosystem. We are developing a Forest Sustainability Act to enshrine the sustainable forest policy, institute forest management standards that forest industries must meet, and put in place the auditing, monitoring and enforcement mechanisms necessary to ensure that our forest practices are of the highest standards.

Never before has public scrutiny of how we manage our forests been so intense. Whether we rely on the forests for our livelihood or not, governments, industries and communities have a strong interest in demonstrating to the world that our forest practices in Ontario are among the best in the world.

The above initiatives are essential to show that Ontario's forests are managed on a sustainable basis. I feel strongly that with these initiatives in place, we can together achieve sustainable forests, sustainable forest industries, sustainable communities and sustainable jobs. We can all feel proud of these achievements. ♦



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BC 21: Silviculture work force for the future

Henry Benskin, RPF, Silviculture Branch Director,

Note: Letter to CSM Editor in response to Dirk Brinkman's article in the Fall 1993 issue (pp. 40-1), Jan. 26, 1994.

In the past 20 to 25 years, the British Columbia silviculture industry has evolved from an hourly-paid forestry labour-pool, into a mixture of owner-operators, independent contractors, worker cooperatives, hourly-paid contract crews and piece-rate paid employees. A clear cry throughout this period of change was the need for consistently enforced quality and safety standards, and adequate training for workers.

As part of a provincial government initiative, BC 21— the Forest Worker Development Program (FWDP)— was established in Spring 1993, to promote local forestry contracting and offer opportunities for contractors to train workers in safety, quality and work skills. The skills and knowledge of forest workers will improve through participation in local, on-the-job field training.

BC forests offer social benefits to society, as well as economic and environmental benefits. For example, forestry employment and retraining opportunities for displaced workers are important to the stability of many rural communities. In addition, the increased participation of First Nations people in forest management continues to be an important step in developing fair land claims settlements. The Ministry of Forests is attempting to partly address these issues with the FWDP. It was created to promote investment in both people and forests.

FWDP consists of three levels of involvement to allow graduated levels of training and experience. The entry level provides hourly paid employment and training to people who have had very little forest or related work experience. Since the program is funded in coopera-

tion with the Ministry of Social Services (MSS), three-quarters of the workers come from provincial income assistance. The main objective of the entry level is to provide workers with a broad range of experience in forestry activities, train them in basic work skills and ethics, while employing them productively in doing various forestry work.

The bridging level further develops workers' productivity and technical skills, but places greater emphasis on accomplishing forestry work than the entry level. The workers are paid a base hourly rate, with a bonus for the entire crew and the contractor for higher production. The bridging level is also cost-shared with MSS.

In 1993/4, the entry and bridging levels of the program will achieve forestry work valued at \$4 million if contracted in the normal manner. MSS will contribute \$12.9 million to cover the extra costs involved in training new workers to achieve this work, for a total investment of \$16.9 million.

The \$12.9 million from MSS would normally be spent on income assistance payments to the program participants. On average, it costs the people of BC \$6,000 to support a family of four for five months. A person employed on an FWDP crew for the same time costs the government about \$14,000. Since the estimated average amount of work accomplished by a person on an FWDP crew would cost the government \$10,500 if done through the regular contracting method, the overall cost of savings is estimated at \$2,500 per person. In addition to the cost savings, other benefits include: the opportunity for an individual to find employment; reduce their reliance on future government funded programs; and improve their self-esteem and self-confidence, enabling them to live more gratifying and productive lives. FWDP is a worthwhile

investment for both government and society as a whole.

In 1993/4, a total of \$22.6 million is targeted to FWDP's third level, which focuses on stabilizing and diversifying the local contracting community through achievement of range, recreation, stand tending and other projects. Training is also available at this level to support the further development of worker skills and a stable well-trained local work force.

Although contracts at the local contracting level are handled as part of the regular silviculture program, they would not have been possible without BC 21 funding.

Silviculture contractors who participate in FWDP will benefit from a source of trained local workers, access to ongoing training for their existing employees, and a more stable source of local work including the opportunity to bid on multi-activity contracts of several months duration. Those contractors who do not want to participate can rest assured that the FWDP comprises a relatively small part of the \$450 million per year silviculture industry.

The interest in promoting multi-activity contracts under the FWDP is in response to contractors' and workers' complaints about the short term and seasonal aspects of silviculture work. Multi-activity contracts link several activities together in one contract. This creates longer term employment and greater stability of work, resulting in greater security of investments in equipment and training. Multi-activity contracts also act as an incentive for silviculture workers to increase and diversify their forestry skills, and thus increase their opportunities for employment.

The silviculture industry has traditionally experienced high worker turnover. By offering longer term employment, FWDP takes a step towards stabilizing the workforce. Other factors that contribute to high worker turnover include poor work conditions and uncertainty of pay. As one worker recently interviewed stated, "I have a family to support and I need a pay cheque every two weeks. At least I know I am getting paid working for an FWDP contractor." Improving compliance with Employment Standards is an important aspect of creating better work conditions for forest workers.

In order for the job of a forest worker to become a more stable career option, contractors need to see workers as a valuable investment. Under FWDP, the ministry is moving further towards evaluating contracts on the basis of more than just bid price. The program encourages contractors to train their workers and see them as a long term resource.

One of the challenges facing the silviculture industry is the need to shift the role of the forest worker from that of a transient temporary worker to a full-time, year-round local worker. The FWDP contributes to creating a more stable and locally focused, forestry work force with high standards for employment. The program also promotes better working conditions for forest workers, recognizes the cost of training as part of activity contracts, and advocates a balance of social, economic and environmental achievements from the public money expended. ♦



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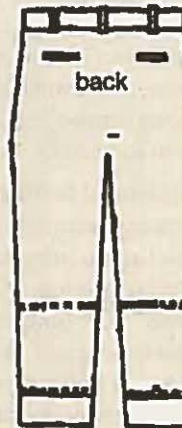
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One contractor's perspective on FWDP

C.O. Emery, WSCA Director

Our members' interest in the Forest Worker Development Program (FWDP) training program appears to be growing. At the recent Directors' meeting, I was asked to provide further information. However, I can only relate examples of how the program has worked in the past, together with a few educated guesses as to what the future holds.

First of all, I believe there will be a 1994 version of FWDP.

One of the program's underlying principles is to provide sufficient training and/or work to qualify the participant to become eligible for UIC benefits. Historically, this has been twenty weeks.

Participants are normally recruited at three levels. Level One is a basic entry level which assumes no skills and may require a life skills training and counseling component. Here, the contractor-sponsor pays participants, from program funding, a base rate of \$8 per hour.

Level Two accommodates previous Level One participants or persons with equivalent experience. Level Two places participants in a "bridging mode" or "second season," which finishes off training and hones skills taught in the previous year. Participants are paid a base rate of \$12 per hour, with a production bonus.

The purpose of Level Three is to provide further employment on a local basis for Level Two graduates or equivalent. The mandate is to develop locally based contractors and workers, paid on a regular piece-work basis. Associated training funds can be accessed here for any residual training, or for forestry-related training required by either interested persons from the local community or staff members other than FWDP participants.

Although Level Three emphasizes local contractors and local participants, there is no precise definition of "local." The generally accepted standard appears to

be a contractor who is based in the District and performs a substantial amount of work within the District, thus making an honest and real attempt to build a resident, employee-based work force.

There are many hidden opportunities within the program. For example, by agreement with your District Liaison Officer, the program can be interrupted to perform other work, and then recommenced at its completion. This other work should consist of opportunities which will provide participants with experience not offered through the program, or something that will assist the District office in achieving its seasonal goals within one of the departments (e.g., silviculture, protection, range, recreation, etc.). This other work could also be for a community-based effort, such as working on ski trails. An audit trail must demonstrate that no "double dipping" is occurring during this other work. That is, workers and contractors must show that they are not being funded from a second source while simultaneously receiving FWDP funding.

Additional funds are available from other government agencies for creating related modules in conjunction with the FWDP program. One example was the MSS "Rise" funding for pre-employment assessment and counselling, which allowed contractors to assemble a decent and appropriate crew for Level One entry. Also, under the right circumstances, some federal funding is available for further practicums.

Unfortunately, to find out all about FWDP, there is no one person to whom to turn. Worse than that, there are many persons within MOF and MSS offices who are not completely familiar with FWDP or its flexibility. Therefore, it takes an extremely high degree of tenacity on the part of the interested contractor to get things started. On top of all that, the training responsibility has

shifted to the new Ministry of Skills, Labour and Training. It is as yet unknown as to what the impact of this will be.

Contractors who pursue an FWDP will be frustrated and will be given misinformation before landing in a good, solid knowledgeable position. This is not a dig at government workers providing assistance on FWDP. The fact is that most individuals in our own industry do not have the time to become properly knowledgeable about this program, as it represents such a small part of our activities, generally speaking.

Contractors also need to do a bit of soul searching regarding the program's objective, which is to supply contractors with skilled workers. In some areas, there is an obvious pressing need for skilled workers. This is quite the opposite in other areas, based on current MOF goals. Contractors must consider how many workers they lose each year and how many new ones come into the industry. Workers training under this program represent only a small percentage of the overall industry requirements each year. Moreover, where are MOF production goals going? Philosophically, we may indeed need thousands of more workers, yet there is still the slight matter of funding.

Maybe it is time to revisit and implement the idea of \$3 to \$4 per-cubic-metre assessment on stumpage. We cannot truly build a worker-based industry without continuity of work, which cannot in turn be achieved without adequate funding.

Finally, for those contractors who do not believe in social forestry and general community health, then this program is probably not for them. On the other hand, for those who do, then there are many business opportunities to be had within the program. Ask the believers who are making it work for them. ❖

NSR standards

Henry Benskin, Silviculture Branch

Note: Letter to the editor of CSM in response to the Fall 1993 article by Dirk Brinkman, Jan. 31, 1994.

There is no biologically magic number that makes a site change from NSR to SR. The decision on what stocking is acceptable is based on the objectives of management for each site. Stocking standards are guidelines for a district manager's decision. NSR is a purely administrative term which, as you have noted in other articles, is a different number in different provinces. BC has a good record for ensuring that land is regenerated to acceptable standards.

Stocking standards are applicable to stands at regeneration delay and at free-growing. Therefore, they apply to a stand that has met free-growing somewhere between eight to fifteen years. Although the new policy refers to pre-'82, the majority of the stands to which the policy is applicable are beyond the free-growing window and stocking naturally declines with age. Most stands harvested today contain only 250 to 400 stems/ha.

Stocking standards are based on well-spaced trees. Analysis shows that at least three times that number of trees are actually on site. Therefore, using a minimum stocking standard of 420 well-spaced stems/ha means there are approximately 1260 stems/ha on site. Also, for this standard to apply, these minimum number of stems must be free-growing.

We have no disagreement with selection harvesting systems and the possible need to plant some areas logged by such a method. However, there is a big difference in prompt replanting in selection harvesting and in attempting to fill-plant an area which was originally clear-cut and is at least twelve years old. Most of these sites have developed a substantial brush component and treatment costs to spot site-prepare and spot plant, with subsequent brushing treatments, would be all but prohibitive. The only satisfactory brush treatment would be to use chemicals.

We have made it abundantly clear that these reduced stocking standards may be applied, at the district manager's discretion, only to pre-'82 areas. Stands harvested from 1982 onwards, must meet the current provincial stocking guidelines unless the district manager has a good reason not to do so. ♦

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Future directions for silviculture in BC

Harry Benskin, Director Silviculture Branch, BC Ministry of Forests

Note: Edited version of a talk presented to the 1994 WSCA Conference in Vancouver, Feb. 3, 1994.

All stakeholder groups that are involved in the management and use of our forest resources, including the silviculture community, are wondering about what the future holds for them. I think I can guarantee you that changes will happen, and that some will be unpredictable. And it's not just the stakeholder groups that will be involved in the change, the BC Forest Service will be, for obvious reasons. The public clearly wants us as custodians of the forest resource to do our job differently. Exactly how that will evolve over time is not clear.

We are going through some very fundamental changes in society's attitudes towards the management of our forest resources, and a great deal of uncertainty exists as to what's going to emerge at the end of the day. There are at least four very big issues that we face at this time.

The CORE process is looking at the definition of land uses, and the allocation of land to various uses. And in that regard, some interesting publications were released recently towards a land use strategy. Last year the CORE commissioner, Stephen Owen, released the "Land Use Charter." Further on the subject of guiding strategic vision, we now have goals to achieve the principal stages in the charter, and some of those goals refer to issues such as intensive forest management.

Besides CORE, there is the Forest Practices Code, I would encourage you to look at the discussion paper. Timber Supply Reviews are underway, and also a follow up Forest Sector Strategy process. And last but not least, treaty negotiations and the whole subject of meeting fiduciary responsibilities with First Nations.

Compounding those challenges is an extremely tight fiscal situation faced by all levels of government. As well as very high expectations of society to maintain public services and financial support, for a whole series of things that the public has come to rely on.

There's no question that we are in a highly charged political environment in forestry. Under these circumstances, the Forest Service and Ministry of Environment have to try and develop rational resource management policies that are socially acceptable, as well as environmentally and economically viable, and we have to do that with the best information that's at our disposal.

The Forest Practices Code (FPC) discussion paper and rule book culminated from two years of very intensive staff work in both the Ministry of Forests and Environment. At this time, staff are continuing to work on the code, developing what are called provincial standards, regional standards, and the legislation that will come through this year. So much staff work has been devoted to this that we've had to take staff off other things. It's been very difficult to cover our bases with all the code work that has gone on.

If you look at the FPC rule book, you'll see that silviculture is extremely well represented. There are thirteen sections covering rules and various disciplines in forestry, and five of those deal with various aspects of silviculture.

First of all, relative to other areas where rules are now needed in forestry, silviculture probably has fewer new rules than the other areas, such as planning and timber harvesting. We got very early off the mark by having Part 10.1 of the Forest Act in 1987, and the Silviculture Regulation. And that has represented a very early and solid beginning, and we are now adding to that foundation in the rule book.

Secondly, all of the silviculture sections in the code have a preamble that says we have to manage towards integrated resource management, and we also have to manage for biological diversity. And more importantly, where specific objectives are not in place for those two elements, objectives have to be created. And that's a very key point. I believe that silviculture represents a means to the end. We are tradespeople that are skilled in the art and science of

managing all forms of forest vegetation across the landscape, to meet potentially a whole variety of objectives.

The Society of American Foresters in their recent silviculture newsletter dated October 1993, have a very appropriate definition of silviculture, which we certainly endorse in the Silviculture Branch. It essentially says that silviculture is the art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of land owners and society on a sustainable basis. So you're looking at a much broader definition that looks at a variety of uses and objectives. I think it would be in all of our interests to get behind it.

Biological diversity has been talked about a great deal and the FPC is trying to integrate the issue at both the landscape and the stand level. The intention is not to manage every hectare of forest to retain tree development diversity. The intent is to use a combination of protected areas, riparian zones, wild life habitat, old growth management areas, and so on, in a type of network that is assessed across the landscape in order to meet biological diversity requirements. In some situations where we feel we have a shortfall in biological diversity, then we may need to add structural diversity to second growth stands, perhaps by planting a greater variety of tree species.

At the end of the day, for silviculture to really have focus in this province, we really need land use designation and goals, to more clearly define exactly where we are going, what our treatments are aimed towards. Within the Silviculture Branch, we've had a fair number of discussions on this. Mike Wyeth, in particular, has advocated that rather than just talking about interim treatment objectives, we should try and visualize the future conditions of the forest that we want to work towards. By having a vision of the

forest that you would like to achieve—for timber production, wildlife or recreation, etc.—then we can work backwards and figure out the diversity of silviculture treatments that we need to apply to get there.

Now what does this mean for the types of silviculture that will be practiced in the future, and the level of silviculture? I think potentially a great deal, because this approach would mean that we broaden the scope of the program. We would not only capitalize on opportunities for intensive forest management, but we would also capitalize on opportunities to practice silviculture, to enhance wildlife values, to enhance recreation values, to manage secondary stands by adding diversity and so on.

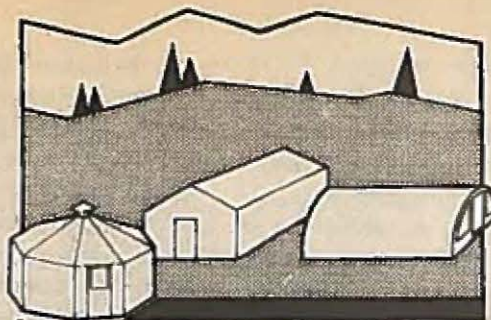
But aside from the opportunities, we also have to recognize that the government has a shortage of money, that the government is also concerned with social issues, as well as the economic and environmental benefits, and must address the issue of continuing employment in forestry, and the concern about stability in many rural communities. You probably all know there are many people on income assistance, and unemployment insurance, that want to improve their self-esteem and confidence by getting job training and work. We also have to think about the need to increase participation of First Nations people, because that continues to be an important step in developing fair land claim settlements.

At last year's WSCA convention, Dan Miller, BC forest minister at that time, said that it's really to your advantage to stay on top of technical developments. And in that regard, I am very pleased to see that the WSCA has got together with BC Forest Network (BCFN) to put on another training series. I sincerely hope that will continue and that there will be good attendance. I would add that, as good business people, it's important for you to try and anticipate the social priorities of government, and to be as creative as possible to see how your silviculture contracting industry can contribute solutions. New government money is tough to get, but the chances are improved if you get behind multi-purpose programs, that not only cover the economic and environmental aspects, but also the social issues as well.

Now, regardless of the circumstances, the BC Silviculture programs have a history of successfully responding to change, and when governments change, or priorities have shifted, we usually have found creative ways of getting the funding. We've got a new set of circumstances to work with now—I mentioned earlier the CORE process, the Forest Sector Strategy, and the Forest Practices Code. I think we have to strategize and think very carefully about the new opportunities for silviculture.

In a recent interview with the *Vancouver Sun*, Forest Minister Andrew Petter made some comments with respect to the forest sector strategy. He said basically that we can expect this strategy to focus on four areas in particular. One is silviculture—enhancing the fibre supply for industry. Secondly, value-added—increasing the economic value of forest products. Thirdly, labour adjustment—finding ways to keep the workers within the industry. And fourthly community stability—ensuring resource communities have a say in resource use. Notice the coverage across a broad spectrum of issues.

continued on next page...



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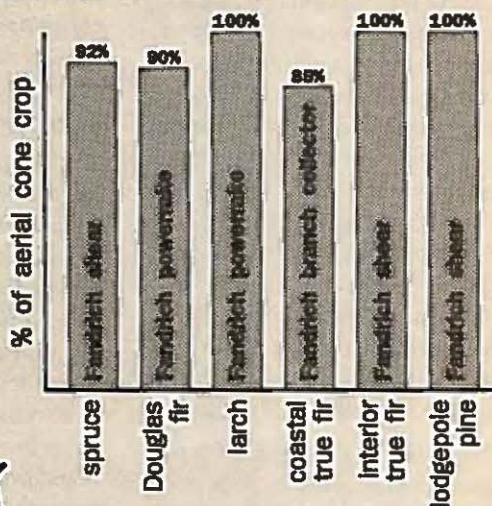
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I have no doubt that silviculture is going to continue to feature very prominently indeed in the forest management strategy of the future. However, it's going to be very important that you as a silviculture industry are prepared to respond and to adapt to the new circumstances that we face. If you do that, then there's no question in my mind that you are going to be a significant part of the future direction of forestry.

Q: *Recently forest health became part of Silviculture Branch's mandate—after being part of prevention. Does that mean that there will be rules changing, or more funds directed through forest health than in the past. Before it seemed to be overshadowed because it was part of the fire control. Do you see a significant change in forest health in BC?*

BENSKIN: I've always felt that forest health was a fundamental part of silviculture anyway, and I've had great difficulty recognizing it as a separate entity. I think forest health considerations are absolutely vital when we plant trees, tend forests, as well as in protecting the wood supplies of the future. As far as funding is concerned, the bulk of the funding for forest health goes for bark beetle control, and that funding has increased over the years. I see a lot of opportunity in the area of pathology, and ways of managing pathogens in the forest, the root rots, and we are certainly looking to work up a suitable business case for increased goals in the area of forest health. As a matter of fact, we're currently finalizing a discussion paper that'll come out very shortly which is a preliminary look at the costs and benefits of forest health treatments. They look very attractive indeed, so it's an area which I think will expand considerably in the future.

Q: *Is contracting going to be a big part of the future, or are there going to be other methods of getting the trees back up there?*

BENSKIN: As I touched on in my presentation, I think the future is very bright indeed for silviculture in the province. The public has many diverse expectations on our forest resources, and

we are the tradespeople who treat the vegetation, and typically, we have tended to orient our thinking towards wood supplies. But there is a great deal of opportunity out there. And those of you who've travelled in Europe for example, you will see that silviculture treatments are explicitly used there to enhance wildlife objectives to manage riparian zones for stream protection.

I think if we embrace the broader context of silviculture, then wonderful opportunities emerge. I think the challenge we face is to somehow make a good business case to the government. And I think that business case becomes a lot more acceptable to Treasury Board if we embrace a portfolio of good reasons to support the program, the economic, the environmental and the

...get behind multi-purpose programs, that not only cover the economic and environmental aspects, but also the social issues as well...

social.

Q: *What's being done to ensure that there's a consistent application of the rules of government and the practice of contractors who work in silviculture? As you move from district to district, or region to region, the application of the rules change and even between the people who are looking after a contract within districts, the rules change.*

BENSKIN: A very valid question. I'm sure you appreciate that with staff turnover within the Forest Service, it's difficult. But I think the solution is communication and training. We are still committed to staff training to make sure that our front line people are well versed in the principals of contract procedure, and apply them consistently. You may have seen some correspondence from Diane Lucas from our Tech. and Admin. Services Branch. She has just instituted an electronic bulletin board to help ensure that staff are aware of the provincial procedures. And can apply them based on site specific circumstances.

By the way, we're putting together a contract administration course, right now.

We'll have a pilot project and contract course this spring. So we are actively trying to get a good contract administration approach out there so the staff is well trained to cover all bases.

Q: *To follow up that question—if there isn't consistent application out there, what can contractors do?*

BENSKIN: The suggestion I've given is in the past when contractors have approached me, is to approach the district staff and to outline your concerns. It's difficult for us in Victoria to ascertain the various viewpoints around a question which has a local origin. You really have to negotiate, talk to the district personnel who are responsible for planning the contract work, and hopefully get your concerns addressed, and failing that, talk to the regional staff.

Q: *Why not establish an appeal process or publish procedures for doing this so that contractors would know it exists, and that the ministry is interested in listening to the concerns of contractors.*

BENSKIN: It's an issue that has been around for many years and I don't think it will go away. There are always going to be grievances although we are doing our best through training, through province-wide communications to try and minimize that. I realise that dealing with local staff can be tough, because you have to work with them on an on-going basis to get your contract, but I think that's the only way that it's going to work.

Q: *Last April, the WSCA sent a letter suggesting there was a problem in the Boundary area and a resultant tree stashing conviction. At the time, we suggested a procedure should go out to all the districts concerning how to handle problems of that nature when they come up. You responded by saying that they were currently being reviewed. What's the status at this point?*

BENSKIN: Yes, we are conducting a review of our contract admin. procedures. During the summer we contacted district staff and we solicited their input into the process. We asked them for what they perceived the needs and scope of a

contract performance system would be. We feel that a contractor performance system should be in place, preferably tied to our integrated silviculture information system, so it's on-line. The difficulty we have is that we are right in the middle of implementing this silviculture information system. Our system staff are completely tied up, and it's probably going to be 1995 before we have that on-line system available. Now, in the meantime, I believe that our system isn't exactly falling apart, but we are doing as much as we can to ensure good communication throughout the organization, on problems that exist. We're really concerned about tree stashing, and we want to build clauses into the contract that'll I think reflect performance conditions more carefully.

Q: In checking around with all the MOF various districts concerning these field problems with your field staff, we came across a very high level of frustration. Members of the MOF staff felt that they weren't getting the support or backing from Victoria to try and exclude these people or weed them out. There was just nothing really in place for them to effectively deal with these concerns. It seemed to me that it was price-driven type of decision.

BENSKIN: As I said, our contractor procedures need to be improved, no question about that. We would like some input from WSCA, we offered that to listen to your ideas in a letter that was sent back to you. We have to watch out because we can't create a double-jeopardy situation. If a company is convicted in court, we can't automatically exclude them, there has to be some performance base criteria actually stated in the contract. Contracts that are signed off before conviction are still legal, and we really can't do anything about it. That's the dilemma we face.

Q: Previously MOF had a contractor performance system and a "D" contractor class couldn't get a contract. There were a few things that would cause you to be classified as a "D" contractor, such as being caught stashing, or failure to pay WCB. At one time had mobility to restrict for various things, why is that not possible today? The WSCA is concerned with weeding out some of the elements that damage the image of our industry and the program's credibility.

BENSKIN: Needless to say, we share your concerns. However, we have to make sure that we cover the legal bases very well. In that regard, we have had discussions with Ministry of Attorney-General and we continue to do so.

Q: The people in contracting industry employ a majority of the people who work in silviculture. I'm curious in terms of we're looking at employing people who are on UIC and other things, there's a lot of concern from the people who are working right now.

BENSKIN: No question about it. We want to make sure that we maintain the existing silviculture contracting industry. We also want to make sure that relative to many other competing government priorities, that our existing programs are sound. As I said in my presentation, we are well aware that the public purse is really tight, and that every sector of society that relies on public funding may have to adapt and do business differently. It's clear that on the government's agenda are social issues, they're concerned about workers that are displaced from the forest industry, they're concerned about the First Nations, they're concerned about people on income assistance, and they are very interested in the opportunities that forestry and silviculture work has to offer.

We will do our level best to make sure that we cover both bases. I think in the past year, the funding has increased overall so that the amount of money that we spent on FWDP training levels one and two, had absolutely no effect on silviculture goals elsewhere in the program, and we hope that will continue.

Q: I believe the WSCA would like to be involved in the process for dealing with issues of making work, because we do employ people, we know how to employ people.

BENSKIN: I very much appreciate the good ideas that this association can offer. All I can say is that I am not responsible for political process that is used to formulate programs for the consideration of Treasury Board. Make your proposals known. I would strongly recommend that you follow some of the suggestions that I made earlier, that you recognize the social mandate of government, and work those into your proposals. ♦



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BC WCB Regulation Review and Camp Standards

Rex Eaton, Director of Regulation Review, WCB

Note: Edited version of a talk presented to the 1994 WSCA Conference in Vancouver, Feb. 3, 1994.

WCB regulation review process

For two years now we've been reviewing the Health and Safety Regulations at the WCB. It is an open, consultative, transparent, exhaustive, and exhausting program of regulation review. I coordinate it, and it's been a wonderful opportunity to work with a lot of people, including some of the directors of the WSCA in relation to silviculture and silviculture camps. But we're reviewing all the regulations, not just those related to conditions in camps.

We're conducting the review in three stages, and each in each stage has a number of committees working at developing proposals. These proposals either go out to public hearing or they get fed on to other committees who make changes as part of the overall strategy.

In phase one of the program beginning in mid-1992, we deliberately placed those initiatives which were brand new, in order to give them the maximum time to work themselves out. We established a number of committees, including: first aid, agriculture, occupational hygiene (which deals with chemicals in the workplace), ergonomics (which deals with the control of muscular-skeletal problems, such as repetitive strain injuries, or back injuries). We also established a committee to look at camps regulations in the first phase.

Every committee has an equal number of representatives from the workers and from employers. Every specialty committee also has representatives from the WCB and other agencies. For example, with silviculture camps, Robin Brown represented the Ministry of Forests and Gerry Penner represented the Ministry of Health.

We expect every committee to work on the basis of consensus as far as possible, and I am pleased that in connection with silviculture camps, consensus was established. With first aid, we weren't quite as successful with consensus, and two or three areas of non-consensus had to go to the Board of Governors for resolution.

Occupational first aid

The first aid regulations went to public hearing in the spring of 1993. These regulations were then revised, adopted and took the force of law on January 1, 1994. However, the inspection component will pick up around the middle of this year, because we want to allow enough time for people to become more aware of what the requirements are and how they relate to their industry. And we want to allow enough time for programs to be put in place, as they involve new kinds of education and training requirements, etc.

We have made a number of adjustments throughout the regulations in order to try to accommodate the more contemporary patterns of medical care provision. In terms of first aid certificates we decided to change the names to level one, level two, and level three in order to simplify things. We also wanted to create the understanding that these are stepping stones—what you learned in level one will be built on going into level two, and so on.

A level one certificate is the equivalent of the previous survival first aid certificate, which is a one day course. Level three is equivalent to the previous industrial first aid certificate, that's a two week training course. We also have a level two requirement in a number of circumstances. Level two is a new concept, intermediate between survival and industrial, it's a one week training course.

There are probably two significant changes to the requirements for first aid certificates in the work place, that are in these regulations, one of which particularly affects you. Your industry is rated as B hazard—except when you use chainsaws, etc.—when it becomes an A hazard. I want to draw your attention to one of the requirements for B hazard industry more than twenty minutes from a hospital, which would be typical for a lot of tree planting and silviculture operations. For two to five workers, and for six to fifteen workers, you need a level one first aid certificate with a transportation endorse-

ment. Sixteen workers or more, you'll need a level three certificate.

The new transportation endorsement is intended to address a problem of basic survival when you are more than twenty minutes from a hospital. A level one first aid course doesn't really tell you anything about how to transport an injured worker. The transportation endorsement provides some additional training in transporting injured workers, it's a one day course.

Transportation requirements

We are now in the second stage of regulation review, and we've set up another series of committees, including one on transportation requirements. That committee has not quite completed their deliberations. They have been advised that the silviculture subcommittee wishes to see a requirement for employer to transport workers from a camp or equivalent facilities to the worksite. And so they're reviewing that as part of the work that they're doing. I will be talking with the chair of the committee because we want some specific comment from the committee in relation to this recommendation from the camps group.

Another of the changes that I think will affect your industry, have to do with all-terrain vehicles. There is concern that all-terrain vehicles have been under-regulated, that people are not adequately trained, there's not adequate use of headgear, and equipment that's being pulled to transport workers is not up to standards in some cases. And that committee has a number of recommendations which I anticipate will be in their final report.

Silviculture camps

The silviculture subcommittee worked diligently last spring, over a period of about four months to produce a final report. They were guided by a terms of reference from the governors of Workers' Compensation Board. Their final report contains a number of provisions addressing sanitation, accommodation, food preparation, and similar matters, for the

concept of temporary camps.

e had previously entered into discussions with the Ministry of Health and Ministry of Forests and determined that there appeared to be the niche in the industrial camps regulations for a concept of temporary camp. This is different from a permanent camp that you might find, for example, at a mine, or a long term construction project.

In our regulation review process, the silviculture subcommittee's recommendations were sent to a senior advisory group, called the Regulation Advisory Committee which includes six WCB governors. The mandate of the regulation advisory committee is to review all the subcommittee reports and offer general comment. They are not specialists in a particular industry, or matter being addressed. We expect that committee to have some perspectives of how to position a subcommittee report, thoughts on some general regulatory matters, and the like.

A group from within this senior regulation advisory committee received silviculture subcommittee's report in July 1993, and we expected a report from them by August. Well, come September, they still hadn't finished, and by October we said you have to produce your comments on this document.

The big ticket issue they were grappling was the question of, since the WCB is taking the initiative to regulate temporary camps, why in heck aren't we regulating permanent camps? That took a fair amount of time for consultation, and then referring the

matter to the WCB governors for direction on the bigger issue. We've have had discussions with the Ministry of Health about this, and the result of those discussions is that Ministry of Health agrees that the Workers' Compensation Board should administer all regulations related to all industrial camps, whether they be temporary or more permanent.

We are in the process of developing a memorandum of agreement between the two as to how this will happen, how they will provide training to WCB officers in the nature of the general regulations and assist us with the administration of the regulations. Under this agreement, the regulations will be left under the Health Act, because it was considered that there were too many legal hurdles to jump and too little time to do anything else. There is no other jurisdiction in Canada in which the camps regulations are under health and safety law. They're always under health acts, administered by, generally speaking, ministries of health. In the States, the USHA administers the camps regulations, but under the equivalent to the Workers' Compensation Act. So there may be some transition ideas there.

To deal with the camps regulations we have now created a task group within the Workers' Compensation Board composed of a chair of the silviculture subcommittee, myself, the vice president of the Health and Safety Division (now called Prevention Division and the chair of a group within the Regulation Advisory Committee. The task group is to generate a proposal that respects the consensus of agreement of the silviculture subcommittee to the maximum, and that respects the interests of the umbrella body Regulation Advisory Committee.

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One of the key issues in that respect, is the parameters of what a temporary camp would be. And those parameters have not yet been formulated in terms of the task group's decision-making. I expect to get a report back from two people who have been grappling with that within the next week or two. It is then our intention to go to the regulations advisory committee later this month and call for some additional representation of liaison people to assist with pushing us through. And if all of that takes root, then of course we will be calling some people who have helped us previously in this area.

It is our hope and our expectation that at public hearings beginning in mid-May this year we will have camps regulations, along with three other sets of regulations—ergonomics, fall protection, and noise control. Noise control and fall protection, you're probably not too worried about, but you might be interested in the ergonomics regulations.

We're not in a position to regulate costs, I heard a partial referral on the matter of costs to us, but we are in a position to help regulate the standards, which of course are associated with the costs of setting a camp up.

Injury Reduction Partnerships

In Alberta there's a program called Partners in Injury Reduction, which is a co-op effort by WCB and a professional association. It is a voluntary incentive program which offers WCB refunds, i.e. money, for reduced accidents costs. Contractors are certified either by peer review or external consultants to have an acceptable safety program and then they can join the program. I have been asked if the WCB would be willing to consider a similar program with the WSCA.

In BC, the WCB now administers an assessment reduction program called ERA, which adjusts assessments up and down according to injury experience compared to the average for the industry, and in a sense that's part of the way. But there is no

specific program in the BC WCB, where setting up an audited health and safety program gets you a reduction. There was an attempt to provide such a program in the construction industry through the prevention division. A pilot program was established but it was decided not to continue with it.

Although it's not quite the same, there is another possibility for an initiative that you believe would bring much better safety to the silviculture workplace. If it is a discreet project, you might be able to get some funding for it through the grants and awards system at the WCB. In that case, I would recommend a contact person by the

...the new transportation endorsement is intended to address a problem of basic survival when you are more than twenty minutes from a hospital...

name of Lynn Alsberg, who is the Assistant to the President of the WCB.

Q: *I was concerned about the camps issue, and discussed it with my attorney. The consensus seems to be that the document states that if you sign a contract with the Forest Service to do anything, you are automatically obligated to have a silviculture camp. Most of my employees stay at home. Why do I need a camp for them? It also seems to infer that if I put guys in a motel that doesn't meet these standards, the motel owner is liable.*

EATON: You're touching on the other big issue in connection with camps. Silviculture subcommittee did a fair amount of work on this issue. We are faced with a question of whether the Board can mandate a camp in certain circumstances, for example, if you're more than an hour away from the nearest available habitation. We have a problem on legally requiring a camp under the Workers' Compensation Act or the Health Act, right now. What we've been doing in the past is to set out the requirements if you do have a camp. We also reviewed similar requirements across Canada, throughout North

America, and Europe, to see how other jurisdictions has been address it.

In fact, the balance of the legal and administrative opinion right now is we don't think we can have a requirement for establishing a camp in particular circumstances. But we will continue to examine it.

The task group I mentioned is reviewing the issue in order to create a definition of operation of a camp which is effective, but not overly inclusive, so as to address the concern of a level playing field. We're trying to ensure that somebody who's prepared to provide a camp, and therefore has to meet camp standards, is not financially disadvantaged relative to

somebody across the road who is perhaps not prepared to provide a camp and therefore doesn't have to meet standards. This is an economic and social problem in your industry that we have to be very sensitive to. And it has been brought very directly

to our attention.

Q *Are you suggesting that the Board is going to ensure that if my competitor is from out of town and requires a camp to do his job, that I have to bid on the premise that I too will put up a camp in my backyard, even though there'll be nobody staying in it?*

EATON: No, what I'm saying is that the balance of the legal and administrative opinion is that we have difficulty placing ourselves in the position of specifying the circumstances in which a camp is required. But if a camp is established, you can establish the reasonable minimum. There's a whole variety of questions here, one of which is, from the point of view of the employer, competitive position. From the point of view of the worker, choice over whether or not they want to stay in a camp, or they want to stay somewhere else. Do they want to camp out on the top of the nearest mountain and watch the sun rise, and be prepared to hike up and down at the beginning and end of the day, or do they prefer to stay in town and do a fair amount of driving into the camp. It's a difficult area.

Q: *One of the opposing forces beyond the argument Chuck just presented, is if it were enforced in the industry, the rest of the industrial world working in the bush, would feel subject to moral requirement for the same kind of temporary camp. I just want to point out that the WSCA representatives and the forest industry representative on the silviculture subcommittee have advised that this is not a consensus document if there is not uniform enforcement of standards related to accommodation and transportation.*

EATON: I appreciate that the correspondence has been very clear and very direct on that point. I can tell you that there's been a great deal of response to it and concern with it at the Board. We will need to consult with people on the silviculture subcommittee in a process of drawing together the overall regulations as they address temporary and more permanent camps. We are now looking at a number of legal remedies to ensure that the principle that underlies the concerns of the employer representatives are addressed as far as we can legally.

We have also, by the way, undertaken some initiatives with other agencies to ask them to look closely at the social aspects to see what they can do to address this concern. There may well be initiatives, through another ministry or branch of the Ministry of Labour, where we may see policies that substantially encourage the provision of camps in order to help with the level playing field.

My expectation is that there may be a number of options which satisfy the legal requirements, a sense of social justice, and the level playing field that we can discuss further in the next few months.

Q: *Does the WCB have the staffing or the funding to go out there and actually regulate and inspect these camps? And secondly, in the regulations, there are requirements for supply of water, septic systems and so on. We're often working in a situation where these camps are being established on crown land or something like that. We don't have any authority to go and start putting in these things. Is the WCB going to see that the license holders, or whoever is responsible, will be establishing sufficient sites in this nature?*

EATON: You left out the Ministry of Environment, which I understand doesn't like to have permanent sites around that could be used from one year to the next.

As for the question of staffing in the area of silviculture, we have people telling us right now we don't have enough staff and others telling us we have too many. But when you look at the number of inspectors we have compared to some other jurisdictions, we're doing pretty well.

Under the budget for 1994, there are no plans for increased staff. We have taken on some added responsibilities, so people are going to be spreading out their activity. One thing I can say about camps is that we already have inspectors out in silviculture operations, looking at them. Part of the rationale for adopting the camps regulations with the Workers' Compensation Board, is the Public Health Inspectors don't get out to the field, and we're already out there. What we're saying is, that there's some added responsibilities associated with those inspections. So we think that our capability to outreach is not bad. ♦

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1994 WSCA Strategic Priorities

At the 1994 WSCA convention, we conducted a strategy session with all the members present. Everyone was asked to nominate priorities for the association for the coming year. These nominations were then grouped into 19 categories. Each member present then voted for their top three priorities. The priorities listed below are ranked by the the number of total votes they recieved (shown in parentheses). Also included are some specific priorities suggested for each area.

1. MOF & industry contract administration (22)

- ▲ MOF to be auditor not policeman
- ▲ MOF to uniformly enforce standards in contract (and eliminate unenforceable ones)
- ▲ MOF to apply standards uniformly across MOF districts
- ▲ MOF to eliminate qualification barriers to entry in Districts
- ▲ MOF & industry to use more long-term (multi-year) contracts
- ▲ MOF & industry to upgrade skills and guidelines for evaluating proposals

2. WSCA deal with WCB & ESB (19)

- ▲ Meet with ESB to defuse timebomb
- ▲ Continue involvement in WCB standards review
- ▲ Establish nutrition standards for industry
- ▲ Decide how to respond to WCB & ESB changes
- ▲ Ensure uniform enforcement by WCB & ESB
- ▲ Reduce government agency involvement in silviculture
- ▲ Ensure uniform enforcement of camp standards
- ▲ Deal with ESB over rules on overtime and statutory holidays

3. Make WSCA stronger (18)

- ▲ Attract more contractors into WSCA
- ▲ Increase contractor input into WSCA
- ▲ Increase regional representation in WSCA (reduce apathy)
- ▲ Provide incentives to members for attracting new members to Association
- ▲ Identify priorities for WSCA
- ▲ Identify forces changing our industry

4. Snags (13)

- ▲ Quantify real danger level of snags and lobby WCB accordingly
- ▲ Identify who is responsible for Wildlife Tree assessment (should be before silviculture crews arrive)

5. Redirect FWDP (12)

- ▲ More liaison between MOF and contractors on training
- ▲ Government to direct training funds into industry not social assistance
- ▲ FWDP needs contractor profit allocation in program
- ▲ WSCA to quantify impact of FWDP on contractors
- ▲ MOF missing boat on training existing contractors

6. Support FWDP (10)

- ▲ WSCA to get the real facts on FWDP
- ▲ WSCA to provide more constructive criticism/support of FWDP
- ▲ Present positive side of FWDP
- ▲ Contractors missing boat on training

7. WSCA Positive PR (10)

- ▲ Promote positive aspects of silviculture achievements
- ▲ Generate positive PR for industry (we are the white hats)
- ▲ Improve public perception of treeplanting
- ▲ Use media better to get our message out

8. Forest Practices Code (9)

- ▲ WSCA to provide more input into Forest Practices Code (FPC)
- ▲ Ensure real enforcement of FPC
- ▲ Create WSCA mechanism for whistle blowing w/clients
- ▲ WSCA input into implementation of FPC

9. Promote intensive silviculture (8)

- ▲ Promote benefits of intensive silviculture more
- ▲ Influence licenses to pay for and do more intensive now (while they have the cash)
- ▲ Introduce incentives for intensive silviculture in tenure system

10. Certification & performance evaluation (6)

- ▲ Introduce certification of contractors
- ▲ Introduce certification of field project supervisors
- ▲ Introduce performance based bidding awards

11. WSCA Ethics (5)

- ▲ Implement penalties for gross misconduct of contractors
- ▲ Focus more on WSCA principles & agreements

12. Herbicide subsidy (3)

- ▲ Eliminate government herbicide subsidies

13. Government funding (1)

- ▲ Lobby for consistency of government funding
- ▲ Lobby for FRDA renewal

14. MOF payment (1)

- ▲ Speed up MOF payment process

15. The future (1)

- ▲ What is future of silviculture and how will we be affected?
- ▲ What are future silviculture numbers from MOF?
- ▲ What are goals of MOF for increased value and yield?
- ▲ How will net loss of forest land base affect us?

16. WSCA Insurance (0)

- ▲ Review Association liability policy (and carrier) and confirm fire coverage

17. Stop IWA (0)

- ▲ Oppose IWA agenda to put unemployed loggers into silviculture

18. Stop GST (0)

- ▲ Fight GST on camp costs

19. Native training (0)

- ▲ More attention to Native training as potential work for contractors



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Contact:

Ken Robertson
Stephen Pellizzari

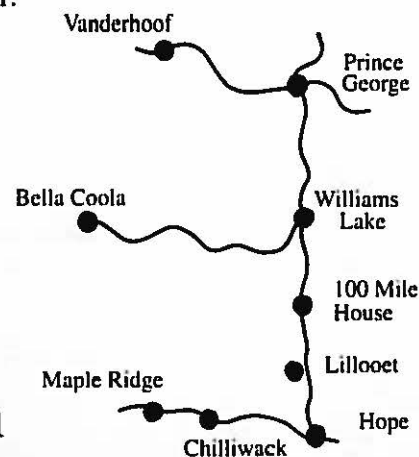
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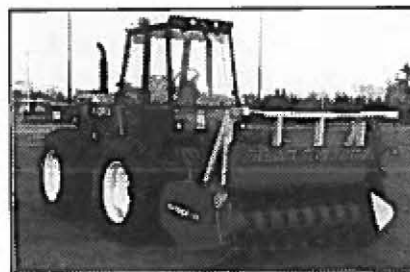
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